

**Proper Seat Placement of Children Aged 12 or Younger  
Within Vehicles: A Rural/Urban Comparison**

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## **ABSTRACT**

Seating children in the rear of vehicles has been shown to decrease the odds of being fatally injured in a motor vehicle crash by 36% to 40%. Although rear seating is safer, rates of children being front-seated remain high, especially for older children. Few states have enacted legislation regarding child seat placement, and only one state indicates a requirement that children of a certain age be rear-seated regardless of the circumstances. While differences in traffic safety between rural and urban areas have been extensively researched, only one other known study has been conducted on rural/urban differences in child seat placement. In this paper, rural and urban differences in child seat placement within vehicles are analyzed. The objective of this research was to determine if there are rural/urban differences in child seat placement exist. Based on a small sample of vehicles observed at urban and rural elementary schools in North Dakota, the results of this study indicate that there are significant rural/urban differences in child seat placement. Nearly one-third of overall vehicles observed had children seated in the front seat. Significant urban/rural differences exist in child seat placement, with children in rural areas much more likely to be front-seated than children in urban areas. Differences also exist among vehicle type, with children riding in pickup trucks more likely to be front-seated than children in any other type of vehicle. Overall, parents were aware that seating a child in the rear of a vehicle is safer.



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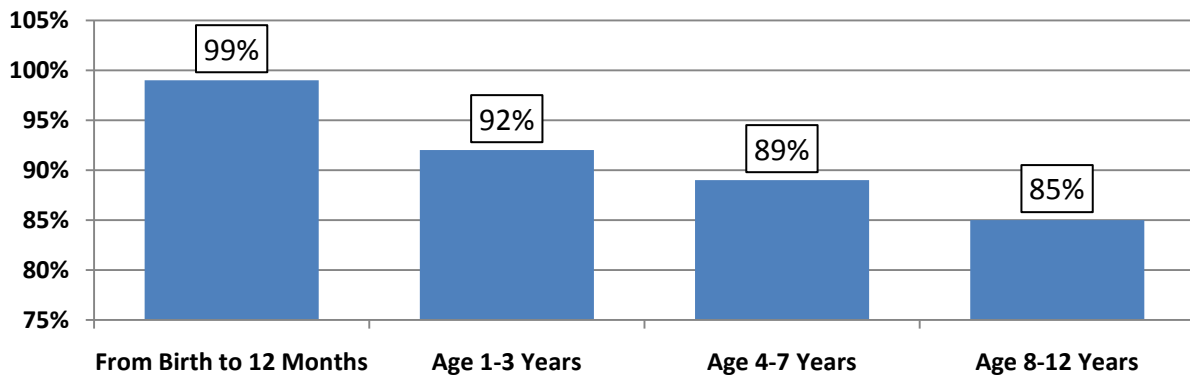
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# 1. INTRODUCTION

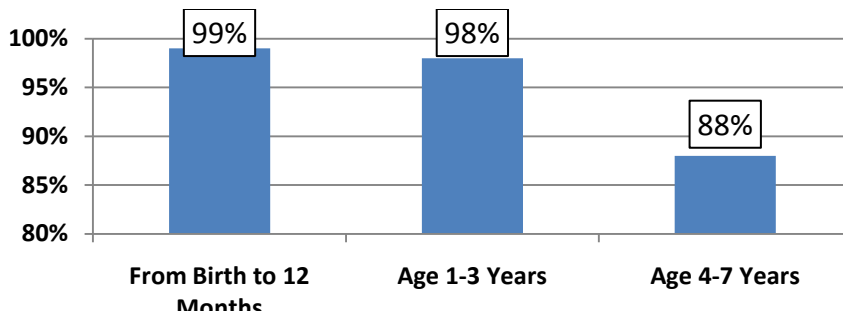
Motor vehicle crashes are the leading cause of death for children between the ages of 1 and 12 in the United States (CDC 2010). Because of this, much attention is given to properly restraining children within vehicles. Restraint use in the United States for younger children (aged 7 or younger) is relatively high – 87% in 2008 (NHTSA 2009a). This is based on the annual National Occupant Protection Use Survey (NOPUS). However, when restraint use is examined by age category, a trend of decreasing restraint is seen with increasing age (Figure 1.1) (NOTE: The restraint use rates by age are collected through the National Survey of the Use of Booster Seats, which is considered to be more accurate than NOPUS due to actual on-site interviews collecting child demographic information, such as age, as opposed to NOPUS, which is observational only).



Source: The National Survey of the Use of Booster Seats, NHTSA’s National Center for Statistics and Analysis, 2008

**Figure 1.1** Child Restraint Use Rates: 2008

As parents and caregivers become lax regarding restraint use, they also become complacent regarding seat placement within the vehicle. Figure 1.2 illustrates the decline in child rear placement as children age. In fact, it has found that restraint use among children who are front-seated is lower than among those who are rear seated (48% to 74% front seat restraint use versus 88% rear seat restraint use) (NHTSA 2009b, Durbin et al. 2004). Two studies by Durbin et al. (2004, 2005) found a similar trend with ages extended through age 12, with rear seat placement at 97% to 98% for children from birth to age 3, 70% to 88% for children aged 4 to 8, and rear seat placement at 27% to 67% for children aged 9 to 12. Ferguson, Wells, and Williams (2000) also found a relationship between increasing age and declining rear seat placement. In a study conducted by Ebel et al. (2003), nearly one-quarter (24.1%) of children aged 4 to 8 were seated in the front seat of a vehicle.



Source: National Occupant Protection Use Survey, NHTSA's National Center for Statistics and Analysis, 2008

**Figure 1.2** Child Rear Placement by Age: 2008

In 1997, the National Transportation Safety Board recommended that each state amend its child passenger safety laws to make child rear seating required (Greenberg-Seth et al. 2004). To date, sixteen states have passed legislation mandating child rear seating (Figure 1.3) ([www.iihs.org](http://www.iihs.org)). However, only one state, California, requires children as old as 12 to sit in the back seat of a vehicle, "if practical," and one "recommends" that children aged 9-12 sit in the back seat of a vehicle (Table 1.1). California is the only state with a law requiring a child of a certain age be rear-seated in a vehicle regardless of the circumstances. Neither North Dakota nor any of the surrounding states (Minnesota, South Dakota, Montana, or Wyoming) have any legislation in place requiring or recommending child seat placement within a vehicle.

Why is seat placement such an important issue? According to Braver et al. (1998) children aged 12 years or younger who were seated in the back seat were 36% less likely to die as a result of a motor vehicle crash compared with front-seated children. A more recent study by Durbin et al. (2005) found that children were 40% safer when seated in the back of a vehicle than in the front when involved in a crash, and the risk of injury declined to less than 2% when rear-seated children were secured in age-appropriate restraint systems. In a similar study, Smith and Cummings (2006) found that rear seat passenger position may reduce the risk of death in a traffic crash by 21%. Mayrose and Priya (2008) found that occupants who were seated in the rear of a vehicle, regardless of age, were 29% safer than passengers in the front seat. With rear-seating having such apparent benefits, it's perplexing that more states have not enacted legislation requiring rear-seating of children.

Of the 1,008 children aged 12 and younger involved in fatal motor vehicle crashes in the United States in 2006, 21% were front-seated (NHTSA 2008a). Of the 61 children aged 12 or younger killed in motor vehicle crashes in North Dakota between 2004 and 2008, 14, or approximately 23%, were front-seated (NHTSA 2010). Of those who were front-seated, 57% were unrestrained, as compared with only 17% of those who were rear-seated. It is possible that some of these deaths could have been prevented by properly restraining the children in the back seat of the vehicle.

The North Dakota Department of Health, Injury Prevention Program conducts biannual child restraint observation surveys throughout the state. According to a recent report released by the Injury Prevention Program (NDDH IPP 2007), in 2006 approximately 19.2% of children aged 10 or younger in North Dakota were seated in the front seat of the vehicle in which they were riding. It should be noted that only the ten most populous cities in North Dakota were surveyed. A study by Glass and Graham (1999), which examined child placement in passenger vehicles during fatal crashes in the United States from 1985-1996, found that 37.4% of children involved in fatal crashes in North Dakota were front-seated. However, when only those crashes where children were traveling with one other adult or with one other adult and

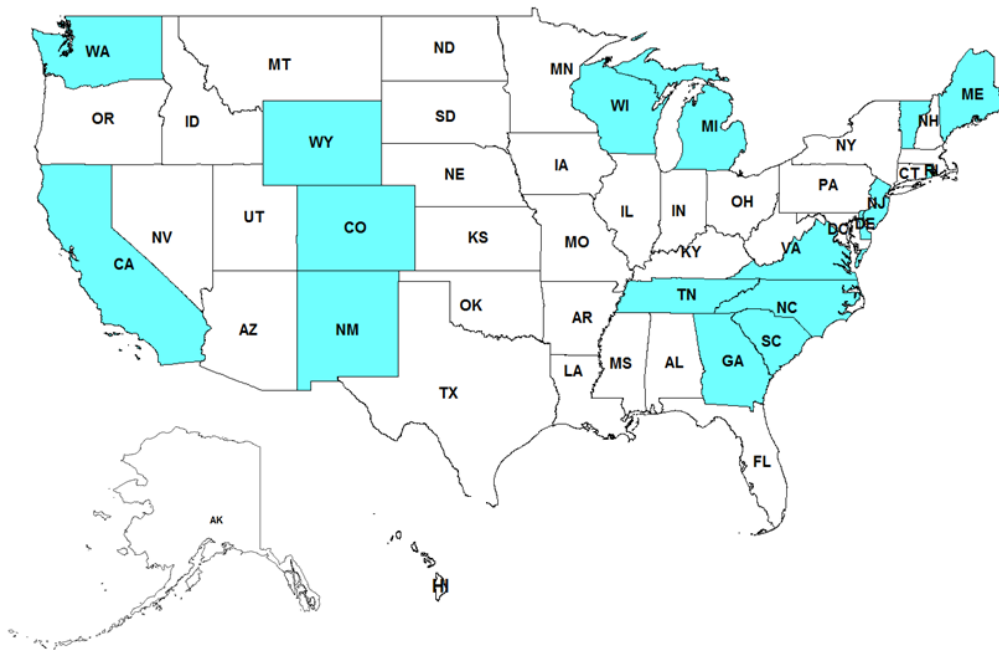
other children under the age of 12 were observed, the percentage of children in North Dakota aged 12 or younger involved in fatal motor vehicle crashes while front-seated jumps to 85%.

