Setting the Stage for Injury and Violence Prevention in Ohio

Andrea Gielen & Carolyn Cumpsty Fowler
“One of the most impressive achievements over the past two decades has been a ‘political’ one — through communication, advocacy, and constituency building, a national ‘community of interest’ in promoting safety and preventing injury has emerged.”

Reducing the Burden of Injury: Advancing Prevention and Treatment Richard J. Bonnie, Carolyn E. Fulco, Catharyn T. Liverman, Editors; Committee on Injury Prevention and Control, Institute of Medicine, 1999
### A multi-faceted community!

<table>
<thead>
<tr>
<th>Injury Prevention</th>
<th>Injury Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-event</td>
<td>Event</td>
</tr>
<tr>
<td>Preventing injury causing events</td>
<td>Preventing injury or minimizing severity of injury</td>
</tr>
</tbody>
</table>

Reducing the Burden of Injury: Advancing Prevention and Treatment Richard J. Bonnie, Carolyn E. Fulco, Catharyn T. Liverman, Editors; Committee on Injury Prevention and Control, Institute of Medicine, 1999
What we will cover

Burden of Injury and Successes in Prevention
Problem Definition and Strategic Thinking
PRECEDE-PROCEED Planning Model
Phased Environmental Influences Matrix
APPLICATION SESSIONS
Burden and Successes in Injury Prevention
Injury

• Results from the acute exposure to physical agents such as mechanical energy, heat, electricity, chemicals, and ionizing radiation in amounts or at rates above or below the threshold of human tolerance.

• Transfer of mechanical energy accounts for 3/4 of all injuries.
The extent and severity of injury…

• are largely determined by the amount of energy that is concentrated outside the band of human tolerance, but

• both exposure to energy and the consequences of exposure are influenced by a variety of factors – many of which are mutable!
Why are we interested in measuring the burden of injury?

• Communicating the magnitude of the problem
• Prioritizing our efforts at prevention and treatment
• Projecting and evaluating the impact of alternative programs and policies
5 Million Deaths

More than malaria, TB, and HIV combined
Change in the Rank Order of Global Disease Burden* (10 leading causes)

1990

1. Lower respiratory infections
2. Diarrhoel diseases
3. Conditions - perinatal period
4. Unipolar major depression
5. Ischemic heart disease
6. Cerebrovascular disease
7. Tuberculosis
8. Measles
9. Road traffic accidents
10. Congenital anomalies

2020

1. Ischemic heart disease
2. Unipolar major depression
3. Road traffic accidents
4. Cerebrovascular disease
5. COPD
6. Lower respiratory infections
7. Tuberculosis
8. War
9. Diarrhea disease
10. HIV

* Disease burden measured in Disability Adjusted Life Years (DALYs)
# 10 Leading Causes of Death by Age Group, United States – 2008

