



A Guide to Community Preventive Services

Reducing Motor Vehicle Injuries Among Child Passengers

Cuyahoga County, Ohio

Local Usage Rates
Best Practice Research
Recommendations
Resource Information



*Prepared by
The Cuyahoga County Board of Health and
The Safe Kids/Safe Communities Coalition
on behalf of
The Treu-Mart Fund
a supporting organization of
The Cleveland Foundation
and
The Jewish Community Federation*

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Letter to the Community:

Motor vehicle accidents are the leading cause of preventable injuries to children in America. This we know. Moreover, many of these injuries could be either avoided or lessened in their severity by the proper use of restraints.

We are distressed by research documented in this report showing the use of seatbelts and other restraints in Greater Cleveland to be well below national averages. Even more disturbing is the precipitous falloff in the use of restraints by children as they get older.

Disturbing conclusions emanating from this study are inescapable:

- Parents throughout the community are conscientious in using infant seats for their babies but seem less well informed about, or committed to what is necessary for their toddlers and youngsters.
- There is an alarming lack of understanding of the importance of, or what is an appropriate restraint for children too small to be safely protected by a typical seat belt or shoulder harness.
- Where parents are unwilling to use seatbelts, there is a high likelihood that their children will not be restrained either.
- Cost of restraints is not a factor in their relative non-use.
- Despite expensive and pervasive advertising efforts, use of child restraints remains too low.
- Utilization of seat belts and child restraints is highest in states where legislation mandating their use is stronger than current Ohio statutes.

We commend the Board of Health and the Safe Kids Coalition for the careful work that has gone into this report and to a group of Cleveland's leading pediatricians who encouraged conducting this study. It is our collective hope that this report and its dissemination to community groups and leaders like you will be only the first of many steps taken that will help make a demonstrable difference with our children.

Because state legislation is critical, public awareness and education will be key. Ohio laws are passive and as such, inadequate, unnecessarily endangering Ohio's children. Public pressure must be built for a stronger statute, one that mandates the use of proper restraints for all children. This will require an increased level of citizen understanding that we hope this report will foster.

Thank you on behalf of the board of trustees.

Arthur W. Treuhaft
President

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EXECUTIVE SUMMARY

Despite numerous campaigns to promote the use of safety belts and car seats, and child occupant protection laws in every state, motor vehicle crashes continue to kill and seriously injure children at an alarming rate. Approximately 1,800 children under the age of 14 are killed each year in the United States as occupants in motor vehicles and more than 280,000 are injured¹. Clearly there is much more work to be done.

Motor vehicle crashes are not “accidents”, and much can be done to prevent them. Child safety and injury prevention must be among our highest priorities as a community. No more important challenge exists than finding ways to improve the safety of our children. In Cuyahoga County, thousands of children are seen in Cleveland-area hospitals due to injuries from motor vehicles crashes each year, and for 39 children between 1996-2001 these injuries proved fatal².

Although it is well established that the proper use of car seats and lap/shoulder belts significantly reduce the risk of serious injury for child passengers, restraint use remains low in some age groups and populations. Of particular concern is the knowledge that Cuyahoga County has historically had one of the worst seat belt usage rates in the State of Ohio. Observational studies conducted in 2001 by the Ohio Department of Public Safety estimated adult seat belt use in Cuyahoga County at 62%, well below the national average, and estimated child restraint use for children 0-4 at 56%. Reliable figures for Northeast Ohio children age 4-8 have not historically been available. However, the National Highway Traffic Safety Administration (NHTSA) estimates that only 6.1% of booster age/sized children are being transported in booster seats.

This report is the culmination of a six month team effort to gather information needed to formulate recommendations aimed at increasing age and height/weight appropriate car restraint use among Cuyahoga County children. The results of a county-wide observational study conducted at randomly selected child care centers, parks and gas stations are presented along with the findings of a telephone survey of Cuyahoga County parents. Attempts were made to identify significant patterns and trends which serve as a guide for prevention efforts.

Some of the more significant findings include:

- **65%** of the drivers observed were wearing seat belts, which is significantly lower than the national average and significantly lower than the percentage of adults who reported believing seat belts were important.
- Children were more likely to be restrained when riding with a restrained driver.
- **86.1%** of children observed were in some sort of restraint but only 42% were restrained according to recommendations issued by the National Highway Traffic Safety Administration (NHTSA).
- **12.9%** of children observed were riding completely unrestrained.
- Child seat usage rates were high (**>90%**) among children covered by Ohio’s child seat law but drop off dramatically in children over age four.
- Adults surveyed cited their child’s resistance as the number one barrier to restraint use.
- Only **20.5%** of 4 to 7 year old children were using booster seats as recommended.

- **76%** of adults surveyed believe there should be a law requiring seat belt use.
- **84%** thought there should be a law requiring car or booster seat use.
- Health and safety professionals were reported to be the most believable sources of child passenger safety information by respondents.

The above findings are supplemented by information gained through a review of existing literature regarding the effectiveness of various interventions strategies in increasing child restraint use. Achievable recommendations are provided for what actions can be taken, now or in the future, to make Cuyahoga County's children safer motor vehicle passengers. Recommendations range from modeling safe behavior by always wearing a safety belts, to providing parents and family -serving professionals with up to date usage guidelines, to legislative advocacy and increased enforcement of existing laws.

In addition, a resource directory of existing local, state and national initiatives and sources of child passenger safety information and educational materials is provided as a supplement.

This research effort provides valuable information needed for informed decision-making that can improve the health and safety of children in our community. All sectors of the community have a role to play in ensuring that children are restrained correctly when traveling in motor vehicles. Implementation of the recommendations in this report holds the promise of further reducing what remains an unacceptably high toll.



INTRODUCTION

Injuries are the leading cause of unintentional injury deaths among children in the United States and in urban communities such as Cuyahoga County. Nationally, on average more than 250 children die each week from preventable injuries resulting principally from motor vehicle crashes, residential fires and drownings. Most of these deaths can be prevented.



In Cuyahoga County, 147 children died between 1996-2000 from unintentional injuries . Of these, 39 children were killed as passengers in motor vehicles. Each year large numbers of children also receive medical attention in local emergency rooms and doctors' offices due to injuries from motor vehicle crashes.

Fortunately, recent research has documented the effectiveness of a number of interventions in preventing automobile related injuries among children. Devices such as infant seats, booster seats and seat belts have been proven effective in reducing the risk of serious or fatal injury in an automobile crash by as much as 71% when used properly³. However, despite these proven protective benefits, restraint usage rates continue to be alarmingly low in some age groups and populations. While legislation and public education campaigns have had a positive impact on the use of infant/child safety seats, booster seat usage for children in the 4-8 age range, who are generally still too small to be properly secured by seat belts, remains relatively rare. National research has shown that rates of restraint use decline steadily with the increasing age of the child, with the effect that nearly two thirds of all traffic fatalities are unrestrained passengers⁴.

The primary objectives of this effort were to assess current child restraint practices in Cuyahoga County and determine what attitudes and beliefs may influence a parent's decision-making process as it relates to the use of child car restraints. Determining baseline usage rates, understanding what is meaningful to parents and what information sources they most value were identified as critical first steps in creating an effective intervention plan. With these objectives in mind, project partners conducted a county wide observational study and telephone survey which yielded information critical to future efforts. The project team also reviewed existing evidence/literature regarding the effectiveness of various intervention strategies and inventoried available resources.

This report:

- provides an overview of current child restraint usage recommendations
- provides data on current child restraint usage rates in Cuyahoga County
- provides information on parental attitudes and beliefs related to restraint use
- provides recommendations for parents, health and human services provider agencies, schools, community leaders and policy makers related to child passenger safety.
- provides a resource directory of existing auto safety initiatives at the national, state and local level that may serve as models or provide opportunities for collaboration.

In summary, this report represents a community-wide call to action to protect the health and safety of our most valuable resource, our children.

CURRENT CHILD RESTRAINT USAGE GUIDELINES

The specifics of child passenger safety restraint use vary somewhat between organizations because of the inherent difficulties in operationalizing what constitutes the ideal age/size/weight for each type of seat and/or seat belt use. The National Highway Traffic Safety Administration (NHTSA) recommends that child passengers be restrained in child safety seats until they have reached 40 pounds and recommends booster seat use for children who have outgrown car seats but are less than 4'9" in height (roughly estimated to be between the ages of 4 and 8)⁵.