Several reasons justify the focus on rural/urban differences in child seat placement. First, motor vehicle crashes resulting in fatalities are more likely to occur in rural areas than in urban areas, putting children at greater risk. Although only 23% of the U.S. population lives in rural areas, rural fatalities account for 57% of all traffic fatalities (NHTSA 2008b). Zwerling et al. (2005) found that fatal crash incidence density is more than twice as high on rural than urban roads.

In North Dakota, slightly more than half of the population lives in rural counties (51%), while 93% of the total fatalities in 2007 occurred in rural areas (USDA Economic Research Service 2010). Several studies found rates of motor vehicle fatalities for children in rural areas more than twice that of urban areas (University of Iowa and Iowa Department of Public Health 2003, Hwang et al. 1997, Kmet and Macarthur 2006, Niemcryk et al. 1997, King et al. 1994, Svenson et al. 1996a,b, and Lapidus et al. 1998). In addition, most rural crashes involve rural residents while most urban crashes involve urban residents (Blatt and Furman 1998).

This study is also focusing on the difference in rural/urban seat placement because seat belt use in rural areas tends to be lower than in urban areas, which is directly related to increased fatalities, putting children at risk (NHTSA 2007). Also, drivers who are unbelted tend to properly restrain children within vehicles less than drivers who are belted (54% versus 92%) (NHTSA 2009b), which may in turn lead to placing their children in the front seat of vehicles.

Finally, this study is concentrating on rural/urban seat placement differences because the use of child safety seats in rural areas tends to be lower than in urban areas (NHTSA 2009b). If parents in rural areas are less likely to restrain their children properly, they might also be less likely to require their children to be rear-seated.



**Figure 1.3** Seat Placement Laws in the United States: 2010  
*Shaded states: States with seat placement laws*

**Table 1.1** Seat Placement Laws in the United States: 2010  
(States sorted ascending by maximum age covered by law)

<b>State</b>	<b>Rear Seat Placement Law Specifics</b>
Virginia	children in rear-facing devices, if available; only in front seat if front passenger airbag is deactivated
New Mexico	<1 year in a rear-facing device, if available
Colorado	<= 1 year and <20 lbs, if available
Vermont	<=1 or <20 lbs, unless front passenger airbag deactivated
Michigan	<=3, if available
Wisconsin	<=3, if available
North Carolina	<=4 and <40 lbs, unless front passenger airbag deactivated or restraint is designed for use with airbags
Georgia	<=5, if available
South Carolina	<=5, if available
California	<=5 or <60 lbs
Rhode Island	<=7, if available
New Jersey	<=7 and <80 lbs, if available
Wyoming	<=8, if available
Tennessee	<=8 and <4'9", if available, recommended for children 9-12
Maine	<=11 and <100 lbs, if available
Delaware	<=11 and 65 in or less, if passenger airbag is active
Washington	<=12, if practical

There have been numerous studies regarding child seat placement within vehicles, however, only one study knowingly exists that focuses specifically on the urban and rural differences of child seat placement (Lundell 2003). Lundell summarizes several years of data (2000-2003) from the Iowa Child Passenger Restraint Survey, which showed that as an area's population increases, the less likely children were to be front-seated (Table 1.2). A limitation of the Lundell analysis is that only children aged 6 or younger were included in the analysis.

**Table 1.2** 2000-2003 Percent of Children in the Rear Seat by Population Group, Iowa

<b>Population Group</b>	<b>Number of Communities</b>	<b>2000-2003 Percent of Children in Rear Seat</b>
<2,500	4	75.2%
2,500-9,999	9	80.5%
10,000-49,999	7	85.6%
>50,000	13	88.8%

As a result of increased fatalities, decreased seat belt use, and decreased child safety seat use in rural areas, there appears to be attitudinal differences between rural and urban populations in regards to risk factors and safety interventions (Rakauskas 2009). Because of these substantial differences in traffic safety culture that appear to exist in rural areas, this study seeks to contribute to the safety literature to determine at what rate children are riding front-seated within vehicles and if differences exist between rural and urban areas in regards to child front seat placement.

In addition, this study seeks to determine the rationale for front seat placement of children and to assess parental/caregiver perceptions of traffic safety issues. It is not always that children are front-seated due to the lack of a free seat in the rear of the vehicle. In fact, studies have shown that approximately 80% of vehicles where children are front-seated have at least one available seat in the rear of the vehicle (Segui-Gomez et al. 1998 and Lennon 2005). Lennon (2007) found that parents were apt to cite several reasons for having their children front-seated including age and size of child, behavior of child, inconsistency with other adult caregivers, peer pressure from child's friends, and lack of clear legislation. Understanding parental perceptions of the risks associated with seating children in the front seat of a vehicle can provide insight to designing interventions to reduce that risk (Will and Geller 2004).

The following sections outline the study methodology, including the vehicle observations and focus groups, and discussion and conclusions regarding the results.



## **2. METHODOLOGY**

A combination of direct observation and focus group research methods was used to gather information on seat placement practice and perceptions. A direct observation methodology was employed instead of a self-report parental survey for two main reasons. First, direct observation methods have been used successfully in numerous previous studies focusing on child restraint use and child placement (Ferguson et al. 2000, Segui-Gomez et al. 1998, Lennon 2005, and Ramsey et al. 2000, Floerchinger-Franks et al. 2000, and Eby et al. 2001). Second, it has been shown that parents tend to over-report safe behavior in self-report surveys, including restraint use (Stulginskas et al. 1985, Webb et al. 1988, Abrogast et al. 2000, and Korn et al. 2007). Focus groups are comprehensive group dialogues using moderately identical groups to provide information regarding issues delineated by researchers (Hughes and Dumont 1993). They are used to develop hypotheses surrounding a particular research question. They were used in this research for two reasons. First, focus groups have been used in several previous studies focusing on child restraint use and child placement (Lennon 2007, Eby et al. 2001, and Rivara et al. 2001). They also allow researchers to delve deeper into participants perceptions, attitudes, and experiences than a survey would allow (Lennon 2007).

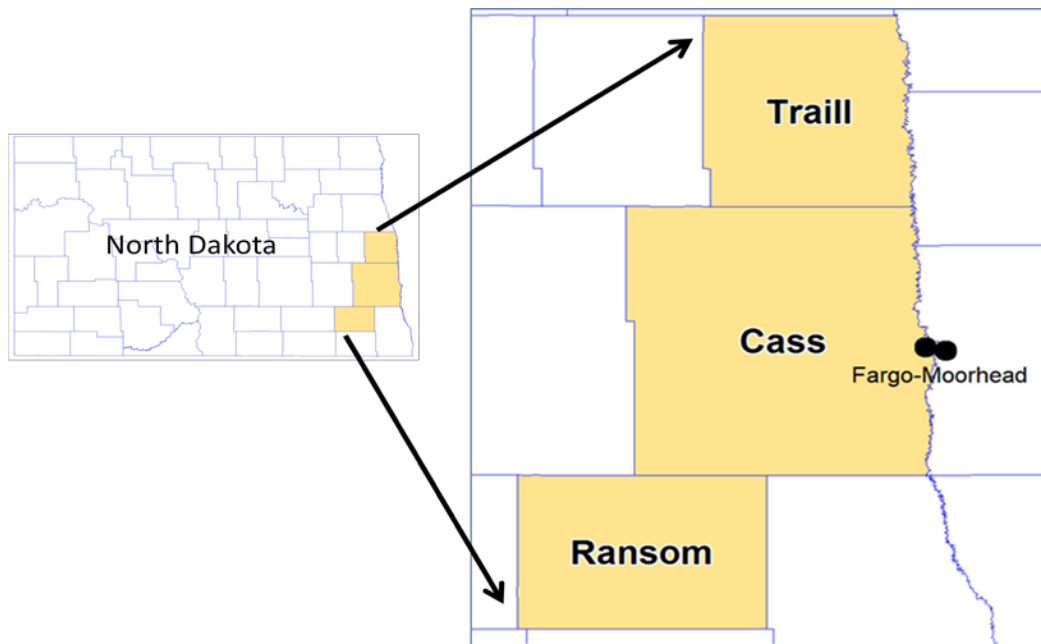
### **2.1 Seat Placement Observations**

IRB approval was obtained to conduct direct observation of morning child drop-offs at area elementary schools to obtain child placement rates within vehicles. Elementary schools were chosen as observation locales as they encompass the selected age group – children aged 12 or younger. Specific elementary schools were randomly chosen based on their location within designated observation zones. Observation zones were designated as “rural” – defined as any school districts in Cass County, ND, located outside of Fargo and West Fargo or “urban” – defined as the Fargo and West Fargo school districts.