<table>
<thead>
<tr>
<th>Rank</th>
<th>&lt;1</th>
<th>1-4</th>
<th>5-9</th>
<th>10-14</th>
<th>15-24</th>
<th>25-44</th>
<th>45-54</th>
<th>55-64</th>
<th>65+</th>
<th>Total</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Congenital Anomalies</td>
<td>5,638</td>
<td>Unintentional Injury</td>
<td>1,469</td>
<td>Unintentional Injury</td>
<td>1,624</td>
<td>Unintentional Injury</td>
<td>14,983</td>
<td>Unintentional Injury</td>
<td>16,065</td>
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<tr>
<td>2</td>
<td>Short Gestation</td>
<td>4,754</td>
<td>Congenital Anomalies</td>
<td>521</td>
<td>Malignant Neoplasms</td>
<td>457</td>
<td>Malignant Neoplasms</td>
<td>433</td>
<td><strong>Homicide</strong></td>
<td>5,275</td>
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<tr>
<td>3</td>
<td>SIDS</td>
<td>2,353</td>
<td><strong>Homicide</strong></td>
<td>421</td>
<td>Congenital Anomalies</td>
<td>170</td>
<td><strong>Suicide</strong></td>
<td>215</td>
<td><strong>Suicide</strong></td>
<td>4,238</td>
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<tr>
<td>4</td>
<td>Maternal Pregnancy Comp.</td>
<td>1,765</td>
<td>Malignant Neoplasms</td>
<td>394</td>
<td><strong>Homicide</strong></td>
<td>113</td>
<td><strong>Homicide</strong></td>
<td>207</td>
<td>Malignant Neoplasms</td>
<td>1,663</td>
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<tr>
<td>5</td>
<td>Unintentional Injury</td>
<td>1,318</td>
<td>Heart Disease</td>
<td>186</td>
<td>Heart Disease</td>
<td>97</td>
<td>Congenital Anomalies</td>
<td>161</td>
<td>Heart Disease</td>
<td>1,065</td>
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<tr>
<td>6</td>
<td>Placenta Cord Membranes</td>
<td>1,080</td>
<td>Influenza &amp; Pneumonia</td>
<td>142</td>
<td>Benign Neoplasms</td>
<td>59</td>
<td>Heart Disease</td>
<td>132</td>
<td>HIV</td>
<td>975</td>
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<tr>
<td>7</td>
<td>Bacterial Septicaemia</td>
<td>700</td>
<td>Septicaemia</td>
<td>93</td>
<td>Chronic Low. Respiratory Disease</td>
<td>65</td>
<td>Chronic Low. Respiratory Disease</td>
<td>64</td>
<td>Influenza &amp; Pneumonia</td>
<td>206</td>
</tr>
<tr>
<td>8</td>
<td>Respiratory Distress</td>
<td>630</td>
<td>Cerebrovascular</td>
<td>63</td>
<td>Cerebrovascular</td>
<td>63</td>
<td>Cerebrovascular</td>
<td>6</td>
<td>Diabetes Mellitus</td>
<td>574</td>
</tr>
<tr>
<td>9</td>
<td>Circulatory System Disease</td>
<td>594</td>
<td>Chronic Low. Respiratory Disease</td>
<td>54</td>
<td>Influenza &amp; Pneumonia</td>
<td>40</td>
<td>Influenza &amp; Pneumonia</td>
<td>49</td>
<td>Cerebrovascular</td>
<td>189</td>
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<tr>
<td>10</td>
<td>Neonatal Hemorrhage</td>
<td>556</td>
<td>Perinatal Period</td>
<td>51</td>
<td>Septicaemia</td>
<td>25</td>
<td>Septicaemia</td>
<td>36</td>
<td>Complicated Pregnancy</td>
<td>169</td>
</tr>
</tbody>
</table>

Injury categorized according to...

- Mechanism
- Intent
- Nature and Severity
- Place of Occurrence
Mechanism refers to...

*external* agent or particular activities that precipitate the injury:

- Motor vehicle crash
- Firearm injury
- Fall
- Poisoning
- Fire and Burns
- Drowning
- Stab or cutting/piercing wound

Uses International Classification of Disease (ICD)
www.cdc.gov/nchs/about/otheract/ice/matrix10.htm
**Intent** refers to …

the actor’s purpose and awareness of the risk of injury:

- **Unintentional** ("accidents")
- **Intentional**
  - Interpersonal: assaults & homicides
  - Self-directed: suicides
  - Collective: armed conflicts, war

Uses International Classification of Disease (ICD)
www.cdc.gov/nchs/about/otheract/ice/matrix10.htm
Nature and Severity refers to:

- Information about the body region (head, chest...), the type of injury (laceration, fracture...) and the extent of injury (open fx, major laceration...)

