Child Restraint Systems: Addressing Misuse through Research and Action

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Safe Kids Dauphin County
THANKS to my Lead Agency, Trauma Team and Coalition Members
DEFINING THE ISSUE

- Who is being injured?
- Where are the injuries occurring?
- How many injuries have occurred?
- Who is responsible to take action?
- Are there any trends?
- Who will use the data?

Is your child SAFE in the car?
SOURCES OF DATA

- **National data**: CDC, NHTSA, Safe Kids car seat check data
- **State data**: Child Death review, trauma centers, Dept of Transportation, Health, Education, DPW
- **Local data**: Hospital discharge, trauma centers, police and EMS reports
- **Media**
Mechanism of Injury: E codes an Injury Description

- How the event occurred

- Motor vehicle traffic accidents (E810-819)
  - Driver or passenger – car, motorcycle, animal drawn, streetcar
  - Into a fixed object or another vehicle
  - Highway or not
  - Pedestrian
### 10 Leading Causes of Injury Deaths by Age Group Highlighting Unintentional Injury Deaths, United States – 2010

<table>
<thead>
<tr>
<th>Rank</th>
<th>Age Group</th>
<th>Cause</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>&lt;1</td>
<td>Unintentional Suffocation</td>
<td>905</td>
</tr>
<tr>
<td>2</td>
<td>1-4</td>
<td>Unintentional Drowning</td>
<td>436</td>
</tr>
<tr>
<td>3</td>
<td>5-9</td>
<td>Unintentional MV Traffic</td>
<td>345</td>
</tr>
<tr>
<td>4</td>
<td>10-14</td>
<td>Unintentional MV Traffic</td>
<td>517</td>
</tr>
<tr>
<td>5</td>
<td>15-24</td>
<td>Unintentional MV Traffic</td>
<td>7,024</td>
</tr>
<tr>
<td>6</td>
<td>25-34</td>
<td>Unintentional Poisoning</td>
<td>6,767</td>
</tr>
<tr>
<td>7</td>
<td>35-44</td>
<td>Unintentional Poisoning</td>
<td>7,476</td>
</tr>
<tr>
<td>8</td>
<td>45-54</td>
<td>Unintentional Poisoning</td>
<td>9,662</td>
</tr>
<tr>
<td>9</td>
<td>55-64</td>
<td>Unintentional Poisoning</td>
<td>4,351</td>
</tr>
<tr>
<td>10</td>
<td>65+</td>
<td>Unintentional Poisoning</td>
<td>21,649</td>
</tr>
</tbody>
</table>

Data Source: National Center for Health Statistics (NCHS), National Vital Statistics System.
Produced by: Office of Statistics and Programming, National Center for Injury Prevention and Control, CDC using WISQARS™.
Penn State Hershey Children’s Hospital
Top Mechanism of Injury 2007 to 2012

The bar graph illustrates the top mechanisms of injury from 2007 to 2012 at Penn State Hershey Children’s Hospital. The x-axis represents the different mechanisms of injury, including MVC (Motor Vehicle Collision), Fall, Pedestrian, Bike, Animal/Farm, Assault/abuse, Gunshot/stab, and Burn. The y-axis represents the number of cases. Each year from 2007 to 2012 is represented by a different color code:
- 2007: Blue
- 2008: Yellow
- 2009: Red
- 2010: Green
- 2011: Brown
- 2012: Dark blue

The graph shows variations in the number of cases for each mechanism over the years, with notable peaks and declines in different years.
Percentage of Children by Age for Seat Checks

The histogram shows the percentage of children by age for seat checks. The y-axis represents the percentage, while the x-axis shows age in years (ranging from 0 to 10). The highest percentage is observed for children aged 0, with a significant drop as age increases.
<table>
<thead>
<tr>
<th>Factor</th>
<th>Number of Caregivers</th>
</tr>
</thead>
<tbody>
<tr>
<td>It allows me to see my child better</td>
<td>15 (4)*</td>
</tr>
<tr>
<td>It is safer than the other direction</td>
<td>41 (27)</td>
</tr>
<tr>
<td>I am following physician recommendation</td>
<td>43 (29)</td>
</tr>
<tr>
<td>My child prefers facing in this direction</td>
<td>10 (2)</td>
</tr>
<tr>
<td>Family member/friend told me to install it this way</td>
<td>7 (5)</td>
</tr>
<tr>
<td>It is easier to get my child in/out of the car this way</td>
<td>7 (2)</td>
</tr>
<tr>
<td>It keeps the sun out of my child’s eyes</td>
<td>3 (1)</td>
</tr>
<tr>
<td>My child weighs enough to face in this direction</td>
<td>59 (27)</td>
</tr>
<tr>
<td>My child has enough head control for this direction</td>
<td>20 (5)*</td>
</tr>
<tr>
<td>This direction reduces the risk of spinal injury</td>
<td>22 (14)</td>
</tr>
<tr>
<td>I am following the AAP recommendation</td>
<td>53 (32)#</td>
</tr>
<tr>
<td>The infant seat was needed for a younger child</td>
<td>3 (3)</td>
</tr>
</tbody>
</table>
Develop Your Strategy:

