

The
**PREMATURE
GRADUATION**

of Children from Child Restraints
to Vehicle Safety Belts

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16. Abstract <p>Belt-positioning booster seats are recommended for children between 40 and 80 pounds, however, usage is estimated at only 5% nationally. The goal of this project was to determine reasons for the premature graduation of children from child safety seats to vehicle seat belts and to suggest strategies for increasing booster seat use.</p> <p>The project utilized multiple methods, including a review of existing literature and programs regarding premature graduation and booster seat use; discussions with parents, children, and experts via telephone or focus groups; and facilitated brainstorming sessions. These qualitative methods were used to gain a broad understanding of the issues relating to the premature use of seat belts by young children and to suggest strategies to increase booster seat use.</p> <p>This research showed that the premature graduation of children from child safety seats to vehicle seat belts occurs for a variety of reasons. Most notably, a parent's perception of risk of their child being injured in a crash plays an important role – parents who used booster seats tended to have a higher risk perception than parents who used seat belts for their children. Parents' knowledge of best practice for child passenger safety and the potential consequences for not following these recommendations played a key role among the subjects studied in this research. Parents identified several potential barriers to optimal restraint for their young children including situational circumstances (e.g., extra adult or child in the vehicle), child behavior, child discomfort, the law, availability of the booster seat, cost, convenience/ease of use, and perceptions of safer alternatives. This research also identified potential strategies to overcome barriers to booster seat use, and to promote continued booster seat use among parents who use them.</p>					
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Executive Summary

Seat belts do not properly fit young children. The lap belt rides up around the child's waist and the shoulder belt crosses the face or neck, often causing the child to place the belt behind his/her back or under his/her arm. This reduces the effectiveness and compromises the torso restraint. As a result, the premature use of seat belts can cause significant injury in the event of a motor vehicle crash. In particular, young children restrained using seat belts are 3.5 times more likely to sustain a significant injury and 4.2 times more likely to sustain a significant head injury than children using child safety seats or booster seats (Winston, et al., 2000). In addition, young children using seat belts are also at risk for seat belt syndrome, which can include serious injuries to the abdomen and/or spine.

In order to help prevent these injuries, the National Highway Traffic Safety Administration recommends that children between 40 and 80 pounds be restrained using a belt positioning booster seat.¹ Unfortunately, however, belt positioning booster seat use is only about 5% nationally. The goal of this project was to determine reasons for the premature graduation of children from child safety seats to vehicle seat belts and to suggest strategies for increasing booster seat use.

To meet these goals, the project utilized multiple methods, beginning with a review of existing literature and programs regarding premature graduation and booster seat use. The project also elicited information from experts in child passenger safety as well as other health behavior promotional fields, such as immunization and lead poison prevention. Facilitated brainstorming sessions were used as well to generate ideas and questions for focus groups with parents and children. Two sets of focus groups were held, each followed by supplementary in-depth telephone discussions with parents. These qualitative methods were used to gain a broad understanding of the issues relating to the premature use of seat belts by young children and to suggest strategies to increase booster seat use among children between 40 and 80 pounds.

This research showed that the premature graduation of children from child safety seats to vehicle seat belts occurs for a variety of reasons. Most notably, a parent's perception of risk of their child being injured in a crash plays an important role – parents who used booster seats tended to have a higher risk perception than parents who used seat belts for their children.

¹ During the time period in which this study was conducted, the recommendation of NHTSA and other safety organizations on the use of booster seats specified that the seats should be used by children who have outgrown their child seat, who weigh between 40 and 80 pounds, and who have not reached 4'9" in height. Additional data and information on the subject have been accumulated since the recommendation was originally made. In response, NHTSA is looking into whether the guideline is the most accurate and up-to-date, specifically with respect to whether the 80-pound upper weight limit should be decreased.

Along with that, the perception of risk associated with a specific type of restraint - some parents who used booster seats did so because of concern about seat belt fit when their child was using a seat belt without a booster. Parents' knowledge of best practice for child passenger safety and the potential consequences for not following these recommendations played a key role among the subjects studied in this research.

Parents identified potential barriers to optimal restraint for their young children including situational circumstances (e.g., extra adult or child in the vehicle), child behavior, child discomfort, the law, availability of the booster seat, cost, convenience/ ease of use, and perceptions of safer alternatives. These barriers to booster seat use prevented some parents in this study from using or regularly using the proper restraint for their child and also led to ideas for strategies to increase the use of booster seats. However, for parents who were committed to booster seat use, child behavior did not pose a significant barrier – booster seat use was non-negotiable.

In this research, parents identified potential strategies to overcome barriers to booster seat use, and to promote continued booster seat use among parents who use them. Areas for consideration include:

- Educating parents on successful parenting strategies including consistency, setting boundaries, and communication may help parents who want to use booster seats but feel that they cannot control their child's behavior.
- Educating parents on the benefits of booster seats over seat belt adjusters.
- Developing programs to distribute free or low-cost booster seats.
- Explaining to parents the rationale for the recommendation of a booster seat until a child reaches 4'9" and 80 pounds.
- Investigating the possibility of transitioning a child in stages from a child safety seat to high back belt positioning booster to low back belt positioning booster. This will allow the child to graduate to a booster seat that seems less like a safety seat ("baby seat") before using a seat belt.
- Providing parents with information on booster seats, motor vehicle crashes, injuries to children, etc in locations identified by parents in Table 1.
- Stressing the importance of proper seat belt fit and seat belt and booster seat functions.
- Using media outlets and available/interested celebrities or personalities to get the message out. Make that message simple and clear.
- Strengthening laws to match best practice.
- Putting information and/or a coupon in the child safety seat box explaining about booster seats as the next step.

- Showing stepwise progression (infant seat to child safety seat to booster seat to seat belt) on all child safety seat boxes and on in-store displays.

The above listing highlights some of the many strategies for increasing and extending booster seat use outlined in this report.

Future work should investigate further the behavioral aspects of appropriate and inappropriate restraint using both qualitative and quantitative research methods. Parents' beliefs about restraint, barriers to optimal restraint, and perceptions of the benefits of optimal restraint should be assessed in-depth to gain a deeper understanding of premature graduation and to create appropriate and effective safety messages. In addition, research should be conducted to further identify the best time, place, and messenger for child passenger safety information to be delivered. Targeted interventions should be developed in order to gain short term improvement, long term improvement, sustainability, and acceptability.

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I. Introduction

Over the past two decades, great gains have been achieved in motor vehicle occupant safety: the fatality rate per 100,000 population for motor vehicle occupants fell 29.7%. However, children between the ages of 5 and 9 years experienced a more modest fatality rate reduction of only 10.6%, from 2.84 fatalities per 100,000 in 1979 to 2.54 fatalities per 100,000 in 1999. [1] In 1999 alone, 495 children ages 5 to 9 years were killed as occupants in passenger cars, light trucks, and large trucks. While 272 (55%) of these fatally injured children were unrestrained, 161 (33%) were known to be restrained in a seat belt. [2] Many of these seat belt restrained children were likely prematurely "graduated" to safety belts. This sub-optimal, inappropriate restraint may have contributed to fatal injuries.

According to the National Highway Traffic Safety Administration (NHTSA), children should be restrained in child safety seats or booster seats until the vehicle's lap and shoulder belts fit. Vehicle safety belts are considered to fit correctly when the lap portion of the belt rides low over the hips and the shoulder portion crosses the sternum and shoulder.[3] A child is usually ready for the adult lap and shoulder belt when he/she can sit with his/her back against the vehicle seat back cushion with his/her knees bent over the vehicle seat edge and his/her feet on the floor. [4] When children are inappropriately restrained in safety belts, the lap portion of the belt rides up over the abdomen and the shoulder portion crosses the neck or face, often resulting in the shoulder portion of the belt being placed under the child's arm or behind the child's back. In the event of a crash, ill-fitting safety belts can cause severe or fatal intra-abdominal and spinal injuries. Cases of serious cervical and lumbar spinal cord injury, as well as intra-abdominal injuries (including perforation of hollow viscous and solid organ injuries) have been described over the past 10 years, resulting in the identification of a so-called "seat-belt syndrome" of injuries to children resulting from ill-fitting lap and lap-shoulder belts. [5-10] In addition, when the shoulder belt is used improperly behind the child's back or under the arm, the torso restraint is compromised, making it easier for a child to move forward in the event of a crash and contact structures in the vehicle with the head. Children aged 2 to 5 years restrained in vehicle seat belts are 4.2 times more likely to sustain a clinically significant (AIS \geq 2) head injury than children restrained in child safety seats or booster seats. [11]

Two groups of children are prematurely graduated from child restraints to vehicle safety belts: (1) children under 40 pounds who should be restrained in child safety seats; and (2) children over 40 pounds who have outgrown their child safety seats and move to seat belts, but should be restrained in booster seats. While child safety seat usage is as high as 61.2% for children under five, a national survey of parents conducted by the National SAFE KIDS Campaign found that less than 5% of families used booster seats for their children. [12]

The goal of this project was to 1) provide a comprehensive background review of information pertaining to premature graduation; 2) understand why parents prematurely graduate their children to vehicle seat belts; and 3) propose strategies to increase booster seat use among the target age group.

The research team used multiple methods to meet the goals of the project, including comprehensive literature review, analysis of secondary data sources, facilitated brainstorming sessions, review of existing programs, focus groups, in-depth discussions, and discussions with child occupant protection and other health promotion experts.

This report addresses issues related to child occupant protection including the injuries and behavioral issues associated with the premature use of seat belts by children; reasons for the premature use of safety belts by children; and potential strategies for reducing premature graduation.

II. Background Information – Literature Review

A. Injuries

1. Methods

Research team members conducted a comprehensive literature review on injuries related to premature graduation.

2. Results

a. Seat Belt Syndrome

First described by Kulowski and Rost in 1956, [13] the term “seat belt syndrome” (SBS) was coined by Garrett and Braunstein in 1962 to describe a distinctive pattern of injuries, including abrasion or contusion of the abdominal wall, injury to the abdominal viscera, pelvic fracture, and fracture of the lumbar spine, associated with lap seat belts in serious crashes. [5] Garrett and Braunstein’s original description was based on a large population-based sample of primarily adult crash victims. At the time of their study, seat belts were available in only 2-3% of vehicles, and use rates in vehicles where belts were available were estimated to be 33%. These injuries were typically seen in adults. The first descriptions of SBS in children began appearing in the 1970’s as restraint of children became more common with the introduction of rear seat belts. [14]

Injuries from Seat Belt Syndrome

Garrett and Braunstein, in their original report of the seat belt syndrome (SBS), described a constellation of injuries which included hip and abdominal contusions (now commonly referred to as the seat belt sign), pelvic (ileal and pubis) fractures, lumbar spine injuries including subluxations and compression fractures of the bodies of L2 to L4, and intra-abdominal injuries to both solid organs (pancreas, kidney) and hollow viscera (small intestine and bladder). At the time, these injuries were typically seen in adults. [5] Over the past 4 decades, a large number of case reports and case series have confirmed a characteristic pattern of injuries which generally localize to the abdomen and lumbar spine. [15-44]

Intra-abdominal injuries: Gastrointestinal tract perforation, while rare as an outcome of blunt abdominal trauma, [45] is a characteristic injury resulting from SBS. [5, 13, 15-17, 19, 21, 26, 35, 37, 38, 42, 46-48] Small bowel mesenteric tears and perforations are the most common of the hollow viscus injuries. As noted recently by Gotschall, serious intra-abdominal injuries may result from use of either 2-point or 3-point belts. [48]

Two predominant mechanisms have been hypothesized to explain belt-related bowel

injuries. The immaturity of the pediatric pelvis to properly anchor the lap portion of the belt, and the tendency of children to scoot forward in the seat so that their knee breaks at the seat edge, allow the lap belt to ride up over the anterior abdominal wall. From this position during rapid deceleration, the belt can result in mesenteric tears and bowel wall contusions due to direct compression between the belt and the spinal column. [15] Intestinal perforations are likely caused by a sudden increase in intra-luminal pressure, combined with compression of a short segment of bowel by the belt.

The diagnosis of bowel perforation is frequently delayed. [49] Current diagnostic modalities including CT scanning and ultrasonography characteristically miss a significant number of hollow viscous injuries. [50, 51] Finally, many perforations are initially subtle, and come to attention with increasing abdominal tenderness over time. [49] Chandler et al demonstrated that the presence of an abdominal wall contusion significantly increased the likelihood of an intra-abdominal injury including bowel perforation and the need for operative intervention. [42] The authors concluded that patients with the seat belt sign should be hospitalized for serial abdominal examinations, even if the initial diagnostic work-up including CT scan was negative.

Lumbar spine injuries: Two types of lumbar spine injuries—compression fractures and Chance fractures—have been characteristically described as part of SBS. [5, 13, 18, 19, 25, 27-30, 32, 34-36, 38, 39, 41, 48] Chance fractures are an extreme example of a flexion-distraction injury, consisting of rupture of the posterior ligaments, and transverse fractures of the spinous process, pedicles, and vertebral body. [52] The literature has tended to label all types of flexion-distraction injuries as Chance fractures. When the lap belt is properly positioned, crash forces are transmitted to the iliac crests and pelvis. However, when the lap belt rides up over the abdominal wall, the fulcrum of crash forces is displaced anteriorly and lies at the juncture of the seat belt and abdominal wall. The entire spine is, therefore, posterior to the flexion axis, resulting in tension stresses on the elements of the spine. This results in avulsion of bony and ligamentous structures of the spine which can occur at any point along the lumbar spine.

While described in patients using 3-point belts, Chance type fractures nearly always occur in lap belted occupants. [18, 19, 36, 39, 48] The absence of the shoulder portion of the belt enables the hyperflexion of the trunk necessary to produce this injury. Chance fractures, particularly in children, are associated with an increased risk of intra-abdominal injuries. In recent case series by Anderson[6] and Glassman, [7] over 50% of patients with Chance fractures had associated serious intra-abdominal injuries, particularly bowel perforations. This is likely due to the shared mechanism of injury consisting of hyperflexion of the trunk about the lap belt.

Chance fractures can be primarily bony, primarily ligamentous, or a combination of the two,

which is a major determinant of the initial treatment plan. [39] In general, primarily bony injuries are treated with hyperextension in a cast or brace while primarily ligamentous injuries are treated with spinal fusion. Results of three case series of children with Chance fractures published since 1990 which provide specific clinical follow up data suggest that long-term neurologic deficits due to spinal cord injury are relatively uncommon after Chance fractures. [28, 36, 39] In these series, only 2 of 18 (11%) patients reported with Chance fractures were rendered paraplegic, a figure consistent with earlier data.

Compression fractures of the lumbar spine are less common than flexion-distraction fractures, and have rarely been described among children. In the largest series reporting compression fractures in children, Sturm et al noted that 25% of patients with seat belt-related lumbar spine injuries seen over a 10 year period at one Pediatric Trauma Center sustained an anterior compression fracture. [32] The authors theorized that this may result from the increased elasticity of the pediatric spine. This elasticity, particularly in the posterior ligamentous structures, enables the posterior spine to dissipate crash forces without failure, while the anterior spinal column fails in compression. All patients in this series were managed conservatively with no significant neurologic sequelae of the injury. As with flexion-distraction injuries, a large proportion of patients with compression fractures had associated intra-abdominal injuries.

Prevalence of Seat Belt Syndrome

Few population-based studies have been conducted which provide a reliable estimate of the prevalence of seat belt syndrome (SBS) among occupants in crashes. Arajärvi et al utilized a source of data on all fatal crashes in Finland between 1972-83 to identify cases in which seat belt-related abdominal injury was listed as the principal injury. [46] In only 5 cases out of 3,564 fatalities (0.1%) was the cause of death felt to be directly related to a seat belt-induced abdominal injury. Of note, belt use rates in Finland were reported to be 92% for front seat occupants by 1983.

In 1987, Agran et al published one of the first population-based studies of pediatric restraint-related injuries. [14] A total of 1,642 children injured as occupants in motor vehicle crashes were identified using an emergency department-based surveillance system in Orange County, CA between 1981 and 1984. Among this group, 191 (12%) were reported to be wearing a vehicle seat belt at the time of the crash. Three belted children (1.5%) were identified with intra-abdominal injuries related to the seat belt: 2 children between 4 and 9 years of age, and one 10-14 year old. A total of 10 children (5%) were described as having seat belt strain (abdominal wall contusion). While providing an estimate of the prevalence of SBS among children in crashes, it is important to point out that this sample did not include belted children who were not evaluated in an emergency department, and thus, likely overestimates the risk of SBS among all

belted children in a crash.

Tso and colleagues identified 42 (2.1%) restrained children with abdominal injuries from over 2,000 motor vehicle crash victims under 15 years of age entered into one of two hospital-based trauma registries serving the state of Maryland between 1987-91. [47] Among those injured, there were 24 children wearing lap seat belts, 9 wearing lap/shoulder belts, and 5 children restrained in child safety seats. No further breakdown of the ages of children with SBS was provided.

The most recent population-based study to estimate the incidence of SBS among both adults and children was performed at the Accident Research Center in Melbourne, Victoria, Australia. [8] Lane used data reported to the Transport Accident Commission, an organization to which no-fault injury claims from motor vehicle collisions occurring in the State of Victoria, are reported. All claims filed between 1978-88 were used to estimate the incidence of seat belt syndrome. There were 3,369 children under age 15 years in the database, 46 (1.3%) of whom had SBS injuries identified from ICD 9 codes in the claims data. An increasing case frequency was noted over the 10 year time period of the study. The authors noted that this was likely due to increased restraint use by children as more vehicles equipped with seat belts in the rear seat penetrated the market over time.

Children have historically accounted for a relatively small proportion of documented SBS cases, but the occurrence of SBS in children has nonetheless received some current research attention. The study by Lane noted that children under age 15 years accounted for 8.5% of all cases of SBS. Similarly, Anderson and colleagues at Harborview Medical Center in Seattle reported that children under age 15 years accounted for 6% of all cases of motor vehicle-related injuries to the spine and abdomen admitted to a Level 1 trauma center. [6] Both of these studies relied on data collected prior to 1988, a time when child restraint use rates were relatively low compared to current estimates. There have been no updated population-based studies comparing the incidence of SBS in adults vs. children. Based on trends noted through the 1980's, it would be expected that children now account for a larger proportion of cases of SBS.

The studies by Lane and Agran provided data on the occurrence of SBS within specific pediatric age groups. [8, 14] Lane noted that, among the 46 patients with SBS, 8 (17%) were under 4 years old, and 19 (41%) each were 5-9 and 10-14 years of age. The small number of subjects in the Agran study preclude a meaningful statistical analysis of incidence by age group. The most recent series (1991-97 data), reported by Gotschall and colleagues at Children's National Medical Center in Washington, D.C., noted a mean age of 7.3 years, and that 72% of cases were between the ages of 5 and 9. [48]

In summary, the current literature suggests that approximately 1% of children using seat belts and seeking medical attention following a crash have injuries consistent with SBS. As noted above, this is likely an overestimate of the true incidence among all children at risk, given that many children (particularly those using seat belts) may not seek medical attention following a crash. While children have historically accounted for a relatively small proportion of the cases of SBS, as lap seat belts have become more common in the back seat, and as child seat belt use has increased, more cases of pediatric SBS have been noted. While SBS has been reported in children as young as 2 months of age, the age group 5-9 years appears to be at particular risk of SBS.

The current literature suffers from a significant gap in information on exposure to different belt configurations in population-based samples of children. Therefore, currently, no estimate of the true risk of belt-related injury in 2-point vs. 3-point belts can be made. Given the wider availability of 3-point belts since 1990 (3 out of 4 passenger seating positions in most vehicles have 3 point belts) it is likely that the majority of belted children are using 3-point belts.

b. Head injuries

More recently, the Partners for Child Passenger Safety study revealed that children aged 2 to 5 years who are restrained in seat belts (prematurely graduated) are 3.5 times more likely to have a clinically significant injury (defined as any injury AIS \geq 2) than children restrained in child safety seats or booster seats. [11] In addition, children restrained in seat belts are 4.2 times more likely to have a clinically significant head injury such as concussion, skull fracture, or a more serious internal brain injury. These data support the need to reduce premature graduation and point to head injuries as another significant injury problem related to premature graduation. [11]

The mechanism for these head injuries in children could be related to the placement of the shoulder belt. The seat belt does not fit young children properly. More specifically, the shoulder belt can cut across the child's neck or face, making it uncomfortable. This leads many children to place the shoulder belt behind their backs or under their arms which compromises the torso restraint of the child. In the event of a crash, the child is more free to move forward and potentially contact structures in the vehicle, such as the back of the seat in front of them, or his/her knees because the shoulder belt cannot properly function to restrain them. This can lead to significant head injuries in young children restrained in vehicle seat belts as opposed to child safety seats or booster seats.

3. Summary

The majority of research to date regarding injuries to children in seat belts has focused on the relatively rare but tragic constellation of injuries known as seat belt syndrome. Recent population-based research has identified head injuries as a more common risk to the child prematurely graduated to a seat belt. In particular, the risk of head injury is four-fold higher in children in seat belts as compared with those in child safety seats or booster seats.

B. Behavioral Issues

1. Methods

Research team members conducted a comprehensive literature review on behavioral issues related to premature graduation.

2. Results

a. How might behavioral science approaches to child injury prevention contribute to understanding the problem of premature seat belt use and to designing of potential interventions?

Relevant concepts include assessment of children's and parents' knowledge base about injury risk and safety behaviors, developmental changes in child and parent abilities and in parent-child interactions, models of attitudinal and behavior change, and analysis of the specific behavioral processes involved. Few of these concepts have yet been applied to the issue of premature seat belt use.

Knowledge base and assessment of risk: Behavioral scientists addressing other areas of injury prevention have evaluated parents' and children's knowledge base regarding risk and safety-promoting behaviors, and examined the effectiveness of educational approaches to increase that knowledge base. [53] This body of research suggests that it is important to assess parents' and children's knowledge of child safety restraints other than seat belts for young children, how parents view risk of injury when their young child is already restrained in a seat belt, and whether knowledge of more optimal restraint would affect parents' decisions. In addition, the relevant parental, community, and societal messages that teach children about booster seats and readiness for seat belts have not been systematically assessed. For example, it is not known how children are influenced by parents' and peers' statements and behaviors about use of booster seats, or whether television or other media images play a role in forming children's and parents' impressions of booster seats.

Child development: A developmental perspective is key for addressing any injury prevention issue that involves complex child behavior and parent-child interactions. [53, 54] Addressing premature seat belt usage in toddlers, preschoolers, and young school age children clearly requires an understanding of child development. Key factors which change as children grow include motor skills and cognitive understanding, as well as a child's ability to sustain repeated safety behaviors, his or her desire for autonomy, and the ability to withstand current inconvenience for an intangible benefit (safety). Parent-child interactions, influenced by all of these factors, also change with the child's developmental stage.

Behavioral process: A behavioral process analysis of injury risk situations entails "fine-grained, behavioral, specific, repeated analysis" of situations in which injuries or "near-misses" occur, in order to understand causal factors and to identify potential points for intervention. [55] In addition to analyzing situations with an immediate high risk for injury, this approach holds promise for analyzing situations in which regular and consistent practice of safety behaviors is the goal. It may be useful to examine the actual moment-to-moment processes (specific parent behaviors, child behaviors, and parent-child interactions) in situations where children are restrained in seat belts and in situations where children are optimally restrained in a car seat or booster seat.

Attitudes, reinforcers, and behavior change: Applications of established psychological principles regarding attitude formation, reinforcement of desired behaviors, and behavior change may be useful in changing parent practices toward more optimal child restraint. [56] Relevant investigations in this area would include evaluation of cultural and group norms regarding seat belt use by younger children, and experimentation to discover the level and type of reinforcement needed to sustain this fairly complex behavior change by children and parents. [57, 58]

b. Are there special issues generated by "raising the bar" from *any* child safety restraint to *optimal* restraint?

Much prior work on child passenger safety has focused on achieving a more basic, yet crucial goal -- ensuring that parents have the knowledge and commitment to place their child in some form of restraint, and that they consistently do so on every vehicle ride. Moving a step further, to optimal restraint in the appropriate safety or booster seat, is a more complex issue for a number of reasons. Williams et al. (1997) addressed a similar issue in their study of an intervention designed to both increase restraint use and move children from the front seat into the back seat of the vehicle, in a preschool and elementary school population. [59] Their results

suggest that it may be easier to increase basic levels of restraint use than it is to change other behaviors such as where the child sits in the vehicle.

There are other problems inherent in adding more “required” behaviors to an established set of safety or injury prevention “rules.” The report of a task force on pediatric psychology and injury control [60], as well as repeated comments by parents in focus groups conducted for the current study, suggest that it may be difficult to motivate additional efforts beyond seat belts because of parents’ perception that their child is safe:

... there may be a perception of safety after one active or passive approach is implemented, thereby precluding additional safety precautions because of an assumption that full safety has been achieved. [60] p. 507

Parents who already use a seat belt for their child may believe that they have mastered what they need to know and done what is necessary for their child’s safety, and may not welcome learning that what they have done is not “enough.” As early as 1978, Etzioni pointed out that multiple warnings regarding health and safety may lead individuals to discount each new warning. [60] Thus parents who have heard and complied with previous safety recommendations concerning their children’s safety in the car may be skeptical about the necessity for further protective behaviors.

c. What can be learned from analogous injury prevention efforts (regarding use of other safety devices)?

While there is no available empirical literature that specifically addresses the premature use of seat belts by 4- through 8 year-olds, there are relevant lessons that may be learned from the literature regarding other child health promotion efforts, particularly those which involve parent efforts to ensure specific child behaviors. [61-63] The two existing areas of investigation that are most promising in this regard are: (1) the use (or non-use) of seat belts by children in this age range, and (2) the use (or non-use) of bicycle helmets by children in the older end of the 4 through 8 age range.

The etiology and processes involved in bicycle helmet usage or non-usage may be a particularly apt analog for this older group. Like the regular use of booster seats for older children, helmet use involves: purchase or acquisition of a piece of specialized equipment, parental rules and reinforcement that support consistent use of the equipment, and child compliance with those rules. For both helmets and booster seats, common concerns raised by non-users or inconsistent users involve the comfort and convenience of using the equipment.

What can we learn about parents' and children's decisions regarding bicycle helmet use that might inform our analysis of proper passenger restraint use by older children? Two relevant studies examined the attitudes and practices of parents and children in the face of new information and new laws regarding helmet use. Caplow and Runyan found that parents of third, fourth, and fifth graders generally believed that they were responsible for ensuring that their child wore a helmet. [64] Many families had family rules that promoted helmet use. The results indicated that parental beliefs about the need for and effectiveness of helmets, as well as their initiation of family rules concerning helmet use, were influential contributors to children's bicycle helmet use. Dannenberg et al. surveyed students to identify factors which influenced children's use of helmets. [65] Having friends who wore helmets, favorable attitudes toward laws requiring helmet use, and regular use of seat belts, were all associated with higher self-reported helmet use. These results suggest hypotheses about parallel factors that may predict the use of appropriate restraints (i.e., booster seats) in older children: parent and child "buy-in" to the need for the equipment; parent willingness to establish clear rules that require using the booster seat each and every time; child perceptions that other children their age are also using this type of restraint; and child familiarity with regular prevention habits in other arenas.

C. Booster Seat Use

1. National Highway Traffic Safety Administration survey [66]

In 1998, the National Highway Traffic Safety Administration conducted a telephone survey that included questions about booster seat use. Subjects included drivers who were also parents or caregivers of a child under the age of 6 years. Of these participants, 76% had heard of a booster seat and of those, 53% had at some time used a booster seat for their child. Over 65% of parents/caregivers began using the booster seat before the child reached age 4 years. Of those parents who had heard of booster seats, nearly one-third (30%) had concerns about their safety. Parents were most concerned about inadequate restraint of the booster and the security of the attachment of the booster to the vehicle. Overall, fewer than half (48%) of all parents/caregivers surveyed reported that they had heard of boosters and had no concerns about their safety.

2. Reasons for nonuse

Ramsey and colleagues conducted an observational study with follow up survey on 149 children ages 3-8 years at a random sample of day care centers in the greater Seattle, WA area to determine booster seat use rates and reasons for nonuse of booster seats. [67] Lap/shoulder belts were the most common form of restraint, and usage rates increased significantly with age.

Overall, booster seat use was 27.7%, however, only 10% of children age 6 years and older were restrained in booster seats.

Researchers interviewed [69] drivers of children not using child safety seats or booster seats to determine if they owned a booster seat and their reasons for not using one. [67] Nearly half (46%) of parents responded that their children were too big for booster seats, citing 40-60 pounds as the upper weight limit for boosters. Other parents responded that they used other safety devices (10.0%), usually used the seat or intended to use it (21.4%), had a problem with the seat (11.4%), or that their child did not like the seat (4.3%). Some parents (7.1%) responded that they had not considered buying a seat.

This research supports previous results indicating that booster seat use is uncommon among children under 9 years of age. It also indicates that the most common reason for nonuse is the perception that young school age children are too big for booster seats.

3. Effects of intervention on the purchase of booster seats

In a 2000 masters degree thesis, Stevens investigated the current risk perception of parents of children aged 3.5 to 8 years who are not properly restrained in a booster seat. The goal of the research was to assess the amount of change in risk perception following exposure to either an information pamphlet, a coupon for a booster seat, or both. Participants in the comparison group did not receive an intervention. A pre-test questionnaire was used to assess the current risk perception and then participants were randomly selected for each intervention group or the control group. Thirty days following the initial test, a call was made to the participant to re-test using the same questionnaire, and participants were asked if they had purchased a booster seat within the past 30 days. While comparisons between intervention groups did not reveal any significant differences, significantly more participants from the intervention groups purchased booster seats compared with the control group. In addition, the questionnaire answers for the pre- and post-tests were compared and overall, there was an increase in risk perception among participants in the intervention groups. This study demonstrated that a simple intervention (pamphlet and/or coupon) could increase risk perception and booster seat purchase. [68]

D. Child Passenger Safety Laws

1. Methods

Research team members utilized information from the *Insurance Institute for Highway Safety's* comprehensive listing of child passenger and seat belt laws to compile the information for this section of the report.

2. Results

Gaps in current child passenger safety and safety belt laws also play a role in promoting premature graduation. [69, 70]. There are two types of restraint laws under which children could be covered: 1) safety belt laws, and 2) child restraint laws. In many states, children, especially those over the age of four and riding in the rear seat, are not covered by either type of law.

By 1985, all 50 states and the District of Columbia had adopted child restraint laws. All state child restraint laws are primary (meaning police may stop vehicles solely for restraint law violations) and mandate that young children be secured in a child safety seat. While these laws have helped to increase restraint usage, they often fail to conform to current best practice. For example, some states permit children as young as two years of age to be restrained in a safety belt if the child is in the rear seat, while other states have no restraint requirements for the rear seat. In most states, children older than four years are covered by safety belt laws, not child restraint laws, potentially contributing to premature graduation. As of the date of this report, only 17 states and the District of Columbia allow primary enforcement of safety belt laws. Safety belt usage rates are higher, on average, in states that allow primary enforcement of belt use than in those with secondary enforcement.

More recently, Washington became the first state to mandate child restraint system use (child safety seat or booster seat) for all children up to six years of age or 60 pounds. Children over age six years or 60 pounds must be restrained in a booster seat or seat belt while riding in the vehicle. While enforcement of this law does not begin until 2002, this is a landmark in child passenger safety legislation.

E. Discussion

A behavioral approach to injury prevention entails analyzing the requisite knowledge, attitudes, and skills that must be in place before an individual can perform the desired behavior consistently. Applying this approach to the problem of achieving optimal restraint for children of all ages implies that even when parents achieve some level of child safety restraint (i.e., putting their 4 through 8 year-old in a seat belt) there are additional prerequisites. At a minimum, parents must:

1. Have the knowledge base to judge accurately which restraint is appropriate for their child's current height and weight at each point in development.
2. Hold attitudes and intentions which are favorable to acquiring and using the proper restraint.
3. Have reasonable mastery of all the skills involved in successful performance of the desired behavior, such as skill in enlisting child compliance or skill in installing a seat properly.

And finally, parents must repeatedly perform the desired behavior in every instance in which it is called for.

Although parents hold primary responsibility for ensuring that their children are properly restrained, it is helpful if children have:

1. Awareness (appropriate to their age and developmental status) of the need to use proper restraint every time they ride in a vehicle.
2. Favorable attitudes toward the restraint they must use (i.e., enjoying the booster seat or at least not protesting its use).
3. When age appropriate, skill in properly getting into and securing themselves in the seat.

The desired behavioral outcome - putting the child in the proper restraint each and every time that s/he rides in a vehicle - involves a complex interplay of these (and other) determining factors. Similarly, the work of Fishbein and colleagues [71] suggests that any model of parent behavior in this arena should address the *interactions* between parents' perceptions of risk, their attitudes, their intentions, and their perception of social norms for this behavior, since it is likely that these interactions affect the eventual behavioral outcome.

III. Background Information – Databases

A. Methods

1. National Automotive Sampling System

As part of a series of studies examining the older (age 6-12 years) child with respect to the automotive environment, Klinich et al. analyzed 1988-91 NASS data to identify characteristic patterns of injury for older vs. younger children. [72] NASS, the National Automotive Sampling System, has the potential for providing exposure estimates but as a population-based sampling system, includes relatively few children, has few child-specific data elements, and suffers from sporadic missing data. [73]

2. Partners for Child Passenger Safety: A child-focused motor vehicle occupant injury surveillance system

The electronic insurance claims database at State Farm Automobile Insurance Co. was used as the mechanism to identify subjects for inclusion in a large scale, child-focused crash surveillance system. Claims qualifying for inclusion were those reporting a crash including at least one child occupant ≤ 15 years of age riding in a model year 1990 or newer insured vehicle. Qualifying claims were limited to those reporting crashes that occurred in fifteen states and the District of Columbia, representing three large regions of the United States (East: NY, NJ, PA, DE, DC, VA, WV, MD, NC; Midwest: OH, IN, IL, MI; West: CA, NV, AZ).

Approximately 7,750 State Farm claim representatives from 365 field offices throughout the three study regions were trained to obtain a minimum amount of standardized data on all qualifying claims, and to obtain consent from the insured for inclusion in the surveillance system. On a daily basis, data from consenting claims were transferred electronically from all field offices to State Farm corporate headquarters in Bloomington, IL. After several quality assurance checks at State Farm headquarters, the data were then forwarded via email to researchers at The Children's Hospital of Philadelphia/ University of Pennsylvania (CHOP/PENN) on a daily basis, six days per week (Monday-Saturday). The data were then subjected to an automated sampling algorithm to select a representative sample of claims to be included in the surveillance system. The sampling algorithm consisted of a single stage cluster sample, stratified on the basis of the treatment status of child occupants. Crashes involving children who were treated in emergency departments, physician's offices, or admitted to the hospital were over-sampled to ensure the capture of all injured children while maintaining a representative sample of all crashes. All child occupants of selected crashes were included in the surveillance system.

Contact information from selected crashes was then transferred electronically on a daily

basis, on the same day that the data were originally received from State Farm, to Response Analysis, Corp., a telephone survey firm based in Princeton, NJ. Within 24 hours of receipt of the data, the firm initiated telephone contact with the insured. Using a Computer Assisted Telephone Interview (CATI) technique, the firm conducted a 25-minute survey with the driver of the vehicle and parent(s) of the involved children. The survey was designed to ascertain information on the circumstances of the crash and the injuries to all involved children.

Data collected between December 1, 1998 and November 30, 1999 were used for analyses for this report. During this time, an average of 1604 children in qualifying crashes were reported to State Farm each week. Among claimants asked to participate in the project by State Farm claim representatives, the consent rate was 81%. Survey data was collected on a total of 8551 children, 5312 (62%) of whom were under age 10 years. When adjusted for sample weights, these subjects represent 48,760 child occupants.

3. National Center for Health Statistics and other databases

An attempt was made to identify whether or not premature graduation is a particular problem among population subgroups, based on sociodemographic characteristics such as race, ethnicity, or household income. This information would be especially valuable in targeting specific interventions to high-risk subgroups. Despite extensive investigation and discussion with investigators with experience in studying ethnic differences in child passenger safety practices [74] no study-specific databases that would yield reliable information regarding the use of specific restraints in large, population-based samples of individuals for whom race, ethnicity, or other sociodemographic are indicators could be identified.

Data collected by the National Center for Health Statistics (NCHS) via the Behavioral Risk Factor Surveillance System were also examined. This yearly survey collects data on child passenger safety practices, specifically restraint use, in addition to information on race and ethnicity. Using 1998 data available on-line at the NCHS website, self-reported child restraint use data adjusted for race and ethnicity were examined.

B. Results

1. National Automotive Sampling System

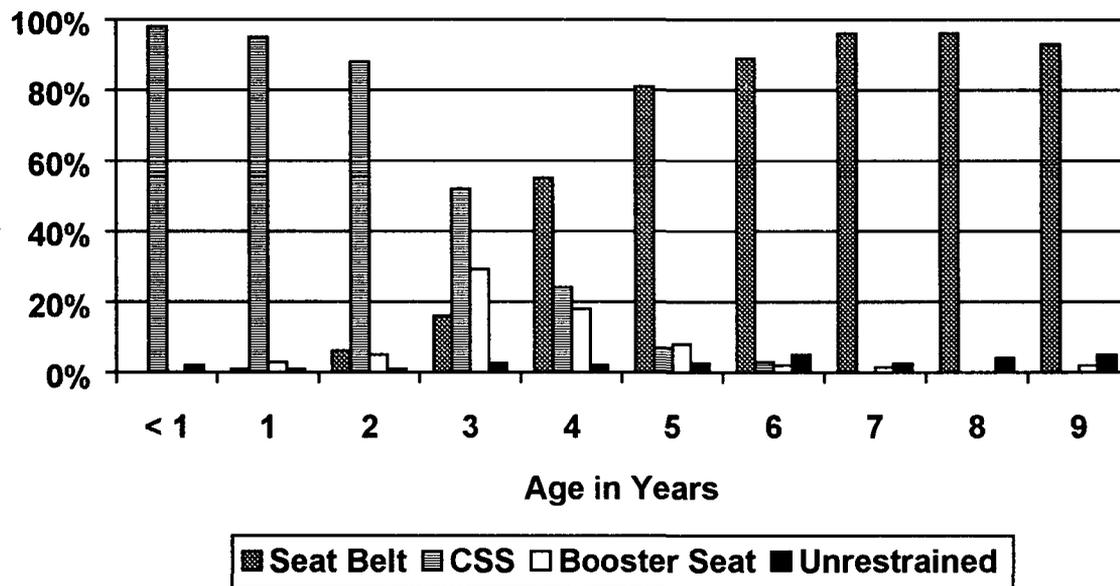
Older children accounted for 43% of child occupants in crashes, though received 55% of the injuries. [72] Seat belts were worn by 56% of older children, divided equally between lap/shoulder and lap only belts. Restraints reduced a child's risk of any injury, from 64% of unrestrained children to 38% of restrained children. Surprisingly, severity of injury was not related to restraint use. Restrained children had a four-fold increase in incidence of injuries to the abdomen and pelvis.

2. Partners for Child Passenger Safety

a. General

Overall restraint use was high, averaging 97% for all children 0-9 years of age. Figure 1 presents the distribution of restraint type by age in this population. As can be seen in the figure, the majority of children ≤ 2 years of age were appropriately restrained in a child safety seat.

Figure 1: Distribution of restraint type by age (PCPS data from 12/1/98-11/30/99)



	Age of child (years)									
Restraint	< 1	1	2	3	4	5	6	7	8	9
Seat Belt	0%	1%	6%	16%	55%	81%	89%	96%	96%	93%
CSS	98%	95%	88%	52%	24%	7%	3%	0%	0	0
Booster Seat	0%	3%	5%	29%	18%	8%	2%	1.5%	0	2%
Unrestrained	2%	1%	1%	2.5%	2%	2.5%	5%	2.5%	4%	5%

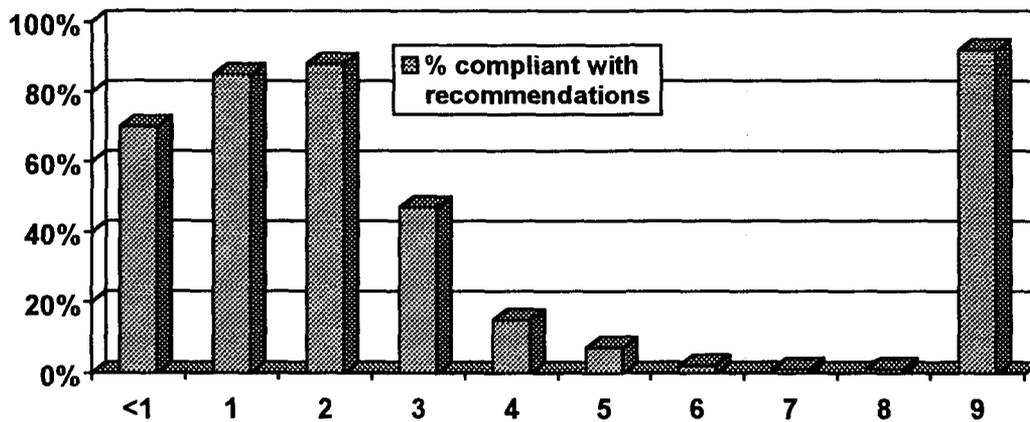
b. Booster seat use

Booster seats were used by only 6.9% of children less than 10 years of age. Booster seats were used by only 5.3% of children 4-9 years old, the age group for whom they are primarily intended. The distribution of booster seat use demonstrated a brief peak among 3 year olds (29%), which dropped to 18% at age 4, and was negligible thereafter (see figure above). Approximately half of the children using booster seats were using shield boosters. The vast

majority of children 5 years of age and older were restrained in seat belts. Figure 2 presents the percentage of children in the study conforming to the recommended best practices for child restraint as defined by NHTSA.

Among children in booster seats, shield boosters were the most common type, accounting for 52% of all booster seats, followed by high back (32%) and low back (16%) belt positioning boosters. Of note, shield boosters were more commonly used among young children (82% of children ≤ 2 years of age in booster seats were using shield boosters). Only among 4 year olds were belt positioning boosters the most common type used (59%).

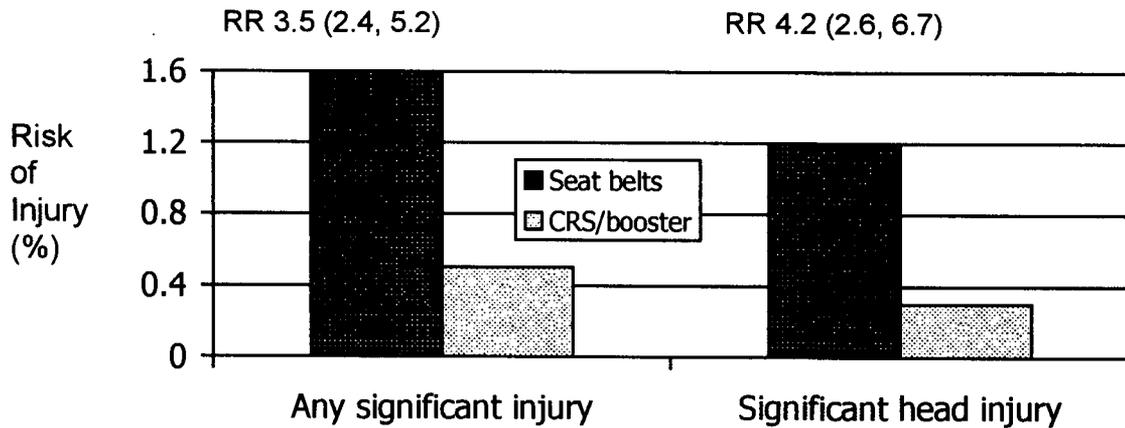
Figure 2: Compliance with recommended restraint



c. Risk of injury associated with premature graduation

Analyses were conducted to determine the risk of serious injury associated with the premature graduation of 2-to-5 year old children to seat belts from child restraint systems. The study sample consisted of 2,077 children age 2-to-5 years, weighted to represent 13,853 children. Among children in this age group, nearly 40% were restrained in seat belts. Compared to children in child restraint devices, children in seat belts were 3.5 times more likely to suffer a serious injury (Odds Ratio 3.5, 95% Confidence Interval (2.4, 5.2)). Children in seat belts were at particular risk of serious head injuries (Odds Ratio 4.2, 95% Confidence Interval (2.6, 6.7)) when compared to children in child restraint devices (see figure below).

Figure 3: Risk of significant injury (2-5 year-olds)



3. National Center for Health Statistics

Using 1998 data available on-line at the NCHS website, self-reported child restraint use data adjusted for race and ethnicity were examined. The survey data show very high (> 85%) reported restraint use that did not vary by race/ ethnicity. Although such information could be invaluable in understanding the problem and identifying targets for possible intervention, there is no clear answer from the data currently available to indicate whether premature graduation varies significantly by population subgroups.

4. Summary

Data from the National Automotive Sampling System, Partners for Child Passenger Safety, and the National Center for Health Statistics were reviewed for information pertaining to premature graduation.

Data from the Partners for Child Passenger Safety study provide valuable exposure-based estimates of restraint use in a large, representative population of children in motor vehicle crashes. Preliminary analyses of PCPS data indicate that, while restraint use in this population is high, many children are not optimally restrained for their age. Specifically, premature graduation out of child safety seats becomes common by age 3. By age 4, the common form of restraint is the seat belt, although seat belts do not typically fit children of that age.

Similar to previous studies, significant reductions in risk of injury-both serious and minor-were noted among children in both seat belts and child restraint devices, when compared to unrestrained children. Analyses of the risk of injury associated with premature graduation suggest that 2-to-5 year old children are at increased risk of serious injury when prematurely graduated to seat belts. While seat belt syndrome exists, these injuries are very rare. Results

suggest that the primary risk of premature graduation to seat belts is head injury.

No meaningful data are available regarding population subgroups and restraint use.

IV. Phase I Primary Research - Reasons for Non-Use of Booster Seats

A. Focus Groups and In-Depth Discussions with Parents and Children

1. Methods

Research team members and other invited experts participated in a two-day long facilitated brainstorming session. One of the goals of this brainstorming session was to identify questions to pose to parents and children in a set of focus groups. A “creativity coach” was hired to teach the group strategies for brainstorming and to assist them in developing ideas. A list of questions for parents and children was generated (see Appendix B for full list of ideas). Ideas from the facilitated brainstorming session combined with the goals of the project were used to create a topic guide (included in full report in Appendix C) for use in three focus groups with parents and two with children. Parents of children ages 2-to-9 years were recruited to participate in professionally led focus groups (in New Jersey and Pennsylvania). One focus group with parents of children using booster seats (11 participants); one focus group with children age 4 years who had been restrained in booster seats at least once in the past 6 months (n=4); one focus group with children age 5 -to- 7 years who had been restrained in booster seats at least once in the past 6 months (n=4); and two focus groups with parents of children using seat belts (10 participants each) were conducted.

A separate group of 15 parents who met the same qualifications as those who participated in the focus groups were recruited to participate in a 30 minute in-depth telephone discussion.

2. Results: Potential barriers to booster seat use

a. Knowledge

Parents of children who regularly use booster seats demonstrated greater awareness overall of a number of issues surrounding child restraint. These parents were better informed than those in the seat belt groups with respect to:

- Designs, associated risks, and installation of booster seats;
- Legislation regarding child restraint;
- Guidelines/best practices for the appropriate form of child restraint;
- Risks associated with improper/premature use of safety belts.

Parents who regularly used booster seats appeared to be more proactive than those parents of seat belt users in seeking information about issues related to child safety and child restraint.

b. Risk perception

The researchers found from the focus groups that parents' perceptions of the risk associated with their child being injured in a motor vehicle crash and their perceptions of risk associated with the method of restraint used for their child, was highly influential in choosing a method of restraint.

Participants in the groups of parents who sometimes used seat belts to restrain their 1-to-4- or 5-to-9-year-old child seemed to exhibit less concern that their child would be injured in a motor vehicle crash than did those in the group of parents who used booster seats. They were not ignorant of the potential for being involved in a motor vehicle crash. The key distinction seemed to lie in the degree of confidence these parents felt that, in restraining their child, they were effectively protecting the child from injury in the event of a crash. Among those participating in the seat belt user groups, parents' concern seemed to revolve more around the possibility of injury if their child is not restrained. At the same time, however, these parents expressed a fair amount of confidence that, in restraining their child, the risk of injury is significantly reduced. These parents' confidence was often associated with the use of vehicle safety belts alone.

Parents participating in the group of booster seat users demonstrated somewhat greater concern over the possibility of their child being injured in a crash, regardless of the child being restrained or the method of restraint used. These parents seemed less confident in their ability to effectively protect their child from injury, despite their use of a restraint. This level of concern associated with the method of restraint used for their child represents a fundamental distinction between these two groups of parents, and could suggest an important link to parents' willingness to prematurely graduate their child to safety belts alone.

c. Gaps in child passenger safety and seat belt laws

Focus group participants' awareness of the requirements of child restraint laws in their state tended to be somewhat greater among those in the group of booster seat users than among those in the seat belt groups. Regardless of any prior knowledge of the laws, however, parents in all groups generally viewed the laws as too lenient, too vague and too general. Many were surprised to learn that no size or weight requirements for children are indicated. Considering that children of the same age can be very different in size, most agreed that the child's size should be made part of the law.

Legislation aside, it was apparent that many parents in these focus groups relied on other sources more than they did the law for guidance in choosing a type of restraint for their child. Most of these parents were at least generally aware, if only from information provided with safety seats and booster seats, that a key factor in choosing the best form of restraint for their

child is the child's size and weight. And while parents may not be well informed as to the recommended size and weight parameters, based on this research, many intended to follow what they perceived as the appropriate standards in restraining their child, regardless of what the law did or did not mandate.

At the same time, however, it is important to note that, based on this research, some parents did view the laws regarding child restraint as an indication of what was the safest form of restraint. With local child restraint laws suggesting that a safety belt is acceptable for children over age 4 in Pennsylvania and over age 1½ in New Jersey, this could have given some parents a false sense of security in using safety belts for their child.

d. Situational influences

Throughout this research, a number of circumstances were identified that may influence parents' choice of restraint for their child. Among those mentioned were:

- The need to accommodate other children: When there were other children in the vehicle, parents sometimes gave up their child's booster seat for another child or allowed all children to ride in safety belts alone so they felt "equal."
- Motor vehicle design: Some parents indicated that their vehicle could not accommodate a booster seat, especially when other passengers or a child safety seat or infant seat was present.
- Availability of a safety seat or booster seat: According to parents in these groups, unavailability of a safety seat or booster seat for their child in an unanticipated emergency often prompted initial use of a safety belt alone for their child. Similarly, if the child's booster seat was installed in a second vehicle that was unavailable, the parent may have had "no choice" but to restrain their child with a safety belt alone.
- Length of trip: Some parents indicated that if they were going on a "short trip" (defined by some as less than 15 minutes) they may use just a safety belt for their child, as opposed to going to the trouble of putting the child in a safety seat or booster seat.
- Weather: Some parents who sometimes used safety belts for their child would explicitly use a booster seat instead in bad weather.
- The parent's mood or situations when the parent is rushed: If the parent is running late or feeling pressured or rushed, for some this represents a situation in which they would "definitely" choose a booster seat for their child.

Of particular note is parents' inclination to alter their standard method of restraint based on the length of the trip, the weather, or their own mood. Parents' choice of a booster seat or safety seat over a safety belt alone in bad weather or when the parent is feeling rushed is

reportedly due to their perception that these factors could affect their driving and thus increase the risk of a crash.

Parents' perception of reduced risk on a short trip is equally difficult to explain – particularly considering that parents themselves recognized that many motor vehicle crashes occur within only a few miles from home.

Also of interest is parents' readiness to accept safety belts as an appropriate form of restraint for their child following the first time this restraint was used. It was evident that, after using a safety belt alone for their child once without incident, the inclination of some parents was to think it is safe to continue using this form of restraint. Parents commented on the ease of use and convenience of using the safety belt and even the belt fit and child's behavior; however, they did not mention the possibility of the seat belt not being protective in a crash.

e. Attitudes about booster seats

Based on this research, it seems that booster seats themselves may be a factor in parents' decision to graduate a child to safety belts alone. It is important to note that many parents grouped the shield boosters and belt positioning boosters together as "booster seats."

Factors that may influence some parents' decision not to use a booster seat for their child include:

- **Installation**: Many parents reported experiencing difficulty installing their booster seats. One reason cited was instructions that were confusing and unclear, with no means to confirm that the seat has been installed correctly. Some parents reported that they were unable to install a particular seat in their vehicle due to incompatibility with vehicle design features.
- **Lack of protection**: Some parents commented that a particular booster seat design (such as the shield design) allowed their child too much mobility and not enough protection. Some felt the lack of restraint to the child's upper body (with the shield design) provided inadequate protection.
- **Safety**: Several participants considered booster seats unsafe, or not as safe as a safety belt alone for their child. In particular, parents related incidents in which their child unfastened the latches or latches broke. Others had experienced or heard about incidents in which a booster seat shifted or slid out from under a child – in one case causing injury.
- **Child comfort**: Based on this research, a child's size represents a key factor in parents' decision to graduate a child from any form of restraint to the next – whether it is from a safety seat to a booster seat or from a booster seat to safety belts. Specifically, a key reason parents cited for the switch was that the child had outgrown or was "too big" for the restraint used. That some booster seats do not accommodate children up to the size designated in the recommended best practices evidently prompts some parents to graduate

the child to safety belts alone as opposed to a larger booster seat. That a child is “too big” for a booster seat is a common misperception among parents.

f. Insights from children

Several children in the focus groups indicated that they had brothers or sisters in seat belts who could buckle themselves. Many of the children indicated that they could not buckle themselves into their booster seats and would like to be able to buckle themselves.

Children in the groups also tested several different designs of belt positioning booster seats. Most of their comments were about the comfort of the seats. They liked ones that were large enough for them and disliked ones that appeared or felt “too skinny.” Comfort appears to be a significant issue for children. The children did indicate, however, that they would ride in a seat that was comfortable for them.

B. Summary

Ensuring the use of booster seats by children who have outgrown child safety seats poses unique challenges for parents, as indicated by the results of focus groups and in-depth discussions conducted for this project. In particular, parents themselves are unclear as to the purpose of a booster seat and, therefore, would have difficulty mandating their use. Further, most current child restraint laws do not support the position that booster seats are a necessary next step after child safety seats. Parents’ perception of risk of crashes and risk of injury influenced the decision to use booster seats but this decision was highly influenced by situational factors and comfort.

Phase II Primary Research - Strategies for Increasing Booster Seat Use

A. Facilitated Brainstorming Session

1. Methods

Research team members and invited experts participated in a second facilitated brainstorming session to use information from the first set of focus groups to brainstorm ideas to reduce premature graduation. This one-day session was facilitated by the same “creativity coach” as the previous session.

2. Results

A large list of ideas was generated in the session. Among the ideas that participants listed as their favorites:

- Use a crash model video to highlight the importance of the issue to police and other groups.
- Include articles in the newspaper or on TV after a crash where children were not injured and were properly restrained.
- Target parents by identifying barriers and including realistic solutions.
- Tie child restraint type to clothing sizes.
- Use advertising messages for 5-9 year old children.
- Target Screen Writers/Actors Guild to get Hollywood involved.
- Use board meetings/editorial meetings to get the information into the news.
- Target children through programs such as Rugrats and Public Service Announcements.
- Create a “safety gear” package that would include a bike helmet, a booster seat, and sports gear.
- Include information with school registration forms.
- Target parents in charge (Bill Gates, etc.) as spokespersons.
- Create a web site where a parent could type in age, height, weight and get optimal restraint.
- Place booster seats with school supplies at stores.
- Add education to driver re-training.
- Place inserts in magazines.
- Distribute posters/displays at retailers.
- Insurance companies could track ages of children and send optimal restraint information.

A comprehensive list of ideas was generated and is included in this report as Appendix D.

B. Review and Assessment of Existing Programs

1. Methods

In order to assess what programs are available to community members throughout the country, the project sought information on Traffic Safety Programs in the United States. Contact people were identified through the Patterns for Life database of traffic safety programs. A request was sent to each organization asking for information regarding their activities related to booster seats and premature graduation from child safety seats to vehicle seat belts.

2. Results

Within a three-week period, 154 programs provided information. Of these programs, 104 offered booster seats as part of their program while 50 did not. Many programs that offered booster seats did so through child safety seat clinics or check points. Others conducted classes ending with either the purchase of a low cost seat or a free seat. Of the programs that did not offer boosters, many commented that a lack of sufficient funding was the main reason for not offering this service. Many of these, however, did provide education about premature graduation during child safety educational presentations. Since this project task was completed, several national programs have been initiated, including Ford Motor Company's Boost America program.

There were several programs that were of specific interest because of their creative approach to the issue of premature graduation.

Baltimore SAFE KIDS Coalition

The Baltimore SAFE KIDS Coalition has linked booster seats with immunizations, or "booster" shots. This program, in conjunction with the Baltimore City Health Department, offers "booster" seats when kids visit the TIKE Mobile (To Immunize Kids Everywhere) for "booster" shots. Trained staff members match the appropriate seat to the child and help to install the seat into the vehicle.