- Anatomic Measures (e.g., AIS)

- Physiologic Measures (e.g., GCS)

Uses International Classification of Disease (ICD)
www.cdc.gov/nchs/about/otheract/ice/matrix10.htm
Place of Injury refers to ...

where the injury took place regardless of its mechanism or intent

- On the road
- In the home
- At work
- At school
- At play
Distribution of Injury Deaths

- Motor vehicles: 29%
- Falls: 25%
- Firearms: 18%
- Poison: 17%
- Other: 11%
Distribution of Injury Deaths

- **Suicide**: 19%
- **Homicide**: 11%
- **Unknown**: 3%
- **Unintentional**: 67%
If a person dies of a MVC at age 45 but is expected to live to age 75, then one can conclude that the MVC was associated with a loss of 30 potential life years.
Years of Potential Life Lost Before Age 75 (YPLL-75) by Cause of Death, United States

- All Injury: 2,000 YPLL-75
- Malignant Neoplasms: 1,600 YPLL-75
- Heart Disease: 1,400 YPLL-75
- HIV: 600 YPLL-75
- Cerebrovascular Disease: 200 YPLL-75

YPLL-75 per 100,000 population under 75 years of age
Deaths are only the tip of the injury iceberg . . .

170 Thousand Deaths
1.6 Million Hospitalizations
27 Million ER visits

NEISS ALL INJURY PROGRAM, 2005
Lifetime Cost of Injury: $406 Billion

- Productivity losses due to disability: 45%
- Productivity losses due to death: 35%
- Medical and related costs: 20%

Finkelstein et al, 2006
Annual Lifetime cost -- $406 Billion -- by Cause

- Motor Vehicle/other road user: 22%
- Fall: 20%
- Struck by/against: 12%
- Cut/pierce: 4%
- Fire/Burn: 2%
- Poisoning: 6%
- Drowning/submersion: 1%
- Firearm/gunshot: 9%
- Other: 24%

Total costs in 2000
Distribution of Trauma Deaths

- 50% occur at the scene or in transport
- 30% occur within the first few hours
- 20% occur later within days or weeks

*Multiple options for intervention but primary prevention is key!*
10 Great Public Health Achievements

www.cdc.gov/mmwr/preview/mmwrhtml/00056796.htm
What is this public health achievement?
What accounts for the successes in MV crash deaths?

- Interstate highways
- Roadway designs
- MV safety standards
- Seat belt use
- Car seat use
- Drinking and driving
1987 – 2004 Unintentional Injury Deaths, Ages 0-14, United States

1987 – 2004 Unintentional Injury Death Rates, Ages 0-14, United States

### 1987 – 2004 Unintentional Injury Deaths, Ages 0 to 14, United States

<table>
<thead>
<tr>
<th>Type of Incident</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motor vehicle crash</td>
<td>↓32%</td>
</tr>
<tr>
<td>Drowning</td>
<td>↓44%</td>
</tr>
<tr>
<td>Pedestrian injury</td>
<td>↓55%</td>
</tr>
<tr>
<td>Fire and/or burn injury</td>
<td>↓58%</td>
</tr>
<tr>
<td>Falls</td>
<td>↓28%</td>
</tr>
<tr>
<td>Poisoning</td>
<td>↓14%</td>
</tr>
<tr>
<td>Firearm</td>
<td>↓74%</td>
</tr>
<tr>
<td>Suffocation</td>
<td>↑28%</td>
</tr>
</tbody>
</table>

What strategies lead to success?

- Education
- Enforcement
- Engineering
- Economic incentives
- Emergency Medical Services
- Evaluation

Choice of solution depends on problem definition and strategic thinking
Problem Definition and Strategic Thinking
Identifying an Injury Problem is Important

..but it is only useful for prevention if this initiates systematic, critical thinking and informed responses.
What is Prevention?
What is Prevention?

• ACTIVELY making something unhealthy or harmful NOT happen
  – Can you think of an example?

• ACTIVELY making something healthy or protective happen
  – Can you think of an example?
If we want to:

- ACTIVELY make something unhealthy or harmful NOT happen
  - What must we understand?

- ACTIVELY make something healthy or protective happen
  - What must we understand?
We must learn to approach injury and violence in a critical, systematic way.
The Problem is Seldom “Obvious” - 1

What is the problem?
Problem Definition

Is one of the most difficult, most frustrating, and most important things you will do when addressing an injury problem.
Today’s small group discussion topic

Prescription Drug Overdose
“Goal: reduce Prescription Drug Overdose in Ohio”

- What group?
  - Age group, people prescribed drugs, off-prescription users, habitual users, inexperienced recreational users, prescribing physicians/clinicians, other?