Of the 21 elementary schools in Fargo and West Fargo, six were randomly chosen as sites to conduct seat placement observations. After attaining Fargo and West Fargo school superintendent permission to conduct observations within their respective school districts, the principals of the selected schools were contacted requesting permission to conduct observations at their individual schools. Permission to conduct observations was granted by principals of two Fargo schools and two West Fargo schools.

There are six elementary schools located in the rural observation zone of Cass County (outside of Fargo/West Fargo) (Figure 2.1). Because of the small number of schools, all six of the elementary schools were contacted requesting permission to conduct observations at their respective schools. Two of the schools granted permission for the observations to be scheduled. Researchers extended their search for elementary schools at which to conduct rural seat placement observations to counties directly adjacent to Cass County. Two additional rural elementary schools gave permission to allow observations to be conducted at their schools – one in Ransom County and one in Traill County.

Due to child safety issues and concerns, each school was provided an informational letter template which they had the option to send out on their letterhead to parents/guardians informing them of the upcoming observational study at their child’s school. The letter stated that a traffic safety survey of vehicles entering and exiting the school parking lot was to be conducted at some point in the near future – listing no specific date. Although the schools were made aware of a final observation date well in advance, researchers asked that school officials not inform the students or parents/guardians of the exact day of the observations, or of the exact nature of the observations (traffic safety in general versus seat placement) as researchers did not want parents/guardians to alter their behavior prior to the observations. The letter also stated that observers could be identified by the bright orange safety vests they would be wearing.



**Figure 2.1** Reference Map of Observation Areas

Observations were conducted during November and December of 2009 (Figure 2.2).

November 2009						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3 RURAL OBS	4 RURAL OBS	5 URBAN OBS	6 URBAN OBS	7
8	9	10	11	12	13	14
15	16	17 RURAL OBS	18	19 URBAN OBS	20 URBAN OBS	21
22	23	24	25	26	27	28
29	30	<b>December 1</b>	2	3	4 RURAL OBS (AM only)	

**Figure 2.2** Observation Calendar

Two observers were stationed at each location at the designated time prior to school starting. Each observer wore an orange safety vest and carried a clipboard which had “TRAFFIC SAFETY SURVEY” prominently displayed on the back. Each observer was supplied with multiple observation sheets and a writing utensil.

School start times were obtained from each school and observations were timed accordingly. Observations taking place started a minimum of 45 minutes prior to the designated start time and observers stayed until a minimum of five minutes after the start of the school day. Observers were advised to mark only those vehicles with one adult within the vehicle, as previous studies have shown that the presence of an adult driver and at least one adult passenger decreases the odds of a child being placed in the front seat to almost zero – as one of the adult passengers is almost always seated in the front seat (Segui-Gomez et al. 1998).

Initially, observers were to record the following information for each vehicle:

1. Vehicle type
2. If there were any children in the vehicle front-seated and their restraint type
3. If front-seated, if there was room available in the rear of the vehicle for the child to be rear-seated
4. The placement and restraint type of other children in the vehicle
5. If the driver properly restrained

However, due to the fast pace of drop-offs experienced on the first day of observations, all of the recommended information could not be recorded. After the initial observation session, observers were instructed to record only the following:

1. Vehicle type
2. If there were children sitting in the front seat of the vehicle (if there is only one adult in the car)
3. If there was room available in the rear of the vehicle for a front-seated child to be rear-seated
4. Placement of other children in the vehicle

Observers were instructed to record seat placement of children they believed to be 12 or younger. Children which exited vehicles during morning drop-offs were assumed to be 12 or younger, while ‘older-looking’ children who did not exit the vehicles during morning drop-offs were assumed to be older than age 12. Seat placement of children younger than elementary school age was also recorded.

## **2.2 Focus Groups**

During the urban and rural seat placement observations, random vehicles were chosen to receive recruiting packets containing information regarding an opportunity for parents/caregivers to take part in an upcoming focus group on child traffic safety. Drivers of vehicles which were in close proximity to the observers were chosen to receive focus group packets. Approximately 100 packets were distributed. The packets contained the following:

1. An informational letter explaining specifics of the focus group
2. Consent form
3. Pre-survey

Collecting such information as:

- a. Demographics
- b. Placement of children in vehicle
- c. Minimum age of children when riding in front seat of vehicles
- d. Existence of state law on placement of children with vehicles.

#### 4. Self-addressed stamped envelope

To participate in the focus groups, interested parties had to be the parent/guardian of a child aged 12 or younger, at least 18 years old, and had to have been available during one of the specified dates/times.

Parents were to return the signed consent form and the pre-survey (in separate envelopes) if they were interested in participating in the focus groups. Of the approximately 100 packets that were distributed during observations at all eight schools, only three parents ultimately responded. It should be noted that parents would be compensated \$20 for their time, and a meal would be provided.

Due to the lack of success in initial focus group recruitment efforts, researchers decided to take a different approach to focus group recruitment by partnering with a local hospital, in addition to increasing the compensation amount to \$30. An advertisement for the focus group was placed on the hospital's internal website, and persons interested in participating in one of the focus groups were encouraged to contact the researcher either by phone or email.

##### **Focus Group Participants Needed**

The Rural Transportation Safety and Security Center (RTSSC) at NDSU would like to better understand the attitudes and perceptions of parents/guardians of children aged 12 or younger regarding car seat and seat belt issues. RTSSC, along with Safe Kids Fargo/Moorhead, is looking for parents/guardians who have children aged 12 or younger to participate in a one-time focus group. You will be compensated for your time. If interested, please contact ----- by January 25.

Although this restricted the focus group recruitment pool to employees of the health system, researchers felt the benefits of the increased response rate outweighed the drawbacks of the limited population. In addition, health facility employees are just as likely to have their children attending area schools as non-health facility employees, and so had just as much of an opportunity to have been recruited for the focus groups via the original recruitment method. One drawback is that, as health care employees, this pool of participants might have additional knowledge regarding child traffic safety.

This new recruiting method yielded an additional 19 participants. Three separate focus groups were ultimately held: two groups conducted with parents living within the Fargo-Moorhead area – for a total of 19 participants, and one group conducted with parents living outside of the Fargo-Moorhead area – which included only two parents.

The group discussion was designed to gather information regarding parents' perceptions and knowledge of safe placement for children in vehicles. In addition, parents were asked to discuss factors and their relative influence in parents' decisions about where their children should ride in a vehicle. The hypothesis that there is a difference between parental attitudes of child occupant safety of urban parents versus rural parents was to be tested as well. However, due to the lack of success in recruiting rural parents to participate in these focus groups, a separate analysis cannot be conducted.

Parents also were queried regarding their receptiveness of child safety information based on sponsor, source, content, and delivery media.

### 3. RESULTS

#### 3.1 Vehicle Observations

During November and December of 2009, 687 vehicles were observed at area elementary schools in eastern North Dakota – 78.1% at urban schools and 21.9% at rural schools (Table 3.1). A total of 537 vehicles were observed at the four urban schools – with school observations ranging from 105 to 187 vehicles. A total of 150 vehicles were observed at the four rural schools – with school observations ranging from 17 to 62 vehicles.

**Table 3.1** Observations by Rurality

	Rural		Urban	
	N	%	N	%
<b>School A</b>	47	31.3%	134	25.0%
<b>School B</b>	24	16.0%	187	34.8%
<b>School C</b>	17	11.3%	111	20.7%
<b>School D</b>	62	41.3%	105	19.6%
<b>TOTAL</b>	<b>150</b>	<b>100.0%</b>	<b>537</b>	<b>100.0%</b>

There are most likely differences in demographics by school district, such as average household income, owners versus renters, and education. However, because the Census Bureau hasn't released the 2010 Census results, due to the fact that the existing school district demographic information is ten years old, and changes have occurred in South Fargo and West Fargo in the past ten years where all of the urban observations took place including the addition of an elementary school it wasn't deemed useful to include the older information in this report.

##### 3.1.1 Vehicle Type

A higher proportion of cars, trucks and vans were observed at rural schools than urban schools (41.3% versus 33%; 14% versus 10.8%; 22% versus 19.7%), while SUVs were more likely to have been observed at urban schools than rural schools (36.5% versus 22.7%) (Table 3.2).

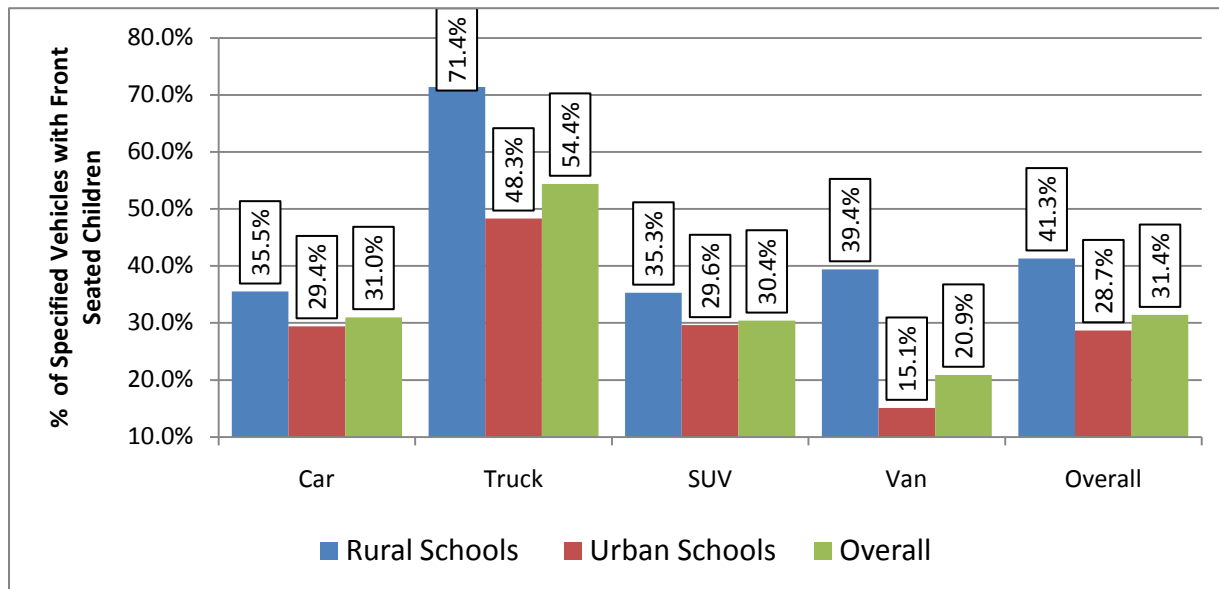
**Table 3.2** Observations by Vehicle Type and Rurality