Figure 1- Proper Child Safety Seat Use Chart Buckle Everyone. Children Age 12 and Under in Back!			
	INFANT	TODDLER	YOUNG CHILDREN
WEIGHT	Birth to 1 year at least 20-22 lbs.	Over 1 year and Over 20 lbs.-40 lbs.	Over 40 lbs. Ages 4-8, unless 4'9"
TYPE OF SEAT	Infant only or rear-facing convertible	Convertible / Forward-facing	Belt positioning booster seat
SEAT POSITION	Rear-facing only	Forward-facing	Forward-facing
ALWAYS MAKE SURE	Children to one year and at least 20 lbs. in rear-facing seats Harness straps at or below shoulder level	Harness straps should be at or above shoulders Most seats require top slot for forward-facing	Belt positioning booster seats must be used with both lap and shoulder belt. Make sure the lap belt fits low and tight across the lap/upper thigh area and the shoulder belt fits snug crossing the chest and shoulder to avoid abdominal injuries
WARNING	All children age 12 and under should ride in the back seat	All children age 12 and under should ride in the back seat	All children age 12 and under should ride in the back seat



The American Academy of Pediatrics (AAP) makes similar recommendations⁶, advising car seat use for children under 40 pounds and booster seat use for children in the 40 to 80 pound range until they meet the following requirements:

- the shoulder belt fits across the mid-chest and shoulder
- the lap belt fits low and snug across the hips, not the stomach
- the child can sit all the way back against the vehicle seat, with knees bent at the edge of the vehicle seat

In general, the AAP advises that children should remain in booster seats until they have reached 4'9", estimated as between the ages of 8 and 10. Because determining whether a child is ready for a seat belt is dependent on a number of factors and does not lend itself to easy labeling (as with the 4 /40 rule), the AAP has steered away from setting hard and fast age rules, instead relying on the three indicators of proper seat belt fit. As a result, most agencies issuing recommendations eschew age as a deciding factor, focusing instead on height⁷.

The observational study and telephone survey described in this report were designed to elicit information regarding parents' and caregivers' child restraint use, determinants of decisions to use child seats, booster seats or seat belts for their children and parent/caregiver support for legislation related to occupant protection issues.

OBSERVATIONAL STUDY

Methodology

The observational study used a combination of observation and interaction to assess restraint system use and non-use among parents and children in Cuyahoga and Lucas Counties. Observers collected basic information about the children (age, weight, race/ethnicity, etc.), the type of restraint used (if any), the driver (sex, race/ethnicity), driver's restraint status and the basic vehicle type. Observers were trained in effective observational techniques and used data collection forms which were developed and field tested by the National Safe Kids Coalition.

The selection of observation sites was based on a county-wide sample. Population statistics and the presence of full-time child care centers and gas stations were used to determine the number of sites visited in each municipality. Sites were selected randomly (72%), systematically (13%), and by convenience (15%) [see appendix 2 for details]. The length of the observational period was determined by the volume of children potentially visiting the site, with the minimum observation period being one hour. Observation sites included child care centers, parks, zoos, health clinics and gas stations. In order to maximize the quantity of data collected, sites were visited during times when they were most likely to have the highest volume of vehicles with children. Child care centers were visited during peak drop off hours of 7-9am weekdays and other sites were visited during late morning and afternoon hours. Where applicable, a letter was sent and a follow up telephone call made to the owner/administrator of each data collection site to obtain consent prior to data collection to ensure that the survey did not interfere with the business conducted at the site.

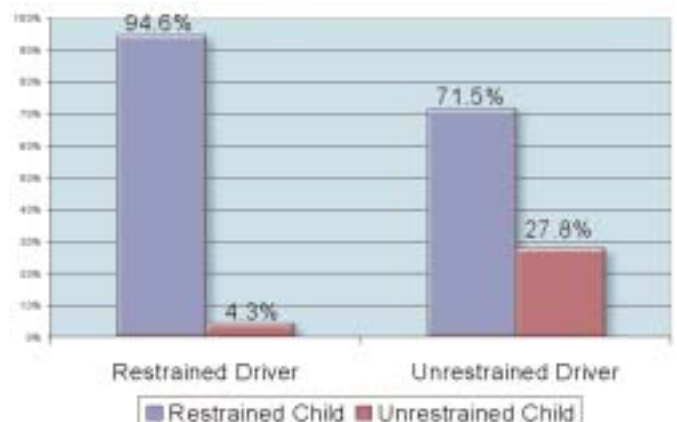
Observations were collected from July through September 2002. A total of 714 vehicles and 973 child passengers were assessed in Cuyahoga County. An additional 805 vehicles and 1,138 child passengers were assessed in Lucas County for comparison purposes. A detailed summary of the results can be found in Appendix 1.

Technical Note: For the purposes of analysis, restraint use was evaluated according to three categories: 1) Ohio law (mandates restraint use in children under age four and forty pounds and front seat passengers regardless of age); 2) The National Highway Traffic Safety Administration's (NHTSA) Child Safety Seat Use Chart (found on page 4) using the age/weight criteria (excluding the height criterion for ages 4-8 years); and 3) general restraint use meaning some type of restraint was used by the child regardless of age/weight appropriateness.

Significant Findings for Cuyahoga County

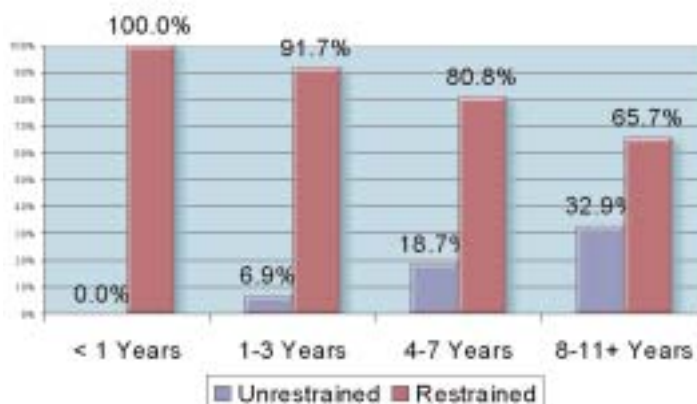
The observed restraint use among drivers was 65.1% which is significantly lower than the national rate (75%). The percentage of restrained female drivers (66.7) was similar to the percentage of restrained male drivers (68.3%). This finding is not consistent with current literature which has found that females tend to be restrained more often than males. Reasons for our findings are unclear. Overall, 12.9% of the child passengers were unrestrained. More interestingly, the percentage of children that were unrestrained was significantly higher among children riding with an unrestrained driver compared to a restrained driver (Figure 2). This implies that a child passenger that is riding with an unrestrained driver is five times more likely to be unrestrained than a child riding with a restrained driver. This clearly demonstrates the importance for continued public service campaigns aimed at increasing seat belt use in adults.

Figure 2 - Correlation Between Driver Restraint Use and Use By Child Passengers



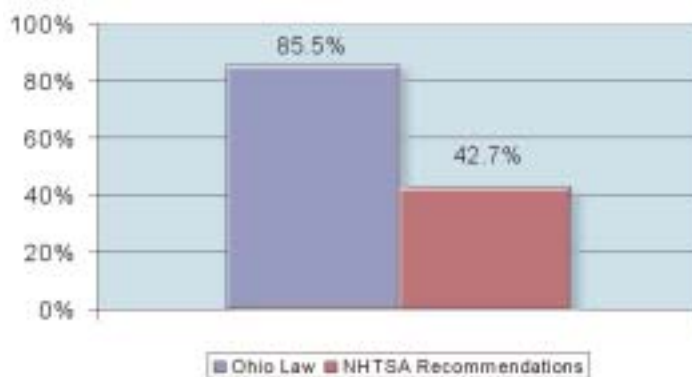
Furthermore, we observed that restraint use declined steadily with increasing age of the child (Figure 3). This suggests that adults understand the importance of putting very young children in car restraints and/or the legal consequences associated with allowing a very young child to ride unrestrained. Further investigation is needed to help identify the barriers associated with not using child restraints in older children, such as the resistance by older children to use child restraints and/or the lack of understanding of the importance of restraining older children.

Figure 3 - Restraint Use (%) By Child's Age



When comparing restraint use according to Ohio law and NHTSA recommendations, the percentage of proper child restraint use declined by approximately 50% (Figure 4). This huge gap between proper use according to NHTSA recommendations and proper use according to Ohio law needs further exploration. The fact that Ohio law considers an unrestrained backseat child passenger (> 4 years of age and > 40 pounds) as an acceptable way to travel may partly help explain this gap. However, the fact that over 85% of the child passengers observed were in some type of restraint may suggest that other reasons exist, such as the adult driver's not complying with proper child restraint recommendations and/or they are not aware of them. It is quite possible that the current laws are partly to blame because they do not align with current recommendations or provide legal consequences for improper recommended use.