- What general locale?
  - All Ohio, regionally, your jurisdiction?

- What environments?
  - Schools, clinical settings, communities with higher death rates, illegal distribution “hubs”, other?

- What circumstances?
  - Intentional or unintentional overdose, medical use - monitored, medical use – unmonitored, illegal/criminal use, recreational use in social settings (e.g., parties, clubs)?

- What severity?
  - Fatal, hospital admissions, ED visits?

- What consequences?
  - Disability, cost, enforcement time, criminal, civil, etc?
If we do not start our planning with a clear and focused problem definition, the intervention program will get into trouble.
The Problem is Seldom “Obvious” - 2

• How did this event happen?
• What do we know?
• What have we assumed?
• What must be done to “fix” it?
• How can we accomplish this?
Learn how to ask the right questions

+ 

persevere until you get and listen to answers
Yes, but “what should we ask?”

• What do we want to know?

• What are the right questions?

• How can we guide our thinking?
Yes, but “What should we ask?”

- What do we want to know?
- What are the right questions?
- How can we guide our thinking?
- We need reference points
  - Where should we begin?
“No mass disorder afflicting mankind was ever brought under control or eliminated by attempts at treating the individual”

Dr. George W. Albee
1921-2006
The Epidemiologic Triangle (basic)

Host

Motor Vehicle Injury

Agent

Energy

Environment
The Epidemiologic Triangle + Vector*

* In the injury literature, this may also be referred to as the “vehicle” or “carrier”
What We See is Determined by WHERE and HOW We Look

Agent & Carrier

Individual Human Factors

Social ENVIRONMENT
Physical
How do we overcome this bias?
Our Guide: William (Bill) Haddon, Jr., MD

• First “Highway Safety Chief”
  – National Highway Traffic Safety Administration

• Headed Insurance Institute for Highway Safety

• Developed a Framework for Understanding Key Determinants of Injury:
  The “Haddon Matrix” (1972)

Dr. Bill Haddon, 1926-1985
Bill Haddon was determined to expand our field of vision.
The Haddon Phase-Factor Matrix

<table>
<thead>
<tr>
<th>Factors</th>
<th>HUMAN (Individual)</th>
<th>AGENT &amp; Carrier</th>
<th>ENVIRONMENT</th>
<th>Physical</th>
<th>Social</th>
</tr>
</thead>
</table>

- **Physical**
- **Social**
The Haddon Phase-Factor Matrix

Phases

Pre-Event

Event

Post-Event
Phases of Injury Prevention

- **Pre-Event**
  Reducing the number of events with the potential to cause injury.

- **Event**
  Reducing the number & primary severity of injuries that occur.

- **Post-Event**
  Preventing secondary insults; improving the final outcome.
<table>
<thead>
<tr>
<th>Human</th>
<th>Agent &amp; Carrier</th>
<th>Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Physical</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Social</td>
</tr>
<tr>
<td>Pre-Event</td>
<td><strong>Will an event - with the potential to cause injury - occur?</strong></td>
<td></td>
</tr>
<tr>
<td>Event</td>
<td><strong>Will an injury occur? What will the primary severity be?</strong></td>
<td></td>
</tr>
<tr>
<td>Post-Event</td>
<td><strong>What will the outcome be?</strong></td>
<td></td>
</tr>
<tr>
<td>Child Pedestrian Injury simplified</td>
<td>Human (Individual)</td>
<td>Agent &amp; Carrier</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>--------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td><strong>Pre-Event</strong></td>
<td>“Age”, Size, Behavior, Experience, Supervision, Alcohol, Fatigue</td>
<td>Speed, Size, Braking &amp; Maneuvering ability</td>
</tr>
<tr>
<td><strong>Event</strong></td>
<td>Size, clothing, any protective gear</td>
<td>Force, direction, &amp; number of impacts</td>
</tr>
<tr>
<td><strong>Post-Event</strong></td>
<td>Pre-existing conditions, EMS care &amp; rehabilitation</td>
<td>Additional vehicle impacts; entrapment; fire</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Human (Individual)</td>
<td>Agent &amp; Carrier</td>
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</table>
Haddon Matrix: next steps

Not all associated factors are Causal or Key

- Which factors are controllable?
  - The child pedestrian’s age-related developmental limitations are not

- Will changing these change the outcome?
Identifying an issue that must be changed is seldom enough to help us fully understand how to make that change.
Before we “treat” this problem we must make a more thorough diagnosis.