Vehicle Type	Rural		Urban		Overall	
	N	%	N	%	N	%
<b>Car</b>	62	41.3%	177	33.0%	239	34.8%
<b>Truck</b>	21	14.0%	58	10.8%	79	11.5%
<b>SUV</b>	34	22.7%	196	36.5%	230	33.5%
<b>Van</b>	33	22.0%	106	19.7%	139	20.2%
<b>Overall</b>	<b>150</b>	<b>100.0%</b>	<b>537</b>	<b>100.0%</b>	<b>687</b>	<b>100.0%</b>

### 3.1.2 Child Placement

#### 3.1.2.1 Rural/Urban

Children in rural areas were more likely to be front-seated in vehicles than children in urban areas (41.3% vs. 28.7%, respectively) (Figure 3.1). Overall, nearly one-third of children were front-seated within vehicles (31.4%). The differences between rural/urban in regards to child placement are statistically significant ( $\chi^2=8.712$ ,  $df=1$ ,  $n=687$ ,  $p=0.003$ ).



**Figure 3.1** Front Seat Placement by Vehicle Type and School Rurality

#### 3.1.2.2 By Vehicle Type

Children riding in pickup trucks were most likely to be front-seated (54.4%), followed by cars (31%), SUVs (30.4%), and vans (20.9%) (Figure 3.1). A one-way ANOVA was run to test for differences by vehicle type in regards to child seat position. Overall differences were found to be statistically significant ( $F(3,683)=9.212$ ,  $p<0.001$ ). The results indicate that there are differences between vehicle types in regards to child seat position. Differences between seat placement by vehicle type for rural ( $F(3, 146) = 3.210$ ,  $p=0.025$ ) and urban ( $F(3,533) = 7.079$ ,  $p<0.001$ ) observations were both statistically significant as well, meaning that differences in seat placement by vehicle type extend across rural/urban lines.

A one-way ANOVA was used to test for specific differences in child placement among vehicle type. Tukey HSD comparisons of the four vehicle types indicate that significant differences exist in child seat placement overall between trucks and cars ( $p<0.001$ ), SUVs ( $p<0.001$ ), and vans ( $p<0.001$ ) (Table 3.3). Comparisons among the other vehicles were not statistically significant (car/SUV:  $p=0.999$ , car/van:  $p=0.163$ , SUV/van:  $p=0.208$ ). This may very well be because trucks oftentimes do not have room in the rear of the cab, due to not having a second row of seats or an extended cab; which means children who ride in pickup trucks are frequently forced to ride front-seated, while cars, SUVs and vans are most likely to have rear seats, which explains the significant differences between trucks and vehicles with rear seats.

Tukey HSD comparisons of the four vehicle types for rural observations found two relationships were significantly different – car/truck ( $p=0.019$ ) and SUV/truck ( $p=0.039$ ) (Table 3.3). The other relationships

were not found to be statistically significant (truck/van:  $p=0.087$ , car/SUV:  $p>0.999$ , car/van:  $p=0.982$ , SUV/van:  $p=0.986$ ).

Differences in urban environments in child placement among vehicle type reveal statistically significant differences among all vehicle relationships with the exception of car/SUV ( $p>0.999$ ) (truck/va:  $p<0.001$ , truck/car:  $p=0.027$ , truck/SUV:  $p=0.026$ , car/van:  $p=0.046$ , SUV/van:  $p=0.036$ ) (Table 3.3).

**Table 3.3** Differences in Seat Placement Among Vehicles: Tukey HSD Results

		<b>Rural</b>	<b>Urban</b>	<b>Overall</b>
Car	Truck	0.019	0.027	0.000
	SUV	1.000	1.000	0.999
	Van	0.982	0.046	0.163
Truck	Car	0.019	0.027	0.000
	SUV	0.039	0.026	0.000
	Van	0.087	0.000	0.000
SUV	Car	1.000	1.000	0.999
	Truck	0.039	0.026	0.000
	Van	0.986	0.036	0.208
Van	Car	0.982	0.046	0.163
	Truck	0.087	0.000	0.000
	SUV	0.986	0.036	0.208

### 3.1.2.3 By Vehicle Type by Rural/Urban

Rural children were more likely to be front-seated for all vehicle types than children in urban areas. Children riding in pickup trucks were most likely to be front-seated in both rural and urban environments, however, the difference between the percentage of front-seated children in the rural and urban environments was large – 71.4% rural vs. 48.3% urban (Figure 3.1). However, these differences were only marginally significant ( $\chi^2=3.332$ ,  $df=1$ ,  $n=79$ ,  $p=0.068$ ) (Table 3.4).

The rural/urban difference between children riding in the front seat in vans was large as well – 39.4% rural vs. 15.1% urban (Figure 3.1). In this case, these differences were statistically significant ( $\chi^2=9.000$ ,  $df=1$ ,  $n=139$ ,  $p=0.003$ ) (Table 4.4).

The rural/urban differences between children riding in the front seat in cars and SUVs was much smaller, 35.5% rural and 29.4% urban for cars and 35.2% rural and 29.6% urban for SUVs (Figure 3.1). The urban/rural differences in seat placement for cars ( $\chi^2=0.801$ ,  $df=1$ ,  $n=239$ ,  $p=0.371$ ) and SUVs ( $\chi^2=0.445$ ,  $df=1$ ,  $n=230$ ,  $p=0.505$ ) were not statistically significant (Table 3.4).

**Table 3.4** Chi-Square Results Rural/Urban Differences: Seat Position by Vehicle Type

Vehicle	$X^2$	df	$p$
Car	0.801	1	0.371
Truck	3.332	1	0.068
SUV	0.445	1	0.505
Van	9.000	1	0.003

### 3.1.3 'Front-Seatedness' by Availability of Rear Seat

#### 3.1.3.1 Rural/Urban Overall

Of the vehicles observed at rural schools with front-seated children, 93.5% had room available in the rear of the vehicle for the child, while slightly fewer (90.8%) similar vehicles observed in urban areas had room available in the rear of the vehicle (Table 3.5). No statistical differences exist between rural and urban environments and availability of room in back of the vehicle ( $\chi^2=0.419$ ,  $df=1$ ,  $n=215$ ,  $p=0.517$ ). The possibility exists that urban and rural caregivers who allow their children to be front-seated have similar proclivities toward high-risk activities. Another explanation could be that these two groups are representative of a population who are unaware of the risks involved with placing a child in the front seat of a vehicle.

**Table 3.5** If Front Seated, Availability of Room in Back by Rurality

	Yes	No
Rural (n=62)	93.5%	6.5%
Urban (n=154)	90.8%	9.2%

#### 3.1.3.2 By Vehicle Type

Significant differences exist between vehicle type by availability of room in back ( $F(3,211) = 5.851$ ,  $p<0.001$ ). Of all vehicle types, pickup trucks were least likely to have room available in back for children who were front-seated, with 77% of pickups observed having room available in the back of the vehicle, as opposed to 94% of observed SUVs, 95% of observed cars, and 100% of observed vans (Table 3.6). Again, this may be because trucks oftentimes do not have room in the rear of the cab, due to not having a second row of seats or an extended cab, which means children who ride in pickup trucks are frequently forced to ride front-seated, while cars, SUVs, and van are mostly likely to have rear seats. However, would caregivers with pickup trucks be more likely to place their child in the rear of a vehicle if they were driving a vehicle type other than a truck?

Differences were examined among vehicle types in regard to rear seat availability. Tukey HSD comparisons indicate significant differences between trucks and cars ( $p=0.004$ ), SUVs ( $p=0.005$ ), and vans ( $p=0.002$ ). The other vehicle relationships were not found to be statistically significant (car/SUV:  $p>0.999$ , car/van:  $p=0.795$ , SUV/van:  $p=0.764$ ).

#### 3.1.3.3 By Vehicle Type by Rural/Urban

Differences in availability of room in back were examined by geography and vehicle type. Significant differences exist among vehicle type by rural/urban ( $F(3,211) = 5.851$ ,  $P<0.001$ ).

**Table 3.6** If Front Seated, Availability of Room in Back by Vehicle Type and Rurality

Vehicle Type	Yes	No
Car (n=74)	94.60%	5.40%
Rural (n=22)	90.90%	9.10%
Urban (n=52)	96.20%	3.80%
Truck (n=43)	76.70%	23.30%
Rural (n=15)	86.70%	13.30%
Urban (n=28)	71.40%	28.60%
SUV (n=69)	94.20%	5.80%
Rural (n=12)	100.00%	0.00%
Urban (n=57)	93.00%	7.00%
Van (n=29)	100.00%	0.00%
Rural (n=13)	100.00%	0.00%
Urban (n=16)	100.00%	0.00%

Caregivers driving cars in rural areas were less likely than caregivers in urban areas to have available room in the back of their vehicle for their front-seated child (90.9% rural versus 96.2% urban), while trucks and SUVs in rural areas were more likely to have available room in the rear of the vehicle for front-seated children than trucks and SUVs in urban areas (Truck – 86.7% rural versus 71.4% urban; SUV = 100% rural versus 93% urban) (Table 3.6). Vans observed in rural and urban schools were both as likely to have room available in the rear of the vehicle (100% urban and rural).