What to do with the data?
DATA INTO ACTION

- What is your message
- Who needs to know
- How to package the message
- Is it working
<table>
<thead>
<tr>
<th></th>
<th>Human Factors</th>
<th>Agent</th>
<th>Physical Environment</th>
<th>Sociocultural Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pre-Event</strong></td>
<td>Child Driver</td>
<td>Vehicle type Restraints</td>
<td>Time of day, Road conditions</td>
<td>Rural, Suburban, Urban</td>
</tr>
<tr>
<td><strong>Event</strong></td>
<td>Child Driver</td>
<td>Vehicle type Restraints</td>
<td>Time of day, Road conditions, Speed</td>
<td>Mobilize community to consider strategies to reduce injuries</td>
</tr>
<tr>
<td><strong>Post-Event</strong></td>
<td>Extent of injuries and access to care</td>
<td>Vehicle type Restraints</td>
<td>Road signage, stop signs, traffic lights, speed limits, traffic calming</td>
<td>Media, legislation, Community education – children, parents, drivers</td>
</tr>
</tbody>
</table>
The Spectrum of Prevention

- Influencing Policy & Legislation
- Changing Organizational Practices
- Fostering Coalitions & Networks
- Educating Providers
- Promoting Community Education
- Strengthening Individual Knowledge & Skills

www.preventioninstitute.org
1. **Strengthening Individual Knowledge and Skills**
Enhancing an individual’s capability of preventing injury or illness and promoting safety

2. **Promoting Community Education**
Reaching groups of people with information and resources to promote health and safety

3. **Educating Providers**
Informing providers who will transmit skills and knowledge to others

4. **Fostering Coalitions and Networks**
Bringing together groups and individuals for broader goals and greater impact

5. **Changing Organizational Practices**
Adopting regulations and shaping norms to improve health and safety

6. **Influencing Policy and Legislation**
Developing strategies to change laws and policies to influence outcomes
Strengthening Individual Knowledge

- Car seat checks
- Parenting classes
- Safety in and Around Cars, Count Down to Drive, Safe Travel, Cub Scout Patch
- Education materials targeting high risk groups, consider literacy and your message
- Provider and car seat technician classes
- Website links and social media strategies to encourage use of best resources
Promoting Community Education

- Car seat checks and parenting classes
- Education materials targeting high risk groups
- Car seat technician classes
- Coalition member info distribution: message to many
- Hospital newsletter
- Media
3 BROTHERS WHO SURVIVED A HEAD-ON COLLISION
Educating Providers

- Resource for education materials for offices, ED waiting areas
- Hospital Provider education – residents to car seat checks, nursing orientation, trauma course lectures, therapists, nursing students
- Community providers – EMS, MD, Fire
- Car seat technician classes
Fostering Coalitions & Networks

- Child Death Review Teams
- Head Start
- Advisory Boards \ Work Groups
- Local and government agencies – PennDOT, county probation/parole, child welfare agencies, housing authority
- Public Service – Fire, Police, EMS
- Schools
- Media
- Other Health Care Providers
- Civic Groups – Rotary, Boy and Girl Scouts
- Safe Kids / ATS / MADD / Red Cross / AARP
- Think First
Institutional Commitment: Resources for Infrastructure

- **Safety Center** opened Feb 2013 with $1 million from The Hershey Company
- **Internal support:** Development, marketing, management for volunteers, printing
- **Staffing of 2 health educators**
- **Lead agency for Dauphin County Safe Kids since 1994**
- **Regional, state and national activities based on injury data**

**Programs:** Child Seat Inspection Stations, SAFE KIDS Walk This Way, Home Safe Home, Shaken Baby Awareness, Wheel SMART, Cribs for Kids, Think First: brain and spinal cord injury prevention, Teen Driver Awareness Education, Family Disaster preparedness
Changing Organizational Practices
Managing Policy & Legislation