Source: U.S. Department of Health and Human Services, Health People 2010
PRECEDE – PROCEED Planning Framework

Part 1
Maryland Kids In Safety Seats -- KISS Program

A project of the Maryland Department of Health and Mental Hygiene funded by the Maryland Department of Transportation, 1980 - present
PRECEDE/PROCEED FRAMEWORK APPLIED TO MARYLAND’S CHILD PASSENGER SAFETY PROGRAM

PRECEDE/PROCEED FRAMEWORK APPLIED TO MARYLAND’S CHILD PASSENGER SAFETY PROGRAM

INJURY PREVENTION PROGRAM

Create and provide training and resource materials for health departments, MDs, police, community organizations

Create and distribute public educational materials

Establish and support Child Passenger Safety Associations

Establish and support car seat loaner programs

PREDISPOSING FACTORS

Increase parent awareness and reduce misperceptions

REINFORCING FACTORS

Encourage significant others to support use

ENABLING FACTORS

Educate legislators about need

Reduce financial barriers to use

ENVIRONMENTAL FACTORS

Require use of car safety seats by law

Make seats available low income families

BEHAVIORAL FACTORS

Increase proper and consistent use of car safety seats

HEALTH OUTCOME

Reduce MVC child occupant injury and deaths

QUALITY OF LIFE

Live to full potential
Complete Education
Meaningful Employment
Avoid Pain and suffering

Planning Steps

Step 1

Step 2

Step 3

Step 4

Source: L.W. Green and M. Kreuter
Johns Hopkins
SAFE Home Project

A collaboration with the JH Department of Pediatrics and the Center for Injury Research and Policy

Funded by the Maternal and Child Health Bureau, HRSA and private donations
Injuries...represent a critical public health problem in Baltimore...

Dr. Joshua M. Sharfstein
Commissioner of Health

Unintentional injury is the leading cause of death for ages 1-14
38% due to fires
37% due to motor vehicles

Baltimore children ages 1-17 are four times as likely to die from residential fires as children nationwide

Children younger than 5 in Medicaid managed care experience injury at rates nearly twice the national average
Step 1: Social Assessment

• WHY:
  – Gain insight into community values and perceived needs
  – Understand why health problem may/may not be important to community
  – Engage community as active partners

• HOW:
  – Individual: e.g., surveys
  – Community: e.g., asset mapping
  – Group: e.g., focus groups
Health Behavior and Lifestyle Environment

What things concern you most about being a parent?

HEALTH PROMOTION

Health Education
Policy regulation organization

Predisposing factors
Reinforcing factors
Enabling factors

Behavior and Lifestyle
Environment

Health
Step 2: Epidemiological and behavioral assessment

• WHY:
  – Determine which health problems poses the greatest threat to health and quality of life
  – Identify most important and most changeable behavioral and environmental risk factors for chosen health problem

• HOW:
  – Define who has problem: e.g., age group, gender, ethnicity, geographical area
  – Identify indicators: e.g., morbidity, mortality, YPLL
  – Sources of data: CDC, NIH, Healthy People, State Health Dept, Surveys, Literature
  – Examine various types of risk factors
Risk Factors to Consider

• Genetic or biologic
  – Gender
  – Age
  – Pre-existing health conditions

• Behavioral factors
  – Behaviors or lifestyles of the individuals at risk that contribute to the occurrence and severity of the health problem

• Social, physical, health care
  – External to the individual
  – Beyond personal control
  – Not amenable to education
SAFE Home Data Sources