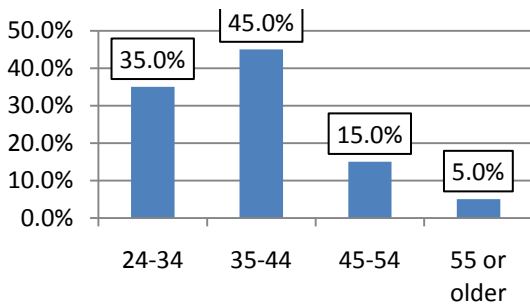
Rear seat availability did not significantly differ by vehicle type in rural areas ( $F[3,28] = 1.037, p=0.383$ ). However, rear seat availability did significantly differ by vehicle type in urban areas ( $F[3,149] = 5.958, p<0.001$ ). Once again, Tukey HSD comparisons indicate significant differences between trucks and cars ( $p=0.001$ ), SUVs ( $p=0.001$ ), and vans ( $p=0.007$ ).

## 3.2 Focus Groups

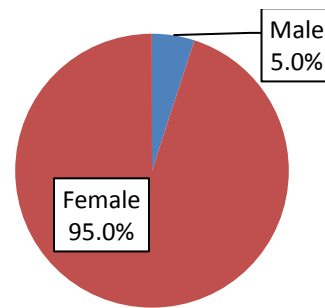
### 3.2.1 Focus Group Pre-survey Results

More than three-fourths of focus group participants were between the ages of 24 and 44 (80%), and a vast majority were female (95%) (Figures 3.2, 3.3).

**Figure 3.2** Participant Age Distribution

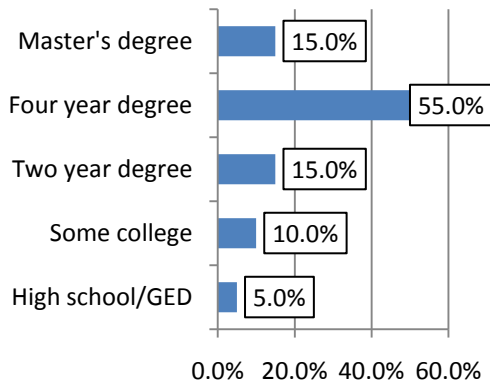


**Figure 3.3** Participant Gender Distribution

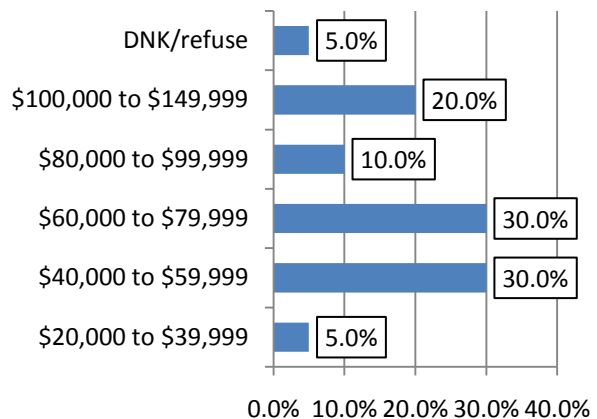


Nearly three-fourths of participants had at least a four-year degree (70%), and 60% had household income levels between \$60,000 and \$149,999 (Figures 3.4, 3.5). Most participants were married (85%), with two being divorced, and one being in a committed relationship.

**Figure 3.4** Participant Education

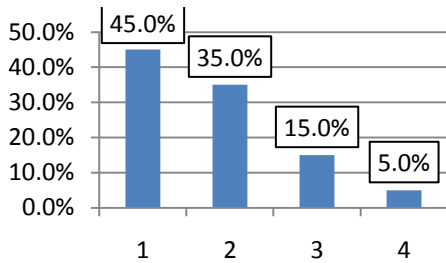


**Figure 3.5** Participant Household Income Distribution

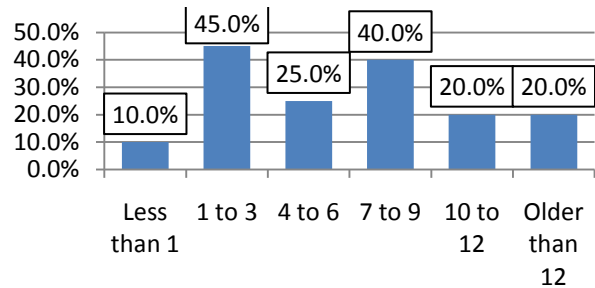


Nearly half the participants had one child (45%), while 35% had two children and 20% had three or more (Figure 3.6). Only 20% of participants had children who were older than age 12 (Figure 3.7). Because it was a prerequisite to participate in the focus group, all participants had at least one child who was age 12 or younger.

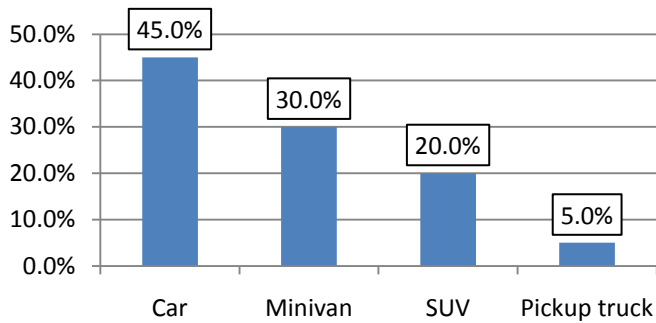
**Figure 3.6** Number of Children per Participant



**Figure 3.7** Participant Child Age Distribution



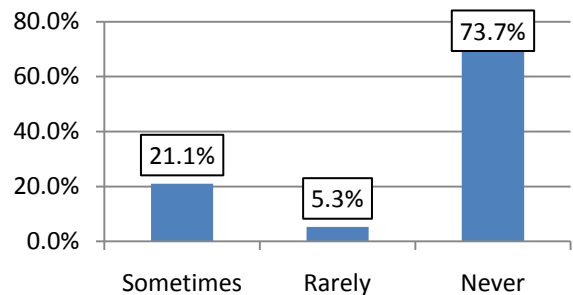
**Figure 3.8** Primary Participant Child Transport



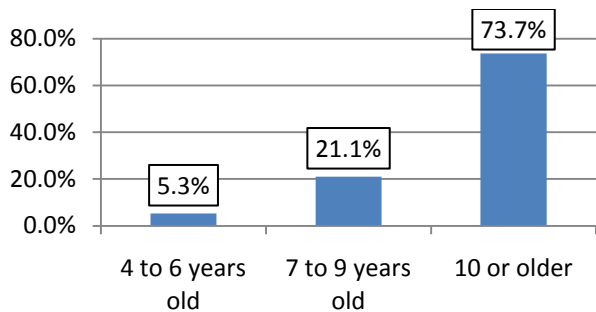
Nearly half of the participants had a car as their primary vehicle (45%), with 30% stating that a minivan was their primary vehicle, 20% an SUV, and only one respondent stated that a pickup truck was their primary vehicle (Figure 3.8).

When asked how often they let their children ride in the front seat of a vehicle, nearly three-fourths of participants said they “Never” allow their children into the front seat of a vehicle (73.7%), while 21% stated they sometimes allow their children into the front seat, and one participant said they rarely allow their children into the front seat (Figure 3.9).

**Figure 3.9** Frequency of Participant Child Front Seat Placement



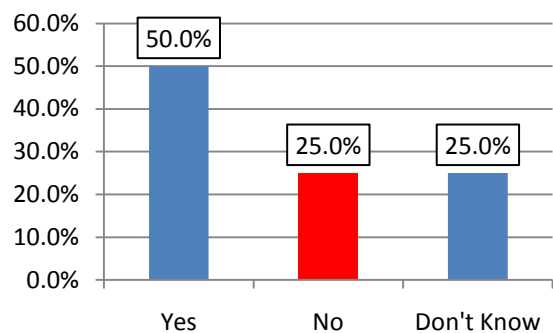
**Figure 3.10** Minimum Age for Child Front Seat Placement



When asked at which age they felt a child is old enough to start sitting in the front seat of a vehicle, most participants stated that a child must be at least 10 years old to sit in the front seat (73.7%), while 21% said that if a child were between 7 and 9 years old they would be old enough, and one participant said that if a child were at least 4 they would be old enough to sit in the front seat (Figure 3.10).

The final question on the focus group pre-survey asked participants if there was a law in North Dakota regarding where a child should be seated within a vehicle (i.e. front seat or back seat). Half the participants incorrectly said there was a law in North Dakota dictating child placement within a vehicle, while one-quarter did not know whether or not such a law existed (Figure 3.11). Only one-quarter of participants correctly responded that there was no such law in place in North Dakota.

