JOHNS HOPKINS BLOOMBERG SCHOOL of PUBLIC HEALTH

Child Injury Prevention: Global Examples

Prasanthi Puvanachandra, MD MPH

International Injury Research Unit,

Department of International Health

International Injury Research Unit (IIRU)

Mission:

"understanding the burden of injuries and developing affordable means of injury reduction and safety promotion in underserved populations of the world"

IIRU: A health systems approach to injury prevention and control….

- promote strategic research,
- conduct intervention trials,
- provide economic analysis,
- evaluate existing policies,
- monitor new programs,
- and assist in capacity development

Global Childhood Unintentional Injury Surveillance: A Pilot study in Developing Countries (GCUIS)

Global Childhood Unintentional Injury Surveillance Pilot Study (GCUIS)

- Goal:

  "To determine the magnitude, and nature of childhood injury in urban settings within LMIC by improving ongoing injury surveillance".

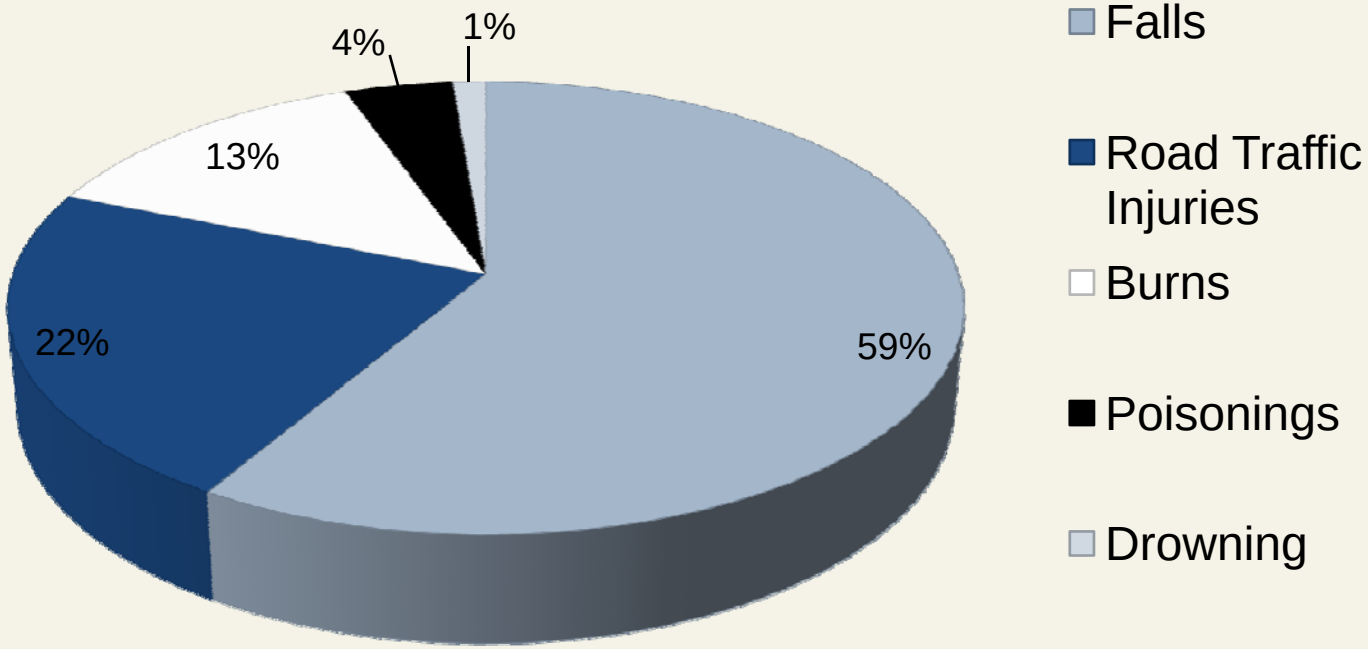
- Methodology:
  - standard surveillance form administered to caretakers of injured children arriving at emergency departments in four LMIC (Pakistan, Bangladesh, Egypt, Columbia) to identify all unintentional injuries.
  - demographic information; injuries measured in terms of mortality and disability including injury severity score (ISS); risk factors including age, gender, education, time, location, activity; selected cost information; use of safety measures; and outcome data regarding treatment in the emergency department.

