THE INFLUENCE OF TRAUMA PROJECT RESEARCH FINDINGS ON POLICY AND PRACTICE OF INJURY PREVENTION AND TRAUMA CARE IN GHANA

KNUST, Kumasi

UW (HIPRC), Seattle
1. Background: GHANA

Population: 25 million; GNI: $1600 (low-middle)
Injury burden

<table>
<thead>
<tr>
<th>Rate</th>
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<tbody>
<tr>
<td>RTI</td>
<td>20</td>
</tr>
<tr>
<td>Fall</td>
<td>6.4</td>
</tr>
<tr>
<td>Violence</td>
<td>3.5</td>
</tr>
<tr>
<td>Fire</td>
<td>2.9</td>
</tr>
<tr>
<td>Drowning</td>
<td>2.7</td>
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Deaths per 100,000 per year

Source: GBD

- Motor vehicle crashes
  - Pedestrians
  - Commercial vehicles
Injury burden: Disability

- Occupational injuries
  - Rural:
    - Agriculture
    - Lacerations: 40% of injury related disability
  - Urban:
    - Informal workshops
    - Road side traders
Trauma Care
PERCENT OF MODERATELY SEVERELY INJURED (Inj Sev Score 15-24) WHO DIE

Source: Trauma Outcomes in the Rural Developing World: Comparison with an Urban Level I Trauma Center *J Trauma*, 1993
2. KNUST – UW Fogarty Program: Purpose, Methods
STRENGTHENING INJURY CONTROL RESEARCH IN GHANA and WEST AFRICA

   Over 40 scientific publications on injury control
   Largest community based survey on injury in Africa

2005–present: Grants from Fogarty Intl Center
   • Increased capacity for injury control in Ghanaian institutions:
     • KNUST, MoH, M of Transport, NRSC
     • Building and Roads Research Institute (BRRI)
   • Research that has catalyzed practice and policy for injury control in Ghana.
Spectrum of Injury Control

Surveillance

Prevention

Pre-Hospital Care

Hospital Care
TRAINING METHODS

1. Short Courses in Ghana & West Africa.

2. Short attachments at HIPRC

3. Degrees: MPH at UW and KNUST

Research projects to accompany 2 and 3.
Short Courses

2007: Journalists
2009: Parliament
2010: Medical leadership of Ghana
2010, 2014: Residents at KNUST
2011: Injury Surveillance
2012: Injury Research
2012-2015: West African College of Surgeons
Short Courses

2007: Journalists

Yankson et al, Injury Prevention 2010;16:194e197
Short Courses

2009: Parliament

40 members of Parliament:
- From all 3 major political parties
- From committees on health and transport.
Short Courses

2012-2015: West African College of Surgeons
Monrovia, Liberia
Lome, Togo
Kumasi, Ghana
Abidjan, Cote d’Ivoire

Workshops on trauma system planning
Participants from almost all of 17 WACS countries
40 – 90 for each course

Trauma System Planning
Workshop, symposium, and call for abstracts

West African College of Surgeons
in collaboration with
Kwame Nkrumah University of Science and Technology
University of Washington
Fogarty International Center
Build Constituency and Political Support for Injury Control
## 3. Findings:
Locally relevant, Scientifically rigorous, Influence policy and practice