Injury Prevention Program, Cincinnati Children's Hospital Medical Center

This program has instituted a two-week injury prevention rotation for first year pediatric residents, which includes 3.5 hours of child passenger safety education.

This organization has also recently received funding from the Maternal and Child Health Bureau to conduct a study of a program in preschools/day care centers to get children into the back seats and to use child safety seats and booster seats. The program will include a teacher-directed child safety seat education component for the children over a seven-month period.

Parents will also be provided with information. Children receiving this information will be compared to children in control schools.

Connecticut SAFE KIDS Coalition

This organization has created a poster with tear off pads. These are distributed for use in pediatrician offices. This initiative was of interest because this idea was mentioned in the brainstorming session held for this project at Children's Hospital.

SAFE & SECURE, Orange County Sheriff's Office Operation Booster Seat

This collaboration between American Express Financial Advisors and the Orange County Sheriff's Office has the goal of equipping 1530 children ages four to eight years with belt positioning booster seats. Parents and care-givers attend a one hour workshop designed to teach safety and financial investment skills in an effort to promote a healthy and secure future for their child. The program has partnered with a local ABC affiliate television station to get the word out. An educational segment on child passenger safety was aired which called attention to a Child Passenger Safety Phone Bank, staffed by six certified technicians and instructors. One phone bank per quarter will be conducted along with other media activities. These certified personnel were available to answer questions regarding child safety seats and booster seats and other child passenger safety issues. The hope was that by getting the message out through the media, awareness will be heightened and parents will sign up for the educational classes. This program is in its infancy and will be evaluated as it progresses.

There are many other programs that offer both education and booster seats in their community, however, because funding is limited for child passenger safety activities and programs, booster seats are not usually the focal point of the programs.

C. Focus Groups and In-Depth Discussions With Parents

1. Methods

In order to evaluate parental beliefs and behaviors related to the transition from child safety seat to booster seat or seat belt, the project recruited parents of 2 to 4 year-old children for participation in a second wave of focus groups. Four focus groups were held, two in New Jersey and two in Pennsylvania. Parents in groups 1 and 2 "usually" used child safety seats to restrain their children. Parents in group 3 "usually" used booster seats to restrain their children and parents in group 4 "usually" used seat belts to restrain their children. These groups were selected in order to elicit information both pre- and post-transition.

During the focus group discussion, parents first discussed parenting strategies and their children's restraint practices. Then, a member of the research team introduced the parents to best practice for child restraint and showed a low back booster, a high back booster, and a shield booster. Recommendations for each type of booster seat were reviewed and parents were allowed to ask questions. The purpose of this exercise was for the remaining discussion to revolve around the best practice recommendations.

It is important to keep in mind that the nature of qualitative research is to gain a broad perspective and to generate ideas, rather than reach a consensus or firm conclusion. Before the education segment of the discussion, parents tended to use the general term "booster seat" for all three types of seats shown instead of differentiating between the belt positioning booster seats and the shield booster seats, indicating an initial lack of understanding of different types of booster seats.

Ten parents of 2 to 5 year-old children using booster seats and 11 parents of 2 to 5 year-old children using seat belts were recruited separately to participate in a 30 minute in-depth one-on-one telephone discussion. Parents of 5 year-olds were included to get a broader perspective on the transition stage. The purpose of the in-depth discussions was to delve deeper into potential strategies for reducing the premature graduation of children from child safety seats to vehicle seat belts.

2. Results

The full qualitative report based on findings from the second set of focus groups and in-depth discussions can be found in Appendix E.

a. Importance of extending the use of booster seats

A major finding of this research as expressed by the participants was the need for strategies aimed specifically at *extending* the use of booster seats among those parents who do initially transition their child from a safety seat to a booster seat.

The majority of parents who participated in this research were aware that a booster seat is the appropriate restraint to use when children outgrow their safety seat. More specifically:

- Those who were currently using a booster seat for their child age 2 through 4 were, by definition, aware of this transitional stage, though some did transition to the booster seat before their child reached the recommended 40 pounds.
- Virtually all of those parents who had not yet transitioned their child to the next form of restraint after a child safety seat intended to use a booster seat.

- Even among those who had prematurely graduated their 2-to-4-year-old to seat belts, most had used a booster seat for their child before they graduated the child to seat belts.

Even when parents recognized that a booster seat was the appropriate restraint to use after a safety seat, they frequently did not recognize the importance of keeping their child in a booster seat until seat belts fit the child properly – at about 8 years and 80 pounds. Some parents even laughed at the idea of trying to keep their 8 year old children in a booster seat. Many, however, said that 60 pounds or 6 years of age might be a more attainable goal.

b. Successful parenting approaches

In the first wave of focus groups, the likelihood of premature graduation was often linked to differences in attitudes, knowledge, and behavior between different child restraint user segments – that is, parents using seat belts vs. those using a booster seat. Similarly, differences between the parents of seat belt users and of booster seat users in the second wave of focus groups may have some bearing on the way in which parents respond to their child’s resistance to continued use of a booster seat.

In particular, many parents still using a booster seat for their 2-4 year-old had encountered the same types of resistance from their child that had prompted other parents to prematurely graduate their child to a seat belt. Yet, while the parents using seat belts chose not to fight that particular battle with their child, those parents who were still using a booster seat and who had encountered resistance from their child saw this – at least for the time being – as a battle worth fighting. Further, these parents viewed this as a battle they would not allow their child to win. This reflected the very different parenting styles of these child restraint user segments.

Good parenting skills clearly emerged in the comments of many booster seat users in this research as they described the strategies they used to overcome their child’s resistance to sitting in a booster seat. Among the approaches they found successful were:

- Being consistent: **Always** upholding the requirement that the child be seated in his or her booster seat – with no exception and no “negotiation.”
- Starting early: Establishing a non-negotiable policy right from the start.
- Setting boundaries/“Being the parent”: “Taking a stand” on what is the right thing to do to protect their child from injury, and never giving in (emphasizing the importance of consistency).

- Communicating safety: Explaining to the child the importance of sitting in a booster seat when it comes to keeping them safe.
- Emphasizing individuality: Emphasizing the importance to parents of protecting their own child – regardless of what other parents are doing or the type of restraint other children are using.

Other differences also emerged in this research that distinguished those parents who prematurely graduated their child to a seat belt from other parents.

- Many of the parents who prematurely graduated their child to a seat belt expressed concerns over the way the seat belt fit their child and how well it protected their child from injury. And yet, at the same time, many of these parents said the seat belt “adequately” protected their child.
- Others cited confidence in their own driving and their ability to avoid a crash as the basis for believing their child was adequately protected.

These attitudes clearly set this group of parents apart from the other groups, and again suggested that some parents’ inclination to prematurely graduate their child to seat belts may be associated with the way in which they perceive the risk of injury to their child in a vehicle crash.

c. Barriers to use of booster seats

This set of focus groups and in-depth discussions identified several barriers to booster seat use:

Child Behavior: Where the causes of premature graduation are concerned, the first wave of focus groups identified parents’ perceptions of risk, as well as their ignorance of the risks associated with premature graduation, as key influences, along with a number of situational influences. The second wave of focus groups highlighted specific aspects of child behavior as fundamental to the problem of premature graduation. Moreover, it highlighted what may be the most significant barrier to the extended use of booster seats, the way in which the transition to seat belts is associated with the child’s maturation.

- Child resistance clearly emerged as a significant barrier to the extended use of booster seats. Among parents currently using a seat belt for their child, the child's resistance reportedly played a major role in the decision to transition the child to a seat belt. In most cases, this transition was made from a booster seat.
- Other parents – both booster seat users and child safety seat users – likewise anticipated considerable resistance from their child to staying in a booster seat when the child sees his or her peers wearing seat belts. Most of these parents predicted this would likely occur at the age of about 5 or 6 years – considerably before the child reaches the recommended 80-pound criterion for the safe use of seat belts. Notably, many of these parents were uncertain as to what the outcome of this “battle” with their child would be.

Perceptions of child comfort: Among participants in the seat belt user focus group, a number of parents perceived their child to be uncomfortable in the booster seat they used (in most cases a shield design) which contributed to the decision to switch the child to a seat belt. This frequently centered on the lack of support these seats provided for the child's torso and head, especially when the child fell asleep in the seat.

Safety Perceptions: The lack of physical support provided by some booster seats also contributed to some parents' perception that these seats were not the safest form of restraint for their child. Among seat belt users, some parents apparently felt the booster seat did not offer any significant safety advantage over seat belts (alone) for their child age 2 through 4 years.

Inconvenience: Some parents – particularly among the seat belt users – complained about the inconvenience of using a booster seat, saying they were big and bulky and awkward to transport or to transfer between vehicles. Among those who prematurely graduated their child to a seat belt, this further contributed to their decision to do so.

Cost: While not a concern for most parents in this research, the cost of booster seats did emerge as a deterrent to use for some. It was apparent that, having already purchased several different sizes and designs of infant and child safety seats – often multiplied by several children in the family – the added cost of yet another seat for their child became a deterrent to purchasing and using a booster seat for several participants in the in-depth discussions.

The law: The law clearly played a role in some parents' child restraint decisions. Several in-depth discussion participants who were prematurely using seat belts to restrain their child

indicated that the decision to graduate the child was influenced by the law in their state. Based on their comments, some parents believed they could rely on their state law to guide them in identifying the safest form of restraint for their child.

Perceptions of “safer” alternatives: Parents described perceived advantages of after-market seat belt attachments over booster seats (convenience, cost, no resistance from children). This, combined with the inaccurate belief among many parents that these devices compensate for poor seat belt fit and are as safe or safer than a booster seat for their child, represent a key barrier to booster seat usage.

d. Perceptions concerning booster seats

In exploring parents' knowledge and perceptions concerning specific forms of child restraint, it became evident that some parents do not make a clear distinction between child safety seats and booster seats. While most seemed to be able to make the distinction when urged to do so, many seemed to think of booster seats and child safety seats as being in one broad category of safety seats.

As noted previously, the majority of parents who participated in this research recognized that a booster seat is the appropriate restraint to use when a child outgrows a child safety seat. Most parents believed that the transition from a child safety seat generally occurs at about the time a child reaches 40 pounds.

However, parents' perceptions of when a child should be transitioned to a seat belt varied and, consistent with the first focus groups, many parents were not aware that the transition should not be made until the child reaches 80 pounds or about 8 years of age.

A number of misperceptions concerning when a child is ready to be restrained in a seat belt emerged:

- Size: While most parents recognized size as the key factor, most of the focus group participants cited weights of 60 pounds or less. Many of the parents who had already transitioned their child to a seat belt believed the cut-off for a booster seat was 40 pounds.
- Age: While most parents recognized that the child's size, more than their age, is a key determinant, they expect the transition from a booster to a seat belt would likely occur at an age of 5 or 6 years. In the minds of parents, there seemed to be a strong association between this age as the appropriate transition point and the time a child started kindergarten. Notably, a number of parents in the seat belt user group stated that booster seats were primarily intended for children of about age 3 or 3 ½ years.

- **Maturity:** As in the in-depth discussions conducted for the first phase of the project, a child's maturity level arose as a criterion for determining a child's readiness to move up to a seat belt. Specifically, some parents believed that when a child was mature enough to know that s/he should not unfasten the seat belt and should remain seated with the seat belt buckled, that was a signal that s/he was ready to graduate to a seat belt. This apparently related to the belief that, at this age, the primary purpose of any form of restraint was to keep the child secured and prevent the child from moving around in the vehicle. Thus, to some, when the child reached a certain level of maturity or understanding, s/he was ready for a seat belt alone.

e. Perceptions of specific booster seat designs

As mentioned above, sample booster seats were available in the room with parents to aid discussion of features. Key findings related to parents' perceptions of specific booster seat designs included:

- In terms of their own experience, most parents in this research had used and were familiar with the shield design, while familiarity with the belt-positioning designs – especially the high-back design – seemed to be more limited.
- The high-back belt-positioning seat was perceived as the safest booster seat, and the one that offered the child the greatest comfort.
- Probed on whether belt-positioning booster seats posed a safety risk for children because they are not anchored to the vehicle, most parents in the focus groups believed they did pose a risk. This perception could deter the use of these seats among some parents.

A number of parents in the focus groups not only had distinctly different impressions of the high-back and low-back models, but also viewed each of these designs as appropriate for children at a different stage of development. Several parents considered the high-back design more appropriate for younger children when they outgrew a safety seat and who needed more support, with the low-back design being more appropriate for older children who were not yet ready for a seat belt.

Further, some parents observed that, with the high-back seat bearing close resemblance to a safety seat, it was especially likely to generate resistance from children when their peers were no longer using a booster seat. Conversely, the low-back would not only seem less like a

safety seat (a “baby seat”) to children but would also draw less attention from peers. This might make the low-back more acceptable to older children and generate less resistance.

It was also observed by at least one parent that the low-back seat would be considerably less bulky and more convenient than the high-back design.

Thus, while it is not likely to provide a complete solution to overcoming the problem of peer pressure and child resistance to booster seats among school-age children, some parents did feel that progressively graduating a child to different booster seat designs could help alleviate this problem. While the added cost of this alternative was not addressed by parents in the focus groups, several commented on the likely appeal to their child of taking a step up to the low-back belt-positioning seat from a high-back seat.

In supplementary in-depth discussions, a more desirable alternative was identified: a four-in-one child safety seat that would grow along with the child, from birth to school age, from infant seat to booster seat. Such an alternative would overcome the cost barrier for some parents of purchasing one more seat for their child, while still providing the child with important child-restraint “milestones” as the seat changes and they graduate from one stage to the next.

Such a step-wise progression of seats – or stages of a single seat – could prolong the use of a booster seat until the seat belt fits the child properly.

f. The impact of information

Even in the face of child resistance and other existing barriers, it was evident that increased awareness of the recommended best practices would likely have an impact on some parents’ behavior when it comes to graduating their child to seat belts.

- In the second wave of focus groups, several parents using seat belts for their child indicated they plan to switch the child back to a booster seat based on the information presented to them. Likewise, several parents in the first wave of focus groups who had prematurely graduated older children to seat belts indicated their intention to switch the child back to a booster seat.
- Among the in-depth discussion participants, several parents of seat belt users indicated their intent to at least re-evaluate their choice of child restraint, or to choose a booster seat rather than a seat belt for a younger child not yet graduated from a child safety seat.
- Particularly striking was the case of one seat belt respondent who had reportedly used a seat belt for her four-year-old up until only a few weeks prior to the discussion. After seeing information about the potential consequences of seat belt use for small children in Parents

Magazine, she returned her child to a booster seat. Another parent had seen information on the Today Show, and another on Dateline NBC. Both indicated their intent to re-evaluate their child's seat belt use. Though this was a small sample and not representative, it may indicate that use of the media is important in heightening awareness of best practice.

- Another example of the power of information in reducing premature graduation was seen in the case of one booster seat user whose choice of child restraint had been influenced by information received from her auto insurance provider, State Farm.
- Among booster seat users using a shield booster seat, the information presented also had an impact. Several of these parents indicated their intention to make an immediate change from the shield design to a safer belt-positioning design.

Of course, information alone will not sway the child restraint decisions and behavior of all parents. Even among parents in this research, many seat belt users were not inclined to switch their child back to a booster seat, despite their awareness of the added risk of injury associated with seat belts.

g. The importance of proper seat belt fit

As mentioned earlier, some safety seat users did cite proper seat belt fit as the criterion they will use to determine when their child is ready to move up to a seat belt. However, as also noted, many of the seat belt users were reportedly concerned that the seat belt did not fit properly and yet they did not seek an alternative for their child. Notably, some parents in this research – especially those who had not yet transitioned their child to a seat belt – clearly recognized the importance of proper seat belt fit as a criterion for determining their child's readiness for a seat belt (alone). Others believed devices such as the aftermarket seat belt attachments offer a safe alternative. Most parents understood the function of seat belts in restraining the occupant and limiting the amount of forward motion but none described the important role of restraints in slowing the rate of stopping of occupant movement in a crash.

Several parents in this research felt the guidelines for determining optimal restraint for a child should be less standardized. According to the comments of a number of parents, the current guidelines have a number of weaknesses:

- They fail to address the specific stature of each individual child. More importantly, given that each child's size and stature is somewhat unique, parents often felt that the designated standards do not apply to their child's particular size and frame.

- The various age and weight guidelines can be confusing or hard for parents to remember.
- The guidelines do not convey the reason behind each specific weight guideline or its importance. In particular, the guidelines do not link the importance of proper seat belt fit with the 80 pounds or 4' 9" tall size guidelines.
- Similarly, the current guidelines do not communicate how a parent can tell that a seat belt fits their child properly such that the child is safely restrained.

Incorporating a less standardized criterion for determining the optimal form of restraint to use for any given child emerged as a desirable enhancement to the best practices guidelines. Specific to guidelines for school-age children, one suggestion from parents was the addition of a guideline centered on the way the seat belt fits a child. Communicating how the seat belt should fit a child (and perhaps how it should not) in order for it to safely protect the child from injury would apply uniformly to all children, regardless of their particular dimensions. This information could be presented in conjunction with appropriate size and age guidelines. Further, this type of criterion could make the importance of proper fit more intuitively clear to parents than age or weight requirements that may seem arbitrary to some.

Diagrams were suggested by some as a means of clearly illustrating for parents of children in safety or booster seats what is and is not the proper fit of a seat belt for a child.

The importance of understanding proper seat belt fit was further supported by the impact this type of information had among parents in the seat belt user focus group. In this group, a CHOP representative supplemented the best practices by explaining that when the seat belt fits properly, it falls on the strongest parts of the child's body – over the hips and across the chest – as opposed to on the neck or abdomen. Among this particularly hard-to-influence segment, this information seemed to be more meaningful than the best practices alone.

h. Other strategies for reducing premature graduation

Parents in the focus groups often remarked on the appeal of booster seats that are built-in to vehicles. While the cost of these seats was not discussed, many parents felt that seats that are built into vehicles would represent a solution to many of the barriers to booster seat use.

As noted previously, a single seat that will grow along with children from infancy to school age was identified as desirable and could overcome a number of barriers to the use of booster seats.

Parents' brainstorming on strategies for communicating information to parents and for promoting the use of booster seats produced a long list of ideas. These ideas are summarized in Table 1.

In communicating the importance of following the best practices for child restraint, the types of information parents felt would have the greatest impact included crash tests and other research that conveyed the potential consequences when children are prematurely graduated. Others indicated that the "shock-value" of presenting real-life stories and pictures of children who were injured would have an impact and move parents to change their child restraint behavior.

Possible spokespersons for effectively delivering the message about booster seats and child restraint might include celebrities known for their role as caring, involved parents, with Maria Shriver named by several parents. Children could also be used effectively in a media campaign – for promoting booster seats to parents (by confronting them with the potential consequences to *their* child) as well as to children (by demonstrating how "cool" booster seats can be). Well-known medical professionals such as those featured in Parents Magazine might be effective messengers of child restraint information who could communicate the potential consequences of not following the recommended best practices. According to several parents, just knowing that The Children's Hospital of Philadelphia supports the research that led to the recommended best practices for child restraint lends considerable weight and credibility.

When it comes to gaining child acceptance of booster seats – particularly among school-age children – parents offered the following suggestions for marketing seats to children:

- Cartoons/videos that present popular characters actually sitting in booster seats.
- Endorsements by personalities and celebrities popular among children, including Britney Spears and well-known sports figures.
- Encouragement by schools and teachers. According to parents, children generally accept what teachers say as the indisputable truth.
- Public service announcements aimed at children such as those in the "The More You Know" series.
- Mild scare tactics; a milder version of the scare tactics suggested as compelling to parents.

Table 1: Parents' suggestions for communicating/implementing best practices for child restraint

<ul style="list-style-type: none"> • Seminars and training courses: <ul style="list-style-type: none"> - Presented by sheriff's departments, police and fire departments. - Presented at retail outlets that sell safety and booster seats (WalMart, K Mart). - Presented outside supermarkets.
<ul style="list-style-type: none"> • Offer free or discounted seats to those who attend seminars/courses.
<ul style="list-style-type: none"> • Videos and printed information distributed to parents by hospitals before babies are released from the hospital.
<ul style="list-style-type: none"> • Checkpoints for identifying cases of sub-optimal child restraint: <ul style="list-style-type: none"> - Inspections for appropriate restraint (as well as proper installation of seats) at inspection stations.
<ul style="list-style-type: none"> • Programs for parents to trade-in used safety seats for coupons or discounts on a new safety seat or booster seat.
<ul style="list-style-type: none"> • Reduced rates on auto insurance for compliance with best practice.
<ul style="list-style-type: none"> • Incorporate best practices for child restraint into driving tests
<ul style="list-style-type: none"> • Link reminders to check child restraints (practices and installation) with other annual events/reminders, such as changing clocks at Daylight Savings Time.
<ul style="list-style-type: none"> • Establish and promote a "Child Restraint Month" – a specific month of every year when attention to proper child restraint is intensified.
<ul style="list-style-type: none"> • Information distributed by pediatricians and posted at pediatricians' offices as well as more proactive involvement by pediatricians.
<ul style="list-style-type: none"> • Daycare centers.
<ul style="list-style-type: none"> • Schools, through teachers.
<ul style="list-style-type: none"> • Articles/announcements in local newspapers.
<ul style="list-style-type: none"> • Parents Magazine.
<ul style="list-style-type: none"> • Commercials/public service announcements.
<ul style="list-style-type: none"> • Television news magazines such as Dateline NBC and 20/20; news programs such as the Today Show.
<ul style="list-style-type: none"> • Billboards.
<ul style="list-style-type: none"> • Flyers/newsletters distributed by a variety of sources.
<ul style="list-style-type: none"> • Townships/municipalities.
<ul style="list-style-type: none"> • Auto insurance companies.
<ul style="list-style-type: none"> • At inspection stations.

<ul style="list-style-type: none"> • Department of Transportation.
<ul style="list-style-type: none"> • Libraries.
<ul style="list-style-type: none"> • The Internet/ World Wide Web sites for parents.
<ul style="list-style-type: none"> • Lamaze/pre-natal classes.
<ul style="list-style-type: none"> • Notification from the Department of Health at the child's birth (include a schedule of restraint usage along with a schedule of immunizations; also provide this information on a refrigerator magnet).
<ul style="list-style-type: none"> • In-store displays and "information centers," where parents can easily find information on recommended child restraint practices and on specific booster seat designs.

Word-of-mouth was also identified as a potentially effective means of communicating important information about child restraint. Encouraging parents to "spread the word" could play a key role in efforts to reduce premature graduation.

D. Discussions With Child Occupant Protection Experts and Experts in Other Health Promotion Behaviors

1. Methods

In an effort to learn from experts in the child occupant protection field, the research team identified experts in legislation and advocacy. In addition, the team identified experts in other health fields including lead poisoning and vaccination/immunization to learn from their experience. Communication was conducted via email or the telephone.

2. Results

a. Child occupant protection

Legislation/Enforcement: Legislative experts from the National SAFE KIDS Campaign [75] and Advocates for Highway and Auto Safety [76] and police officers [77, 78] noted that while the general public is aware of child passenger safety laws they are not aware of the specifics.

Experts in these fields suggested that in order to increase awareness about optimal restraint, stronger laws were needed, and these laws need to be translated into language that people can understand. [75-78] In addition to increasing the effectiveness of child passenger safety laws, the experts felt that primary safety belt laws were needed. They also commented that the laws needed to be strengthened to be consistent with the data or, at the very least, with best practice. They recommended closing the gaps in the current laws and uniform penalties for infractions. Finally, they felt that both the public and the police must be educated about the importance of age and size appropriate restraint use.

Advocacy: In addition to experts in legislation and enforcement, this project solicited input from people conducting child passenger safety programs. They stressed that knowledge of best practice was key and suggested using safety messages that highlight best practice to heighten parents' awareness about booster seats.

b. Other health promotion fields

Child vaccination/immunization: There were several different strategies used for improving vaccination compliance that may be applicable to increasing booster seat use: [79]

- Making the acquisition and use of the product as easy as possible. This was done by expanding the number of sites and venues that offered vaccinations and extending hours of operation.
- Making sure that the user knows the risks of not using the product. This was done with articles and media about the risk of death if the child was not vaccinated.
- Involving community-based organizations in your project - have them be partners in delivering the message. This could include the school system since older school aged children often have younger siblings.
- Developing some type of reminder system based on age - a reminder system that lets the family know it's time for the booster seat. An automatic-type of card system or phone call system worked with immunizations.
- Getting families involved in your program while the children are young.
- Developing a profile of the high-risk child or family, i.e. those that are most likely NOT to use booster seats, and target this group.
- Making families who use booster seats the messengers. Make sure they understand the message and that it is easy to deliver the message, then monitor how effective the provider of the message is and provide feedback.
- Building a delivery infrastructure that will sustain the message and booster seat use over the long term.

Also from the vaccination field was a categorization scheme for parents. Parents who do not do what is recommended can be categorized into one of three groups: [80]

- Parents who don't like things that are mandated.
- Parents who believe that it is more harmful than helpful to do what is recommended.
- Parents who have heard that it is harmful but aren't sure. These people need information from a reliable source.

Some suggested strategies to address these groups include “common concerns” information sheets for physicians to give to parents. A vaccine education center was also created through the world wide web to educate parents. Similar strategies could be used to increase booster seat use.

Lead poison prevention: Researchers in lead poisoning have found that if the parent is motivated, they can carry out preventive strategies, usually out of concern for potential long-term effects. The parent must “buy in” to the importance, however, in order for the prevention initiatives to be accomplished. Making the parent concerned, perhaps through a video presentation of the child’s movement in a crash, may motivate parents to use the proper restraint for their child. [81]

E. Summary

The second phase of primary research highlighted improved education regarding the need for booster seats and upgraded laws as primary strategies for promoting booster seat use. In addition, the importance of extending the use of child safety seat or booster seats to the recommended age and weight guidelines was emphasized. Once a child has used a seat belt without a child safety seat or booster seat (i.e., once a child is prematurely graduated to a seat belt), getting that child to “go back” to using a booster seat is difficult. Further, this phase highlighted the importance of parenting style and setting safety as a non-negotiable priority as key strategies for overcoming obstacles to booster seat use.

V. Summary

A. Context of Premature Graduation

The premature use of seat belts can cause significant injury in the event of a motor vehicle crash. This research shows that the premature graduation of children from child safety seats to vehicle seat belts occurs for a variety of reasons. Most notably, a parent's perception of risk of their child being injured in a crash plays an important role – parents who use booster seats tended to have a higher risk perception than parents who use seat belts for their children. Along with that, the perception of risk associated with improper seat belt fit prompted some parents to use booster seats. Parents' knowledge of best practice for child passenger safety and the potential consequences for not following these recommendations played a key role among the subjects studied in this research.

B. Potential Barriers to Optimal Restraint for Young Children

Parents identified several potential barriers to optimal restraint for their young children including situational circumstances (e.g., extra adult or child in the vehicle), child behavior, child discomfort, the law, availability of the booster seat, cost, convenience/ease of use, and perceptions of safer alternatives. These barriers to booster seat use prevented some parents in this study from using or regularly using the proper restraint for their child and also led to ideas for strategies to increase the use of booster seats.

C. Potential Strategies to Overcome Barriers to Optimal Restraint

In this research, parents identified potential strategies to overcome barriers to booster seat use, and to promote continued booster seat use among parents who use them. Areas for consideration include:

- Educating parents on successful parenting strategies including consistency, setting boundaries, and communication may help parents who want to use booster seats but feel that they cannot control their child's behavior.
- Educating parents on the benefits of booster seats over seat belt adjusters.
- Developing programs to distribute free or low-cost booster seats.
- Explaining to parents the rationale for the recommendation of a booster seat until a child reaches 4'9" and 80 pounds.
- Investigating the possibility of transitioning a child in stages from a child safety seat to high back belt positioning booster to low back belt positioning booster. This will allow the child to graduate to a booster seat that seems less like a safety seat ("baby seat") before using a seat belt.

- Providing parents with information on booster seats, motor vehicle crashes, injuries to children, etc in locations identified by parents in Table 1.
- Stressing the importance of proper seat belt fit.
- Using media outlets and available/interested celebrities or personalities to get the message out. Making that message simple and clear.
- Strengthening laws to match best practice.
- Putting information and/or a coupon in the child safety seat box explaining about booster seats as the next step.
- Showing stepwise progression (infant seat to child safety seat to booster seat to seat belt) on all child safety seat boxes and on in-store displays.

D. Limitations/Nature of Qualitative Research

The nature of qualitative research is to gain a broad perspective and to generate ideas, rather than reach a consensus or firm conclusion. This research led to a greater understanding of the context of premature graduation and generated ideas and potential strategies to decrease the premature graduation of children from child safety seats to vehicle seat belts.

E. Future Work

Future work should investigate further the behavioral aspects of appropriate and inappropriate restraint using both qualitative and quantitative research methods. Parents' beliefs about restraint, barriers to optimal restraint, and perceptions of the benefits of optimal restraint should be assessed in-depth to gain a deeper understanding of premature graduation and to create appropriate and effective safety messages. In addition, research should be conducted to further identify the best time, place, and messenger for child passenger safety information to be delivered. Targeted interventions should be developed in order to gain short term improvement, long term improvement, sustainability, and acceptability.

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Appendix A

Current recommended best practice for child restraint in the United States

	INFANTS (birth to one year)	TODDLERS (one to four years)	SCHOOL AGE CHILD (four to eight years)
WEIGHT	Up to 20 pounds If an infant is more than 20 pounds, use a seat that is labeled for rear-facing use up to 30 pounds	Over 20 pounds and up to 40 pounds If a toddler is less than 20 pounds, use a rear-facing child safety seat	Over 40 pounds up to 80 pounds If a school age child is less than 40 pounds, use a forward-facing child safety seat
TYPE OF CHILD SAFETY SEAT	Infant only or rear-facing convertible	Convertible or forward-facing only	Belt positioning booster
SEAT ORIENTATION	Rear facing only	Forward facing	Forward facing
MAKE SURE THAT ...	Children are one year of age AND 20 pounds before turning them forward facing Harness straps are at or below shoulder level	Harness straps are at or above shoulder level (Note: Most seats require harness straps to be in top slots when seat is used forward facing)	Belt positioning booster seats are used with both the lap and shoulder belt (Note: Shield booster seats are not recommended)
KEY SAFETY TIPS	NEVER place an infant in the front seat of a vehicle with a passenger air bag A rear-facing seat spreads crash forces over an infant's entire body, minimizing injury to the delicate brain and spinal cord	Children in forward-facing child safety seats should never sit in the front of a vehicle with a passenger air bag Properly installed forward-facing child safety seats minimize the risk of head and brain injury by reducing head movement in a crash	The purpose of a belt positioning booster seat is to position the child so that the adult seat belt will fit optimally across the child's hips and chest The lap belt must fit low and tight across the hips and the shoulder belt must rest over the shoulder and across the chest. Adult seat belts usually do not fit properly until a child is 8 years old and reaches 4'9" in height

While seat belts are better than no restraint at all, adult seat belts usually do not fit children properly. For best protection, use age- and weight-appropriate restraints for every trip, and make sure all children age 12 and under ride in the vehicle back seat.

Source: National Highway Traffic Safety Administration, American Academy of Pediatrics
Adapted by: Partners for Child Passenger Safety, May 2000.

Appendix B

Facilitated brainstorming session #1 notes

1. Overview

The brainstorming session was facilitated by Michael Friend, a Creativity Coach from Before & After. The session lasted one and a half days and began with some fundamentals of effective brainstorming. The group learned that small teams work better for brainstorming and that all ideas should be written down. He urged the group to continually ask better questions to stimulate creative thinking. Mr. Friend also taught the group several other brainstorming techniques that were employed throughout the sessions. The groups brainstormed questions for the parent and child focus groups as well as ideas for improved booster seat use.

2. Focus Group Questions

The group brainstormed about questions to ask people involved in the focus groups. Questions for both children and adults were included. Many questions for parents related to behavior, decision making, marketing and educational messages. Questions for children centered around design and activity in the car.

The group selected its top questions for focus groups from over 100 questions that were generated.

a. Top Questions for Parents – Background/Other

- Have you been in a crash before?
- Are you a professional or blue collar worker?
- What is the birth order of this child?
- How many children do you have?
- Are there economic issues related to premature graduation?
- Could we sell parents on other advantages of booster seats besides safety?
(behavior control, fun, etc.)
- What makes kids feel grown up?
- Who is in charge – parents or kids?
- What are the characteristics of kids who want to sit in booster seats?
- Has the message worked too well re: “baby” protection – doesn’t seem to apply to older kids?
- How does your child’s vulnerability change with age?
- Do you believe being required to restrain your child violates your freedom of choice?
- Do you know everything you need to know?
- What are the injuries?
- What are other countries doing right?
- Should the laws cover these kids better?

- When we say boosters, what do you think?

b. Top Questions for Parents – Behavioral/Decision Making

- Whose responsibility is it to make sure your child is safe?
- Why were you anxious to move your child out of a car seat?
- Is the decision to stop using a car seat or booster conscious or does it just happen?
- What causes a family/parent to make an exception?
- Parents who “do it right” – how? Why?
- What would cause parents to change behavior?
- Does your approach to safety change as you have more kids?
- Who is responsible for the decision to move the child?
- How do people make the leap from uninterested/uninformed to strong advocate?
- Why and by whom is the decision made to stop using a child restraint?
- Who decides to sit where and how restrained?

c. Top Questions for Parents – Risk Perception

- How risky do parents think it is to ride in the car?
- What do you think is the greatest risk of fatality to your child?
- Do you believe in fate?
- Are you a risk taker?
- Is liability a factor?
- Do parents know where motor vehicle injuries fit relative to other problems?

d. Top Questions for Parents – Education/Message

- Who needs to be the messenger of this information?
- Do preschools provide enough information?
- Is there a single piece of information that would make the difference?
- Who do parents want to hear from?

e. Top Questions for Children – General

- What makes kids feel grown up?
- How do you control your parents?
- What do you want to do in the car?
- Who is in charge – parents or kids?
- What are the characteristics of kids who want to sit in booster seats?
- When we say boosters, what do you think?

f. Top Questions for Children – Design

- Design the perfect booster seat.

g. Top Questions for Children – Risk/Behavior

- How risky is it to ride in the car?
- Why is seat belt use a rite of passage?
- What makes you feel grown up?

h. Top Questions for Children – Education/Message

- Who would you want to hear from?
- Who is cool?
- How do you deal with peer pressure?

i. Additional Focus Group Questions

- How important is safety to you?
- Do you take advantage of charities or give-aways?
- Does your neighbor use a booster seat?
- What laws do you knowingly break?
- Do schools provide enough education?
- Are kids under peer pressure?
- What is the kid's role in the decision?
- How do you make a car seat cool?
- How much TV do you watch?
- Can the child read?
- How old is your car?
- Who buckles your child?
- How much educational TV do you watch?
- Where is the safest place to sit? Is sitting in the back good enough?
- What's your education level?
- Do physicians recommend booster seats at visits?
- Where does your child sit in the car?
- What's your income level?
- How much would you spend?
- Do you use a baby-sitter?
- Do you love your child?

- What is a booster seat?
- What happens in a crash?
- Where do you live?
- How many cars do you have?
- How do your kids get to school?
- Do you travel a lot when the child is asleep?
- How does a seat belt work?
- Where do you live?
- What do your kids do/play with in the car?
- Do your children see a physician regularly?
- Do you perceive not using a booster seat as a risk?
- Could the information be more concise/clear?
- Do you know a child who died in a crash?
- Why are boys different than girls?
- Do you choose your vehicles based on safety?
- What are you afraid of?
- How do crashes happen?
- How expensive is your car?
- Are you in a hurry?
- Did you use an infant seat?
- What sex are you?
- How do you decide where your child sits?
- How often do you drive with your children?
- Are you tired when you're driving your kids?
- How old are you?
- Would you ride a roller coaster without proper restraint?
- Does the vehicle make you perceive that you are safer/more confident?
- Is it baby-like to sit in a child seat?
- Do the schools provide enough education?
- Do birthing classes provide enough education?
- Do kids complain?
- Do any of your kid's friends sit in boosters?
- Do you feel invincible?
- Do you believe you could be in a crash?
- Are all parents in your "circle" committed? Informed?
- Are you an aggressive driver?

- When would you rank safety over comfort?

3. Ideas to Reduce Premature Graduation

The group brainstormed about ideas to reduce the incidence of premature graduation of children to vehicle seat belts. Ideas for education of children and adults, media advertisements, improved marketing, improved design and more were generated by the group.

The group selected its favorites from over 300 ideas that were generated.

a. Top Ideas

- Universal seat that covers all ages
- Integrated seats
- Back to school: supplies, check-up, dentist, auto restraint
- Howard Stern asking parents embarrassing questions
- Permanent "fitting stations"
- Barbie's daughter in a booster seat
- At K-1 grade orientation, have boosters to try and buy
- ER episode – 2 kids in 2 car crashes – 1 restrained, 1 unrestrained – show consequences
- Car entertainment supplies for kids
- Morning driver time – mantra "Are your kids in boosters?" – subliminal
- This is your child – this is your child in a crash w/ and w/o CRS
- Adjustable head rest or gel pack for sleeping
- 4 star rating from kids
- Reward to CRS manufacturer with best ad
- SUV/SW 3rd seat specifically for kids
- Montel/Jerry Springer – my child died in a car crash
- WIC or food stamps can be used for booster seat purchase
- Mechanism in booster to guide parents toward proper use
- Free male or female doll with purchase
- HMO pays for training of pediatrics staff
- Incorporating child restraint use into well child check up checklist required by HMO or M/C
- Something goes home to parents 1st month of 1st grade (promise card, parent-child activity, etc.)
- K-1 grade messages to parents and kids about developmental issues (feeling like a "big kid" – still in seat)

- Buy/order seat in non-traditional places – pediatrics office, auto dealer, DMV, garages, grocery store
- Video for police (compelling, brief, informational)
- Parent/grandparent- buy 1 get 1 half price promotional
- Oprah/Rosie show
- Make seat look like a fighter pilot seat – integrated speakers, computer games, walkie talkie, TV – customized
- Andy Sipowicz with parents in interrogation room
- Insurance company-sponsored course – compliance reduces premium – birthday reminders
- The Magic Seat – helps belts fit
- Aetna including boosters in ads – pro-social
- Protect child's face via booster – little button noses, etc.
- In Sunoco bill – flyer to buy booster
- Mentor grandchildren
- You wouldn't dress your child in your clothes, why make them wear your belt?
- Whistle stop "safety train" across country
- Change standards to reflect real world experience
- Hispanic: media, food brands, novellas
- Graphic crash demonstrations
- Replacement covers to grow with child
- Color coded belt to indicate proper fit
- Provide better understanding of crash forces
- Show people sled tests
- Classroom restraint fitting device

b. Other ideas

- regulated children's programming to include specified % of time on safety messages
- more legislation continuity between states – national law
- neighborhood (church/community group)-based - targeted sites for giveaways
- IRS data to target seat giveaways – notice sent with tax refund/communication
- The Convincer with child dummies at shopping malls, amusement parks, or virtual convincers
- Child protection display with Convincer at Disney – target Orlando for marketing
- Who are kids' heros – who delivers message (race car drivers, fighter pilots, astronauts, police/firemen) >5 yrs

- School based education (aka stop, drop and roll) – kids pressure parents
- Federal regulation for integrated booster in all vehicles
- \$ off something for kids restrained correctly
- FL, CA lead efforts through Disney efforts
- Restraint through age groups
- Filibuster
- Senior citizen lobby for national legislation
- Education – start early, get used to it
- Time trials in gym class – National Safety Fitness Competitions
- Sports teams, groups of friends – leverage this to educate/develop a new sense of norm
- Preschool requirement for licensing = autosafety course
- (toddler age) Parental education at preschool/daycare, shopping malls, MD office waiting rooms, insurance companies
- Parental education beginning with newborn birthing class – limit exposure
- NHTSA/Government sponsored educational materials – age directed data from IRS or HHS – via internet – targeted to >5 yrs children in school
- Auto dealers – throw in appropriate seat with purchase of car (or voucher, CD-ROM of educational material)
- Seat manufacturers/Gov't – buying guide brochure in stores, interactive computer display
- Insurance – benefits mitigated by use of restraint (after crash)
- Inducements for proper restraint in random checkpoints (e.g., meal vouchers)
- Celebrities at checkpoints for kids and parents
- Incorporate child safety into auto shows – get fathers more involved/put seats in cars
- Restraint laws revised to highlight proper use of age-specific restraints – uniform upper age limits
- Vehicle owners manuals should have more specific (generic) guidelines – from NHTSA (phone # for further info)
- Commercial time for child safety (ala drugs, etc.) – changing public perception of “normal” socially accepted behavior
- More blood & guts messages
- Target billboards to highways most commonly traveled to/from vacation
- Insurance Company reward if kid restrained in crash
- Driving simulators to learn avoidance and what it's like to be in a crash
- Celebrity involved crashes turned into public awareness campaigns (e.g., Princess Di)
- Testimonials (scared straight)
- Disney characters, Sesame Street, Barney, Teletubbies, etc.

- New distribution points (sporting goods stores, clothing stores, AAA, catalogs, internet)
- Want kids alive for grades K-12 – transportation safety campaign
- Comfort for sleeping child
- Kids' attitudes tap into/develop moralistic – “must be in a seat” like anti-smoking
- Convince HMOs that this is important – pediatrician can take time to do safety
- Need excellent, trustworthy info on actual injury risk
- At malls, auto shows, have seats there to try – get sticker
- Proper belts and seats in TV shows
- Tie into auto inspection
- Seat belt and CPS law together
- Child safety first – before adult law being universal
- Lawmaker – personal interest
- Maximizing/developing resources for state-level advocacy
- Build on presidential initiative
- Law/Corporate practice requiring certified fitting station at dealerships/garages
- Alternatives for PR and distribution
- Dealership training – core group should know how to install and teach parents/buyers
- Auto dealers – promotions with booster seats
- Pediatrician offices – staff do “checkpoint” like checks in parking lots / video in waiting room
- Web page to purchase seats and find out what seat works in my car
- New characters on RugRats – Vince and Larry – crash test dummies
- Crash test dummy – kids in ads or in their own show (Muppet Babies, dolls at Toys ‘R’ Us)
- Eddie Bauer, Lands End sell booster seats in catalogs and on web
- Booster seat web page – linked from other parent web sites
- Plot lines showing parents struggling/succeeding
- ER episode with 1 kid restrained and 1 unrestrained with consequences
- PSAs
- RugRats TM begging for booster seats
- Make issue personal for decision makers
- Ads for older kids – use old TV footage, MTVTM-like, ironic/cool/hip to sit in seats
- Feature stories in “women’s” magazines
- Booster seat ads in parenting magazines
- Improved, biofidelic child dummies
- Can't convince people without good data
- Need to find state representative case of injury and non-injury
- Mine existing databases for relevant info

- Non-traditional research methods to get this info
- Focus on incremental risk (belt vs. seat) plus overall risk
- Target transition points (baby -> toddler, little kid -> school aged)
- Similar to vaccination requirement for school
- Sign in driveway or outside school
- Give out reminder in car – window sticker, trash bag
- Give out car games, cassette tapes for kids
- Kindergarten orientation
- Target messages at well-child visits for different ages
- Target younger ages first – phases of PR
- Insurers give rebate or policy discount for seat purchase
- Insurers send info to policy-holders on seat use, brands that work, etc.
- Annual insurance “check-up” – include safety seat info
- Pillow that fits seat
- Pockets, cup holders, music on seat
- Add-on pockets, cup holders, activity center, etc. for existing seats
- Add-ons should be safe and targeted to older group
- Buses have fold down seats
- Demands from families to manufacturers
- Manufacturers show how product is used – photos, video
- Trade in gun for booster seat
- Append to shareholders statement
- Coupon from pediatrician for Toys ‘R’ Us
- Testimonials/stories
- Letter to CEO in crash – would your child have been okay?
- Get 1 company to do a great TV ad
- Approach with car seat manufacturer
- Coupons for police
- Better dummies
- Crash tests on vehicle seats that mirror today’s vehicles
- Shock value
- Petition
- Regulation
- Liability
- Contest
- Airbag coalition

- Quick fix
- Letter in appreciation – donate this
- Report testing results
- Schools
- Late night TV
- Disney connection – all day pass = free booster seat
- Churches
- QVC™
- Pediatricians
- Oprah
- Graco™
- General Practitioners
- Link with major corporation and let them promote
- OP Clinic in school for 4 year olds
- Retailers brochure POP display coupon on receipt
- Laws
- Drivers licensure/test
- Military families
- Internet
- Block leaders
- Schools – regulation
- Increase parental seat belt use
- Police education to community
- Self-help
- Spanish
- Employer
- Professional sports figure
- Billboards
- Better follow-up on crashes
- Kids PSA series
- Run as movie trailers
- Weird message – not bad person because you're using a seat belt
- Sensational stories to focus on real world examples
- Testimonials
- Oprah dedicate show to kids
- Entertainers for safety

- ER episode
- Radio outlets
- Nick at Night
- Increase seat positions
- Adaptable for long life – small to large
- Appeals to parents
- Quick
- Kids can do it alone
- Easy to use
- Readily available
- Cheap
- Packaged
- Useful for more than 1 child
- Practical
- Attractive
- Comfortable
- Status symbol
- Price
- Peer pressure from other parents
- Appeals to child
- Current/popular
- Add ons to make different
- Color matters
- Look good
- Fit in with friends
- Look like fun
- Personal possession
- Comfortable
- Willing to nag
- Role models
- Redesign
- Price
- Comfort
- Autonomy
- Laws
- Schools

- Develop cues to tell if child is not restrained
- Pediatrician and health center
- After school care
- Educate law enforcement
- After school and weekend activities
- Dentists/Orthodontists
- EMS Providers
- Employer wellness programs
- Insurance companies
- Severity
- Relationship between misuse and injury
- Foreign standards criteria
- Adjustable upper anchorages for kids
- NASCAR™ style harness for kids
- Targeted approaches
- Need a motivational component
- Dedicated child belts
- Create a belt-add-on product
- Checkpoints and fitting stations
- Child >40 lbs in middle seat w/o shoulder belt
- Lap belt locator – to keep belt low on hips
- Tension sensor – tells you about loose or tight
- Seat weight – limitation inherent in standard – reason
- Manufacturers create a generic fit guide to go with seats
- Car seat adapter to use with existing car seats with UCRA
- Cup holders and video games
- Fabric matching car interior
- AARP and modern maturity
- Nursing homes
- Spokespeople sources of info
- Kids to design it
- Make grown up looking
- Match up with back to school
- Senior centers
- Geriatrics office
- Develop strategies to generate free media about lives saved and lost

- Safety benefits to grandkids
- Target different types of grandparents
- Mix of saves and losses – real life
- Not use a bench seat
- Relative risk
- Kids behavior
- Don't have the info needed to judge risk
- Picture of grandchild
- Emotional impact
- Better messages about harness fit – what it is
- Have auto manufacturers give the models – provide actual seats
- Proper fit
- Risk is only thought of independently – not cumulative
- Time
- Churches
- Strong message – positive and negative
- Grandparents – give as a gift
- Require automakers to test child restraint
- Statistics
- Single situations – anecdotes
- Convenience
- Marketing database
- Social security
- Older – prevention
- More consumer testing
- In a rush
- Distance
- Personal perception – I'm a safe driver
- Screening kids
- Make kids happy – let them see out the window
- Restraint can control kid – not so bothersome
- Jump suit with proper belt locations on it
- In schools – in each classroom
- Hispanic groups
- Some kind of feedback mechanism on belt
- Grandparents can nag their kids

- Knowledge of safety
- Crowded
- Teach safety to the masses
- What to do with more than 1 kid
- Advertise hotlines and resources (after improving them)
- Manufacturers of autos and restraints must talk to each other
- Risk is less obvious in familiar situations
- Messages that stick
- Simple, catchy message
- Something on lap belt to hold it in position
- Technological equivalent of growth chart
- Sell with back to school items
- Poor fit of belt for you = unsafe fit for your child
- Change the standard testing procedure
- Show kid being in middle seat
- Need better relationship between auto and restraint manufacturers
- Cup holders
- Slogans "Your child will not be thrown" (perception of current product is that they do not restrain)
- Medical consequence of minor injury
- Time, stress and cost of impact
- Help people understand that child restraint is worthy of worry
- Work with fast food

Ideas from TV Characters

Andy Sipowicz

- motivation for police
- person to do spot with "child w/o CRS," etc.
- plea bargaining
- police station as distribution site
- police-sponsored positive ticketing

Elmo/Mickey Mouse

- draw to checks
- re-program voice for kids to hear message
- could be getting into booster seat

WWF

- promotional spots
- hand out seats
- ticket giveaway
- simulated being beat up
- restrained = can't move; unrestrained = body slam
- Ventura to lead national efforts

Ideas from Toys

Blocks

- Stepping stones
- Stepped approach – younger -> older, different groups
- Vivid colors, not subtleties/info – attractive seats (coordinate with car or kids like it)
- Toy with reminder or messages
- Modular seats – comfort for sleeping/foam/velcro

Dolls

- Booster seat for Barbie's younger sister
- Booster changes shape as child ages (cooler look)
- Booster seats sold with some dolls
- Barbie car with seat belts
- Belt 'n' Buckle Big Bird
- Suzie crash dummy

Teletubbie

- Teletubbie show focusing on graduation from car seat to booster
- Sesame Street, Mr. Rogers

Bikes

- "Training wheels" -> booster seats
- Safety on the bike, safety in the car
- Decorate your car seat – wash off markers, paints, glitter

Jack-in-the-Box

- Cassette recorder on side of booster seat

Legos

- Lego baseboard on shield surface
- All info in multiple languages

Slinky

- flexible, round & round
- car seats that change form for kids

Bubbles

- Light in seat (for nighttime playing)

Board Games

- Travel games built in – or as accessories or free bonus with seat

Water Gun

- Analogy to gun dangers – you wouldn't put your child in front of a gun

Ideas from Song Titles

Stop in the Name of Love

- Picking up kids from school
- Valentines special – love your kid
- Booster seats icons
- Booster seat signs
- Movie trailer or on home video
- 4 Stop signs for rating system

Jingle Bells

- Snap in makes bell sound
- Bell system to rate booster

Bad to the Bone

- Harley kid in booster seat

Daddy's Little Girl

- Theme – kids with bunch of boosters

Moonbeam

- Van seat with 1 seat for kids
- Space – shapes of Star Wars

Some Kind of Wonderful

- Vehicle mfg partner with seat mfg to develop product that works
- Partner with Please Touch Museum
- Activity level to keep kid involved
- Buttons on booster seat
- Kids rate their seats

This Magic Moment

- Inflatable – magic – now you see it, now you don't
- David Copperfield
- Tie into birthday event
- Morning drive time at traffic report
- Child marketed booster

The Long and Winding Road

- Tapes of TV shows in car seat
- Trailers on audio tapes for kids
- Need booster for trip
- Tie into trip
- Long trip

Appendix C

Qualitative report of focus groups and in-depth discussions #1

**PREMATURE GRADUATION OF CHILDREN
FROM CHILD RESTRAINTS TO
VEHICLE SAFETY BELTS**

A Qualitative Study Conducted for:

THE CHILDREN'S HOSPITAL OF PHILADELPHIA

Qualitative report of focus groups and in-depth discussions #1

Conducted by:

RESPONSE ANALYSIS CORPORATION

April 1999

BACKGROUND AND OBJECTIVES

The National Highway Traffic Safety Administration (NHTSA) and others have conducted extensive research on and dedicated significant resources to reducing the number of children who are killed and injured as a result of motor vehicle crashes. While the fatality rate for children in motor vehicles has been substantially reduced in recent years, the rate of child injury and fatality in motor vehicle crashes remains high, and motor vehicle crashes represent the leading cause of death for children age 6 to 14. While research has shown that some form of restraint is often used for children age 0 to 9 who are involved in fatal crashes, many of these children have been prematurely graduated to safety belts. When used prematurely, safety belts represent a sub-optimal and inappropriate restraint that may, in fact, contribute to fatal injuries.

A critical shortcoming associated with the use of vehicle safety belts alone for young children is that, if they do not fit correctly, the lap portion of the belt may ride up over the child's abdomen and the shoulder portion may cross the child's neck or face. This often results in the shoulder portion of the belt being placed under the child's arm or behind the child's back. In the event of a crash, ill-fitting safety belts can result in severe or fatal intra-abdominal and spinal injuries; this problem is often referred to as "seat-belt syndrome." Thus, according to NHTSA, children should be restrained in child safety seats or booster seats until vehicle safety belts fit correctly when used alone.

While the problem of children being prematurely graduated from safety seats or booster seats to vehicle safety belts has been clearly identified, a significant gap remains in fully understanding the reasons why children are prematurely graduated. As part of a larger undertaking by TraumaLink at The Children's Hospital of Philadelphia (CHOP) on behalf of NHTSA, Response Analysis Corporation has been engaged to conduct research that will help close this gap in understanding. With the long-term goal of the research being to reduce the number of children who are prematurely graduated from child restraints to vehicle safety belts, the overall objective of this study is to develop a comprehensive understanding of the nature, causes, and potential solutions to the problem of premature graduation. The more specific objectives of the research are to:

- Assess the extent of parents' perceived risk that children will be involved in and injured or killed in a motor vehicle crash relative to the risk associated with other potential causes of injury;
- Identify any situational elements of the problem of premature graduation – specific circumstances, such as the distance being traveled, weather conditions, the purpose and

nature of the trip, or the presence of other passengers in the vehicle that lead parents to restrain children inappropriately;

- Understand parents' perceptions of various forms of restraint for children in terms of safety, installation, convenience, and their child's perceptions of and response to use;
- Determine parents' level of knowledge concerning the positioning of children in a vehicle for optimum safety;
- Determine parents' awareness and understanding of the laws in their state regarding child restraint;
- Determine parents' awareness of recommended best practices for child restraint in vehicles;
- Obtain the perspective of children for the purpose of identifying and understanding the potential role of the child in influencing parents' use/choice of vehicle restraint;
- Identify potential means of effectively communicating recommended best practices for child restraint in vehicles to parents and for promoting implementation of those practices.

With subsequent research tasks aimed at identifying effective modes of intervention to premature graduation, an underlying objective of this phase of the research is to identify critical issues that will lead to achieving this ultimate research goal.

METHODOLOGY

In order to meet the specified research objectives, a series of three focus group discussions were conducted among parents, and two groups were conducted among children. Additionally, a total of 15 supplementary in-depth telephone discussions were conducted among parents to refine some of the key findings of the groups.

Focus Groups

The problem of premature graduation revolves around two groups of children: children age 1 to 4 who are moved to safety belts before they reach 40 pounds and four years of age, and children over four who outgrow their child safety seats and should be restrained in booster seats until vehicle safety belts fit properly. With this in mind, the focus groups were designed to

examine the problem of premature graduation separately for each age group. Thus, the composition of each parent group was as follows:

- Group 1: Parents/guardians of children age 1 to 4 who have been restrained in vehicle safety belts at least once or twice in the past six months
- Group 2: Parents/guardians of children age 5 to 9 who have been restrained in vehicle safety belts at least once or twice in the past six months
- Group 3: Parents/guardians of children age 4 to 9 who have been restrained in a booster seat at least once or twice in the past six months

The original plan called for a single group of children age 4 to 9 who have been restrained in a booster seat at least once or twice in the past six months. However, given the huge developmental differences between the youngest and oldest in this age range, expected attention spans, and the fact that the children would be available for a two-hour period while their parents participated in Group 3, the decision was made to hold two shorter focus groups with children. The recruit yielded only children up to 7 years old who met the requirements for participation in the study, that is, no 8-to-9-year-olds who had ridden in a booster seat in the last six months were located. The resulting child groups were as follows:

- Group 4: Children age 4 who have been restrained in a booster seat at least once or twice in the past six months
- Group 5: Children age 5 to 7 who have been restrained in a booster seat at least once or twice in the past six months

An effort was made to include parents/children of different genders and with a variety of age, education, and ethnic characteristics in each group.

Two different methods/sources were used in the recruitment of participants for the groups. A printed flyer briefly describing the nature of the research was distributed to parents through local childcare programs and elementary schools. The notice encouraged interested parents to call a toll-free telephone number for more information and to volunteer for participation. Other parents were screened and recruited from lists of potential participants that are maintained by the focus group facilities.

The groups were conducted in two different locations, as follows:

	<u>Location</u>	<u>Date</u>
Groups 1 and 2	Voorhees, NJ	February 24, 1999
Groups 3, 4, and 5	Montgomeryville, PA	February 27, 1999

The "parent" groups (Groups 1, 2 and 3) were moderated by Andrea McGruther, an independent market research consultant who has moderated focus group discussions on a wide range of topics; each was approximately two hours in duration. The children's groups were facilitated by Karen Morgan, a RAC employee with a Ph.D. in family relations and human development, trained in focus group moderation and experienced in leading play groups for children. The children's groups lasted approximately 40 to 50 minutes each.

Supplementary In-Depth Discussions

As a means of refining and elaborating some of the key findings of the focus groups, in-depth personal discussions were conducted by telephone among 15 parents who met the same qualifications as those who participated in the focus groups. Although these discussions were conducted on an individual one-to-one level, respondents are generally referred to in this report by group (1, 2 or 3); the discussions are distributed as follows according to the designated groups:

	<u>Number of Discussions</u>
Group 1	5
Group 2	6
Group 3	4
TOTAL	15

Discussion for this supplementary phase of the research occurred during the period October 21 through November 13, 1999. As with the focus groups, the discussions were unstructured, consisting primarily of open-ended, free-response questions. The average length of discussion was approximately 35 to 40 minutes.