• Literature:
  – Injury rates
  – Populations at risk
• Professional organizations:
  – Professional endorsement
  – Professional standards
  – Current practices
• Injury data: PED saw > 6000 injury cases annually
Child Injury: Falls, Fires & Burns, Poisons

Behaviors
- Stair gates & baby walkers
- Smoke alarms & hot water temps.
- Poison storage and Ipecac use

Environment
- Access
- Availability

Predisposing factors

Reinforcing factors

Enabling factors

Health Education
Policy regulation organization

HEALTH PROMOTION

Children growing up healthy and safe

HEALTH PROMOTION

Policy regulation organization

Health Education

Predisposing factors

Reinforcing factors

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Children growing up healthy and safe
Phased Environmental Influences (PEI) Matrix
Question:
If injury problems are so complex, how do we learn to ask the right questions?

Answer:
Challenge yourselves to look beyond the obvious.
Injury problems occur in a context. Prevention programs succeed ONLY if they address these factors.

Best-practices intervention planning requires that we understand the causal chain AND the factors that support or inhibit it.
Social-Ecological Influences

- Public Policy
  - law, regulation, standards & enforcement

- Community
  - culture, values, norms

- Schools or Workplace
  - social & physical environment

- Interpersonal
  - social networks

- Individual
  - knowledge, attitude, beliefs, skills
Understanding Environmental Context

- The Haddon Matrix does not help us understand complex injury issues (e.g., alcohol or prescription-drug-related injury; lack of willingness to screen for IPV, etc). We need to take another step.

- The *Phased Environmental Influences Matrix* helps us understand the environmental contexts in which this problem developed and how it may be changed.

* This is a working title; it may be changed when published.
### Phased Environmental Influences Matrix

<table>
<thead>
<tr>
<th>State Issue Being Analyzed Here:</th>
<th>Environmental Contextual Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Identified Levels of Social Environmental Influences*</td>
</tr>
<tr>
<td></td>
<td>Defined by user; may range from individual-level to multi-national</td>
</tr>
<tr>
<td>Physical &amp; Built Environment</td>
<td>Level 1</td>
</tr>
<tr>
<td>Historic Phase Factors</td>
<td></td>
</tr>
<tr>
<td>Current Phase Factors</td>
<td></td>
</tr>
<tr>
<td>Future Phase Factors</td>
<td></td>
</tr>
</tbody>
</table>

Carolyn Cumpsty Fowler PhD, MPH (Rev. 2010) Johns Hopkins Bloomberg School of Public Health. All rights reserved.
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<th>Historic Phase Factors</th>
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<th>Level 3</th>
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<tbody>
<tr>
<td>How did we get to the current situation? What is the history of this problem? Is there a history of previous attempts to address this or similar problems? Don’t assume there’s no historical baggage!</td>
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<tr>
<td>What are the factors influencing the status quo? Which are modifiable? Don’t assume there’s consensus about the need to change. Who benefits from preserving the status quo?</td>
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<td>What are the factors influencing sustainability of this intervention/policy? What can we do in the current phase to anticipate and plan for opposing forces and challenges to the intervention/policy?</td>
<td></td>
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## Phased Environmental Influences Matrix

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<tr>
<th>State Issue Being Analyzed Here:</th>
<th>Physical &amp; Built Environment</th>
<th>Environmental Contextual Factors</th>
<th>Identified Levels of Social Environmental Influences* Defined by user; may range from individual-level to multi-national</th>
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What is the issue your group is analyzing today?
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These are specific to your setting. You choose these.
# Phased Environmental Influences Matrix

## Environmental Contextual Factors

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## Let’s think of possible levels of influence

### State Issue Being Analyzed

#### Physical & Built Environment

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</tr>
<tr>
<td><strong>Future Phase Factors</strong></td>
<td>3</td>
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*Examine each level of influence*

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# Phased Environmental Influences Matrix

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**Historic Phase Factors**

**Current Phase Factors**

**Future Phase Factors**

During the first application session, you will analyze a **prescription drug overdose-related problem** using the **Phased Environmental Influences Matrix**.

