SECTION ON INJURY AND POISON PREVENTION

SCHEDULE

SATURDAY, OCTOBER 9, 1999

Section on Injury and Poison Prevention
8:30 a.m.–6:00 p.m.
Conference Theatre Room, The Grand Hyatt

Scientific Abstract Session I

Moderator: Flaura K. Winston, MD, PhD, FAAP

1) 8:30 a.m. School Commuting: The Proper Focus of Pediatric Injury Prevention
   Doug Holt, BS; Nadia Tatje; Eric Griffin; Elisa Moll, BA; Arvind Cuaam, PhD; Flaura K. Winston, MD, PhD, FAAP. TraumaLink, The Children’s Hospital of Philadelphia and The University of Pennsylvania, Philadelphia, PA.

2) 8:45 a.m. Injury Mechanisms of Children in Side Impacts Collisions
   Shannon Morris, BS; Kristy Arbogast, PhD; Flaura K. Winston, MD, PhD, FAAP. TraumaLink, The Children’s Hospital of Philadelphia and the University of Pennsylvania, Philadelphia, PA.

3) 9:00 a.m. Child Safety Seats Non-Users: What Doesn’t Click
   Phyllis Agran, MD, MPH, FAAP; Diane Winn, RN, MPH; Craig Anderson, PhD, DHSc. Health Policy and Research Department of Pediatrics, University of California at Irvine, Irvine, CA.

4) 9:15 a.m. Is the Backseat Best? Predictors of Seat Belt Use Among Low Income Latino School-Aged Children
   Elizabeth A. Edgerton, MD, MPH, FAAP; Naihwa Duan, PhD; Steven Asch, MD, MPH. Dept. Peds., Harbor–UCLA Med. Center., Torrance, CA, RAND Corporation, Santa Monica, CA, and Dept. of Medicine, UCLA School of Medicine, Los Angeles, CA.

5) 9:30 a.m. Barriers to Optimal Restraint for Children Under Age 9
   Elisa Moll, BA; Esha Bhatia, MA; Gwen Miller, MA; Flaura K. Winston, MD, PhD, FAAP; Nancy Kassam-Adams, PhD; Dennis R. Durbin, MD, MS, FAAP. Children’s Hospital of Philadelphia, The University of Pennsylvania, Philadelphia, PA and Response Analysis Corporation, Princeton, NJ.

6) 9:45 a.m. Impact of 70 MPH Speed Limit on Alabama Interstate Fatalities
   Samuel T. Bartle, MD, FAAP; Steven Baldwin, MD; Carden Johnston MD, FAAP; William King, RPH, MPH, DrPH. Pediatric Emergency Medicine Children’s Hospital, The University of Alabama at Birmingham.

10:00 a.m. Break

10:15 a.m. The Best Articles of 1997 on Injury and Poison Prevention
   Jane Knapp, MD, Children’s Mercy Hospital, Kansas City, MO Karen Sheehan, MD. Children’s Memorial Hospital, Chicago, IL.

Scientific Abstract Session II

Moderator: Flaura K. Winston, MD, PhD, FAAP

7) 3:15 p.m. Talking with Kids About Tough Issues
   Lois Salisbury, MD; Vesa Zimmerman, Peggy McHugh, Henry J. Kaiser. Children Now, New York University Medical School, Bellevue Hospital Center, New York, NY.

8) 3:30 p.m. Injury Reduction and Bounce Characteristics of Safety Baseballs and Acceptability by Youth Leagues
   Loren G. Yamaoto, MD, MPH, MBA, FAAP; Alson S. Inaba, MD, FAAP. Emergency Services, Kapiolani Medical Center For Women And Children Department of Pediatrics, University of Hawaii John A. Burns School of Medicine Honolulu, Hawaii.

9) 3:45 p.m. In Vitro Acetaminophen Absorption by Diatomaceous Earth Versus Activated Charcoal
   Valerie Chock, MD; Loren G. Yamaoto, MD, MPH,FAAP. University of Hawaii, John A. Burns School of Medicine, and Emergency Services, Kapiolani Woman’s and Children’s Medical Center, Honolulu, HI.

10) 4:00 p.m. Love Our Kids Lock Your Guns: A Community Firearm Safety Education and Gun Lock Distribution Program
    Tamara Coyne-Beasley, MD, MPH; Luenda Charles, MPH; Tojnt Ajose; Victor Schoenbach, PhD. Schools of Medicine and Public Health, University of North Carolina, Chapel Hill, NC.

11) 4:15 p.m. Passing A Child Firearm Security Law: The Toledo Experience
    Sanford R. Kimmel, MD, FAAP, FAAFP, Toby Hoover. Dept. of Medicine, Medical College of Ohio and Ohio Coalition Against Gun Violence, Toledo, OH.

12) 4:30 p.m. Poisoning Prevention Education Following Pediatric Ingestions
    Raymond Pitetti, MD; Frank Marre, MD; Edward Krenzelok, PharmD. Department of Pediatrics, University of Pittsburgh School of Medicine, Pittsburgh, PA.

13) 4:45 p.m. Enhancing Poison Prevention by Pre-Emp- tive Family Education: A Randomized Prospective Study
    Usha P. Reddy, MD, FAAP, Shirley Yee; Joanne Evanoff, Maria Puigbonet-Crawford, MSc;
P1) Response to a Commercial Back-up Warning Device—Implications for Pediatric Injury
Robert Sapin, MD, FAAP; Joan Roux, BSN; Lynne Fullerton, PhD. Department of Emergency Medicine, University of New Mexico School of Medicine, Albuquerque, NM.

P2) Field Performance of LeadCare® Handheld Blood Lead Analyzer as Assessed by the National Blood Lead Proficiency Testing Program
Jane M. Maney, MT(ASCP). University of Wisconsin-Madison, Wisconsin State Laboratory of Hygiene (WSLH), Madison, WI.

P3) Evaluation of Filter Paper Blood Lead Methods: Results of a Pilot Proficiency Testing Program
Jane M. Maney, MT(ASCP). University of Wisconsin-Madison, Wisconsin State Laboratory of Hygiene, Madison, WI.

P4) A Pediatric Toxicology Consultation Service: The First 1000 Days
Carl R. Baum, MD; Steven E. Krug, MD, FAAP. Division of Emergency Medicine, Children's Memorial Hospital, Northwestern University Medical School, Chicago, IL.

P5) The Paradox of Low Speed and High Severity Pediatric Injuries Among Young Children
Phyllis Agron, MD, MPH, FAAP; Diane Winn, RN, MPH and Craig Anderson, PhD, DHSc. Health Policy and Research and Department of Pediatrics, University of California at Irvine, Irvine, CA.