Figure 4 - Proper Restraint Use (%) According to Ohio Law and NHTSA Guidelines



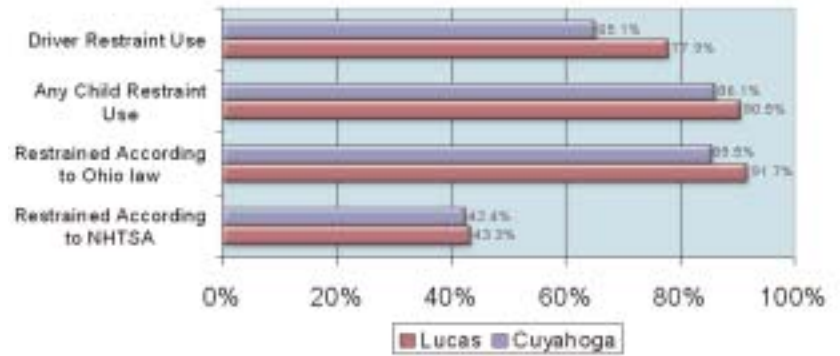
Children 4 to 7 years old are an age group of particular interest (the most likely ages where booster seats would be recommended for proper restraint use). Booster seat use among this group was extremely low at 20.5% – in other words, only 1 in 5 of the children in this age group were in the proper recommended restraint. Furthermore, lap and shoulder/lap belt restraints accounted for 52% of the restraint type in this age group, and 19.4% of the children were completely unrestrained. This finding further suggests that 1 out of every 2 children in this age group are in restraints (i.e. lap/shoulder belts) that may not properly fit and cause injury itself.

Although these children may be considered restrained properly under Ohio law (i.e. not using a restraint if the child is a back seat passenger), this clearly demonstrates the need for legislative changes to help increase the percentage of age/weight appropriate children using booster seat restraints.

Peer County Comparison

In order to assess the impact of future interventions aimed at improving child restraint use, it is necessary to be able to make before/after comparisons with a control group (i.e. a group that is similar in baseline demographics but does not receive the intervention). Therefore, we collaborated with the Lucas County Health Department, the suburban county that contains the city of Toledo, to conduct a similar observational study. Overall, restraint use (in both child and adult passengers) was higher in Lucas County (see Figure 5). The reasons for these differences are unclear. It is possible that underlying differences in demographic factors (e.g. the percentage of restraint use among female drivers was significantly higher (80.4%) compared to males (69.3%) account for higher overall rates in Lucas County. Additionally, stronger law enforcement or the perception of law enforcement may exist in Lucas County. Despite these differences, it is evident from the both the Cuyahoga and Lucas county data that less than 1 out of every 2 child passengers are restrained properly (according to NHTSA's age/weight guidelines).

Figure 5 - Comparisons of Child Safety Restraint Use Between Cuyahoga and Lucas Counties



TELEPHONE SURVEY

Methodology

The purpose of the independent survey was to gather valuable information on the opinions, attitudes, and usage of seat belts from the perspective of residents of Cuyahoga County. In order to achieve the stated objectives, a stratified random-sample telephone survey was conducted by Direct Opinions, an independent market research firm headquartered in Beachwood, Ohio. Telephone interviewing was selected as the primary data-gathering methodology because telephone interviews afford several advantages which include: the ability to control and assure randomness in the sample selection compared to mail surveys or person-to-person interviews; the ability to gather large samples distributed over a large geography; and the ability to obtain data in a very timely fashion.

In order to assure randomness in the survey sample, a customized calling list was randomly generated from proprietary consumer databases of households in Cuyahoga County. Qualified respondents were at least 18 years old with children under the age of 12 living in the household. A total of 7,500 names were included on the initial sample list. Respondent candidate names were called from a list on an "Nth" name basis (every 10th name) to assure randomness in the sample base. A total of 400 surveys were completed among Cuyahoga County residents, with an additional 400 surveys conducted among residents residing in East Cleveland and Brooklyn. Interviews were conducted between September 14, 2002 and September 30, 2002. A detailed summary of the results can be found in appendix 3.

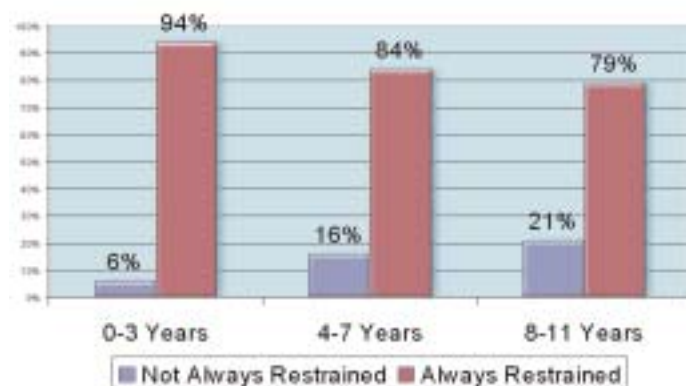
Significant Findings

The percentage of respondents that reported always wearing seat belts was 70.5%, which was similar to the rate observed in the observational study (65.1%). What is interesting about this rate is the fact that it is significantly lower than the number that reported believing seat belts were important (87%) or that all adults should wear seat belts while driving (88%). This implies that adults understand the value of wearing a seat belt but there are barriers to putting the knowledge into actions.

Other similarities between the telephone and observational studies exist. Specifically, there was a decline in restraint use with increasing age of the child (Figure 6); although, the percentage of parents reporting restraint use among children 8-11 was higher in the telephone survey (79% vs. 67%). This difference may reflect known differences associated with self-reported data as compared to observational data. It is also possible that one potential reason for the higher rate of restraint use reported in younger children may be due to the fact that 92% of the respondents reported believing that car and booster seats protect child passengers and that "younger and smaller children" should always be restrained in these seats. Additionally, respondents who reported always or almost always using car seats, boosters, or seat belts for children less than 12 years of age offered safety as the primary reason (77%), followed by concern for the law (30%). This indicates that a majority of the respondents who use child restraints for their child understand the protective effects car restraints can provide and a third are motivated by the legal consequences associated with not restraining a child.

Additionally, when parents reported always buckling up, 99% of the children 0-3 were restrained in car seats, as opposed to 78% of those children whose parents did not report wearing seat belts. These findings provide further support for the need to continue with educational campaigns aimed at increasing adult car restraint use as a means of impacting child passenger restraint usage.

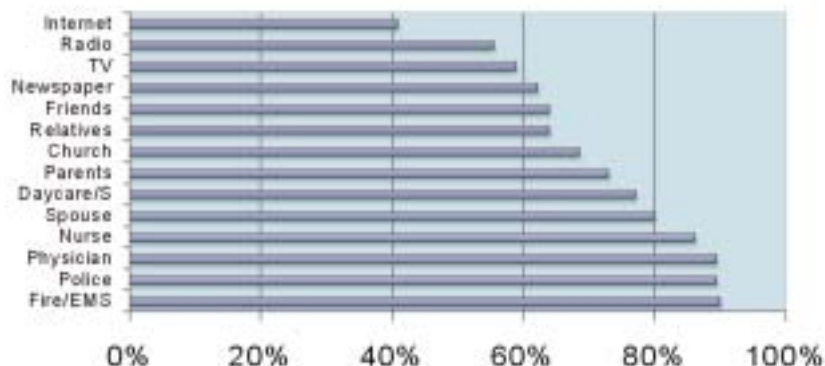
Figure 6 - Restraint Use (%) By Child's Age



Conversely, when respondents who reported that their children were restrained only some of the time, rarely, or never were asked about barriers to restraint use, 61% responded that their child's resistance was the number one barrier. This suggests that considerable effort needs to be made to get children comfortable with the fact that car restraints should always be part of their lives and not something that they out-grow as they get older.

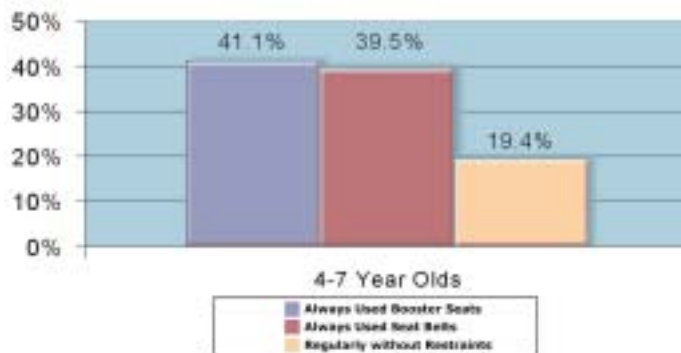
Telephone survey results show there may be opportunities to reach people with a message regarding the importance of restraint use. When asking people to rate various sources of information for child passenger safety advice as "believable" or "not believable", over 85% of the respondents said fire/EMS personnel, police personnel, physicians and nurses were rated as "believable" sources (Figure 7).

Figure 7 - Sources Rated as "Believable" (%)



When looking at restraint use in children 4-7 years old (Figure 8), 41.1% of respondents reported using booster seats and 39.5% reported using seat belts, which indicates that 19.4% regularly ride without restraints. Although the reported percentage of children in booster seats was twice the number that was observed (41.1% vs. 20.5%), it remains apparent that proper restraint use in this age group needs to be improved. It is also interesting to note that 84% of the respondents thought there should be a law requiring car or booster seat use, suggesting that the public would be in favor of legislative changes aimed at increasing child restraint use.