**Figure 3.11** Existence of North Dakota Law Regarding Child Placement within Vehicles



## 3.2.2 Major Themes

### 3.2.2.1 Most Important Safety Issues

Participants were asked what they felt the most important issues are about children's safety in passenger vehicles. This was a "fishing" question to see if child seat placement came to mind as one of the most important issues. Several topics were mentioned, including child placement:

- Seat placement
- Age issues (age requirements for placement within vehicles, specific car seats, seat belt use)
- Size issues (height/weight requirements for placement within vehicles, specific car seats, seat belt use)
- Economic issues (size of vehicle and number of children to be transported; affordability of car seats)
- Parent attitudes (not willing to go through the "hassle"/take the responsibility of properly restraining their children)
- Inconsistency in recommendations/information among sources (i.e., bulky winter clothing in car seats; when a child should be moved to a different car seat)
- Inconsistency of laws/recommendations among states

#### *Comments Specific to Seat Placement:*

- One parent wondered if it was more of a hazard to have to reach into the back seat to tend to a child than having them sitting next to them in the front seat.
- Another parent mentioned that "It's a treat for my daughter to ride from daycare and back to the house (in the front seat). She's five – a pretty big kid – and she's tall for her age."
- One parent said her child would mention her friends not sitting in booster seats or already sitting in the front seat, when she wasn't allowed to sit in the front seat of vehicles, and say how unfair it was.
- Many parents said that the information regarding seat placement wasn't widely available, and that some parents just didn't know about recommendations regarding child placement. "You don't know what you don't know."
- There was much discussion regarding when children are outside of parental "jurisdiction," such as when they are with other caregivers: grandparents, other relatives, or friends. Some people don't have a problem placing children in the front seat, and if the parent is not there, there isn't anything that can be done about it. Parental enforcement can only go so far, and it is up to the other caregivers to follow the recommendations of the parents.
- One parent mentioned that sometimes you just can't win. "My kid's going to throw a temper tantrum if I don't let him sit in the front, so I'm going to let him sit in the front no matter what. And if the kid doesn't sit in the front seat, he's going to sit in the back and unbuckle himself and hit mom/dad while they're driving."

### **3.2.2.2 Obstacles/Barriers for Parents to Place Their Children in the Back Seat of Vehicles**

Participants were asked to discuss what obstacles exist that would prevent parents from placing their children in the back seat of a vehicle.

Several topics were discussed including:

- Stigma for child
- Laws are too complicated
- Family size and size of vehicle
- Family situation (blended families – “Mom lets me sit in the front seat”)
- Parents not being in control of their children (who’s the parent?)
- Parents are too lenient – not consistently requiring their children to sit in the back seat
- Parent/child interaction

One parent mentioned that they were looking forward to having conversations with their child when he is old enough to sit in the front seat. She mentioned that it is difficult to talk with him when he is in the back seat, and that she would have a better verbal experience if he was sitting in the front next to her.

Strategies which were discussed to assist parents in placing their children in the back seat include:

- Not giving the child an option – back seat all the time
- Skip the bribery – “If you’re good then you get to sit in the front seat.”
- Focus on the positives – “It’s the safest place for you to be. If something were to happen, that’s the place for you.”
- Ask the pediatrician (or another authority figure) to tell the child they need to sit in the back seat
- Increase education regarding what is safest for children/dangers of placing child in the front seat

### **3.2.2.3 Information Channels**

Participants were asked to discuss whose responsibility it should be to provide information to parents, not only regarding child placement within vehicles, but also about other child safety issues within vehicles.

Several sources were discussed, including:

- Parents proactively seeking out the information
- Pediatricians
- Schools
- “As many sources as possible”
- Daycare providers

Parents commented that most of the information they received regarding vehicle safety, especially from pediatricians, was focused mostly on infants and very young children. They receive less and less information about properly restraining their children within a vehicle as they age.

## **4. SUMMARY AND CONCLUSIONS**

### **4.1 Findings**

The objectives of this study were to determine current rates of child front seat placement in vehicles, if rural/urban differences exist in child seat placement, and to determine if differences exist in traffic safety perceptions between urban and rural parents.

Overall, nearly one-third of vehicles observed had children seated in the front seat. Significant urban/rural differences exist in child seat placement, with children in rural areas much more likely to be front-seated than children in urban areas. Differences also exist among vehicle type, with children riding in pickup trucks more likely to be front-seated than children in any other type of vehicle.

Rural/urban differences were unable to be determined for parental perceptions of child seat placement and traffic safety issues due to a low participant rate by rural parents. Overall, parents were aware that seating a child in the rear of a vehicle is safer. Several reasons were given for not having a child seated in the rear of a vehicle, including size of vehicle, number of children to be transported, differences in family guidelines, and ambiguous “rules” regarding child vehicle safety. Parents felt that child vehicle safety information should come from as many sources as possible. They were also concerned that the majority of information received regarding traffic safety focused more on much younger children, and that as their children aged, they tended to receive less and less information.

### **4.2 Study Limitations**

This study was limited by several factors. First, the observations were conducted in a relatively small number of cities in North Dakota, not representative of the state as a whole. As a consequence, these results may not be generalizable to other parts of North Dakota, to other states, or to other communities.

Second, specific age information for each individual child could not be discerned. Assumptions were made that if a child was dropped off at an elementary school, they were aged 12 or younger; and if a child in the vehicle did not exit the vehicle with the younger children and they looked older, they were most likely older and attending a middle school.

Third, only children in vehicles being dropped off at elementary schools were observed. What is unknown are the seat placement practices of caregivers whose children ride the bus to school. Children who ride the bus to school might have parents who have entirely different seat placement practices than those parents who drive their children to school. Future research conducting seat placement observations in the community at large would be a benefit.

Fourth, the focus group recruitment methodology was unable to get a suitable number of rural parents to participate in the focus groups. Possibly conducting focus groups within the specific rural city might have increased focus group participation. Although Fargo, ND, is not a considerable distance from any of the cities in which observations were conducted, it is possible that the distance was far enough as to make it inconvenient for the rural population.

Finally, most of the focus group participants were recruited from a local health care facility. It is possible that their work within the health care industry has biased their attitudes toward safety issues, thereby making them “safer drivers” than participants working in other industries.

### 4.3 Future Research

Future research in the area of child seat placement should determine why there are rural/urban differences in child seat placement. There are marked and significant differences in seat placement. What are the reasons for these differences?

In addition, future research could focus on differences between seat placement in a school setting and seat placement in the community at large. It is possible that parents are altering their normal behavior and are restraining their children more safely due to the school setting, resulting in a social desirability bias. Are there differences in seating position and restraint use between the school setting and the community at large? Are these differences similar in a rural and urban environment?

Also, different recruiting methodologies could be used for rural focus group recruitment. Initial methodologies were unsuccessful at recruiting either rural or urban parents and overall methodologies used in this study were unsuccessful at recruiting rural participants. Was rural interest in focus group participation low due to the location of the focus groups, or were rural parents less interested in participating in the research? Rural focus group participation might have been higher if the focus group sessions were held within the individual rural towns.

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**APPENDIX A: SCHOOL PERMISSION LETTER**

October 26, 2010

PRINCIPAL NAME

Principal

SCHOOL

ADDRESS

CITY, STATE ZIP

Dear PRINCIPAL'S NAME:

My name is Andrea Huseth-Zosel and I am an Associate Research Fellow at the Rural Transportation Safety and Security Center (RTSSC) at North Dakota State University (NDSU). We are conducting a study of child placement within vehicles. Children aged 12 years or younger seated in the back seat of a vehicle are approximately 40% less likely to be involved in a fatal crash compared with front-seated children. In 1997, the National Transportation Safety Board recommended that each state amend its child passenger safety laws to make child rear seating required. To date, fifteen states have passed legislation mandating child rear seating. However, only one of those states requires children as old as 12 to sit in the back seat of a vehicle. Neither North Dakota nor any of the surrounding states (Minnesota, South Dakota, Montana, Wyoming, or Colorado) have any legislation requiring or recommending child seat placement within a vehicle. Observation surveys will provide baseline statistics needed to better understand crash risk exposure for young passengers.

I would like to request permission for researchers to observe vehicles as they are entering and exiting the SPECIFIED SCHOOL parking lot to determine rates of child front seat and rear seat placement. The observations would take place twice during the course of one day – one hour in the morning and one hour in the afternoon, thereby capturing arrivals and departures from SPECIFIED SCHOOL. The specific date of the observations will be determined in the near future.

Observers will wear bright orange safety vests to designate themselves as researchers, in addition to carrying NDSU identification. Facility identifiers (pictures, name, or description) will not be included in any publications resulting from this research. The facility will remain completely anonymous. YOUR SCHOOL is one of six schools in Fargo and West Fargo chosen at random for vehicle observations. Focus groups are being conducted following completion of the observations. Aside from recruiting two parents/guardians to participate in these focus groups, no contact will be made by researchers with parents/guardians or any children.

I will be contacting you within the next two weeks to determine if your facility is willing to allow the observations to occur. Or, if you prefer, you may contact me via phone (701) 234-6427 or email at [andrea.huseth-zosel@ndsu.edu](mailto:andrea.huseth-zosel@ndsu.edu). Also, if you have any questions, please feel free to contact me at any time.

Sincerely,

Andrea Huseth-Zosel, M.S.

**APPENDIX B: PARENT INFORMATION LETTER**

## **SCHOOL/DISTRICT LETTERHEAD**

To: Parents of **SPECIFIC SCHOOL** students  
Re: Traffic Safety Survey

### **DATE**

Dear Parents:

Sometime in the next few weeks the Rural Transportation Safety and Security Center (RTTSC) at North Dakota State University (NDSU) will be conducting a traffic safety survey of vehicles entering/exiting the **SPECIFIC SCHOOL** parking lot. No identifying information is being collected for this research. The data collected will help to provide a better understanding of crash risk exposure for young passengers.

On the day of the observations, observers will be stationed at the entrances/exits to the parking lots. They will be wearing bright orange safety vests to designate themselves as researchers. They will also be carrying clipboards with the words “Traffic Safety Survey” clearly displayed on them.

Although we do not know the specific date of the observations, due to child safety issues and concerns that might arise as a result of the researchers’ presence in our parking lot, you are being informed of this survey now. Please keep this in mind in the coming weeks.