P6) Association Between Positive Serum βhCG Test and International Drug Ingestions in Hospitalized Adolescent Females
Gary B. Zuckerman, MD; Joseph F. Perno, MC; Barbara E. Mahon, MD. Division of Pediatric Critical Care Medicine, Department of Pediatrics, Robert Wood Johnson Medical School, New Brunswick, NJ.

Sharmila Mudgal, MD, MPH; Letitia K. Davis, ScD. Department of Preventive Medicine, Carney Hospital/Tufts University Program Occupational Health Surveillance Program, Massachusetts Dept. of Public Health, Boston, Massachusetts.

P8) Strokes Following Penetrating Trauma of the Oropharynx
Madeline Matar, Joseph, MD, FAAP, FACEP; Susan J. Lewis, MD. Department of Emergency Medicine, Division of Pediatric Emergency Medicine, University of Florida Health Science Center, Jacksonville, FL.

P9) Pediatric Burns—Seven Years' Experience in a Tertiary Pediatric Medical Center in Israel

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SCHOOL COMMUTING: THE PROPER FOCUS OF PEDIATRIC INJURY PREVENTION?

Background: Pedestrian crashes are among the leading causes of serious injuries in Philadelphia's children. In response, Philadelphia has undertaken the installation of flashing yellow lights around schools as a possible countermeasure. This intervention is based on the hypothesis that the majority of pedestrian crashes were related to schools. In this study, it was undertaken to examine the relationship between pedestrian crashes and schools.

Methods: The Injury Circumstance Evaluation (ICE) system is a surveillance system for children ages 18 and under seeking care at a Level I Pediatric Trauma Center for traffic injuries. Those who sustained injuries as pedestrians were the focus of this study. Pre-hospital care providers, injured children, witnesses, and relatives were surveyed for details of the circumstances surrounding the incident. Additionally, a sample of 145 children was asked supplemental questions regarding supervision and pedestrian habits. Police accident reports and EMS run sheets were reviewed for the location of the crash. Crash locations were plotted by means of a computer-mapping program. Further information from the Philadelphia Police Accident Investigation Division provided a comprehensive report on a sample of the crashes. Medical records provided injury information.

Results: 1269 child traffic injuries were captured by the ICE system between November 1995 and November 1998. Of these, 503 pedestrians were enrolled. 48% of child pedestrians suffered injuries that required hospital admission. Additionally, 50% of the child pedestrians suffered AIS 2 or greater injuries. Of the 503 pedestrian crashes, 400 locations were available. Of these, only 7% of the crashes occurred within 300 feet (one block) distance to the nearest school, within the approximate zone of the newly installed flashing yellow lights. Correspondingly, from the sample group of 145 asked additional questions, only 10% reported that the crash happened during their walk to or from school. The majority of crashes were not related to school: 25% occurred during unsupervised in-street play and 49% occurred during street crossings that were not associated with going to and from school.

Conclusions: The vast majority of child pedestrian injuries in Philadelphia are not occurring in the close proximity of schools, nor are they related to commuting to or from schools. Child pedestrian injury prevention should focus on child pedestrian behaviors that put children at risk. In Philadelphia, these behaviors include unsupervised in-street play and street crossings. Interventions should be expanded beyond the school environment to address the actual causes of injury.

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INJURY MECHANISMS OF CHILDREN IN SIDE IMPACT COLLISIONS
SD Morris, KB Arbogast, FK Winston

Background: Frontal impacts occur twice as often as side impacts, however, the fatality rate is twice as high in side impact crashes. Recently, significant efforts have been focused on redesigning vehicles to better protect their occupants in side impacts. Very little is known about side impact crashes and their injury implications for child occupants; most attention has been focused on adult response. This study used crash investigations of side
impact collisions involving children to identify occupant contact points and injury mechanisms in order to enhance the vehicle redesign process.

Methods: A case-series analysis of side impact crashes involving children was conducted. Cases were identified through the Partners for Child Passenger Safety Surveillance System, an electronic transfer of insurance claims data for crashes involving children from State Farm Insurance Companies to The Children's Hospital of Philadelphia. On a daily basis, injury and vehicle damage descriptions (included in the claims data) were reviewed to select potential cases for a full-scale on-site crash investigation.

Results: Seventy-one children, 0–15 years of age, were involved in 43 side impact crashes. The average (+/−sd) delta V of the crashes was 19.5 kmph (+/−13) with a range of 3–62 kmph. Six children were unrestrained, 11 were restrained with a lap belt, 37 were restrained using a lap/shoulder belt and 17 children were restrained in a child safety seat. Thirty-four of the children received no medical treatment, 27 were treated and released, and 8 children were hospitalized. The face, upper extremity, lower extremity and head were the most common injury locations. Of the 106 injuries sustained by these 71 children, 18 injuries (from 7 children) were AIS2 or greater (AIS2-14, AIS3-3, AIS5-1) with the head, extremities and abdomen being the most common location for these injuries. 94% of these injuries were due to direct contact. The interior door surface, belt webbing, and the ground were the most common injury sources.

Discussion: This study identified contact points and injury mechanisms for children in side impact crashes over a range of crash severities. Previous work has shown that head injury is over represented in serious injuries when looking at all directions of impact. These cases, however, demonstrate an emphasis on serious abdominal injuries. Direct contact with the interior door surface below the window was identified as one primary source of these serious injuries to children. Presently, this vehicle area is not an emphasis of the current side impact improvement efforts. Vehicle manufacturers must focus on designing this area of the vehicle to protect a child’s soft abdomen.

CHILD SAFETY SEAT NON-USERS: WHAT DOESN’T “CLICK.”

Phyllis Agran, MD, MPH, FAAP; Diane Winn, RN, MPH and Craig Anderson, PhD, DHSc, Health Policy and Research and Department of Pediatrics, University of California at Irvine, Irvine, CA.

Background: California requires children ≤4 yr. and ≤40 lbs. to be properly restrained in child safety seats (CSS’s).

Methods: We conducted focus groups (2 English, 1 Spanish) with individuals ticketed for violation of the child restraint law in order to identify and explore child/patient/family/psychosocial factors and other domains related to child passenger safety and non-use of CSS’s.

Results: There were 24 participants (18 parents, 20 drivers). 83% of the children were 2 & 3 yr olds, 14/24 were boys. Nearly all knew children should be restrained but there was variability in knowledge regarding the specifics of the child restraint law. Almost all of the parents owned CSS’s. Most were inconsistent users with a number moving children out of CSS’s early. Factors influencing non-use included: 1) Lifestyle circumstances (i.e. lack of planning and routine, multiple caregivers, lack of reliable transportation, finding it a bother); 2) Circumstances of particular trip (i.e. car broke down, unexpectedly getting a ride, car seat in another car); 3) Child’s behavior (i.e. climbed out of seat, resisting as toddler, mimicking older children); 4) Non-parent or non-driver; 5) Parenting style (i.e. lack of consistency, not set limits); and 6) Risks related to CSS non-use not perceived (i.e. receiving a ticket, involvement in a crash, short trip, seat belt adequate).