A PERSPECTIVE ON THE FINDINGS

It is important to emphasize that this research is qualitative in nature. Qualitative research is exploratory research designed to generate ideas and develop hypotheses, and to identify variables which can be used in quantitative research. Because the research was structured as a series of open-ended questions (as well as an activity for the children) and includes a very limited number of respondents, it should not be viewed as a quantitative measure of attitudes and behavior. It is intended to identify and screen ideas for further consideration.

Following is an overview of key observations made in the course of this research. These observations refer only to the views expressed by those who participated in the focus groups or discussions and should be considered anecdotal rather than conclusive. Results represent the opinions of the individuals involved in the research and are not necessarily projectable to or representative of all parents of children in the designated age groups.

CONCLUSIONS AND RECOMMENDATIONS – PARENTS

CONCLUSIONS

The results of this research identify a number of important underlying issues that offer insight on the problem of premature graduation. The findings further suggest several basic themes that, with further investigation, may be useful in the development of effective interventions to address the premature graduation of children to vehicle safety belts. In particular, based on this research, it is hypothesized that two very fundamental factors are central to the problem. In short, in this evaluation of parents' attitudes and behavior with respect to child restraint, the findings are consistently linked to:

- Parents' perceptions of the risk associated with their child being injured in a motor vehicle crash and, more important, their perceptions of risk as associated with the method of restraint used for their child;
- Parents' awareness of recommended best practices for child restraint in a motor vehicle and the potential consequences of not implementing these practices.

Moreover, understanding the connection between these two factors may represent a significant element in changing parents' child restraint behavior and reducing the number of children who are prematurely graduated to vehicle safety belts.

Perceptions of Risk

From this research, a number of observations supporting this hypothesis can be made concerning parents' perceptions of risk. From the focus groups, it can be observed:

- Overall, participants in the groups of parents who sometimes use seat belts to restrain their 1-to-4- or 5-to-9-year-old seemed to exhibit less concern that their child will be injured in a motor vehicle crash than did those in the group of parents who primarily use booster seats. These parents clearly do not love their children any less, nor are they ignorant of the potential for being involved in a motor vehicle crash. The key distinction seems to lie in the degree of confidence these parents feel that, in restraining their child, they are effectively protecting the child from injury in the event of a crash.
- More specifically, among those participating in the seat belt user groups, parents' concern seemed to revolve more around the possibility of injury if their child is not properly restrained. At the same time, however, these parents expressed a fair amount of confidence that, in restraining their child, the risk of injury is significantly reduced. Sadly, these parents' confidence is too often associated with the use of vehicle safety belts alone as the chosen method of restraint.
- Parents participating in the group of booster seat users, however, demonstrated somewhat greater concern over the possibility of their child being injured in a crash, regardless of the child being restrained or the method of restraint used. These parents clearly seemed less confident in their ability to effectively protect their child from injury, despite their use of a restraint.

This level of concern, or risk, associated with the method of restraint used for their child seems to represent a fundamental distinction between these parents, and could suggest an important link to parents' willingness to prematurely graduate their child to safety belts alone. If the risks associated with improper use of safety belts as a form of child restraint are effectively communicated, parents' confidence in this method of restraint – and likewise, their inclination to use safety belts for their child – may be significantly reduced.

Awareness

Further evidence supporting the link between premature graduation and parents' perceptions of the associated risks is found in observations regarding the level of knowledge parents participating in this research exhibited with respect to child restraint. Specifically:

- Just as parents participating in the group of booster seat users seemed to demonstrate more concern surrounding the effectiveness of child restraint, they also demonstrated greater awareness overall of a number of issues surrounding child restraint. These parents were clearly better informed than those in the seat belt groups with respect to:
 - Designs, associated risks, and installation of booster seats;
 - Legislation regarding child restraint;
 - Guidelines/best practices for the appropriate form of child restraint;
 - Risks associated with improper/premature use of safety belts.

Differences in awareness could not be as easily observed across discussion respondents in the context of the discussion. However, it is to some extent supported by the observation that most of the booster seat users seem to be using the high-back, 5-point harness design. On the other hand, a number of the seat belt users noted their safety concerns related to other designs that simply boosted their child up with only lap belt restraint.

Parents who participated in the booster seat focus group appeared to be more proactive than those participating in the groups of seat belt users in seeking information about issues related to child safety and child restraint. And while no direct relationship can be determined from this research, one might draw the following hypothesis:

With more information on child restraint, those parents who primarily use a booster seat to restrain their child have a greater awareness of the risks associated with children being improperly restrained – and with the premature use of safety belts alone. That they primarily use a booster seat to restrain their child age 4 to 9 completes the proposed equation between awareness and recognition of risk and use of the proper restraint.

The Impact of Information

Perhaps the most convincing element of the hypothesis that effectively communicating the risks of premature graduation to parents is key to reducing the occurrence of this practice is found in parents' reactions to learning what are the recommended best practices for child restraint. As noted, more parents in the booster seat user group than in the seat belt groups indicated awareness of the best practices recommended for child restraint. Overall across all groups, however, several parents who are currently using safety belts alone to restrain their child age 1 to 4 or 5 to 9 were clearly sobered by the information that this may not be a safe or effective form of restraint for their child. These parents further indicated their intent to switch their child to a booster seat or to at least re-evaluate their choice of restraint. When parents were further informed of the possible injury that can result from improper or premature use of safety belts, the effect was even more dramatic.

This is, of course, a small, non-representative sample of parents and not necessarily indicative of the impact that such knowledge may have among all parents who are prematurely using safety belts to restrain their child. Likewise, these parents' intent may or may not be translated into real change.

At the same time, however, it was evident that the parents participating in this research are eager to do all they can to protect their child from injury. Further, most indicated that they seldom compromise in their use of what is perceived as the safest restraint for their child when riding in a motor vehicle. Their expressed intent to change from safety belts alone to a booster seat for their child offers powerful evidence of the link between parents' awareness of the risks of premature graduation and their implementation of recommended best practices.

Situational Influences

Of course, ignorance of the risks associated with the premature use of safety belts is not the only factor involved. Throughout this research, a number of circumstances were identified that may influence parents' choice of restraint for their child. Among those mentioned are:

- The need to accommodate other children: When there are other children as passengers, parents sometimes give up their child's booster seat for another child or allow all children to ride in safety belts alone so they feel "equal";
- Motor vehicle design: Some parents indicated that their vehicle cannot accommodate a booster seat, especially when other passengers or a child safety seat or infant seat is present;

- Availability of a safety seat or booster seat: According to parents in these groups, that a safety seat or booster seat was unavailable for their child in an unanticipated emergency often prompted initial use of a safety belt alone for their child. Similarly, if the child's booster seat is installed in a second vehicle that is unavailable, the parent may have "no choice" but to restrain their child with a safety belt alone;
- Length of trip: Some parents indicated that if they are going on a "short trip" (defined by some as less than 15 minutes) they may use just a safety belt for their child, as opposed to going to the trouble of putting the child in a safety seat or booster seat;
- Weather: Some parents who sometimes use safety belts for their child will explicitly use a booster seat instead in bad weather;
- The parent's mood or situations when the parent is rushed: If the parent is running late or feeling pressured or rushed, for some this represents a situation in which they would "definitely" choose a booster seat for their child.

Even in these situations, however, parents' failure to understand the risk of using safety belts alone for their child represents an important influence. Of particular note is parents' inclination to alter their standard method of restraint based on the length of the trip, the weather, or their own mood. Parents' choice of a booster seat or safety seat over a safety belt alone in bad weather or when the parent is feeling rushed is reportedly due to their perception that these factors could affect their driving and thus, increase the risk of a crash. This raises the question, if they associate the booster seat or safety seat with greater safety or added protection for their child, why do they not choose this form of restraint regardless of the circumstances of the trip?

Parents' perception of reduced risk on a short trip is equally difficult to explain – particularly considering that parents themselves recognize that many motor vehicle crashes occur within only a few miles from home.

Also of interest is parents' readiness to accept safety belts as an appropriate form of restraint for their child following the first time this restraint is used. It was evident that, after using a safety belt alone for their child once without incident, the inclination of some parents is to think it is safe to continue using this form of restraint. In the words of one parent:

"I think the first time we did it, it was an emergency situation. My daughter had to be picked up at school by somebody who didn't have a car seat or a booster seat and she was fine and we said, 'That worked,' and we knew that we could do it again."

Clearly, in communicating the associated risks of premature use of safety belts, the message needs to emphasize that the risk is always present – regardless of the distance traveled, parents' mood, the weather conditions, or a single event without incident.

Booster Seats

Based on this research, it seems to some extent, booster seats themselves may be a factor in parents' decision to graduate a child to safety belts alone. Specifically, factors that may influence some parents' decision not to use a booster seat for their child include:

- **Installation:** Many parents reported experiencing difficulty installing their booster seats. One reason cited is instructions that are confusing and unclear, with no means to confirm that the seat has been installed correctly. Some parents reported that they were unable to install a particular seat in their vehicle due to incompatibility with vehicle design features;
- **Lack of protection:** Some parents commented that a particular booster seat design (such as the lap design) allowed their child too much mobility and not enough protection. Some feel the lack of restraint to the child's upper body (with the lap design) provides inadequate protection;
- **Safety:** Several participants voiced the perception that booster seats are unsafe, or not as safe as a safety belt alone for their child. In particular, parents related incidents in which their child unfastened the latches or latches broke. Others had experienced or heard about incidents in which a booster seat shifted or slid out from under a child – in one case causing injury;
- **Child comfort:** Based on this research, a child's size represents a key factor in parents' decision to graduate a child from any form of restraint to the next – whether it is from a safety seat to a booster seat or from a booster seat to safety belts. Specifically, a key reason parents cite for the switch is that the child has outgrown or is "too big" for the restraint used. That some booster seats do not accommodate children up to the size designated in the recommended best practices evidently prompts some parents to graduate the child to safety belts alone as opposed to a larger booster seat. That a child is "too big" for a booster seat is a common perception among parents.

Most parents seemed to feel their child has no objection to sitting in a booster seat (assuming it is the right size for the child), and in some cases, actually prefers it. The following verbatim comments of participants are, however, clear evidence that a child's resistance can, in some cases, affect parents' choice of restraint.

"My child prefers just the seat belt. She is five. She gives me a hard time every time I try to put her in the booster seat."

"My son is seven and sometimes he doesn't want to feel like a baby. If you have older children who are in a seat belt, he's going to want to be in a seat belt."

Renaming Booster Seats

When asked their feelings about the term "booster seat," parents had mixed views as to whether the name enhances or detracts from perceptions of this form of restraint. It is especially notable, however, that for some, the name "booster seat" tends to minimize the purpose – and importance – of this restraint. Specifically, there was clearly some confusion among these parents as to whether booster seats are intended to simply raise the child up so that the vehicle safety belt fits properly, or are they intended to provide added restraint. It was evident that, without knowledge of the risks to children of wearing an improperly fitting safety belt, simply raising the child up for a proper fit may not seem critical to parents. Thus, a name that implies that this restraint does no more than "boost" the child up higher could be dangerously misleading to some.

Safe Positioning

Based on this research, most parents are aware that proper positioning of a child in a motor vehicle is another important aspect of protecting them from injury in the event of a crash. At the same time, however, parents' perceptions of just what is the safest place in the vehicle for a child to sit are clearly varied, and some have developed their own opinion on the safest place in the vehicle (e.g., "away from the gas tank"). What's more, vehicle designs or the presence of other passengers – especially other children or a child for whom a safety seat or booster seat is required – often prevent the placement of a child in the center of the back seat. Also, almost any of those situational factors that may influence parents' choice of restraint can, according to parents in these groups, affect where the child is positioned in the vehicle.

To an extent, while it is not the focus of this research, the findings suggest that just as parents are not fully informed of the risks associated with prematurely restraining their child with safety

belts, some are not aware of what is the proper positioning of their child, or the risk associated with improper placement.

Legislation

As noted, focus group participants' awareness of what legislation in their state mandates regarding child restraint tended to be somewhat greater among those in the group of booster seat users than among those in the seat belt groups. Regardless of any prior knowledge of the laws, however, parents in all groups generally viewed the laws as too lenient, too vague and too general. Many were surprised to learn that no size or weight requirements for children are indicated, considering that children of the same age can be very different in size. Most agreed that the child's size should be made part of the law.

Legislation aside, however, it was apparent that many parents in these groups rely on other sources more than they do the law for guidance in choosing a type of restraint for their child. Specifically, most of these parents are at least generally aware, if only from information provided with safety seats and booster seats, that a key factor in choosing the best form of restraint for their child is the child's size and weight. And while parents may not be well informed as to the recommended size and weight parameters, based on this research, many intend to follow what they perceive as the appropriate standards in restraining their child, regardless of what the law does or does not mandate.

At the same time, however, it is important to note that, based on this research, some parents do view the laws regarding child restraint as an indication of what is the safest form of restraint. Thus, with local child restraint laws suggesting that a safety belt is acceptable for children over age 4 in Pennsylvania and over age 1½ in New Jersey, this could give some parents a false sense of security in using safety belts for their child.

Thus, if communicated and enforced, a law with more rigid requirements for child restraint may have a positive impact on some parents' restraint behavior. However, parents' intent to restrain their child in the way they believe to be the safest regardless of what is mandated merely underscores the importance of communicating best practices to all parents.

Additional Insights – In-Depth Discussions

The findings of the supplementary in-depth discussions among parents clearly support the findings of the focus groups. In addition, these discussions offered added insight in a number of areas. In particular:

- The comments of parent discussants highlight the importance of consistency when it comes to parents' use of the proper restraint for children. When parents recognize the importance

of using the same method of restraint consistently, *all the time*, the potential benefits can be significant, including:

- Reduced likelihood of child injury due to the use of improper restraint due to situational influences;
 - Increased acceptance of (and presumably less resistance to) use of the “proper restraint” (especially booster seats) by children as a result of it becoming “automatic.” Likewise, children themselves become proponents of safety when riding in a motor vehicle;
 - Reduced likelihood of child injury resulting from lack of any restraint or use of an improper restraint when children ride in other people’s vehicles.
- The role of the child in parents’ decision to graduate the child to a regular seat belt was especially evident in these discussions in a number of ways.
 - It was apparent that a child’s desire to be a “big kid” by moving up to a seat belt clearly influenced some parents’ choice of restraint – especially when friends or older siblings are using them;
 - Similarly, if parents who are using seat belts for their child were to learn that it is safer for their child to be restrained in a booster seat, the child’s resistance to “going backwards” is likely to keep many parents from making the switch, even if they accept the booster seat as safer;
 - A child’s maturity level – in terms of behavior and ability to understand the concept of risk in motor vehicles – is often perceived as an indication that the child is ready to graduate to a seat belt.
- The discussions emphasize the influence that specific booster seat designs can have on parents’ acceptance and use of this type of restraint – as well as their “comfort level” in using a booster seat for their child as opposed to a regular seat belt. Many parents are clearly not sure as to what the intended purpose of booster seats is, and these seats are often perceived as unsafe, making a regular seat belt the preferred option when a child has

outgrown a car seat. Much of this appears to be related to the specific seat design, with booster seat users endorsing the added security of other designs.

- Specifically, the newer seats that accommodate larger children, the 5-point harness that offers upper body restraint, and the high-back design that offers head and neck support tend to be favorably viewed by those who use them.
- Parents' comments in these discussions tend to support the conclusion that, if communicated to parents, more rigid laws concerning the use of booster seats could have a significant impact on their use of this type of restraint. Specifically, although most parents have limited knowledge of what exactly the law in their state mandates, this research suggests that:
 - Parents generally want to avoid getting a ticket for improper child restraint, and if they are aware that the law mandates the use of a booster seat, many would likely comply;
 - The existing laws in the states studied tend to give parents a false sense of security that their child is safe if wearing a seat belt;
 - If the law required children to be restrained in a booster seat, parents would likely be less inclined to give in to their child's resistance. Further, as the law becomes more widely known and accepted, peer pressure would likely have lesser influence on children.
- The importance of parents' own comfort level in their choice of restraint for their child emphasizes the importance of communicating information that will not only identify the recommended best practices for safety, but the *reasons* why these are the safest choices for children of specific ages and sizes, along with convincing statistics.

RECOMMENDATIONS

A number of global recommendations for reducing the incidence of children being prematurely graduated to safety belts can be made based on this research.

Communication

Overall, the research suggests that perhaps the most critical element in efforts to reduce the incidence of premature graduation lies in effectively communicating to parents the risks associated with improper use of vehicle safety belts, and informing them of the recommended best practices for the safest form of child restraint.

More specifically, based on this research, information that is disseminated to parents should:

- Clearly spell out the weight and size guidelines for determining the safest form of restraint for children;
- Communicate the potential consequences associated with the improper use of safety belts for children;
- Emphasize that the risk is always the same – it is not reduced by the length of the trip, favorable weather conditions, or how cautiously the parent drives;
- Similarly, emphasize consistency in the use of proper restraints. If the same form of restraint is *always* used, regardless of the circumstances, this leaves no questions for the child, no room for negotiation, and no jeopardizing the safety of the child. Parents must be encouraged to “stand firm” for safety when it comes to choosing a form of restraint for their child. In the words of one parent:

My son is 65 to 70 pounds and he's six, but he's the size of an eight-year-old and he's in the booster seat. He has no choice. This is the way he has been brought up from day one. Just as they don't question brushing their teeth before they go to bed, if I happen to start the car and he hasn't got his seat belt buckled and he's not in his seat, he freaks.

- Highlight the disadvantages of using vehicle safety belts prematurely. Specifically, if the child is uncomfortable in a safety belt – if it cuts across the child's neck or face – this is a clear indication that it does not fit properly and of the risk of injury;
- Include specific information about the proper positioning of children in a motor vehicle, and the risks associated with improper placement;

- Inform day care/childcare centers of recommended best practices – particularly if they have occasion to transport children. These centers also represent a source of information on which parents often rely.

Sources of Information and Communication

Group participants were asked to suggest ways of communicating to all parents what are the recommended best practices for safely restraining children in these age groups. Their suggestions for sources of information to effectively reach parents include:

- Pediatrician/doctors' offices and clinics;
- Hospitals, prior to parents leaving after the birth of a child;
- Schools/preschools;
- Parents' magazines and other publications directed to parents;
- Police;
- On the Internet;
- Public service announcements on television and radio;
- Division of Motor Vehicles/information distributed with motor vehicle registration;
- Through motor vehicle insurance providers;
- Information included with child safety seats and booster seats;
- Television specials and news programs, including programs such as 20/20.

Another suggestion parents made for promoting the implementation of recommended best practices for child restraint is to educate children on these practices. Considering the extent to which children are aware of the importance of using seat belts, with many reportedly requesting their parents or others who have failed to "buckle up" to do so, children may themselves become the best advocates of these practices. Sources for educating children include children's videos, schools/preschools, and announcements on children's programming.

Booster Seat Design

Aside from information and communication, a number of other suggestions for promoting the use of booster seats can be made based on this research. While some may be realized only in an "ideal world," they are representative of where at least part of the problem of premature graduation lies.

- The intended purpose of booster seats needs to be better communicated to and clarified for parents. Many are confused as to the true purpose of this restraint and about the variety of designs;
- Some consideration might be given to promoting a change in the name used for booster seats. The term “booster seat” could minimize the purpose of this restraint, and thereby fail to impart to parents how critical it is in protecting children’s safety;
- Booster seats should become more standardized in design and purpose. Standardization of weight parameters for booster seats could reduce premature graduation in instances when a child grows out of the seat being used. Rather than purchase a larger seat to accommodate the child, parents somewhat naturally move the child up to a safety belt alone. The size and weight parameters for booster seats should comply with best practice recommendations such that becoming “too big” for a booster seat does, in fact, indicate the child is ready for a safety belt alone;
- The number and variety of booster seat designs should be reduced – if one is safer than others, the others should not be marketed;
- Instructions for the installation of booster seats need to be made clearer, simpler. Instructions should include information or diagrams that help parents confirm that the seat is installed correctly;
- Child-proof latches and buckles might be considered so that children cannot get out of the seats too soon, before the vehicle has come to a complete stop;
- Child safety seats and booster seats should be compatible with car designs; ideally, auto manufacturers and manufacturers of safety/booster seats should collaborate on achieving full compatibility;

Notably, consistent with the findings of this research, it appears steps may already have begun to standardize child safety seat designs and make them compatible with vehicle designs. On February 27 of this year, as the focus group phase of this study was in progress, President Clinton announced new federal rules to make child safety seats safer. The rule establishes a single standardized system for anchoring child safety seats in new cars and light trucks by the end of 1999. As this study concludes, it is noteworthy that the first phase of the three-year

federal plan to create a universal, easy-to-use child seating system went into effect in September of 1999. It designates standard attachments for safety seats and requires that all new cars and trucks have standard anchors in the back seat to link to the seat attachments.

Legislation

Where possible, efforts to promote changes in legislation such that the use of booster seats is mandated for children of a designated age or size might also be considered.

Additional Investigation

This research only touched on children's feelings toward booster seats and their preferences for specific styles and designs. More extensive research among children may be warranted in order to learn their preferences and identify features that may generate resistance.

SUMMARY OF FINDINGS – PARENTS

PARENTS' PERCEPTIONS OF RISK

There are virtually unlimited ways in which children in the age groups being studied can be injured, often seriously or even fatally. In understanding the underlying dynamics of premature graduation of children to vehicle safety belts, it is helpful to assess the level of risk parents associate with their children being involved in a motor vehicle crash. It is further useful to gain perspective on how that level of risk compares with the perceived risk associated with other potential causes of injury to children in these age groups.

When the parents who participated in the focus groups were asked to name ways in which their children can be injured, for the most part, their responses were extremely consistent. Other than injury in a motor vehicle crash, the types of injury mentioned most by parents include:

- Choking

- Falling/injury during play, especially while using play equipment such as a skateboard, bicycle, or roller blades, or while not wearing appropriate protection

- Drowning

- Poisoning

- Animal/pet bites/scratches

- Fire/burning

- Electrical shock
- Suffocation

(NOTE: In this area, and throughout the discussions, parents were asked to focus on their child(ren) in the age group under study)

To determine the level of concern parents associate with these risks, and hence the relative risk associated with injury from a motor vehicle crash, participants were asked to rate the extent to which they worry about each one as a potential cause of injury to their child. The level of concern expressed by parents varied somewhat, and the degree to which they worry about children age 1 to 4 tends to be somewhat greater than for children in the 5-to-9 age group. For the most part, however, based on participants' responses, parents feel a moderate amount of worry over risks such as those listed above, but while they recognize that they cannot always avoid them, they feel they can do a fair amount to protect their children from these types of injury.

Parents' perceptions of the risk to their child of being injured in a motor vehicle crash were somewhat more difficult to generalize, and differences observed across these groups are highly relevant to this research. Specifically:

- In Groups 1 and 2, involving parents who sometimes restrain their children age 1 to 4 or 5 to 9 in safety belts, the concern expressed by parents focused primarily on the risk of injury if children are not restrained, or are not "properly" restrained. At the same time, however, most parents in these groups indicated that, as with other types of potential injury, they feel confident that they are doing all they can to protect their child. Further, it was evident that these parents believe that what they are doing to restrain their child is relatively effective in preventing injury in the event of a crash.

"I would say child restraint is where I'm most effective in keeping my child safe. I would say I have the most control over that because I can do something."

However, as illustrated in the following verbatim comment of one parent, the confidence these parents feel is often associated with the use of a seat belt alone to restrain their child.

"Now that my daughter is in a seat belt, I feel safer about it. She'll stay in a seat belt and she'll control it and she'll sit properly, but I couldn't find a booster seat"

that worked well. The buckle didn't latch right all the time and she didn't sit properly all the time."

- The nature and degree of concern expressed by participants in Group 3 (parents who primarily restrain their 4-to-9-year-olds in booster seats) was, in several respects, quite different. Overall, it was evident that the perceived risk of injury to children in a motor vehicle crash was considerably greater among these parents. Further, the parents in this group expressed a comparatively limited degree of confidence in their ability to keep their child safe from injury in a motor vehicle crash, regardless of the method of restraint used.

"I don't feel very effective in protecting my child from injury in a motor vehicle accident. You can be as prepared as you can be, but there is nothing saying that you can keep your child safe every time you take him out in the car. You can't. It's just not in your control."

Clearly, this suggests a fundamental difference in the way parents in these groups approach the use of child restraints. In particular, participants in the group of parents who primarily use booster seats for their children age 4 to 9 appear to feel a greater sense of risk in association with the possibility of their child being injured in a motor vehicle crash. Further, these parents expressed far less confidence in their own ability to effectively keep their child safe in a crash, regardless of the type of restraint used. On the other hand, while the groups of parents who use safety belts for their children in these age groups do not necessarily underestimate the possibility of a crash or of child injury, they presented somewhat greater confidence in the protection provided by the restraint used.

METHODS OF KEEPING CHILDREN SAFE IN MOTOR VEHICLES

Parents use a wide variety of techniques to help keep their children safe from injury when riding in a motor vehicle. Among those mentioned most by parents in the focus groups are:

- Use of “proper restraint”
- Proper positioning of the child in the vehicle
- Driving defensively, cautiously, and obeying traffic safety laws
- Setting a safe example for children by using safety belts themselves
- Bringing along a toy or book to keep the child occupied
- Maintaining the vehicle in good working condition
- Maintaining control of children/no fighting, rowdy behavior
- Talking to children about safety in a motor vehicle

Regarding the use of specific types of restraints, in all groups, a variety of different types were identified by parents as the preferred method for their child age 1 to 4 or 5 to 9. In specific groups, it is noteworthy that while there was greater emphasis on the use of seat belts in Groups 1 and 2 (the “Seat Belt Groups”) – and particularly among the parents of children in the older age group – some of these parents also use a booster seat for their child in the age group in question. Likewise, among parents in Group 3 (the “Booster Seat Group”), while participants clearly focused on booster seats as the preferred method of restraint for their 4-to-9-year-old, there was also some mention of seat belts being used for these children. Other methods of restraint sometimes used by parents across all groups include child safety seats and “Safe Fit,” a product that apparently attaches to and helps adjust a vehicle safety belt to fit small children.

Concerning the perceived effectiveness of specific restraints in keeping children safe, it is important to note that parents generally seem to believe that they are doing as much as possible to protect their children. Thus, as mentioned earlier, those who use safety belts for their children age 1 to 4 or 5 to 9 believe it to be the best means of restraining their child. As illustrated in the comment of one parent, below, some are simply not aware of the need or importance of a booster seat for their child, particularly, it seems, when they are beyond the appropriate age or size for a child safety seat.

"I wouldn't give a booster seat a high rating for safety. I don't see any need for it with a five-year-old. I just don't."

Of course, a child's size and weight can be crucial in determining the safest method of restraint, and it was apparent in these discussions that many parents are aware that size/weight guidelines exist for choosing the best restraint.

"I think it all depends on the child. If you have a four-year-old that's 65 or 70 pounds then your seat belt is effective because they're too big for a car seat. I know my three-and-half-year-old is almost 50 lbs. She's the height of a five-year-old."

As is apparent in the verbatim comment above, however, many parents have misconceptions or are uncertain of the specific weight restrictions recommended.

As in the focus groups, the parents who were discussants in the supplementary phase of the research also reported use of a variety of types of restraints for their children, with the use of seat belts alone far more predominant for the older children, age 5 to 9, than for children age 1 to 4. Most of the parents of children in the younger age group typically use a booster seat for their child and qualified for the discussion based on only isolated or occasional use of a seat belt alone. Even among those using a booster seat for children in the older group, the children concerned tended to be on the younger end of the range, with the oldest one age 5. Several of the parent discussants indicated they do use the Safe Fit or similar seat belt attachment for their child.

The supplementary discussions verified much of what was learned in the focus group discussions about parents' perceptions of what is safest for their child. In particular, when it comes to the safest method of restraint, virtually all the parent discussants believe that the method they are using is the safest one for their child at his or her age and size.

When asked to rank the three key methods of restraint – car seat, booster seat, and seat belt – from safest (1) to least safe (3) for their child at his or her age and size, respondents' answers form an interesting pattern across all groups.

- Parents of younger children (Group 1) are clearly divided on whether they believe a car seat or booster seat is the safest method of restraint for their child, but nearly all feel a seat belt alone is the least safe;

- Parents who use or have used a seat belt for their 5-to-9-year-old (Group 2) are also split in terms of their perception of the safest method of restraint, with half saying the seat belt is safest and the other half saying a booster or car seat is safest. Clearly not all feel a seat belt alone is the best method to use, and one of these parents believes it is, in fact the least safe. Most say that a car seat is the least safe.

- All but one of those who use or have used a booster seat for their child age 4 to 9 (Group 3) feel the booster seat is indeed the safest method, with a seat belt overwhelmingly ranked second. They are generally agreed that a car seat is the least safe method of restraint for their child at his or her present age and size.
 - It is noteworthy that the rankings for Group 3 actually reflect one mother's responses for two different children, age 5 and 7. Interestingly, for the 5-year-old, a booster seat was ranked the safest method, while for the 7-year-old, she considers a seat belt safest.

(Respondents' rankings are summarized in the table below.)

Restraint Safety Ranking

Ranking	CAR SEAT Usage/Quota Group*			BOOSTER SEAT Usage/Quota Group*			SEAT BELT Usage/Quota Group*		
	1	2	3	1	2	3	1	2	3
	Total	(5)	(6)	(4)	(5)	(6)	(4)	(5)	(6)
1 (Safest)	2	1	0	2	2	4	1	3	1
2	2	1	0	3	3	1	0	2	4
3 (Least safe)	1	4	5	0	1	0	4	1	0
Mean	1.8	2.5	3.0	1.6	1.8	1.2	2.6	1.7	1.8

*Group 1 = age 1-4/seat belt

*Group 2 = age 5-9/seat belt

*Group 3 = age 4-9/booster seat (one discussant responded for 2 children)

As in the focus groups, it was apparent in the in-depth discussions that parents' perceptions of what is safest for their child is closely associated with the child's size. Even in their rankings, several parents indicated that their child's size was a factor in their assessment. Several commented that while they actually feel a car seat or booster seat is the safest method, their child is simply too big or too tall for such a seat, or the child outgrew the seat they were using. As will become evident, to some extent this also relates to the design of booster seats. While many new designs are now available, several parents noted that at the time their child was ready to make the transition from a safety seat, no appropriate design was available.

"I think a booster seat is safest – one of those seats for bigger kids with a shoulder harness and crotch strap. I don't use a booster because the one we had was too small and there was nothing available at the time. Now it would be like going backwards for him to sit in a booster."

Respondents' comments offer additional insight on what parents think of when they think about the safest method of restraining their child. In relating what they believe is the safest, best way for their child to ride in a car, parents' answers consistently conveyed a number of common points related to safety, including:

- Snug, secure fit: In whatever method they perceive to be safest, parents often referred to the fact that it keeps the child restrained in the most secure manner – “snugly” in the words of one mother. This applies to the desirability of some form of upper-body restraint, as in a 5-point harness booster seat, or the shoulder strap of a seat belt.
- Proper fit for the child’s size: As noted, size plays an important role in parents’ perception of what is safest *for their child*. A car seat or booster seat is often perceived as the safest method – but because their child is too tall or too big, it is not considered a safe alternative. Likewise, some do not consider seat belts the safest method because their child has too much room to move around.
- Child is unable to “wiggle free”: Several parents explained their choice of the safest restraint as one their child can’t un-buckle or squirm free of – a restraint that will keep their child from “jumping around the car.”
- The child’s level of maturity: Interestingly, according to a number of parents, the specific method of restraint that is safest for their child often depends on the child’s level of “maturity.” This generally applies to the use of seat belts and parents’ comfort level as related to the belief that their child is old enough and mature enough to understand the importance of being secured in a vehicle. More important, considering the child’s maturity level and understanding of the importance of safety, these parents believe that the child won’t try to get out of the seat belt or to unbuckle it.

Views on Positioning Children in Motor Vehicles

As noted, when it comes to keeping children safe from injury, the parents who participated in the focus groups clearly recognize the importance of positioning children properly in a vehicle. At the same time, however, it was apparent that parents have mixed and varied perceptions of where is the safest place in the vehicle for their child to sit. As is evident in the verbatim comments below, while most parents are aware that young children should not be placed in the front seat, they are confused about what is the safest place in the back seat. Others have developed their own opinion on the safest place in the vehicle for children, and the decision is sometimes based on specific vehicle design features or the need to accommodate other children in the vehicle.

“There is more danger in the front seat than in the back.”

"This is kind of silly, but I have one in the middle and then I have the other one behind me on my side instead of the passenger side. I just have that fear of making a left turn and having someone hitting me on the side."

"I always place mine away from the gas tank just in case someone should hit the gas tank and that will blow up."

"I always put my son in the right rear because I can always see him in the rearview mirror."

"I don't put mine in the center. I put them on either side because, number one, they fight. I just think if there was an accident, I don't know if there is any logic to this, but they could just fly right through the windshield if they're in the middle."

A more disturbing finding is that some parents simply do not recognize the risk to children of riding in the front seat, or they allow other factors, such as the number of passengers, to dictate where the child is positioned in the vehicle.

"I don't understand how it could be more dangerous in the front seat. You're restrained in the back and in the front. You could go forward and hit your head on the dashboard and you can go forward and hit your head on the front seat."

"Only because I don't have an air bag in front. Sometimes I'll let them sit in the front. It's easier for me to watch her too."

"I put her up front when it's just the two of us because why should she sit all the way in the back. If I'm with my spouse, then the children would be in the back seat. That's not a safety issue, it's just what I do."

"When I have the two little ones with me, I'll tell the five year old to ride up in the front only because I prefer her being in a shoulder strap with a lap belt as opposed to just being in a lap belt in the back. I think she is safer being in the shoulder strap with the lap belt as opposed to being in just one belt."

When it comes to *where* children sit in a vehicle, the findings of the follow-up discussions differ somewhat in that there was virtually no mention of children in the age groups studied ever being permitted to ride in the front seat. While these parents described a wide variety of seating

arrangements for various members of their family, it was apparent that they are generally adamant and unbending about children always sitting in the back seat. Alternatively, if they own a van or station wagon, children may sit in either the middle-back seat or the “back-back” seat. It is noteworthy that, in describing the safest way for their child to ride in a car, these parents often voiced stronger opinions about *where* the child should sit than on *how* the child should be restrained.

More specifically, a variety of perceptions were revealed in parents’ discussion of how they’ve worked this out in their family. In particular:

- As noted, virtually all the parent discussants indicated their children always sit in the back seat (either the middle- or back-back seat if a van or station wagon). The perception that it is not as safe for children to sit in the front seat is strongly associated with the fear of injury from an air bag, but also the fear of a child “flying forward” through the windshield.
 - In the back seat, parents believe children are blocked from the windshield by the front seat, and children are buffered by the trunk of the vehicle from any impact from behind.
- As among participants in the focus groups, these parents had a variety of ideas concerning which side of the vehicle is safer for their child. In particular, positioning a child on either side of the vehicle has many perceived advantages:
 - In many instances, parents who restrain their child with a seat belt position the child on either side of the vehicle because these seats have a shoulder harness, whereas the middle seat usually has just a lap belt. Again, parents generally perceive the shoulder strap as a more *secure* form of restraint for their child;
 - Visibility was cited as another key factor – some parents feel they can see their child better if he or she is seated on a particular side of the vehicle;
 - An advantage for the child is that they are able to look out the window;
 - If there is more than one child, positioning one on either side of the vehicle keeps them separated, thereby reducing any conflicts between children;

- Several parents noted that they insist their child sits on the passenger side because the child has a tendency to kick the seat in front and this was distracting to the parent who is driving.
- Notably, a few parents had conflicting ideas about whether it is safest for children to sit on one side of the vehicle or in the middle. There was a perception among some that sitting next to a door made their child more vulnerable to impact if the vehicle were hit on that side. Thus, they prefer their child sit in the middle – in some cases despite the middle seat having only a lap belt.
- Other reasons for positioning children in specific seats relate to the ease of getting a child in and out of a safety seat or booster seat, or the need to secure a safety seat or booster seat in a particular place in the vehicle.

An important finding uncovered in this follow-up phase relates to the *consistency* of where and how children sit in a motor vehicle. With virtually no exception, these parents indicated that, as a general rule, the seating and type of restraint used by children and other family members is always the same. Concerning *where* children sit, several commented that their children insist on sitting in “their usual spot” in the vehicle and there may even be a conflict between children if one child sits in the other’s usual seat. When it comes to the *type of restraint*, parents repeatedly commented that they won’t put the car in gear or won’t leave the driveway until all are in their proper restraint. Several noted that, in fact, their children do as good a job of enforcing this rule as do the parents, telling adults to “buckle up” if they haven’t done so. Respondents emphasized the importance of following the same *routine* consistently when their children ride in a vehicle. They believe that by doing so without exception as a matter of course, children come to more readily accept the method the parent believes is safest.

“It’s the routine that makes it work. It’s just a ritual so no one questions it. It’s just the way it’s done. We required it from the start.”

Consistency in where children sit – as well as in the type of restraint used – repeatedly emerged as a key theme in this phase of the research.

Children’s Feelings About Where and How they Ride in a Car

In the discussions, parents’ comments on what feelings their children have about where they sit in the vehicle and how they are restrained largely follow their views on the value of

consistency in “making it work.” Specifically, many parents indicated that, while their child may have strong feelings about sitting in “their spot” in the car, for the most part, they simply accept the use of the chosen restraint because “they know that’s just the way it is – it’s automatic.”

Still, distinct differences in the way children feel were evident across groups, with children in the older age group apparently inclined to have stronger feelings about the type of restraint used. Specifically, among parents in Groups 2 and 3 (children age 4 to 9), some admitted their child’s desire to move from a booster seat to a regular seat belt did have some influence on their decision to make the transition. One parent reported the child’s argument that “I’m not a baby anymore”; another noted that her 7-year-old would not want to sit in a booster seat.

Most Important Reasons for Safety Decisions

Considering all the various choices parents have for the way in which they restrain their child and the placement of their child in a motor vehicle, parents were asked what are the most important reasons for the decisions they’ve made and the way they’ve worked this out in their family. Obviously, a number of factors already discussed clearly represent important influences, including:

- The perceived risk of injury from an air bag if the child is sitting in the front seat when a crash occurs;
- Other perceived risks related to the child’s position relative to the point of impact in a crash;
- A restraint that fits the child snugly and keeps the child securely restrained, keeps them from moving around the vehicle;
- The child’s level of maturity and understanding of the concept of danger/risk;
- The child’s comfort.

These and other factors clearly influence parents’ decisions as to where and how their child should ride in a motor vehicle. In identifying the *most important* reason, however, parents emphasized something that cannot be clearly defined. Specifically, it was evident in their answers that parents’ own comfort level – their own *belief* or *sense* that the child is safely seated and secured in the vehicle – seems to be the predominant underlying influence. Parents seem to develop a strong “feeling” as to whether or not their child is safe and secure in a vehicle, and this is clearly a key driver of their decisions.

This “comfort level” is, of course, made up of all the factors discussed so far, as well as things that parents may see in the news or hear from friends or relatives, or the influence of legal restrictions. The overriding response when parents were asked to name the most important reasons for their decisions was, quite simply, “safety.” When probed further, respondents offered such comments as:

“I like to know he’s safe.”

“It’s just what feels right to me.”

“My comfort level is most important.”

“It’s what I believe is safest.”

It’s difficult to say where parents’ perceptions of what is safest originate. However, some sources that have apparently contributed to parents’ comfort level include things they’ve seen on television, in the newspaper or in magazines (especially Parents Magazine), or on the Internet, or what they’ve heard from their pediatrician. Notably, one respondent is reportedly employed by State Farm, and through the firm’s partnership with CHOP in the interest of reducing injury to children in motor vehicle crashes, this mother formed much of what she believes about safety from CHOP updates.

Safety in Other Vehicles

A factor that may contribute to the incidence of children being prematurely restrained in a safety belt alone is children riding in other people’s vehicles, outside the supervision of parents, and where there may be no safety seat or booster seat available. Based on the comments of parents who participated in the focus groups, in the majority of cases, parents do, in fact, maintain considerable control over the type of restraint used for their child, even when the child rides in someone else’s vehicle. Specifically, when asked how they handle situations in which their child rides with someone else, participants overwhelmingly indicated that they require that the child use the same method of restraint used in their own vehicle. Where a child safety seat or booster seat is the preferred restraint, parents frequently see that the seat is transferred to the car in which the child will ride. In those instances where a seat belt alone is the method typically used, parents ensure that their child is “buckled in” in the alternate vehicle. Several parents indicated that they are unwilling to compromise on the restraint they believe is safest – if for any reason it cannot be accommodated, the child reportedly doesn’t make the trip.

“No matter whose car they’re in or where they’re going, it’s back seat, seat belt.”

"We have an extra car seat that we use to take a neighbor's child or they take our child. I won't let my son and neither will my wife let him ride without having a car seat."

"I have several different things I provide and I make sure before they go anywhere. I try to control the situation as best as possible. I always make sure that I give my son's booster seat to the person who will be driving."

The findings of the follow-up discussions were generally consistent with those of the focus groups when it comes to children riding in other cars. Most of these parents indicated that, in fact, it is a rare event for their child to ride in someone's vehicle other than theirs or without a parent present. Not surprisingly, this seems to be especially true for children in the younger age group. When they do ride in others' vehicles, as in the focus groups, respondents generally indicated that they require that the child use the same method of restraint used in their own vehicle. This frequently involves transferring a booster seat, or coordinating with the other driver as to how the child will be restrained.

It is worth noting, however, that, especially for those children typically restrained with a seat belt alone, some parents simply "assume" their child buckles himself in when riding in others' vehicles. To some extent, this assumption relates back to parents' belief that the consistency of using a seat belt makes this "automatic" for children. It also goes hand in hand with the belief among several parents that a certain level of "maturity" is associated with children being graduated to a seat belt – a maturity that indicates their child is ready to do it on his own.

There are, of course, occasions when a child riding in a car other than the parent's or outside the supervision of the parent may not be restrained or is restrained improperly. However, based on the comments of parents in this research – who almost never permit their child to ride without the preferred method of restraint – this does not appear to be a major contributor to the problem of children being restrained prematurely in a safety belt alone.

PERCEPTIONS OF SPECIFIC CHILD RESTRAINTS

Safety Seats

Virtually all parents who participated in the focus groups reportedly used a child safety seat for their child when the child grew out of an infant seat, and some indicated that they still use a safety seat for their child age 1 to 4 or 5 to 9. Overall, the parents in this study were quite favorable toward the use of child safety seats, naming a number of positive features, including:

- The child is well restrained: Parents like that the child has limited mobility in a safety seat. It makes them feel secure that the child is protected from injury;
- There are fewer distractions for the parent/driver: Some parents indicated that knowing the child has limited mobility, they feel less compelled to constantly turn and check on the child's activity;
- The child is more visible to the parent/driver and the child can see out the window: A safety seat raises children up so they are able to see out the window of the vehicle, a feature that, according to parents, is preferred by the child. Further, when the child sits higher, it makes it easier for the parent to see the child in the back seat.

These attributes are expressed in parents' own words in the following examples of their comments:

"I like the peace of mind. I just feel safer if they're in a little more protection than just a seat belt. With a nine year old you can't exactly do that, but until they grow out of that car seat, they ride in the car seat."

"You can see the kids because they sit up higher. They have more of a view."

"You just feel safer. They can't be moving all over the place."

"It keeps me from turning around and saying, 'No, don't do that' or from having to stop."

Without question, the key disadvantage parents associate with car safety seats is the hassle and inconvenience of moving and installation. In their own words:

"They're bulky."

"It's a pain in the butt big time for me."

"If it's raining, forget it, you're soaking wet."

"It's hard to move and install depending on the car."

A more important aspect of installation relates to ensuring that child safety seats are installed properly. A number of parents expressed concern over their uncertainty as to whether or not the seat is correctly installed.

"It's often a guess about whether or not you really did it right. There is no picture on the thing that tells you what it really should be like."

"You could think you have it in tight and the next thing you go around the corner and the seat swings out."

Obviously, if child safety seats are not installed correctly, this increases the risk of injury to the child. It was apparent from the comments of parents participating in this research that better information on the proper installation of child safety seats is needed.

Another disadvantage cited by a number of parents in association with child safety seats is that it is awkward and uncomfortable for the child when the child is wearing a bulky winter coat. Some parents also disliked it that when children fall asleep in a safety seat, the child's head falls forward.

Understanding the reasons why parents switch their children from car safety seats or booster seats to a safety belt alone is, of course, a critical aspect of understanding the problem of premature graduation. When participants were asked why they stopped using their child safety seats, the explanation was quite simple: children simply outgrew them. This not only makes it more difficult for the parent to place the child in the seat, but makes it unpleasant for the child, as well.

"When they start to get too big, it's, 'Do we have to?' It got uncomfortable for them."

For the most part, with only a few exceptions, aside from the child's discomfort when they begin to outgrow the seat, parents indicated that their children liked (or still like) riding in a safety seat.

Booster Seats

When parents in these group discussions were asked how they feel about booster seats for their child age 1 to 4 or 5 to 9, their opinions were far more varied than those expressed about child safety seats. Clearly, understanding the reasons behind parents' varied perceptions of booster seats may represent a critical element in gaining a better understanding of the premature graduation of children to safety belts alone. Key questions to consider include, why

do some parents use a booster seat when others move the child into a seat belt alone, and what factors drive parents to make the switch from a safety or booster seat to a seat belt alone? This section looks at parents' feelings about and experiences with booster seats and the circumstances in which their child was first graduated to a safety belt alone.

Not surprisingly, those who are currently using a booster seat for their 1-to-4-year-old or 5-to-9-year-old had a number of positive things to say about this form of restraint. In particular, as with child safety seats, those who use booster seats like that they keep the child well restrained with limited mobility. Also, as with child safety seats, booster seats position the child higher in the seat, allowing the child to see out the window and making it easier for the parent to see the child in the back seat. Because booster seats position the child so vehicle safety belts fit the child correctly, it also makes the child more comfortable in that the seat belt doesn't cross the child's face or neck.

At the same time, some parents had almost nothing positive to say about booster seats, saying either that they were *too* restraining for the child or they give the child too much mobility.

"There's no happy medium. It's like they're totally restrained and they're agitated and they're moving all around or they're too free and they start taking everything off."

Notably, it seemed a substantial amount of the variability in participants' perceptions was directly related to the high degree of variability between specific designs and brands of booster seats. Further, it is important to emphasize that users as well as nonusers expressed many criticisms and concerns about the booster seats that are currently available on the market.

Regarding specific designs, some parents were favorable toward the shield-type seat, which is used with lap belts only. Others feel this offers little protection to the child, gives the child too much mobility, or makes it too easy for the child to maneuver out of the seat. The five-point harness design is preferred by some parents, who like the protection it provides to the child's upper body. Others were either unaware of this design or found it too restraining for the child or too difficult to use. Parents also voiced opposing opinions on the safety/booster seats built in to some cars or minivans.

Difficulties with installation remain a key complaint surrounding booster seats and it is particularly noteworthy that several parents indicated that they were unable to find a seat that could be installed in their vehicle.

"I couldn't figure out how to get it to work with my seat belts in my car."

“We tried to put a booster seat in my car, and because of the lap belt with the other belt, it didn’t work.”

Further, as with child safety seats, parents often indicated that they’re never really sure if the seat is installed correctly.

“We don’t know really how to install the booster seat. We read the instructions with the one we’re using and hope that we’re doing it as best as we can.”

“I’ve heard that 80% of parents don’t install them properly.”

Many parents who participated in the focus groups indicated that they rely on the information and instructions provided with the booster seat they buy. As expressed in the following comment, it appears some improvement is needed in this area.

“I guess it depends on the manufacturer, how clear the instructions are. I think a lot of people probably don’t read them at all. They’re 50 pages long. The instructions are not very clear all the time.”

It was very apparent that a great deal of confusion exists among parents as to the various booster seat designs available, the safest, most appropriate design for their child, and how to properly install a booster seat in their vehicle. Notably, for some, this may have motivated the premature graduation of their child to a safety belt alone.

“I went straight to a seat belt. We tried a booster seat and couldn’t get it to work in my car so we said the heck with it.”

An interesting observation worth highlighting in this analysis concerns parents’ general level of knowledge about booster seats. Specifically, as has already been observed, parents who participated in the “Booster Seat Group” seemed to demonstrate a greater perception of the risk to their child associated with injury in a motor vehicle crash than did those in the “Seat Belt Groups.” Another general observation is that parents who participated in the group of booster seat users were clearly better informed overall about booster seats (designs, associated risks, installation, etc.) and more proactive in seeking information about their use – from public service organizations, police, parents’ publications, and product manufacturers. This may have implications for further investigation of factors associated with premature graduation.

Specifically, identifying factors that tend to characterize those parents who are likely to be better informed about booster seats and the risks associated with premature graduation to safety belts may be useful in targeting information to less informed parents.

Another deterrent to the use of booster seats lies in the perceived risk some parents associate with the seats. More than once, parents expressed concerns regarding the security of the latches on a booster seat, or of a particular design, or they described experiences in which a booster seat shifted or actually slid out from under the child, making the safety of these restraints doubtful in their minds. Clearly, this represents another factor that could affect parents' level of comfort in using booster seats and potentially prompt their child's graduation to a safety belt.

"I was always concerned that the belts, even with the clips, weren't snug. It just always scared me because with the belts in the car, you just pull them across and sometimes if you pull it too much you can't snap it so you have to start the process over. But it always worried me, are they going to grab or are they going to give."

"We tried a couple of different versions of booster seats and I found the lap ones to be unreliable with the latch. The latch would break and it was harder to know that the seat was actually secure in the car. There was more shifting."

"I had a family member that was in an automobile accident and the child that was in the car seat was fine. The one in the booster seat, the booster seat slid out from under the child and the child wasn't killed, but it broke his jaw."

"I don't think boosters are as safe as the standard car seat. I don't think they're as safe. A booster seat is they're just sitting. Their upper trunk is left to just... In a head-on collision, that kid is going to have whiplash big time."

Parents also expressed some of the same complaints they had with child safety seats with respect to the child's discomfort with a bulky winter coat, or when the child falls asleep in the seat.

From the child's perspective, according to parents, some children had "no problem" with the transition from safety seat to booster seat, or even viewed it as a step up. Other children, however, apparently viewed the booster seat as a step down, as described by one father in the comment below.

“My son used to complain because he couldn’t do it himself, because of the way the thing was configured. When he was in the car seat, he could do the car seat himself and then when he moved up to the booster seat, he had to have someone buckle him in so he thought that was a step down instead of a step up.”

The question of whether children’s perceptions of booster seats are influenced by others such as peers or siblings was also raised in these discussions. Based on the feedback of participants, however, it seems such influence is relatively limited.

Concerning the first time parents made the transition from a safety or booster seat to a safety belt alone, the child’s size again emerges as a key factor. When asked what first motivated the use of a safety belt alone, most parents indicated that their child had become too big for a booster seat. It is important to note, however, that parents’ perceptions of when a child is “too big” are often inconsistent with recommended best practices for child restraint, and this may represent a key element in understanding the problem of premature graduation. Specifically, according to parents, a child may be too big when the seat or the belt becomes “too tight” or the child is cramped or uncomfortable in the seat being used. Others seem to have a clear weight parameter in mind – when a child reaches a specific age or weight, they are big enough for a seat belt alone. Notably, while perceptions vary, a weight of 40 to 45 pounds seems to be the point at which parents most often think the transition is appropriate.

Another motivation for switching a child to a safety belt mentioned by several parents concerns the need to accommodate another child riding in the vehicle – typically a child that is about the same size or smaller than the parent’s own child. According to several parents, in a situation such as this, when no second booster seat is available, either no one rides in the booster seat so all children feel “equal,” or the other child is placed in the booster seat. A variety of other situations involving an emergency or other unanticipated circumstances were also described as what prompted parents’ first use of a safety belt for their child. Notably, once the transition is made without incident, as expressed in the verbatim comments below, parents seem to lose sight of the risk of injury and may be inclined to continue using nothing more than a seat belt for their child.

“I think the first time we did it, it was an emergency situation. My daughter had to be picked up at school by somebody who didn’t have a car seat or a booster seat and she was fine and we said, ‘That worked,’ and we knew that we could do it again.”

"I needed a ride somewhere and I had no other choice. My husband had the car. After the first time, it was much easier. And you figure how easy it is so each time after that, the car seat ends up having a doll sitting in it."

To some extent, it was also evident in the parents' discussions that the child may resist going back to a booster seat once the initial switch has been made.

Many of the same findings regarding parents' perceptions of and experiences with booster seats emerged from the in-depth discussions. Once again, some parents – especially those who are currently using a booster seat for their child – cited a number of things they like about these seats. Advantages mentioned include:

- **A sense of security:** The booster seat they use keeps the child well restrained with a "snug, secure fit." One parent noted that it keeps her child from "jumping around the car." One seat belt user noted that she liked knowing that, when her child was in a booster seat, he "couldn't wiggle out of it."
- **Ease of use:** Some noted that the booster seat is easier to use than a car safety seat, and they like that the child can climb in and buckle it themselves.
- **Child comfort:** Several commented on the added comfort for their child of a booster seat, and because it raises the child up, the child can see out the window.

These same perceived advantages were also among some parents' criticisms, however, and it is noteworthy that booster seat users and nonusers alike cited a number of disadvantages associated with these seats. Among parents' complaints were:

- **Lack of mobility:** While some parents like that the booster seat they use or used kept the child secure, others complained that the child's mobility is too limited in a booster seat. An example frequently cited was when the child drops a cup of juice or a toy, they can't reach down and pick it up when in a booster seat.
- **Difficult to use:** Some parents reportedly found it difficult to get the child into and secured in the booster seat.

- Child comfort: Parents who were discussants also expressed some of the same complaints as were heard in the focus groups with respect to the child's discomfort with a bulky winter coat, or when the child falls asleep in the seat.

Notably, as in the focus groups, many of the attitudes expressed by discussion respondents concerning booster seats are clearly associated with specific booster seat designs. It was evident from their comments that the specific design of a booster seat can have a significant impact on how parents view them – as well as their perception of how safe their child is when restrained in a booster seat. From a positive standpoint, designs that parents particularly like include:

- Five-point harness: Parents' favorable comments on the security offered by a booster seat often related to their use of the 5-point harness booster seat. As noted previously, upper-body restraint was identified as an important element in what many parents perceive as safest for their child. Several parents noted the peace of mind they feel with the 5-point harness, saying they know their child is "tightly restrained."
- High-back booster: The type of booster with a high back was also praised by several parents, saying this design supports the child's head and protects the child from neck injury in the event of an accident. From a comfort perspective, the high back also supports the child's head from "flopping forward" when the child falls asleep.

On the negative side, discussion respondents highlighted many of the same *safety* concerns about booster seats that arose in the focus groups. Notably, these concerns seemed to arise more from current seat belt users than from others, and in some cases, they apparently influenced the parent's decision to graduate the child to safety belts.

- More than once, these parents described experiences in which a booster seat moved around on the seat, making it seem unsafe as far as restraining the child securely.
- Several noted they felt insecure using a booster seat that has only a lap belt. This design offers no upper-body restraint, no neck support – for safety as well as for the child's comfort, keeping them from slumping forward if they fall asleep – and some parents worry that the child can "fly forward" through the windshield.

- There was also some mention of instances when parents were unsure the buckle on the booster seat was locked in place.

Several parents' verbatim comments clearly convey their concern for their child's safety with some booster seats. Notably, the following comments were all made by parents who currently use a seat belt for their child age 1 to 9.

"The one I had – a Fisher Price seat – didn't seem secure. It moved around and it seemed like he could fall out. It had only a lap restraint and it did not seem safe. It kept sliding and I felt like he could fly forward."

"It was always tipping over."

"It raised him up above the back of the seat and I worried about his head with no support."

"I used the booster for a short time, but it didn't seem safe."

Perceived Purpose of Booster Seats

Interestingly, there was considerable confusion among the parent discussants when it comes to understanding just what a booster seat is designed for. When asked what they think is the primary purpose of a booster seat, a number of parents admitted they are not really sure. Not unrelated to specific booster seat designs, some parents believe these seats are primarily intended to raise children up so that the seat belt fits them properly, while others believe that they are actually a form of restraint, providing upper-body and neck and head support. Most of these parents had the general idea that booster seats are supposed to add to the child's safety when riding in a motor vehicle, but as illustrated in the comment of one mother, they weren't exactly sure how.

"To be honest, I never really got it. It just boosts them up – it's not as good as a car seat."

Another interesting perspective on the purpose of booster seats was expressed by a number of parents in this phase of the research. Repeatedly, parents noted that booster seats are designed to be a transitional method of restraint for children when they are too big for a car safety seat, but not yet old enough or big enough to use a seat belt alone.

"It's a stepping stone in the child's maturation."