You will choose the levels of social influence you need to consider.

Remember, you don’t have to know details. It is very helpful to realize what you don’t know; this guides your questioning.

Hint: Don’t try to work box by box. Brainstorm in your group and then decide where your suggested factors belong.

Based on your conclusions from this exercise, you should be able to fill in Step 1 of your PRECEDE/PROCEED Framework.

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APPLICATION SESSION 1

But first, it’s time for a break
PRECEDE – PROCEED Planning Framework

Part 2
Two of the greatest virtues in life are patience and wisdom.
Children growing up healthy and safe

Predisposing factors
- Stair gates & baby walkers
- Smoke alarms & hot water temps.
- Poison storage and Ipecac use

Reinforcing factors
- Access
- Availability

Enabling factors

Behaviors
- Stair gates & baby walkers
- Smoke alarms & hot water temps.
- Poison storage and Ipecac use

Child Injury: Falls, Fires & burns, Poisons

Health Education

Policy regulation organization

HEALTH PROMOTION
Step 3: Educational and Ecological Assessment

• WHY:
  – To identify those factors that must be changed to initiate and sustain the process of behavioral and environmental change

• NOTE: Collective causation
  – These factors collectively influence the behavior; they are not mutually exclusive and they frequently interact
Predisposing Factors

• Definition
  – Antecedents that provide the rationale or motivation for a behavior

• Example
  – Knowledge, attitudes, beliefs, personal preferences, cognitive and affective domain, existing skills and self-efficacy beliefs
Reinforcing Factors

• Definition
  – Factors subsequent to the behavior that provide continuing reward or incentive for the behavior to become persistent

• Example
  – Social support, peer influence, significant others, vicarious reinforcement (i.e. modeling behavior of someone influential to the individual)
Enabling Factors

• Definition
  – Antecedents that enable (allow) motivation to be realized; they can affect behavior directly or indirectly through an environmental factor

• Example
  – Programs, services, and resources are enabling factors for behavioral and environmental outcomes; new skills are enabling factors for a behavioral outcome
Methods of Educational Assessment

• Research Literature
  – Descriptive, correlational studies
  – Evaluation, intervention studies

• Original data collection with intended audience

• Expert review and input

• Once you’ve identified the PRE factors, rate and prioritize:
  – Importance of the factor
  – Changeability
## Identifying important and changeable factors

<table>
<thead>
<tr>
<th>More Changeable</th>
<th>More Important</th>
<th>Less Important</th>
</tr>
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<tbody>
<tr>
<td>More Changeable</td>
<td></td>
<td></td>
</tr>
<tr>
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BEHAVIORS
- Stair gates & baby walkers
- Smoke alarms & hot water temps.
- Poison storage and Ipecac use

PREDISPOSING
- Perceived risk
- Perceived seriousness
- Beliefs about barriers

REINFORCING
- Pediatric advice

ENABLING
- Low cost products
- Skills to adopt practices

ENVIRONMENT
- Access
- Availability

HEALTH PROMOTION

Health Education

Policy regulation organization

HEALTH PROMOTION

Health Education

Policy regulation organization
“The decision to place a factor in one category or another is less important than ranking the factor as an influence or determinant of behavior worthy of attention and finding a way to address it in the program.”

Green & Kreuter
Step 4. Intervention Methods and Administrative Considerations

- **DIRECT COMMUNICATION**
  - Predisposing
- **INDIRECT COMMUNICATION**
  - Reinforcing
- **COMMUNITY INTERVENTION**
  - Enabling
Direct Communication Strategies to Address Predisposing Factors

- mass media
- small media
- face to face communication

Advice for Parents delivered by pediatricians, safety educator, CHW

- Discuss risk of injury with parents
- Discuss seriousness of injuries
- Discuss barriers to safer practices
Indirect Communication Strategies to Address Reinforcing Factors

- Train-the-trainer/influential others
- Resource materials
- Technical assistance
- Lay health advisors; buddy systems