Figure 8 - Reported Use (%) of Car Restraints in Children Age 4-7



In order to access the public's knowledge of existing resources that provide subsidized car seats for low income families, respondents were asked "Do you know that there is a subsidized car seat distribution program for low-income families?". In addition, they were asked "Have you or anyone you know received a subsidized car seat?". Approximately half of the respondents (44.5%) were aware of the existence of a car seat distribution program for low income families. Among those that had heard of such a program, only 26% had received a subsidized seat or knew someone who had. Based on these findings, there is a clear need to increase the awareness and utilization of these programs.

Another objective of the telephone survey was to attempt to identify disparities in safety restraint usage and beliefs among populations with varying socioeconomic status, which was accomplished by over-sampling the cities of Brooklyn and East Cleveland. Income levels for the three sample groups were as follows: \$55,000-\$64,999 for the main sample, \$45,000-\$54,999 for Brooklyn, and \$15,000-\$24,999 for East Cleveland. In addition to income level, other differences between the groups did exist and can be found in Appendix 3.

Most of the restraint usage and belief disparities between the survey samples occurred in the East Cleveland oversample, which had significantly lower rates of most of the safe traveling indicators. Since it is well established that rates of seat belt, car seat, and booster seat use are directly related to socioeconomic status, results were expected (see Appendix 2). Respondents in the East Cleveland oversample were significantly less likely than those in the main sample or the Brooklyn oversample to report restraining 4 to 7 year olds in boosters or belts, but the same did not hold true of 8 to 11 year olds. Because such differences in belief and restraint usage do exist between communities of varying socioeconomic status, global changes in car safety restraint recommendations and/or laws may not be enough for the most disadvantaged communities. Therefore, targeted interventions may be necessary in these and similar communities once global changes are in place.



BEST PRACTICE RESEARCH

Research into best practices and proven strategies began with the development of an inventory of existing local, state and national programs and initiatives aimed at improving child passenger safety. Project staff sought the expertise of colleagues from across the country and conducted literature searches to determine what is known about the effectiveness of various strategies in increasing car restraint use among children.

An inventory of existing local, state and national initiatives that address child passenger safety has been compiled and is included with this report in the form of a resource directory. The inventory helps to illustrate the widespread availability and wide array of strategies currently being applied to improve child passenger safety. Although these programs vary in their scope and reach, they share one or more of the following components and can be categorized as follows:

- media and public awareness campaigns
- education programs
- incentive and distribution programs
- legislative advocacy
- enhanced enforcement campaigns

Reviews of available research have been conducted to determine the effectiveness of each of these strategies in increasing restraint usage among child passengers. Most helpful among these materials were the findings of a research effort funded by the Center for Disease Control and Prevention which looked specifically at the effectiveness of five intervention strategies in increasing child safety seat use. These findings have been published as a supplement to the American Journal of Preventive Medicine and are provided as a guide to communities working to prevent motor vehicle related injuries in children. The five strategies and/or program areas assessed in the study mirrored those listed above.

Although each of the strategies identified above have been shown to have some positive effect on child seat usage rates, systematic reviews provide strong scientific evidence that child seat laws and campaigns to educate and enforce laws are the most effective strategies for creating significant sustainable results over time. Education campaigns and distribution and incentive programs also show promising results when used to compliment existing laws; however the effectiveness of these strategies significantly diminishes in the absence of legislation⁸. Laws mandating the use of child seats give muscle to other intervention strategies.

These findings are reinforced when looking at local statistics. Child seat usage rates are high (>90%) among children covered by Ohio's child seat law but drop off significantly in children over age four. Ohio's child seat law does not meet current best practice recommendations and fails to address appropriate restraint use in older children. Comprehensive programming offered through the Greater Cleveland Safe Kids Coalition, which includes many all of the intervention components previously described, has had limited success in increasing restraint use among children in older age groups. Those states that have more aggressive child seat laws tend to show more success in this area.

Furthermore, findings do not indicate a lack of local resources or identify gaps in services. There are, however, opportunities to better utilize existing resources and to raise community awareness regarding the availability of services and information, even in the absence of more aggressive legislation.

RECOMMENDATIONS FOR ACTION

The following recommendations are provided as a guide for implementing interventions at the community level to prevent injuries to child occupants in motor vehicles. No single approach can be expected to fully address the complex issues that surround child passenger safety. Multiple factors influence parents' decision-making, and not all parents value the same sources of child safety information. Therefore, we must be consistent but varied in our approaches. The recommendations below have been organized into categories to reinforce the various roles we have as parents and professionals and to facilitate the adoption of child passenger safety basics into common practice. The only way to create a long term sustained change and improved outcomes is through the collective efforts of all those who care for and serve children in our community.

Recommendations for Parents and Caregivers

1. Model appropriate safety behavior by always wearing your safety belt.
2. Ensure the safety of your children and other children in your care by strictly following recommended restraint guidelines appropriate to the age, weight and height of the child.
3. Take opportunities to discuss child passenger safety with peers and parent groups .

Recommendations for Health and Human Service Providers

4. Take steps to become familiar with changing guidelines related to car restraint use in order to appropriately advise parents.
5. Educate parents before the child is born (prenatal and lamaze classes) regarding importance of motor vehicle safety and work to change the mind set that children only require special precautions through the pre-school years.
6. Include messages about child passenger safety and other safety basics as core components of service interaction with families.
7. Provide parents with up to date resource information.

Recommendations for Schools and Child Care Centers

8. Incorporate motor vehicle safety into core health curriculum used with children.
9. Disseminate up-to-date usage guidelines to parents.
10. Provide additional resource information to those in need.
11. Strictly follow recommendations when transporting children in non-bus vehicles.

Recommendations for Community Leaders and Policy Makers

12. Advocate for legislation that goes beyond requiring nonspecific restraint use in pre-school children to address appropriate restraint use in all age groups.
13. Scale up enforcement of existing laws.

RESOURCE DIRECTORY

★- PREFERRED SOURCES OF EDUCATIONAL MATERIALS FOR BOTH PARENTS AND PROFESSIONALS

Local Resources

Buckle Down Cleveland Campaign(216) 844-1977
Led by the Injury Prevention Division of University Hospitals Rainbow Babies and Children's Hospital, Buckle Down Cleveland took shape in 1998 as a collaborative, community-wide program. The grass roots effort has mobilized media, health care personnel, local businesses, law enforcement, safety forces and a large group of dedicated volunteers to address car seat and seat belt safety issues in schools, day care centers, senior centers and community groups throughout Cuyahoga County.

★**Greater Cleveland Car Seat Fit Stop Hotline**(216) 844-2277
Provides access to subsidized child car restraints for income-qualified families; car seat fitting station locations and answers to car set related questions.

Greater Cleveland Safe Kids/ Safe Communities Coalition(216)844-7352
The Greater Cleveland Safe Kids/Safe Communities Coalition works collaboratively on community-based, grassroots programs to prevent childhood mortality and morbidity due to unintentional injury. Through a Regional Child Passenger Safety Program, child safety seats are distributed and parents are educated on proper installation. The Safe Kids Buckle Up program is a program through which Rainbow Babies and Children's Pediatric Trauma Center conducts Child Passenger Safety Technician Training for local fire, EMS, law enforcement, hospital and public health personnel in addition to sponsoring child safety seat check-up events at which parents can have car seats checked for proper installation and use.

State of Ohio Resources

Ohio Department of Public Safety www.state.oh.us/odps(614) 466-2550
The Ohio Department of Public Safety is working with law enforcement statewide in an effort to increase seat belt usage and save lives. The What's Holding You Back? Campaign uses radio, television, billboards, buses, banners and law signs to get the message out that if you choose not to buckle up, the answer to the question "What's Holding You Back?", is simply nothing. Law enforcement plays a critical role in the campaign by stepping up enforcement and writing citations for those who choose to violate Ohio's child passenger and seat belt laws.

Ohio Partnership for Traffic Safety www.state.oh.us/odps/opts(614) 466-3250
Under the leadership of the Ohio Department of Public Safety (ODPS), a statewide network, the Ohio Partnership for Traffic Safety (OPTS) was formed. The goal of the network is to unite government with the private sector to utilize the safety expertise and resources of the network with the knowledge and insights of Ohio's business leaders. Each works with the other to increase profits, reduce operating costs, and minimize the public cost to citizens by reducing vehicle-related deaths and injuries.

National Resources

4 Kids Sake www.4rkidssake.org(909)278-1820
4 R Kids Sake is a non-profit organization whose mission is to protect children from preventable injuries and death in and around cars through awareness, education, legislation and product re-design.

AAA Foundation for Traffic Safety www.aaafoundation.org(202)638-5944
The AAA Foundation for Traffic Safety is dedicated to saving lives and reducing injuries by preventing traffic crashes. It is a not for profit, publically-supported, charitable, educational and research organization. AAA has launched a multi-year national education and advocacy campaign to help reduce the leading cause of death for children 1-15 years of age as part of AAA's year long centennial celebration. The safety drive will seek to modify safety belt laws that, in many states, let young children ride unbelted or using ill-fitting safety belts designed for adults.