Conclusions: For these non-users, the competing factors identified in the focus groups outweighed the benefits of CSS use. Non-ownership was not an issue. These findings have implications not only for CSS use, but also for use of other injury prevention devices.

IS THE BACKSEAT BEST? PREDICTORS OF SEAT BELT USE AMONG LOW INCOME LATINO SCHOOL-AGED CHILDREN

Elizabeth A. Edgerton, MD, MPH, FAAP, Naihua Daun, PhD and Steven Asch, MD, MPH. Dept Peds, Harbor-UCLA Med Ctr, Torrance, CA, RAND Corporation, Santa Monica, CA, and Dept of Medicine, UCLA School of Medicine, Los Angeles, CA.

Background: Motor vehicle injuries are the leading cause of death among school-aged children in the United States. Children living in poverty are twice as likely to die from motor vehicle injuries. Among injured children in San Diego, Hispanics were 4 times less likely to wear a seat belt than non-Hispanic whites. Seat belts are an effective method of protection in motor vehicle collisions, but little is known about their use among low-income Latino school-aged children traveling to and from school.

Methods: We obtained unobtrusive observations of seat belt use among children at 9 predominately low-income Latino elementary schools over 7 months in 1997-98. The dependent variable was seat belt use among school-aged children and the independent variables included vehicle type, driver sex and seat belt use, passenger sex, estimated age and position in vehicle. Univariate analysis is presented as relative risk (RR).

Results: We observed 2,231 vehicles carrying 3,651 school-aged children between 5-12 years of age. During unobtrusive observations, seat belt status was determined for 96% of front seat occupants and 56% of backseat occupants. For these vehicles, 66% of drivers and 22% of school-aged children were belted. Among school-aged children, 49% were female, 68% traveled in a 2- or 4-door vehicle, 54% traveled only with the driver, and 56% traveled in the backseat. Comparing the percentage of children belted in particular conditions, we found certain situations more likely to be associated with seat belt use. Children traveling in a vehicle other than a truck (30% vs 19%) were 1.6 times more likely to wear a belt. Children traveling only with a driver versus other passengers (40% vs 24%) were 1.7 times more likely to be belted. Children traveling in the front seat compared to the backseat (40% vs 14%) were 2.8 times more likely to be belted. Children traveling with a belted driver (42% vs 7%) were 6 times more likely to wear a belt.

Conclusion: More than 50% of these children were traveling in the backseat as recommended by NHTSA and AAP, but only 14% were belted. Traveling with a belted driver was the strongest predictor of seat belt use for a child, but a third of drivers were unbelted. Current national passenger safety campaigns may not effectively target this population, and using community-based and culturally tailored educational approaches may be more appropriate for this high-risk group. Project funded by the Robert Wood Johnson Clinical Scholars Program.

BARRIERS TO OPTIMAL RESTRAINT FOR CHILDREN UNDER AGE 9


Background: Barriers exist to the optimal restraint of children in motor vehicles. According to the National Highway Traffic Safety Administration, in 1997, 55% of children ages 0-4 and 45% of children ages 5-9 killed in crashes were restrained. Many of these
restrained children were prematurely graduated from child safety seats to vehicle safety belts. The reasons for premature graduation are not well understood. This study involved parents of restrained children to examine optimal restraint for children under age 9.

Methods: Focus groups of approximately 10 parents each were held in Pennsylvania and New Jersey. The parents represented a mixture of household size and composition, employment, and income. Participants were recruited using a flyer that was distributed at local child care programs and elementary schools and using lists maintained by the focus group facilities. Three different groups were conducted: parents of children ages 1–4 who had been restrained in vehicle safety belts at least once or twice in the previous 6 months; parents of children ages 5–9 who had been restrained in vehicle safety belts at least once or twice in the previous six months; and parents of children ages 5–9 who had been restrained in booster seats at least once or twice in the previous six months. Topics explored included parents' perceptions of the risk of their child being injured in a motor vehicle crash; parents' awareness of recommended best practices for child restraint in a motor vehicle and the possible consequences of not implementing these practices; and parents’ attitudes towards booster seats.

Results: Parents who had restrained their children in booster seats differed from the other two groups in several key ways: they were more aware of the child passenger safety laws in their state, they were more likely to have sought out information on child passenger safety, and they perceived a greater risk of their child being injured in a motor vehicle crash. Factors that influenced how children were restrained and where they were seated in a vehicle for parents in all three groups included: (1) the particular circumstances of the trip, such as the number or type of passengers; (2) negative attitudes towards booster seats; and (3) awareness of recommended best practices and the potential consequences of not implementing these practices.

Conclusions: This study indicates that parents and caregivers appear to need more information about the optimal restraint of children in motor vehicles, including information about potential consequences of premature graduation to seat belts, the risks of motor vehicle injury, and specific information on proper positioning and the purpose of booster seats. Future research should, therefore, be directed to understanding how parents determine restraint for their children in order to assist in the development of more targeted interventions to promote optimal restraint.

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IMPACT OF 70 MPH SPEED LIMIT ON ALABAMA INTERSTATE FATALITIES

Samuel T. Bartle, MD, FAAP, Steven Baldwin, MD, Carden Johnston, MD, FAAP, William King, RPh, MPH, DrPH.

Background: Changes in speed limits are associated with the rate and the number of deaths due to motor vehicle crashes. In May 1996 Alabama increased the maximum allowed speed on its Interstate highways from 65mph to 70mph. This study examines the number and rate of fatalities on the Interstate, Federal, and State roadways of Alabama before and after the speed limit change.

Methods: This study uses the motor vehicle crash fatality data and the miles vehicle traveled (VMT) as reported in the annual Alabama Traffic Accident Facts Report, a joint publication of the Departments of Transportation, Public Safety, Economic & Community Affairs, and Education. The fatality rate is defined as the number of fatalities per VMT. This study examined the years 1984 through 1997. The number of fatalities and the fatality rate for the year after the speed increase is compared to that which is predicted based on the trend of the preceding thirteen years. Analysis was performed using the EpiStat software program with the One Sample Test for Normality and the Test for Outliers.

Results: There was 174 deaths on Alabama Interstate highways for 1997, the first full year of the higher speed limit. This is significantly larger (p < 0.001) than predicted number for this period based on the trend of the preceding years. The 1997 fatality rate on Alabama Interstate highways is 3.259 deaths/VMT (p < 0.05), significantly higher than the trend of the previous thirteen years would suggest.