If you have any questions regarding this study, please feel free to contact Andrea Huseth at (701) 231-6427 or [andrea.huseth-zosel@ndsu.edu](mailto:andrea.huseth-zosel@ndsu.edu).

Sincerely,

## **APPENDIX C: SEAT PLACEMENT OBSERVATION SHEET**

### Child Seat Placement Observation Survey

Date \_\_\_\_\_

Time \_\_\_\_\_ AM/PM

Observation Method: *Direct* or *Video Capture*

State/County \_\_\_\_\_

City (if applicable) \_\_\_\_\_

Observer Name(s) \_\_\_\_\_

**DO NOT RECORD VEHICLE IF AT LEAST ONE OF THE FOLLOWING:**

1. Driver does not appear to be 18 years of age or older.
2. Adult is seated in the front passenger seat.

For 'Vehicle Sequence Number', because many vehicles will likely have more than one child occupant, children from the same vehicle should be grouped together. Number each vehicle sequentially as the occupants are recorded, but record driver information for each individual vehicle only once - even for multiple children. See example outlined in red below.

*Child/ren = Any individual(s) who appear(s) to be age 12 or younger  
Car=Car; Trck=Pickup Truck; SUV=Sport Utility Vehicle; Van=Minivan or Van*

*DNK = Do Not Know  
M=Male; F=Female*

*Seat = Child Safety Seat  
Boost = Booster seat  
Belt = Seat Belt*

Vehicle Sequence Number	Child	Vehicle Type				Driver Seat Belt Use			Driver Gender			Approximate Age of Child in Years			Seating Position		If FRONT-SEATED, is room available in backseat for child?		Restraint Type			
		Car	Trck	SUV	Van	Y	N	DNK	M	F	DNK	<1	1-5	6-12	Front	Back	Y	N	NONE	SEAT	BOOST	BELT
<b>EXAMPLE - Car with 2 children</b>																						
1	1	Car	Trck	SUV	Van	Y	N	DNK	M	F	DNK	<1	1-5	6-12	Front	Back	Y	N	NONE	SEAT	BOOST	BELT
	2	Car	Trck	SUV	Van	Y	N	DNK	M	F	DNK	<1	1-5	6-12	Front	Back	Y	N	NONE	SEAT	BOOST	BELT
	1	Car	Trck	SUV	Van	Y	N	DNK	M	F	DNK	<1	1-5	6-12	Front	Back	Y	N	NONE	SEAT	BOOST	BELT
	2	Car	Trck	SUV	Van	Y	N	DNK	M	F	DNK	<1	1-5	6-12	Front	Back	Y	N	NONE	SEAT	BOOST	BELT
	3	Car	Trck	SUV	Van	Y	N	DNK	M	F	DNK	<1	1-5	6-12	Front	Back	Y	N	NONE	SEAT	BOOST	BELT
	4	Car	Trck	SUV	Van	Y	N	DNK	M	F	DNK	<1	1-5	6-12	Front	Back	Y	N	NONE	SEAT	BOOST	BELT
	5	Car	Trck	SUV	Van	Y	N	DNK	M	F	DNK	<1	1-5	6-12	Front	Back	Y	N	NONE	SEAT	BOOST	BELT
	6	Car	Trck	SUV	Van	Y	N	DNK	M	F	DNK	<1	1-5	6-12	Front	Back	Y	N	NONE	SEAT	BOOST	BELT
	7	Car	Trck	SUV	Van	Y	N	DNK	M	F	DNK	<1	1-5	6-12	Front	Back	Y	N	NONE	SEAT	BOOST	BELT
	8	Car	Trck	SUV	Van	Y	N	DNK	M	F	DNK	<1	1-5	6-12	Front	Back	Y	N	NONE	SEAT	BOOST	BELT
	9	Car	Trck	SUV	Van	Y	N	DNK	M	F	DNK	<1	1-5	6-12	Front	Back	Y	N	NONE	SEAT	BOOST	BELT
	10	Car	Trck	SUV	Van	Y	N	DNK	M	F	DNK	<1	1-5	6-12	Front	Back	Y	N	NONE	SEAT	BOOST	BELT
	11	Car	Trck	SUV	Van	Y	N	DNK	M	F	DNK	<1	1-5	6-12	Front	Back	Y	N	NONE	SEAT	BOOST	BELT
	12	Car	Trck	SUV	Van	Y	N	DNK	M	F	DNK	<1	1-5	6-12	Front	Back	Y	N	NONE	SEAT	BOOST	BELT
	13	Car	Trck	SUV	Van	Y	N	DNK	M	F	DNK	<1	1-5	6-12	Front	Back	Y	N	NONE	SEAT	BOOST	BELT
	14	Car	Trck	SUV	Van	Y	N	DNK	M	F	DNK	<1	1-5	6-12	Front	Back	Y	N	NONE	SEAT	BOOST	BELT
	15	Car	Trck	SUV	Van	Y	N	DNK	M	F	DNK	<1	1-5	6-12	Front	Back	Y	N	NONE	SEAT	BOOST	BELT
	16	Car	Trck	SUV	Van	Y	N	DNK	M	F	DNK	<1	1-5	6-12	Front	Back	Y	N	NONE	SEAT	BOOST	BELT
	17	Car	Trck	SUV	Van	Y	N	DNK	M	F	DNK	<1	1-5	6-12	Front	Back	Y	N	NONE	SEAT	BOOST	BELT
	18	Car	Trck	SUV	Van	Y	N	DNK	M	F	DNK	<1	1-5	6-12	Front	Back	Y	N	NONE	SEAT	BOOST	BELT
	19	Car	Trck	SUV	Van	Y	N	DNK	M	F	DNK	<1	1-5	6-12	Front	Back	Y	N	NONE	SEAT	BOOST	BELT
	20	Car	Trck	SUV	Van	Y	N	DNK	M	F	DNK	<1	1-5	6-12	Front	Back	Y	N	NONE	SEAT	BOOST	BELT
	21	Car	Trck	SUV	Van	Y	N	DNK	M	F	DNK	<1	1-5	6-12	Front	Back	Y	N	NONE	SEAT	BOOST	BELT

**APPENDIX D: FOCUS GROUP RECRUITMENT LETTER**

Dear Parent/Guardian:

The Rural Transportation Safety and Security Center at NDSU invites you to participate in **an upcoming focus group discussion about child traffic safety issues**. Participation is completely voluntary. The focus group itself will not take more than an hour. It will take place from noon to 1:00 and you have the option of attending on either December 10 or December 11. **Participants will be compensated \$20 for their time, and lunch will be provided.** The focus groups will take place at MeritCare Health System in Fargo, ND.

To be part of this focus group discussion, you need to meet all of the following criteria:

1. I am interested in taking part in this important discussion.
2. I am the parent or guardian of a child aged 12 or younger.
3. I am 18 years of age or older.
4. I am available from noon to 1:00pm on December 10 or December 11.

If you meet all four of these criteria please read on.

Please **read and sign the enclosed consent form**, and also **fill out your contact information** on the enclosed contact information sheet providing your name, mailing address, phone number, and focus group date/time preference, and **return all of this in the envelope marked 'CONSENT FORM.'**

Also, please **read and complete the enclosed survey**, and **return this in the envelope marked 'SURVEY.'** The survey is being sent back in a separate unmarked envelope to ensure complete anonymity and confidentiality.

**Please return all of the above-listed information no later than December 1, 2009** to be eligible to take part in this important discussion. Once we receive your consent form and contact information, we will send out a letter verifying the date/time/exact location of the focus group.

If you have any questions, please feel free to contact Andrea Huseth-Zosel at (701) 231-6427 or [andrea.huseth-zosel@ndsu.edu](mailto:andrea.huseth-zosel@ndsu.edu).

Thank you so much for your interest in this very important topic!

Sincerely,

Andrea Huseth-Zosel  
Associate Research Fellow  
Rural Transportation Safety and Security Center

**APPENDIX E: FOCUS GROUP CONSENT FORM**

## Proper Seat Placement of Children Aged 12 or Younger within Vehicles

### **This study is being conducted by:**

Andrea Huseth-Zosel  
Associate Research Fellow  
Rural Transportation Safety and Security Center (RTSSC)  
North Dakota State University  
[andrea.huseth-zosel@ndsu.edu](mailto:andrea.huseth-zosel@ndsu.edu)  
(701) 231-6427

### **Why am I being asked to take part in this research study?**

You have been selected for this study because the study is focusing on the perceptions and knowledge of parents/guardians of children aged 12 or younger who are at least 18 years of age. There will be six to twelve participants taking part in this discussion.

### **What is the reason for doing the study?**

RTSSC would like to better understand the attitudes and perceptions of parents/guardians of children aged twelve or younger regarding child occupant protection issues. Ultimately, this information will add to the body of knowledge regarding child occupant protection, increase the understanding of barriers to proper child occupant protection, and reduce traffic fatalities of children aged twelve or younger.

### **What will I be asked to do?**

You will be part of a focus group. This is simply a discussion on a specific topic, which is led by a group facilitator who moves the discussion along. You will be encouraged to discuss the topic with other participants in the group and share opinions. We ask that all participants freely discuss and are entitled to their opinions – they just need to be honest.

### **Where is the study going to take place, and how long will it take?**

The focus group will take place at MeritCare in Fargo. There will be two focus groups, one on Thursday, December 10 and one on Friday, December 11 – both are from noon to 1:00pm. You have the option of participating in either focus group. The specific location at MeritCare and the specific date and time are to be determined and you will be notified via mail when these details have been finalized. The focus group will not take more than an hour.