Advocates for Highway and Traffic Safety www.saferoads.org(202)408-1711
Advocates for Highway and Auto safety is an alliance of consumer, health and safety groups and insurance companies and agents working together to make America's roads safer. Advocates encourages the adoption of federal and state laws, policies and programs that save lives and reduce injuries. By joining its resources with others, Advocates helps build coalitions to increase participation of a wide array of groups in public policy initiatives which advance highway and auto safety.

Air Bag and Safety Belt Campaign www.nsc.org/airbag.htm(202)625-2570
The Airbag and Safety Belt Campaign, under the umbrella of the National Safety Council, is an intensive education and action campaign consisting of public/private partnerships among automobile manufacturers, insurance companies, child safety seat manufacturers, occupant restraint manufacturers, government agencies, health professionals and child safety organizations. Established in June 1996, the Campaign's goal is to educate the public on how to maximize the lifesaving capabilities of airbags while minimizing the risk and to increase the proper use of safety belts and child safety seats.

★American Academy of Pediatrics www.aap.org/family/cps.htm(847) 434-4000
The American Academy of Pediatrics (AAP) and its member pediatricians dedicate their efforts and resources to the health, safety and well-being of infants, children, adolescents and young adults. The AAP has formulated policy statements and educational materials related to child passenger safety which are available on their website.

American Public Health Association www.apha.org(202)777-2742
The American Public Health Association (APHA) has been influencing policies and setting priorities in public health for over 25 years. Throughout its history, it has been in the forefront of numerous efforts to prevent disease and promote health. APHA brings together researchers, health service providers, administrators, teachers, and other health workers in a unique multi-disciplinary environment of professional exchange, study and action.

Association for the Advancement of Automotive Medicine www.carcrash.org . .(847)844-3880
The Association for the Advancement of Automotive Medicine (AAAM) is a professional multi-disciplinary organization dedicated entirely to motor vehicle crash injury prevention and control. The AAAM sponsored an international conference in Washington D.C. in April of 2001 of leading child passenger safety experts in medicine, engineering, research, enforcement and child safety to promote scientifically sound public policy on child booster seats in motor vehicles.

Automotive Coalition for Traffic Safety www.actsinc.org(703)243-7501
The mission of ACTS is to educate the general public and targeted audiences about technology-related safety issues and to provide safety related services to its members. Initially, ACTS served as an events-oriented umbrella group which publicized the popularity and success of safety belts and mandatory belt laws. With the passage of time, ACTS has expanded its scope of activities to include all safety issues related to vehicle technology. Member organizations include: Daimler Chrysler, Ford Motor, General Motors, Mazda, Nissan, Toyota, Volkswagen, Alliance of Automobile Manufacturers and the Automotive Occupant Restraints Council.

- Automotive Occupants Restraints Council www.aorc.org(606)269-4240**
 The mission of AORC is to reduce traffic deaths and injuries by providing the motoring public with reliable and effective occupant restraint systems. The goal is to save more lives through encouraging seat belt use and child passenger seats and raising community awareness regarding air bag systems. Nearly 90 percent of the US seat belt and air bag industry-manufacturers and suppliers are AORC members.
- Buckle Bear www.bucklebear.com(517)927-7731**
 Buckle-Bear is an educational program aimed at preschool to elementary-aged children and their families. It uses cartoon-type characters to educate young children (and their families) concerning auto safety. The principal focus is on instruction regarding proper child restraint in cars, air bag safety, and other passenger safety practices such as being quiet and not disrupting the driver.
- Buckle Up America www.buckleupamerica.org(202)366-9294**
 Buckle Up America is a national campaign working to increase the proper use of seatbelts and child safety seats. The effort is coordinated by the National Highway Traffic Safety Administration and consists of a network of state and local chapters. The campaign has media, education and outreach components.
- Center for Auto Safety www.autosafety.org(202)328-7700**
 The Center for Auto Safety provides a wide variety of links, articles and resource information related to automobile safety for consumers and professionals.
- Child Passenger Safety Board www.cpsboard.org(708)-503-8822**
 The National Child Passenger Safety Board is an authoritative body that has been established to monitor and provide program direction and technical guidance to states, communities and organizations as a means to maintain a credible, standardized child passenger training and certification program.
- Children’s Safety Network www.childressafetynetwork.org(617) 969-7100**
 The Children’s Safety Network works with maternal and child health (MCH), public health and other injury prevention practitioners to provide technical assistance and information, facilitate the implementation and evaluation of injury prevention programs and conduct analytical and policy activities that improve injury and violence prevention.
- Daimler Chrysler’s Fit For A Kid Program www.fitforakid.org(877)FIT-4-A-KID**
 Daimler Chrysler offers a service to help parents use child safety seats correctly so their children travel as safely as possible. This free service involves a parent bringing their vehicle, child seat and child to a participating Daimler Chrysler dealer for an inspection. A trained specialist inspects the seat, ensures it’s a good fit for the child and compatible with the vehicle and demonstrates how to correctly secure the seat in the vehicle and the child in the seat. Anyone is eligible for the service, regardless of their vehicle’s brand.
- Kids in Cars www.kidsncars.com(415)789-1000**
 Kids In Cars works to raise public awareness regarding the dangers of leaving children alone in or around vehicles through educational materials and parent testimonials.
- I’m Safe Network www.imsafe.com(877)-NOW-SAFE**
 The I’m Safe! Network is the website for Child Safety Solutions, an innovative developer of child-friendly injury-prevention programs. Child Safety Solutions was launched in January 2000 to meet the increasing need for community-centered safety education programs and materials that can be delivered using a variety of media.

Insurance Institute for Highway Safety www.hwysafety.org(703)247-1500
The Insurance Institute for Highway Safety and the Highway Loss Data Institute are independent, nonprofit, research and communications organizations funded by auto insurers and dedicated to reducing highway crash deaths, injuries, and property losses.

National Center for Injury Prevention and Control www.cdc.gov/ncipc(770)488-1506
The National Center for Injury Prevention and Control (NCIPC) works to reduce morbidity, disability, mortality, and costs associated with injuries. Activities include education, outreach and advocacy.

★National Highway Traffic Safety Administration (NHTSA) www.nhtsa.dot.gov(800) 424-9393
The National Highway Traffic Safety Administration (NHTSA), under the U.S. Department of Transportation, was established by the Highway Safety Act of 1970, as the successor to the National Highway Safety Bureau. NHTSA is responsible for reducing deaths, injuries and economic losses resulting from motor vehicle crashes. This is accomplished by setting and enforcing safety performance standards for motor vehicles and motor vehicle equipment, and through grants to state and local governments to enable them to conduct effective local highway safety programs.

National Safety Council www.nsc.org(630)285-1121
The National Safety Council is a non-governmental organization. The Council serves as an impartial intermediary by bringing together safety and health professionals representing industry and labor to form national coalitions on key safety issues. The National Safety Council statisticians have created a comprehensive system for tracking and compiling injury and illness data, including annual publication of Injury Facts, an authoritative compendium of safety and health statistics. Council researchers also produce the Journal of Safety Research, an international, interdisciplinary scientific quarterly.

SAE Child Passenger Safety Program www.sae.org/about/prsafety(724) 776-4841
The Society for Automotive Engineers provides public awareness programs that promote vehicle safety and maintenance and energy resource conservation. Through the SAE Foundation, they are also deeply involved in the engineering-related education of children, teachers, college students, and faculty. Industry and faculty awards provide recognition to outstanding contributors in the profession.

Safe Child Net www.safechild.net(800) 638-2772
SafeChild.net is a product of the Consumer Federation of America Foundation. The mission of the Foundation is to provide information to the public on consumer issues, assist state and local organizations, and conduct research projects. The Foundation has played a leadership role in advocating before congress and federal agencies on child safety and have participated in voluntary safety standards proceedings for children's products. The Foundation has also assisted the 78 state and local consumer groups that make up its network in promoting pro-active child safety measures.

★Safe Kids Campaign www.safekids.org(202)393-2072
The National Safe Kids Campaign is the first and only national non-profit organization dedicated solely to the prevention of unintentional childhood injury — the number one killer of children ages 14 and under. More than 300 state and local Safe Kids coalitions in all 50 states, the District of Columbia and Puerto Rico comprise the Campaign.

Safe Ride News www.saferidenews.com.(800) 422-4121
Safe Ride News is a bi-monthly, independent publication supported primarily by subscriptions. The publication provides information for injury prevention professionals, advocates and the public on new standards, laws and programs by supporting and collaborating with other organizations in the field.

★**Safety Belt Safe U.S.A.** www.carseat.org(800)745-SAFE
SafetyBeltSafe USA is the national, non-profit organization dedicated to child passenger safety. Its mission is to help reduce the number of serious and fatal traffic injuries suffered by children by promoting the correct, consistent use of safety seats and safety belts. It provides consultation to advocates, parents, business leaders, the media, and professionals working in the fields of health care, traffic safety, and education.