Conclusion: The number of Interstate highway fatalities and the fatality rate for 1997, the year after the implementation of the 70mph speed limit, is significant. Other variables affecting fatality include newer safety restraints and safer vehicles or external factors such as better roads are considered to influence all road types in a similar manner. The data examined here strongly suggest that a higher allowable speed is an unique influence on interstate travel fatalities.

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TALKING WITH KIDS ABOUT TOUGH ISSUES

Lois Salisbury, Children Now, Veva Zimmerman, MD, New York University Medical School and Peggy McHug, MD. Bellevue Hospital Center, (Sponsored by Children Now and The Henry J. Kaiser Family Foundation).

Background: Children today are confronting issues about sex, relationships, violence, drugs and alcohol at increasingly early ages. Experts identify ages 8–12 as an important “window of opportunity” when children want to hear about tough issues from their parents. Parents say they would like more information about how and when to raise these issues from their doctors. The American Academy of Pediatrics is an endorser of this national initiative.


Results: The survey revealed that families are still waiting too long and not talking enough when it comes to what kids say they need to know. Kids ages 10–12 say they personally want more information about how to protect against HIV/AIDS (50% of kids want more information); what to do if someone brings a gun to school (50% of kids want more information); how to handle pressure to have sex (44% of kids want more information); how to know when you are ready to have sex (43% of kids want more information); and how alcohol and drugs might affect decisions to have sex (43% of kids want more information). More than 10–12 year olds are steering clear of some of the more difficult conversations about sex, including how to handle peer pressure to have sex (54% of parents have not discussed); how to know when you are ready to have sex (50% of parents have not discussed); how alcohol and drugs might affect decisions to have sex (50% of parents have not discussed) and how to prevent pregnancy and STDs (38% of parents have not discussed).

Conclusion: Parents want to protect their kids, educate them, and impart their values, but they express uncertainty about how and when to do so. Pediatricians have the unique opportunity to encourage parents to begin having conversations with their child about sex and other tough issues. This national initiative supports doctors in this effort by providing a free parent booklet in English and Spanish for their distribution. Talking with kids early and often about tough issues is a powerful form of prevention—a genuine deterrent to risky teen-age behavior.

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INJURY REDUCTION AND BOUNCE CHARACTERISTICS OF SAFETY BASEBALLS AND ACCEPTABILITY BY YOUTH LEAGUES

Loren G. Yamamoto, MD, MPH, MBA, FAAP, Alson S. Inaba, MD, FAAP. Emergency Services, Kapiolani Medical Center For Women And Children Department of Pediatrics, University of Hawaii John A. Burns School of Medicine Honolulu, Hawaii.
Background: The only reasonable way to reduce the potential for ball-related youth baseball injuries sustained by the defensive players (the majority of ball-related injuries) is to make the ball less injurious. AAP’s 1994 statement on youth baseball injuries in this regard reads, “Consideration should be given to utilizing low-impact NOCSAE-approved baseballs and softballs for children 5 to 14 years of age, if these balls demonstrate satisfactory playing characteristics and reduce injury risk.” A variety of studies should be undertaken to determine the efficacy of low-impact balls in reducing serious impact injuries. The purpose of this study, in accordance with this AAP policy, is to investigate: A) injury reduction potential of softer baseballs, B) their bounce characteristics, and C) their acceptability by youth leagues. Baseball coaches have typically not liked safety baseballs because of their noticeably different bounce characteristics and the lack of sound (“crack”) upon impact with the bat.

Methods: A) Two models were used to assess impact damage by four different baseballs (1 standard ball and 3 safety balls). Baseballs were dropped from a standard height onto aluminum soft drink cans and clam shells to compare crush height differences and frequency of shattering, respectively. Three other models are proposed, but are pending completion at the time of this abstract. B) Ball bounce characteristics were measured on two playing surfaces from a vertical drop, a slow throw and a fast throw. C) A letter from the local AAP chapter supporting the use of safety baseballs was sent to the Little League baseball presidents in the state. A self-addressed stamped survey card was included to survey the frequency of previous safety baseball use and their willingness to use safety baseballs more often in the future.

Results: A) Can crush heights (300 drops) and shell shatter frequencies (50 drops) were highest with the standard baseballs and significantly lower for the safety baseballs (p < 0.001 and p = 0.0003, respectively). B) Safety baseballs bounced higher after vertical drops and slow throws, but during fast throws, the bounce heights were similar. C) Out of 27 survey cards sent out, 6 were initially returned. After a second request, 7 more returned. Nine respondents indicated that they were already using safety baseballs for the younger players. None of the 13 respondents indicated that they were planning to expand the use of safety baseballs in their leagues.

Conclusion: Safety baseballs are less injurious in these models. Safety baseballs have different bounce characteristics during vertical drops and slow horizontal travel. But where the bounce is most critical, during fast horizontal travel, the bounce characteristics are not different. Youth baseball league officials are not very willing to expand the use of safety baseballs. There is no justifiable reason to continue to withhold the use of safety baseballs.

LOVE OUR KIDS LOCK YOUR GUNS: A COMMUNITY FIREARM SAFETY EDUCATION AND GUN LOCK DISTRIBUTION PROGRAM


Background: Annually, approximately 40,000 people die from intentional and unintentional firearm injuries, as when a curious child plays with a loaded firearm. The vast majority of unintentional injuries occur in the home, where approximately one out of three handguns are kept loaded and unlocked. In the absence of anticipated industry-wide improvements in safer gun design, many public health professionals have begun to advocate firearm safety counseling and the use of gun and trigger locks. The purpose of this project is to determine if the provision of firearm safety education by trained providers, distribution of free gun locks, and follow-up result in safer gun storage practices among participants.

Methods: Participants for the pilot study in a small city were recruited through a multimedia campaign utilizing politicians, a sports team, the police department, a pediatrician and other influential individuals to heighten community awareness of firearm safety and to publicize the event. Randomly selected registered gun owners were also sent letters about the event, which was held at an outdoor shopping mall during the weekend. Participants filled out a modified STOP2 survey to assess their family’s risk of firearm injury, received individualized firearm safety counseling, and a gun lock whose use was demonstrated on a firearm comparable to the participant’s. Consent was obtained for follow-up telephone interviews at three and six months to evaluate the program’s impact.

Results: The 112 gun owners who participated were 18–81 (mean 45) years old; 63% were male, 60% had education beyond high school, 59% were white, 57% had an income above $30,000, and 48% had a partner and children. 74% of the participants reported owning a gun for protection. Three-month telephone interviews were completed with 82 participants (73%) who had consented to follow-up. At the 3 month interview, 75 participants...
(91%) said the counseling and educational materials were helpful; 77% (up from 47% at baseline) reported having their guns locked up. 62/82 participants (76%) reported using the gun lock(s) without problems. There were smaller increases in the percentages who said they kept their ammunition locked and stored separately (74%, up from 69%) and that they stored their gun unloaded (72%, up from 63%).