### **What are the risks and discomforts?**

The risks associated with this research are little to none. You may feel uncomfortable sharing information in front of peers if you are shy. It is not possible to identify all potential risks in research procedures, but the researcher has taken reasonable safeguards to minimize any known risks to the participant.

### **What are the benefits to me?**

You are not expected to get any benefit from being in this research study.

### **What are the benefits to other people?**

You will assist in adding to the body of knowledge regarding child occupant protection and increase the understanding of barriers to proper child occupant protection. As a result, it is hoped that this will reduce traffic deaths of children aged twelve or younger.

**Do I have to take part in the study?**

Your participation in this research is your choice. If you decide to participate in the study, you may change your mind and stop participating at any time without penalty or loss of benefits to which you are already entitled.

**What are the alternatives to being in this research study?**

Instead of being in this research study, you can choose not to participate.

**Who will see the information that I give?**

The focus group discussion will be recorded in order to accurately track information provided. The recordings will be accessed by Andrea Huseth and will be destroyed and discarded following discussion analysis. No specific names will be reported or disclosed in any of the resulting materials.

Data and records created by this project are owned by NDSU and the investigator. You may view information collected from this focus group by making a written request to the principal investigator. You may view information collected as a whole, but individual answers from each participant are not collected.

If during the course of the focus group information surfaces that indicates that any individual is being harmed or may be harmed, the researcher is legally obligated to report this information to the proper authorities.

**Will I receive any compensation for taking part in this study?**

You will receive \$20 as compensation for participating in the focus groups, in addition to lunch, as the discussion will take place over the lunch hour.

**What if I have questions?**

Before you decide whether to accept this invitation to take part in the research study, please ask any questions that might come to mind by emailing or calling the researcher at [andrea.huseth-zosel@ndsu.edu](mailto:andrea.huseth-zosel@ndsu.edu) or 701-231-6427.

**What are my rights as a research participant?**

You have rights as a participant in research. If you have questions about your rights, or complaints about this research, you may talk to the researcher or contact the NDSU Human Research Protection Program by:

- Telephone: 701.231.8908
- Email: [ndsu.irb@ndsu.edu](mailto:ndsu.irb@ndsu.edu)
- Mail: NDSU HRPP Office, NDSU Dept. 4000, PO Box 6050, Fargo, ND 58108-6050.

The role of the IRB is to see that your rights are protected in this research; more information about your rights can be found at: [www.ndsu.edu/research/irb](http://www.ndsu.edu/research/irb) .

**Documentation of Informed Consent:**

You are freely making a decision whether to be in this research study. Signing this form means that

1. you have read and understood this consent form
2. you have had the consent form explained to you
3. you have had your questions answered, and
4. you have decided to be in the study.

You will be given a copy of this consent form to keep.

\_\_\_\_\_  
Your signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Your printed name

\_\_\_\_\_  
Signature of researcher explaining study

\_\_\_\_\_  
Date

\_\_\_\_\_  
Printed name of researcher explaining study

Please send this consent form back in the pre-addressed stamped envelope provided to you. The envelope is marked – CONSENT FORM.

**APPENDIX F: FOCUS GROUP PRE-SURVEY**

## Focus Group Pre-Survey

This survey is being used solely to obtain demographic information regarding participants of the focus group for which you have agreed to participate. Your responses in this survey will remain anonymous. When you have completed this survey, please send the survey back to Rural Transportation Safety and Security Center (RTSSC) researchers in the pre-stamped, pre-addressed envelope that has been provided to you. The envelope should be labeled 'SURVEY.' The pre-stamped, pre-addressed envelope has been provided specifically for the purpose of keeping all responses anonymous.

Please choose the most appropriate response for each of the following questions:

1. What is your age?     18 to 24     25 to 34     35 to 44     45 to 54     55 or older
2. What is your gender?     Male     Female
3. How many children do you have currently living in your household?  
 1     2     3     4     5 or more
4. I have children currently living in my household that are: (please mark all that apply)  
 Less than one year old     4 to 6 years old     10 to 12 years old  
 1 to 3 years old     7 to 9 years old     13 years old or older
5. What is your approximate annual household income?  
 Less than \$20,000     \$60,000 to \$79,999     \$150,000 or more  
 \$20,000 to \$39,999     \$80,000 to \$99,999     Do not know/refuse  
 \$40,000 to \$59,999     \$100,000 to \$149,999
6. What is the highest level of education that you have completed?  
 Less than high school     4 year degree (BA, BS)  
 High school/GED     Master's Degree (MS)  
 Some college     Doctoral or Professional Degree (MD, PhD, JD)  
 2 year degree (Associate's)     Do not know/refuse
7. What is your marital status?  
 Single, never married     Separated  
 In a committed relationship     Divorced  
 Married     Widowed  
 Do not know/refuse
8. What type of vehicle is the vehicle in which you most often transport your child/ren?  
 Car     SUV     Other \_\_\_\_\_  
 Minivan     Pickup truck
9. Where does your child/do your children attend school?  
 In the Fargo or West Fargo school district     Outside of the Fargo or West Fargo school district
10. When riding in a vehicle, how often do your children ride in the front seat?  
 Always     Sometimes     Rarely     Never
11. At which age do you feel a child is old enough to start sitting in the front seat of a vehicle?  
 Less than one year old     4 to 6 years old     10 to 12 years old  
 1 to 3 years old     7 to 9 years old
12. In North Dakota is there a law regarding where a child should be seated within a vehicle (i.e. front seat, back seat)?  
 Yes     No     Do not know/refuse

***Thank you for your response!***

Please return the completed survey in the envelope marked 'SURVEY.'

**APPENDIX G: FOCUS GROUP PARTICIPANT INFORMATION SHEET**

**FOCUS GROUP PARTICIPANT CONTACT INFORMATION**

Please return this completed form with the consent form in the envelope marked 'CONSENT FORM.'

1. Name \_\_\_\_\_

2. Mailing Address \_\_\_\_\_

3. Email address \_\_\_\_\_

4. Phone number \_\_\_\_\_

5. Date/time preference:

**(NOTE: If you are available either day and don't have a preference, please mark both days)**

Thursday, December 10, 2009 from noon to 1:00pm

Friday, December 11, 2009 from noon to 1:00pm

6. Do you have any food allergies? If so, please list them here:

\_\_\_\_\_

7. Would you prefer a vegetarian meal?     Yes     No

**Please note:**

**There will be no childcare available**, so please make sure to have appropriate childcare arranged prior to the day of the focus group.

**APPENDIX H: FOCUS GROUP FACILITATOR GUIDE**

**Instrument Title:** Discussion Guide – Proper Seat Placement of Children Aged 12 or Younger within Vehicles

**Principal Investigator:** Andrea Huseth-Zosel

**(Optional facilitator text in red)**

I. Introduction (5 minutes)

a. Welcome participants and introduce yourself

“Thanks for being here today. I know you are all busy and have a limited time for lunch. So I won’t waste any of your time. We’ll just jump right in.  
I’m Andrea Huseth – I’m a researcher at the Transportation Institute at NDSU.”

b. Explain the general purpose of the discussion and why the participants were chosen

“The reason why all of you are here today is to discuss child traffic safety issues – specifically child safety within a vehicle.”

c. Explain the presence, purpose of recording equipment and confidentiality

“I will be recording this discussion for transcription at a later time.

However, the recordings and the transcriptions will be destroyed after the information is analyzed.

This discussion is completely anonymous and confidential – no names are or will be associated with this discussion here today.

Nobody’s name or children’s names – if they come up today – will be attached to any report or transcript.

All responses will remain anonymous – save for the people in this room.

If there’s anything you feel uncomfortable about – don’t feel like you HAVE to answer. Feel free to not answer.”

d. Outline general ground rules and discussion guidelines

“It is important that you know this is a safe environment.

There are no right or wrong answers to these questions.

Don’t be afraid to speak up!

This is meant to be a discussion – so try to speak to each other, and not so much to me. However, I do ask that one person speak at a time.

And if we are running long – I will be interrupting to try to move the discussion forward to get you out of here on time.”

e. Review where the restrooms are

f. Introductions

“As an ice breaker, why don’t we go around the table – tell your first names, how many children you have and how old they are.

I’ll start. I’m Andrea, I have 2 kids ages 2 and 5.” Move to the next person...

II. Questions (45-50 minutes)

“OK – let’s get right to the questions...”

1. What do you think are the most important safety issues when thinking of child traffic safety?

PROBE QUESTION(S):

- a. What first comes to mind when you think of child traffic safety?
2. Do you think there is any difference in terms of safety of a child sitting in the back seat versus the front seat if the child is securely restrained in the vehicle?
3. Thinking of your own children who aren’t yet 13, do you allow them to sit in the front seat?

PROBE QUESTION(S):

- a. Why do you/don’t you allow them to sit in the front seat?
  - b. Are there certain times when you do allow them/don’t allow them to sit in the front seat?
  - c. Are your children too young to have the option to sit in the front seat?
    - i. When are you going to allow them to sit in the front seat? Do you have a plan about rules?
  - d. Do you have rules about your children sitting in the front seat?
4. What do you think are barriers or obstacles to parents being able to get their kids to sit in the back?
5. Have you yourselves heard any advertisements or received any information from your doctor, school, or daycare center about placing your children in the back seat versus the front seat?

PROBE QUESTION(S):

- a. What have information have you received/what have you heard?
6. Is there anything else that anyone would like to say or add that you haven’t had a chance to say yet?

III. Closing (1-2 minutes)

“You have been wonderful. Thank you so much for your input. This is a very important subject and I really appreciate the time you have taken out of your day to discuss this.”

Hand out envelopes with \$30 in them to participants.

“Here is the compensation promised to you for participating in this discussion here today. Again, thank you so much for taking the time...”