STRENGTHENING HOSPITAL-BASED INJURY PREVENTION THROUGH A PUBLIC HEALTH FRAMEWORK

4th Annual Trauma Prevention Coalition
Injury Prevention Coordinators Symposium
Thursday, June 7th 2018
New Injury Patterns Emerge
1800’s-1900’s

■ Pre-industrial
  – Unfortunate events, acts of God

■ Post-industrial
  – Industrial “accidents”
  – Increased focus on safety
  – Education, training, surveillance
Injury Becomes Science
1940’s-1960’s

- Injury caused by uncontrolled release of energy
  - Kinetic
  - Chemical
  - Thermal
  - Electrical
  - Radiation

Figure 1. The three “phases” of the interactions that lead to the end-results in road losses in energy-damaged people and property.

Figure 2. The three groups of “factors” involved in each of the three phases of interactions that lead to the end-results in road losses in energy-damaged people and property.

Epidemiological Triangle

The **host** is exposed to a disease causing **agent** – either directly or by a **vector**.

The **environment** aids or hinders the process.

*e.g.* Humans exposed to malaria by mosquito.
Injury Prevention Triangle

The **host** is exposed to a disease causing **agent** – either directly or by a **vector**

The **environment** aids or hinders the process

e.g. Humans exposed injury forces by decelerating car
# Haddon Matrix

<table>
<thead>
<tr>
<th>Pre-event (Primary)</th>
<th>Host</th>
<th>Equipment</th>
<th>Physical Environment</th>
<th>Social Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education and licensing</td>
<td>Crash avoidance technology</td>
<td>Weather conditions</td>
<td>Enforcement activities</td>
<td></td>
</tr>
<tr>
<td>Event (Secondary)</td>
<td>Proper use of restraint</td>
<td>Functioning safety equipment (airbags)</td>
<td>Road features (guardrails)</td>
<td>Safety equipment use laws</td>
</tr>
<tr>
<td>Post-event (Tertiary)</td>
<td>EMS response</td>
<td>Ease of extrication from vehicle</td>
<td>Accessibility to crash victims</td>
<td>Trauma system capabilities</td>
</tr>
</tbody>
</table>
### Prevention Gains Momentum

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
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<tbody>
<tr>
<td>1966</td>
<td>• Highway Safety Act</td>
</tr>
<tr>
<td>1968</td>
<td>• American Trauma Society</td>
</tr>
<tr>
<td>1971</td>
<td>• Occupational Safety and Health Administration</td>
</tr>
<tr>
<td>1972</td>
<td>• Consumer Product Safety Act</td>
</tr>
<tr>
<td>1979</td>
<td>• ICD changed: accident &gt; Injury</td>
</tr>
</tbody>
</table>
“The long-term solution to the injury problem is prevention. The major responsibility for accident prevention rests not with the medical profession, but with educators, industrialists, engineers, public health officials, regulatory officials, and private citizens.”

ACS Addresses Prevention
1979, 1983

Resources For Optimal Care of the Injured Patient

“... injury prevention in the home and industry, and on the highways and athletic fields: standard first-aid: problems confronting public, medical profession and hospitals regarding optimal care for the injured”

Middle ages
1800's
1913
1950's-1960's
1960's-1970's
1966
1985
1993
2017
Injury in America (1985)

Findings:

- Injury traditionally regarded as “accidents”
- No central agency responsible for injury control
- Injury prevention and research given low priority
- Requires coordinated effort between all fields
- Funding is disproportionately low
- Available funding is widely and unevenly distributed

Injury in America (1985)

Recommendations:

- Establish a Federal Center for Injury Control
- Provide funding commensurate with the problem
- Establish multidisciplinary approach to research
- Scientifically evaluate prevention programs

Prevention Finds a Home

1986
Injury Prevention Act passed

1987
First “Injury in America” conference

1989
$20 Mil to DHHS for CDC’s Injury Program

1992
National Center for Injury Prevention and Control
ACS Increases Focus on Prevention
1990

“Unfortunately, prevention is one of the most difficult to achieve...”

“Prevention, nevertheless, is an essential component and an integral part of a trauma system”

“More emphasis must be placed on innovative prevention programs...”

“The following three general strategies are available to prevent injuries...”
(education, enforcement, engineering)

ACS Requires Injury Prevention
1993

Chapter on Prevention added

Required designated Prevention Coordinator for level I and II

Required injury control research (level 1)

Required special ED and filed data collection (level 1)

Recognizing Conflicting Priorities

Trauma Centers

- Focus on individual
- Acute care delivery
- Patient outcomes
- Tertiary prevention
- Revenue/reimbursement
- Clinical research

Injury Prevention Programs

- Focus on populations
- Prevention interventions
- Population outcomes
- Primary prevention
- Reduce cost of injury
- Community research
Celebrating our Achievements
1993-Present

- Policy Advocacy
- Public Education
- Intervention
- Outreach
- Community Engagement
- Participatory Research
FINDING A PLACE ON THE RIVER

Tools of our Trade
Stages of Prevention

Tools of our Trade

Pre-Crash - PRIMARY
Prevent the crash

Crash - SECONDARY
Reduce injury during crash

Post-Crash - TERTIARY
Lessen impact of injury after crash
Social Ecological Model

Centers for Disease Control: Social Ecological Model

- **Individual**: Individual attitudes, beliefs, knowledge, and behaviors.
- **Interpersonal**: Individual relationships, support groups, social networks, cultural context.
- **Institutions and Organizations**: Schools, health care administration, businesses, faith based organizations, institutions.
- **Community**: Relationships and communications between organizations and institutions.
- **Structures and Systems**: Federal, state, and local regulations, laws, the built environment (public works, infrastructure, etc.).
Spectrum of Prevention

Embracing Our Diversity

Professional Backgrounds

- Public health
- Social work
- Pre-hospital
- PT/OT
- Nursing
- Advocacy
- Communications
- Business
- Other

Organizational Affiliations

- ATS
- STN
- Safe States
- Think First
- Safe Kids
- Injury Free
- Children’s Safety Network

Injury Prevention Education

- ATS IPC Course
- Johns Hopkins Summer Institute
- Safe States
- Prevention Institute
- Webinars
Opportunities to Advance HIP

- Trauma Prevention Coalition (2014)
- IVP Standards and Indicators (2017)
- National networking
- Collaborative research
- Resource sharing
- Mentoring
WHERE DO WE GO FROM HERE?
Tell Us Your Ideas

I’ve always wanted to...

I wonder if we could...

Wouldn’t it be nice if..

Have you ever thought of...

Can we find a way to...
Thank you ...