<table>
<thead>
<tr>
<th>Degree scholars</th>
<th>Institution</th>
<th>Profession</th>
<th>Topics</th>
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</thead>
<tbody>
<tr>
<td>Koranteng</td>
<td>KNUST</td>
<td>Soc Sci</td>
<td>Surveillance</td>
</tr>
<tr>
<td>Damsere-Derry</td>
<td>BRRI (MoT)</td>
<td>Soc Sci</td>
<td>Vehicle speed</td>
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<td>Yankson</td>
<td>Ministry of Educ</td>
<td>Education</td>
<td>Press reporting</td>
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<td>Kuutiero</td>
<td>NGO</td>
<td>Development</td>
<td>Road safety law</td>
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<tr>
<td>Ankomah</td>
<td>KNUST</td>
<td>Surgery</td>
<td>Burns</td>
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<td>Asiedu</td>
<td>MoH (regional)</td>
<td>Nursing</td>
<td>Child safety</td>
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<td>Yeboah</td>
<td>KNUST</td>
<td>Orthopedics</td>
<td>QI</td>
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<td>Osei-Ampofo</td>
<td>KNUST</td>
<td>Emerg Med</td>
<td>Injury in pregnancy</td>
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<td>Gyedu</td>
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<td>Surgery</td>
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<td>Japiong</td>
<td>Police Hospital</td>
<td>Nursing</td>
<td>Emergency capacity</td>
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<td>Paittoo</td>
<td>Fire Service</td>
<td>Admin</td>
<td>Firefighter safety</td>
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<td>Nakua</td>
<td>KNUST</td>
<td>Pub health</td>
<td>Mining safety</td>
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<td>Agyeman</td>
<td>KNUST</td>
<td>Nursing</td>
<td>Workplace violence</td>
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Spectrum of Injury Control: UW-KNUST Research Activities

- Surveillance
- Prevention
- Pre-Hospital Care
- Hospital Care

Under-reporting in official data sources

- Vehicle speed study
- Improving press reporting
- Review of road safety laws

Preventable death review
Example of Under-reporting in Vital Statistics
KATH Mortuary

- Existing mortuary data (1992-5) 70
- Mortuary interviews (1996-2000) 633

Surveillance: Mortuary data

Injury Deaths/Year

1992-5 70
1996-2000 633
2006-2007 773

Adofo Koranteng, Research Officer, KNUST
Prevention: Targeting risk factors: speed

Vehicle speed: a risk to all, especially vulnerable road users
Research on vehicle speeds: 20,000 vehicles


Speed calming interventions

Example: Traffic calming along Accra-Kumasi road:
2005: 2 locations - 2010: 10 locations

- Asphalted speed bump
- Thermoplastic speed bump
- Rubberized delineators
“Now people in the towns along the roads are demanding these.” Francis Afukaar, Vice-Director, BRRI, Nov, 2010

Informal, locally made speed bump: Kumasi – Sunyani road, May 2013
Led to:

Improvements in care
- Detection of missed injury
- Control of external hemorrhage control, resusc

More structured QI
- Discussion of preventable deaths in dept meetings
- Multidisciplinary review
FOLLOW-UP STUDIES AFTER COMPLETION OF SCHOLARSHIPS

Leverage funding: Northern Pacific Global Health Research Fellows Training Consortium (Fogarty Global Health Fellows Program)

Strategic assessment of the availability of pediatric trauma care equipment, technology and supplies in Ghana

James Ankomah a, Barclay T. Stewart a,b,d,*, Victor Oppong-Nketia c, Adofo Koranteng a, Adam Gvedu a,d, Robert Quansah a,d, Peter Donkor a,d, Francis Abantanga a,d, Charles Mock b,e,f
4. Key conditions

Engage relevant institutions

Advisory board composition:
- KNUST (clinical care, SPH)
- Building and Roads Research Institute (MoT)
- Ministry of Health
- Police Service (Road safety, Police Hospital)
- National Road Safety Commission

Advisory board functions:
- Advice on program
- Trainees recruited from key institutions
- Mentoring on research projects
- Develop research questions
  - Locally relevant and scientifically rigorous
  - Influence policy and practice
5. Principles to guide future research

- Wide engagement of stakeholders in injury control.
- Locally relevant, scientifically rigorous research.
- Expand further into West Africa
  - West African College of Surgeons
  - Other institutions
Example: Research on vehicle speeds – documentation of non-compliance with 50 kph speed limit on roads through crowded settlements. Risk factor for pedestrian deaths.

James Damsere-Derry, Research officer, BRRI, Kumasi, Ghana
UW Fogarty scholar

Result


Increased utilization of traffic calming infrastructure at sites with high rates of pedestrian deaths: Accra-Kumasi road.

2005: 2 locations
2010: 10 locations

Decrease in pedestrian deaths.
Example: 55% at Suhum junction

“Now people in the towns along the roads are demanding these.” Francis Afukaar, Vice-Director, BRRI, Nov, 2010
NO SPEED
Ramps
NO VOTE.