Conclusions: These pilot data suggest that a community-wide awareness program using a high profile, multimedia, public education campaign, individualized firearm safety counseling, and gun lock distribution with demonstration of use may promote safer firearm storage. Longer follow-up, validation of self reports of safer storage practices, and monitoring firearm injury rates after an intensive and extensive campaign are needed to establish the public health potential of this approach.

11 PASSING A CHILD FIREARM SECURITY LAW: THE TOLEDO EXPERIENCE
Sanford R. Kimmel, MD, FAAP, FAAFP and Toby Hoover. Dept. of Family Medicine, Medical College of Ohio and Ohio Coalition Against Gun Violence, Toledo, OH.

Background: Firearms are the second leading cause of injury-related deaths in the United States, killing over 5,000 children each year. The presence of guns in the home increases the risks of homicide and suicide as well as unintentional injuries. Concerned community groups sought to enact legislation preventing access to firearms by children.

Methods: In January of 1997, the Mayor announced four proposals to City Council recommended by the Coalition Against Gun Violence. These ordinances would prevent access of children to firearms, ban Saturday Night Specials and assault weapons, and register weapons, including secondary sales. After initial rejection by Council, the Coalition worked with the Medical College of Ohio and Mercy Health Partners to inform and educate the community about the hazards of firearms. 10,000 brochures describing the dangers of guns around children and asking that guns be locked up were distributed in schools, police programs and at community events. In July, 1998 the ordinances were reintroduced to City Council. Expert testimony supporting the ordinances was obtained from the city law department, the Chief of Police, the Victims Assistance Program, the Ohio Public Health Association, a trauma nurse, and professors of health promotion, constitutional law, sociology/crimal justice, family medicine, and members of the clergy. The most moving testimony came from victims and their families. The Council asked many questions including those about the local incidence of gun violence affecting children. Answers to these questions and clarification of the ordinances were subsequently made to the President and the Clerk of Council. These efforts continued after the opponents to the gun ordinances presented their views.

Results: In January 1999, the Toledo City Council unanimously passed Section 549.26 of the Municipal Code, Failure to Secure Firearms, after adding multiple amendments. Ordinance No. 32-99 states: “Except as provided in this section, no person shall knowingly store or leave a loaded firearm, or an unloaded firearm accompanied by ammunition, in any location where the person knows or reasonably should know that any person under sixteen years of age is likely to gain possession of such firearm.” Exceptions include firearms secured with a locking device to prevent discharge, firearms which are stolen, firearms used under supervision for shooting and hunting, and those which the owner has at hand based on reasonable cause to believe a threat of criminal attack exists to his person, property, or family.

Conclusions: The passage of a firearm security ordinance requires the cooperative efforts of many groups to educate the community, its leaders, and its representatives. Efforts to promote passage of the remaining ordinances continue.

12 POISONING PREVENTION EDUCATION FOLLOWING SERIOUS PEDIATRIC INGESTIONS
Raymond Pitetti, MD, Frank Maffei, MD, Edward Krenzelok, PharmD. Department of Pediatrics, University of Pittsburgh School of Medicine, Pittsburgh, Pa.

Background: Childhood poisonings remain a significant cause of morbidity and hospital cost. Education remains the cornerstone in the prevention of serious ingestions. Due to a risk of subsequent ingestions, preventive education is especially important following an initial ingestion. Recent data suggests that preventive education is often not provided to patients seen in an outpatient setting following accidental poisoning. This study reports on how often preventive education was provided to parents and children admitted to an urban children’s hospital following a serious ingestion.

Methods: Retrospective chart review of accidental pediatric ingestions requiring admission from January 1996 through November 1997.

Results: A total of 106 patients (59 males, 47 females) were identified. Ages ranged from 10 months to 8 years (median 2 years). Extensive chart review failed to identify documentation of preventive education in 41 children (39%). Fifty-six patients were admitted to the pediatric ward, thirty-three to the pediatric intensive care unit (PICU), and seventeen to the otolaryngology service for direct laryngoscopy and bronchoscopy (DLB) following a caustic ingestion. No documentation of preventive education was found in 16 of 56 (28%) ward patients, 12 of 33 (36%) PICU patients and 13 of 17 (76%) patients requiring DLB. A significant difference was found between the three groups (Chi-square p = 0.002). Pairwise comparison revealed a significant difference in documentation in ward patients vs. DLB patients (p < 0.0001) and in PICU patients vs. DLB patients (p = 0.007).

Conclusion: Our data suggests either missed opportunities in post-poisoning preventive education or documentation failures. Post-exposure preventive education and documentation of such may be improved by implementing a standard post-poisoning discharge packet. Such a packet would be reviewed with the caretaker by a health care provider and would include a safety checklist, syrup of ipecac, poison center stickers and slide locks for medicine cabinets.

13 ENHANCING POISON PREVENTION BY PRE-EMPTIVE FAMILY EDUCATION: A RANDOMIZED PROSPECTIVE STUDY
Usa P. Reddy, MD, FAAP, Shirley Yee, Joanne Evanoff, Maria Puigbonet-Crawford, MSc, Brian Shaw, MD, Angus Warner, Derek Stephens, MSc, William Mountststephen, MD, FAAP. Hospital For Sick Children, University of Toronto, Toronto, Ontario, Canada.

Background: Traditional modes of dispensing safety information to caregivers and children include distribution of pamphlets and public service announcements. We propose that emergency department (ED) encounters can serve as a vital opportunity to direct awareness of poison prevention safety information to caregivers and children. Poison and injury prevention educational materials are likely to produce maximal effect if multiple modalities of educational tools are used and targeted at both caregivers and children during emergency department encounters. The specific aim of our study is to compare the effectiveness of an educational program directed at caregivers and children during an emergency department encounter and a scheduled general pediatric office encounter. We questioned if inclusion of an animated educational poison safety videotape would enhance written safety materials in increasing awareness of parents and children about accidental
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RESPONSE TO A COMMERCIAL BACK-UP WARNING
DEVICE-IMPLICATIONS FOR PEDIATRIC INJURY
PREVENTION

Joan Roux, BSN; Robert Sapien*, MD, FAAP; Lynne Fullerton, Ph.D. Department of Emergency Medicine, University of New Mexico School of Medicine, Albuquerque, New Mexico, USA.

Background: Injuries from motor vehicles are the leading cause of death in children, and pedestrian injuries account for 35-40% of these deaths. Children under 5 years of age tend to be injured more in non-traffic settings. Although the literature discusses back-up warning devices as an injury prevention modality, there is no specific data on the efficacy for this age group. Our objective was to determine children’s response to commercial warning alarms in a mock pedestrian versus motor vehicle setting.