Traffic Injury Research Foundation www.trafficinjuryresearch.com(613)232-5235
The mission of the Traffic Injury Research Foundation (TIRF) is to reduce traffic related deaths and injuries. It achieves its mission by designing, promoting and implementing effective programs and policies, based on sound research. TIRF is a national, independent road safety institute. Since its inception in 1964, TIRF has become internationally recognized for its accomplishments in a wide range of subject areas related to identifying the causes of road crashes and developing programs and policies to address them effectively.

US Consumer Products Safety Commission (CPSC) www.cpsc.gov(301)-504-0990
CPSC is an Independent Federal Regulatory Agency. CPSC works to save lives and keep families safe by reducing the risk of injuries and deaths associated with consumer products. They do this by: developing voluntary standards with industry; issuing and enforcing mandatory standards or banning consumer products if no feasible standard would adequately protect the public; obtaining the recall of products or arranging for their repair; conducting research on potential product hazards; informing and educating consumers through the media, state and local governments, private organizations; and by responding to consumer inquiries.

APPENDIX

1. Ohio Child Seat Law

2. Observational Study

- a. Survey Tool
- b. Sampling Technical Note
- c. Data Tables

3. Telephone Survey

- a. Survey Tool
- b. Tables
- c. Figures

4. Limitations

5. References

APPENDIX 1

Ohio Child Restraint Law O.R.C. 4511.81

4511.81 Child restraint system required; child highway safety fund. — RC § 4511.81 is affected by Am. Sub. S.B. 123 (149 v —), effective 1-1-2004. See the 2002 Legislative Bulletin No. 4 for the version effective 1-1-2004.

(A) When any child who is in either or both of the following categories is being transported in a motor vehicle, other than a taxicab or public safety vehicle as defined in section 4511.01 of the Revised Code, that is registered in this state and is required by the United States department of transportation to be equipped with seat belts at the time of manufacture or assembly, the operator of the motor vehicle shall have the child properly secured in accordance with the manufacturer's instructions in a child restraint system that meets federal motor vehicle safety standards:

- (1) A child who is less than four years of age;
- (2) A child who weighs less than forty pounds.

(B) When any child who is in either or both of the following categories is being transported in a motor vehicle, other than a taxicab, that is registered in this state and is owned, leased, or otherwise under the control of a nursery school, kindergarten, or day-care center, the operator of the motor vehicle shall have the child properly secured in accordance with the manufacturer's instructions in a child restraint system that meets federal motor vehicle safety standards:

- (1) A child who is less than four years of age;
- (2) A child who weighs less than forty pounds.

(C) The director of public safety shall adopt such rules as are necessary to carry out this section.

(D) The failure of an operator of a motor vehicle to secure a child in a child restraint system as required by this section is not negligence imputable to the child, is not admissible as evidence in any civil action involving the rights of the child against any other person allegedly liable for injuries to the child, is not to be used as a basis for a criminal prosecution of the operator of the motor vehicle other than a prosecution for a violation of this section, and is not admissible as evidence in any criminal action involving the operator of the motor vehicle other than a prosecution for a violation of this section.

(E) This section does not apply when an emergency exists that threatens the life of any person operating a motor vehicle and to whom this section otherwise would apply or the life of any child who otherwise would be required to be restrained under this section.

(F) If a person who is not a resident of this state is charged with a violation of division (A) or (B) of this section and does not prove to the court, by a preponderance of the evidence, that the person's use or nonuse of a child restraint system was in accordance with the law of the state of which the person is a resident, the court shall impose the fine levied by division (H)(2) of section 4511.99 of the Revised Code.

(G) There is hereby created in the state treasury the "child highway safety fund," consisting of fines imposed pursuant to divisions (H)(1) and (2) of section 4511.99 of the Revised Code for violations of divisions (A) and (B) of this section. The money in the fund shall be used by the department of health only to defray the cost of designating hospitals as pediatric trauma centers under section 3727.081 [3727.08.1] of the Revised Code and to establish and administer a child highway safety program. The purpose of the program shall be to educate the public about child restraint systems generally and the importance of their proper use. The program also shall include a process for providing child restraint systems to persons who meet the eligibility criteria established by the department, and a toll-free telephone number the public may utilize to obtain information about child restraint systems and their proper use.

The director of health, in accordance with Chapter 119. of the Revised Code, shall adopt any rules necessary to carry out this section, including rules establishing the criteria a person must meet in order to receive a child restraint system under the department's child restraint system program; provided that rules relating to the verification of pediatric trauma centers shall not be adopted under this section.

HISTORY: 139 v H 605 (Eff 3-7-83); 141 v S 54 (Eff 5-6-86); 141 v H 428 (Eff 12-23-86); 142 v S 53 (Eff 10-20-87); 144 v S 98 (Eff 11-12-92); 145 v H 381 (Eff 6-23-94); 148 v H 138 (Eff 11-3-2000); 149 v H 94. Eff 6-6-2001.

The effective date is set by section 206 of HB 94.



APPENDIX 2

OBSERVATIONAL STUDY

2a. Survey Tool

2b. Sampling Technical Note

2c. Data Tables

APPENDIX 2b.

TECHNICAL NOTE ABOUT SAMPLING FOR OBSERVATIONAL STUDIES

Initially, day care centers and gas stations were selected as likely places to find children in automobiles. Gas stations were selected because of the fact that adults would need to stop the vehicle and have “a few minutes to spare” while pumping the gas. Therefore, listings of child care centers and gas stations were obtained. Sites were randomly selected by municipality. In the event that a randomly selected site did not give consent to conduct the survey, an alternate site was selected by reviewing the list and attempting to find a replacement that was in the vicinity of the original selection (systematic substitution). Additionally, once the study started, it became apparent that the number of children that would be seen at a gas station was low. Therefore, observers were instructed to go to health clinics, parks, libraries, or zoos in the area (convenience). A large proportion of final survey sites were randomly selected (72%), with an additional 13% from systematic substitution, and 15% from convenience.



APPENDIX 2c.

Table 1. Summary of Survey Demographic Information for Cuyahoga and Lucas Counties

Variable	CUYAHOGA COUNTY # Vehicles = 714 Children = 973 n (%)	LUCAS COUNTY # Vehicles = 805 # Children = 1,138 n (%)	TOTAL # Vehicles = 1,519# # Children = 2,111 n (%)
Type of Survey Site			
Daycare	557 (78.0%)	569 (70.7%)	1,126 (74.1%)
Other ^a	157 (22.0%)	236 (29.3%)	393 (25.9%)
Type of Vehicle			
Coupe/Sedan	438 (61.3%)	450 (55.9%)	888 (58.5%)
SUV	126 (17.6%)	129 (16.0%)	255 (16.8%)
Minivan	119 (16.7%)	159 (19.8%)	278 (18.3%)
Pickup	19 (2.7%)	38 (4.7%)	57 (3.8%)
Van (Full Size)	9 (1.3%)	23 (2.9%)	32 (2.1%)
Missing Info	3 (0.4%)	6 (0.7%)	9 (0.6%)
Gender of Driver			
Female	529 (74.1%)	638 (79.3%)	1,167 (76.8%)
Male	164 (23.0%)	163 (20.2%)	327 (21.5%)
Missing Info	21 (2.9%)	4 (0.5%)	25 (1.6%)
Race of Driver^b			
Black	122 (17.0%)	80 (9.9%)	202 (13.3%)
White	534 (74.8%)	688 (85.5%)	1,222 (80.4%)
Other	29 (4.1%)	30 (3.7%)	59 (3.9%)
Missing Info	29 (4.1%)	7 (0.9%)	36 (2.4%)
Race of Child Passenger^b			
Black	199 (20.5%)	124 (10.9%)	323 (15.3%)
White	693 (71.2%)	962 (84.5%)	1,655 (78.4%)
Other	62 (6.4%)	49 (4.3%)	111 (5.3%)
Missing Info	19 (2.0%)	3 (0.3%)	22 (1.0%)
Age of Child Passenger (yrs)			
< 1	75 (7.7%)	77 (6.8%)	152 (7.2%)
1-3	434 (44.6%)	427 (37.5%)	861 (40.8%)
4-7	391 (40.2%)	491 (43.1%)	882 (41.8%)
8-11+	70 (7.2%)	143 (12.6%)	213 (10.1%)
Missing Info	3 (0.3%)	0 (0.0%)	3 (0.1%)
Weight of Child Passenger (lbs)			
20 or under	68 (7.0%)	84 (7.4%)	152 (7.2%)
21-29	211 (21.7%)	169 (14.9%)	380 (18.0%)
30-39	291 (29.9%)	307 (27.0%)	598 (28.3%)
40-59	313 (32.2%)	386 (33.9%)	699 (33.1%)
60-79	60 (6.2%)	135 (11.9%)	195 (9.2%)
80 and up	27 (2.8%)	53 (4.7%)	80 (3.8%)
Missing Info	3 (0.3%)	4 (0.4%)	7 (0.3%)

a = Clinics, gas stations, libraries, parks, zoos.

b = Race was based on observation not self-report.

