Ecological Framework – Mental Health & Violence

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## Global Injury Mortality

### Table 2. Estimates of the Rate of Death per 100,000 Persons Associated with Cause-Specific Injuries, According to Income Level and Region, in 2008.

<table>
<thead>
<tr>
<th>Cause of Death</th>
<th>High-Income Countries</th>
<th>Low-Income and Middle-Income Countries</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Africa</td>
<td>The Americas</td>
</tr>
<tr>
<td>Unintentional injuries</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Road-traffic injuries</td>
<td>10.3</td>
<td>20.9</td>
</tr>
<tr>
<td>Falls</td>
<td>7.8</td>
<td>2.4</td>
</tr>
<tr>
<td>Drowning</td>
<td>1.8</td>
<td>5.2</td>
</tr>
<tr>
<td>Fires</td>
<td>0.9</td>
<td>4.9</td>
</tr>
<tr>
<td>Poisoning</td>
<td>4.1</td>
<td>4.9</td>
</tr>
<tr>
<td>Other</td>
<td>10.9</td>
<td>16.9</td>
</tr>
<tr>
<td>Intentional injuries</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-harm</td>
<td>13.4</td>
<td>6.3</td>
</tr>
<tr>
<td>Interpersonal violence</td>
<td>2.7</td>
<td>20.1</td>
</tr>
<tr>
<td>War and conflict</td>
<td>0.1</td>
<td>3.6</td>
</tr>
</tbody>
</table>

* Data are from the World Health Organization.

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Norton & Kobusingye, NEJM 2013
<table>
<thead>
<tr>
<th>Rank</th>
<th>Age Groups</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Unintentional Suffocation 905</td>
<td>Unintentional Drowning 436</td>
</tr>
<tr>
<td>2</td>
<td>Homicide Unspecified 154</td>
<td>Unintentional MV Traffic 343</td>
</tr>
<tr>
<td>3</td>
<td>Homicide Other Spec., classifiable 82</td>
<td>Unintentional Fire/Burn 89</td>
</tr>
<tr>
<td>4</td>
<td>Unintentional MV Traffic 76</td>
<td>Unintentional Fire/Burn 151</td>
</tr>
<tr>
<td>5</td>
<td>Undetermined Suffocation 39</td>
<td>Unintentional Suffocation 134</td>
</tr>
<tr>
<td>6</td>
<td>Unintentional Drowning 39</td>
<td>Unintentional Pedestrian, Other 103</td>
</tr>
<tr>
<td>7</td>
<td>Undetermined Unspecified 35</td>
<td>Homicide Other Spec., classifiable 84</td>
</tr>
<tr>
<td>8</td>
<td>Adverse Effects 22</td>
<td>Unintentional Natural/Environment 52</td>
</tr>
<tr>
<td>9</td>
<td>Unintentional Fire/Burn 22</td>
<td>Homicide Firearm 43</td>
</tr>
<tr>
<td>10</td>
<td>Unintentional Natural/Environment 22</td>
<td>Unintentional Struck by or Against 37</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™.
US Trends in Suicide, by Means, 1999-2010
(rate per 100,000; MMWR, 3 May 2013)
US Trends in Suicide, by Means, 1999-2010 (rate per 100,000; MMWR, 3 May 2013)
2004-2010, United States
Smoothed Age-adjusted Death Rates per 100,000 Population
Firearm, Suicide, All Races, All Ethnicities, Both Sexes, All Ages
Annualized Age-adjusted Rate for United States: 5.76
2004-2010, United States
Smoothed Age-adjusted Death Rates per 100,000 Population
Motor Vehicle, Traffic, Unintentional, All Races, All Ethnicities, Both Sexes, All Ages
Annualized Age-adjusted Rate for United States: 13.06
Ecological model: Mental health & social risks for violence to self and others

Poverty; poor education systems
Bullying; high local crime levels
High residential instability; low community cohesion
High unemployment
Local illicit drug trade
Weak community institutional policies
Inadequate victim care services
Local ethnic or religious conflicts

Psychological & personality disturbances
Severe psychopathology
Alcohol/substance misuse
Victim of child maltreatment, trafficking, or current abuse; orphaned or abandoned
Violent or suicidal behavior—past or current
Access to lethal means

Unstable social infrastructure
Economic insecurity
Stigma regarding mental distress & help-seeking; cultural norms that support violence
Discrimination: gender; race; other
Policies that increase inequalities
Poverty; weak economic safety nets
Access to lethal methods (firearms)
National or regional armed conflict

Exposure to poor parenting or violent parental conflict; fractured family structures; families exposed to civil strife
Family history of violence or suicide
Current relationship/marital turmoil; participant in intimate violence
Financial, work stress; under- or unemployed
Friends & family that engage in violence
Unsafe storage of lethal substances or means

*Risks depend upon age, sex & gender, and developmental challenges
Premature Death in Early Adulthood

Common Developmental Contexts for Different Adverse Outcomes

Emerging Behavioral Problems & Mental Health Disturbances
School Difficulties
Alcohol and Substance Misuse

Disruptive Family Factors
Disadvantaged Economic & Social Factors

Legal System Involvements
Emergency Room Visits
Mental Health & Chemical Dependency Treatment Contacts

Prevention & Intervention Opportunities
Indicated & Clinical
Selective & Indicated
Universal & Selective

HOMICIDE
MVAs & Unintentional Poisoning
SUICIDE
Ecological model: Protective factors (P) and interventions to prevent violence to self and others (Caine 2014)

(P) Coordinated community support systems
(P) Robust local faith & service organizations
Strengthen educational systems, vocational training programs—for youth & adults
Enhance neighborhoods & home ownership, & community safety
Combat “culture of violence”
Promote help-seeking & victim support
Reduce access to lethal means and illicit drugs; promote safe firearm storage

(P) Robust coping & resilience; (P) sense of belonging & self-worth
Identify & treat persons suffering severe psychiatric & substance/alcohol related disorders; interventions with suicidal individuals
Prevent alcohol & substance misuse
Prevent child abuse and victimization
Rehabilitate violent persons
Reduce access to lethal means

(P) Family-communal coping; (P) interpersonal connectedness; (P) intergenerational support
Support high-risk parents; intervene in fractured families
Use community, health system, & court-based screening to detect intimate & family violence
Support families to enhance health, food security, economic opportunities, & access to education & vocational skills
Promote safe storage of lethal means

*Protective factors & interventions depend on age, sex & gender, and developmental challenges
<table>
<thead>
<tr>
<th>Haddon Matrix for Suicide Attempts</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Individual Behavior</strong></td>
</tr>
<tr>
<td>Pre-event</td>
</tr>
<tr>
<td>Event</td>
</tr>
<tr>
<td>Post-event</td>
</tr>
</tbody>
</table>

Proposed three dimensional Haddon matrix.

The Health Impact Pyramid