Methods: Preschool children were asked to walk behind a stationary vehicle twice. The first time no alarm sounded. The second time the vehicle was placed in reverse gear and an alarm sounded. The children’s responses were recorded by video camera. A positive response was considered demonstration of avoidance behavior by the child. Location and distance where the response occurred were measured. Other responses such as merely acknowledging the alarm were also recorded. Responders versus non-responders were compared by age, gender, distance to response, and Briggance score.

Results: Thirty children completed the study. Participants ranged in age from 38–61 months, with a median age of 53 months. More than half (57.6%) of participants were male. Briggance scores ranged from 55%–100%. The distribution of the scores were right skewed, with a median of 84%. None of the 33 children responded with avoidance behavior. Eighteen (55%) acknowledged the back-up warning device as evidenced by looking or hesitation in their gait. Participants who acknowledged the alarm were: 1) slightly younger (53 ± 6.4 months) than those who did not show any response (50.5 ± 8.0), (logical regression p-value = .33; 2) a slightly greater percentage of males (57.9%) versus females (50.0%), (Chi-square p-value = .65); and 3) had higher Briggance scores (74% vs. 68%), (logical regression p-value .43). Inclusion of all three predictor variables into the logistic regression model did not significantly influence the relationship identified in the simple model.

Conclusion: A commercial back-up warning device did not elicit avoidance behavior in the studied children. Over half of the children, however acknowledged the warning alarm. None of the hypothesized variables (age, gender, Briggance score) predicted response, although slight differences were observed.

P2

FIELD PERFORMANCE OF THE LEADCARE® HANDHELD
BLOOD LEAD ANALYZER AS ASSESSED BY THE
NATIONAL BLOOD LEAD PROFICIENCY TESTING
PROGRAM

Jane M. Maney, MT (ASCP). University of Wisconsin-Madison, Wisconsin State Laboratory of Hygiene (WSLH), Madison, WI.

Background: ESA’s LeadCare blood lead analyzer has been on the market for over a year. The Clinical Laboratory Improvement Amendments (CLIA) ’88 require users to participate in an approved blood lead proficiency testing (PT) program. The National Blood Lead Proficiency Testing Program (PBPTP) has been providing PT services to laboratories for over 11 years, and has been approved by the Health Care Finance Administration (HCFA) for over 4 years. Consequently, the PBPTP has seen a dramatic increase in demand for PT services from LeadCare users. PT data are useful in assessing LeadCare performance to date.

Methods: Monthly blood lead PT specimens are provided to over 360 participating labs, and the resultant performance data are collected, analyzed, and distributed. Grading criteria employed in the PT program are consistent with CLIA rules. In the 13-month period, February 1998 through February 1999, LeadCare enrollment increased from 12 to 70 labs. Thirty-nine specimens were distributed for evaluation.

Results: LeadCare laboratory performance lags behind the performance of labs utilizing other blood lead measurement techniques, specifically, graphite furnace atomic absorption (GFAA) or bench-top anodic stripping voltammetry (ASV). Only at blood lead concentrations less than 10 µg/dL does the percentage of labs attaining acceptable results favorably compare to other methodologies. At these concentrations 98.9% of LeadCare users, 98.7% of GFAA users, and 97.3% of ASV users perform acceptably using CLIA grading criteria. Performance of all lab techniques decreases with increasing blood lead concentrations, but that trend is particularly pronounced with the LeadCare instrument. For example, at blood lead concentrations exceeding 19 µg/dL, LeadCare performance drops below 90%. GFAA and ASV performance does not drop to this level until blood concentrations exceed 49 µg/dL, and 39 µg/dL, respectively. Also significant, performance of LeadCare users has declined over time. Comparing the first half of the study period to the second half, the average percentage of acceptable results decreased from 87% to 83%. In addition, a coexisting increase from 2.5 to 3.0 in the standard deviations (SD) of the group mean values is observed.

Conclusion: Pediatricians can appreciate the benefits of obtaining immediate childhood blood lead screening results, making LeadCare a potentially attractive option. However, based upon the PBPTP experience thus far, caution is advised. Practitioners are encouraged to utilize the PBPTP data in making decisions about the place of the LeadCare technology in their practices.
P3
EVALUATION OF FILTER PAPER BLOOD LEAD METHODS: RESULTS OF A PILOT PROFICIENCY TESTING PROGRAM.

Jane M. Maney, MT (ASCP). University of Wisconsin-Madison, Wisconsin State Laboratory of Hygiene (WSLH), Madison, WI.

Background: Filter paper (FP) blood lead testing services have been available commercially for years. Proficiency testing services, however, and the associated regulatory standards associated with it, have not. This fact figured heavily into the Center for Disease Control & Prevention’s (CDC) and some State agencies historical positions of not supporting the use of filter paper based methods in childhood lead poisoning prevention programs. In 1996, the WSLH developed a Filter Paper Proficiency Testing Pilot Program (FP PT) to address this need.

Methods: Laboratories with a research and/or commercial interest in blood lead FP techniques were recruited through a variety of methods. Six such labs were identified, five in the USA and one in Canada. In the first year of the Pilot study, three of the six labs were offering the FP test commercially. A draft plan was developed, based upon the existing National Blood Lead Proficiency Testing Program administered at WSLH, published papers on the subject, and input from the participating parties. A consensus plan was adopted and in Oct 1997, the first specimens were distributed.

Results: Results from the first year of the Pilot study are presented. Laboratory data were collected from the participating labs from Oct 1997 to June 1998. Three distinct assessment tools were used to measure lab performance. All measures yielded similar conclusions regarding individual lab performance. The initial two events were considered preliminary and results were poor. Later events were evaluated according to CLIA laboratory regulatory guidelines. Over the 7-month period, 35 specimens were tested by the six participants, yielding 210 individual results. Three of the six labs performed acceptably throughout the testing period. Of the individual lab results falling outside of the CLIA criteria, 85% fell below the minimum acceptable range. Performance was largely method dependent.

Conclusion: An FP PT Program was developed that can assist and monitor the performance of FP blood lead laboratories. The existence of the FPPT will serve as a necessary quality assurance tool for FP labs, requiring them to conform to federal lab regulations. Performance data from the Program can also serve as an independent assessment tool for pediatricians considering utilizing FP labs in their practices. All procedures were approved by the University of Wisconsin-Madison Center for Health Sciences Human Subjects Committee and the CDC Internal Review Board, and are in accordance with the Helsinki Declarations.

P4
A PEDIATRIC TOXICOLOGY CONSULTATION SERVICE: THE FIRST 1000 DAYS

Carl R. Baum, MD, and Steven E. Krug, MD, FAAP. Division of Emergency Medicine, Children’s Memorial Hospital, Northwestern University Medical School, Chicago IL, USA.

Objective: To describe the first 1000 days (33 months) of a toxicology service (TS) in a free-standing children’s hospital.