- Pediatric counseling training program
- Home visitor program
Community Intervention Strategies to Address Enabling Factors

- Advocacy through press conferences, lobbying, letter writing campaigns
- Community mobilization through coalitions, grassroots organizing, demonstrations
- Organizational change strategies, policy and procedures

Established Children’s Safety Center
  - Accessible and affordable safety items
  - Safety expert

Created CHW home visiting program
Pediatric Counseling Program

Training Program

- Solicit
- Advise
- Focus
- Encourage

Counseling Framework

5 hours, faculty led, hands-on, role plays, homework
Children’s Safety Center

Free personalized education

Reduced cost safety supplies

Children’s Center opens facility to boost safety
HOME VISITS

Community Health Workers:

- Identify hazards in client’s home
- Personalize education/coach on installation
- Refer to the Children’s Safety Center
Assessing the administrative and policy environment

• WHY: To identify the policies, resources, and circumstances prevailing in your organizational situation that could facilitate or hinder program implementation

• HOW:
  – Create measurable program objectives and realistic timelines for implementation
  – Assess consistency of program with organizational mission, policies, and regulations
  – Identify barriers to implementation and strategies to address them
  – Identify and coordinate the resources necessary to implement a program
PROGRAM COMPONENTS

Pediatric Counseling

Children’s Safety Center

Home Visits

Predisposing
Perceived Risk
Perceived Seriousness
Beliefs about Barriers

Behaviors
Stair gates & baby walkers
Smoke alarms & hot water temps.
Poison storage and Ipecac use

Environment
Access
Availability

Reinforcing
Pediatric Advice

Enabling
Low cost products
Skills to adopt practices
Safe Home Findings

- Amount and quality of physician counseling improved
- Counseling led to more satisfied patients, but had no effect on safety practices
- Counseling and visiting Children’s Safety Center was associated with more observed safety behaviors
- Home visits had no added benefit

Gielen et al, 2001; 2002; McDonald et al, 2003; Chen et al, 2003
Application Session 2
In this application session, you will continue your discussions.

Pick what you believe to be the most important **behavior** and the most important **environmental** factor and complete Step 2 of your PRECEDE/PROCEED Framework.

Complete Step 3 of the Framework by identifying the most important and most changeable **Predisposing, Enabling and Reinforcing** influences

Based on this analysis, complete Step 4 – deciding on your interventions – what programs and policies are needed and how will you make it happen?

Remember, you don’t have to know details. It is very helpful to realize what you don’t know; this guides your questioning.
Debrief and Lessons Learned
What have we learned?
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PRECEDE/PROCEED FRAMEWORK APPLIED TO INJURY PREVENTION

INJURY PREVENTION PROGRAMS AND POLICY INTERVENTIONS

- Education
- Economic Incentives
- Enforcement
- Engineering
- Emergency Medical Services

PREDISPOSING FACTORS

REINFORCING FACTORS

BEHAVIORAL FACTORS

ENABLING FACTORS

ENVIRONMENTAL FACTORS

HEALTH OUTCOME

QUALITY OF LIFE

Planning Steps

Implementation and Evaluation Steps

Adapted from L.W. Green and M. Kreuter
What have we learned about community?

Community is:

– complex
– connected
– constantly changing
– influential
Injury Prevention Challenge or Opportunity?

Adapted from CDC’s Local Public Health System Graphic
Community is the solution

not the site
BUT ...
If you’ve seen one community, you’ve seen one community

• Even apparently similar situations may be different

• Each presents unique challenges and opportunities.
Context is Crucial!

What fits in one context may be:
- unfeasible
- ineffective
- inappropriate
- disruptive

in another.

Even “model programs” must be tailored to fit.
Engage community members from day 1
An “anything is better than nothing” approach to injury prevention creates the risk that non-strategic interventions will be implemented in the community with negative consequences for all injury prevention initiatives.
The Power of Restraint

- A journey of a thousand miles begins with a single step

Lao-tzu
604 BC-531 BC

New translation:
- “The journey of a thousand miles begins beneath one’s feet”