Focusing on the transition from a safety or booster seat to a safety belt alone, parents who completed these discussions were questioned as to how they knew or will know the right time to make the change. In their answers, the child's size is once again identified as a decisive factor. More specifically, parents in all groups cited the following as factors that indicated to them – or will tell them – their child was/is ready to “graduate”:

- **Size/weight:** As noted, the child's size is clearly the primary influence on parents' decision to move the child from a safety or booster seat to a seat belt. Most of these parents indicated they made/will make the switch when their child is big enough, or becomes too big for a booster seat. This is determined by a variety of criteria, including weight guidelines provided by booster seat manufacturers or the way a regular seat belt fits the child – i.e., it “doesn't cut across the child's face or neck,” or it just “seemed to fit better” or it fits the child comfortably.
 - Notably, the law in the respondents' state also emerged as a potentially influential factor, with several parents referring to what is indicated by law as a criterion that affected/will affect their decision.
- **Age:** To a lesser extent, age was mentioned as a contributing factor by a few parents – driven primarily by their perception of the state law.
- **Maturity/understanding:** Once again, the child's level of maturity was identified by a number of respondents as a factor that can have a significant influence on when the child is graduated to a seat belt. According to parents, this encompasses a variety of considerations, including:
 - The child's ability to buckle the seat belt himself;
 - How the child behaves in the car – that he sits still and won't try to unbuckle or get out of the safety belt;
 - Similarly, that the child understands the concept of safety and the need to wear a seat belt – again related to knowledge that the child won't try to remove the belt;

“I knew it was okay when he was old enough to comprehend the concept of danger and to understand the importance of wearing his seat belt. He understands that he has to stay in the seat belt.”

Notably, a few parents indicated they will rely on the recommendation of their pediatrician in determining when the child is ready for such a change.

It is also noteworthy that a few parents who have already graduated their child to a seat belt indicated that their child had “pushed” for the transition, since friends or an older sibling were already using a seat belt. At least one parent admitted this did have some influence on their decision to make the switch.

All of these things apparently contribute to the parent’s overall “comfort level” – a critical element in parents’ choice of restraint, and the changeover to a seat belt alone for their child.

When it comes to the possible influence of friends or relatives on the parent’s attitudes toward the booster seats, virtually none of the parent discussants in this follow-up phase reported ever being challenged or asked to explain why they use a booster seat for their child.

Safety Belts

When asked to consider the positive aspects of using a seat belt alone to secure their child age 1 to 4 or 5 to 9, many parents who participated in the focus groups immediately named a number of advantages, including:

- Convenience/ease of use and that children can secure themselves without the help of the parent;
- Convenience from the standpoint that seat belts come with the car, with no purchase or installation required;
- Because no purchase is required, seat belts offer a cost advantage;
- Comfort for the child – the child feels less restrained or confined, especially when wearing a heavy winter coat.

Notably, safety was also mentioned by at least one parent as a perceived advantage of using a safety belt alone for children in the age group in question. As observed previously, some parents clearly believe this to be the safest method of restraint for their child.

According to some parents, some of the same factors cited above are also recognized as disadvantages associated with the use of safety belts alone for their children. In particular, when a child can get in and out of the safety belt without help, they may unfasten it too soon – before the vehicle has come to a complete stop or after only a brief stop when the vehicle is moving again. Another disadvantage mentioned by one parent in the comment below represents a key indicator that a safety belt alone is being used prematurely for a child. Clearly, if the seat belt is uncomfortable for the child because of improper fit, this should be a signal to the parent that it is not the appropriate restraint.

“To use it alone, especially for my daughter, it cuts across her neck so it’s not very comfortable. And it’s easier for them to get out of.”

As with other forms of restraint, most parents indicated that a child’s preference for a seat belt alone does not affect the method of restraint actually used. However, the potential influence of children’s resistance to a booster seat or preference for just a seat belt cannot be overlooked. The following comments illustrate the potential for a child’s preference to influence their premature graduation to a seat belt alone.

“My child prefers just the seat belt. She is five. She gives me a hard time every time I try to put her in the booster seat.”

“My daughter loves it. She thinks she’s a big shot. It’s a treat.”

“My son is seven and sometimes he doesn’t want to feel like a baby. If you have older children, say nine and ten who are with you and they are in a seat belt, he’s going to want to be in a seat belt.”

In the follow-up discussion phase, parents also expressed mixed views on the advantages and disadvantages of using a regular seat belt for their child, regardless of the type of restraint they are currently using. Advantages mentioned by these parents include some of those identified in the focus groups. Specifically:

- **Ease of use:** Seat belts are perceived by some as easier for both the child and the parent in that children can secure themselves (in most cases) without the help of the parent. (Most of those who use a seat belt for their child say the child buckles it himself, and started doing so at age 4 or 5.)

➤ One parent also referred to the ease of having no “equipment” to worry about, calling it a “liberating” experience when her child started using a seat belt. Another mother commented on how she “looks forward” to the time her child can use a seat belt as she views the booster seat as a “nuisance.”

- Comfort for the child: That a seat belt is less bulky when a child is wearing a heavy winter coat re-emerged in these discussions as an advantage associated with this form of restraint.
- Greater mobility: Some parents like that their child has more mobility in a seat belt than in a safety seat or booster seat. Parents again cited the example of a child being able to reach down for a toy or other item if dropped.
- Safety/security: From a safety standpoint, several parents like that a seat belt keeps their child secured in the vehicle – keeps the child from “jumping around the car.”

Notably, just as some parents see *no* problems or drawbacks to using a seat belt for their child, others see *no advantages*, and expressed concerns about how safe this type of restraint is for their child. Such concerns were heard primarily – but not entirely – from booster seat users. Notably, it is apparent in some of these concerns that the child is, in fact, *not* yet ready for a seat belt alone. Specifically, these parents noted:

- The child is “too small” for a seat belt alone, with room to move around;
- Likewise, the child has too much mobility (“she can get up and sit on her knees”) – a clear indication of improper fit;
- The harness cuts across the child’s face – another indicator that the child is not yet ready for a seat belt;
- Notably, for some, the parent’s concern for the child’s safety – and constantly checking to see if the child is secure – could represent a distraction for the parent who is driving.

SITUATIONAL INFLUENCES

Throughout these discussions, a number of factors related to specific circumstances were identified as potential influences on how parents choose to restrain their child age 1 to 4 or 5 to 9, as well as where they position the child in the vehicle. In particular, the presence of other children, the design of the vehicle, and the child's size have all been cited as factors that may affect how and where parents restrain their child in a motor vehicle. In a more focused discussion of how parents decide what method of restraint to use, participants spontaneously identified a number of other contributing factors, including the length of the trip, which vehicle is being driven, availability of a safety seat or booster seat, convenience, and the need to accommodate an infant seat or safety seat for other children. The following comments illustrate the effect these types of situations can have on parents' child-restraint decisions.

"My daughter plays with several kids from her school and if I'm picking up or dropping off, she always has to sit in her car seat because I may have two other car seats in my car or I may just have another child that is much smaller than her that may need the car seat."

"It depends on if we're driving far. I know she is not going to want to sit still for an hour drive. She is not going to want to be restrained. And if I know we're only going five minutes, I know she can be quiet for five minutes."

"It all depends on her. Will she sit still or not. She is a lot more free in her seat belt."

"In my case, if it's a short trip, like I'm going to drop him off in the morning, you just get in and strap him and just get out and go to the neighbor's house."

"I've given up my daughter's car seat for someone that was smaller."

"For me, in my car I've got the car seat, my wife has the booster seat in her car. If I drive her car, it's there. If she drives my car, it's there."

"If I'm going local, like 7-11 or real quick somewhere, she sits in the back seat. If we're going on a long trip, she's in her booster seat."

"Mine is based on availability. My wife has the booster seat in her car and she wasn't there and depending on which child is with me, the booster seat was there for my son and my daughter will just get in the back with the seat belt."

In an effort to assess the potential impact of a number of specific factors in parents' decision as to which type of child restraint to use, parents were presented with a series of hypothetical scenarios in which the characteristics of several different motor vehicle trips with their child are described. For each scenario, parents were asked what method they would choose to restrain their child in the vehicle. The characteristics of each trip described included variations on:

- The length of the trip: 5 minutes, vs. 30 minutes;
- Weather: sunny and clear vs. rainy and gray;
- Purpose of trip: grocery shopping vs. a check-up for the child at the doctor's office;
- Parent's mood: relaxed and happy and in no particular hurry vs. running late/a very busy day;
- Child's mood: relaxed and happy vs. fussy and fidgety;
- Number of passengers: parent and child only vs. parent, child and two other children.

For the most part, parents indicated little variation in the type of restraint they would use for their child, regardless of the characteristics of the trip described. In a few instances, however, some of the factors described did impact parents' choice of restraint. In particular:

- As mentioned previously, the length of the trip can clearly be a factor in parents' choice of restraint:

"I would use just a seat belt if it was a short trip."

- According to some, the weather may also affect parents' choice of restraint:

"If the streets were wet I would feel a little bit more safe in a booster seat."

"I would say booster seat. I don't know why. The weather does make a difference for me. I just try to be more safe. The weather condition does have an effect on when I'm driving."

- Some parents indicated that the parent's mood contributed to the choice of restraint:

"If I am running late, she is definitely in a car seat."

"She is definitely in a booster because if I'm running late or I'm busy because my driving may change according to my day. If I'm five minutes away and I'm in a hurry. I can't keep my eyes on her and the road at the same time if I'm in a hurry. If I'm taking my time and I don't have to worry about where I'm going, I can stop at a light and not worry."

- As discussed previously, several participants agreed that the presence of other children in the vehicle can have an impact on the type of restraint used:

"It all depends on the sizes and ages of the kids. I have given up my daughter's car seat to a small child."

"If one of the other children was my son, and the other one was a child my daughter knew, I'd put the two little ones in the back and my son would sit up front with me. So it kind of depends."

Parents' rationale for considering a booster seat or safety seat over a seat belt alone in bad weather or when the parent is rushed or running late is of particular interest. According to some parents, these factors could affect their driving and thus increase the risk of a crash. It is particularly noteworthy that when they believe there is an added risk of a crash, some parents will choose to secure their child in a safety seat or booster seat as opposed to only a seat belt. This raises a question that cannot be answered based on this research alone: if a parent associates a safety seat or booster seat with improved safety and reduced risk of child injury, why doesn't the parent use these means of restraint in all circumstances – i.e., regardless of weather conditions or mood?

Of course, the perception that the risk is affected by the distance traveled – that, there is less risk on a short trip than on a longer trip – is equally difficult to explain. Parents themselves recognized the lack of reasoning in this rationale, as several commented that many crashes do,

in fact, occur only a short distance from home. Clearly, understanding parents' perceptions of risk and how they act on those perceptions is again emphasized as key to understanding their child restraint choices.

With regard to using the same method of child restraint regardless of these or other situational factors, some parents commented on the importance of maintaining consistency. Several emphasized that they never compromise on the method of restraint used for their child. In their perception, this not only maintains the highest degree of protection from injury for their child, but also makes the specific type of restraint a non-negotiable issue for the child as well the parent.

"You do the same thing all the time. They just automatically do it. And it's easier for you. Once in a while they'll ask to sit in the front and I just say no. Just because. That's what kids do. They want to try."

"I just try to make the same decision no matter what. I don't always have a choice because I have to deal with what vehicle is there and what car seat is there. I try to make the best decision and if I had two other children to take to the store and I don't have restraints, I don't go. But that's my choice."

The potential impact of specific circumstances on where children sit in a motor vehicle and the use of specific types of restraint was also discussed with parents in the in-depth discussions. As in the focus groups, for the most part, parents who were discussants generally reported that situational factors (such as the length of the trip, the weather, the number of passengers, etc.) or unplanned or unexpected car trips have little or no influence on the type of restraint used.

In the majority of cases, these parents indicated that there are virtually no exceptions to their established seating arrangement and use of child restraint – regardless of the number of children or adults in the car, the length of the trip, or the weather. When asked how they've managed to make this work so well in their family, these parents once again focused on consistency as a critical factor, with most saying if they can't accommodate the situation safely (with the form of restraint perceived as safest), they don't make the trip.

Concerning the potential for a child's mood to influence parents' actions, most indicated that their children simply accept the parent's decision about the type of restraint used without question or incident. They emphasized again that there is virtually never any question about where or how their children ride in a vehicle.

"You just put them in and strap them in and let them cry. I just do it. It works for me."

"If my daughter refused to sit in her booster seat, we're just not going. It's just the way it is."

"Sometimes it's difficult, but I won't leave unless it's done. I haven't backed down. It's just the way it is."

There were, of course situations that required parents to make exceptions to their usual practice. Most of these exceptions involved inconsequential shifting of children from one position in the vehicle to another (always excluding the front seat). However, some of the situations reported can offer additional insight on circumstances that may lead parents to do something other than what they think is safest for their child – and that may put children at increased risk of injury when riding in a motor vehicle. In particular:

- One mother who typically uses a booster seat for her 4-year-old, but sometimes uses a seat belt, noted that she would *definitely* use the booster seat on a longer trip because she'd "feel safer."
- An unexpected need for one respondent's husband to pick up their child from school in his car (with no access to a booster seat) led to the use of a seat belt alone for the child. (Notably, in this instance, the respondent – unaware of the situation – "threw a fit" when she heard about it.)
- If transporting additional children, a few parents indicated that they may place one of them (generally the oldest) in the middle of the back seat, with just a lap belt.
- One parent reported an isolated instance of her 4-year-old sitting in the hatchback of their two-seater (with no restraint) on a "short trip" to pick up a pizza. She also expressed considerable regret over having allowed this exception.
- Another parent reported that she puts her 4-year-old in only a seat belt, as opposed to her regular booster seat, when she drives her son down the street to the bus stop each day.
- In another reported incident, the presence of more children resulted in one child sitting on an adult's lap in a seat belt for a "short trip."

Clearly, parents do make exceptions, and while they may be rare and isolated instances, these exceptions can result in injury to a child in the case of a crash. The potentially important role of consistency in parents' use of the proper restraint for their child is clearly supported by the findings of both the focus groups and the supplementary discussions. Promoting consistency in the restraint method(s) used for children could represent an important aspect of educating parents on the dangers of premature graduation to safety belts alone.

AWARENESS AND PERCEPTIONS OF LEGISLATION

It was found that the parents who participated in the focus group among booster seat users were considerably better informed than those in the seat belt groups about booster seats, and about child restraint practices in general. Consistent with this observation, participants in the booster seat user group also appeared to have somewhat more awareness of the laws in their state regarding child restraint.

- The law in Pennsylvania (Group 3 – “Booster Seat Group”) states:

Children under age 4 must be restrained in a child safety seat. A seat belt may not be substituted for this age group.

- The law in New Jersey (Groups 1 and 2 – “Seat Belt Groups”) states:

Children under age 5 must be restrained in a child safety seat. However, a seat belt can be substituted if the child is 1½ to 5 years old and seated in the rear seat.

For the most part, parents who participated in the group of booster seat users indicated at least a general awareness of the legislation in Pennsylvania regarding child restraint. Among the parents participating in the seat belt groups, however, awareness was somewhat tentative, and a bit vague, with several indicating the belief that the law designates a combination of age and weight requirements.

“As far as kids, they have to have some restraint. What the differences are, based on the age or weight, I don't know the specifics. I do know that there is criteria for using car seats. I know there is some guidance out there. There is a lot mandated, but I don't know what the specifics are.”

"I know that there is an age, a weight or a height or some combination of one, two or all three in order to have the kids in the seat belts."

When these parents learned of the actual law in New Jersey, most admitted they were not aware of it, and many were surprised to learn that no size or weight parameters are designated.

For the most part, all parents who participated in these groups agreed that the current laws in their state are not enough to effectively protect children from injury in a motor vehicle crash. Specifically, among the opinions expressed was the view that the law is too lenient, too vague, and too general. Several commented that the laws should include size and weight requirements since children of the same age can be very different sizes.

When asked if they thought stricter legislation regarding child restraint would change people's behavior and increase the use of the proper restraint, parents' responses were mixed. Several indicated, however, that with enforcement, they believed a law that mandates more specific, more rigid requirements for child restraint would likely have some positive effect.

"You'll probably change a few people's habits, and I think gradually, more and more people will come aboard with it."

Legislation aside, however, it was apparent in these groups that many parents rely on other sources of information more than the law to guide them in choosing a type of restraint for their child and to determine at what point their child should be graduated either to a booster seat or to seat belts. It was evident throughout the discussions that parents are, at least generally, aware that a key factor in choosing the best form of restraint for their child is the child's size and weight. And while parents may not be well informed as to the recommended size and weight parameters, based on this research, many intend to follow what they perceive as the appropriate standards in restraining their child, regardless of what the law does or does not mandate.

"My kids at five, looked like three. They were small and they're still small. I don't know what the law is at all, but I just go on when they get too big for the car seat then they move up to the next thing and when they're too big for that, then they move on to the next thing."

“It doesn’t matter what the law says, I will restrain my child because I believe in this with my whole heart and soul, for his own protection and my own peace of mind. I couldn’t quote what the particulars are, and to me it doesn’t matter. What does matter is that I’m taking very definite steps in order to protect my child.”

“I think the law says forty pounds you can go into a seat belt. My wife and I have already discussed that. Once she has outgrown the car seat, we’re going to a booster regardless. I don’t think we’re going right to the belt just yet. First of all, she’s a good size kid, but she’s not huge.”

“If it’s safer to be in the back seat in a whatever, a booster seat or whatever I feel is safe and it’s not the law, I don’t really care. If they say that all kids have to be in the front seat, and I think that’s stupid, well, I’m not going to do it. I don’t really care.”

Clearly, if communicated and enforced, stricter laws mandating more specific forms of child restraint based on size and/or weight may help reduce the rate of premature graduation. At the same time, however, it is apparent that many parents rely on sources other than legislation in decisions regarding child restraint, and they intend to use the safest form of restraint for their child *regardless of what the law in their state mandates*. This clearly underscores the importance of effectively communicating to parents what are the recommended best practices for child restraint.

As in the focus groups, most parents who were discussants had some awareness of the law in their state (primarily NJ) concerning the use of restraints for children. Most, however, had only a vague awareness of what the law specifically requires. In trying to recall the law, respondents cited a variety of age and weight requirements for children to graduate from a car seat to a seat belt alone. The most common perception among respondents is that the law requires a car/safety seat for infants until age 4 or until they reach 40 pounds, at which time a seat belt is required. Some think the law designates that children up to a certain age may not sit in the front seat if there is an air bag. One mother noted that she believes a booster seat is *suggested* at 40 pounds, but for the most part, these parents recognized that there are no legal requirements concerning booster seats.

Impact on Safety Decisions

Asked if they think the law affects their decisions about where and how their child rides in the car, most discussion respondents indicated that the law has/had no effect. Specifically, virtually all indicated that they would be restraining their child as they do, regardless of whether

or not the law required restraint for children. They emphasized again that it is their “comfort level” with the safety of their child that is what drives their decisions.

“It’s a personal thing. I’d do what feels right to me anyway.”

“I don’t want a ticket, but safety comes first.”

“I would automatically put him in a seat belt anyway.”

It should be noted, however, that in most cases, the method of restraint used by these parents is, in fact, in compliance with the law – that is, the law does not require *more* than what parents are already doing, or something different than what they are doing. Thus, while it seems evident that most parents will restrain their child in some way regardless of legislation, the question remains as to how legislation could affect *the way in which* they would restrain their child when the child outgrows a car seat. Notably, based on the comments of some parents, if the law required booster seats for children up to a certain age, it could have a significant impact on the use of these seats.

“I’d use seat belts regardless of what the law says. But I’d go to a booster seat if the law required it – I’d make the change back to a booster. I wouldn’t want to get a ticket.”

Several other observations can be made based on the comments of parents who were discussants. In particular, their comments suggested other ways in which a law requiring booster seats might impact parents’ decisions:

- Some parents indicated that when their child outgrew his car seat, the law did influence their decision to graduate the child to a seat belt. Similarly, some noted that knowing the law allowed children the age of their child to ride in a seat belt made the transition easier.
- One seat belt user noted that the fact that the law *requires* that her 5-year-old be restrained in a seat belt makes it easier to make the case for using a seat belt to her child. If he should resist or complain, she simply answers, “*It’s the law, and you wouldn’t want Mommy to get a ticket would you?*” Likewise, another parent commented:

“The law does have an influence because my child is less likely to question it if it’s ‘the law.’”

It seemed evident from several parents' comments that, despite most parents being unsure what the law specifically requires, the law – or their perception of the law – can make a difference, if only by reassuring parents that the way they restrain their child “must be safe if it's the law.” Ultimately, the findings of the follow-up discussions tend to support the conclusions made from the focus groups. Specifically:

- Although most have only a vague knowledge of the law in their state, there is some indication that these parents consider the law regarding child restraint to be a reliable indication of what is safest. Thus, the establishment and enforcement (as well as the communication) of legislation that follows the Recommended Best Practices for child restraint could significantly reduce the likelihood that parents will follow these practices.
- At the same time, many say they will do what is safest regardless of what the law says, re-emphasizing the importance of communicating what is, in fact, “best practice” for child safety.

AWARENESS OF AND REACTIONS TO RECOMMENDED BEST PRACTICES

Based on available research surrounding child injury in motor vehicle crashes, The Children's Hospital of Philadelphia prepared a summary of “Recommended Best Practices” for protecting children from injury in a crash. These best practices were presented to participants in the parent groups to assess their awareness and reactions.

As presented to the group participants, the recommended best practices for child restraint are as follows:

- (1) For children under age 4, the appropriate restraint is a child safety seat – also referred to as a “car seat.”
- (2) For children age 5 through 9 – depending on height and weight – the most appropriate restraint is a booster seat.
- (3) Current best practice recommendations are that only children over age 8 and 80 pounds should be seated in vehicle safety belts because seat belts are designed to provide optimal restraint to adults rather than children.

Misperceptions of what is the safest form of restraint for children of different ages, sizes and weight were evident among many parents throughout the focus group discussions. Notably, for many, 40 pounds seems to represent the “magic number” – the weight at which they believe it is safe for children to be graduated from a child safety seat to the next form of restraint. Unfortunately, many are unsure as to what the “next form of restraint” should be. Parents’ reactions to these best practices clearly conveyed their lack of awareness of these safety guidelines.

“I did think that at forty pounds then you could be in a regular seat belt – I didn’t know it was eighty pounds. I think it was safe to be in a seat belt at forty pounds or more.”

“I thought it was eight or nine that they could sit up in the front. But I thought that if they were forty pounds that they could sit in the back in a seat belt. I thought it was forty pounds and forty-two inches.”

“I don’t know where I heard it, but what Carla said sounds familiar. I thought like eighty pounds was front seat, but like anything over forty pounds you could go to seat belt in the back seat. That was my understanding.”

“I thought it was at four years/forty-four pounds they could sit in a regular seat belt.”

Once parents were informed of these recommended best practices, the impact was, in a number of cases, quite dramatic. Some parents who currently restrain their child in a safety belt alone were visibly shaken to learn that they are not doing all they can to protect the child from injury in the event of a motor vehicle crash. Several expressed the intent to change their child-restraint practices – or to at least consider such a change.

“It’s at least opening up a discussion with my wife.”

“As a responsible person, if you’re given knowledge, you ought to act on it.”

“It makes me rethink what I’m doing.”

Some, however, indicated they wanted more details or information on the research behind these recommendations. Sadly, “real-life tragedies,” such as incidents of child injury related to premature use of a safety belt, are often what is needed to motivate a change in

behavior. According to some parents, this type of information would likely affect their child-restraint practices; a few parents had seen an eye-opening television program about child injury due to improper restraint and indicated that the program had already motivated a change.

“I think you have to put some statistics with it. If you told me that children five through nine were injured in horrible ways, like the thing I told you about seeing about the lap belts, it made me change the way I restrained my son at that time. But I haven’t seen any evidence that she is in any danger. This doesn’t convince me.”

“I want to see something that would make me change the way I do things.”

“Seeing a program where the kid’s spinal cord got snapped affected what we’re doing, because we were totally unaware that (a seat belt) was the problem. It never occurred to us.”

In the case of children who are currently being restrained with a safety belt alone, some parents anticipated resistance if they tried to “downgrade” the child to a booster seat. Clearly, if this is perceived by the child as a step down, they may be less than enthusiastic about the change.

“Perhaps if I had known this two years ago, but once you’ve moved a child into a seat belt, I don’t think you can move them back into a booster seat because you’re taking away a grown-up privilege that they’ve grown accustomed to.”

“The only way I could see my daughter sitting in a booster seat now is if I bought a car that already had booster seats in it. If it was there, I think I could get her to use it, but as far as going out and buying one of those apparatus, I couldn’t be bothered.”

“I think we all sort of knew about the age for the car seat. As far as the second one, I cannot imagine my child sitting in a booster seat the size that she is at the age of seven. She won’t. She’s about 70 lbs. But she is only seven. Age five through nine – she’s not to the age of eight.”

Following the discussion of recommended best practices, an additional statement concerning the risks of injury if these practices are not implemented was read to participants, as follows:

“Research has shown that failure to implement these best practices exposes a child to an increased risk of injury in a motor vehicle accident. At least one major problem, called “seat belt syndrome,” has been identified as resulting from children being inappropriately restrained. This refers to lumbar spine and internal injuries that result from the lap belt riding up onto the child’s stomach and then exerting force on the internal organs and the spine.”

Parents’ reactions to this statement tend to confirm that this type of information – information that focuses on potentially serious injury that can result when children are not correctly restrained – could in fact underscore the importance of implementing the recommended best practices. Evidently, this direct emphasis on the risks involved may be required to motivate some parents to change their child restraint practices.

“I’m going to go home and see how my son sits down in a seat belt now. I’ll pay more attention to it.”

“If they have done extensive research and they’re saying that you jeopardize your child if you don’t follow these guidelines then I’m going to put the booster seat back in.”

“It makes me not want to put her in a seat belt. It’s the same thing with putting a seat belt on yourself. You have to wear it appropriately whether it’s on you or on your kid.”

It should be noted that among parents in the group of booster seat users – already characterized as generally more knowledgeable of child restraint than others – many were already aware of this information and indicated that it had influenced their choice of restraint for their child.

The notion that parents’ knowledge of the recommended best practices for child restraint might impact their decisions was explored in several ways in the follow-up discussion phase of the research. Seat belt users were asked if they would change to a booster seat for their child if they learned from “a reliable source” that it was “definitely safer.” Additionally, all respondents were asked what the concept of “best practice” means to them, and the implications of learning that their own choice of restraint for their child may not comply with “best practice.”

Changing Parents’ Choice of Child Restraint

Concerning the likelihood that parents would change from using a seat belt alone for their 1-to-9-year-old to using a booster seat, the findings are mixed. (Note: These observations apply

almost entirely to parents of children 4 to 9, as most respondents in Group 1 qualified by only isolated seat belt use for their child age 1 to 4.)

- Several parents indicated they would definitely make the switch to a booster seat based on the conditions described, and several others said they would consider the change but expressed certain provisions for doing so:
 - One mother indicated she would make the change, but would involve her child in the decision, saying her son is a mature child and if he understood the importance he would be more accepting of the change. This tends to again highlight the importance some parents place on their child's maturity in decisions regarding the type of restraint to use;
 - Another noted that it could depend on how long a period of time would be affected. In other words, if the "reliable source" indicated her child would be safer in a booster seat until reaching a weight that is only five pounds more than her child's present weight, she would be unlikely to make such a change;
 - Others indicated it would depend on the source, or if they felt the information was borne out by reasons that made sense to them – another indication of the importance of parents' own "level of comfort" with the safety of the restraint they choose for their child.
- Conversely, some parents indicated they would not make the change, with resistance anticipated from the child mentioned most often as the reason.

"My kids wouldn't change now."

"There would be too much trouble from my kids. It would be like going back to being a baby."

"It would be tough because my son would balk."

Another factor that would make it difficult for parents to change back to a booster seat from a regular seat belt relates to the design of booster seats. Some parents indicated that their child is simply too big for a booster seat.

“It would be too hard getting him in and he would be too uncomfortable because he’s too big.”

Seat belt users who were discussants were also asked what could make it easier for them to make the change back to a booster seat. Their responses offer a great deal of insight on factors that could aid in the identification of effective modes of intervention to premature graduation. Specifically, according to parent discussants, the following factors could make it easier for them to switch their child from a seat belt to a booster seat:

- If other children the same age as their child were also sitting in booster seats, it would not make their child feel “like a baby.” Without peer pressure on children to sit in a regular seat belt, the decision would be easier for the parent as well. This tends to underscore the need for wider understanding and acceptance of the importance of using booster seats for children age 4 to 9 to prevent injury in a crash.
- Some parents noted that if the law required they use a booster seat for their child, it would make the change back to a booster seat considerably easier. Aside from generally wanting to comply with legal requirements – and to avoid receiving a ticket – it was noted that such a law would also help reduce any resistance from children. In the words of one parent:

“If it were the law I would definitely make the switch. I would get strong resistance from my daughter, but I’d just tell her she has to do it or I’ll get in trouble with a policeman.”

- It was also noted that making “the facts” more public would motivate parents to use a booster seat instead of a regular seat belt for their child. Promoting the importance of booster seats in conjunction with hard numbers/statistics that communicate the risk and potential consequences of using a seat belt alone for a child could, according to some parents, drive the message home.
- Other suggestions from parents again focus on the design of booster seats. Consistent with other findings, some parents stated that booster seats should be designed to better accommodate larger children. Others said they should have a more “mature” look to make them more acceptable or even desirable to children. According to one parent, this would be a “downsized, less closed” style.

The Meaning of “Best Practice”

Parents had some difficulty defining what the concept of “best practice” means to them, but with the context of the discussion revolving around child safety in vehicles, most respondents generally described “best practice” as simply doing what is safest for your child. Interestingly, for many parents, an important element of “doing what is safest” includes following the safest practice *consistently, all the time*. Repeatedly, parents emphasized this as key to doing what is best for their child.

When asked how they would react if they learned that the way in which they are currently restraining their child is not “best practice,” parents’ comments tend to emphasize two underlying factors that may be critical to understanding and addressing the problem of premature graduation:

- Parents clearly want to do what is safest for their child and in most cases, believe that they are using the safest method of restraint;
- This “belief” may represent a key aspect of changing some parents’ choice of child restraint. Specifically, parents’ own level of comfort with the method of restraint they choose for their child is critical. With most parents saying they would investigate what they learned about the “best practice” for child restraint before they would make it their own practice, it is evident that parents must *believe* – or be convinced – that a particular method of restraint is the safest for their child. In some cases, this means parents must come to believe that the safest method is something other than what is currently being used.

“I would research it. I would want to know what is inadequate about what I’m doing.”

“I would want to know more. I would consider it, and investigate to find out what’s wrong with what I have been doing. Once I was certain that it is, I would switch, and I would thank God nothing had happened.”

“I would be surprised and skeptical that it is really safer.”

“I would seriously think about what’s best for my child and for us as a family. If I believed a seat belt was reliable, I would still use it. If they show me the statistics – show me that it makes the difference between life and death, then I’d switch.”

ACCEPTABLE COST FOR THE "IDEAL" BOOSTER SEAT

To assess the extent to which cost could be a deterrent to use of a booster seat, parents were asked what is the most they would pay for a booster seat that has all the features that are most important to them. (In responding, parents were also asked to assume that they learned from a "reliable source" that their child should always ride in a booster seat, and that they have decided to use and purchase a booster seat for their child.)

Respondents who use or previously used a booster seat reported paying a wide range of costs, clearly associated to some degree with the seat design, and perhaps how long ago the seat was purchased. When it comes to what they *would* pay, keeping in mind that it is assumed that they have learned that a booster seat is the safest method of restraint for their child, a few indicated that they would pay any amount.

On a more realistic level, however, most indicated a cost in the range of \$50 to \$100, with a few citing a lower cost, and just two respondents (booster seat users) citing a cost of more than \$100. While this cannot be considered a quantitative or projectable assessment, it does appear that those who are currently using a seat belt for their child age 4 to 9 are skewed somewhat more toward a lower price as to what is acceptable to them. (A summary of the costs cited by parents appears in the table below.)

Highest Price Would Pay for the "Ideal" Booster Seat

	Number who Would Pay the Stated Cost		
	Group 1	Group 2	Group 3
\$30 to < \$40		1	
\$40 to < \$50	1	2	
\$50 to < \$75	2	1	
\$75 to \$100	2	2	2
More than \$100 (\$110 and \$125)			2

SOURCES OF INFORMATION

Identifying ways in which parents currently receive information regarding child restraint can be useful in planning efforts to educate parents on recommended best practices for the purpose of reducing the rate of premature graduation to safety belts. Based on the input of participants

in this research, parents may rely on a number of different sources for this type of information. Among those mentioned were:

- Information on the box and included with child safety seats and booster seats;
- Television specials and news programs, including programs such as 20/20;
- Parents' Magazine;
- Pediatrician/doctor's office;
- Information from children's school or preschool;
- Public service agencies, such as police, fire department, or the Department of Transportation;
- Consumer Reports and consumer groups;
- Safety/booster seat manufacturers and dealers;
- Automobile manufacturers;
- Friends/neighbors/relatives with same-age children.

In deciding which safety seat or booster seat to purchase, it is worth noting that a number of parents indicated that they took their child shopping with them to ensure that the one they purchased would be acceptable to the child. This underscores the importance of seats designed to appeal to and be comfortable for the child.

Following are several of parents' verbatim comments relevant to the process of choosing a particular booster seat.

"We went around to several different places. Not only did we look at the boxes, we also talked to some people there at the store and the ones that knew something about them rather than just simply being there. We got some real good information from the Kohl's people."

"People warned me about the lap one. 'Oh, she's going to climb out of that. You're going to hate it.' Sure enough, within a week she had climbed out of it."

"I took my daughter shopping. She sat in it and I asked her if it was comfortable and did it feel good. We did it with her coat on. I wanted to see the fullest extent of the shoulder straps. I knew what I wanted and I showed her a couple of different ones."

"I also think a factor that went into the decision by me and my wife on car seats is that my wife's friend, my sister, all have kids that are slightly older than my daughter and you ask your friends, 'What worked for you? What are the pros and cons of this one? Did you like this one? We bought this one and it's sitting in our garage. We didn't like it.' You listen to what they have to say, as well as reading the literature and doing all of that also."

"I think it also depends on the car. When we were traveling we rented a couple of different types of cars and the car seat sat differently in the cars. It was more comfortable or less comfortable or snugger or not."

PARENTS' SUGGESTIONS FOR IMPROVING BOOSTER SEATS

As noted previously, and as suggested by the comment above, a number of parents described motor vehicle design issues as a factor that affected their purchase and use of a booster seat. It is apparent from this research that incompatibility between motor vehicle designs and some booster seat designs could potentially deter parents' use of this important restraint and prompt the premature use of vehicle safety belts for their child.

Other design issues also emerged in this research in parents' discussions of booster seats. Among their criticisms were the large variety and inconsistency of the weight guidelines for different makes and designs of seats, the need for improved safety/child protection, and the need for seats that offer greater comfort for children as large as 80 pounds. Parents had several suggestions for addressing these issues, including:

- Expand the weight ranges accommodated by child safety and/or booster seats, thereby reducing the number and variety of different restraints required to accommodate a child until they have reached a safe age and weight for safety belts alone;
- Establish consistent standards for child safety and booster seat designs, and for the child sizes/weights accommodated; the standards should be consistent with recommended best practices;
- Establish standards to ensure that motor vehicle designs will accommodate all makes and designs of child safety seats and booster seats.

Participants' verbatim comments regarding these issues are presented below.

"There is a variety amongst the manufacturers of car seats even. Maybe they need to set up standards amongst themselves. Some booster seats only go to 60 pounds. Some go to 70 pounds. Some go to 80 pounds."

"It would help if they would not make such a large variety of them because you have the ones from newborn to one and then the ones to the three year olds. Then you have the great big one and then you have the ones with the protected things around the side. Then you have ones that look like a seat with nothing surrounding it."

"If they're going to enforce this eighty-pound thing then they better redesign some booster seats. After seventy pounds I don't think they're going to fit too well in a booster seat."

"And that's something that the automobile manufacturers have to do. They have to work some way of making the seats in the vehicles work better with car seats."

Renaming Child Booster Seats

Parents participating in this research were probed as to their opinions of the term "booster seat." When asked how they feel about the term, parents had mixed views on whether this label enhances or detracts from perceptions of this form of restraint. Based on their comments, in considering whether the name "booster seat" is appropriate, perhaps a key consideration is what meaning or purpose should be conveyed to parents by the term. More specifically, not all parents are clear on what is the purpose of a booster seat for their child. There was confusion among parents as to whether booster seats are intended to simply raise the child up so that the vehicle safety belt fits properly, or are they intended to provide added restraint. It was evident that, without knowledge of the risks to children of wearing an improperly fitting safety belt, simply raising the child up in the seat may not impart how critical this is in protecting a child from injury. Thus, for some, the name "booster seat" tends to minimize the purpose – and importance – of this type of restraint. The following verbatim comments illustrate this possible misconception as an important consideration surrounding the best name for the restraint commonly referred to as a booster seat.

"Booster just makes me think of something that's going to position a child higher."

"They've got to standardize what a booster is."

"Upper body support should be specified."

"I think the word booster seat makes people think it's just going to raise the child up a few inches and provide no other effect. The typical booster seat, anyway. If they think they can just use the seat belt, a few inches wouldn't make that much difference. It kind of implies that it's not that important."

"It's kind of ambiguous."

In short, one might hypothesize that the term booster is appropriate when parents are knowledgeable of the importance of this type of restraint. For those unaware of the risks, however, the term may not effectively convey its importance or worse, it could potentially be misleading.

"I guess because I'm concerned about it, what it's called doesn't really matter to me because I know what I want it to do and I will look for something to do those things."

"I always thought a booster was safer than a seat belt. According to the laws and I just thought that as my child got older, she would best be accommodated in a seat belt because of her height. I saw a booster as a 'car seat type.'"

One might also hypothesize that while the name may not communicate the importance of using a booster seat, closing the gap in parents' understanding of how critical a booster seat can be in reducing child injury may require more than a name change.

"I think the term is okay. I think the device itself needs some work."

Concerning children's perceptions of the term, according to several parents, their child has no objection to the name.

"I don't think she minds. She doesn't mind it in restaurants because it makes her where she can see over the table instead of her food being up here, so she doesn't mind. She sits in one at home. I think she likes it in the car because she can see out. She's four. I think if she were nine, she might say, 'I don't want to sit in this thing.' At that point it's a baby seat, but for now, it enables her to see out the window and it keeps her safer."

“We call it the big kid booster seat and we made a big deal out of it. It was this big gift she got to use when she was four.”

SUGGESTIONS FOR EDUCATING PARENTS ON RECOMMENDED BEST PRACTICES FOR CHILD RESTRAINT

It has been apparent throughout this analysis that many parents’ knowledge and understanding of the safest means of protecting their child age 1 to 4 or 5 to 9 from injury in a motor vehicle crash is inadequate. Further, many parents are unaware of the risks associated with prematurely graduating their child to a safety belt alone. The group participants were asked to suggest ways of communicating to all parents what are the recommended best practices for safely restraining children in these age groups. Their suggestions for sources of information to effectively reach parents include:

- Pediatrician/doctors’ offices and clinics;
- Hospitals, prior to parents leaving after the birth of a child;
- Schools/preschools;
- Parents’ magazines and other publications directed to parents;
- Police;
- On the Internet;
- Public service announcements on television and radio;
- Division of Motor Vehicles/information distributed with motor vehicle registration;
- Through motor vehicle insurance providers.

Following are select verbatim comments made by participants on ways they’d like to see information on child restraint provided to parents.

“I think your doctor’s office. When you go for the check-ups it should be standard procedure that when the child develops they introduce you to the proper ways. They, obviously are busy, and it shouldn’t be their focus, but they could at least give you a pamphlet and say, ‘Did you know that PennDOT has this group and they will check each of your vehicles and they even gave away a new car seat.’ They won’t let a child go home without the proper car seat.”

“If you have a car, you have to have car insurance. Everything is going through insurance. The insurance company is always complaining if you get hurt and you’re suing this or that person. Either do more studies or whatever else about the way the car

seats are now and inform people. They should do something to give you possible discounts if you can't afford it. It's only helping them and other people."

"When you are in the hospital, they will not release your baby from the hospital without an infant seat, but there is no way of knowing about booster seats. Unless your doctor tells you at a four year exam that you need to use a booster seat, because it's not the law and there is just no mechanism to educate everyone."

"I think every baby, when it leaves the hospital, a parent should have guidelines for car seat safety for their children."

"Even at that age you're taking your kid to the doctor pretty regularly to get shots and stuff, there is nothing to prevent the doctor from saying, "Okay, your kid has reached this 20-pound or whatever, you're probably going to be transitioning to another kind of seat. Here is a pamphlet on car seat safety."

Another suggestion parents made for promoting the implementation of the recommended best practices for child restraint is to educate children on these practices. Considering the extent to which children are aware of the importance of using seat belts, with many reportedly requesting their parents or others who have failed to "buckle up" to do so, children may themselves become the best advocates of these practices.

"I think you would need to educate the children also – the same way we're educating our children about sex and drugs is through school at a young age. They'll feel important when they come to you and say, 'I learned this today.' It makes them feel important that they are telling you something."

"Children's video and public service announcements on Nickelodeon, PBS. That's prime time. If you hook the kids, they'll drive the parents insane over it."

"My kid came home the other day and he was singing, stop, drop and roll. He's coming home with all this stuff."

PARTICIPANTS' ATTITUDES TOWARD AND USE OF RESTRAINTS

Before beginning the group discussions, parents were asked to complete a self-administered questionnaire concerning their attitudes toward and use of various types of

restraint, their relative perceptions of risk, and a variety of other issues. Their responses were tabulated and the highlights of the results are presented below and in the following pages. Consistent with observations made in the course of the discussions, on several points, the responses of participants in Group 3 – the booster seat user group – distinguish these parents from those in the seat belt groups.

Participants' Use of Restraints

Based on their responses, overall, the majority of parents who participated in this research and their spouses wear safety belts at least most of the time; 25 of the 31 participants say they personally always wear safety belts.

- It is noteworthy that participants in the booster seat user group (Group 3), as well as their spouses, are reportedly somewhat more dedicated users of safety belts than are those in the other groups.

Concerning the form(s) of restraint used for children age 1 to 4 or 5 to 9:

- While most of the Group 1 participants (7 of 10) indicate that they primarily use either a safety seat or booster seat for their child age 1 to 4, three of these parents say they usually use safety belts alone;
- Nine in 10 of the participants in Group 2 say they usually use safety belts alone for their child age 5 to 9;
- Not surprisingly, participants in Group 3 report using a booster seat or car safety seat for their 4-to-9-year-old more often than do those in the seat belt user groups. Of the 11 Group 3 participants, nine say they use a safety or booster seat most often.

Across all groups, most parents who have children at home who are younger than the child for whom they were recruited to the study, say they primarily use a safety seat or booster seat for that younger child.

Participants' Use of Restraints

	Total Participants	GROUP 1 Seat Belt Users (Age 1 to 4)	GROUP 2 Seat Belt Users (Age 5 to 9)	GROUP 3 Booster Seat Users (Age 4 to 9)
(Number Of Participants)	(31)	(10)	(10)	(11)
Frequency of participant wearing seat belt				
Always	25	6	8	11
Usually	3	3	-	-
Sometimes	3	1	2	-
Never	-	-	-	-
Frequency of spouse wearing seat belt				
Always	19	4	6	9
Usually	4	1	2	1
Sometimes	4	2	1	1
Never	3	3	-	-
No Spouse	1	-	1	-
Restraint usually used for designated child*				
Car seat	7	4	1	2
Booster seat	11	3	1	7
Seat belt only	15	3	9	3
No restraint	-	-	-	-
Other	-	-	-	-
Other methods of restraint used for designated child*				
Car seat	8	2	1	5
Booster seat	9	5	1	3
Seat belt only	20	6	9	5
No restraint	-	-	-	-
Other	-	-	-	-

Participants' Use of Restraints (Cont'd)

	Total Participants	GROUP 1 Seat Belt Users (Age 1 to 4)	GROUP 2 Seat Belt Users (Age 5 to 9)	GROUP 3 Booster Seat Users (Age 4 to 9)
(Number Of Participants)	(31)	(10)	(10)	(11)
Restraint usually used for child age 5 to 9				
Car seat	-	-	NA	NA
Booster seat	2	2	NA	NA
Seat belt only	-	-	NA	NA
No restraint	-	-	NA	NA
No children age 5 to 9	8	8	NA	NA
Restraint usually used for older children (age 10 to 17)				
Car seat	-	-	-	-
Booster seat	-	-	-	-
Seat belt only	10	-	7	3
No restraint	-	-	-	-
No children age 10 to 17	21	10	3	8
Restraint usually used for additional younger children at home				
Car seat	13	2	5	6
Booster seat	3	-	1	2
Seat belt only	-	-	-	-
No restraint	-	-	-	-
No additional younger children at home	14	8	4	2

**Multiple responses accepted*

No Answer Omitted

Participants' Perceptions of Risk

There has already been some discussion of these parents' perceptions of risk as expressed in the course of the discussions. Highlights in this area taken from the questionnaires completed by participants include:

- Overall, parents tend to worry more about their child being in a motor vehicle crash than they do about the child getting a serious illness. Likewise, these parents generally indicate a greater perceived likelihood of their child being involved in a motor vehicle crash than of getting a serious illness.
 - Notably, consistent with observations made based on parents' open discussion, it appears parents in Group 3 are somewhat more inclined than the others to worry about their child being in a crash.
- Concerning parents' ability to prevent their child from being involved in a crash, overall, most feel they have at least some control. Apparently, most feel they have more control over this than they do over preventing serious illness to their child.

Participants' Perceptions of Risk

	Total Participants	GROUP 1 Seat Belt Users (Age 1 to 4)	GROUP 2 Seat Belt Users (Age 5 to 9)	GROUP 3 Booster Seat Users (Age 4 to 9)
(Number Of Participants)	(31)	(10)	(10)	(11)
Worry about child being in motor vehicle accident				
Every day	11	4	3	4
Once every few days	3	-	-	3
Occasionally	12	3	6	3
Never	5	3	1	1

Participants' Perceptions of Risk (continued)

	Total Participants	GROUP 1 Seat Belt Users (Age 1 to 4)	GROUP 2 Seat Belt Users (Age 5 to 9)	GROUP 3 Booster Seat Users (Age 4 to 9)
(Number Of Participants)	(31)	(10)	(10)	(11)
Worry - child getting seriously ill				
Every day	2	2	-	-
Once every few days	4	1	3	-
Occasionally	20	5	5	10
Never	5	2	2	1
Likelihood of child being in crash				
Very likely	4	2	-	2
Somewhat likely	15	5	6	4
Somewhat unlikely	10	2	3	5
Very unlikely	2	1	1	-
Likelihood - child get seriously ill				
Very likely	-	-	-	-
Somewhat likely	6	2	2	2
Somewhat unlikely	15	5	6	4
Very unlikely	10	3	2	5
Parental control :- child in crash				
No control	2	-	1	1
Some control	16	6	4	6
A lot of control	13	4	5	4
Parental control – child illness				
No control	8	2	4	2
Some control	20	7	5	8
A lot of control	3	1	1	1

**Multiple responses accepted*

No Answer Omitted

Opinions Regarding Methods of Restraint

For the most part, there is strong agreement among parents in all groups on questions related to the benefits of using some type of restraint in a motor vehicle.

- Parents generally agree that the correct use of seat belts, safety seats and booster seats reduces the severity of injury in a motor vehicle crash. Overall, 30 of the 31 participants indicate agreement with this statement; the other participant was unsure;
- Based on their questionnaires, none of the parents in this study feels that seat belts, safety seats or booster seats are too inconvenient to bother using;
- Parents in this study indicate almost unanimous *disagreement* with the statement that booster seats would not help if they were in a serious crash with their child; one parent is not sure;

Similarly, while there is slightly more uncertainty among parents, almost all disagree with the statement that, if they were in a serious crash with their child, booster seats would cause additional injuries or put them in greater danger. Three of the 31 participants were unsure about this.

Participants' Opinions Regarding Methods of Restraint

	Total Participants	GROUP 1 Seat Belt Users (Age 1 to 4)	GROUP 2 Seat Belt Users (Age 5 to 9)	GROUP 3 Booster Seat Users (Age 4 to 9)
(Number Of Participants)	(31)	(10)	(10)	(11)
Correct use of restraint reduces severity of injuries				
Agree	30	10	9	11
Disagree	-	-	-	-
Not Sure	1	-	1	-
Seat belts are inconvenient				
Agree	-	-	-	-
Disagree	31	10	10	11
Child restraints are inconvenient				
Agree	-	-	-	-
Disagree	31	10	10	11
Serious crash - Booster seats would not help?				
Agree	-	-	-	-
Disagree	30	9	10	11
Not Sure	1	1	-	-
Serious crash - booster seats would cause additional injuries/greater danger?				
Agree	-	-	-	-
Disagree	28	8	9	11
Not Sure	3	2	1	-

No Answer Omitted

Awareness of Legislation

The questionnaire offered parents a choice of three different laws regarding child restraint and asked them to choose which one accurately described the law in their state (the choices included the correct response for New Jersey and for Pennsylvania as well the law for several other states). Across groups, parents' responses tend to confirm the observation that those in the group of booster seat users (Group 3) are generally more knowledgeable about issues surrounding child restraint than are those in the other groups of seat belt users. Specifically:

- All 11 of the parents who participated in Group 3 correctly identified the law in their state (Pennsylvania).
- By contrast, only one parent in each of the other groups was able to correctly identify the law for New Jersey.

Participants' Awareness of State Laws Regarding Child Restraint

	Total Participants	New Jersey		Pennsylvania
		GROUP 1 Seat Belt Users (Age 1 to 4)	GROUP 2 Seat Belt Users (Age 5 to 9)	GROUP 3 Booster Seat Users (Age 4 to 9)
(Number Of Participants)	(31)	(10)	(10)	(11)
Awareness of state laws regarding child restraint				
Correct response	13	1	1	11
Incorrect response (total)	18	9	9	-
Incorrect response 1	13	6	7	-
Incorrect response 2	-	-	-	-
Incorrect response 3	5	3	2	-

RESPONSE CHOICES:

- 1) Children under age 4 must be restrained in a child safety seat. A seat belt may not be substituted for this age group. (PENNSYLVANIA LAW)
- 2) Children under age 5 must be restrained in a child safety seat. However, a seat belt can be substituted if the child is 1½ to 5 years old and seated in the rear seat. (NEW JERSEY LAW)
- 3) Children under age 3 must be restrained in a child safety seat. A seat belt may not be substituted for this age group. (OTHER STATE LAW)

BACKGROUND INFORMATION

Also included in the questionnaire were a number of background questions regarding participants' driving habits, their experience with motor vehicle crashes, their parenting style, and information about their household.

Participants' Driving Habits

- Overall, about half the group participants report spending less than an hour in the car on a typical weekday. Those in Group 2 tend to stand out from others for spending somewhat more time in the car, with six of these ten parents reporting spending at least two hours per day in a motor vehicle;
- Commuting and errands represent the primary reasons for participants' driving. Group 2 once again stands out somewhat from the others with more commuting time reported;
- Most parents (26) feel they drive at least as cautiously as other drivers, with more than one-third (13) saying they are *more* cautious than other drivers on the road;
- Overall, about two-thirds of the parents in this study say they are accompanied by their child in their vehicle most of the time; those who participated in the booster seat user group are reportedly somewhat more likely than those in the other groups to have their child with them in their vehicle.

Participants' Driving Habits

	Total Participants	GROUP 1 Seat Belt Users (Age 1 to 4)	GROUP 2 Seat Belt Users (Age 5 to 9)	GROUP 3 Booster Seat Users (Age 4 to 9)
(TOTAL)	(31)	(10)	(10)	(11)
Time in car on typical weekday				
Less than 1 hour	14	6	2	6
1 hour up to 2 hours	7	2	2	3
2 hours up to 3 hours	7	-	5	2
More than 3 hours	3	2	1	-
Purpose of most driving*				
Commuting	17	5	8	4
Errands	12	4	2	6
Travel	-	-	-	-
Fun/activities	3	-	1	2
Other	3	1	2	-
Driving Style				
More aggressive than others	3	1	1	1
About the same as others	13	3	6	4
More cautious than others	13	6	3	4
How often accompanied by designated child				
Always	3	1	-	2
Usually	18	5	5	8
Sometimes	10	4	5	1
Never	-	-	-	-

**Multiple responses accepted*

No answer omitted

Participants' Motor Vehicle Crash Experience

Participants' experience with or involvement in a motor vehicle crash may have an impact on their approach to safety restraints in a motor vehicle for themselves and for their child. Parents in this study were asked a series of questions regarding their experience with and perceptions of motor vehicle crashes. Overall, while most of these parents report some involvement in or knowledge of someone who was in a motor vehicle crash, only a few know someone whose child was injured in a crash. More specifically:

- Most of the parents in this study (29 of 31) were at some time involved in a motor vehicle crash, but most report they were not accompanied by their child at the time of the crash. Among those who say their child was with them, all five indicate that the child was not injured.
- While 12 of the parents who participated in the study say they have a friend or relative who was in a crash with a child present, only four report that the child was injured.

Perceptions of the Incidence of Child Injury in a Motor Vehicle Crash

Parents' perceptions of the frequency with which a child is injured in a motor vehicle crash add further insight to understanding their perceptions of risk. The group participants were asked in what percentage of crashes involving children they think a child is not injured, and in what percentage of crashes involving children they think a child dies.

The greater sense of risk exhibited by the Group 3 participants in open discussion is, to some degree confirmed by their responses to these questions. Specifically:

- On average, the parents in Group 3 indicated that a child is injured in nearly two-thirds of crashes involving children. Parents in Groups 1 and 2 – the seat belt user groups – reportedly think the incidence of injury to a child is considerably lower. While the numbers are still high, in each of these two groups, on average parents think that a child is injured in fewer than six in ten crashes involving children.
- Similarly, the parents in Group 3 clearly perceive the risk of death to a child in a motor vehicle crash to be considerably greater than did the other parents. While, on average, parents in Groups 1 and 2 believe that in just over one in ten crashes involving children a child dies, the perceived incidence is more than twice as high among those in Group 3. Specifically, parents who participated in the group of booster seat users believe a child dies in nearly one-third (30%) of crashes involving children.

Participants' Motor Vehicle Crash Experience

	Total Participants	GROUP 1 Seat Belt Users (Age 1 to 4)	GROUP 2 Seat Belt Users (Age 5 to 9)	GROUP 3 Booster Seat Users (Age 4 to 9)
(Number Of Participants)	(31)	(10)	(10)	(11)
Ever been in crash				
Yes	29	10	9	10
No	2	-	1	1
Accompanied by child in crash*				
Yes	5	1	2	2
No	23	9	6	8
Child injured in crash**				
Yes	-	-	-	-
No	5	1	2	2
Friend/relative in crash with child				
Yes	12	3	6	3
No	18	7	4	7
Friend's/relative's child injured*				
Yes	4	1	2	1
No	7	2	3	2
Estimate % crashes - child uninjured				
Mean number	39	44	41	34
Est. % crashes with child – child dies				
Mean number	19	13	14	30

* Among those in crash /have friend or relative who was involved in a motor vehicle crash

** Among those accompanied by child in motor vehicle crash

No answer omitted

Background Information

Participants in this study represent a mix of parents in terms of strictness of parenting style, household size and composition, employment, and income status. The participants in each group are profiled on these characteristics in the table below.

Background Information

	Total Participant s	GROUP 1 Seat Belt Users (Age 1 to 4)	GROUP 2 Seat Belt Users (Age 5 to 9)	GROUP 3 Booster Seat Users (Age 4 to 9)
(Number Of Participants)	(31)	(10)	(10)	(11)
Parenting Style 1=Not strict; 10=strict				
Mean score	4.3	6.5	2.7	3.8
Number of people in household				
Mean	4.2	3.8	4.8	4.1
Total children in household (mean)	<u>2.1</u>	<u>1.5</u>	<u>2.8</u>	<u>2.1</u>
Younger than age 1 (mean)	0.2	0.2	0.2	0.2
1 to 4 (mean)	0.9	1.1	0.5	1.1
5 to 9 (mean)	0.6	0.2	1.1	0.5
10 to 14 (mean)	0.4	-	0.8	0.3
15 to 17 (mean)	0.1	-	0.2	-
Parental Employment Status				
Single parent works full-time	1	-	1	-
Both parents work full-time	9	2	3	4
One parent works full-time/one parent works part-time	12	6	2	4
Only 1 parent works outside home	9	2	4	3
Household Income				
Less than \$25,000	1	-	1	-
\$25,000 to < \$50,000	6	1	3	2
\$50,000 to < \$75,000	15	8	3	4
\$75,000 or more	8	1	2	5

No Answer Omitted

CONCLUSIONS AND RECOMMENDATIONS – CHILDREN

CONCLUSIONS

The results of this research provide some interesting insights into children's level of awareness about car safety and point to several possible avenues for improving children's appropriate use of safety restraints.

Children's Awareness of Safety Practices

Even the youngest children seemed to be aware that car and/or booster seats as well as seat belts served a safety function. In addition to being buckled, several of the children seemed to realize that riding in the back seat was somehow related to staying safe in the car, but no explanations were offered. Not distracting a parent by talking to them was the only other safety practice mentioned by a child.