Methods: Descriptive study of the implementation of a TS and its consultations.

Results: An emergency department (ED) attending physician trained in medical toxicology established the TS in a 265-bed tertiary-care pediatric teaching hospital. The hospital, which generally treats children limited to age 0–16 years, has approximately 39,000 ED visits/year, 8400 inpatient admissions/year, and 1200 pediatric intensive care unit (PICU) admissions/year.

Housestaff are encouraged to call the TS with any toxicology-related problems or questions. Fellows training in pediatric emergency medicine serve “first call” responsibilities during their ED shifts, with attending back-up, in order to gain experience in management of toxicology cases. The fellow or TS attending provides formal consultation at the bedside when the case is deemed significantly complex or of teaching interest. The TS is available 24 hours per day/7 days per week, but consultations are infrequent enough to be managed by one attending (the ED director provides alternate coverage on occasion). Consultations have included the following: 120 inpatient or emergency department consultations (mean 3.6/month); mean (±S.D.) age of patients, 7.8 ± 6.1 y (range: 10 days to 18.4 y). Of the 120 cases, 92 (76.7%) involved a single suspected or confirmed substance. The most frequently encountered toxin was acetaminophen (APAP), alone or in combination, in 23 cases (19.2%). Anticonvulsants were involved in 14 cases (11.7%). Toxic alcohols were suspected or confirmed in 10 cases (8.3%). A toxic agent was suspected but ultimately unknown in 8 cases (6.7%). There was historical suspicion for hydrocarbons (lamp or pine oil; kerosene) in 7 cases (5.8%). Calcium-channel antagonists were reported by history in another 7 cases (5.8%). Acetylsalicylic acid (ASA) or tricyclic antidepressants (TCA) were involved in 6 cases (5.0%) each. In only 2 cases (1.7%) was a drug of abuse—phencyclidine—discovered on routine urine toxicology screening (CEDIA® homogeneous enzyme immunoassay, Boehringer Mannheim Corp., Indianapolis IN) that was not suspected from the history. Treatment involved a specific antidote—N-acetylcysteine, deferoxamine, naloxone, methylene blue, ethanol, or fomepizole—in 30 cases (25% of total). Multi-dose activated charcoal and urinary alkalinization were used in 11 cases (9.2%) each. Disposition included 6 discharges (5% of total) to home from the ED, 56 admissions (46.7%) to the PICU, and 2 admissions (1.7%) to the neonatal intensive care unit. Two (1.7%) fatalities occurred: one, an unknown, was ultimately determined to be a drowning, while the other was attributed to excessive magnesium oxide supplements. TS cases represented approximately 1.7% of all PICU admissions.

Conclusion: A TS, implemented in a children’s hospital, provides consultative services on a significant number of patients with a wide variety of toxic exposures.

P5
THE PARADOX OF LOW SPEED AND HIGH SEVERITY PEDESTRIAN INJURIES AMONG YOUNG CHILDREN

Phyllis Agran, MD, MPH, FAAP; Diane Winn, RN, MPH and Craig Anderson, PhD, DHSc. Health Policy and Research and Department of Pediatrics, University of California at Irvine, Irvine, CA.

Background: Vehicle speed is associated with severity of pedestrian injuries. Frequently, young children are involved in low speed nontrafficked events. We compared the severity and patterns of injury between children injured in low-speed nontraffic collisions and higher-speed traffic collisions.

Methods: A population-based surveillance system was used to identify children <5 yr hospitalized or fatally injured. Medical records and police reports were abstracted and parent interviews conducted.

Results: There were 47 traffic and 30 nontrafficked events. Thirty-eight percent of the children were two years old. Nontraffic events primarily involved vehicles backing out of driveways while all traffic events involved vehicles moving forward in the street. For nontraffic cases, means for Maximum Abbreviated Injury Scores (MAIS) were 2.23 overall, 1.07 for head, 0.90 for abdomen and mean hospital days = 3.74. For traffic cases, means for MAIS were 2.06 overall, 1.36 for head, 0.43 for abdomen and mean hospital days = 1.90.
days = 3.13. The MAIS's overall and by body region were compared using the Mann-Whitney rank test. There were no differences between the two groups.

Conclusions: This study demonstrates an exception to the relationship between speed and severity of pedestrian injuries for young children. The size of young children may predispose them to those low speed serious rollover type pedestrian injuries which for young children are as serious as the higher speed pedestrian collisions. Understanding the biomechanics and types of pedestrian injury events can provide information necessary for the treatment and prevention of pedestrian injuries to young children.

P6
ASSOCIATION BETWEEN POSITIVE SERUM βHcG TESTS AND INTENTIONAL DRUG INGESTIONS IN HOSPITALIZED ADOLESCENT FEMALES

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Background: Suicidal behavior and pregnancy are serious and frequent problems among adolescent females; it is unclear whether they are associated. No recent studies investigating the association between positive serum βHcG tests and intentional drug ingestions have been published. The objective of this study was to determine the prevalence of pregnancy, defined as a positive serum βHcG, in adolescent females admitted to the hospital because of an intentional drug ingestion and to compare this prevalence to reported pregnancy rates for adolescent females in New Jersey.

Methods: The medical records of all female patients between the ages of 13 to <18 years admitted to Robert Wood Johnson University Hospital from 1986 to 1998 for intentional drug ingestion (based on ICD-9 Codes) were reviewed. An intentional drug ingestion was defined as an ingestion of a drug or drugs in excess of recommended dosages that was not intended for therapeutic benefit. Demographic data and the results of the serum βHcG test were abstracted. Patients were divided into 2 groups: 13–<15 yrs and 15–<18 yrs. The prevalence of pregnancy, for the respective age groups, was calculated and compared to the average 1992-5 New Jersey pregnancy rates (NPR) for adolescent females.

Results: 137 charts were reviewed. Of these, 100 charts included a serum βHcG test and were analyzed. Demographic characteristics of the study population were similar to those of other studies of suicidal adolescents. In the whole study population, the prevalence of pregnancy was 3% (3/100; 95% confidence interval [CI] 0, 6.3%).

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<tr>
<th>Age Group</th>
<th>βHcG Test Performed (%)</th>
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<tr>
<td>13–&lt;15 yrs</td>
<td>43 (31)</td>
<td>31 (31)</td>
<td>0 (0%; 0, 9.7) 0.6%</td>
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<tr>
<td>15–&lt;18 yrs</td>
<td>94 (69)</td>
<td>69 (69)</td>
<td>3 (4.3%; 0.3,8.3) 5%</td>
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<td>137</td>
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Conclusion: Our data suggest that the prevalence of pregnancy among 13 to <18 year old female patients admitted to the hospital for intentional drug ingestions is not significantly different from the reported pregnancy rate for adolescent females in the state of New Jersey. Because this study was not prospective, not all patients received a serum βHcG test; if this caused bias, it is likely to have inflated the observed pregnancy rate and would not affect our conclusions.