Table 2. Summary of Restraint Information for Cuyahoga and Lucas Counties

Variable	CUYAHOGA COUNTY # Vehicles = 714 # Children = 973 n (%)	LUCAS COUNTY # Vehicles = 805 # Children = 1,138 n (%)	TOTAL # Vehicles = 1,519 # Children = 2,111 n (%)
Restraint Use by Driver			
No	230 (32.2%)	175 (21.7%)	405 (26.7%)
Yes	465 (65.1%)	627 (77.9%)	1,092 (71.9%)
Missing	19 (2.7%)	3 (0.4%)	22 (1.4%)
Position of Child Passenger			
Front	101 (10.4%)	122 (10.7%)	223 (10.6%)
Back	855 (87.9%)	1,009 (88.7%)	1,864 (88.3%)
Cargo	0 (0.0%)	1 (0.1%)	1 (0.0%)
Missing Info	17 (1.7%)	6 (0.5%)	23 (1.1%)
Any Restraint Use by Child Passenger			
Yes	838 (86.1%)	1,031 (90.5%)	1,869 (88.5%)
No	126 (12.9%)	103 (9.1%)	229 (10.8%)
Missing Info	9 (1.0%)	4 (0.4%)	13 (0.7%)
Restraint Type for Child Passenger			
Rear-Facing	56 (5.8%)	71 (6.2%)	127 (6.0%)
Forward Facing	358 (36.8%)	424 (37.3%)	782 (37.0%)
Belt Positioning Booster	157 (16.1%)	109 (9.6%)	266 (12.6%)
Shield Booster	17 (1.7%)	10 (0.9%)	27 (1.3%)
Lap & Shoulder Belt	175 (18.0%)	356 (31.3%)	531 (25.2%)
Lap Belt Only	75 (7.7%)	61 (5.4%)	136 (6.4%)
None	126 (12.9%)	103 (9.1%)	229 (10.8%)
Missing Info	9 (1.0%)	4 (0.4%)	13 (0.6%)
Restrained According to OHIO Law			
No	131 (13.5%)	93 (8.2%)	224 (10.6%)
Yes	832 (85.5%)	1,043 (91.7%)	1,875 (88.8%)
Missing Info	10 (1.0%)	2 (0.2%)	12 (0.6%)
Restrained According to NHTSA Recommendations^c			
No	547 (56.2%)	638 (56.1%)	1,185 (56.1%)
Yes	413 (42.4%)	493 (43.3%)	906 (42.9%)
Missing Info	13 (1.3%)	7 (0.6%)	20 (0.9%)

c = Recommendations based on the age/weight criteria from the National Highway and Traffic Safety Association (it excludes the height criterion for children 4-8 years old).

APPENDIX 3

TELEPHONE SURVEY

3a. Survey Tool

3b. Tables

Appendix 3a.

Child Restraint Usage Telephone Survey for the Treumart Fund – July 2002

Survey intro...Query about having children under the age of 12 living in the household.

- T1. What is your relationship to the children under 12 living in your household?
1. parent
 2. grandparent
 3. relative
 4. foster parent
 5. boy/girlfriend of parent
 6. other
- T2. Do you have child car seats or booster seats for them?
1. yes
 2. no (**skip to #4**)
- T3. Where do you use the seats in your vehicle? Do you use them in the back seat or front seat?
1. back seat
 2. front seat
- T4. Does your vehicle have an airbag on the passenger side?
1. yes
 2. no
 3. not sure
- T5. How many children aged 4-7 years old are living in your household?
- 1,2,3,4,5,6,7,8,9
 - 10=10 or more
 11. none
- T6. How many children aged 8-11 years old are living in your household?
- 1,2,3,4,5,6,7,8,9
 - 10=10 or more
 11. none
- T7. How often do the children aged 4 to 7 sit in a booster seat when riding in a vehicle?
1. never
 2. rarely
 3. some of the time
 4. most of the time
 5. all of the time
 6. doesn't ride in car
- T8. How often do the children aged 8 to 11 sit in a booster seat when riding in a vehicle?
1. never
 2. rarely
 3. some of the time
 4. most of the time
 5. all of the time
 6. doesn't ride in car

T9. How often do the children aged 4 to 7 use a seat belt when riding in a vehicle?

1. never
2. rarely
3. some of the time
4. most of the time
5. all of the time
6. doesn't ride in car

T10. How often do the children aged 8 to 11 use a seat belt when riding in a vehicle?

1. never
2. rarely
3. some of the time
4. most of the time
5. all of the time
6. doesn't ride in car

T11. How many children aged infant to 3 years old are living in your household?

- 1,2,3,4,5,6,7,8,9
10=10 or more
11. none (**skip to 14**)

T12. How often do they use child safety seats when riding in a vehicle?

1. never
2. rarely
3. some of the time
4. most of the time
5. all of the time
6. doesn't ride in car

T13. If the child is under the age of 1 and rides in a car seat, does the child ride facing the rear or facing forward?

1. rear facing
2. forward facing

T14. If the answers to questions 7-12 were **All of the time** or **Most of the time**.

Which of your children has the closest birthday to today's date? Thinking about that child, why do you use car seats, booster seats, or seat belts?

open ended; responses were categorized as follows:

1. research shows it saves lives
2. helps prevent injuries from air bags
3. vehicle equipped with automatic seat belts
4. it's the law
5. habit
6. other reason
7. safety reasons

T15. Other reason child uses a car seat, booster seat, or seat belt (T14.6 above).

open ended

T16. If the answers to questions 7-12 were **Some of the time, Rarely, or Never.**

Which of your children has the closest birthday to today's date? Thinking about that child, what are the barriers you face in using car seats, booster seats, and/or seat belts?

open ended; responses were categorized as follows:

1. cost
2. child resists
3. peer pressure from other adults
4. lack of room in vehicle
5. difficulty moving restraints from vehicle to vehicle
6. lack of law enforcement
7. already a safe car
8. don't feel they are needed
9. child is too big
10. child is too old
11. other reason

T17. Other barriers you face in using a car seat, booster seat, or seat belt (T16.11 above).

open ended

T18. Who or what would change your car restraint use?

open ended

T19. I'm going to read a list of some different people and organizations. Please tell me if you would consider taking their advice about child passenger safety by rating them as Believable, Neither Believable nor Unbelievable, or Not Believable.

source	1. believable	2. not believable	3. neither/nor
a. television			
b. radio			
c. newspaper			
d. internet			
e. fire/EMS			
f. police			
g. church			
h. parents			
i. relatives			
j. spouse			
k. friends			
l. daycare/school			
m. physician			
n. nurse			
o. other person/ organization			

T20. Other person/organization giving advice about child passenger safety (T19.O. above).

open ended

T21. Have you heard about the car seat check-ups that are being held throughout Cuyahoga County?

1. yes
2. no

T22. Have you or anyone you know had a car seat check-up?

1. yes
2. no

T23. Do you know that there is a subsidized car seat distribution program for low-income families? **(IF NO, ask if they would like the phone number: 216-844-2277.)**

1. yes
2. no

T24. Have you or anyone you know received a subsidized car seat?

1. yes
2. no

T25. How often do you wear a seat belt when driving or riding in a vehicle? Would you say you wear a seat belt...

1. never
2. rarely
3. some of the time
4. most of the time
5. all of the time

T26. Do you believe adults should wear seat belts all of the time?

1. yes
2. no
3. unsure

T27. Do you believe younger and small children should be in car or booster seats all the time?

1. yes
2. no
3. unsure

T28. Do you think seat belts protect you?

1. yes
2. no
3. unsure

T29. Do you think car or booster seats protect your children?

1. yes
2. no
3. unsure

T30. Do you think there should be a law requiring seat belt use?

1. yes
2. no
3. unsure

T31. Do you think there should be a law requiring car or booster seat use?

1. yes
2. no
3. unsure

T32. Lastly, I need to ask a few questions about you and your family for our statistical analysis. Into what age group do you fall?

1. 16-17
2. 18-24
3. 25-34
4. 35-44
5. 45-54
6. 55-64
7. 65 or older
8. refused

T33. What is your marital status?

1. single
2. married
3. divorced
4. widowed
5. refused

T34. What is the total number of children under the age of 18 living in your household?

- 1,2,3,4,5,6,7,8,9
- 10=10 or more

T35. What is the highest level of education you have completed?

1. less than high school
2. high school graduate
3. some college, no degree
4. 2-year or technical school graduate
5. 4-year college degree
6. some graduate level studies
7. master's degree
8. some post-graduate studies
9. doctoral degree (Ph.D.)
10. refused

T36. Into which of the following groups would your annual household income be found?

1. \$0-\$14,999
2. \$15,000-\$24,999
3. \$25,000-\$34,999
4. \$35,000-\$44,999
5. \$45,000-\$54,999
6. \$55,000-\$64,999
7. \$65,000-\$74,999
8. \$75,000-\$100,000
9. over \$100,000
10. refused

T37. Would you mind giving me your race?