Parental Use of Safety Restraints

All the children confirmed that their parents utilized seat belts. In fact, one 4-year-old appeared to believe that the mother was buckling up on the child's behalf – not for her own safety. It was unclear whether this expressed belief was an example of egocentric thinking or if this mother had actually explained her own seat belt usage in this fashion to her child. If the latter was true, it might provide another strategy for encouraging use of restraints.

Only the oldest children, the 7-year-olds, mentioned that their parents did not use their seat belts consistently. It cannot be determined from this study if older children, perhaps due to increasing cognitive skills, are more likely to notice when their parents don't use their seat belts. An alternative explanation may be that parents become more lax as their children grow older.

The oldest children also noted that their mothers were more reliable seat belt wearers than their fathers. This apparent difference was not great. However, if such a finding were to be documented quantitatively, it could have an impact on children's willingness to use restraints.

Parental Restraint of the Child

Generally, the children's report of how they were restrained in their vehicle that morning and how they are typically restrained appeared to confirm parental reports.

While only the oldest children remarked on parental inconsistencies in buckling themselves, even the youngest children reported instances of parents forgetting to buckle their children. Two of the 4-year-olds appeared concerned when this occurred. One child seemed almost envious of his older brother's ability to buckle himself and therefore be independent of

his parents' ability to remember. Of course, this reaction will not be true for all children. Another child remarked that her 3-year-old brother enjoyed rolling around on the back seat unrestrained.

Influences on Children's Use of Safety Restraints

- **Physical Comfort Level**

Physical comfort level is an experiential factor affecting children in various life arenas. Riding in the car is no exception. While older children may not be more cognizant of comfort level, they were better able to articulate aspects of discomfort. It was visually apparent that most booster seats were becoming increasingly constrictive for this age group. Among the various models, tightness was noted in at least three places – the allowance for width of the hips, the shoulders, and, in one instance, the head. One could anticipate, then, that level of comfort would have significant ramifications on children's willingness to continue using appropriate restraints while riding in a car.

- **Parents**

Results from the younger group suggest that parents play a substantial role in children's willingness to use a booster seat. If the parent creates an environment early on that communicates that proper safety restraint usage is a nonnegotiable issue, most children appear to be accepting. There will, of course, be a minority of children with more challenging temperaments for whom use of safety restraints may be a continual struggle. On the other hand, when parents become inconsistent in their enforcement (and perhaps, their own usage), it appears to facilitate a perception on the part of the child that restraint use is negotiable. It may also contribute to a sense of insecurity and/or guilt in children. This appeared to be the case with one of the children in the older group.

Generally, a child trusts that parents will keep them safe. When children are at a certain level of development where they know what should be done, e.g., "I should be in the back seat", and the parent fails to enforce that, a sense of insecurity may develop. However, having parents explain extenuating circumstances may suffice to allay the child's concern. Guilt may develop, as well, when a child feels responsible for talking a parent into doing something "wrong."

- **Birth Order Effects**

Children with older siblings reported no teasing or other negative influence affecting their willingness to ride in a booster seat. Yet, there appeared to be an admiration of and desire to emulate older siblings, even in seat belt usage. Therefore, one might anticipate that children with older siblings could be more likely to want to graduate earlier to wearing seat belts. Firstborn children, with parental encouragement and support, may be more willing to delay graduation to a seat belt.

Conversely, both of the older seat belt users reported that graduation to seat belt use was triggered by the need for a younger sibling and/or cousin to use their booster seat. This situation, of course, has financial implications for families.

- Peers

Children appeared willing to try to influence friends to use car safety restraints. The youngest children simply restated the rule but with no further effort at persuasion. Older children were able to offer a rationale for why a friend should change his/her behavior.

- Spokespeople

The children had limited suggestions about who might influence their behavior beyond their own parents and perhaps the police. However, that does not mean they can't be influenced by spokespeople. The field of children's advertising surely proves otherwise.

Selection of a Booster Seat

Of course, no firm conclusions can be drawn from two focus groups. With these children, however, the opportunity to participate in the purchase of their booster seat did not seem to relate directly to the child's willingness to ride in it.

Focusing on the experiential portion of the sessions, comfort appeared to be a salient feature for children. However, one other aspect of the car seat selection process arose, which may influence parents and children differently. One might assume that a seat with a longer "life span", such as the Even-flo 2-in-1, would appeal to parents on an economic level. However, children may prefer to graduate to a seat that cannot be used by an infant as a way of marking another milestone in their own development. The latter approach in marketing may also postpone the premature graduation to seat belts with the birth of a younger sibling.

Delaying Graduation of Children into Seat Belt Usage

It appears that the suggested best practice of keeping children in a booster seat until they are 80 lbs. or 8 years old would extend booster seat usage through a transitional period in children's cognitive abilities. Many children, while still in the 4-5 year age range, may be fairly

compliant with whatever their parents decide is the “right” method of restraint to use. By the time children reach the age of 7, they appear to be much more aware of parental inconsistencies and more reflective of their own behavior. Therefore, one might anticipate a different parental approach which focuses on explanations and consequences as being necessary to get older children to continue using an appropriate restraint.

Return to Use of a Booster Seat

As many parents in the adult focus groups suggested, getting a child who has been wearing a seat belt to go back to using a booster seat could be challenging. Parents believe this would represent a perceived step backward for the child or the removal of a privilege. Results from the children’s group tend to suggest likewise.

However, three factors appear to play a role. If authority figures, especially parents, provide viable explanations and consistently enforce booster seat usage, many children would probably comply. There was some evidence in this study to suggest viable explanations might be safety-based and/or law-enforcement-based, i.e., this is the law and we must comply. This situation would be analogous to the institution of a child safety helmet requirement when bike riding. Of course, the law enforcement argument would be more effective if child restraint legislation is changed to reflect best practice. Lastly, booster seats that comfortably accommodate the older and /or larger child would be critical.

RECOMMENDATIONS

The results of the children’s groups overlap those of the adult groups on several points. Therefore, these recommendations will complement those already offered in the adult section of the report.

Communication

As mentioned in the conclusion of the adult section, a critical element in preventing children’s premature graduation to seat belts is parents’ understanding of the risks involved. An encouraging finding from the children’s portion of this study is a recognition that children, even as young as 4 years old, may be capable of taking a proactive role in their own safety.

- **Children’s Programs**

Children, when they have some basic understanding of the risk involved, appear concerned about their own safety. As they move into the elementary school years, they seem to be aware of and concerned for parents’ safety, as well. Educational programs

that target preschool and early elementary school children and focus on the value of booster seats (and other safety restraints) could help children reinforce parents' use of best practices. A simple but catchy slogan may assist the youngest children in providing effective parental reminders.

- **Parent Education**

As mentioned earlier, parental consistency is a crucial part of children's willingness to use appropriate restraints. If certain safety practices are presented as nonnegotiable from a very early age, most children will accept these practices without question into the early elementary school years.

As children's reasoning skills develop further and peer pressure becomes a more important influence in the elementary school years, parents may need to adapt their approach somewhat for continued compliance. Children are less willing to accept what they may perceive as an arbitrary rule. It becomes more important for children to be included in a discussion of the reasons for continuing to use (or going back to using) a booster seat.

Educational programs targeting parents need to go beyond just furnishing safety information. They need to provide parents with effective guidance techniques for implementing the safety practices they've learned. Concrete examples (e.g., role plays) of how to counter a child's resistance may be needed.

Sources of Information and Communication

In the preschool and early elementary school years, parents remain one of the most, if not the most, important influences in their children's lives. Parents need to remember that and feel comfortable with, as well as capable of, exercising that influence effectively.

Other authority figures in children's lives, such as police officers and teachers, could be expected to be useful in conveying safety information directly to children, as well. Although the children did not appear to recognize being influenced by media or literary characters, there is significant research to suggest otherwise.

Booster Seat Design

- Size

It was clear that many of the booster seats currently on the market were simply too small for the older and/or heavier child. Perhaps, if the manufacturer of one of the better-fitting seats (e.g., the 2-piece Britax polystyrene foam seat or the Century) were to piggy-back on a seat belt syndrome awareness campaign and target this market successfully, other manufacturers would be motivated to consider improvements.

- Ease of Use

One area of booster seat design appears to have conflicting goals for parents and children. Some parents are concerned that latches and buckles are "child-proof" in order to prevent children from unfastening themselves while the vehicle is still in motion. Children, on the other hand, desire that sense of mastery or self-efficacy, which allows them to do it by themselves, i.e., to be a "big boy" or "big girl." In fact, it appears there are times when parents, too, would find it easier if their children could buckle themselves.

At the present time, many of the seats, in combination with car design, prove too difficult for many adults to master. With a standardization of booster seat design and compatibility with car designs, perhaps the complexity of the belts, buckles, and latches could be reduced. An increased focus on educating children about booster seat safety could reduce the incidence of children prematurely exiting their booster seats. Additionally, perhaps a special release could be designed into the restraint system that allows parents to choose whether their child can have the option of doing it themselves, like those on some car doors.

Additional Investigation

The findings of the children's groups point to some interesting research questions. A few suggestions are listed below.

- What role might cognitive dissonance play in changing children's behavior?

- Do parents become more lax with their own safety as children graduate to seat belts?
- Will participation in the purchase of a booster seat increase a child's willingness to use one?
- To what extent is there an older sibling and/or younger sibling effect on premature graduation to seat belt use?
- Will the inclusion of concrete guidance techniques improve the effectiveness of parental awareness programs?
- Will the development and implementation of programs targeting young children increase both parental and child compliance with best practices?

SUMMARY OF FINDINGS – CHILDREN

Two groups of children participated in this study. The first group consisted of four 4-year-olds - two boys and two girls. The older group was composed of two kindergartners (5 and 6 years old) and two second graders (both 7 years old). One of the second graders was female. Below is a summary of findings with verbatim comments included.

RIDING IN A CAR – A CHILD’S PERSPECTIVE

The youngest group, the 4-year-olds, appeared unable to reflect on the general experience of riding in a car – what they liked or disliked about it. Although preschool-aged children are famous for asking “why” questions, cognitively they have difficulty responding to questions which require them to reflect upon their own motivations. Riding in a car appeared to be something one simply did.

The older children, on the other hand, were able to share impressions of their experience. Two of the four children said that they liked riding in the car; however, only one articulated her reasons: *“It’s fun and I like long rides...I like going out to places.”*

Two children commented that they didn’t like riding in the car. One said, *“I don’t like going long because if I go really long to somewhere my stomach starts hurting and I throw up sometimes.”* The other stated, *“I hate riding in my car. I don’t like it in my car – it’s so hot in there.”* A third child seemed to empathize, saying: *“Sometimes it can make your head sweat.”*

SAFETY AWARENESS/PARENTAL PRACTICES

Child’s Method of Restraint Used That Morning

As mentioned earlier, these children were screened for recent booster seat usage. In the younger group, three of the four children rode that morning in a booster seat which was fastened to the back seat. The fourth youngster rode in the back seat wearing a seat belt. The fourth child had no recollection of when he last used a booster seat, although the six month time frame used in the recruit could easily exceed the memory capabilities of a 4-year-old when the event to be recalled is not a noteworthy one.

In the older group, the youngest child, a 5-year-old, also rode in a booster seat but in the front seat of his van. The rest of the children in this group rode in the back seat of their car or middle seat of their van with the 6-year-old also in a booster seat. The two second graders wore seat belts. Both these 7-year-olds recalled having used a car seat and/or booster seat (one child seemed unclear about the distinction). However, both children reported moving to seat belts when their seats were given to a younger sibling and/or cousin.

Parental Use of Safety Restraints

The children were asked what their parents do to “stay safe while riding in the car.” This question was asked separately about mothers and fathers to explore whether the children were cognizant of any parental differences. Among the younger group, there seemed to be general agreement that the mothers wore their seat belts. In fact, one four-year-old noted that her mother “*buckles up in a seat belt because she wants me to be safe*”. The children all nodded when asked if their dads also used seat belts.

Similarly, the children in the older group reported both mothers and fathers buckled up. However, the children in this group mentioned noticing when parents failed to restrain themselves. One child volunteered the following information about her mother. “*Sometimes when she’s going on a short trip she doesn’t put her seat belt on.*” When asked if daddies ever forget to buckle up, all the children in the older group indicated that their fathers did forget to buckle “*sometimes.*”

In order to probe for any perceived differences in their parents’ buckling behavior, the children in the older group were asked who was better at remembering to buckle up – Mommy or Daddy. The two second graders replied, one quite quickly, that their mothers were more reliable. The kindergartners perceived no difference between their parents.

While none of the boys in the older group commented on any other parental behaviors designed to keep a parent safe while riding in a car, the second grade girl mentioned that her father requests she keep quiet when they’re driving. “*He doesn’t want me to talk to him so we don’t get into a crash.*” This same child also indicated that, “*Sometimes if my mom doesn’t know where she’s going, she’ll say ‘don’t talk to me’.*”

Parental Restraint of the Child

When children were asked what parents did to keep them safe in the car, one 4-year-old reported that his parents “*buckle me up.*” He then added that “*sometimes they forget when they’re driving*”. When questioned about what he does in that situation, he replied “*I call them...come buckle me up.*” He then confided that his older brother “*can buckle himself by himself,*” leaving the impression that he may envy his brother’s freedom from reliance on their parents for his safety. At this point another 4-year-old mentioned that her mommy also used to forget sometimes, “*but now she doesn’t ‘cause I call Mommy, you forgot.*”

The only other parental approach to safety mentioned by the youngest group regarded their placement in the car. “*Only my mommy and daddy*” ride in the front seat.

When the older group of children was asked how their parents kept them safe, the first response was about position in the car. The second grade girl remarked that “*they don’t let me go in the front seat unless my brothers are annoying me.*” One of the kindergartners said: “*I*

always sit in the middle (row of his van) because if I sit in the front, it could be dangerous. I could get hurt."

However, the majority of responses regarded safety restraints. One of the kindergartners said that his *"mommy buckles me up."* The other second grader reported that he and his mother remind each other to buckle up. *"Sometimes I forget to buckle up and she tells me if I don't buckle up and sometimes she forgets and I tell her to."* The other kindergartner also noted that his mother reminds him to get in his (booster) seat, that she tells him *"if I forget, I might get hurt."*

When asked how their fathers kept them safe, one of the kindergartners reported that his dad buckles him. The female second grader said: *"I tell him don't put me in the front seat and he doesn't let me."* This is the same child who said that her mother does let her ride in the front seat. Her body language indicated that she was experiencing some conflict over this inconsistency. Probing her discomfort, she was asked how she felt when her mother puts her in the front seat. *"I like it"* she stated. *"It makes me feel like a grown up and I can see the things first before everybody else."* Exploring further her apparent cognitive dissonance, her situation was reflected back to her. *"You like riding in the front seat, but you don't think you're supposed to ride in the front. How does that make you feel?"* She replied that she felt *"bad. It's kinda hard."*

Child's Awareness of the Safety Function of Restraints

As mentioned earlier, three of the four children in the 4-year-old group rode in booster seats. One child used a seat belt. When asked why their parents put them in a booster seat or seat belt, the belted child was able to articulate the safety function. The other 4-year-olds seemed to agree. However, during the experiential portion of the session (the imaginary trip to Disney World discussed later), the younger children were asked what would happen if you didn't have your belt fastened. Asked if it would still be safe, several of the children said yes but one changed her mind and said no. Then one boy replied, *"if you're not buckled then the police will get you."*

Among the children in the older group, the safety function seemed evident. As one child said, *"because that's how we don't get hurt."* The older children were also asked *"even if your mommy is a really safe driver, do you think you could be in a car accident?"* Three of the four children were aware that other drivers could cause crashes. Other drivers could *"get a little bit tired"* or *"have a problem and they have to get somewhere really really fast."*

Situational Factors in Parental Practices

The children in the youngest group did not acknowledge any situational variations in their method of restraint. Each of the children using booster seats said they liked riding in them and wanted to ride in them all the time.

This was not the case among the children in the older group. The second grade girl remarked that *"they don't let me go in the front seat unless my brothers are picking on me."* She added one more variable involved in riding in the front seat of her car. *"Sometimes all the other seats are full."* This same child also reported that *"sometimes if my baby brother doesn't want to sit in his car seat Mommy lets him go in the back seat with a big boy seat belt but not all the time, only for short distances."* Her younger brother is 3 years old.

The kindergartner who rode in a booster seat in the front seat of the car to the meeting that day shared that *"when my sister's in the car I have to ride in the back seat 'cause if I ride in the front seat, my sister will want to go in the front seat, too."* The second kindergartner also varied type of restraint depending on what vehicle he was in. With his mother, he used a booster seat. In his dad's car, he used a seat belt.

Involvement in the Purchase of Their Booster Seat

In the 4-year-old group, both of the girls indicated that they had helped to select their booster seats. The one child could not recall any reason why she liked the seat she had. The second reported that her seat made an interesting motion. *"My car seat has this great thing that goes brrrrr when my mom opens it."* Her arm movement seemed to denote a piece that fits across her lap and raises in an arc-like fashion when released. The other girl noted that her seat did the same thing. The third child using a booster seat in this group shared that his daddy had brought the seat home for him. As mentioned earlier, all three children indicated that they liked their booster seats and wanted to sit in them all the time.

In the older group, only the kindergartners were still using booster seats. One said he got his as a present. Only the second grade girl reported that she had helped select her seat.

Booster Seat Name

The older group was asked whether they thought the booster seat could have a better name. Only one child offered a suggestion, saying *"call it a car seat."*

Graduation to Seat Belts

When asked when they thought it would be time for them to start using a seat belt, the 4-year-olds said *"when you get older"* or *"bigger."* The child currently using a seat belt said *"maybe about this tall"* and showed a height level with his hand that was about his own height,

maybe slightly shorter. The girls stood and showed a level higher than themselves. One stretched her arms up high over her head and the other stood on her tiptoes to demonstrate. It was interesting to note, however, that the boy using the seat belt was no taller than the other three 4-year-olds and was perhaps slighter in build.

When the older children were asked when they thought it was time for children to move from a booster seat to seat belts, the two 7-year-olds both thought that age seven was the time to make that change. The 5-year-old went along with the older two. The 6-year-old said he'd need to be *"the same size as my mom and dad."* He failed to detect any inconsistency or experience any cognitive dissonance when it was pointed out that he was already using a seat belt in his dad's car and he was still smaller than his parents.

Both of the second graders reported graduating to seat belt use when their seats were passed on to a younger sibling or relative. One stated, *"I used to (ride in a booster seat) but now my baby brother has to use it."* The other said, *"I used to when I was a baby, but not anymore. I had to give it to my baby cousin now."*

SIBLING EFFECTS/PEER PRESSURE

Siblings

The 4-year-old currently using a seat belt had an older brother who also wore a seat belt and *"can buckle himself by himself."* The other 4-year-old boy also had older siblings. *"I have two big sisters...They buckle up. By themselves."* One of the girls also had older sisters. *"They buckle in two seats. I'm in the middle."* Only one child in this group had a younger sibling. She stated, *"I have a baby sister...she has a baby seat."* When asked if she used to ride in a baby seat, this child replied quite emphatically, *"I used to, but not anymore."* The 4-year-olds were queried regarding what their older siblings said about their booster seats but the question elicited no responses.

Both of the second graders had older siblings. One also had a younger sibling as did both of the kindergartners. There were no comments about older siblings' use of restraints. Of course, both the second graders had already graduated to seat belts, presumably the same method of restraint used by their older siblings.

Influences Affecting Self-Use of Safety Restraints

The male second grader was asked if there was anything somebody could say to him that would make him think about riding in a booster seat. He replied: *"No."* The kindergartners indicated that they would listen to parents or to the police. Since the moderator did not want to do anything to discourage proper restraint usage, a scenario where peers tease the children for using a booster seat was not pursued.

Influencing Others to Use Safety Restraints

When asked who might influence other children to sit in a booster seat, the female second grader mentioned parents. When prompted with a mention of cartoon characters and a sports figure, two children tentatively mentioned Mickey Mouse and Donald Duck (after their return from the imaginary trip to Disney World).

The 4-year-olds could not offer any suggestions as to who their friends might listen to, nor did they respond positively to any suggestions offered. However, when asked what they might say to a friend who doesn't want to be restrained, one 4-year-old offered, "*Buckle your seat belt and stay.*"

The children in the older group were also asked what they would say to a friend who didn't want to wear a seat belt. Both second graders mentioned possible crashes. "*I would tell them they could get into a car crash and their dad and mom get tired so you have to wear your seat belt and not go in the front seat.*" Another said, "*if somebody starts to go fast and your car is behind them and then they get slow and you're not wearing a seat belt, your mom press the brakes and you might bump your head into the seat in front.*" However, after mentioning these possible consequences of a crash, the girl shared, "*once my little brother didn't wear a seat belt and we had to stop a lot of times and he rolled back and forth and he thought that was fun.*"

ADDITIONAL INFLUENCE

Mastery/Self-Efficacy/Autonomy

The 4-year-olds seemed to envy older siblings who were able to buckle themselves up. One child noted with pride that his older brother "*buckles himself up.*" Another child with two older sisters also stated that they buckle up to keep safe "*by themselves.*" A third child noted that her father told her "*if I buckle up my seat myself, I'm a big girl. When I get bigger I can.*"

This child went on to mention that she had a baby sister who rode in a "*baby seat.*" When asked if she used to ride in a baby seat, she proudly replied "*No. I used to, but not anymore.*" During the experiential portion of the session, this same child was able to unbuckle her seat belt. She nodded and grinned when she was asked whether she could do that in her own car. She also agreed with the statement that she sometimes unbuckles herself before the car has stopped, a safety concern for parents. In fact, several of the children showed visible signs of satisfaction at fastening and/or unfastening a seat belt, whether used by itself or in conjunction with a booster seat.

This striving to grow up and gain the privileges of greater maturity was not limited to those possessed by siblings. They also mentioned adult privileges. "*When I grow up, I'll be a lot more bigger and drive.*" And "*when you're big, sometimes you can ride a motorcycle.*"

Yet, when asked if it made them mad that they couldn't fasten their belts themselves, there was no report of frustration or anger.

PERCEPTIONS OF ACTUAL BOOSTER SEATS

Given the limitations of young children's ability to reflect on their likes and dislikes, an attempt was made to elicit this information, both verbally and nonverbally, by introducing them to a sample of booster seats within the context of an imaginary trip to Disney World. A pretend van was set up with a chair representing the driver's seat and one booster seat sitting on the floor next to the chair, theoretically in the front seat. A second row of booster seats sat on the floor behind the first row. In the rear was a removable bench seat from a van. Both groups adapted readily to the premise of a make-believe van.

Unfortunately, many of the booster seats tipped over when sitting on the floor. One child seemed to like this "reclining" feature, noting "*I want to lay down*". Most of the boosters were rotated to the back bench seat to give the children a more realistic sense of how each seat felt. If trying a booster on the floor, the moderator supported the chair from behind in an attempt to minimize any sense of instability.

Five different models of booster seats were available for the children to try. Below is a brief description of each seat and the children's reactions to them.

- **Century Next Step**: The Century Next Step seat had blue upholstery and adjustable armrests.

Reactions: The children were intrigued with the adjustable armrest of the Century model. They all wanted to sit in the seat (after this feature was pointed out) and try to work the buttons themselves. There appeared to be a sense of self-satisfaction as each child mastered the buttons. It was unclear whether the actual armrest feature was perceived as more desirable.

This seat was selected by several of the children. One of the 4-year-old girls selected it because it was "*comfortable*." The 5-year-old also selected it but provided no explanation. It was unclear whether he preferred it for any inherent feature or for the fact that it was located in the front seat of the imaginary van. This was the child who had ridden to the session that morning in a booster seat located in the front seat. He had

also commented about being relegated to the back seat when his younger sister was in the car. Interestingly, the female second grader also found the Century to be one of only two seats which didn't "squash" her. She was concerned, however, that it lacked a seat belt. Note: The five-point harness had been removed prior to the session so that the children would not be predisposed to believing this seat was for younger children.

- **Britax (not Star Riser)**: The Britax seat consisted of two pieces of shaped polystyrene foam with a cloth cover of pastel colors.

Reactions: Once it was placed on the bench seat so that the two pieces did not separate, this seat seemed to appeal to the children. Even the larger children appeared fairly comfortable in it. When the second grade girl had to select a seat in which to ride to Disney World, she ultimately selected this one, even though she is now a seat belt wearer and a seat belt was available. The smaller kindergartner (who was about the same size as the preschoolers and seemed to believe his head should come to the top of the seat back) felt okay about where his head was located on this seat. He was also very amused by the squeaky sound this booster seat made against the vinyl bench seat when he wiggled. The other second grader said this seat was too small for him.

- **Britax Star Riser**: The Star Riser had a high back whose height could be adjusted. It had a brightly colored print cover. Also made by Britax, this seat will only be called a Star Riser for the remainder of this report.

Reactions: One of the 4-year-olds said she had a seat like the Star Riser. When asked what she liked about it, she replied, "it's new and I got it from Disney." She did sit in this seat but the back fell over. None of the other 4-year-olds tried it. This avoidance may have been due to its apparent instability while sitting on the floor. Unfortunately, this seat was never moved to the bench seat. The child who claimed to have a similar seat returned twice to sit in this seat which the moderator stabilized from behind. However, she ultimately selected the Britax. One of the kindergartners was amused by the way this seat could fold down and the "bumpy" noise it made when raised again. However, he thought the back was too high for him.

The star theme print pattern of this seat was mentioned to the younger children and they were asked if they would like a seat like this, one that looked like an astronaut's seat.

The idea appeared foolish to the 4-year-olds who laughed quite vigorously at this suggestion.

None of the older children liked this seat. The female second grader said it was “*too skinny.*” It was clearly tight through the hips. The male second grader said the armrests were too low. The head support seemed to bother a number of the children. Given the adjustable nature of the back, perhaps this discomfort could have been remedied. However, the moderator could not afford the time to attempt to adjust it to each individual child. It did not adjust easily.

- **Evenflo 2-in-1**: The Evenflo 2-in-1 also had blue upholstery with white dots. It had a sticker on the seat back showing both an infant and an older child sitting in the seat. The bottom cover for the seat kept sliding off.

Reactions: Almost all the children noticed the sticker on the seat showing both an infant and an older child sitting in the seat. Many of the children, after looking at the picture, moved on to examine other seats. One kindergartner, referring to the picture of the older child, concluded the seat didn’t fit him because “*my head has to be all the way up there.*” Also, the children appeared bothered by the bottom cover which kept sliding off. All three of the older children found this seat too small, especially through the shoulders.

- **Century Breverra**: The Century Breverra had a dark gray/black print cover with angled lines. Although manufactured by Century, this seat will be referred to as the Breverra for the remainder of this report.

Reactions: The Breverra had a piece of elastic hanging off the seat spaced approximately between where the child’s legs would extend. One 4-year-old child indicated she liked the seat because it had “a puller” which she proceeded to stretch and pull on. The other 4-year-old girl rejected it because she thought it was “*dirty.*” The two kindergartners had positive reactions to this seat. However, they were unable to articulate any particular reason for liking this seat.

Specific Features/Attributes of Booster Seats

Height

The moderator asked the 4-year-old seat belt wearer to try a few booster seats and lifted him off the bench seat and into an adjacent booster seat. As soon as his seat belt was vacated, another child went over and took his seat. It was pointed out that by sitting in the booster seat

he was higher than the child now sitting with the seat belt. He did not feel this was an advantage, at least not one worth sitting in a booster seat to achieve.

Head Rest

In an attempt to get the children to consider the head rest feature of the seats, the moderator asked whether they had ever fallen asleep in the car and had their heads roll around. She demonstrated how this might look. Not surprisingly, the children seemed unaware that this might happen to them. The 4-year-old seat belt wearer assured the moderator that he kept *"sitting up like the grown-ups do."* However, when physically placed in the Century booster seat with side panels extending up to the top, he tucked his head against the side and feigned sleep, appearing comfortable with that feature.

The 5-year-old attended carefully to the height of the seat back/head rest. He was of the impression that his head should be just as tall as the seat back. Therefore, he eliminated most of the seats. He felt the Britax fit him.

Seats with Themes

When asked about having a seat like the Star Riser that looked like an astronaut's seat with a star theme print pattern, the 4-year-olds laughed and said no. The idea of a booster seat that looked like a race car driver's seat brought the same reaction, although the girls were much louder in their protestations. It should be noted that one of the girls said she had this type of seat that she got from Disney. Perhaps her seat had a different theme (perhaps a Disney theme) on the fabric cover that was more appealing to a girl.

Earlier in the session, the other 4-year-old girl talked about her Barbie doll's car, sharing *"I'm going to drive a new car called a person Vette. My Barbie has a Vette like that."*

Booster Seat with Built-in Toys

The younger children were asked whether they'd like a booster seat that came with built-in toys. They laughed at the idea and said no. When asked if their own seats ever got in the way of playing with their toys, they responded that they did not.

Additional Observations During the Activity

Seat Belt Wearers' Willingness to Try a Booster Seat

When the younger group entered the area where the “van” was located, the following observation was made. In response to the request to pick a seat, the three booster seat users all started to examine the booster seats even though the entire rear bench seat was open. Interestingly, the child who no longer used a booster seat went directly to the rear bench seat and tried a couple of positions until he found one where he could buckle himself in. When specifically asked to try a couple of the booster seats and lifted into several models, this child appeared distinctly uncomfortable.

By the time various seats were tried and the children were asked to select their seats for the ride to Disney World, there were three seats positioned on the rear bench seat, that is, there was no longer any opportunity to select just a seat belt. The 4-year-old seat belt wearer opted to create a seat on the floor, borrowing the strap from the adjacent booster seat to use as a make-believe seat belt rather than “regress” to a booster seat.

Another interesting but opposite observation was made with the female second grader. She was currently a seat belt wearer and did try the seat belt before being prompted to try all the booster seats. Yet she eventually opted for the Britax booster seat even though a seat belt was available.

The only other child to use a seat belt exclusively also expressed a preference for the seat belt. However, he ultimately ended up in the Evenflo seat for the “trip”, possibly because the seat belt position was already taken and this was the only other seat left in the rear of the “van.”

Attention to Having the Seat Belts Fastened

A common reaction of the children who were trying out booster seats sitting on the rear bench seat was the desire to have the actual seat belt fastened across the booster seat. They seemed to be quite aware of the importance of this feature. If the focus group moderator was unable to fasten the belt properly, the children appeared uneasy until a magic wand was used to make a pretend belt.

On a few occasions, there were belt-related comments about the seats sitting on the floor. Prior to the session, the five-point restraint was removed from the Century seat so that the children wouldn't think it was only for younger children. This lack of a belt was mentioned by at least one child. Another child inquired about the belt attached to the Starriser. After examining it together, the moderator and child concluded the existing belt must be used to anchor it in the car and the child would use a car seat belt to actually buckle in.

Booster Seat Users Test of the Seat Belt

In the younger group, only one of the booster seat users tried out the seat belt. She slipped into the seat after the seat belt user was removed to try the booster seats. As mentioned earlier, when the final time to select a place to sit for the ride to Disney World arrived, the entire rear seat bench was occupied by booster seats. This meant there was no opportunity to choose the seat belt, unless you got creative, which the 4-year-old seat belt wearer did.

In the older group, all the children tried the seat belt, even the "full time" booster seat user. He seemed quite pleased that he could buckle and unbuckle himself. The other kindergartner, who uses a seat belt when riding in his father's car, selected the seat belt as his favorite.

Appendix D

Facilitated brainstorming session #2 notes

A second facilitated brainstorming session was held on Friday November 5, 1999. The purpose of this session was to use what we have learned from the work done for the background report to brainstorm creative but feasible ideas to combat premature graduation.

Participants in this session included Flaura Winston, Dennis Durbin, Nancy Kassam-Adams, Esha Bhatia, Shannon Morris, Rebecca Anderko, Elisa Moll, Alan Block (NHTSA), and Howard Willson (DaimlerChrysler). Our facilitator was Michael Friend (Before & After).

The session began with a brief overview from Esha Bhatia regarding the research done up to this point on assessing the state of premature graduation. The first activity was to list issues relating to premature graduation. The issues listed were:

- Victims stories
- Changing long habits
- Realities of head injury
- Who is voice of authority?
- Entertainment
- Out of control kids
- Repeated behavior – due diligence every time
- Parents are overwhelmed – too much to do for safety/health
- Enforcement
- Difficulty of use
- Parenting practices
- Kids' independence
- Booster seats don't look safe
- Product litigation
- Portability
- Complex message
- Correcting wrong messages
- Car/driver situations change
- Laws
- Comfort of seat
- Cost
- Communications channels
- Compatibility
- Technology
- Availability
- Back to school
- Unrealistic expectations
- Buy one get one half price
- Data
- Risk perception
- Back seat optimization
- Endorsements
- Active/passive
- Subsidizing
- Prioritizing

In order to determine possible interventions, a list of targeted groups was created. This list included both people who need to receive the messages and people who ought to be giving the messages.

People who should be educators:

- Public health professionals
- Medical professionals
- Magazines
- Primary care physicians
- Retailers
- Manufacturers
- Elementary schools
- Legislators
- Police
- Hollywood
- Health sector
- Insurance industry
- Automobile dealers
- CPS technician

People who should be receiving the message

- Parents
- Care givers
- Grandparents
- Children

The larger group was broken down into three smaller ones and each group brainstormed “entry points” for each group. This activity was not to determine the correct message, rather to determine the appropriate place and time to give the message.

Initial entry points for parents:

- Insurance reimbursements
- Point of vehicle/CRS sale
- Laws
- Car washes
- Pharmaceutical company sponsor ads or seats
- Gymboree
- Crash reports in newspaper – include restraint
- Injury stories on TV – include restraint
- Every TV show correct use
- Web sites for choosing a car seat
- Growth chart with time line
- Consumer reports with optimal car seats
- Plant seed at birth
- School orientation
- Recognizing parents are heroes
- Vehicle instruction manuals
- Pediatrician offices
- Auto insurance
- Health insurance
- Ad agencies
- Community newsletter
- Day care monthly parent groups

- Children's hospitals and AAP web sites
- Tie in with subscriber lists
- NOVA/DATELINE
- Car shows
- Radio station promos/giveaways
- Gas stations

- Supermarkets
- Post office
- Welcome wagon
- Employee health
- 1-800# for information from manufacturers

Initial entry points for kids:

- sports/rec sign up
- birthday triggered reminders (sports teams, insurance companies, Baskin Robbins, Chuck E. Cheese)
- TV Blues Clues
- YMCA
- Sesame Street
- New toy campaigns
- Web sites for kids
- Head Start/after school programs
- Drivers ed for teens
- Libraries

- Branding that appeals to pre-teens as role models
- 7-9 year old heroes
- Back Street Boys, Spice Girls
- Ads during shows kids watch
- Barbie's car and accessories
- Kindergarten car safety day
- Free interactive software
- Older children mentoring
- Sibling classes and books
- Speakers at PTA
- Cub/Girl Scouts

Initial entry points for grandparents:

- AARP
- Geriatric office waiting area
- Church
- Information with medicare
- Grandparents' day at school
- Social security
- Charities/Service clubs

Initial entry points for police:

- Police academy
- Roll call

Initial entry points for manufacturers:

- Company orientation

Initial entry points for retailers:

- Trade shows/JPMA
- Bonuses for sales
- Newsletter

Initial entry points for CPS Technicians:

- Recertification
- Collaborate with us
- Education

Initial entry points for teachers/day care:

- Professional training/certification
- In-service
- Location license

Initial entry points for media:

- Studio heads/writers/etc as parents

Initial entry points for doctors:

- Scientific meetings
- CME/graduate courses
- Local professional societies

Initial entry points for legislators:

- Target as parents and grandparents

Then, each group selected their favorite initial entry points and brainstormed using those points as a base.

Initial ideas

Milk/juice cartons

Ideas from initial idea

- growth chart graphic with guidelines
- fruit snacks, granola bars, fruit by the foot
- tie in with celebrity campaign
- cereal boxes
- gas stations

Police roll call

- appeal to them as parents

- demos available
 - cards with guidelines to hand out to motorists
 - crash model video*
 - car stops with coupons
- Churches
- blessing the seats
 - safety messages in kids areas
 - taking care of each other and ourselves
 - sponsor events
 - youth group car wash/events
- Open house at school
- send home with report card
 - demos available
 - video of crash model*
 - Little League, etc
 - kids in high school involved as community service
 - brochure with registration pack
- Hero award for parents
doing the right thing
- newspaper/TV feature after no injury crash*
 - stories about decision making
 - CPS week
 - realistic barriers/real life scenarios*
 - wrap kids in safety message
- Baby Gap/clothing
- tie to clothing sizes*
 - designer seats are cool
 - attachments for seats
 - side of shoe box
 - similar ad messages as cool clothing for 5-9*
- Legal/industry standard
dealers give compatibility
- info/posters at dealers
 - target used car dealers

Hollywood

- realistic scenarios/real life situations
- spokesperson who takes it on
- ads before G-rated movies
- School House Rock re: safety
- board meetings/editorial meetings*
- target Screen Writers/Actors Guild*
- award for best message
- outside advocates to lobby
- regional newsletters
- link with cartoons
- opinion leaders/credible sources
- Rugrats/PSA*

Link to immunizations

- posters in PMD offices
- school reminders
- doctors prescribe – covered by insurance
- insurance takes up cause

Rebates/coupons from insurance

- include in sales pitch
- rebate at car seat check
- rebate to grandparents
- memorial funds for booster seats
- seat belt is good, booster is better

Message to pediatricians in medical school

- multiple points – in class, residency, continuing ed
- study break with presentation
- advocate for curriculum change
- video presentation

Safety package

- design for target audience
- educational packages

	<ul style="list-style-type: none"> - helmet, booster, sports gear*
Modify school forms	<ul style="list-style-type: none"> - medical form - health class information - registration forms*
Famous spokesperson	<ul style="list-style-type: none"> - targeting legislators as parents - target parents in charge (Bill Gates, etc.)* - sports personalities, models, talk show hosts - adopt an area program - parents of victims as advocates - Letterman put people on spot
Web site with dynamics and information	<ul style="list-style-type: none"> - type in age, height, weight – get optimal restraint*
Back to school/staples	<ul style="list-style-type: none"> - school health organization - school policy - with school supplies at store* - interactive display - screen saver - store links with school district – campaign - new covers with "hot" new prints
CPS techs at dealers	<ul style="list-style-type: none"> - encourage all dealers to train personnel - service reminders - NADA public service - RVIA
Grandparents/AARP	<ul style="list-style-type: none"> - add to driver re-training* - inserts in magazines* - airline partnership

CRS dealers –

- Optimum restraint
 - posters/displays at retailers*
 - train customer service people

Insurance

- track ages of children*
- insert with renewal
- rebates for boosters with proof of purchase
- life stages marketing

*The starred items are favorite ideas chosen by the group.

The group then brainstormed about items they would like to see on an “optimal restraint” web site. The following are ideas that were given:

- Explanation of our 4 stages
- Kid birthday reminders
- “Quick time” movies of crashes
- Database of certified technicians
- Video instructions for installation – print out directions
- Games
- Experiments for teachers
- Sub-links – kids, parents, grandparents, teachers
- Kids with special health needs
- FAQ
- Links to search engines
- Links to kid health/safety sites
- 1-800 number
- Research
- Accident questionnaire

Finally, the group brainstormed for different names for “booster seat.” The following were ideas for new names:

- Belt positioning
- School seat
- Graduate seat
- Stage 1, 2, 3, 4
- Student seat
- Bumper seat
- Co-pilot
- Captain chair
- First mate
- BK seat
- Youth seat (infant, toddler, youth, adult)
- Sprint seat
- Shoulder belt seat
- Adult belt seat

Appendix E

Qualitative report of focus groups and in-depth discussions #2

**PREMATURE GRADUATION OF CHILDREN
FROM CHILD RESTRAINTS TO
VEHICLE SAFETY BELTS**

A Qualitative Study Conducted for:

THE CHILDREN'S HOSPITAL OF PHILADELPHIA

Qualitative report of focus groups and in-depth discussions #2

Conducted by:

ROPER STARCH WORLDWIDE

June 2000

BACKGROUND AND OBJECTIVES

The National Highway Traffic Safety Administration (NHTSA) and others have conducted extensive research on and dedicated significant resources to reducing the number of children who are killed and injured as a result of motor vehicle crashes. While the fatality rate for children in motor vehicles has been substantially reduced in recent years, the rate of child injury and fatality in motor vehicle crashes remains high, and motor vehicle crashes represent the leading cause of death for children age 6 to 14. While research has shown that some form of restraint is often used for children age 0 to 9 who are involved in fatal crashes, many of these children have been prematurely graduated to safety belts. When used prematurely, safety belts represent a sub-optimal and inappropriate restraint that may, in fact, contribute to injuries.

Premature graduation is a complex problem that is unlikely to be solved by a single approach. Thus, it is critical to develop a comprehensive understanding of the nature, causes, and potential solutions to this problem. As part of a larger undertaking by TraumaLink at The Children's Hospital of Philadelphia (CHOP) on behalf of NHTSA, Roper Starch Worldwide has been engaged to conduct research that will examine premature graduation. With the long-term goal of the research being to reduce the number of children who are prematurely graduated from child restraints to vehicle safety belts, the work conducted by Roper will help CHOP address a number of interim objectives.

Previous research conducted by Roper as part of the larger research effort includes:

- ❖ Qualitative focus group discussions among parents and children in February 1999; and
- ❖ Supplementary in-depth telephone discussions among parents in October and November of 1999.

These studies were designed primarily to explore the nature and causes of premature graduation of children to vehicle safety belts and to identify key factors that contribute to the problem. Further, the previous research sought to gain an understanding of parents' perceptions of and attitudes toward various forms of restraint, and determine parents' level of knowledge of the laws regarding child restraint in

vehicles, as well as their awareness of the recommended best practices for child restraint.

The current phase of research conducted by Roper Starch Worldwide has been designed to build on the findings of the previous studies by exploring possible solutions to the problem of premature graduation. More specifically, this research was designed to help CHOP begin to identify potential interventions to the premature graduation of children to vehicle safety belts. The research further seeks to identify ways to overcome the barriers to the use of booster seats – the optimal form of restraint for children age 4 to 8 years or from 40 to 80 pounds.

With this underlying objective in mind, this research focuses on parents of children at the critical transitional point, when the child outgrows the convertible child safety seat. Specific areas of investigation among these parents include:

- ❖ Child behavior with respect to any resistance the child may exhibit to the use of specific forms of restraint;
- ❖ Strategies used by parents to overcome a child's resistance to the use of specific restraints, as well as strategies used in overcoming problems experienced with child acceptance of other situations;
- ❖ Parents' beliefs and level of knowledge with respect to booster seats and other forms of child restraint;
- ❖ Parents' awareness of and reactions to the recommended best practices for child restraint in a vehicle, including impact on parents' attitudes toward child restraint, as well as the credibility and the importance of the information presented;
- ❖ Parents' suggestions for ways of communicating the recommended best practices for child restraint to parents and for promoting the implementation of those practices;
- ❖ Parents' ideas on promoting acceptance of booster seats among parents and children;

- ❖ The role of the law as a guideline for parents' decisions concerning how they restrain their child in vehicles.

METHODOLOGY

In order to meet the specified research objectives, a series of four focus group discussions was conducted among parents. Additionally, a total of 21 supplementary in-depth telephone discussions were conducted among parents to refine and augment the findings of the groups.

Focus Groups

The current research focuses on the point at which the use of a convertible child safety seat ends and children are ready to transition to the next form of restraint. Specifically, only parents of children age 2 through 4 were recruited for these groups. The groups were further designed to obtain the input of parents in key child restraint user segments – that is, parents using a specific type of restraint for their child(ren) in the designated age group. The specific composition of the groups was as follows:

- Group 1: Parents of children age 2 or 3 who have “usually” been restrained in a child safety seat in the past two months
- Group 2: Parents of children age 3 or 4 who have “usually” been restrained in a child safety seat in the past two months
- Group 3: Parents of children age 2, 3, or 4 who have “usually” been restrained in a booster seat in the past two months
- Group 4: Parents of children age 2, 3, or 4 who have “usually” been restrained in a vehicle safety belt in the past two months

An effort was made to include parents of different genders and with a variety of age, education, and ethnic characteristics in each group.

The groups were conducted in two different locations, as follows:

	Location	Date
Groups 1 and 2	Montgomeryville, PA	June 29, 2000
Groups 3 and 4	Voorhees, NJ	June 27, 2000

The number of participants in each group ranged from 7 to 11; each group was approximately two hours in duration.

Supplementary In-Depth Discussions

As a means of refining and elaborating on some of the key findings of the focus groups, in-depth telephone discussions were conducted among 21 parents who met similar qualifications as those who participated in the groups. Specifically, the discussions were distributed as follows:

	Number of Discussions
• Parents of children age 2 through 5 who have “usually” been restrained in a vehicle safety belt in the past two months	11
• Parents of children age 2 through 5 who have “usually” been restrained in a booster seat in the past two months	10
TOTAL	21

These supplementary in-depth discussions occurred during the period August 2 through August 28, 2000. As with the focus groups, the discussions were unstructured, consisting almost entirely of open-ended, free-response questions. The average length of discussion was approximately 35 to 40 minutes. Separate questionnaires were used to guide the discussions among each parent segment.

A Perspective on the Findings

It is important to emphasize that this research is qualitative in nature. Qualitative research is exploratory research designed to generate ideas and develop hypotheses, and to identify variables which can be used in quantitative research. Because the research was structured as a series of open-ended discussion groups and discussions, and includes a very limited number of respondents, it should not be viewed as a quantitative measure of attitudes and behavior. It is intended to identify and screen ideas for further consideration.

Following is an overview of key observations made in the course of this research. These observations refer only to the views expressed by those who participated in the focus groups and in-depth discussions and should be considered anecdotal rather than conclusive. Results represent the opinions of the individuals involved in the discussions and are not necessarily projectable to or representative of all parents of children in the designated age groups or of users of specific forms of vehicle restraint.

CONCLUSIONS

The results of the previous research conducted for CHOP by Roper focused on two underlying factors as critical to understanding and ultimately reducing the problem of premature graduation. In that research, the nature and causes of premature graduation were consistently linked to:

- 1) Perceptions of risk: Differences in parents' perceptions of the risk associated with the specific form of restraint used for their child; and
- 2) Awareness of best practices: Parents' awareness of the recommended best practices for child restraint and the potential consequences of premature graduation.

To a large extent, the results of the current research support the importance of these two factors in understanding and reducing premature graduation. Additionally, however, these results identify a number of more direct causes of premature graduation and, more importantly, they suggest a number of steps toward the development of strategies to reduce the incidence of this problem.

Extending the Use of Booster Seats

An important outcome of this research is the emphasis the findings place on the need for strategies aimed specifically at *extending* the use of booster seats among those parents who initially transition their child from a safety seat to a booster seat.

Among the parents who participated in this research, it was learned that the majority are aware that a booster seat is the appropriate restraint to use when a child outgrows their safety seat. More specifically:

- ❖ Those who are currently using a booster seat for their child age 2 through 4 are, by definition, aware of this important transition and are clearly following this recommended practice.

- ❖ Additionally, however, it was learned that virtually all of those parents who have not yet transitioned their child to the next form of restraint after a child safety seat intend to use a booster seat.

- ❖ More notably, even among those who have prematurely graduated their 2-to-4-year-old to seat belts, it was learned that most of these parents had used a booster seat for their child before they graduated the child to seat belts.

These results cannot, of course, be considered representative of all parents with children at this critical age, nor are they necessarily indicative of the incidence of initially transitioning young children from a child safety seat to a booster seat. At the same time, however, they do emphasize the importance not only of promoting the initial transition to booster seats among all parents, but also of promoting the *extended* use of booster seats among those who choose a booster seat as the next form of restraint after a child safety seat. The results clearly highlight that, even when parents recognize that a booster seat is the appropriate restraint to use after a safety seat, they frequently do not recognize the importance of keeping their child in a booster seat until seat belts fit the child properly – at about 8 years and 80 pounds.

Child Behavior

Where the causes of premature graduation are concerned, the previous research identified parents' perceptions of risk, as well as their ignorance of the risks associated

with premature graduation as key influences, along with a number of situational influences. This research particularly highlights specific aspects of child behavior as fundamental to the problem of premature graduation. It further highlights how the way in which the transition to seat belts is associated with the child's maturation represents what may be the most significant barrier to the extended use of booster seats.

To many children, the graduation to each successive form of restraint has clearly come to represent one of the rites of growing up – a sign of being a “big kid.” Based on this research, this applies to the transition from a safety seat to a booster seat, as well as to the transition from a booster seat to a seat belt. Where the latter transition is concerned, while children may actually look forward to and feel pride in “moving up” to a booster seat, they reach a stage when they want to move up to a seat belt. At this stage, it is children's resistance to the continued use of a booster seat – particularly when older siblings are using seat belts and, more importantly, when many or most of the child's peers are using seat belts – that make the extended use of a booster seat especially challenging for parents.

- ❖ In this research, this type of child resistance clearly emerged as a significant barrier to the extended use of booster seats. Among parents currently using a seat belt for their child, the child's resistance reportedly played a major role in the decision to transition the child to a seat belt. In most cases, this transition was made from a booster seat.

- ❖ Other parents – both booster seat users and child safety seat users – likewise anticipate considerable resistance from their child to staying in a booster seat when the child sees his or her peers wearing seat belts. Most of these parents predicted this would likely occur at the age of about 5 or 6 – considerably before the child reaches the recommended 8-year or 80-pound criterion for the safe use of seat belts. Notably, many of these parents were uncertain as to what the outcome of this “battle” with their child would be.

Parenting Approaches

In the previous research, the likelihood of premature graduation was often linked to differences observed between different child restraint user segments – that is, parents using seat belts vs. those using a booster seat. Similarly, differences observed between

the seat belt users and other parents in the current research may have some bearing on the way in which parents respond to their child's resistance to the extended use of a booster seat.

In particular, it seems many of the same types of resistance that often prompted the seat belt users to graduate their child to seat belts are also encountered by many parents still using a booster seat for their 2-to-4-year-old. While the parents using seat belts chose not to fight that particular battle with their child, those parents who are still using a booster seat and who have encountered resistance from their child see this – at least for the time being – as a battle worth fighting. Further, these parents apparently see this as a battle their child cannot win. This clearly reflects the very different parenting styles of these child restraint user segments.

Good parenting skills clearly emerged in the comments of many of the booster seat users in this research as they described the strategies they use for overcoming their child's resistance to sitting in a booster seat. Specifically, among the approaches they have found successful are:

- ❖ Being consistent: ***Always*** upholding the requirement that the child be seated in his or her booster seat – with no exception and no “negotiation”
- ❖ Starting early: Establishing a non-negotiable policy right from the start
- ❖ Setting boundaries/“Being the parent”: “Taking a stand” on what is the right thing to do to protect their child from injury, and never giving in (emphasizing the importance of consistency)
- ❖ Communicating safety: Explaining to the child the importance of sitting in a booster seat when it comes to keeping them safe – leveraging the child's level of maturity at an age when many parents feel the child is “mature enough” to sit in a seat belt alone
- ❖ Emphasizing individuality: Emphasizing the importance to parents of protecting their own child – regardless of what other parents are doing or the type of restraint other children are using

Other differences across these parent groups were also observed in this research that seem to distinguish those parents who prematurely graduated their child to a seat belt from other parents.

- ❖ Notably, many of the parents who prematurely graduated their child to a seat belt expressed concerns over the way in which the seat belt fits their child and how well it is protecting their child from injury. And yet, at the same time, many of these parents say they feel the seat belt is “adequately” protecting their child.

- ❖ Others cite confidence in their own driving and their ability to avoid a crash as the basis for believing their child is adequately protected.

These factors clearly set this group of parents apart from others, and again suggest that some parents’ inclination to prematurely graduate their child to seat belts may be associated with the way in which these parents perceive the risk of injury to their child in a vehicle crash.

Other Barriers to Extended Use of Booster Seats

While child resistance to sitting in a booster seat clearly represents a critical barrier to the continued use of booster seats for many parents, it is obviously not the only one. Other potential barriers emphasized by this research include:

- ❖ **Perceptions of child comfort:** Among participants in the seat belt user focus group, a number of parents focused on their perceptions of their child’s discomfort in the booster seat they used (in most cases a shield design) as a factor that contributed to the decision to switch the child to a seat belt. This frequently centers on the lack of support these seats provide for the child’s torso and head, especially when the child falls asleep in the seat.

- ❖ **Safety perceptions:** To some extent the lack of support provided by some booster seats also contributed to some parents’ perception that these seats are not the safest form of restraint for their child.

- Among seat belt users, some parents apparently felt the booster seat did not offer any significant safety advantage over seat belts alone for their child age 2 through 4.

- ❖ Inconvenience: Some parents – particularly among the seat belt users – complained about the inconvenience of using a booster seat, saying they are big and bulky and awkward to transport or to transfer between vehicles. Among those who prematurely graduated their child to a seat belt, this further contributed to their decision to do so.

- ❖ Cost: While not a concern for most parents in this research, the cost of booster seats did emerge as a deterrent to use for some. It was apparent that, having already purchased several different sizes and designs of infant and safety seats – often multiplied by several children in the family – the added cost of yet another seat for their child became a deterrent to purchasing and using a booster seat for several discussion respondents.

- ❖ The law: The law clearly plays a role in some parents' child restraint decisions, and likewise, in the problem of premature graduation. Several of the discussion respondents who were prematurely using seat belts to restrain their child indicated that the decision to graduate the child was influenced by the law in their state. Based on their comments, some parents clearly believe they can rely on the law in their state to guide them in identifying the safest form of restraint for their children.

- ❖ Perceptions of “safer” alternatives: Seat belt attachments such as the [Brand Name] device offer a number of perceived advantages over booster seats (convenience, cost, no resistance from children). This, combined with the belief among many parents that these devices compensate for poor seat belt fit and are as safe or safer than a booster seat for their child, represent a key barrier to booster seat usage. With these devices apparently becoming an increasingly attractive and popular alternative, more information about the associated risks clearly needs to be communicated to parents.

Perceptions Concerning Booster Seats

In exploring parents' knowledge and perceptions concerning specific forms of child restraint, it became evident that some parents do not make a clear distinction between child safety seats and booster seats. While most seem to be able to make the distinction when urged to do so, many seem to think of booster seats and child safety seats as one broad category of safety seats. It is critical that parents understand and make a clear distinction between safety seats and booster seats. Further, if they are to understand the importance of using each of these restraints at a specific point in the child's development, it is critical that they understand the specific purpose and function of each.

As noted previously, the majority of parents who participated in this research apparently do recognize that a booster seat is the appropriate restraint to use when a child outgrows a child safety seat. Most parents believe that the transition from a child safety seat generally occurs at about the time a child reaches 40 pounds.

Notably, however, parents' perceptions of when a child should be transitioned to a seat belt vary and, consistent with the previous research, many parents are not aware that the transition should not be made until the child reaches 80 pounds or about 8 years of age.

Specifically, a number of misperceptions concerning when a child is ready to be restrained in a seat belt clearly need to be changed. Among the criteria cited by parents in this research are:

- ❖ **Size:** While most parents recognize size as the key factor, most of the focus group participants cited parameters of 60 pounds or less. Many of the parents who have already transitioned their child to a seat belt, believe the cut-off for a booster seat is 40 pounds.

- ❖ **Age:** While most recognize that the child's size, more than their age, is a key determinant, in citing the expected age at which a child is likely to make the transition from a booster to a seat belt, most parents indicated an age of about 6 years. In the minds of parents, there seems to be a strong association between this age as the appropriate transition point and the time a child starts kindergarten.

- Notably, a number of parents in the seat belt user group stated that booster seats are primarily intended for children of about age 3 or 3 ½.

- ❖ **Maturity:** As in the in-depth discussions conducted last year, a child's maturity level also arose as a criterion for determining a child's readiness to move up to a seat belt. Specifically, some parents apparently believe that when a child is mature enough to know that he should not unfasten the seat belt and will remain seated with the seat belt buckled, this is a signal that he is ready to graduate to a seat belt. This apparently relates to the belief that, at this age, the primary purpose of any form of restraint is to keep the child secured and prevent the child from moving around in the vehicle. Thus, to some, when the child reaches a certain level of maturity or understanding, he is ready for a seat belt alone.

Notably, some parents in this research – especially those who have not yet transitioned their child to a seat belt – clearly recognize the importance of proper seat belt fit as a criterion for determining their child's readiness for a seat belt alone. Other findings of this research suggest that this is a criterion that could enhance the current recommendations for child restraint as a means for parents to determine whether or not their child is ready to graduate to seat belts. At the same time, however, this emphasizes the importance of disseminating information about [Brand Name] and other seat belt attachments, which are apparently promoted as a means of compensating for poor seat belt fit.

Perceptions of Specific Booster Seat Designs

Key findings related to parents' perceptions of specific booster seat designs include:

- ❖ In terms of their own experience, most parents in this research have apparently used and are familiar with the shield design, while familiarity with the belt-positioning designs – especially the high-back design – seems to be somewhat more limited.

- ❖ The high-back belt-positioning seat is clearly perceived as the safest booster seat, and the one that offers the child the greatest comfort.

- ❖ Probed on whether the fact that the belt-positioning booster seats are not anchored to the vehicle represents a safety risk for children, most parents in the focus groups indicated the belief that it does. This perception can clearly represent a deterrent to the use of these seats among some parents.