P7
PROTECTING YOUNG WORKERS: A SURVEY OF KNOWLEDGE, ATTITUDES AND CURRENT PRACTICES AMONG PHYSICIANS

Sharmila Mudgal, M.D, MPH and Letitia K. Davis, ScD. Department of Preventive Medicine, Carney Hospital/Tufts University Program Occupational Health Surveillance Program, Massachusetts Dept. of Public Health, Boston, Massachusetts.

Background: Millions of children in the United States work, and despite federal and state laws, face many safety hazards, and also have a high incidence of work-related injuries. The rate of injuries per hour worked among teens is higher than the rate of occupational injuries among adults. This is all the more remarkable considering that teen workers are prohibited by child labor laws from working in the more hazardous jobs. Physicians are in a position to influence occupational health and safety issues in adolescents. The aim of this study was to assess the level of knowledge, current practices, attitudes and existing resources among physicians regarding occupational health and safety issues in adolescents.

Methods: A survey addressing the above issues was mailed out to 260 physicians from two communities in Massachusetts. The analysis was restricted to only the physicians who saw adolescents in their practices.

Results: Of the 184 (71%) physicians who responded to the survey, 113 (43%) saw adolescents in their practices. Of these, 77 (68%) of the physicians did not counsel teens about workplace health and safety, 96 (85%) were not aware of jobs that teens are prohibited by law from doing, and 71 (63%) were unaware of Massachusetts' requirements for reporting work-related injuries. In addition, 109 (96%) of the physicians did not have any resources on adolescent occupational health and safety for their own reference or to give their teen patients and their parents. The physicians indicated an interest in obtaining materials related to adolescent occupational health and safety hazards, child labor laws, guidelines for reporting occupational injuries/illnesses and resources on occupational health at the state and local level.

Conclusion: This study demonstrates a strong need to educate physicians and to provide them with resources so that they may promote occupational health and safety in their clinical encounters with their adolescent patients.

P8
STROKE FOLLOWING PENETRATING TRAUMA OF THE OROPHARYNX

Madeline Matar Joseph, M.D., F.A.A.P., F.A.C.E.P. and Susan J. Lewis, M.D. Department of Emergency Medicine, Division of Pediatric Emergency Medicine, University of Florida Health Science Center/Jacksonville, Florida.

Background: Stroke as a result of internal carotid artery (ICA) thrombosis following penetrating trauma of the oropharynx have been infrequently reported. Our objective is to report a case of delayed stroke presenting as a local seizure and fever, which occurred as a result of intra-oral penetrating trauma in a toddler.

Case Report: A 21-month old male presented to the ED due to a new onset seizure. Four days prior to admission, patient had fallen with a glass vial in his mouth which resulted in a small amount of bleeding from the mouth which stopped promptly. Upon the evaluation in a nearby hospital, patient was found to have a severe laceration of the right tonsil for which he underwent a right tonsillectomy and a 4 cm long glass was removed. Endoscopy (to detect any swallowed glass) and a 4 vessels cerebral angiogram were also performed which were uneventful. Patient was discharged home the next day and was reported to be doing well. Over the following 2 days, patient was noted to be sleepy which was attributed to the anesthetic effects of the operation, but he continued to be afibrile and feeding well. On the fourth day, after the initial injury the patient began vomiting then developed a generalized tonic clonic seizure.
On arrival to the ED the patient was somnolent but arousable. His vital signs were remarkable for a temperature of 101.5°F. His physical exam was notable for a healed scar in the right tonsillar area as well as left sided weakness with hyperactive deep tendon reflexes. A head CT scan was performed which revealed multifocal areas of low attenuation in the right parietal lobe in the distribution of the right middle cerebral artery consistent with a large ischemic infarction. Carotid angiography showed complete occlusion of the right (ICA) just above the common carotid artery bifurcation as well as numerous intraluminal defects in the supraclinoid internal carotid artery consistent with a thrombi. Lab revealed: WBC 7.2, H/H 10.5/30.9, hemoglobin electrophoresis was normal, platelet count 420,000/mm³, blood chemistry was within normal limits including a blood glucose of 148 mg/dl. Blood and urine cultures were negative and EKG was normal.

Discussion: Although intra-oral trauma is a common occurrence in childhood, associated neurological sequelae such as seizures, hemiparesis and hemiplegia are exceedingly rare. In fact, over the past 40 years only a total of 28 such cases have been reported. The initial presentation of the majority of these cases is very subtle. In addition, all of the previously reported cases occurred within 48 hours from the initial trauma.

Conclusion: We believe this a case of a stroke secondary to intra-oral trauma presenting as fever and seizure, occurring 4 days after the initial injury. Therefore, appropriate follow-up instructions are warranted.

**P9**

**PEDIATRIC BURNS—SEVEN YEARS’ EXPERIENCE IN A TERTIARY PEDIATRIC MEDICAL CENTER IN ISRAEL**

Ran D. Goldman, Lara Zilberstein, Shai Padeh, Justen Passwell.
Department Pediatrics B, Sheba Medical Center, Tel-Hashomer, Israel.

Burns are a common cause of mortality and morbidity in children and is the second most common cause of mortality in children after road accidents. In recent years, a significant drop in the prevalence of burns has been achieved due to isolation of risk factors, education and preventive steps in the community. We have reviewed our experience of children with burns admitted to the Sheba Medical Center during the years 1990 to 1996. Our purpose was to define the risk factors, course of admission, treatment, complications and the outcome. Three hundred and eighteen children were admitted with burns over this period to our center. Most burns occurred in children between the age 1–5 years. Males were affected more than females (1.6:1). Background diseases had no significant effect and in most cases (69.2%) the total body surface burn area (TBSA) was less than 10%. Hot beverages and food accounted for 54.0% of the cases, electric kettle and other electric appliances were the cause in more than 10.0%. Thirteen percent of the children turned to the emergency room 1 to 14 days after the injury occurred. Nevertheless, the TBSA and the complications did not differ from the other cases. Elevated body temperature (>38°C) was found in 55.3%. Blood cultures were positive in only 12.0% of children. Increased white blood cell count (>15,000 mm³) was found in 45.3% of the children. Decreased serum albumin (<3.0 gr/dl) has been found in 17.7% of the children with a good correlation to both TBSA and degree of burn. There was a significant correlation between low serum albumin level and the need for skin engraftment. Our survey confirms findings from previous reports, with similar risk factors and trends. We conclude that serum albumin levels could serve as a predictive factor to the need of later skin engraftment in addition to TBSA and degree of burn. These findings could help in planning community education and prevention.
**SECTION ON INJURY AND POISON PREVENTION**  
Flaura K. Winston  
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