1. Caucasian
2. African American
3. Hispanic
4. Asian
5. Native American
6. other
7. refused

T38. Other race (T37.6 above).

open ended

T39. Interviewer only (**do not ask**): gender

1. male
2. female



Table 3. Demographic data of parent populations and sample populations

Place	Population	Gender (%)		Ethnicity (%)				Female headed households w/ ch<18	Female headed households < poverty line	All households w/ ch < 18 below poverty line	Household income (parent median, sample model)
		Male	Female	White	Black	Hispanic	Asian				
Cuyahoga County sample	1,393,978	47	53	67	27	3	2	9	36.4	16.2	\$39,168
East Cleveland sample	400	28.5	71.5	79	13	4.5	.5	19	47.4	36.7	\$55,000-64,999
Brooklyn sample	27,217	44	56	5	93	0.8	0.2	11	16.5	6.9	\$20,542
	165	24	76	9	85.5	4	0				\$15,000-24,999
	11,586	48	52	93	2	4	2				36,046
	235	31	69	82	5	10	1				35,000-44,999

Table 4. Statistical tests related to demographic differences between survey groups.

independent variable	dependent variable	χ^2	degrees of freedom	p value	mode main	mode East Cleveland	mode Brooklyn
Survey Group (main, East Cleveland oversample, Brooklyn oversample)	age group	77.681	14	<.001	35-44	25-34	35-44
	marital status	115.74	8	<.001	married	single	married
	education level	94.806	18	<.001	4 yr. college	hs grad	hs grad
	income level	144.431	18	<.001	\$55-64,999	\$15-24,999	\$45-54,999
	race	408.509	14	<.001	White	Black	White
	gender	2.226	2	0.329	female	female	female

Table 5. Statistical tests related to demographic differences between survey groups.

independent variable	dependent variable	X ²	degrees of freedom	p value	Main	East Cl.	Brooklyn
Survey group (main, East Cleveland oversample, Brooklyn oversample)	always wears a seatbelt	12.338	2	0.002	73%	59%	74%
	restrains ch 4-7 in booster or belt	12.618	2	0.002	82%	69%	86%
	restrains ch 8-11 in booster or belt	4.291	2	0.117	76%	65%	75%
	has heard of car seat checks	31.851	2	<.001	74%	51%	73%
	has had a car seat check				26%	20%	29%
	has heard of subsidized seat program	9.804	2	0.007	50%	39%	39%
	has received a subsidized seat	19.557	2	<.001	9.50%	21%	8%
	believe adults should always wear belts	10.551	4	0.032	89%	81%	91%
	believe younger children should always use car/booster seat	18.173	4	0.001	93.5%	85.5%	94%
	think seat belts protect	24.944	4	<.001	89%	76%	92%
	think car/booster seats protect	24.142	4	<.001	94%	83%	95%
	should be a law requiring belt use	2.373	4	0.668	76%	72%	79%
	should be a law requiring css/booster use	12.234	4	0.016	84%	77%	88.5%

STRENGTHS AND LIMITATIONS

We obtained large sample sizes for both observational studies (714 vehicles, 973 children in Cuyahoga County and 805 vehicles, 1,138 children in Lucas County). Additionally, the telephone survey obtained information from 800 respondents in Cuyahoga County. The fact that similar findings were obtained from both the observational study and the telephone survey strengthens the belief that the results are representative for Cuyahoga County. Furthermore, the fact that similar results were obtained from the both observational studies (Cuyahoga and Lucas counties) also suggest that the usage rates may reflect that of other suburban counties in Ohio.

However, as with all studies, limitations in both the observational and telephone surveys do exist. Below is a list of potential limitations.

Forward-facing vs. Booster Seat Restraints

Forward-facing child restraints and some boosters look similar and/or some can be converted into belt-positioning booster seats. Thus, it is possible to misclassify the type of child restraint used. Furthermore, if a child was in a forward-facing car seat that converts into a booster and the observer did not note the presence of the 5-point harness, the child would be classified as not properly restrained.

Proper Type vs. Proper Installation

It is also important to note that this study was not designed to determine proper installation of the child safety seats. Therefore, it is possible that the correct restraint type was installed improperly. Some regional studies have demonstrated that as many as 90% of the child car restraints may be installed improperly. Evidence for this estimate was also suggested from the fact that among the 69% of the telephone respondents who have heard about car seat checkups, only 37% reported having or knew someone that had had one.

Age/Weight Restraint Recommendations

It is important to note (particularly in older children) that to accurately assess proper restraint use, it is necessary to incorporate the child's height. Thus, it is possible that some children may have been misclassified. However, the number of children this may have effected was small relative to the large percentage of children riding in improper child restraints according NHTSA's guidelines.

Reasons for Using/Not Using Restraints (Telephone survey only)

Although respondent's were asked why they used or did not use child restraints, the age of the child was not recorded, thus making it impossible to calculate age-specific reasons. However, in the event that the respondent reported only having children 0-3 or 4-7 or 8-11 (over 360 respondents), it is possible to evaluate responses specific to these three age groups.

Child/Driver's Race (Observational survey only)

Race was based on observation and not self-report. Because of the possibility of misclassifying someone, racial disparities in child restraint use could not be determined.

Missing Data (Observational survey only)

Although the amount of missing data was minimal (0-4% depending on the variable), it did occur. Two main reasons were identified that contributed to missing data. First, the data collection form was based on a nationally used format, it was congested and increased opportunities for missing data (particularly with driver specific information). Secondly, Observers reported that there were a few occasions where multiple cars arrived at the site simultaneously and/or there were multiple children within a vehicle making it difficult to document the restraint status of all children prior to them exiting the vehicle.

Sub-group Analysis

Data could not be analyzed at the site or city level (in most cases) because of the small number of observations obtained. Thus, any attempts made to draw conclusions at the site and/or city level may not be accurate.

Self-Reported Data (Telephone survey only)

As mentioned earlier in the report, self-reported data may lead to under/over reporting of a particular event. This may be partly responsible for why usage rates were not identical (in some case) between the observational and telephone survey, though results were similar in many cases.

Potential Bias (Telephone survey only)

Differences between the observational and telephone surveys may also be attributed to selection bias. Telephone surveys are naturally biased in favor of those who have telephones; as a result, the surveys populations may tend to be somewhat more affluent than the general community from which the numbers were drawn. Additionally, at least two other county-wide telephone surveys regarding seat belt use and child passenger safety have been conducted within the past few years. Therefore it is possible, though highly unlikely, that if the same person was sampled for each of the surveys, they may change responses since questioning the same person too many times about the same thing could cause someone to change their response.

APPENDIX 5

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Greater Cleveland SAFE KIDS/ Safe Communities Coalition MEMBERSHIP APPLICATION

The Coalition is designed to bring community partners together in working collaboratively to improve the health and wellbeing of Greater Clevelanders across the lifespan and serve as a resource for organizations, agencies, companies, and individuals interested in injury prevention and health promotion.

Signature Required for Membership

Date

Name: _____

Lead Agency: _____

Address: _____ City: _____ State: _____ Zip: _____

Work Phone Number: _____ Fax Number: _____

Email Address: _____ Website Address: _____

Risk Area (s) Expertise or Interest:

- | | |
|---|--|
| <input type="checkbox"/> Traffic Crashes | <input type="checkbox"/> Falls |
| <input type="checkbox"/> Bicycle Injuries | <input type="checkbox"/> Choking/Poisoning |
| <input type="checkbox"/> Child Passenger Safety | <input type="checkbox"/> Unintentional Firearm Incidents |
| <input type="checkbox"/> Occupant Protection | <input type="checkbox"/> Burns/Fires |
| <input type="checkbox"/> Drowning | <input type="checkbox"/> Impaired Driving |
| <input type="checkbox"/> Pedestrian Injuries | <input type="checkbox"/> Other: (Please specify) _____ |

I would be interested in participating on the following Action Teams:

- | | |
|---|---|
| <input type="checkbox"/> Child Passenger Safety | <input type="checkbox"/> Bike & Pedestrian Safety |
| <input type="checkbox"/> Gun Safety | <input type="checkbox"/> Fire Safety |
| <input type="checkbox"/> DUI Reduction | <input type="checkbox"/> Speed, Reckless & Aggressive Driving Reduction |
| <input type="checkbox"/> Public Relations | <input type="checkbox"/> Fund Raising |

May we list your organization as a Greater Cleveland SAFE KIDS/Safe Communities member in local literature? Yes No

Membership Status: check one Active Member Mailing List Only

Please mail or fax application to:
Greater Cleveland SAFE KIDS/Safe Communities Coalition
c/o the Rainbow Community Safety and Resource Center
11100 Euclid Avenue, WRN B53, Cleveland, OH 44106-6039
Phone 216-844-7352 FAX 216-844-7841