It is particularly notable that a number of parents in the focus groups not only had distinctly different impressions of the high-back and low-back models, but also viewed each of these designs as appropriate for children at a different stage of development. Several parents clearly considered the high-back design more appropriate for younger children when they outgrow a safety seat and who need more support, with the low-back design being more appropriate for older children who are not yet ready for a seat belt.

Further, some parents observed that, with the high-back seat bearing close resemblance to a safety seat, it is especially likely to generate resistance from children when their peers are no longer using a booster seat. Conversely, the low-back would not only seem less like a safety seat (a “baby seat”) to children, but would also draw less attention from peers. This might make the low-back more acceptable to older children and generate less resistance.

It was also observed by at least one parent that the low-back seat would be considerably less bulky and more convenient than the high-back design.

Thus, while it is not likely to provide a single solution to overcoming the problem of peer pressure and child resistance to booster seats among school-age children, some parents did feel that progressively graduating a child to different booster seat designs could help alleviate this problem. While the added cost of this alternative was not addressed by parents in the focus groups, several commented on the likely appeal to their child of making a step up to the low-back belt-positioning seat from a high-back seat.

In supplementary discussions, a more desirable alternative was identified: a four-in-one child safety seat that would grow along with the child, from birth to school age, from infant seat to booster seat. Such an alternative would overcome the cost barrier for some parents of purchasing one more seat for their child, while still providing the child with important child-restraint “milestones” as the seat changes and they graduate from one stage to the next.

Such a step-wise progression of seats – or stages of a single seat – could also serve to naturally extend the use of a booster seat until the seat belt fits the child

properly. This is an outcome that this research emphasizes as critical in reducing premature graduation, considering that premature graduation *from a booster seat* to a seat belt is highlighted as a key element of the problem. Further, it is likely to be substantially easier for parents to overcome a child's resistance to *staying* in a booster seat longer than the child might like than to force a child *back* to a booster seat (a "baby seat") once the child has graduated to seat belts.

Parents' Awareness of and Reactions to Recommended Best Practices

For the most part, while parents in this research did not question the credibility of the information presented in recommended best practices, the majority clearly found some of it surprising. In particular, across all child restraint user segments, information that was most often new to parents included the 4'9"/80-pound parameter for booster seats, and the risks associated with the shield design booster seat.

Concerning the 80-pound/8-year parameter, as noted previously, many parents expect resistance from their child well before the child reaches that point. Also as suggested earlier, much of this resistance relates to peer pressure. That many or most other children at the age of about 6 are wearing seat belts is clearly inconsistent with this recommended practice. This inconsistency clearly generates resistance from children. It also creates somewhat of a dilemma for many parents – both in explaining this inconsistency to their children and for some, in justifying it for themselves.

That school buses do not have booster seats for younger children being transported to daycare or kindergarten represents another inconsistency between these recommendations and what is general practice today. Several parents focused on this particular inconsistency as one that is difficult to understand or justify.

Notably, this 80-pound/8-year criterion is also inconsistent with the law in most states. This represents another potentially powerful inconsistency when it comes to parents' perceptions of when it is appropriate to graduate their child to seat belts. Specifically, while it seems most parents base their decisions concerning child restraint on their own beliefs more than on what the law mandates, some parents are guided by the law. Others seem to "fall back" on what the law mandates as a standard that corroborates their inclination to graduate their child to seat belts. Further, many parents "use" the law in countering any resistance they may get from their child to wearing a seat belt. If the law were to mandate the use of a booster seat, this might make it easier for

some parents to fight, and win, the “battle” with children to extend the use of a booster seat. Others reportedly will use a booster seat simply to avoid paying a fine.

The Impact of Information

Even in the face of child resistance and other existing barriers, and without other interventions, it was evident that increased awareness of the recommended best practices would likely have an impact on some parents’ behavior when it comes to graduating their child to seat belts. In this research:

- ❖ In the focus groups, several of the parents using seat belts for their child indicated they plan to switch the child back to a booster seat based on the information presented to them. Likewise, several parents in other groups who had prematurely graduated older children to seat belts indicated their intention to switch the child back to a booster seat.
- ❖ Among the discussion respondents, several seat belt users indicated their intent to at least re-evaluate their choice of child restraint, or to choose a booster seat rather than a seat belt for a younger child not yet graduated from a car safety seat.
- ❖ Particularly striking was the case of one seat belt respondent who had reportedly been using a seat belt for her four-year-old until only a few weeks prior to the discussion. After seeing information about the potential consequences of seat belt use for small children in Parents Magazine, she transitioned her child back to a booster seat.
- ❖ Another example of the power of information in reducing premature graduation is seen in the case of one booster seat user whose choice of child restraint had been influenced by information received from her auto insurance provider, State Farm. Clearly, State Farm’s participation in the Partners for Child Passenger Safety is having an impact on some parents.
- ❖ Among booster seat users using a shield design booster seat, the information presented also had an impact. Several of these parents indicated their intention to make an immediate change from the shield design to a safer design.

Of course, this information alone will not impact the child restraint decisions and behavior of all parents. Even among parents in this research, many seat belt users were clearly not inclined to switch their child back to a booster seat, despite being aware of the added risk of injury associated with seat belts. Further investigation may be needed to learn other ways of changing the child restraint behavior of these parents.

The Importance of Proper Seat Belt Fit

As mentioned, some safety seat users did cite proper seat belt fit as the criterion they will use to determine when their child is ready to move up to a seat belt. However, as also noted, many of the seat belt users are reportedly concerned that the seat belt does not fit properly and yet they do not seek an alternative for their child. This suggests a need for educating parents not only on exactly how a seat belt should fit their child, but also on the implications for their child's safety if it does not fit the child as it should.

Others believe devices such as the [Brand Name] seat belt attachment offer a safe alternative. More information may also need to be communicated to parents about the potential risks associated with the use of this type of product.

Parents' thoughts on possibly shifting the focus of the current best practices to reinforce parents' knowledge as well as the importance of proper seat belt fit are particularly noteworthy. Specifically, several parents in this research felt the parameters for determining the optimal restraint for a child should be more standardized. Based on the comments of a number of parents, the current guidelines have a number of weaknesses.

- ❖ They fail to address the specific dimensions and stature of each individual child. More importantly, based on this research, given that each child's size and stature is somewhat unique, parents often feel that the designated parameters do not apply to their child's particular size and frame.
- ❖ The various age and weight parameters can be confusing or hard for parents to remember.
- ❖ The guidelines do not convey the reason behind or the importance associated with each specific weight parameter. In particular, the guidelines as presented do not link

the importance of proper seat belt fit with the designated parameters of 8 years or 80 pounds or 4' 9".

- ❖ Similarly, the current guidelines do not communicate how a parent can tell that a seat belt fits their child properly so that the child is safely restrained.

Incorporating more "standardized" criteria for determining the optimal form of restraint to use for any given child emerged as a desirable enhancement to the best practices as presented. Based on this research, it is hypothesized that such a change could serve to make the information more meaningful to parents, as well as easier for parents to remember and follow. It may also be easier for parents to explain and justify the need for a booster seat to their child.

Specific to the parameters designated for school-age children, one possibility to consider would be the addition of a guideline centered on the way the seat belt fits a child. Specifically, communicating how the seat belt should fit a child (and perhaps how it should not) in order for it to safely protect the child from injury would apply uniformly to all children, regardless of their particular dimensions. This information could be presented in conjunction with appropriate size and age guidelines. Further, this type of criterion could more effectively make the importance of proper fit more intuitively clear to parents than age or weight requirements that may seem somewhat arbitrary to some.

Diagrams were suggested by some as a means of clearly illustrating for parents what is and is not the proper fit for a child before they are graduated to a seat belt.

Further support of the impact that understanding the importance of proper seat belt fit may have is found in the impact this type of information had among parents in the seat belt user focus group. In this group, a CHOP representative supplemented the best practices with an explanation of how, when the seat belt fits properly, it falls on the strongest parts of a child's body – over their hips and across their chest – as opposed to on their neck or abdomen. Among this particularly hard-to-influence segment, this information seemed to be more meaningful than the best practice guidelines alone.

Other Strategies for Reducing Premature Graduation

Parents in the focus groups often remarked on the appeal of booster seats that are built in to vehicles. While the cost of these seats was not discussed, many of these

parents felt that seats that are built into vehicles would represent a solution to many of the barriers to booster seat use.

As noted previously, a single seat that will grow along with children from infancy to school age was also identified as desirable and could overcome a number of barriers to the use of booster seats.

Raising parents' awareness of the recommended best practices for child restraint and the potential consequences of not following these practices clearly plays a critical role in reducing the problem of premature graduation. Parents' brainstorming on strategies for communicating this and other information to parents and for promoting the use of booster seats produced a long list of ideas. These ideas are summarized on [page E-22].

In communicating the importance of following the best practices for child restraint, the types of information parents feel will have the greatest impact include crash tests and other research that convey the potential consequences when children are prematurely graduated. Others indicated that the "shock-value" of presenting real-life stories and pictures of children who were injured would have an impact and move parents to change their child restraint behavior.

Possible spokespeople for effectively delivering the message about booster seats and child restraint might include celebrities known for their role as caring, involved parents, with Maria Shriver named by several parents in this research. Children could also be used effectively in a media campaign – for promoting booster seats to parents (by confronting them with the potential consequences to *their* child) as well as to children (by demonstrating how "cool" booster seats can be). Well-known medical professionals such as those featured in Parents Magazine might also represent effective supporters of critical child restraint information and could effectively communicate the potential consequences of not following the recommended best practices. Notably, according to several parents, just knowing that CHOP is behind research that led to the recommended best practices for child restraint lends considerable weight and credibility.

When it comes to gaining child acceptance of booster seats – particularly among school-age children – parents offered the following suggestions for marketing seats to children:

- ❖ Cartoons/videos that present popular characters actually sitting in booster seats
- ❖ Endorsements by personalities and celebrities popular among children, including Britney Spears and well-known sports figures
- ❖ Through schools and teachers: according to parents, children generally accept what teachers say as the indisputable truth.
- ❖ Public service announcements aimed at children such as those in the “The More You Know” series.
- ❖ Mild scare tactics: a milder version of the scare tactics suggested as compelling to parents

Word-of-mouth was also identified as a potentially effective means of communicating important information about child restraint. Encouraging parents to “spread the word” could play a key role in efforts to reduce premature graduation.

PARENTS' SUGGESTIONS FOR COMMUNICATING/IMPLEMENTING BEST PRACTICES FOR CHILD RESTRAINT

- Seminars and training courses
 - Presented by sheriff's departments, police and fire departments
 - Presented at retail outlets that sell safety and booster seats, including Wal-Mart, K Mart, and Sears
 - Presented outside supermarkets
- Offer free or discounted seats to those who attend seminars/courses
- Videos and printed information distributed by hospitals before babies are released to parents after delivery
- Checkpoints for identifying cases of sub-optimal child restraint
 - Inspections for appropriate restraint (as well as proper installation of seats) at inspection stations
- Programs for parents to trade-in used safety seats for coupons or discounts on a new safety seat or booster seat
- Reduced rates on auto insurance for compliance with best practices
- Incorporate best practices for child restraint into driving tests
- Link reminders to check child restraints (practices and installation) with other annual events/reminders, such as changing clocks at Daylight Savings Time
- Similarly, establish and promote a "Child Restraint Month" – a specific month of every year when attention to proper child restraint is intensified
- Pediatricians: information distributed, posted at pediatricians' offices, as well as more proactive involvement by pediatricians
- Daycare centers
- Schools, through teachers
- Articles/announcements in local newspapers
- Parents' Magazine
- Commercials/public service announcements
- Television news magazines such as Dateline and 20/20; news and information programs (the Today Show)
- Billboards
- Flyers/newsletters distributed by a variety of sources:
 - Townships/municipalities
 - Auto insurance companies
 - At inspection stations
 - Department of Transportation
- Libraries
- The Internet/Web sites for parents
- Lamaze classes/pre-natal classes
- Notification from the Dept. of Health at the child's birth (include a schedule of restraint usage along with a schedule of immunizations; also provide this information on a handy refrigerator magnet)
- In-store displays and "information centers," where parents can easily find information on recommended child-restraint practices and on specific booster seat designs.

RECOMMENDATIONS

The fact that premature graduation is apparently so widespread is, in itself, a key factor in perpetuating the problem. Specifically, the fact that what is safest for children is inconsistent with the type of restraint used for so many children over about 5 years of age clearly generates considerable resistance among children of the same age – an age at which peer pressure can be particularly powerful. Children’s resistance, along with the apparent inconsistency between the recommended form of restraint and that which others – including parents, schools, and lawmakers – are using makes the battle particularly challenging for parents.

As a complex problem, there is clearly no single solution for premature graduation. The results of this phase of the research support the recommendations made based on the previous research and further suggest the following as things to consider in efforts to address this problem.

- ❖ Communication is still considered key to reducing the problem of premature graduation. An aggressive campaign is needed to communicate critical information concerning child restraint to parents through television programs and parenting magazines and through use of as many as possible of the other avenues identified by parents in this research.
- A clear distinction between booster seats and child safety seats – and the specific purpose and function of each – needs to be made or reinforced in the minds of parents, with particular emphasis on the unique function of booster seats. Specifically, parents’ awareness and understanding of the “positioning” purpose of booster seats need to be reinforced in conjunction with the potential for seat belts to contribute to child injury when they do not fit properly.
- Parents need to be educated on the availability of different booster seat designs and the specific advantages and disadvantages of each type, including that:
 - The shield design is not recommended and the evidence that supports this;
and

- The fact that belt-positioning seats are not anchored to the vehicle does not diminish their safety or their ability to protect a child from injury.
- Strategies that promote the step-wise progression of children from a safety seat to a high-back belt-positioning seat to a low-back seat prior to seat belts might be considered. Specifically, such a step-wise process can help make booster seats more acceptable to children, thereby making it easier for parents to extend the use of these seats until the child reaches the proper size. Even more desirable would be a single child safety seat that would grow with the child from infancy to school age.
- Awareness of exactly how a seat belt should fit a child needs to be raised among parents. More important, parents need to be educated on the reasons why proper fit is so critical.
- Along with information about proper seat belt fit, more information on the benefits *and risks* associated with seat belt attachments such as the [Brand Name] device needs to be aggressively communicated to parents.
- Awareness of the recommended best practices for child restraint and the potential for injury to children if these practices are not followed clearly needs to be raised among parents. In particular, the parameters for determining when a child is ready to be graduated to seat belts need to be aggressively communicated.
- In the communication of best practices, consideration should be given to incorporating proper seat belt fit into the guidelines as an added criterion to age, weight, and height for determining the child's readiness to graduate.
 - This type of standard will likely help parents to remember and follow the guidelines and can also be used to convey the function of booster seats and the importance of proper seat belt fit, as well as the implications of improper fit.
 - Diagrams can be used to clearly illustrate the correct and incorrect fit in a way that parents will remember.

- In terms of parents' attitudes and approach to child restraint, parents should be encouraged to establish non-negotiable rules concerning child restraint early to discourage child resistance later in the child's development.
 - The other parenting approaches identified in this research should also be promoted among parents. These include the importance of consistency, starting early to establish a non-negotiable policy for child restraint, setting *clear boundaries with respect to child restraint rules*, *communicating the link between booster seats and the child's safety*, and emphasizing the child's individuality, as opposed to being considered just like other children who are prematurely using seat belts.
 - Creating an association in the minds of parents between the importance of their child wearing a bicycle helmet and the importance of sitting in a booster seat could represent a meaningful analogy, considering that most parents reportedly accept and enforce bicycle helmet use by their children.
- ❖ State Farm's efforts to communicate and encourage CHOP's recommended best practices had dramatic impact on one parent in this research. More widespread participation by insurance companies in the Partners for Child Passenger Safety could clearly have more widespread impact.
 - ❖ Adoption of the recommended best practices for child restraint into law would likely have significant impact on the incidence of premature graduation.
 - ❖ Booster seats that are built into vehicles would clearly overcome many of the barriers to the use of these seats. While the cost of these seats may always be prohibitive to some, it is important that vehicle manufacturers work in alliance with child safety advocates and booster seat manufacturers to design and promote seats that will be more acceptable to children and parents.
 - ❖ While there was limited discussion in the current research of the appropriate name for booster seats, it is again recommended that consideration be given to promoting

a name change. The current name is not clearly communicating the purpose of these seats. Further, while not entirely associated with the name, children often think of booster seats as “baby seats.” Efforts to promote and communicate a new name for booster seats could also serve to emphasize that booster seats are distinctly different from and have a distinctly different purpose and function from that of child safety seats.

Further Investigation

This research offers a wealth of information when it comes to identifying factors that potentially lead to premature graduation. It further highlights several distinguishing characteristics of those who are apparently most likely to graduate children to seat belts prematurely and least likely to change their child restraint practices even with knowledge of the potential consequences.

As qualitative research, however, the results do not provide important information on what distinguishes these parents from others, the specific characteristics that profile these parents, or how large a segment of parents they represent. Further investigation among parents who have graduated or intend to graduate their child to seat belts prematurely could be useful in better understanding these parents and in the development of strategies to change their child restraint practices.

- ❖ Quantitative research might be considered to further identify, size, and profile key segments of parents according to their child restraint attitudes and practices. The results of such research could be used in the development, prioritization and targeting of key strategies for educating parents and reducing premature graduation.

SUMMARY OF FINDINGS

CHILD BEHAVIOR

Child Resistance to Booster Seats

With the focus group participants including users of a variety of different types of restraint for their 2-to-4-year-old, the extent to which the child resists the particular form of restraint used was explored at considerable length. Interestingly, based on these discussions, it appears that parents of children who are placed in a booster seat are the most likely to meet with resistance. Specifically:

- ❖ Among those parents who are currently using a child safety seat for their child age 2 to 4, while some do reportedly have problems getting their child to sit in or stay seated in the safety seat, more often these parents indicated they rarely experience any difficulty;
- ❖ Likewise, relatively few problems were reported by the parents in the seat belt user group. According to these parents, their children don't object to wearing a seat belt, as it is perceived as less confining than other forms of restraint and, as will become evident, it is also perceived as the most "grown-up" form of restraint;
- ❖ Notably, however, in the group of parents whose 3- or 4-year-old is restrained in a booster seat, virtually all have reportedly experienced some form of resistance from their child, generally due to the child's perception that the seat is a "baby seat."

Across these user segments, the extent and nature of resistance encountered seems to encapsulate the very process of transitioning a child from each successive form of restraint as the child grows and matures. Further, it tends to highlight how the way in which various forms of restraint are associated with the child's maturation represents what may be the most significant barrier to the extended use of booster seats. Specifically:

- ❖ As noted, according to the participants in Group 3, who use a booster seat for their child age 2 to 4, the resistance they encounter typically relates to the child's desire to "move up" from a booster seat to a seat belt. It was apparent that, to many children, using a seat belt is perceived as one of the rites of growing up – a sort of "badge" indicating that the child has become a big boy or big girl. Consistent with the findings of the previous research, this is especially likely to occur when the child has an older sibling who uses a seat belt.
- ❖ The prevalence of this natural desire among children to graduate from a booster seat to a seat belt – and its significance to the problem of premature graduation – is highlighted by the findings among those in the seat belt user group. Especially noteworthy is that most of these seat belt users did reportedly initially transition their child from a child safety seat to a booster seat. However, as will be discussed in greater depth later in this report, their child's desire to move up to a seat belt, and

thus, the child's resistance to the continued use of a booster seat, clearly played a key role in the premature graduation of these children.

- ❖ Of course, based on this research, booster seats can and often do play a critical role in a child's maturation. Specifically, in a number of instances, parents noted that their child initially viewed the graduation from a child safety seat to a booster seat as an important step in becoming "a big kid." That a booster seat can and often is incorporated into the maturation process was confirmed by those in the child safety seat user groups, several of whom likewise indicated that their child looks forward to moving up to a booster seat.

The importance of this natural progression of specific types of restraint in a child's maturation – from safety seat to booster seat to seat belt – is apparent in the following comments of parents.

"My older son is in a booster seat. Today, my 2-year-old hopped into the booster and he just closed it and wanted to sit there. I told him no, not until you are four. He thinks of the booster seat as a big kid seat. Today he got in and he felt like, 'look at me, I'm a big boy.'" (CHILD SAFETY SEAT USER/GROUP 1)

"I find that when my daughter sits on the seat with a seat belt, I have problems getting my son in the booster seat because he wants to sit with his sister on the seat with the seat belt on." (BOOSTER SEAT USER/GROUP3)

"My son has two half-brothers and they are older. He says if they can sit on the seat, well I'm a big boy now and you said when I was four and going to school I could wear a seat belt. It's like a signal of being a big kid." (BOOSTER SEAT USER/GROUP3)

"To them, a booster seat means being a baby." (BOOSTER SEAT USER/GROUP3)

“When a 4-year-old sees a 7-year-old or older in a seat belt, they don’t always want to do what they are doing but what everyone else is doing. So, resistance plays a part sometimes.” (SEAT BELT USER/GROUP4)

“The biggest problem I had with the car seat was when a lot of her friends were at the age or the weight where they were out of it. She was happy going to a booster seat from the car seat because she felt like she was a big girl.” (SEAT BELT USER/GROUP4)

Thus, while it is known that many parents skip the booster seat entirely in the progression of restraints used for their children, these findings highlight the premature graduation of children *from booster seats* to seat belts as a key element of the problem. Likewise, they emphasize the importance of not only promoting the transition of children from car seats to booster seats, but also of *extending* the use of a booster seat until the child reaches the age and size when a seat belt fits properly.

Strategies for Overcoming Child Resistance to Booster Seats

Clearly, identifying strategies for overcoming a child’s resistance to a booster seat represents a key objective of this research. Beyond the simple identification of potential strategies, however, the results of this research suggest that the strategies currently used by different restraint user groups could represent a key factor distinguishing those who prematurely graduate their child to seat belts.

Focusing on the booster seat user group, it was evident that these parents make a clear distinction between the strategies they may use in overcoming their child’s resistance to other day-to-day activities, such as going to bed, or taking a bath, etc., and those that are appropriate in getting a child to sit in a booster seat. While various types of “negotiation” may be used to gain a child’s cooperation in going to bed or taking a bath, among these parents, no such strategy is used when it comes to getting the child to sit in a booster seat.

Parents in all groups described a variety of strategies for getting a child to cooperate in day-to-day activities such as going to bed or taking a bath. Strategies cited by those in all groups include:

- Offering rewards, or incentives (i.e., “bribery”);

- “Threatening” to deprive a child of a desired food or activity; or
- Making the required activity a game.

Notably, however, it was particularly apparent among the booster seat user group that the same strategies do not apply when it comes to getting their child to sit in a booster seat. In that situation, these parents made it clear that they are firm and unbending in their approach. In short, when it comes to their child sitting in a booster seat, these parents don’t negotiate on the outcome – “that’s just the way it is.” One strategy that is frequently used by these parents is to simply tell the child that the car won’t move until they’re in their booster seat.

Notably, the same basic approach was also reported by many of those in the child safety seat user groups who occasionally encounter resistance from their child to sitting in the safety seat. This unbending, non-negotiable position on their child’s restraint is apparent in the following verbatim comments of these parents:

“You just do what you have to do.” (BOOSTER SEAT USER/GROUP3)

*“Those kinds of strategies aren’t used when it comes to booster seats. Maybe because you know they can’t win that argument. You can actually put off bedtime another ten minutes – they have ways of winning that argument. But when it comes to driving in the car, they have to be in the booster seat.”
(BOOSTER SEAT USER/GROUP 3)*

“It comes down to a positive or negative response. For example, I’ll say, ‘We can’t get there until you get in your seat.’ (CHILD SAFETY SEAT USER/GROUP 1)

With these parents’ non-negotiable approach to the use of a safety or booster seat in mind, an observation made in the previous research among children is worth noting. Specifically, it was observed that when the parent creates an environment early on that communicates that proper safety restraint usage is a non-negotiable issue, children are often likely to be accepting.

A number of strategies for overcoming a child’s resistance to sitting in a booster seat were offered by the booster seat users who participated in the supplementary in-

depth discussions. Notably, these parents appear to have been particularly successful in overcoming or avoiding their child's resistance so far. Their strategies clearly reflect the non-negotiable approach discussed above, as well as the importance of establishing this policy at an early stage of the child's development. Overall, the approaches suggested by these parents seem to support the theory that good parenting skills represent a key element in overcoming child resistance as a barrier to booster seat use. To summarize, in the experience of these parents, the following approaches have been effective in managing the inclination of many children to resist sitting in a booster seat:

- ❖ **Be consistent:** *Consistency* in upholding the requirement that the child be seated in his or her booster seat is essential to overcoming the child's inclination to try and "negotiate" the issue. This includes all types and lengths of trips – in the example described by one parent, even when driving from one store to another in a shopping mall.
- ❖ **Start early:** As noted above, if a parent establishes a non-negotiable policy when the child is at a young age and from the start of booster seat usage, the child is more likely to accept that any resistance on his part will be overruled.
- ❖ **Set boundaries/"Be the parent":** For some parents, it is as simple as "taking a stand" on what is the right thing to do to protect their child from injury, and never giving in (emphasizing the importance of consistency). It was evident that these parents see the need to overcome any resistance their child may exhibit to sitting in a booster seat as simply part of being a parent. In the words of one parent, *"Keeping my child safe is the most important job I do."*
- ❖ **Communicate safety:** A technique for overcoming child resistance to sitting in a booster seat described by a number of these parents is that of reasoning with their child. These parents described various ways of explaining to their child the importance of sitting in a booster seat when it comes to keeping them safe.
 - To some extent, this technique is based on these parents' belief that their child is "mature enough" to understand the concept of safety, and to grasp the link between their own safety and riding in a booster seat.

- Thus, whereas many parents have cited their child's maturity level as a reason to graduate the child to a seat belt, parents might be encouraged to leverage the child's maturity more effectively in convincing the child to accept riding in a booster seat. In other words, if the child is mature enough to know he shouldn't unfasten his seat belt, he is mature enough to understand the importance to his own safety of sitting in a booster seat.

- ❖ Emphasize individuality: Faced with their child's resistance due to peer pressure, several of these parents described the emphasis they place on telling the child they don't care what their friends or their friends' parents are doing – in the words of one parent, *"We're raising you."*

The following verbatim comments of discussion respondents currently using a booster seat for their children age 2 to 5 clearly communicate these parents' resolve to uphold this practice regardless of any resistance the child might exhibit.

"He doesn't resist the booster seat. From day-one he's ridden in a car seat and I just don't have a problem. I think if you establish it from the beginning then you don't have a problem with them." (BOOSTER SEAT USER/IDI)

"He'll ask why he has to sit in the seat and once I explain it to him and he can kind of get a picture of it, then he accepts it. I tell him, 'You're safer in this seat. If something should happen, you won't get hurt. And if you do get hurt, you won't die. And this is what it is, this is the rule – you have to ride in the seat.' And I don't really have a problem. There are certain things that just have to be done." (BOOSTER SEAT USER/IDI)

"Once I say it, I don't go back on it, especially when it comes to something like this. It's a matter of consistency. He knows, even at this age, I won't move the car unless he's in his seat." (BOOSTER SEAT USER/IDI)

"I feel a parent must be a parent. Children need that. They need us to stand up for what is right. And I feel like I'm setting a good example." (BOOSTER SEAT USER/IDI)

"Some parents aren't setting boundaries with the child. They just don't realize that that's the most important job we have is to be a parent and to keep them safe. The world is a dangerous place and when you have them in your automobile, you have to keep them safe and do the best you can do. (BOOSTER SEAT USER/IDI)

"I've described what could happen, that he could be hurt very badly. I try and relate it to injuries he's had, like when he banged his head. I tell him it would be much worse than that." (BOOSTER SEAT USER/IDI)

"The other day somebody pulled out in front of me and I had to stop suddenly and then I explained to her, ' See, that's why you have to sit in the seat with the seat belt on,' because everything else in the car, except her, went flying." (BOOSTER SEAT USER/IDI)

"Other things we might negotiate or battle out with her, but not this. It's just easier to always say no. I find on things where we do give in, we suffer for that later on – if you do it once, you're sorry later. It's a matter of just always saying no. That seems to be the only thing that works. We've given up on getting her to bed at a certain time – we're lazy on that. But when it comes to the booster seat or thinking she can run out in the street, it's the same thing. You just can't let them win that one." (BOOSTER SEAT USER/IDI)

Probed on what distinguishes situations where the child may resist sitting in their safety seat or booster seat from other types of scenarios, many parents clearly focused on safety as the underlying factor. Where the child's safety is concerned, there is simply no room for negotiation.

"It could be their life." (BOOSTER SEAT USER/GROUP 3)

“Getting a bath or not is not going to hurt them.” (BOOSTER SEAT USER/GROUP 3)

“In the car seat battle, he might delay me but he never wins. I have the final say.” (CHILD SAFETY SEAT USER/GROUP 1)

“It’s not a question of strategy. It’s just the way it is. Authority.” (CHILD SAFETY SEAT USER/GROUP 2)

- ❖ It is noteworthy that, when asked to name any other situations involving their children that are “non-negotiable,” that of requiring the child to wear a helmet when riding a bicycle quickly came to many parents’ minds. It is also noteworthy that wearing a bicycle helmet is a non-negotiable requirement that, based on this research, virtually all parents have come to accept and enforce – regardless of the type of vehicle restraint they use for their child. Specifically, as among the booster seat and safety seat users, virtually all of those in the seat belt user group also reported they require their child to wear a bicycle helmet.

- ❖ Some parents further extended the analogy between bicycle helmets and booster seats by pointing out that, while helmets have now become widely accepted by children and adults as a fundamental necessity when riding a bicycle, they were seldom worn a few years ago. Similar to booster seats, and even seat belts, it has taken time to change established beliefs and behavior concerning the importance and use of bicycle helmets. In the words of one parent:

“When I was a kid I’d rather not ride my bike than wear a helmet. But today, all the kids are doing it. To them it is nothing to wear a helmet, they don’t think twice. If everybody would (use a booster seat), it would make it easier to do it.” (SEAT BELT USER/GROUP 4)

- ❖ Thus, creating an association in the minds of parents and children between the potential risk of not wearing a bicycle helmet and the risk to children of not being properly restrained in a vehicle could represent an effective tool in gaining broader acceptance of booster seats.

Child Resistance and Premature Graduation

Based on the strategies reported by many of the booster seat users in this research, despite their child's resistance to booster seats, these parents have upheld their resolve to enforce the use of a booster seat for their child. This was clearly not the case among those who prematurely graduated their child to a seat belt, however, with these parents reporting that their child's resistance played a significant role in their decision to do so. While the child's desire to graduate to a seat belt – often as a result of seeing other children in seat belts – clearly was not the only factor involved in the switch, as is evident in the following comments of these seat belt users, it did have substantial influence. Notably, for some, the decision to graduate their child to a seat belt was apparently made despite the parent's own underlying safety concerns.

“I think a car seat might still be better protection, but he won't do it and so a seat belt is my best with what he is willing to do and without too much hassle. I think the seat belt is doing it as best it can but my concern is, yes, it will keep him from flying forward but if I were in an accident, would it totally protect him? No, I don't think so.” (SEAT BELT USER/GROUP 4)

“The high-back where you can set (the seat belt) where it came over the child was the best one we used. We stopped using it because when a four year old sees a seven year old or older in a seat, they don't always want to do what they are doing but what everyone else is doing. So, resistance plays a part sometimes.” (SEAT BELT USER/GROUP 4)

“Another issue is if you carpool to nursery school or whatever, the parents don't all give you their car seats. So your kid is in the car seat and the rest of them hop into the car and sit in a seat belt and they question why they are in the car seat. So to a point, that's resistance.” (SEAT BELT USER/GROUP 4)

Parents in the seat belt focus group were asked to rate the extent to which their child's acceptance of – or resistance to – sitting in a booster seat influenced their decision to graduate the child to a seat belt. Their ratings, summarized below, merely emphasize the importance of child resistance in the problem of premature graduation.

On a scale of 0 to 10, where 0 represents no influence and 10 represents a great deal of influence, nearly half of the parents in this group assigned a rating of 6 to 10; an additional two parents rated the influence of their child’s willingness to use a booster seat a 5.

Rating	Number who Assigned Rating*
0 to 4	4
5	2
6 to 10	5

**Among a total of 11 participants*

Across all groups, parents frequently referred to their handling of different types of resistance from their child as a matter of “choosing your battles.” Understanding the reasons why some parents choose *not* to fight the battle of keeping their child in a booster seat while others see this as a battle their child can’t win could clearly be an invaluable tool in developing appropriate strategies to reduce the likelihood of premature graduation.

One child safety seat user’s views on other parents who bow to their children’s opposition to sitting in a safety seat may offer some insight:

“One thing I have found with close friends who spoil their children is that they love their children but they take them out of the car seat if they fuss about it. I have found that some parents just want to make their children happy. I want my kids to be happy too, but they are putting their child’s happiness over the child’s safety. I find that to be the case with a lot of parents.” (CHILD SAFETY SEAT USER/GROUP 2)

Barriers to Booster Seat Use

Clearly, a child’s resistance to sitting in a booster seat represents a potentially critical barrier to the continued use of booster seats for many parents. Among those parents who participated in the seat belt user group, a number of other factors also emerged that made a booster seat undesirable to them in restraining their child. It is

important to keep in mind that, in most cases, these parents did use a booster seat for their child before graduating the child to a seat belt. Thus, while these parents may have recognized the importance of using an interim form of restraint, their comments suggest the need for interventions designed specifically to *extend* the use of booster seats until the child can be safely restrained in a safety belt alone.

Among these parents, the following issues frequently emerged as drawbacks these parents associate with booster seats.

❖ Child Comfort/Lack of Support

As expressed in the comments below, perceptions of the child's discomfort while sitting in a booster seat were frequently cited by parents in the seat belt user group as a factor that made the booster seat undesirable. In some instances, this clearly relates to the lack of support provided by the low-back or shield design. Notably, in at least isolated cases, it was the parent's *perception* that the child was uncomfortable, as opposed to the child's complaining or resistance due to discomfort, that apparently prompted the switch to a seat belt.

"Booster seats are not very comfortable for children." (SEAT BELT USER/GROUP 4)

"He really didn't have a problem with the booster seat, but I thought it looked uncomfortable. I thought it would provide more head support. I heard people say that the booster seats aren't that comfortable. A car seat at least had the side. Maybe if it had had sides it would have been better, but when he fell asleep, his head was droopy." (SEAT BELT USER/GROUP 4)

"Our booster seat had a belt that when you attached it, it would cut off her legs – it would dig into her legs. She didn't like that." (SEAT BELT USER/GROUP 4)

❖ Safety

Some of these parents clearly did not perceive the booster seat as a form of restraint that offers a significant safety advantage over seat belts alone. Similarly, some of

these parents complained of their child climbing out of the booster seat. In several of these instances, the booster seat described by the parent was clearly the shield design.

“Mine could climb out of the booster seat. There was no restraint except the car seat that he could not get out of. It was the one that the piece comes over your lap and the seat belt goes across it.” (SEAT BELT USER/GROUP 4)

“I didn’t find that it gave any more safety than a seat belt. Personally, with the one I had, it was no different than raising them up a little higher.” (SEAT BELT USER/GROUP 4)

As is evident in the following comment of one seat belt user, parents’ perceptions of the safety provided by some booster seats further suggest that booster seat design can, in some cases, encourage premature graduation. This is consistent with the findings of the previous research conducted by Roper, indicating that the lack of support provided by some booster seats often raises safety concerns among some parents. As illustrated in the verbatim comment below, some seat belt users in the current research felt the booster seat they used was simply not as safe for their child as a seat belt alone.

“I remember one night driving home and my daughter was in the booster seat and I looked back in the mirror and thought, ‘Oh my God, where is my daughter?’ She was all the way over – there was no support with the booster seat. It was scary for me. I think that was one of the major reasons I took her out of the booster and just put her right into the seat belt because that way she would have support.”

❖ Inconvenience

Some parents in this group complained that the booster seat was inconvenient or awkward to use or to transfer from one vehicle to another.

"It took up a lot of space and it was big and bulky." (SEAT BELT USER/GROUP 4)

Other types of barriers also emerged in the supplemental discussions among seat belt users.

❖ Cost

While the cost of booster seats has not been identified as a common deterrent to booster seat use among participants in this research, as illustrated in the verbatim comment below, the fact that it can be a barrier for some parents was emphasized by some of these respondents.

"At the time we transitioned our child, the car seat was too small. I started looking for a booster seat and I found one that was too expensive. It was over \$100 – that's pretty steep." (SEAT BELT USER/IDI)

Notably, it is the accumulated cost of all the progressive types of safety seats from an infant seat to a booster seat that becomes a deterrent for some parents. It was apparent from the comments of several discussion respondents that, having already purchased several different sizes and designs of safety seats – often multiplied by several children in the family – the added cost of yet another seat for their child became a deterrent to purchasing and using a booster seat.

"The cost is high. We protect infants but as they get older, we resist paying another \$100 for another safety seat." (SEAT BELT USER/IDI)

"They've got infant car seats and toddler car seats that are all in one that have additional padding in them so that you can turn them around and the kid can face forward. They should be making a three-in-one car seat that goes from infant to 80 lbs so that you don't progressively have to buy them – especially if you have more than one child." (SEAT BELT USER/IDI)

❖ The Law

While the law concerning child restraint does not directly represent a barrier to booster seat usage for parents, it clearly does play a role in some parents' child restraint decisions. Thus, with most state laws currently inconsistent with the recommended best practices for child restraint, the law also plays a role in the problem of premature graduation. The role that current laws can play in parents' decision to graduate their child to seat belts prematurely was evident in the supplementary discussion phase of this research. Specifically, several of the discussion respondents who were prematurely using seat belts to restrain their child indicated that the decision to graduate the child was influenced by the law in their state. As is evident in the comments below, some parents clearly believe they can rely on the law in their state to guide them in identifying the safest form of restraint for their children.

"When we transitioned our child to a seat belt, we followed New York law, which says the child must be in a car seat up to age 4 and 40 pounds. Then the child must be in a seat belt." (SEAT BELT USER/IDI)

"I used a booster seat because of his size – he was small. He was in it until he was about 4. The state of Ohio says at 4 years or 40 pounds, so once he hit 40 pounds, he was graduated to a seat belt. He actually liked the booster because he liked to sit up higher. If anything, I have more problem with the seat belt but he outgrew the one that we had and, like I said, the state of Ohio says 4 years or 40 pounds so that told us it was the right time." (SEAT BELT USER/IDI)

After hearing CHOP's recommendations for child restraint, one of these parents expressed his outrage at the failure of the law to set a standard that is safe for children.

"It concerns me that the government has given in to car makers when it comes to establishing a standard restraint. The Federal Government is supposed to be monitoring the safety of automobiles. It monitors car seats and has a mandate to do this. They should make a law and enforce it."

While some of these issues were also raised by parents who are currently using a booster seat to restrain their 2-to-4-year-old, they clearly represented a greater concern among the seat belt users. While the qualitative nature of this research makes direct comparisons across these parent segments difficult, with respect to the perceived inconvenience of using a safety seat or booster seat, the attitudes of those in the booster seat group seem to stand out as quite different from those of the seat belt users. Specifically, as illustrated by the following comments of booster seat users, these parents seem to feel no hesitation or inconvenience in going to extra effort to protect the safety of their child – as well as that of other children.

“My wife will go out and scrounge up people’s car seats to have enough for everybody in the van. We have two. If there are four children, she has to find two more. We won’t drive without them.” (BOOSTER SEAT USER/GROUP 3)

“I have two booster seats. My mother-in-law has one in her car and we go and get it.” (BOOSTER SEAT USER/GROUP 3)

PARENTS’ BELIEFS ABOUT CHILD RESTRAINT

Perceptions Concerning the Transition from a Child Safety Seat

This research sought to gain perspective on the beliefs of parents across the child restraint user segments studied concerning the transition of children through various forms of vehicle restraints. Focusing first on the transition from child safety seats, all group participants were asked until what age a child should be restrained in a safety seat.

While some parents do cite specific age requirements, it is evident that the majority of parents recognize that it is the child’s size, as opposed to the child’s age exclusively, that typically indicates the child is ready for a transition. For some parents, the criterion for transitioning a child from a child safety seat is as general as “when the child outgrows the seat,” while others have more specific parameters in mind. Most often, the parameters quoted by parents center on the 40-pound limit designated by many safety seat manufacturers and recommended by many pediatricians. Some parents believe that the child’s height is also an important factor to consider.

The following comments across parents in all segments illustrate that, while parents clearly have varying beliefs on this key transition point for children, they almost always associate the transition with the child's size.

- ❖ Among child safety seat users – those who have yet to make the transition from a safety seat – the appropriate criteria for transitioning a child from a safety seat were described as follows:

“Until they don't fit. It's at a certain age, but they can still fit after that age. It was 4, but I left mine in the seat until he couldn't fit anymore.” (CHILD SAFETY SEAT USERS/GROUP 1)

“I think 40 pounds is the cut-off.” (CHILD SAFETY SEAT USERS/GROUP 1)

“Some are petite and if they are in a regular seat with a regular seat belt and they are 4 years old but they are a tiny 4-year-old, they are going to fly out of it. It has to do with their proportion but it's easier for parents to remember 4 years old.” (CHILD SAFETY SEAT USERS/GROUP 1)

“The instructions are what we went by. Most everybody keeps the instructions with the car seat and that is what we used when we were deciding. But again, trying is the right thing. That is what is nice about the convertibles, where you can change it from one level to the next.” (CHILD SAFETY SEAT USERS/GROUP 2)

- ❖ Among booster seat users, it is also evident that parents recognize that the point of transition from a child safety seat may be different for children of different sizes.

“It depends on their weight. We have children now who don't look their age. They weigh more than some of their younger or older siblings so to me it depends on their weight.” (BOOSTER SEAT USER/GROUP 3)

“Forty pounds is what the doctors tell you. If you look at most of the car seats, I think it is regulations that say that.” (BOOSTER SEAT USER/GROUP 3)

"Both of my children were around 30 pounds – one was 30 and the other 32 and we put them both into booster seats. I think that at 40 pounds is when you actually go to a 5-point harness, and then use a booster seat with a shoulder strap." (BOOSTER SEAT USER/GROUP 3)

A key advantage of booster seats cited by booster seat users (and mentioned by parents in other groups as well as a factor to consider in transitioning a child to a booster seat) is that the booster seat raises the child high enough to see out the vehicle window, whereas he would otherwise be below the window level. Notably, this is also perceived as an advantage to some children.

"He enjoys getting in it because it boosts him up and he can see out the window and he is happy in it." (BOOSTER SEAT USER/GROUP 3)

- ❖ Interestingly, the comments of seat belt users again tend to distinguish this group of parents from others. Specifically, as is evident in the following verbatim comments, parents who prematurely graduated their 2-to-4-year-old to seat belts seem less informed than other parents, and more inclined to allow the influence of factors such as the child's maturity or convenience to determine when a transition is made.

"I would say a lot of things play a role – the weight, the age, the height. My daughter is heavy and tall. And the maturity of the child. There are a lot of different things. It isn't just weight. If a child is able to take the belt off, that could be dangerous." (SEAT BELT USER/GROUP 4)

"I thought if their knees bent at the seat area that was an indication that they were ready. I was told that when their legs, their knees met where the seat bends so that their feet are not sticking out... So, it was like a height-type of requirement and the weight, but I did not know it was 40 pounds." (SEAT BELT USER/GROUP 4)

"I do not agree with the 40 pounds. That is what my pediatrician told me. I actually had my daughter in a car seat but for us, we have grandparents, aunts,

uncles, we are constantly switching cars. It was just a pain lugging this huge car seat so I finally said we would just use the booster seat until she is 40 pounds and then into a seat belt. For me, the transition was because of the inconvenience.” (SEAT BELT USER/GROUP 4)

Perceptions Concerning “The Next Form of Restraint”

Particularly critical in this research is the perception of these parents when it comes to the specific form of restraint to which a child should be transitioned *after* a child safety seat. Parents’ beliefs concerning this critical transition were explored across all parent segments.

It is important to note that, throughout these discussions, there is some indication that the distinction between a car safety seat and a booster seat may be somewhat blurred in the minds of many parents. The parents who participated in this research did seem able to make a distinction between these two forms of child restraint when asked to do so. However, it is particularly noteworthy that, until they were asked to make such a distinction, many of the parents in these groups seemed to place safety seats and booster seats in one general category. Among the observations that suggest this hypothesis:

- ❖ Among child safety seat users, it was learned in the course of the discussions that, in fact, some of these parents are currently using a booster seat for their 2-to-4-year-old – particularly among those with children age 3 or 4. The following comments clearly convey some confusion on the part of these parents:

“Does a booster seat count as a car seat? (CHILD SAFETY SEAT USER/GROUP 1)

“Mine are in booster seats. When she said car safety, that was a car safety seat to me – that is what I thought a booster seat was. He went from the infant seat to the car seat to now in the booster seat.” (CHILD SAFETY SEAT USER/GROUP 1)

- ❖ Confusion was evident throughout the discussion among parents currently using a seat belt for their child age 2 through 4. These parents’ confusion was particularly

visible when many participants stated the same criteria for determining the transition from a booster seat as they did for a safety seat. Further, despite that most of these parents indicated they had used a booster seat for their child, many also said that seat belts are the next form of restraint after a safety seat. This suggests that these parents tend to think of a booster seat as merely another form of child safety seat.

- ❖ Notably, even among booster seat users, it was necessary to encourage them to make the distinction. When asked what comes after a child safety seat, many of these booster seat users stated that seat belts are the next form of restraint to use.

Clearly, it is critical that parents understand the distinction between safety seats and booster seats, as well as the specific purpose and function of each, if booster seats are to become the generally accepted form of restraint until a child can be safely graduated to a seat belt.

Once these parents made the distinction between these seats, it was evident that most do recognize booster seats as the type of restraint to which a child should be transitioned after outgrowing a safety seat. This is clearly the case among those currently using a booster seat for their 2-to-4-year-old. However, the perceptions of parents in the seat belt and child safety seat user groups further suggest generally widespread recognition of the importance of booster seats as a transitional form of restraint for small children.

Perceptions Concerning the Transition from a Booster Seat

Clearly, to reduce premature graduation of children to seat belts, it is not only critical that parents recognize booster seats as the next form of restraint after a child safety seat, but also that they are aware of the point until which a child should remain in a booster seat. Among the parent segments studied in this research, the findings can clearly offer insight on where misperceptions may lie, particularly among seat belt users, and how the perceptions of these parents differ from others, particularly those currently using a booster seat for their child at this critical age.

As noted previously, among the seat belt users in this study, there was clearly some confusion between safety seats and booster seats, with many citing the same criteria for transitioning a child from each type of restraint. In fact, while many recognized that their child was not ready for a seat belt after outgrowing the safety seat,

most also perceive the 40-pound marker as the point at which a child is ready to transition to a seat belt.

"It used to be 4 years old or 40 pounds and then you can get them out of a car seat to a seat belt." (SEAT BELT USER/GROUP 4)

Still, others in this group indicated that somewhat higher limits than those should be used to determine when to transition a child to a seat belt. Notably, however, even when a criterion of 60 pounds was cited, the likelihood of a child resisting the seat at that point clearly dominated parents' reactions.

"Once they are 40 pounds they are supposed to go into a booster seat – 40 to 60 pounds is the limit, but trying to keep your child in that seat... Mine climbed out of it all the time." (SEAT BELT USER/GROUP 4)

Among parents in the safety seat user group, while all reportedly intend to transition their child from the safety seat to a booster seat, there are clearly mixed perceptions of the criteria that determine when is the appropriate time to transition their child from a booster seat to a seat belt. Key considerations identified by these parents are:

❖ Size

The child's size or weight is again identified as a key factor in determining when the child is ready to move up to a seat belt. However, most of these parents cite 50 to 60 pounds as the perceived cut-off for booster seat use. While the perception of some of these parents does approach (but falls short of) the recommended 80-pound criterion, even a suggested upper limit of 60 or 70 pounds prompted a reaction from many parents that clearly indicates they anticipate resistance from their child. Based on their comments, this will represent a key challenge for many of these parents in the battle to safely restrain their child. Further, based on the way in which these parents have reportedly handled the restraint of older children, for many, it is apparently a battle they have not chosen to fight.

"The booster seats hold up to 60 or 70 pounds and I can't imagine my son being that big. My 10-year-old is 59 pounds and there is no way that he will sit in that seat. He would be very embarrassed in front of his friends and he just wouldn't do it. Even my 7-year-old, he is a little bit heavier and I know he would never get in it." (CHILD SAFETY SEAT USER/GROUP 2)

"It is hard to put a 7- or 8-year old in a car seat – a booster seat." (CHILD SAFETY SEAT USER/GROUP 2)

These comments highlight the impact not only of seeing an older sibling in a seat belt, but of peer pressure in a child's resistance to sitting in a booster seat. Clearly, establishing the use of booster seats as general practice among children up to about 8 years could play a key role in overcoming this barrier.

❖ Age

While most are clearly aware that the child's size and weight play a critical role in determining when the transition to a seat belt should occur, when asked specifically how old they think their child will be when they move up to a seat belt, most indicated the child would likely be about five or six years. Notably, this is often linked to the point at which the child begins school and is exposed to other children – most of whom are not typically restrained in a booster seat.

"I think kindergarten is the cut off. When they go to kindergarten, they lose a lot of their habits and the parents lose a lot of their habits. They have other people driving them around now. They get a taste of what it is like to be out of the seat. At that point it is anarchy trying to get them back in a booster seat." (CHILD SAFETY SEAT USER/GROUP 1)

❖ Maturity

Interestingly, the child's level of maturity again arose as a factor that can contribute to a parent's decision to graduate the child to seat belts. It became clear that, for some, this is linked to perceptions of the primary purpose of various forms of

restraint for a child. Specifically, some apparently believe that any form of restraint that keeps the child restrained and prevents the child from standing or moving around in the vehicle is serving the purpose. Likewise, some see the advantage of a booster seat over seat belts being that the child cannot get out of a booster seat, whereas many children could and would unfasten a seat belt. Thus, when the child is mature enough to know that he should not unfasten the seat belt and will remain seated with the seat belt buckled, some parents believe this is a signal that a seat belt is an appropriate form of restraint.

"I think at the age of 7 or 8, they are mature enough to know that everyone wears a seat belt in the car or you don't go." (CHILD SAFETY SEAT USER/GROUP2)

"My daughter was fine in the car when she got to be 6 or 7, where she would get in and put her seat belt on. My son, when you put his seat belt on, you won't have the car key turned and he already has the belt off. For him, the largest, most successful restraining device I can find that keeps him in the seat is what I will use. But for my daughter, I didn't need it. They stayed seated and wore their seat belts properly." (CHILD SAFETY SEAT USER/GROUP2)

"The child's conduct is a factor. You make sure they are locked into something." (CHILD SAFETY SEAT USER/GROUP2)

❖ Seat Belt Fit

Of particular note is that some parents consider the way the seat belt fits their child as an indication of whether or not the child is ready to be graduated to a seat belt.

"There are a couple of variables – the size of the child, the conduct of the child, the type of car you are driving. In the van I have, the seat belts are way up high and even when he puts it on it just automatically flips behind his head." (CHILD SAFETY SEAT USER/GROUP 2)

"As far as I know, pretty much all cars have shoulder straps for adults in all car seats so I am concerned about getting the shoulder in the right spot." (CHILD SAFETY SEAT USER/GROUP 1)

"He'll be in a booster seat until the seat belt fits him properly." (CHILD SAFETY SEAT USER/GROUP 2)

"I think you have to go by size, some kids at 7 are still tiny and the seat belt will come across the face. You have to go by how it fits." (CHILD SAFETY SEAT USER/GROUP 2)

"Our son was doing the same thing with the straps – you know, getting too far up in the straps – so we went out and bought him a booster seat. I did try the seat belt but he was not ready for that. Even with the harness strap to lower it, it was still too high on his neck and I wasn't comfortable with that so we decided to keep him in the straps in the booster seat." (CHILD SAFETY SEAT USER/GROUP 2)

It cannot be determined for sure whether these safety seat users will choose to fight the battle to keep their child in a booster seat until the vehicle seat belt fits the child properly or not. While it appears many are likely to do so, the comments of others clearly identify their child's resistance to extended use of a booster seat – as well as parents' own misperceptions – as potential barriers.

Among booster seat users, perceptions of when is the right time to switch their child to a seat belt clearly distinguish these parents. These booster seat users appear better informed about child restraint and what determines a child's readiness for using a seat belt than many other parents – particularly among the seat belt user group. Their comments illustrate their awareness of the importance of proper fit – as well as their strong resolve to keep their child in a booster seat until the belt fits properly. According to some of these parents, they would keep the child in a seat even longer if there was one large enough. Following are representative comments of these parents in response to the question of how long they will keep their child in a booster seat.

"My kids are going to hate my guts. They are going to be nine, but if they are still 50 pounds they are in it. My seats go up to 80 pounds and they will be in their seats until then." (BOOSTER SEAT USER/GROUP 3)

"I'll remove the booster seat when he can see out the window and that shoulder strap is not cutting across the neck." (BOOSTER SEAT USER/GROUP 3)

"They need to be well over 50 pounds. They can sit in there until they are 80 pounds. If they are 50 and have a seat belt that is coming across their neck they won't be in the seat belt." (BOOSTER SEAT USER/GROUP 3)

Notably, while some indicated that the child's comfort plays a key role in determining the proper form of restraint, they also indicated that when the child is no longer comfortable in one booster, they will find another alternative – an alternative prior to graduating the child to a seat belt alone.

"When I looked for a booster seat, I had no idea that my daughter was going to have trouble sleeping in it so I didn't consider comfort. Now I'm considering going out and getting another one because she is so uncomfortable. As long as the safety is still there." (BOOSTER SEAT USER/GROUP 3)

"If they're not comfortable in the booster, you have to go and get another type of booster seat. Comfort is a consideration also." (BOOSTER SEAT USER/GROUP 3)

"Safety is first, but why not make them comfortable too." (BOOSTER SEAT USER/GROUP 3)

Despite these booster seat users' knowledge of proper seat belt fit, however, it is apparent that misperceptions can also defeat their best intentions. Specifically, based on the comments of several of these parents, they may have prematurely graduated an older child to a seat belt with the perception that the [Brand Name] seat belt attachment device is adequate in making the seat belt fit properly.

The Importance of Proper Seat Belt Fit

Of particular importance in the discussion among seat belt users are parents' responses when asked their perceptions of how the seat belt fits their child and if they feel their child is adequately protected by the seat belt. Remarkably, among focus group participants and discussion respondents alike, many of the parents currently using a seat belt for their child indicated that they are concerned about the way the seat belt fits their child. Their concern is clearly warranted – when asked if they have seen their child put the seat belt behind his or her neck, a majority of these parents said they have. In light of the concern expressed in their comments, it is somewhat baffling that these parents do not take steps to correct the problem and reduce the risk to their child.

“My ten year old, as soon as he gets in he puts the seat belt around him and then puts the piece behind him. It bothers him.” (SEAT BELT USER/GROUP 4)

“My son keeps it in front of him but it cuts his neck and it concerns me that if I were to stop suddenly what is it going to do?” (SEAT BELT USER/GROUP 4)

“It seems like no matter how tight I gather from the onset, he'll just squirm up and he is up at the edge of his seat. He is not sitting back and it is not tight.” (SEAT BELT USER/GROUP 4)

“He doesn't resist sitting in the seat belt, but he puts the belt behind him. I freak when I see him doing that.” (SEAT BELT USER/IDI)

Despite these concerns, when parents in the seat belt focus group were probed further on whether they feel the seat belt adequately protects their child, most of these parents (7 of 11) said that they do.

In the supplementary discussions, it was evident that some parents simply may not recognize the risk associated with the child having no upper-body protection at all when the shoulder portion of the belt is placed behind him. Notably, some parents even place the shoulder belt behind their child themselves as a means of relieving the child's discomfort, or perhaps addressing their own misplaced belief that by doing so, they reduce the risk of injury to their child.

"He doesn't like the way the strap goes over his chin. I put it behind him, which I know is wrong." (SEAT BELT USER/IDI)

"It doesn't fit him properly – it cuts across his neck. So I tell him to put it under his arm..." (SEAT BELT USER/IDI)

It also became evident, however, based on the remarks of a number of discussion respondents, that while some parents instinctually *know* that a seat belt is not the proper restraint for their child, they allow other barriers or rationales to keep them from acting on their best instinct.

"None of this information is new to me. I'd say it's just common sense, but obviously I'm not using my common sense. It's all very important – and it's important that my child isn't safe and that I'm probably doing more harm than good by strapping him in the seat belt. And I suppose in the back of my mind I know that – you know it's not good around his neck, and it can't be good going around his waist. And that's just common sense. To hear all this come out of my mouth just sounds so stupid. I can't even believe that I'm letting this poor guy ride around without a booster seat " (SEAT BELT USER/IDI)

Notably, rather than fight their child's resistance to a booster seat, some apparently "settle" for the [Brand Name] seat belt attachment alternative, believing it is "better than nothing."