- Media

- Institutional policies — tolerance test all babies under 37 wks -not just NICU, education of providers in orientation, car seat distribution

- Legislation
  - Booster seat (2002 and 2011) and restraints for passengers 8 to 18 years
  - Graduated Teen Licensing Law
Media, Legislators and The Public

On average a $36.00 booster seat generates $2500 in benefits to society

From Children Safety Network, 2012

- How can this be made viewer friendly?
- Who would best share the message?
  - A really cute 6 year old
  - An insurance company rep
  - A trauma nurse
  - ALL OF THE ABOVE 😊
What Can You DO ??
DEFINING THE ISSUE
REAR FACING RESTRAINTS

Pre 3-2011: Infant birth to 20 pounds AND 1 year of age

NEW: Age 2 - Upper weight limit of the restraint
April 2013
Age at which children must be in a restraint or a booster seat

Source: Insurance Institute for Highway Safety
Educational Resources

for your family
Partners for Child Passenger Safety

Protect my children on every trip

This sheet can be filled out by a parent, child passenger safety technician or physician and then shared with the driver who transports your children. Download it again and again from www.chop.edu/carseat.

Use the proper restraint for each child’s age and size

- Keep your baby in a rear-facing seat until she is at least 1 year old and at least 20 pounds. Never place a rear-facing infant seat in the front seat with an active airbag.
- Use a forward-facing seat with harness after your child has outgrown her rear-facing seat and she is at least 20 pounds and 1 year of age. She should stay in this seat until she weighs approximately 40 pounds or her ears reach the top of the seat.
- Use a booster seat when she has outgrown the forward-facing seat. Be sure to check the height and weight limits for this seat too. Even your child needs to use a booster seat from about 4 to at least 5 years old or until the seat reaches above 4 feet, 9 inches.
- Keep her in a booster seat until the child lap and shoulder belt fits properly. The shoulder belt should fit across the chest between the neck and arm and the lap belt must fit across the upper thighs, not the soft stomach.
- As a booster seat, her head should be level with the seat and the seat should not move more than 1 inch in any direction. A child taller than the seat should not be able to sit on the seat without it.

Here’s where the children sit.

CPS Training Dolls

Types of Restraints

- Infant seat with harness
- Convertible seat
- 3-in-1 convertible
- High-back booster

- Booster seat
- Lap-shoulder seat belt

CPS Training Dolls

- Preemie
  - $70.00 each
- Infant
  - 17” tall
  - 12.5 lbs
  - $75.00 each
- 16-Month
  - 31” tall
  - 20 lbs
  - $95.00 each
- 3-Year
  - 38” tall
  - 30 lbs
  - $85.00 each
- 6-Year
  - 48” tall
  - 45 lbs
  - $95.00 each

CPS Training Dolls

- Designed specifically for CPS Training.
- For easy transport, the largest doll weighs less than 10 lbs.
- Firm torso that doesn’t collapse during seat belt demonstration.
- For training purposes, a harness with plastic sheath is attached so age, size and weight can be displayed.
- Varied skin tones available to represent diverse ethnicities.
- Can be fully customized for your specific need.

Pricing:

- Purchase dolls individually at pricing shown above.
- Discounts for purchases in sets:
  - $199.00 for Set of 4 Dolls (17”, 31”, 38”, 48”)
  - $360.00 for Set of 6 Dolls (Preemie, 17”, 31”, 38”, 48”)

Skin tone (light, medium, dark) can be specified for each doll. If skin tone is not specified, a combination of skin tones will be sent.

Introductory Discount of 5% on all Doll orders during January and February, 2009.

www.chop.edu/carseat

The page was to represent restraint for use in pre-college education.

Prevention Alternatives, Inc.

CPS Training Dolls

PO Box 16, Haslett MI 48040
Email: shrann@comcast.net
Call: 517-927-7731
Fax: 517-913-5999
Outcome Oriented Programming

1. Conduct an assessment (community-based & trauma data)
2. Define the injury problem based on #1
3. Inventory of available resources
4. Develop goals and objectives
5. Plan your intervention
6. Implement
7. Evaluate outcomes
Data to Evaluate your program

- What are your goals?
- Who is your audience?
- What resources do you have for the work?
- Who needs to know – grant, hospital, donor?
- If you planned your program well -- Evaluation is the foundation of the plan!!
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THANK YOU
QUESTIONS or COMMENTS