"The piece that comes around, it does nothing but get in their way or in their face or harm them and then I feel she has no protection. The [Brand Name] helps somewhat, but not enough." (SEAT BELT USER/GROUP 4)

"When it comes down to a fight with the child, the seat belt with [Brand Name] is better than nothing." (SEAT BELT USER/IDI)

"The [Brand Name] definitely compensates for the problem with the seat belt because something is better than nothing. And since they're getting out of the

booster seat, it's like having nothing. So it's better to have something." (SEAT BELT USER/IDI)

Evidence of the risk of parents mistakenly trusting devices such as the [Brand Name] seat belt attachment device to compensate for poor seat belt fit was especially pronounced in the supplementary discussions among seat belt users. Nearly half of these parents reported they currently use such a device for their child after seeing advertising that convinced them it would eliminate the risk of improper seat belt fit and protect their child from injury. Clearly, for many parents, this type of device offers a seemingly perfect alternative to a booster seat and overcomes many of the disadvantages some parents associate with booster seats. Specifically, based on the comments of a number of these parents, these devices offer the following perceived advantages:

- ❖ For several parents, the [Brand Name] or similar device was clearly a welcome solution to their child's resistance to sitting in a booster seat.
- ❖ The [Brand Name]-type device offers the added advantage of being easy to transport and more convenient than a booster seat when it comes to switching it from one vehicle to another.
- ❖ It is also considerably less expensive than purchasing a booster seat.
- ❖ Some parents even believe these devices are safer than a booster seat. As seen in other phases of this research, some parents do have uneasy feelings about how well a booster seat protects their child. As will be discussed, this may be related to the fact that the seat is not anchored to the vehicle, or to other misperceptions related to some booster seat designs.

"He was in a booster seat, but resisted. With the [Brand Name], it's not an issue anymore. And he sees us wearing our seat belts so he accepts it." (SEAT BELT USER/IDI)

“All of that information you just read is on the [Brand Name] package and with the [Brand Name] you don’t really have that problem. The seat belt moves up and the strap that goes around their neck moves down, so it fits them perfectly. It’s totally different from wearing a seat belt. That was part of their advertising – the [Brand Name] makes it so that it adjusts to the child’s body.”

“The information you read isn’t new to me but I thought the [Brand Name] compensated for the seat belt not fitting the child. I thought [Brand Name] was a safe alternative. And with three children, if I’m going from one car to another car or going in somebody else’s car, I figured it was easier for me to keep track of [Brand Name] than it was to lug a booster seat.” (SEAT BELT USER/IDI)

“It’s made by [Company Name], which is like the main brand of all the safety latches, the cabinet locks, the outlet covers, so I associate them with child safety. I figured if they made it, it would be okay because everything else they make is safe.” (SEAT BELT USER/IDI)”

“ We have something called the [Brand Name]. It eliminates the problem of the seat belt cutting across the neck. We use that for the older children. They are also bigger.” (BOOSTER SEAT USER/GROUP 3)

Even among booster seat users, the device apparently has some appeal. Especially notable is that one of the booster seat user discussants initially expressed her plan to switch her child from a booster seat to use of a seat belt with the [Brand Name] device when the child outgrows the seat. The seat she currently uses reportedly accommodates a child up to only 50 pounds. Thus, in the absence of other information, the child would be prematurely graduated to a seat belt, with the parent remaining confident that the child is being properly restrained and protected. Clearly, in efforts to reduce premature graduation, more information may need to be communicated to parents about the effectiveness of this device.

Parents’ misplaced confidence in devices such as the [Brand Name] device aside, the remark of one parent only raises more questions as to the reasons some parents, concerned about how well their child is actually protected by a seat belt, fail to pursue other, safer alternatives for their children.

“The seat belt keeps them from flying out the window. I mean, if that is what the seat belt is for, then anywhere that they are tied will keep them from flying out the window. But I question whether it also keeps them from wounds.” (SEAT BELT USER/GROUP 4)

KNOWLEDGE AND PERCEPTIONS OF BOOSTER SEATS

Impressions of Specific Booster Seat Designs

Parents who participated in the focus groups were presented with three different types of booster seats for their impressions: a shield design seat, a low-back belt-positioning design, and a high-back belt-positioning design. Examples of each of these types of seats were displayed for participants' examination. After a brief explanation of the features of each design, the discussion focused on parents' general impressions of these designs, and of booster seats in general. With specific focus on the belt-positioning designs, parents were also asked to compare these seats to child safety seats. A child safety seat was also displayed to visually aid parents in making comparisons.

For the reader's reference, following is a brief review of the overall design characteristics of each of these designs:

- ❖ **Shield:** As the name indicates, these booster seats have a shield or guard that crosses in front of the child to restrain the child's hips instead of using the vehicle seat belt. A key characteristic of the shield booster seat is that it is anchored to the vehicle by the vehicle seat belt. The seat belt itself does not touch the child; the child is secured by the booster seat's own harness system. These seats are not recommended as an optimal form of restraint for children because there have been cases where children have been thrown from the seat.

- ❖ **Belt-positioning:** A key distinction of these booster seats is that they are not anchored to the vehicle. By raising the child up, these seats position the child so that both the lap and shoulder portions of the vehicle safety belt fit the child properly. Thus, while the seat is not actually anchored to the vehicle, the vehicle seat belt touches and secures the child in place. These seats have been crash-tested and certified.

- The high-back belt-positioning booster seat has a high back that extends above the child's neck and head, while in a low-back booster seat, the child leans against and is supported by the vehicle seat.
- The high-back design has a removable harness system that can be used for younger/smaller children; when the harness is in place, the seat is anchored to the car and the child is secured by the seat's own harness. When the harness system is removed, as noted above, the seat is not anchored to the car.

As far as parents' own experience with various booster seat designs, among those who participated in this research, the shield design has clearly been the most widely used.

- ❖ Among the booster seat group, all but two of the participants reported they are using a shield-design seat, while the remaining parents are currently using a high-back seat.
- ❖ Among the seat belt users, most of those who used a booster seat reportedly used the shield design.
- ❖ Likewise, based on the descriptions in the in-depth discussions of the seats currently used by the booster seat users, at least half were, at the time of the discussion, using a shield design.

Where existing perceptions of booster seats are concerned, when parents in the focus groups were asked which design they think of in association with the term "booster seat", many indicated that the shield design is what comes to mind. Some noted that the high-back seat is more consistent with their perception of a safety seat than a booster seat. Notably, many of the parents who participated in this study were apparently unaware of the availability of the high-back design.

Probed on the specific purpose or function of a booster seat, the seat belt users again tend to stand out from others.

- ❖ For the most part, those in both the child safety seat user groups and the booster seat user group seemed to understand the positioning concept behind booster seats – that is, that they serve to position the child such that the seat belt fits safely.

*“The purpose is just to lift them up enough to keep them in the seat belt.”
(CHILD SAFETY SEAT USER/GROUP 2)*

“To me, it’s the issue of safety and their organs not being injured in a crash – being in the proper position.” (CHILD SAFETY SEAT USER/GROUP 2)

“I think a booster seat is more to bring them up – not more of a safety issue as to raise the child up to a level that they can wear a seat belt. I don’t think it is a restraining safety device but a positioning device to bring the child up to meet the standards of wearing a safety belt.” (CHILD SAFETY SEAT USER/GROUP 1)

“I think it is self-describing – a booster to raise them up to get the upper body up above a certain level so they can wear the seat belt.” (CHILD SAFETY SEAT USER/GROUP 1)

“It’s to keep them in tighter than just having them on the seat without anything. I think they do hug them closer.” (BOOSTER SEAT USER/GROUP 3)

“The booster seat serves the purpose of keeping them up higher so they’re technically in the seat belt.” (BOOSTER SEAT USER/GROUP 3)

- ❖ This understanding is not as clear among the seat belt user group. Many of these parents seemed to have a somewhat more vague perception of the specific function of a booster seat.

*“What comes to mind is the use of them in restaurants to raise them to the table.”
(SEAT BELT USER/GROUP 4)*

“It’s the height of raising them.” (SEAT BELT USER/GROUP 4)

"It raises them to the window area in a car." (SEAT BELT USER/GROUP 4)

It's primarily when they get out of the car seat. It's the next step; it's just a stage." (SEAT BELT USER/GROUP 4)

"It says now they are big people and in seat belts." (SEAT BELT USER/GROUP 4)

Notably, when asked what age the booster seat is intended for, most parents in the seat belt user group indicated that it is appropriate for children of about 3 or 3 ½ years.

Consistent with the perception of the high-back design as similar to a child safety seat, overall, most parents seemed to perceive the high-back seat as the safest of the booster seat designs presented. These parents liked the added support it offers their child, as well as the added comfort. The side clips through which the shoulder portion of the seat belt can be threaded were also perceived as a safety advantage, keeping the belt in place.

"The high-back encompasses them and gives them much more protection." (CHILD SAFETY SEAT USER/GROUP 2)

"I would rather have the high-back myself." (BOOSTER SEAT USER/GROUP 3)

"I agree the high-back would support them more as far as them being jostled around if you had to make a sudden stop. The (low-back) booster seat kind lets them move around a little bit more than the high-back. It kind of secures them more." (BOOSTER SEAT USER/GROUP 3)

A few parents currently using a booster seat for their child even indicated a likelihood to switch from the design they are currently using to a high-back belt-positioning design.

"I'm going to switch to a high-back because of the fact that the seat belt would actually fit him better." (BOOSTER SEAT USER/GROUP 3)

The likelihood of some parents to change current behavior is yet another area where the seat belt users who participated in this research stand out as distinctly different from other parents. In this discussion of specific booster seat designs and the comparative safety provided by each one, the majority of seat belt users indicated they feel the high-back booster seat is safer than a seat belt – the method of restraint currently used for their child age 2 to 4. At the same time, at this point in the discussion, *only one of these parents indicated a likelihood to switch from using a seat belt to any type of booster seat.*

A variety of factors clearly contribute to these parents' resistance to changing their use of restraint for their child, not the least of which is the opposition they anticipate from the child.

"I think it would be a constant struggle with my daughter. She is finally at the point of accepting being in a seat belt instead of the booster. I can't picture going back to the battle." (SEAT BELT USER/GROUP 4)

"I think that my child sits pretty still. Occasionally he will squirm around and I will turn around and tell him to sit down and that is it. I think he would fight getting back into any kind of seat." (SEAT BELT USER/GROUP 4)

Clearly, this is a battle these parents choose not to fight. It seems some are simply "comfortable" with what they are currently using and don't feel it is worth the battle to change.

"You want to do what is best for your child, but you choose your battles. You do what you feel is best or you listen to professionals and say you have to do what they say." (SEAT BELT USER/GROUP 4)

To some extent, this seems to center around the notion that "it can't happen to me." One parent even commented on his confidence in his own safe driving and ability to avoid a crash as the reason he does not intend to change his chosen form of child restraint.

As noted, however, one of these parents did, on seeing and hearing the safety features of these booster seats, indicate the intent to switch her child back to a booster

seat – despite that the child will certainly resist such a step “back.” This parent’s comment once again seems to highlight fundamental differences in parenting approaches and philosophies as a key factor that distinguishes them from others who do not choose to fight this battle.

“I am going to get one. I know it is not going to be easy because my daughter is going to fight me tooth and nail. But the bottom line is, I am the parent and I have to look out for her best interests. If I think she will be safer in (the booster seat), she has to listen to me and not the other way around because I don’t feel safe with what I am doing now. That is wrong.” (SEAT BELT USER/GROUP 4)

Impressions of Belt-Positioning Booster Seats

With the belt-positioning booster seats being the recommended booster seat design, much of the discussion about booster seats in the focus groups concentrated on parents’ impressions of these seats. Notably, many parents had distinctly different impressions of the high-back and low-back models. Further, according to many parents in these groups, not only are these seats perceived as having distinctly different designs but they are also viewed by many as being appropriate for children at different stages of development. These parents clearly considered the high-back design more appropriate for younger children when they outgrow a safety seat and who need more support, with the low-back design being more appropriate for older children who are not yet ready for a seat belt.

“You are actually dealing with three different sizes – infant, toddler and a young person.” (CHILD SAFETY SEAT USER/GROUP 1)

“The younger they are, the more they have to be in the high-back.” (CHILD SAFETY SEAT USER/GROUP 2)

“This (low-back) is a booster to boost them up, for an older child. It purely boosts them up – it will not give them any protection.” (CHILD SAFETY SEAT USER/GROUP 2)

Another noteworthy observation made by a number of parents is that, with the high-back seat bearing close resemblance to a safety seat, it is especially likely to generate resistance from children when their peers are no longer using a booster seat. Conversely, the low-back would not only seem less like a safety seat (a “baby seat”) to children but would also draw less attention from peers. This might make the low-back more acceptable to older children and generate less resistance.

“The high-back looks like a baby seat and the low-back looks like a booster seat like you get in a restaurant. I think the kids think that is cooler.” (CHILD SAFETY SEAT USER/GROUP 1)

“I wonder if some of the issues that you were talking about with older kids not wanting to ride in a booster seat – if the lower one would be less obvious and might make it more acceptable.” (CHILD SAFETY SEAT USER/GROUP 2)

It was also observed by at least one parent that the low-back seat would be considerably less bulky and more convenient than the high-back design.

Further, in keeping with the attraction that “graduating” to the next level of restraint clearly has for children, it was suggested that graduating from a high-back to a low-back booster might be incorporated into the maturation process. While this could present the disadvantage of added cost, one hypothesis is that it would make the seat more acceptable to children and thereby extend their acceptance of and willingness to sit in the seat. For some children, it may even represent a source of pride in “moving up” to the next level, despite that it is one level before the seat belt alone.

“I don’t think at the age of 10, I can turn around and bring one of the booster seats home. But if you went from the high-back to the low-back, then it would be okay.” (CHILD SAFETY SEAT USER/GROUP 2)

It was established in the previous research that some parents question the safety of the belt-positioning design because these booster seats are not anchored to the vehicle and can slide around under the child. Parents in this research were probed on whether they consider this a safety risk. Interestingly, the extent to which these parents perceive this as a problem seems to represent another distinguishing characteristic of

seat belt users. Specifically, while virtually all the parents in the safety seat and booster seat user groups expressed concern over the fact that these seats can move around under the child, among those in the seat belt group this was not perceived as a problem. Following are representative examples of the concerns expressed by those in the child safety seat and booster seat groups.

"If the car stops, then the child can move with it." (BOOSTER SEAT USER/GROUP 3)

"The same concept is when they are just sitting in a seat belt. They have that freedom to move. The seat that they are sitting in has that freedom and can move." (BOOSTER SEAT USER/GROUP 3)

"Logically, if it moves, they can't be as safe as something that is not moving." (BOOSTER SEAT USER/GROUP 3)

"If you are in an accident and it is not attached, that harness is not going to be over their shoulder any more but under the neck. (CHILD SAFETY SEAT USER/GROUP 1)

"That is my one issue with this. There is no way to anchor it. My oldest one is in that now and it just wobbles all over the place." (CHILD SAFETY SEAT USER/GROUP 2)

"I don't think that would be as safe." (CHILD SAFETY SEAT USER/GROUP 2)

Among booster seat users, it seems some have even developed their own method of anchoring the seat to the vehicle.

In fact, when the child is raised up by the seat such that the seat belt fits the child properly, the child is secured by the belt and the fact that the seat is not anchored to the vehicle does not create a safety risk. When asked what would change the perception that these seats are not completely safe for children, many of these parents had a difficult time answering. For many, it seems intuitive that if the seat can move, it is not safe, despite that, with the booster seat in place, they are securely restrained by the seat

belt. Most indicated they would want some form of proof that this does not represent added risk to the child. Some parents indicated they would have to see actual results of crash tests to be convinced. Others referred to their trust in specific sources of information, including Consumer Reports, Parents' Magazine, or their physician.

"I would have to see a crash test that showed it didn't move and have any impact. I see him move way too much." (CHILD SAFETY SEAT USER/GROUP 2)

"Something from the doctor's office might convince me, or from Parents' Magazine or that kind of concept." (BOOSTER SEAT USER/GROUP 3)

RECOMMENDED BEST PRACTICES

Parents in all four focus groups were presented with a summary of the current best practices for restraining children in vehicles. These recommended practices designate guidelines for determining when a child should be restrained in specific types of child safety seats, including a booster seat. The recommendations identify restraints for three distinct stages of a child's development, defined as follows:

	Type of Child Safety Seat	Weight Guidelines
INFANTS (Birth to one year)	Infant only or rear-facing convertible	Up to 20 pounds
TODDLERS (one to four years)	Convertible or forward-facing only	Over 20 pounds and up to 40 pounds
SCHOOL-AGE CHILDREN (four to eight years)	Over 40 pounds and up to 80 pounds	Belt-positioning booster

In the in-depth discussions, a description of Children’s Hospital of Philadelphia’s recommendations for child restraint was read to respondents, including the following key points:

- Seat belts provide inadequate protection for small children and can even add to the risk of injury, especially to the abdomen, spine or head.
- For this reason, the use of booster seats with vehicle lap and shoulder belts is recommended until the adult seat belt fits properly – at about 4’9” and 80 pounds, at about 8 years of age.
- The information read to booster seat respondents included the statement that the shield design is not recommended because children have “flown out of them in crashes.” It also placed emphasis on the fact that, while many parents do use booster seats for their children, most do not keep the child in a booster seat until the child reaches 80 pounds.

Parents’ Reactions to Recommended Best Practices

While overall, the parents did not indicate any problems with the credibility of the information presented, it was apparent that some of the information did come as a surprise to them. Specifically:

- Among the focus group participants, while most were familiar with the recommended practices for infants and toddlers, the parameters designating the appropriate restraint for school-age children stood out as new information to the majority of participants, and that applies to those in all restraint user segments. The 8-year/80-pound criterion for restraining a child in a booster seat was clearly unexpected.
- Likewise, it was the recommendation for keeping children restrained in a booster seat until they reach 4’9” and 80 pounds, or at about 8 years of age, that most often represented new information to the seat belt users who were discussants.

“Eight years is a big surprise.” (SEAT BELT USER/GROUP 4)

"I didn't realize it was up to 80 pounds. That was new to me. I would have said 60, maybe." (CHILD SAFETY SEAT USER/GROUP 2)

"I thought booster seats were for toddlers – kids age 4, 5 and 6." (SEAT BELT USER/IDI)

"I wasn't aware that there are booster seat designs that accommodate children as big as 80 pounds." (SEAT BELT USER/IDI)

It is also important to note, however, that some of these seat belt users were unaware of the variety of booster seat designs available. Several commented that they had encountered problems finding a seat that their vehicle would accommodate, or with being able to fit a larger booster seat in their vehicle, especially if they have other small children in car safety seats or booster seats. Clearly, this emphasizes the need for communicating more information about the variety of designs available and which are most appropriate for vehicles of different sizes, as well as which are appropriate for children of different sizes.

"They don't all fit all cars. I don't think I've ever seen a low-back one of those. So the information about different designs of booster seats is important to me. I'll look into the low-back seat because it might fit in my car." (SEAT BELT USER/IDI)

- Notably, among the discussion respondents who are using a booster seat for their child, the response was somewhat different. These parents were generally aware of the 8-year/80-pound guideline for determining when a child is ready to transition from a booster seat to a seat belt. However, with many of these parents reportedly using a shield-design booster seat, not surprisingly, the fact that these seats are not recommended and the risk associated with using them represented new information to many.

Concerning the 8-year/80-pound parameter, several parents raised concerns as far as enforcing this practice among their children. As has been apparent throughout this research, a key barrier parents face in keeping their child in any kind of safety seat

until the recommended point of transition to a seat belt is the child's own resistance. Many parents, regardless of the type of restraint currently used, clearly anticipate resistance from their children, particularly in cases where it means the child would have to regress from a seat belt *back* to a booster seat.

"No six-year-old I know – because of peer pressure or whatever you want to call it – is going to be in a car seat. I love the high-back for my daughter – it looks like the car seat. With my 8-year-old there will be an argument." (BOOSTER SEAT USER/GROUP 3)

"I have no idea what strategy I'll use to keep my children in one until they're 80 pounds. I really don't know because my 8-year-old is about 66 pounds and he is not tall but hefty. Now he is very involved in sports and with carpooling – it will be hard to carry a seat with me. This is new so I'll have to think about it." (BOOSTER SEAT USER/GROUP 3)

"It's new to me. When you get into the 4'9" and 8 years old, I have been doing things wrong – not using the booster seats, just using the lap belts or even shoulder harness belts. Half of my kids aren't 4'9" yet and the weight thing... My 8-year-old is in a seat belt." (CHILD SAFETY SEAT USER/GROUP 1)

"I can see myself going back to it but I've got my daughter's self-esteem to think about. To her thinking, she is a big girl now and you are in the big seat and for her to go back into the booster, she would think she was a little girl again." (SEAT BELT USER/GROUP 4)

"Once you put them in a seat belt, it is harder to go back. I wish I had never taken them out of it." (SEAT BELT USER/GROUP 4)

As is apparent in these comments and others, much of the resistance parents face from children relates to peer pressure, and more specifically, to the fact that the use of booster seats is not general practice among other children the same age. Further, according to these parents, there is an issue of the child's perception of his or her own level of maturity. To switch a child back to a booster seat after having graduated to a

seat belt would be to take away something many children apparently consider a sign of maturity.

"There is peer pressure too." (CHILD SAFETY SEAT USER/GROUP 1)

"Not in my neighborhood, I'll tell you that right now. My kid will not get back into a booster seat. I can read him the riot act and he still will tell me no. How can I turn around after telling him he is a big boy and can sit in the seat belt?" (CHILD SAFETY SEAT USER/GROUP 1)

This is certainly consistent with the findings of the previous research among parents and children alike. Those results clearly indicated that getting a child who has been wearing a seat belt to go back to using a booster seat would represent a perceived step backward for the child, or perhaps even the removal of a privilege.

When children see their peers restrained in seat belts, it is difficult for them to accept their own parents' demand that they sit in a booster seat. Parents often find it difficult to explain or justify this inconsistency – to their children, and often to themselves.

Several parents in the discussion groups focused on the use of restraints in school buses as another inconsistency that is difficult for them to account for. Specifically, that booster seats have not been established as general practice on school buses clearly creates a conflict for many parents.

"I'm reacting to that upper limit because they go to day care and you don't see car seats on the buses. Some of the older buses don't even have seat belts. You would think people who are responsible for the education of your kids would stress safety." (SEAT BELT USER/GROUP 4)

"When you send your kids off in the bus, what do they do? They sit on a bench seat with lots of other kids – no seat belts there. They would go flying off the seats in an accident. How do you convince them of what's safe?" (CHILD SAFETY SEAT USER/GROUP 1)

"I'm sitting here thinking about school buses and things like that. They require seat belts, but do not require safety seats. How do we, as parents, enforce this

is the primary place where they are with their peers in a safety situation is a school bus and it is not required? They'll say, 'Mom, why do I have to have this?'" (CHILD SAFETY SEAT USER/GROUP 2)

As suggested earlier, at least some parents have reportedly relied on the law to guide them in determining what is the safest form of restraint for their child. Likewise, several parents in this research – particularly seat belt users – also focused on the inconsistency between these recommended best practices and the law. That these practices are not required by law clearly represented a conflict for these parents.

"If it were a law, then maybe everybody would do it and it would make it easier to do." (SEAT BELT USER/GROUP 4)

"If it was the law then it would be easier because then I could tell my son you have to do it, it is the law. All of his friends, his cousins would be doing it and it would be easier." (SEAT BELT USER/GROUP 4)

Where the law is concerned, all parents were probed on what impact the law has or could have on parents' child restraint practices. While opinions were mixed across these groups, many parents in all segments indicated that if the recommended best practices were adopted into law, regardless of their own views, it would likely have an impact on many parents' behavior.

"Nobody wants to give money if they get pulled over for that, so the law does play a big role." (SEAT BELT USER/GROUP 4)

"I think there is a law in New Jersey that everybody has to wear a seat belt. Why shouldn't there be a law that everybody who has a child has to follow the guidelines to child safety or else you get a ticket. I think that would do it if everyone has the information." (BOOSTER SEAT USER/GROUP 3)

"Some people would rather not pay the \$80. The seat would be safer and they wouldn't even know why. They would just know that it is the law and that is what they are going to do." (BOOSTER SEAT USER/GROUP 3)

"If it were law, yes we would follow this information." (CHILD SAFETY SEAT USER/GROUP 2)

Aside from some parents' desire to abide by the law, or the desire to *not* pay a fine, parents in these groups also noted that, if it were the law it would be easier for parents to explain and justify the use of a booster seat to children. Further, the law would give parents a way to enforce the practice without being the "bad guy."

"I hope they make it a law so I can say the policeman says we have to do it." (CHILD SAFETY SEAT USER/GROUP 1)

"It would definitely be easier if it were the law." (CHILD SAFETY SEAT USER/GROUP 1)

Sources of Information

Focusing on the booster seat users who participated in the supplementary discussion phase of this research, as indicated, these parents seemed particularly well informed when it comes to knowing the importance of booster seats and that a booster seat should be used until their child reaches the designated size and weight. Knowing the sources by which these parents obtained this information can be valuable in identifying resources that are likely to reach other parents.

When asked where they acquired their knowledge of booster seats, these parents identified a number of sources. Based on the nature and diversity of their responses, these booster seat users appear to be more active information-seekers than are their counterparts who are using seat belts. Among the sources named by these parents are:

- **Parents Magazine:** Several of these parents commented on seeing this information in Parents Magazine – including some mention of the most recent article, which appeared in the September 2000 issue. Parenting Magazine was also mentioned by at least one parent as a source of this information.

- **Day care center:** Several parents obtained information about booster seats at their child's day care center – either through newsletters to parents or other hand-outs, or in information posted at the center.

- **News programs on television:** A number of these parents referred to information they've seen presented on television, especially in popular news magazine programs such as 20/20 or Dateline. Others referred to information seen on local news programs.

- **Pediatrician's office:** Pediatricians' offices are reportedly a common source of this type of information, again in the form of handouts or pamphlets, as well as in information posted on physicians' bulletin boards.

- **A safety course sponsored by the local police department:** One of these parents had reportedly obtained extensive information through a program sponsored by her local police department. While the program was focused primarily on checking for the proper installation of car seats and booster seats, it also provided instruction to parents on the proper form of restraint.

- **State Farm auto insurance insert:** One of these booster seat users cited information provided in an insert that accompanied her auto insurance renewal application from State Farm. According to this parent, the coverage provided by State Farm is limited if an injured child was not restrained in the proper child seat. This information provided by State Farm – and the added incentive of their requirements for coverage as related to child restraint – clearly had an impact on this parent, as it reportedly influenced her purchase and use of a high-back belt-positioning booster seat. She further used the information to convince her husband that it was not safe for the child to sit in a seat belt. This offers clear evidence of the potential impact of just one element of the alliance between State Farm and The Children's Hospital of Philadelphia in the Partners for Child Passenger Safety program. State Farm's efforts to communicate and encourage implementation of the recommended best practices clearly represent an admirable model of how auto insurers can play a key role in efforts to reduce child injury.

- **Child's school program:** One of these parents learned about the recommendations for booster seat usage from her child, who brought the information home as a result of a safety program at the child's school. Not only did this program communicate the information to the parent, but the child also reportedly learned about the importance of using a booster seat.
- **Moms' Club:** One respondent identified the local chapter of Moms' Club as a valuable source of information such as the recommended best practices for child restraint. Moms' Club is an organization designed to provide support and a variety of activities for at-home mothers, including monthly meetings with speakers and discussions, and outings and playgroups for mothers and children. This parent has reportedly obtained valuable information on booster seats not only from speakers at monthly meetings but through information shared among other parents who participate.
- **Word-of-Mouth:** As suggested by the parent who learned about booster seats through Moms' Club, word-of-mouth can be a powerful resource when it comes to communicating information about child restraint to parents. References to information parents have learned simply through the shared learning and experiences of other parents were made repeatedly by a number of parents in this phase of the research.

Impact of Recommended Best Practices

Based on the reactions of those who participated in this research, knowledge of the recommended best practices for child restraint and of the potential consequences of prematurely graduating a child to seat belts will not likely motivate all parents to purchase or use a booster seat for their child. At the same time, however, it is apparent that increased awareness of the information presented would likely have an impact on the behavior of some parents.

Focusing first on the response of parents in the focus groups, perhaps most notable is that, based on the information presented to them, several of the parents in the seat belt user group indicated they plan to make changes in the restraint used for their child who is currently restrained in a seat belt. In addition to the parent quoted below,

four other parents in this group indicated their intent to switch their child back to a booster seat.

"To me, with what I am doing now, my child could be paralyzed, could die of head injuries, brain injuries. If buying one of those and putting my child in that – resistance or not, if it is going to save their life or at least keep them from being seriously injured, that is worth it to me. I don't care how much resistance I get, I don't care if they don't think they are cool, I don't care about that. I care about whether my child is going to be okay. I don't know when I will be in an accident."
(SEAT BELT USER/GROUP 4)

Likewise, several parents in other groups who had prematurely graduated children older than age 3 or 4 to seat belts indicated they would at least consider switching the child back to a booster seat as a result of the information presented.

"This will make me more conscious when I let my children into the car or van. I will look at my 8-year-old and according to this, he should still be in some kind of booster seat. If he has to be in the seat at 8 years old, that will have to be it. The older he gets, I hope I can get him to sit in there. Now that I know this, that is what I will plan to do." (CHILD SAFETY SEAT USER/GROUP 1)

"My 6 ½-year-old is out of a booster seat now and if she goes back in, how will she take that? I'll probably make her get back in the booster, but it will not be an easy thing." (CHILD SAFETY SEAT USER/GROUP 1)

Among the discussion respondents, the potential impact of information is also apparent. Among those currently using a seat belt for their child:

- ❖ Many of these parents remained somewhat non-committal about making the change from a seat belt to a booster seat. However, several did indicate their intent to at least re-evaluate their choice of child restraint, or to choose a booster seat rather than a seat belt for a younger child not yet graduated from a car safety seat. These parents' comments clearly convey the importance of communicating these

recommendations to parents before they make the mistake of graduating their child to seat belts prematurely.

"At the time we transitioned him to a seat belt, I would have wanted to know this information. I would have considered the high risk. I don't want to risk serious injury to my child." (SEAT BELT USER/IDI)

"It makes me re-evaluate what I'm doing. I'll definitely keep my younger child in a booster seat longer. (SEAT BELT USER/IDI)

"If I had had this information, I wouldn't have transitioned him to a seat belt." (SEAT BELT USER/IDI)

"I think lack of information is a major part of the problem." (SEAT BELT USER/IDI)

- ❖ The case of one seat belt respondent offers what is perhaps the most striking example of the power of information to change some parents' child restraint practices. One of the respondents in this phase of the research had reportedly used a seat belt for her four-year-old up until only a few weeks prior to the discussion. However, after seeing information about the potential consequences of seat belt use for small children in Parents Magazine and Parenting Magazine, she transitioned her child back to a booster seat. This parent's story of what prompted the change, and how she handled what could be perceived by her child as a step "backward" offers valuable insights on ways to motivate change in other parents and effective strategies for overcoming child resistance.

"I approached the strategy of moving her back into a booster seat from a safety perspective. She's got a lot of little buddies whose parents have chosen not to do the booster seat thing and I have said to her, 'This is the safe way. This is how Mommy and Daddy are going to make you safe. If we're ever in a car accident, it would keep you from being hurt.' And she accepted that beautifully. She has said to me, 'Well my girlfriend doesn't have a car seat and her Mommy and Daddy are not making sure that they are safe.' She's really proud of the fact

that she's in there. She can't believe that she needs to be there until she's eight because that sounds so big to her. When she says that, I say to her, 'Well, that's how we need to make sure that you're going to be safe in a car.' (CONVERTED SEAT BELT USER/IDI)

Among the booster seat respondents:

- ❖ Concerning extending the use of booster seats until the child meets the designated size and weight criteria, regardless of what their intentions were prior to hearing CHOP's recommendations for child restraint, once this information was communicated to them, several indicated their intent to comply.

"I'll keep her in a booster seat until she's 14! Seriously, I'll keep her in it until it's no longer necessary – until the seat belt fits across her torso ." (BOOSTER SEAT USER/IDI)

"I plan on using the booster seat until the seat belt fits him – until he's 4'9" and 80 pounds." (BOOSTER SEAT USER/IDI)

"I'm going to do what the guideline says, no matter how much he resists, if he does get to a point where he resists. I'll just tell him this is what it is, too bad." (BOOSTER SEAT USER/IDI)

"I would want to say right now that she doesn't have a choice and I would like to think that I could still maintain that parental control up until the time that she's eight. It's just not a choice." (CONVERTED SEAT BELT USER)

- ❖ And as noted previously, one parent changed her prior intent to switch her child from a booster seat to a seat belt with [Brand Name]-type seat belt attachment device when her child outgrows her current booster seat – which only accommodates a child up to 50 pounds. While information on devices such as the [Brand Name] seat belt attachment is not included in what was read to respondents, after also hearing that these devices are not recommended by CHOP, she stated she would use a booster seat until her child reaches 80 pounds.

- ❖ Among those currently using a shield design booster seat, the information presented also had an impact. Several of these parents indicated their intention to make an immediate change from the shield design to a safer design.

"The information about the shield design not being recommended was very surprising to me, because we have that design in one of our cars. My husband and I switch off cars and I've been driving around with him in the shield booster seat. Just the thought that he could come out of that is very scary. I'm definitely getting rid of it. I don't think you can take a chance on something like that."
(BOOSTER SEAT USER/IDI)

"I have to get another (belt-positioning seat) to replace the shield design that is used in our other car." (BOOSTER SEAT USER/IDI)

"We'll have to buy something else." (BOOSTER SEAT USER/IDI)

Others indicated they would re-evaluate the seat currently used and seek out additional information on other designs.

While the results of this research underscore the power of information to change parents' child restraint decision, it also emphasizes that information alone does not have the same impact on all parents. Among those in the focus groups, even after seeing what are the recommended best practices for child restraint (as well as hearing some commentary by a CHOP representative concerning the specific safety risks associated with premature graduation) many parents were uncertain as to whether or not they would make a change. Despite their best intentions, some clearly questioned their ability to overcome their child's resistance, peer pressure, or other barriers.

"I am sitting here with a barely-4-year-old thinking I'm going to keep him in the back seat until he is 12, and I'm going to keep him in a booster seat until he is 80 pounds, and that is just the way it is. But I don't know what the reality of life is going to be like once he starts getting older." (CHILD SAFETY SEAT USER/GROUP2)

“Things we’ve talked about could make it impossible – picking your battles. If the battle is just so extreme, then I don’t know if I would give in. I think if I were to see a lot of other people not doing it and the school bus issue, I don’t know if that would start to erode my confidence that this is the best way to do it. If I was the only one enforcing it, it would become difficult for me to enforce.” (CHILD SAFETY SEAT USER/GROUP2)

Most notable in parents’ reactions is that more than half of the parents in the seat belt user group indicated they did *not* intend to change their child restraint practice, despite-the-knowledge that their child is at greater risk of injury. To a large extent, these parents’ hesitation to act on the information – or on their own concerns – again center around the child’s resistance to go back to a booster seat, particularly when the child’s peers are using seat belts.

For others, the notion that a seat belt is better than no restraint at all for their child apparently makes this particular battle one they don’t choose to fight.

“Keeping him in a booster until he is 8 is just not going to happen. Even if I am the parent, I have to pick my battles and right now, the seat belt is doing something. Hopefully I won’t get in an accident.” (SEAT BELT USER/GROUP 4)

As suggested previously, another hypothesis is that some parents subscribe to the philosophy “it can’t happen to me.” This was certainly the case for at least one of the parents in the seat belt group who indicated he was comfortable using the [Brand Name]-type seat belt attachment device for his child. This is particularly notable because, in this group, parents were presented with additional information indicating that this device is not crash-tested or regulated. And while this device and other similar devices *may* provide better torso restraint for the child, it can at the same time increase the risk of injury to the child’s abdomen and internal organs and does not reduce the risk of injury to the spinal cord. Despite this information, this parent’s confidence in his own driving reportedly makes him comfortable with the use of this device for his child.

“I’m still comfortable with what I’m using. I am a confident driver and I have no

problem with what I have my child restrained in. I look out for other drivers too.”
(SEAT BELT USER/GROUP 4)

The notion that some parents exclude themselves – and their children – from the potential risk associated with a crash was also proposed by several parents with respect to other parents they know:

“I have some friends that think they will never have an accident. It won’t happen to them. Those kinds of people think they are smarter than these (best practices).” (CHILD SAFETY SEAT USER/GROUP 1)

“You will always have knuckleheads in this world thinking, ‘It won’t happen to me.’ There is nothing you can do about them.” (CHILD SAFETY SEAT USER/GROUP 2)

“My ex-husband lets my son ride in the front seat with the seat belt on. My son tells me that daddy is a real good driver and we won’t get in an accident. So he doesn’t put him in safely, even though a police officer told him the back seat is the safest spot for anyone.” (CHILD SAFETY SEAT USER/GROUP 1)

Some of these same rationales for the continued use of a seat belt for their child were also heard from discussion respondents who remained uncommitted to making a change to a booster seat. More in-depth discussion with parents who themselves admit their choice of a seat belt for their child was in conflict with their own best judgement offered a variety of arguments that helped them rationalize the decision. Many of their explanations have been heard before, including references to the fact that they typically travel only a short distance, they are safe drivers and have never had a crash, and they have used seat belts for children who are now older without any dire consequences.

It is important to note that, in these discussions, a number of parents again emphasized the belief that it will be far more difficult to switch a child from a seat belt back to a booster seat than to keep a child in a booster seat longer if they have not yet graduated to seat belts. As expressed in the following verbatim comments of child safety seat users, while they anticipate problems making a change with an older child,

going forward, they will think twice about the point at which they transition their child to a seat belt.

"It will be easier now to say you have to stay in it. He is a smaller child and can easily stay in the booster seat. But my older child has been out of the seat now. I may try it with my older daughter. I may have my older one read these (best practices). She can read it and ask how tall she is." (CHILD SAFETY SEAT USER/GROUP 1)

"I will keep my younger children that are still restrained in a booster seat longer. But I don't think I can convince my 8-year-old to go back to a booster seat. My younger ones haven't had a taste of the seat belts yet and until they do, they will not know what they're missing." (CHILD SAFETY SEAT USER/GROUP 1)

"Once you go to a seat belt, they won't be going back." (CHILD SAFETY SEAT USER/GROUP 2)

This clearly underscores the importance of educating parents and changing practices before they prematurely graduate their child to seat belts. Once again, it is suggested that a key focus of interventions developed to reduce premature graduation should be not only promoting the use of booster seats when children outgrow a safety seat, but also *extending* the use of booster seats until the seat belt fits the child properly.

STRATEGIES FOR OVERCOMING BARRIERS TO BOOSTER SEAT USE

Standardization of Recommended Best Practices

Clearly, peer pressure, child resistance, and the many inconsistencies between the recommended best practices and what is currently general practice represent significant barriers to the extended use of booster seats. Parents in these groups clearly recognized the need to raise acceptance of the best practices among parents and children.

"I think a lot of it is still education and making it an acceptable practice. It's like the face mask in hockey and helmets in hockey. Nobody wore a helmet back in the 70s and now, they don't go out on the ice without one. It has to do with

bringing people up with education and once it has been used more... Once you go to a seat belt, they won't go back." (CHILD SAFETY SEAT USER/GROUP 1)

Another barrier clearly lies in parents' lack of awareness of the recommended best practices, particularly for school-age children over 40 pounds. As suggested by the previous research, it was evident in the current research that compelling information concerning the optimal methods of child restraint needs to be more widely communicated to parents.

Where the information communicated to parents is concerned, there is strong indication across these groups that the importance of using booster seats for children over 40 pounds could be more effectively communicated by shifting the focus of the current best practices from specific age and weight parameters to a more standardized criterion for determining the optimal restraint for a child. Based on the comments of a number of parents, as presented, the current guidelines have a number of weaknesses. In particular:

- ❖ They fail to address the specific dimensions and stature of each individual child. More importantly, based on this research, given that each child's size and stature is somewhat unique, parents often feel that the designated parameters do not apply to their child's particular size and frame.
- ❖ The various age and weight parameters can be confusing or hard for parents to remember.
- ❖ The guidelines do not convey the reason behind or the importance associated with each specific weight parameter. In particular, the guidelines as presented do not link the importance of proper seat belt fit with the designated parameters of 8 years or 80 pounds or 4' 9".
- ❖ Similarly, the current guidelines do not communicate how a parent can tell that a seat belt fits their child properly such that the child is safely restrained.

Parents' concern for the applicability of the designated parameters to their child and the potential for confusion among parents is evidenced in the following verbatim comments.

"If they are going to spit out every single size, weight, height, people are not going to remember and it will be confusing for them." (CHILD SAFETY SEAT USER/GROUP2)

"I think height is one thing – long legs... But everyone has different dimensions. (CHILD SAFETY SEAT USER/GROUP2)

"I am saying why is 40 pounds – why is weight the next step when you have different kinds of children all over the place. My children are built different than Jill's children and when her child is 40 pounds, that seat is going to be different for both of our kids. My son is going to be taller." (BOOSTER SEAT USER/GROUP 3)

"The biggest thing we have to remember about the things we are talking about is the weights and everything are strictly guidelines. You have to tailor them to each individual." (CHILD SAFETY SEAT USER/GROUP2)

Creating a more "standardized" criterion for determining the optimal form of restraint to use for any given child emerged as a desirable enhancement to the best practices as presented. Based on this research, it is hypothesized that such a change could serve to make the information more meaningful to parents, as well as easier for parents to remember and follow. It may also be easier for parents to explain and justify the need for a booster seat to their child.

"If they have other statistics that is fine and people could use them. People could adapt them to their own families, but you have so many different children. Her 10-year-old is only 59 pounds and my kids are much bigger. My three-year-old is almost 40 pounds. There are too many different sizes to give specifics to every single family. I guess I want to know what is safe for everybody." (CHILD SAFETY SEAT USER/GROUP2)

One alternative to consider would be based on the way the seat belt fits a child. Specifically, communicating how the seat belt should fit a child (and perhaps how it should not) in order for it to safely protect the child from injury would apply uniformly to all children, regardless of their particular dimensions. This information could be presented in conjunction with appropriate size and age guidelines. Further, this type of criterion could more effectively make the importance of proper fit more intuitively clear to parents than age or weight requirements that may seem somewhat arbitrary to some.

"I think what they really do is try to tell you what is a safe fit. The fit has to do with where the points are that the seat belt comes in contact with, which are the hips and the chest, versus the neck. And I think that is really more the issue than the weight or height. Stressing the key points is where the pressure points are or where they should be." (CHILD SAFETY SEAT USER/GROUP2)

"I think the way the seat belt fits would be easier for people to understand than trying to remember 20, 40, 60, 80 pounds, 5-foot-two inches, or whatever – all these different dimensions. The same rule would apply to everybody no matter what size you were. This is how it is supposed to fit. They could look at it and know." (CHILD SAFETY SEAT USER/GROUP2)

Diagrams were suggested by some as a means of clearly illustrating for parents what is and is not the proper fit for a child before they are graduated to a seat belt.

"We want a chart. That way I will know what to do. They should have a chart that shows how your seat belt should fit your child at all times. Show the points – on your hips, etc. I think they need to hit on that a little more with their commercials." (CHILD SAFETY SEAT USER/GROUP2)

"Maybe diagrams are the way to go, and descriptions, regardless of size." (CHILD SAFETY SEAT USER/GROUP2)

Further support of the impact that understanding the importance of proper seat belt fit may have is found in the impact this type of information had among parents in the seat belt user group. In this group, a CHOP representative supplemented the best

practices with an explanation of how, when the seat belt fits properly, it falls on the strongest parts of a child's body – over their hips and across their chest – as opposed to on their neck or abdomen. Among this particularly hard-to-influence segment, this information seemed to be more meaningful.

"It made more of a difference hearing more of the rationale of the placement of the seat belt on the strongest parts of the child's body." (SEAT BELT USER/GROUP 4)

Step-Wise/Graduated Use of High-Back and Low-Back Belt-Positioning Booster Seats

While it is not likely to provide a single solution to overcoming the problem of peer pressure and child resistance to booster seats among school-age children, as suggested earlier, some parents felt that progressively graduating a child to different booster seat designs could help. Specifically, while the added cost of this alternative was not addressed by parents, several commented on the likely appeal to their child of making a step up to the low-back belt-positioning seat from a high-back seat. Similarly, several observed that the low-back seats would likely generate less peer pressure and less resistance than the high-back design, which more closely resembles a safety seat (i.e., a "baby seat").

"The booster seat designs are kind of like graduated – when your child turns 4, they might not be ready for that low-back but they can go to the high-back. It doesn't have the big plastic thing on their lap. Then in a couple of years they can go to the low-back." (CHILD SAFETY SEAT USER/GROUP 1)

Such a step-wise progression of seats could also serve to naturally extend the use of a booster seat until the seat belt fits the child properly.

More desirable to several parents would be a convertible seat that will grow along with the child from infancy to 80 pounds, or the point at which the seat belt fits the child properly. Such an alternative would clearly address the price barrier for some parents of paying the accumulated cost of several progressive designs. Further, one parent hypothesized that such a design could also help overcome a child's resistance to a booster seat by establishing the seat as the child's domain from their first ride in an

automobile to the time they transition to a seat belt. This is consistent with the strategy of establishing a policy of safe restraint *early*, and maintaining it *consistently*.

"I don't know if it's out there yet, but when people are expecting a child, if they could buy a four-in-one car seat, that's the way to go. Right from the start. Because then the kid wouldn't know any difference. It could just be padding taken out at each milestone. And I think it's important that using a seat just doesn't change. Then it's yours. The child knows, 'This is my car seat. I'm going to have this car seat from the day I come home from the hospital until the time I'm eight years old.' But they could still look forward to each one because they would still be graduating. Because it would change." (CONVERTED SEAT BELT USER/IDI)

Booster Seats Built Into Vehicles

Parents in the focus groups often remarked on the appeal of booster seats that are built in to a vehicle. Many of these parents felt that seats that are built into vehicles (at the owner's option), would represent a solution to many of the barriers to booster seat use.

In particular, this would eliminate the inconvenience of using booster seats and of transferring them between vehicles. Further, many felt it would also reduce the child's resistance to using a booster seat, particularly if the seat "blended in" with the vehicle and its upholstery, making it less obtrusive, and less noticeable to peers. Notably, however, the appeal of these seats was not discussed in the context of their cost. Knowing the cost of these seats in vehicles where they are currently offered could dramatically reduce their appeal.

Other Strategies Suggested by Parents

Parents who participated in this research were asked to "brainstorm" to develop strategies for communicating the current best practices for child restraint and encouraging their practice among parents and others. Overall, parents' ideas suggest the need for an aggressive campaign designed to communicate the recommended best practices through avenues that touch virtually all stages of a child's development, starting even before the child is born.

A comprehensive list of the strategies that emerged from parents' brainstorming, as well as the avenues suggested for dissemination of information on best practices for child restraint appears on the following page.

PARENTS' SUGGESTIONS FOR COMMUNICATING/IMPLEMENTING BEST PRACTICES FOR CHILD RESTRAINT

- Seminars and training courses
 - Presented by sheriff's departments, police and fire departments
 - Presented at retail outlets that sell safety and booster seats, including Wal-Mart, K Mart, and Sears
 - Presented outside supermarkets
- Offer free or discounted seats to those who attend seminars/courses
- Videos and printed information distributed by hospitals before babies are released to parents after delivery
- Checkpoints for identifying cases of sub-optimal child restraint
 - Inspections for appropriate restraint (as well as proper installation of seats) at inspection stations
- Programs for parents to trade-in used safety seats for coupons or discounts on a new safety seat or booster seat
- Reduced rates on auto insurance for compliance with best practices
- Incorporate best practices for child restraint into driving tests
- Link reminders to check child restraints (practices and installation) with other annual events/reminders, such as changing clocks at Daylight Savings Time
- Similarly, establish and promote a "Child Restraint Month" – a specific month of every year when attention to proper child restraint is intensified
- Daycare centers
- Schools, through teachers
- Articles/announcements in local newspapers
- Parents' Magazine
- Commercials/public service announcements
- Television news magazines such as Dateline and 20/20; news and information programs (the Today Show)
- Billboards
- Flyers/newsletters distributed by a variety of sources:
 - Townships/municipalities
 - Auto insurance companies
 - At inspection stations
 - Department of Transportation
- Pediatricians/information distributed, posted at pediatricians' offices
- Libraries
- The Internet/Web sites for parents
- Lamaze classes/pre-natal classes
- Notification from the Dept. of Health at the child's birth (include a schedule of restraint usage along with a schedule of immunizations; also provide this information on a handy refrigerator magnet)

The Role of Pediatricians

The suggestions of those in the supplementary discussion phase of the research for the most part paralleled the suggestions of parents in the focus groups. However, these parents also offered specific suggestions that refine or elaborate on some of these strategies. In particular, these parents placed particular emphasis on the role that pediatricians might play, with several commenting on the need for pediatricians to be more proactive in communicating this information to parents. Some felt it should simply be part of children's regular check-ups – almost like immunizations that occur on a fixed schedule in the child's development, likewise, physicians should include scheduled "check-ups" on the type of restraint being used.

"I think doctors should give out this information because people are at the doctor's office for a check-up anyway. Or mail it when they know the child is turning a certain age they should mail it out to them. Just like they send immunization information." (SEAT BELT USER/IDI)

"If there was something mandatory that the pediatrician has to hand out about safety in restraining the child and if it listed the fatalities and the injuries I think that makes an impression on parents to do something. When I took my daughter for her check-up at a year old, I asked the pediatrician if I should turn the car seat around to face front. But I had to ask him, he didn't say anything to me. I think it should be made part of the check-up – the pediatrician should play a more active role." (BOOSTER SEAT USER/IDI)

These parents also emphasized the importance of starting "early" to communicate the recommended methods of child restraint for children of all ages. Many noted that the education of parents should begin even before their child is born, such as in pre-natal or Lamaze classes.

Word-of-Mouth

As noted earlier, word-of-mouth was also identified as a source by which many parents have learned about or communicated to others about child restraint and thus

represents a valuable means of communicating/spreading critical information about the recommended best practices.

"Word-of-mouth is always the best way. I am going to tell my patient tomorrow about the one seat because she is doing something wrong. She will be very receptive because safety is very important to her." (CHILD SAFETY SEAT USER/GROUP2)

"I called literally 50 people when I came home that day (from the safety seat seminar). I felt that I had knowledge and I needed to let everyone I knew that was in car seats know to check their car seats." (BOOSTER SEAT USER/GROUP 3)

"I stay abreast of changes in guidelines from friends." (BOOSTER SEAT USER/GROUP 3)

"All of us have learned something. I think it is just word-of-mouth. I think the shock value helps with people who have the knowledge and don't do anything, but the people who do something about this, I think this is just word-of-mouth. I don't think any of us knew. When you get the knowledge, you should share it with everyone you know." (BOOSTER SEAT USER/GROUP 3)

Likewise, as presented earlier, with the booster seat users who participated in the discussion phase of the research demonstrating considerably more knowledge of child restraint than many of their counterparts who use a seat belt for their child, it was apparent that word-of-mouth has already played a major part in keeping these parents well informed. Likewise, a number of these parents have spread the word, or intend to do so, to other parents they know.

"I saw a young woman the other night who is in my daycare and she was putting the child in the front seat. And I'll tell them, you know your child is safer in the back. I think her child was two years old and her baby was in the first child's car seat so she didn't have one for the two-year-old. So I told her I had seen a car

seat at Catholic Charities who gives to the needy. So I got it for her and she thanked me for it.” (BOOSTER SEAT USER/IDI)

“I had the opportunity to tell a friend about the information from State Farm and about 20/20 and how the shield booster seat isn’t the best thing for a child in an accident and how the best investment would be in the new seat. My friends will tell you I get on their nerves.” (BOOSTER SEAT USER/IDI)

“I tell my neighbor, and my neighbor tells other neighbors and relatives and friends... It’s the infamous grapevine. My neighborhood is a subdivision with 26 homes and 50 to 60 homes in the immediate vicinity with 60 to 80 children age seven and under. We talk a lot about our kids.” (BOOSTER SEAT USER/IDI)

In the Media

Parents also had several suggestions specific to communicating this information in the media. Specifically, aside from news programs such as 20/20 and Dateline, where many parents reportedly learned much of what they already know about proper child restraint, several parents suggested other television programs as those likely to provide effective communication vehicles. Suggestions included announcements/commercials on Nickelodeon, the Disney Channel, the Learning Channel, and other programs that are frequently watched by children – and seen by parents.

Asked to suggest spokespeople who might effectively deliver the message about child restraint, parents offered their ideas on both the type of person parents are likely to pay attention to and trust, and specific individuals who they felt would be good spokespeople for this important message. Most often, parents felt that a well-known celebrity or personality who is a parent and who has an image as an involved and caring parent would be the most effective spokesperson. Notably, several respondents spontaneously suggested Maria Shriver as someone they would trust to deliver the message.

“I think people would listen to celebrities who have children – someone who’s a good parent figure. I think Maria Shriver would be a good spokesperson

because she's news, she's not a comedy person and she has children." (SEAT BELT USER/IDI)

Other celebrities suggested less frequently include Rosie O'Donnell, Cindy Crawford, and Doug Flutie, the latter of whom is a well-known sports figure who has established the Doug Flutie Jr. Foundation for Autism in honor of his son who suffers from autism.

Several parents felt a child should be the spokesperson. A child who has suffered serious injury as a passenger restrained in a seat belt could, in the view of some parents, represent a meaningful way of communicating to parents the potential consequences of using an improper form of restraint for their child. Other child-oriented scenarios such as the one described below could appeal to parents' sense of responsibility to protect their children from injury.

"It should be a child. And maybe at the end, the child should say, 'How would you tell me that I'm crippled because of your neglect.' And that's basically what it boils down to." (BOOSTER SEAT USER/IDI)

"They can get actors who are kids. You can get two five-year-olds chatting away about the new booster seat. I think that would be effective both in marketing to children and adults. It could even bring in the old guilt factor for the parents. Depending upon who you're trying to get through to, if you're trying to get through to the parents, one child could say to the other child, My mom cares...this is kind of nasty, but, my mom cares more about me because she's got me in a booster seat. There's the guilt." (CONVERTED SEAT BELT USER/IDI)

From the perspective of marketing to children, the parent quoted below felt the use of children in a media campaign would enhance the appeal of booster seats to children.

"If they already have the booster seat, the kids could be, Hey, these booster seats are cool. I can see right into other people's cars. They think seeing out the window is the niftiest thing since sliced bread." (CONVERTED SEAT BELT USER/IDI)

Several parents expressed the opinion that well-known physicians and prominent people in the medical field would be appropriate spokespeople to deliver important information about child restraint and the use of booster seats. Such professionals clearly garner the trust of parents and are perceived as highly knowledgeable in the area of child restraint given their exposure to the injuries children sustain when not properly restrained. One parent specifically suggested well-known doctors such as those featured in publications such as Parents Magazine.

Regardless of who the spokesperson is for such a campaign, according to several respondents, knowing that the information comes from a source they trust and that they know to have credibility carries considerable weight in conveying its importance. Several parents commented that just knowing that the information comes from the Children's Hospital of Philadelphia gives it added importance and credibility.

"If you saw a name of someone who's researched it, like Children's Hospital. You know how much they've put into researching car seats." (SEAT BELT USER/IDI)

"I take the information even more seriously considering the source – that it comes from the Children's Hospital of Philadelphia." (BOOSTER SEAT USER/IDI)

"I think just the idea that the Children's Hospital is behind it definitely carries some weight." (BOOSTER SEAT USER/IDI)

In the Store

Throughout this research, parents have repeatedly commented on how confusing and overwhelming it can be to purchase a car seat or booster seat given the number and variety of designs and models available. That some vehicles do not accommodate all seats further adds to the complexity and frustration of finding an appropriate seat. Parents in the discussion phase of this research frequently commented on the need for more information on specific booster seat designs. Having more information provided at

the point-of-purchase would clearly make the decision to purchase a booster seat easier for parents.

Specific information that parents would look for in purchasing a booster seat include:

- Results of product safety testing for the product, and its safety record in actual use
- Product endorsements or the recommendation of a trusted individual or organization (e.g., The Surgeon General/C. Everett Koop, CHOP, Consumer Reports, AAA ratings)
- Information on the specific child weights accommodated by specific booster seats
- A “schedule” of milestones (size/weight/age) for graduating a child from each progressive form of restraint

According to a number of discussion respondents, this type of information should be provided right on product packages. Informational pamphlets or flyers on child restraint safety and on specific products should also be available at in-store displays.

As far as *where* booster seats are sold – and where they should be sold – parents’ responses in the discussion phase of the research were extremely consistent across respondents. When asked where booster seats are currently sold, virtually all respondents identified a number of well-known outlets, including:

- Kmart
- Wal-Mart
- Target
- Bradley's
- Sears
- J C Penney
- Toys R Us
- Babies R Us
- BJ's Wholesale Club
- Ames
- Burlington Coat Factory

Overall, virtually all parent discussants indicated that booster seats are currently being sold in the “right” places. These types of outlets are generally places where “the masses” shop, and where the majority of parents shop frequently. In the words of one booster seat user, *“If you want to buy one, they’re not hard to find.”*

Isolated suggestions for other outlets included supermarkets/grocery stores, car repair shops, such as Midas Muffler, sporting goods stores, and large chain shoe stores or other stores where parents often shop with and for their children.

The Right Price

When asked what they would be willing to pay for a booster seat, respondents’ answers varied somewhat. Overall, however, the most common responses as far as what these parents actually paid or would expect to pay were under \$100. More specifically, most parents’ responses fell in the \$40 to \$60 range.

Most parents – especially those who are currently using a booster seat for their child – indicated that the price of a booster seat would not be a deterrent to use, nor would any price, within reason, be “too much” where the safety of their child is concerned. Notably, while only a qualitative observation, this type of response was, it seemed, offered more frequently by booster seat users.

“I paid \$120 for the one we have. I’d pay as much as \$150, but really, how can it be too much? It can’t be too much for your child’s safety. You just have to have it – it’s like food.” (BOOSTER SEAT USER/IDI)

“If the top-of-the line booster seat was really better – that is, safer – then I wouldn’t hesitate to get that one. The price wouldn’t be a factor.” (BOOSTER SEAT USER/IDI)

“I wouldn’t set a price tag on it. Any amount is acceptable for safety.” (BOOSTER SEAT USER/IDI)

Although most parents who participated in this study indicated that the cost of a booster seat is not an obstacle to use, the comments of a few parents clearly underscore that the purchase price *can* be a deterrent to some parents to using a booster seat. As noted previously, the cost can be especially prohibitive when the accumulated cost of all

the progressive forms of restraint needed for a child, from infant seat to booster seat, is considered.

Car Manufacturers

Parents also believe it is important for car manufacturers to play a role in child restraint (aside from offering built-in safety seats), and work in conjunction with safety seat manufacturers both in communicating with parents as well as in developing seats that are compatible with vehicle designs.

"I think the car manufacturers and the seat manufacturers have to come together and agree. (CHILD SAFETY SEAT USER/GROUP2)

*"If a car came out with a list of car seats that would fit in it – manufacturers need to get together with the car dealers and make everything as easy as possible."
(CHILD SAFETY SEAT USER/GROUP1)*

Information that will Have an Impact

Asked what it would take to convey to parents how critical it is that they do not graduate their child to seat belts prematurely, parents primarily focused on crash tests and other research studies that communicate the potential consequences when children are prematurely graduated. Others indicated that the "shock-value" of presenting real-life horror stories and pictures of children who were injured would have an impact and move parents to change their behavior.

"Maybe if they would tell what would happen to your child in seat belts. Scare tactics." (SEAT BELT USER/GROUP 4)

"Statistics, numbers always open people's eyes. That is why I think a billboard comes into play. A billboard with really staggering statistics. They might wake up when they drive by." (BOOSTER SEAT USER/GROUP 3)

"I think one way to raise the level of anxiety of parents so they understand the risks and change their behavior is having the media announce accidents. There was one not too long ago where a mother was holding her 2-year-old and the father was not

going really fast but she flew out of the car and was killed. I think that might get parents to realize the risks.” (CHILD SAFETY SEAT USER/GROUP 2)

“You have to pull people heartstrings and make them knowledgeable.” (CHILD SAFETY SEAT USER/GROUP 1)

Likewise, it was apparent in the comments of those who were discussants that being confronted with the potential consequences to their child of not using the proper restraint could have a significant impact.

“What had an impact was the information that said this is what can happen and this is what has happened and this is why you need to do it. That combined with my sense of irresponsibility – thinking about the consequences. It made me think about if we were in an accident, what would happen? What if she did slip out of the seat belt? What if her internal organs suffered any kind of damage because the seat belt wasn’t placed right across her hips? What if my headrest was up and her head went in between the headrest and the top of the seat?” (CONVERTED SEAT BELT USER/IDI)

“When I saw the articles in Parents and Parenting Magazines, I think partially it was that information, but also the way it made me feel that made me switch her back to a booster seat. I think that I was starting to feel irresponsible by not having her in one. With all the statistics that were being thrown around, and I was just starting to feel guilty. This is my responsibility. Just because she is five years old doesn’t mean that she shouldn’t still be protected appropriately in a car.” (CONVERTED SEAT BELT USER/IDI)

“I see other parents sometimes letting their child out of the booster seat and I disapprove of that. I’ll tell them, ‘If the child gets hurt... If somebody hits you and your child asks you when he grows up, what happened to me, what are you going to tell him? Will you say Mommy didn’t put you in a booster seat and so you’re crippled?’ Sometimes they roll their eyes and then later they say thank you.” (BOOSTER SEAT USER/IDI)

"All you have to do is inundate me with the bad information – what can happen. That's what puts the fear in you of what if this happened. They could almost guilt you into it. It's bad, but I think it's effective. It jolts you back into thinking it could be me next." (SEAT BELT USER/IDI)

"I think statistics and case stories are the most effective way to get the message across to parents. When you see a story on 20/20 or on your local news about a child that was in an accident, it makes an impact on parents. When you hear a tragic story, that wakes you up and makes you say, 'Oh my God, what if that happened to my child?'" (BOOSTER SEAT USER/IDI)

"Shock value seems to be the only way we learn anything." (BOOSTER SEAT USER/IDI)

Invoking a little parental guilt was also suggested as an effective means of motivating parents to accept and follow through on their responsibility as a parent to keep their child safe.

"Put a little bit of guilt on the parents. Almost like you wouldn't let your infant be in a toddler car seat, why let your five year old be in a seat belt?" (CONVERTED SEAT BELT USER/IDI)

MARKETING BOOSTER SEATS TO CHILDREN

Another important aspect of reducing premature graduation of children to seat belts is, of course, gaining greater acceptance of booster seats among children, particularly school-age children of about 6 to 8 years. Parents in these focus groups were also asked their ideas on how booster seats could be marketed to children to make them more acceptable. Following is a summary of parent's suggestions.

- ❖ **Cartoons/videos:** Parents thought that cartoons and child videos that present popular characters actually sitting in booster seats would help make these seats more acceptable for children.

- ❖ **Celebrity endorsements:** Similarly, a number of parents suggested endorsements by popular celebrities as a potentially effective means of gaining acceptance of booster seats among school-age children. Specific personalities suggested most often include Britney Spears and well-known sports figures. Some consideration might be given to making these endorsements gender-specific for more targeted appeal.
- ❖ **Schools/teachers:** Children's schools and teachers are viewed as a potentially powerful means of communicating to children the importance of booster seats when it comes to keeping them safe from injury in the event of a vehicle crash. Teachers represent an important authority in the lives of children at this age and, according to parents, they generally accept what teachers say as the indisputable truth.
- ❖ **Public service announcements:** Public service announcements aimed at children – such as those in the “The More You Know” series were suggested by some parents as a means of gaining greater acceptance among children.
- ❖ **Mild scare tactics:** Some parents felt that a somewhat milder version of the scare tactics suggested as compelling to parents would be effective in communicating the importance of booster seats to their own safety and that of other children their age.

Where the seats themselves are concerned, several parents suggested they be made in designs that would appeal to children or that appealing features be added. One parent suggested a design that resembles a seat in a racecar. Several noted that a cup holder would have some appeal for children.

As suggested throughout much of this analysis, somewhat less aggressive marketing to children may be needed if parents begin now to extend the use of booster seats until their children reach the appropriate size. It has been evident throughout these findings that children are likely to exhibit less resistance to sitting in a booster seat *before* they are graduated to seat belts. Once they have begun using seat belts, it is far more difficult to take away this milestone of maturity.

Appendix F

Moderators' Guides

**PREMATURE GRADUATION (#7144-001)
MODERATOR'S GUIDE – GROUP #1**

(Group #1 Eligibility: Parents of a 1-to-4 year old child who has ridden in a seat belt at least once or twice in the past 6 months.)

I. INTRODUCTION
(5 minutes)

MODERATOR INTRODUCES SELF AND EXPLAINS GROUND RULES

Approximately 2 hours in length
Everyone should share their views
No right or wrong answers
Group being taped for reporting purposes
No side conversations/one person speaks at a time
CHOP researchers observing

RESPONDENT INTRODUCTIONS

Name
Where they're from
Number of children and their ages
A little about their work or other interests

INTRODUCTION OF TOPIC

Researchers at Children's Hospital of Philadelphia are interested in reducing child injury. This evening we'll be talking about a number of issues related to child safety – particularly how children are secured in vehicles. The results of the research will be used in an effort to improve the safety of children during motor vehicle accidents.

II. GENERAL CHILD SAFETY
(10 minutes)

COMMON SITUATIONS/PLACES WHERE CHILDREN GET INJURED
– What are some of the ways that 1-to-4 year old children get injured? In what situations?

- Record list on flip chart

- IF NOT MENTIONED, PROBE FOR NON-VEHICLE RESPONSES: Other than in motor vehicles, in what situations do 1-to-4 year old children get injured?

RELATIVE RANKING OF WORRY – Which of these (refer to list) do you worry most about? Which do you worry least about?

- Record relative ranking on flip chart

PERCEIVED SELF-EFFICACY OF PARENTS – How effective can parents be in preventing injuries to their child? Which of these (refer to list) can parents do the most to prevent? Least?

- Record relative ranking on flip chart

III. CHILD SAFETY IN VEHICLES (15 minutes)

CURRENT VEHICLE SAFETY STRATEGIES – Thinking specifically about child safety in vehicles... what are some of the ways that you currently keep your 1-to-4 year old child safe in the car?

- Record list on flip chart
- IF NOT MENTIONED, PROBE FOR RESPONSES OTHER THAN CHILD RESTRAINTS: Other than child restraints such as car seats and seat belts, what are some other ways you keep your child safe in the car?

PAST VEHICLE SAFETY STRATEGIES – What things have you done *in the past* to keep your child safe in the car? Why don't you do/use that now?

- Add to list on flip chart

RELATIVE EFFECTIVENESS OF STRATEGIES – How effective are these strategies for keeping your 1-to-4 year old child safe in the car? Which are most effective? Least effective?

- Record relative ranking on flip chart

SAFETY IN OTHER VEHICLES – Does your 1-to-4 year old child ride in a vehicle other than yours? How do you handle these situations?

IV. PERCEPTIONS OF CHILD RESTRAINTS

(20 minutes)

PARENT'S PERCEPTIONS OF CAR SEATS – Let's talk specifically about car seats. We're interested in hearing from parents who currently secure their 1-to-4 year old child in a car seat, as well as, those who have done so in the past.

- What are the “positives” of using a car seat to secure your child? (Probe for other than “safety”.)
- What are the “negatives” of using a car seat?
- What do you like about the car seat you use? What do you dislike? (IF NOT MENTIONED, probe regarding: installation, getting the child in and out, comfort for the child, appearance/color, other features or “bells and whistle”)
- When will/did you stop using a car seat? Why will/did you make this decision? What are/were the criteria?

CHILD'S PERCEPTIONS OF CAR SEATS – Now, let's talk specifically about what your 1-to-4 year old child thinks (or thought) about his/her car seat...

- What does your child like about the car seat? What does he/she dislike?
- Do you think siblings or peers affect how your child feels about the car seat? In what way?
- What else affects how he/she feels about the car seat?

PARENT'S PERCEPTIONS OF SEAT BELTS – Now, let's talk specifically about securing your child in a seat belt only. Again, we're interested in hearing from parents who secure their children in seat belts, as well as, those who do not.

- What are the “positives” of using a seat belt to secure a child?
- What are the “negatives” of using a seat belt?
- (IF NOT MENTIONED, probe regarding: installation, getting the child in and out, and comfort for the child)

CHILD'S PERCEPTIONS OF SEAT BELTS – Now, let's talk specifically about what your 1-to-4 year old child thinks (or thought) about riding in a seat belt only...

- What does your child like about the seat belt? What does he/she dislike?
- Do you think siblings or peers affect how your child feels about the seat belt? In what way?
- What else affects how he/she feels about the seat belt?

COMPARISON OF RESTRAINTS – Which type of child restraint do you think is safest? Which is least safe? Why do you say that?

V. CAR SEAT PURCHASE DECISION

(OPTIONAL: 5-to-10 minutes)

- Where did you get the car seat that you use or used?
(IF PURCHASED)
- Where/from whom did you get information about car seats?
If “others”: Who?
If “written materials”: Where/from whom did you get info?
- What other information would have been helpful?
- Where/from whom would you have liked to get information?
- How did you decide which car seat to purchase? Which features were most important to you?

VI. INSTALLATION/LOCATION OF CHILD RESTRAINTS IN VEHICLE

(10 minutes)

LOCATION OF CAR SEAT

- Where do you usually seat your 1-to-4 year old child in your vehicle?
[Probe for: front vs. back seat, middle or sides of back seat, and (if minivan) which back seat?]
- How do you decide where in the vehicle to seat your child?
- Does this differ if your child is in a car seat vs. a seat belt? If so, how?

INSTALLATION OF CAR SEAT

- How did you figure out the best way to install the car seat in your vehicle?
- Was it easy or difficult to figure out?
- How could installation instructions be improved?
- How do you determine whether the car seat fits your 1-to-4 year old child properly?

VII. MIXED USE / DECISION MAKING

(20 minutes)

Most of you have indicated that, in the past 6 months, you have used more than one type of child restraint for your 1-to-4 year old child. Next, I'd like to talk about how you decide which type of child restraint to use...

FIRST SEAT BELT USE – Think back to the first time your child used a seat belt instead of a car seat...

- What prompted you to use a seat belt instead?
- How did the trip go? What happened?
- What concerns, if any, did you have the first time you restrained your child in a seat belt only? (PROBE FOR CHILD'S SAFETY) Have these concerns changed since then? How have they changed?

UNAIDED – If you sometimes restrain your child in a car seat and sometimes use a seat belt only...?

- How do you decide whether to put your child in the car seat vs. a seat belt only vs. nothing at all? Under what circumstances?
- Is this something you consciously think about before each trip or is it a habit?

AIDED – SCENARIO #1. – (Refer to Page 2 of the Participant Hand-Out.)

You're planning a quick trip to the grocery store – about a 5-minute drive. It's a sunny day and you're in no particular hurry. Your 1-to-4 year old child is the only passenger in the vehicle. He or she is in a good mood and fairly relaxed...

Imagine you're about to go on this trip in your car. How would you restrain your child on this trip? Why?

(Refer to Pages 3 through 8 of the Participant Hand-Out.)

- **SCENARIO #2 (LENGTH changed to “30 MINUTES”):** If the trip were about 30 minutes long, would that make a difference? If so, how?
- **SCENARIO #3 (WEATHER changed to “RAINY”):** If the weather were rainy, would that make a difference? If so, how?
- **SCENARIO #4 (PURPOSE changed to “FOR A CHECK-UP AT THE DOCTOR”):** If you were taking your child to the doctor for a check-up, would that make a difference? If so, how?

- SCENARIO #5 (YOUR MOOD changed to “RUNNING LATE”): If you were running late, would that make a difference? If so, how?
- SCENARIO #6 (CHILD MOOD changed to “FUSSY”): If your child is fussy, would that make a difference? If so, how?
- SCENARIO #7 (PASSENGERS changed to “2 OTHER KIDS”): If there were two other children in your car, would that make a difference? If so, how?

RELATIVE IMPORTANCE OF FACTORS – Which of these factors are most important? Least important? Are there other important factors that are missing?

OTHER INFLUENCES ON CHILD RESTRAINT DECISIONS (Optional)

- Have you and your spouse (if any) specifically discussed child restraint issues and how you feel about the various options? Who is the primary decisionmaker?
- How do your friends/family members with same-age children restrain their child in the car? Do you talk about child restraint with your friends/family members?

VIII. CHILD RESTRAINT LEGISLATION
(10 minutes)

AWARENESS OF LEGISLATION

- Do you know what the laws are in your state regarding child restraint?
- Do you think most parents know the laws?
- How did you learn about these laws?
- What would be good ways to let parents know about the laws in your state?

PERCEPTIONS OF LEGISLATION

- What do you think about the laws in your state? Are they too strict? Too lenient?
- How should they be changed?

ADHERENCE TO LEGISLATION

- In your opinion, do you follow the law in your state?
- Do most parents follow the laws?
- Would changing the laws influence parents' behavior?

IX. BEST PRACTICES (Refer to Page 9 of the Participant Hand-Out) (15 minutes)

Based on extensive research, the following are recommended “best practices” for child restraint in vehicles.

(1) For children under age 4, the appropriate restraint is a child safety seat or car seat.

(2) For children age 5 through 9 – depending on height and weight, the most appropriate restraint is a booster seat.

(3) Current best practice recommendations are that only children over age 8 and 80 pounds should be seated in vehicle safety belts because seat belts are designed to provide optimal restraints to adults rather than children.

AWARENESS OF “BEST PRACTICES”

- Were you aware of these “best practices”?
- Where did you get your information about this?
- How does this information impact your decisions about child restraint usage?

CHANGING BEHAVIOR

- Do you think most parents are aware of these “best practices”?
- What would convince parents to observe “best practices”? What would need to change?
(PROBE FOR: increased awareness, different car seat features, stricter laws.)
- What would be good ways to let parents know about these “best practices”?
(PROBE FOR: presentation, type of message, distribution, spokespeople, other ideas)

SUMMARY OF DISCUSSION TOPICS

I.	Introduction	5 minutes
II.	General Child Safety	10 minutes
III.	Child Safety in Vehicles	15 minutes
IV.	Perceptions of Child Restraints	20 minutes
V.	Car Seat Purchase Decision	5 to 10 minutes (optional)
VI.	Installation/Location of Child Restraints in Vehicles	10 minutes
VII.	Mixed Use/Decision Making	20 minutes
VIII.	Child Restraint Legislation	10 minutes
IX.	Best Practices	15 minutes

**PREMATURE GRADUATION (#7144-001)
MODERATOR'S GUIDE – GROUP #2**

(Group #2 Eligibility: Parents of a 5-to-9 year old child who has ridden in a seat belt at least once or twice in the past 6 months.)

I. INTRODUCTION
(5 minutes)

MODERATOR INTRODUCES SELF AND EXPLAINS GROUND RULES

Approximately 2 hours in length
Everyone should share their views
No right or wrong answers
Group being taped for reporting purposes
No side conversations/one person speaks at a time
CHOP researchers observing

RESPONDENT INTRODUCTIONS

Name
Where they're from
Number of children and their ages
A little about their work or other interests

INTRODUCTION OF TOPIC

Researchers at Children's Hospital of Philadelphia are interested in reducing child injury. This evening we'll be talking about a number of issues related to child safety – particularly how children are secured in vehicles. The results of the research will be used in an effort to improve the safety of children during motor vehicle accidents.

II. GENERAL CHILD SAFETY
(10 minutes)

COMMON SITUATIONS/PLACES WHERE CHILDREN GET INJURED
– What are some of the ways that 5-to-9 year old children get injured? In what situations?

- Record list on flip chart

- IF NOT MENTIONED, PROBE FOR NON-VEHICLE RESPONSES: Other than in motor vehicles, in what situations do 5-to-9 year old children get injured?

RELATIVE RANKING OF WORRY – Which of these (refer to list) do you worry most about? Which do you worry least about?

- Record relative ranking on flip chart

PERCEIVED SELF-EFFICACY OF PARENTS – How effective can parents be in preventing injuries to their child? Which of these (refer to list) can parents do the most to prevent? Least?

- Record relative ranking on flip chart

III. CHILD SAFETY IN VEHICLES (15 minutes)

CURRENT VEHICLE SAFETY STRATEGIES – Thinking specifically about child safety in vehicles... what are some of the ways that you currently keep your 5-to-9 year old child safe in the car?

- Record list on flip chart
- IF NOT MENTIONED, PROBE FOR “BOOSTER SEAT”.
- IF NOT MENTIONED, PROBE FOR RESPONSES OTHER THAN CHILD RESTRAINTS: Other than child restraints such as car seats, booster seats, and seat belts, what are some other ways you keep your child safe in the car?

PAST VEHICLE SAFETY STRATEGIES – What things have you done *in the past* to keep your child safe in the car? Why don't you do/use that now?

- Add to list on flip chart

RELATIVE EFFECTIVENESS OF STRATEGIES – How effective are these strategies for keeping your 5-to-9 year old child safe in the car? Which are most effective? Least effective?

- Record relative ranking on flip chart

SAFETY IN OTHER VEHICLES – Does your 5-to-9 year old child ride in a vehicle other than yours? How do you handle these situations?

IV. PERCEPTIONS OF CHILD RESTRAINTS

(25 minutes)

PARENT'S PERCEPTIONS OF CAR SEATS – Let's talk specifically about car seats. We're interested in hearing from parents who ever secured their child in a car seat.

- What are the "positives" of using a car seat to secure your child? (Probe for other than "safety".)
- What are the "negatives" of using a car seat?
- When did you stop using a car seat? Why did you make this decision? What were the criteria?

CHILD'S PERCEPTIONS OF CAR SEATS – Now, let's talk specifically about what your child thought about the car seat...

- What did your child like about the car seat? What did he/she dislike?
- Do you think siblings or peers affected how your child felt about the car seat? In what way?
- What else affected how he/she felt about the car seat?

(IF "BOOSTER SEATS" MENTIONED) PARENT'S PERCEPTIONS OF BOOSTER SEATS – Let's talk specifically about booster seats. We're interested in hearing from parents who have secured their child in a booster seat.

- What are the "positives" of using a booster seat to secure your child? (Probe for other than "safety".)
- What are the "negatives" of using a booster seat?
- What do you like about the booster seats you have used? What do you dislike?
(IF NOT MENTIONED, probe regarding: installation, getting the child in and out, comfort for the child, appearance/color, other features or "bells and whistle")
- When did you stop using a booster seat? Why did you make this decision? What were the criteria?

(IF "BOOSTER SEATS" MENTIONED) CHILD'S PERCEPTIONS OF BOOSTER SEATS – Now, let's talk specifically about what your child thought about the booster seat...

- What did your child like about the booster seat? What did he/she dislike?
- Do you think siblings or peers affected how your child felt about the booster seat? In what way?

- What else affected how he/she felt about the booster seat?

PARENT'S PERCEPTIONS OF SEAT BELTS – Now, let's talk specifically about securing your child in a seat belt only. We're interested in hearing from parents who secure their children in seat belts, as well as, those who do not.

- What are the "positives" of using a seat belt to secure a child?
- What are the "negatives" of using a seat belt?
- (IF NOT MENTIONED, probe regarding: installation, getting the child in and out, and comfort for the child)

CHILD'S PERCEPTIONS OF SEAT BELTS – Now, let's talk specifically about what your 5-to-9 year old child thinks about riding in a seat belt only...

- What does your child like about the seat belt? What does he/she dislike?
- Do you think siblings or peers affect how your child feels about the seat belt? In what way?
- What else affects how he/she feels about the seat belt?

COMPARISON OF RESTRAINTS – Which type of child restraint do you think is safest? Which is least safe? Why do you say that?

V. NO SECTION V

VI. LOCATION OF CHILD IN VEHICLE
(5 minutes)

LOCATION

- Where do you usually seat your 5-to-9 year old child in your vehicle?
[Probe for: front vs. back seat, middle or sides of back seat, and (if minivan) which back seat?]
- How do you decide where in the vehicle to seat your child?
- (IF "BOOSTER SEAT" MENTIONED) Does this differ if your child is in a booster seat vs. a seat belt? If so, how?

VII. MIXED USE / DECISION MAKING
(20 minutes)

Some of you have indicated that, in the past 6 months, you have used more than one type of child restraint for your 5-to-9 year old child. Next, I'd like to talk about how you decide which type of child restraint to use...

FIRST SEAT BELT USE – Think back to the first time your child used a seat belt instead of a car seat or booster seat...

- What prompted you to use a seat belt instead?
- How did the trip go? What happened?
- What concerns, if any, did you have the first time you restrained your child in a seat belt only? (PROBE FOR CHILD'S SAFETY) Have these concerns changed since then? How have they changed?

UNAIDED – If you sometimes restrain your child in a car seat or booster seat and sometimes use a seat belt only...?

- How do you decide whether to put your child in a booster seat vs. a seat belt only vs. nothing at all? Under what circumstances?
- Is this something you consciously think about before each trip or is it a habit?

AIDED – SCENARIO #1 (Refer to Page 2 of Participant Hand-Out.)

You're planning a quick trip to the grocery store – about a 5-minute drive. It's a sunny day and you're in no particular hurry. Your 5-to-9 year old child is the only passenger in the vehicle. He or she is in a good mood and fairly relaxed...

Imagine you're about to go on this trip in your car. How would you restrain your child on this trip? Why?

(Refer to Pages 3 through 8 of Participant Hand-Out.)

- **SCENARIO #2** (LENGTH changed to "30 MINUTES"): If the trip were about 30 minutes long, would that make a difference? If so, how?
- **SCENARIO #3** (WEATHER changed to "RAINY"): If the weather were rainy, would that make a difference? If so, how?
- **SCENARIO #4** (PURPOSE changed to "FOR A CHECK-UP AT THE DOCTOR"): If you were taking your child to the doctor for a check-up, would that make a difference? If so, how?

- **SCENARIO #5 (YOUR MOOD changed to “RUNNING LATE”):** If you were running late, would that make a difference? If so, how?
- **SCENARIO #6 (CHILD MOOD changed to “FUSSY”):** If your child is fussy, would that make a difference? If so, how?
- **SCENARIO #7 (PASSENGERS changed to “2 OTHER KIDS”):** If there were two other children in your car, would that make a difference? If so, how?

RELATIVE IMPORTANCE OF FACTORS – Which of these factors are most important? Least important? Are there other important factors that are missing?

OTHER INFLUENCES ON CHILD RESTRAINT DECISIONS (Optional)

- Have you and your spouse (if any) specifically discussed child restraint issues and how you feel about the various options? Who is the primary decisionmaker?
- How do your friends/family members with same-age children restrain their child in the car? Do you talk about child restraint with your friends/family members?

VIII. CHILD RESTRAINT LEGISLATION (10 minutes)

AWARENESS OF LEGISLATION

- Do you know what the laws are in your state regarding child restraint?
- Do you think most parents know the laws?
- How did you learn about these laws?
- What would be good ways to let parents know about the laws in your state?

PERCEPTIONS OF LEGISLATION

- What do you think about the laws in your state? Are they too strict? Too lenient?
- How should they be changed?

ADHERENCE TO LEGISLATION

- In your opinion, do you follow the law in your state?
- Do most parents follow the laws?
- Would changing the laws influence parents' behavior?

IX. BEST PRACTICES – (Refer to page 9 of Participant Hand-Out.) (15 minutes)

Based on extensive research, the following are recommended “best practices” for child restraint in vehicles.

(1) For children under age 4, the appropriate restraint is a child safety seat or car seat.

(2) For children age 5 through 9 – depending on height and weight, the most appropriate restraint is a booster seat.

(3) Current best practice recommendations are that only children over age 8 and 80 pounds should be seated in vehicle safety belts because seat belts are designed to provide optimal restraints to adults rather than children.

AWARENESS OF “BEST PRACTICES”

- Were you aware of these “best practices”?
- Where did you get your information about this?
- How does this information impact your decisions about child restraint usage?

CHANGING BEHAVIOR

- Do you think most parents are aware of these “best practices”?
- What would convince parents to observe “best practices”? What would need to change?
(PROBE FOR: increased awareness, different car/booster seat features, stricter laws.)
- What would be good ways to let parents know about these “best practices”?
(PROBE FOR: presentation, type of message, distribution, spokespeople, other ideas)

SUMMARY OF DISCUSSION TOPICS

I.	Introduction	5 minutes
II.	General Child Safety	10 minutes
III.	Child Safety in Vehicles	15 minutes
IV.	Perceptions of Child Restraints	25 minutes
VI.	Location of Child in Vehicle	5 minutes
VII.	Mixed Use/Decision Making	20 minutes
VIII.	Child Restraint Legislation	10 minutes
IX.	Best Practices	15 minutes

**PREMATURE GRADUATION (#7144-001)
MODERATOR'S GUIDE – GROUP #3**

(Group #3 Eligibility: Parents of a 4-to-9 year old child who has ridden in a booster seat at least once or twice in the past 6 months.)

I. INTRODUCTION
(5 minutes)

MODERATOR INTRODUCES SELF AND EXPLAINS GROUND RULES

Approximately 2 hours in length
Everyone should share their views
No right or wrong answers
Group being taped for reporting purposes
No side conversations/one person speaks at a time
CHOP researchers observing

RESPONDENT INTRODUCTIONS

Name
Where they're from
Number of children and their ages
A little about their work or other interests

INTRODUCTION OF TOPIC

Researchers at Children's Hospital of Philadelphia are interested in reducing child injury. This evening we'll be talking about a number of issues related to child safety – particularly how children are secured in vehicles. The results of the research will be used in an effort to improve the safety of children during motor vehicle accidents.

II. GENERAL CHILD SAFETY
(10 minutes)

COMMON SITUATIONS/PLACES WHERE CHILDREN GET INJURED

– What are some of the ways that 4-to-9 year old children get injured? In what situations?

- Record list on flip chart

- **IF NOT MENTIONED, PROBE FOR NON-VEHICLE RESPONSES:** Other than in motor vehicles, in what situations do 4-to-9 year old children get injured?

RELATIVE RANKING OF WORRY – Which of these (refer to list) do you worry most about? Which do you worry least about?

- Record relative ranking on flip chart

PERCEIVED SELF-EFFICACY OF PARENTS – How effective can parents be in preventing injuries to their child? Which of these (refer to list) can parents do the most to prevent? Least?

- Record relative ranking on flip chart

III. CHILD SAFETY IN VEHICLES (15 minutes)

CURRENT VEHICLE SAFETY STRATEGIES – Thinking specifically about child safety in vehicles... what are some of the ways that you currently keep your 4-to-9 year old child safe in the car?

- Record list on flip chart
- **IF NOT MENTIONED, PROBE FOR RESPONSES OTHER THAN CHILD RESTRAINTS:** Other than child restraints such as car seats, booster seats, and seat belts, what are some other ways you keep your child safe in the car?

PAST VEHICLE SAFETY STRATEGIES – What things have you done *in the past* to keep your child safe in the car? Why don't you do/use that now?

- Add to list on flip chart

RELATIVE EFFECTIVENESS OF STRATEGIES – How effective are these strategies for keeping your 4-to-9 year old child safe in the car? Which are most effective? Least effective?

- Record relative ranking on flip chart

SAFETY IN OTHER VEHICLES – Does your 4-to-9 year old child ride in a vehicle other than yours? How do you handle these situations?

IV. PERCEPTIONS OF CHILD RESTRAINTS

(20 minutes)

PARENT'S PERCEPTIONS OF BOOSTER SEATS – Let's talk specifically about booster seats...

- What are the “positives” of using a booster seat to secure your child? (Probe for other than “safety”.)
- What are the “negatives” of using a booster seat?
- What do you like about the booster seats you have used? What do you dislike?
(IF NOT MENTIONED, probe regarding: installation, getting the child in and out, comfort for the child, appearance/color, other features or “bells and whistles”)
- When did you stop using a booster seat? Why did you make this decision? What were the criteria?

CHILD'S PERCEPTIONS OF BOOSTER SEATS – Now, let's talk specifically about what your 4-to-9 year old child thinks about the booster seat...

- What does your child like about the booster seat? What does he/she dislike?
- Do you think siblings or peers affect how your child feels about the booster seat? In what way?
- What else affects how he/she feels about the booster seat?

PARENT'S PERCEPTIONS OF SEAT BELTS – Now, let's talk specifically about securing your child in a seat belt only...

- What are the “positives” of using a seat belt to secure a child?
- What are the “negatives” of using a seat belt?
- (IF NOT MENTIONED, probe regarding: installation, getting the child in and out, and comfort for the child)

CHILD'S PERCEPTIONS OF SEAT BELTS – Now, let's talk specifically about what your 4-to-9 year old child thinks about riding in a seat belt only...

- What does your child like about the seat belt? What does he/she dislike?
- Do you think siblings or peers affect how your child feels about the seat belt? In what way?
- What else affects how he/she feels about the seat belt?

COMPARISON OF RESTRAINTS – Which type of child restraint do you think is safest? Which is least safe? Why do you say that?

V. BOOSTER SEAT PURCHASE DECISION
(OPTIONAL: 5 to 10 minutes)

- Where did you get the booster seat that you use?
(IF PURCHASED)
- Where/from whom did you get information about car seats?
If “others”: Who?
If “written materials”: Where/from whom did you get info?
- What other information would have been helpful?
- Where/from whom would you have liked to get information?
- How did you decide which booster seat to purchase? Which features were most important to you?

VI. INSTALLATION/LOCATION OF CHILD RESTRAINTS IN VEHICLE
(10 minutes)

LOCATION

- Where do you usually seat your 4-to-9 year old child in your vehicle?
[Probe for: front vs. back seat, middle or sides of back seat, and (if minivan) which back seat?]
- How do you decide where in the vehicle to seat your child?
- Does this differ if your child is in a booster seat vs. a seat belt? If so, how?

INSTALLATION OF BOOSTER SEAT

- How did you figure out the best way to install the booster seat in your vehicle?
- Was it easy or difficult to figure out?
- How could installation instructions be improved?
- How do you determine whether the booster seat fits your 4-to-9 year old child properly?

VII. MIXED USE / DECISION MAKING
(20 minutes)

Most of you have indicated that, in the past 6 months, you have used more than one type of child restraint for your 4-to-9 year old child. Next, I'd like to talk about how you decide which type of child restraint to use...

FIRST SEAT BELT USE – Think back to the first time your child used a seat belt instead of a booster seat...

- What prompted you to use a seat belt instead?
- How did the trip go? What happened?
- What concerns, if any, did you have the first time you restrained your child in a seat belt only? (PROBE FOR CHILD'S SAFETY) Have these concerns changed since then? How have they changed?

UNAIDED

- How do you decide whether to put your child in a booster seat vs. a seat belt only vs. nothing at all? Under what circumstances?
- Is this something you consciously think about before each trip or is it a habit?

AIDED – SHOW SCENARIO #1. You're planning a quick trip to the grocery store – about a 5-minute drive. It's a sunny day and you're in no particular hurry. Your 4-to-9 year old child is the only passenger in the vehicle. He or she is in a good mood and fairly relaxed...

Imagine you're about to go on this trip in your car. How would you restrain your child on this trip? Why?

- **SCENARIO #2 (LENGTH changed to "30 MINUTES"):** If the trip were about 30 minutes long, would that make a difference? If so, how?
- **SCENARIO #3 (WEATHER changed to "RAINY"):** If the weather were rainy, would that make a difference? If so, how?
- **SCENARIO #4 (PURPOSE changed to "FOR A CHECK-UP AT THE DOCTOR"):** If you were taking your child to the doctor for a check-up, would that make a difference? If so, how?
- **SCENARIO #5 (YOUR MOOD changed to "RUNNING LATE"):** If you were running late, would that make a difference? If so, how?

- SCENARIO #6 (CHILD MOOD changed to “FUSSY”): If your child is fussy, would that make a difference? If so, how?
- SCENARIO #7 (PASSENGERS changed to “2 OTHER KIDS”): If there were two other children in your car, would that make a difference? If so, how?

RELATIVE IMPORTANCE OF FACTORS – Which of these factors are most important? Least important? Are there other important factors that are missing?

OTHER INFLUENCES ON CHILD RESTRAINT DECISIONS (Optional)

- Have you and your spouse (if any) specifically discussed child restraint issues and how you feel about the various options? Who is the primary decisionmaker?
- How do your friends/family members with same-age children restrain their child in the car? Do you talk about child restraint with your friends/family members?

VIII. CHILD RESTRAINT LEGISLATION
(10 minutes)

AWARENESS OF LEGISLATION

- Do you know what the laws are in your state regarding child restraint?
- Do you think most parents know the laws?
- How did you learn about these laws?
- What would be good ways to let parents know about the laws in your state?

PERCEPTIONS OF LEGISLATION

- What do you think about the laws in your state? Are they too strict? Too lenient?
- How should they be changed?

ADHERENCE TO LEGISLATION

- In your opinion, do you follow the law in your state?
- Do most parents follow the laws?
- Would changing the laws influence parents’ behavior?

IX. BEST PRACTICES

(15 minutes)

Based on extensive research, the following are recommended “best practices” for child restraint in vehicles.

(1) For children under age 4, the appropriate restraint is a child safety seat or car seat.

(2) For children age 5 through 9 – depending on height and weight, the most appropriate restraint is a booster seat.

(3) Current best practice recommendations are that only children over age 8 and 80 pounds should be seated in vehicle safety belts because seat belts are designed to provide optimal restraints to adults rather than children.

AWARENESS OF “BEST PRACTICES”

- Were you aware of these “best practices”?
- Were you aware of the potential injuries from improper use?
- Where did you get your information about this?
- How does this information impact your decisions about child restraint usage?

CHANGING BEHAVIOR

- Do you think most parents are aware of these “best practices”?
- What would convince parents to observe “best practices”? What would need to change?
(PROBE FOR: increased awareness, different car/booster seat features, stricter laws.)
- What would be good ways to let parents know about these “best practices”?
(PROBE FOR: presentation, type of message, distribution, spokespeople, other ideas)

SUMMARY OF DISCUSSION TOPICS

I.	Introduction	5 minutes
II.	General Child Safety	10 minutes
III.	Child Safety in Vehicles	15 minutes
IV.	Perceptions of Child Restraints	20 minutes
V.	Booster Seat Purchase Decision	5 to 10 minutes (optional)
VI.	Installation/Location of Child Restraints in Vehicle	10 minutes
VII.	Mixed Use/Decision Making	20 minutes
VIII.	Child Restraint Legislation	10 minutes
IX.	Best Practices	15 minutes

**PREMATURE GRADUATION (#7144-001)
MODERATOR'S GUIDE – GROUP #4**

(Group #4 Eligibility: 4-to-9 year old children who have ridden in a booster seat at least once or twice in the past 6 months.)

I. WELCOME

- A. Have parent put child's name and age on name tag.
- B. Explain to child that parent needs to answer some very important questions
- C. Explain to child that Mom/Dad brought him/her along to help me with an important job, too.
- D. Move to focus group room, allowing them to bring along their snacks.

II. WARM-UP

(2 – 5 minutes)

- A. Introduce self and children.
- B. How did you get here this morning?
- C. Did anyone fly?
- D. Did anyone take a train?

III. RIDING IN A CAR – CHILD'S VIEWPOINT

(3 – 7 minutes)

- A. Tell me about your car.
- B. What color is it?
- C. Where do you usually sit?
- D. What do you like best about riding in your car? Anything else?
- E. What's the worst thing about riding in the car? Anything else?

IV. SAFETY AWARENESS/PARENTAL PRACTICES

(10 – 15 minutes)

- A. What does Mommy do to stay safe when she's riding in the car?
- B. What does Daddy do to stay safe when he's riding in the car?
- C. Assuming child mentions seat belts: How do seat belts work? What are they supposed to do?

- D. Explore any other safety devices (e.g. airbags) that children mention: How do they work? What are they supposed to do?
- E. When **you** are riding in the car, what does Mommy do to keep you safe? Anything else?
- F. What does Daddy do to keep you safe? Anything else?
- G. What is a car booster seat? What are they for?
- H. Have you ever ridden in a car booster seat? Did you ride in one today? Did you help pick it out? When was the last time you rode in a car booster seat?
- I. Are there times when you don't want to (sit in your car seat/wear your seat belt)? When you feel like that, what does Mommy do? What does Daddy do?

V. SIBLING EFFECTS/PEER PRESSURE
(3 – 5 minutes)

- A. How about your brothers or sisters? Who has a younger/baby brother or sister? How old?
- B. How do Mom and Dad keep them safe when riding in the car?
- C. Who has an older brother or sister? How old? What grade?
- D. How do they stay safe while riding in the car?
- E. What do/did they say about your car seat/booster seat?
- F. Can you think of a better name for it?
- G. How old should you be when you start wearing a seat belt like Mommy and Daddy wear?

VI. PERCEPTIONS OF BOOSTER SEATS
(12 – 20 minutes)

- A. Let's pretend we are going to go on a trip. I have my car right over here. We'll go to Disney World! My car has lots of different kinds of seats. (Picking one child at a time), which seat would you want to ride in? Look at all the seats in my car and pick one. What made you pick that one? What did you like about that seat? (Repeat with each child.)
- B. Does my car have a car/booster seat like you have/had in your car? Explore why child did/didn't pick the familiar seat.
- C. Explore perceptions of how fast each child selected a seat, how carefully they looked them over, whether there appeared to be a peer-pressure effect.

- D. (If a particular seat was avoided), I noticed nobody liked this seat. Is this a bad seat? What makes you feel that way?
- E. You know, it's a long way to Disney World. Is there some way we could change these seats to make them better? Something we could add? Something that bothers you?
- F. If Mickey Mouse said you should ride in a car booster seat, would you? What about Big Bird or Elmo? Who do you think kids would listen to?

VII. CONCLUSION

- A. Thank you so much for helping me learn more about how to keep children safe when they are riding in a car. When you go home and see your friend or brother/sister, if they asked you how to stay safe while riding in a car, what would you tell them? Do you have any questions you'd like to ask me?
- B. I have another group of friends who are going to help me, too. Would you like to go play with my toys or watch a video now? Mom/Dad is not quite done yet. You can also have more snack if you'd like. Thank you – you've been very good helpers!

PHASE 2 FOCUS GROUPS

MODERATOR'S GUIDE

Group #1 – CAR SEAT (2) Eligibility: Parents of a 2-year-old child who was “usually” restrained in a child safety seat in the past 2 months.

Group #2 – CAR SEAT (3/4) Eligibility: Parents of a 3- or 4-year old child who was “usually” restrained in a child safety seat in the past 2 months.

Group #3 – BOOSTER SEAT (2/3/4) Eligibility: Parents of a 2-, 3-, or 4-year-old child who was “usually” restrained in a booster seat (shield or belt positioning) in the past 2 months.

Group #4 – SEAT BELT (2/3/4) Eligibility: Parents of a 2-, 3-, or 4-year-old child who was “usually” restrained in a seat belt in the past 2 months.

[Activity (15 minutes)]

I. Introduction (5 to 10 minutes)

A. Moderator Introduction & Ground Rules

- Approximately 2 hours in length
- Everyone should share their views
- No right or wrong answers
- Group being taped for reporting purposes
- No side conversations/ one person speaks at a time
- CHOP researchers observing

B. Respondent Introductions

- Name
- Where they're from
- Number of children and their ages
- A little about their interests

C. Introduction of Topic

“Researchers at The Children’s Hospital of Philadelphia are interested in reducing child injury during motor vehicle crashes. This evening we’ll be talking about some methods to keep children safe in motor vehicles and some of the barriers to keeping children safe in vehicles. They’d like your assistance in coming up with strategies to help other parents overcome these barriers and how best to communicate these strategies to other parents. Your feedback will be used by researchers to help improve the safety of children in motor vehicles.”

II. Child Behavior (10 to 15 minutes)

"My understanding is that your child is usually restrained in a [Child Safety Seat/Booster Seat/Seat Belt] when riding in a motor vehicle. Is that correct?"

Let's talk about your child's behavior related to using the [Car Seat/Booster Seat/Seat Belt]."

- Do you have any problems making your child sit in the [Car Seat/Booster Seat/Seat Belt]?
- What strategies do you use to make your child sit in the [Car Seat/Booster Seat/Seat Belt]?

- [GROUP 4 ONLY]
 - Have any of you ever used booster seats or car seats?
 - If so, did you ever have problems making your child use it?
 - What strategies did you use to make your child use the seat?

- What strategies do you use in other situations? (Probe: Warning of consequences for noncompliance? Incentives? etc.)
- What strategies do you use to get your child to accept something (like a bed time)? (Probe: Allowing child to participate in the decision? etc.)

III. Respondent Beliefs (45 to 60 minutes)

[MODERATOR NOTE: In Parts A & B, we would like to get the parents talking about their beliefs and knowledge about booster seats and child restraint. In Part C, we will give them the "facts" – including a "best practice" hand out.]

A. Transitions (5 to 10 minutes)

"Next I'd like to talk about some of your thoughts and beliefs about child restraints."

- Until what age should a child be restrained in a child safety seat or car seat?
- After that age, what type of restraint should they use? Why?

- [GROUP 3 ONLY]
 - What prompted you to start using a booster seat for your child?
 - How did you learn about booster seats?

- How did you decide when your child was ready to use a booster seat?

Until what age should a child use a booster seat in the car?

What do you think booster seats are used for? (Can they explain about positioning of the child?)

- How do they work? What is their function?

- [GROUP 4 ONLY]

What prompted you to start using the seat belt for your child?

- How does the seat belt fit your child?
- Does s/he express any discomfort when wearing the seat belt?
- Do you have any concerns about how the seat belt fits your child?

Once a child has outgrown a child seat, do you think that s/he would be adequately protected in a seat belt? Do other parents think so? Why or why not?

B. Impression of Booster Seats (20-25 minutes)

"We have some different types of booster seats and car seats here for us to look at and discuss." [SHOW SEATS] *"This is/these are what is called 'belt positioning' seat(s). This is/these are 'shield' seat(s). This is/these are 'low back belt positioning' seat(s)."* [ALLOW PARTICIPANTS TO LOOK AT SEATS]

- [GROUPS 1, 2 & 4 ONLY]

- When I mention a booster seat, what comes to mind? (Respondents can choose the seats that fit.)
- What age children are booster seats for?
- What do you think booster seats are used for? (Can they explain about positioning of the child?)
- How do they work? What is their function?

- [GROUP 3 ONLY]

- What type of seat does your child use?
 - Why? Why not other types?

"Today, we are going to focus on one type of booster seat – a belt positioning booster seat." [SHOW EXAMPLE(S)] *"I'd like to get your impression of these seats."*

- How do these compare to car seats in terms of function – or how they work?
- How do these compare to car seats in terms of safety? Do you think they are safer, about as safe, or less safe than car seats?

"Some parents have said that they feel belt positioning booster seats are not safe. Parents have said that because these boosters are not

anchored to the vehicle, they could slide around underneath the child and cause injuries.”

- Do you think this is a problem?
- What will it take to change that perception? (Probe: Success stories? Reports of statistics?, etc.)

- [GROUPS 1, 2 & 4 ONLY]
 - Do you think your child would like riding in a booster seat? Why? Why not?
 - (If issues of discomfort, resistance, etc are raised here, ask...) How can those issues be overcome?

- [GROUPS 1 & 2 ONLY]
 - Once a child has outgrown a child seat, do you think s/he would be adequately protected in a seat belt? Do other parents think so? Why? Why not?

- [GROUP 3 ONLY]
 - Do you think your child likes riding in his/her booster seat?
 - Does s/he express like or dislike?
 - What does s/he like or dislike?
 - How did you overcome those dislikes?
 - How can we help other parents overcome those issues?

C. Premature Graduation Problem (20-25 minutes)

[MODERATOR: Distribute “best practice” hand-out. Review and answer brief questions.]

“Research has shown that adult seat belts do not properly fit or protect children in motor vehicle crashes. There are even additional risks of injury associated with seat belt use by young children. Their hips are too small to keep the lap belt low and it can sometimes cause injuries to the abdomen or spine in a crash. In addition, the shoulder belt does not fit small children – which can sometimes cause them to place it behind their backs or under their arms. This reduces the protection and allows the child’s head to move forward in a crash and potentially contact things in the vehicle.”

“In order to better protect children who are too big for car seats (at about age 4 and 40 pounds), booster seats should be used with the lap and shoulder belts in the vehicle.”

- Is any of this information new to you?
 - If so, what is new?
 - If not, where did you learn it?
- Did you find any of this information powerful? Did anything make a strong impression on you?

- [GROUP 4 ONLY] If you had been aware of this information when you switched your child to a seat belt, would you have considered it in your choice?
 - Would you have made a different decision?
 - Why or why not?

- Do you think other parents would want to know any of this information?
- What do you think would be the most important things that other parents would want to know?
- Did you question the credibility of any of the information?
 - Do you think other parents will question the credibility?
 - If there is one, what needs to be done to overcome the credibility problem?
- Is there anything "missing" from the information that you think would have a strong impact on parents?
 - If so, what is missing?
 - How can we communicate this information to parents?
 - What is the best way to reach parents with this information?
 - Who needs to be the spokesperson for this type of information?
 - How can we raise anxiety in parents about graduating their children from a child seat directly to a seat belt?

IV. Booster Seat Acceptability (15 to 20 minutes)

A. Parents

- What will it take to get parents to use booster seats?

- Who do they want to hear the information from?
- Do booster seats cost too much? How much would you be willing to pay for a booster seat?
- Where do you think booster seats are sold? Where should they be sold?
- How should booster seats be marketed to parents?

B. Children

- What will it take to get children to accept booster seats?
- Does it require a name change? Design change?
- How should booster seats be marketed to children?
- Are there any strategies you can think of that parents could use to get their children to accept booster seats? (Probes can be allowing child to choose seat, etc.)
- Could any other parenting strategies be used in these situations?
- How could we let parents know about these strategies?

V. Laws (5 to 10 minutes)

“Some parents have reported that they use the law as a guide for restraining their children.”

- Do you think this is true? Do/Did you ever use the law as a guideline for restraining your child?
 - If yes, how should those laws define proper restraint use?

VI. Parental Responsibility (5 to 10 minutes) [TIME PERMITTING]

“One hypothesis is that parents give children the responsibility for buckling up after the child is able to do so.”

- [GROUPS 3 & 4 ONLY] Was this true in your situation?
- Do you think this is a way that children learn responsibility for taking care of themselves?

- How can we integrate booster seat use into this maturation process?
- [GROUP 3 ONLY] Did you integrate this as a maturation step?
 - If so, how did you do this?

VII. Wrap Up (5 to 10 minutes)

A. Information Dissemination

"We have discussed a lot of information this evening and you have provided us with a great deal of insight into this topic."

- When do you think is the best time to provide parents with the information about booster seats and strategies for proper restraint use? (Probe: "Back to school"? Well child check-ups?, etc.)
- Are there any avenues of dissemination that you feel would be particularly effective?

B. Wrap-Up

- Any questions/comments?
- Anyone interested in additional information?
- Thanks for your time!

Phase 2 – In-depth Interviews - #1
Topic Guide

Eligibility: Parents of children ages 2-5 who regularly use booster seats as their restraint

Introduction

Talk with parents about

- their kids and ages of kids
- how many vehicles they have
- types of trips they regularly make with their children in the vehicle

Introduce topic

Researchers at The Children’s Hospital of Philadelphia are interested in reducing child injury during motor vehicle crashes. We would like to talk with you about some of the barriers to keeping children safe in motor vehicles and some strategies you or other parents you know use to overcome these barriers. Your feedback will help researchers improve the safety of children in motor vehicles.

I understand your child (age 2-5) is usually restrained in a booster seat in the car – is that correct?

Child behavior

- A. When was the last time you had trouble making your child stay seated in the booster in the car or getting your child into the booster?
 - What other troubles have you had with that?
 - What things have you done to make your child use the booster when s/he hasn’t wanted to?
 - Can your child ever change your mind about using the booster (negotiability)?
- B. What do you do when you need to get your child to do other things (like take a bath, or go to bed, for example)?

Booster seats

I am going to read you some information from the researchers at The Children's Hospital of Philadelphia about how they recommend that a child your child's age be restrained in the car.

Research has shown that adult seat belts do not properly fit or protect children in motor vehicle crashes. There are even additional risks of injury associated with seat belt use by young children. Their hips are too small to keep the lap belt low and it can sometimes cause injuries to the abdomen or spine. In addition, the shoulder belt does not fit small children which can sometimes cause them to place it behind their backs or under their arms. This reduces the protection and allows the child's head to move forward in a crash and potentially contact things in the vehicle.

In order to better protect children who are too big for car seats (about 40 pounds), belt positioning booster seats should be used with the lap and shoulder belts in the vehicle. Booster seats that have a shield in front of the child are no longer recommended because children have flown out of them in crashes.

Belt positioning booster seats should be used until the adult seat belt fits the child properly (lap belt low over the hips and shoulder belt crossing the shoulder and chest) – this usually happens at about 4'9" and 80 pounds – about 8 years of age. While many parents use booster seats when their children are approximately 40 pounds, very few parents continue to use them until their child reaches 80 pounds.

- A. What of this information is new to you?
 - Where have you learned this type of information? What are your sources?
 - What type of booster seat do you use for your child? (belt positioning versus shield)

- B. What part of this information made a strong impression on you? What did you find interesting? What wasn't important to you?

- C. What things prompted you to start using a booster seat for your child?
- At the time you transitioned your child to a booster seat, what types of things did you consider in your decision?
 - Where did you get that information? Who did you talk to? Who did you ask? Where did you look for information and what types of information did you receive?
 - How did you decide when your child was ready to use a booster seat?
 - Do you think your child likes riding in his/her booster seat?
 - What does s/he like or dislike?
 - How did you overcome those dislikes?
- D. What kinds of information would influence you to keep your child in a booster seat longer – until s/he reaches 80 pounds or 4'9"?
- How did the information I gave you influence you?
 - If not, what would?
 - [If child is using a shield booster] – did the information I provided influence you to re-evaluate the type of booster seat you are using? Why? What changes are you considering?
 - What other types of information would you want to know about booster seats?
 - What is “missing” from the information I gave you, that you would want to know? That would encourage you to use a booster seat longer for your child? (Probes: statistics, case stories, explanation of how a booster works, etc.)
 - What of this information did you question in accuracy or credibility?
 - What would convince you that it is good information?
 - Where would you want information to be given (doctor’s office, internet, school, etc.)?
 - Who would you want to be giving the message?

- Who should be the spokesperson for this type of information (in a media campaign)?

Booster seat acceptability

- How much would you be willing to pay for a booster seat? What do you think is an appropriate cost for booster seats?
- Where do you think booster seats are sold? Where should they be sold?
- What would make you purchase one in a store?
- How would you get your child to stay in the booster seat longer?

Wrap up

Any additional questions or comments?

Phase 2 – In-depth Interviews - #2

Topic Guide

Eligibility: Parents of children ages 2-5 who regularly use seat belts as their restraint

Introduction

Talk with parents about

- their kids and ages of kids
- how many vehicles they have
- types of trips they regularly make with their children in the vehicle

Introduce topic

Researchers at The Children's Hospital of Philadelphia are interested in reducing child injury during motor vehicle crashes. We would like to talk with you about some of the barriers to keeping children safe in motor vehicles and some strategies you or other parents you know use to overcome these barriers. Your feedback will help researchers improve the safety of children in motor vehicles.

I understand your child (age 2-4) is usually restrained in a seat belt in the car – is that correct?

Child behavior

- C. When was the last time you had trouble making your child stay seated in the seat belt in the car or getting your child into the seat belt?
- What other troubles have you had with that?
 - What things have you done to make your child use a seat belt when s/he hasn't wanted to?
 - Can your child ever change your mind about using the seat belt (negotiability)?
- D. What do you do when you need to get your child to do other things (like take a bath, or go to bed, for example)?

Booster seats

I am going to read you some information from the researchers at The Children's Hospital of Philadelphia about how they recommend that a child your child's age be restrained in the car.

Research has shown that adult seat belts do not properly fit or protect children in motor vehicle crashes. There are even additional risks of injury associated with seat belt use by young children. Their hips are too small to keep the lap belt low and it can sometimes cause injuries to the abdomen or spine. In addition, the shoulder belt does not fit small children which can sometimes cause them to place it behind their backs or under their arms. This reduces the protection and allows the child's head to move forward in a crash and potentially contact things in the vehicle.

In order to better protect children who are too big for car seats (about 40 pounds), booster seats should be used with the lap and shoulder belts in the vehicle. Booster seats should be used until the adult seat belt fits the child properly (lap belt low over the hips and shoulder belt crossing the shoulder and chest) – this usually happens at about 4'9" and 80 pounds – about 8 years of age.

E. What of this information is new to you?

- Where have you learned this type of information? What are your sources?

F. What part of this information made a strong impression on you? What did you find interesting? What wasn't important to you?

G. At the time you transitioned your child to a seat belt, what types of things did you consider in your decision?

- Where did you get that information? Who did you talk to? Who did you ask? Where did you look for information and what types of information did you receive?
- Would you have considered this information in your choice to use a seat belt for your child?
 - How would you have considered it? What would have made you decide differently?

- What other types of information would you have considered?
From what sources?

H. What would make you change your current choice of seat belt use to a booster seat for your child?

- **What keeps you from using a booster seat for your child?
(Probes: cost, child compliance, etc.)**
 - **What would help you to overcome those things?**
- **What would encourage you to use a booster seat for your child?**

I. What are some ways we could communicate information like this to you?

- What information would you want to know?
- What is "missing" from the information I gave you, that you would want to know? That would encourage you to use a booster seat for your child? (Probes: statistics, case stories, explanation of how a booster works, etc.)
- Did providing this information influence you to consider using a booster seat for your child?
 - If not, what would influence you?
- What of this information did you question in accuracy or credibility?
 - What would convince you that it is good information?
- Where would you want information to be given (doctor's office, internet, school, etc.)?
 - Who would you want to be giving the message?
- Who should be the spokesperson for this type of information (in a media campaign)?

Booster seat acceptability

- How much would you be willing to pay for a booster seat? What do you think is an appropriate cost for booster seats?

- Where do you think booster seats are sold? Where should they be sold?
- What would make you purchase one in a store?
- How would you get your child to use a booster seat?
- What things about booster seats do you think your child would like (see out the window, etc)? What things do you think your child would dislike? How could you change your child's mind?

Wrap up

Any additional questions or comments?

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