GCUIS Study (cont.): Methodology

- Children under 12 yrs old presenting to a designated emergency department in Bogota, Karachi, Dhaka and Ismailia.
- Formal and informal training sessions by JHU team on surveillance system, data collection and entry
- Data entered via Epi Info and analyzed with Stata 9.
- Pooled data across all four countries to describe the nature and type of injuries
- Examines the relationship between children of both genders who have an injury and factors in the pre-event and post-event phases
- Provides outcome data during initial management in the emergency department

GCUIS Study (cont.): Results

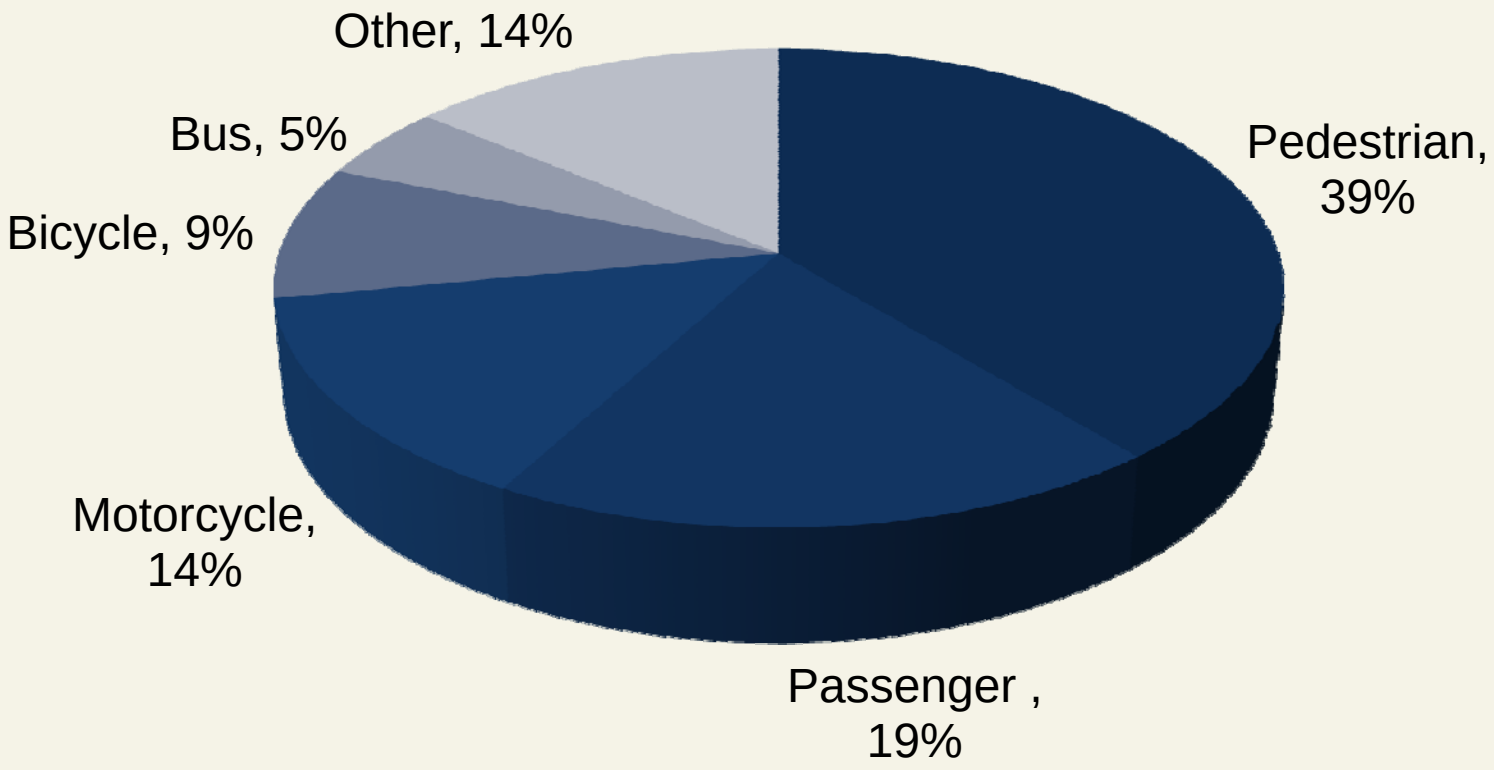
- N = 1559; 1010 male (65%)
- 941 (60%) +5yr old age group
- Causes:



GCUIS (cont.): Results

- Injuries occurred
  - in and around the home (56%),
  - while playing (63%)
  - traveling (11%)
- Injuries were seen throughout the day, with a majority occurring in the mornings between 6am and 12pm (34%) followed by lunchtime between 12pm and 2:30pm (21%).
- 36% of the children were discharged with prediction of short-term disability (under 6 weeks), 11% with long-term disability (over 6 weeks), and only 2% with permanent disability.
- Overall Injury Severity Scores were low (median = 4 and mean = 7) across all sites and injury types

GCUIS (cont.): Road Traffic Injuries



Activity of Child at time of injury

GCUIS (cont.): Road Traffic Injuries

- Striking Vehicle
  - 21% Motorcycle
  - 20% Car
  - 19% Bus
- Only 5% of those who suffered a RTI reported using a seatbelt / restraint for their child
- RTI cases had the highest percentage of projected long-term disability (17%), and need for emergency surgery
- Mean ISS = 10
- 2 children died as a result of RTI

GCUIS Study: Key Lessons

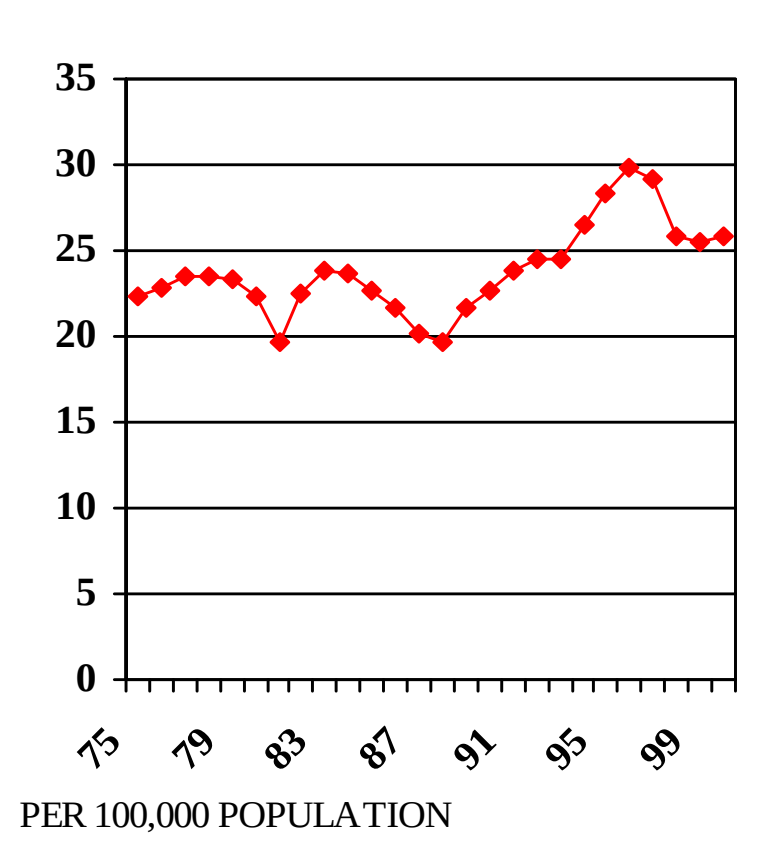
- Standardization of data collection is important for comparative data on child injuries from LMIC;
- New facility based data collection systems can be developed and implemented in current emergency departments in different LMIC contexts;
- Unless specifically included, childhood injuries are often ignored by routine hospital-based information systems; and
- Country investigators are accomplished and capable of uniform protocol based injury research in many LMIC.

Evaluation of a Road Safety Education Program in Primary Schools in Malaysia

Evaluation of a Road Safety Education Progam in Primary Schools in Malaysia

- Population 25.3 million
- LEB – 73
- IMR – 10 per 1000 livebirths
- Number of vehicles on roads - ↑ 7.7 million in 1996 to 12.8 million in 2003
- 60% increase in RTIs over this period

Incidence of road traffic fatalities in Malaysia 1975-2000



Context:

- >70,000 injuries in 5-9 yr group
- Most children (>85%) walk to school
- Children walking through heavy traffic to school = common sight
- Malaysian Government → intersectoral committee (MoH, MoT, Engineers).
- Malaysia Institute for Road Safety Research (MIROS) are taking large steps to address this problem.
- Already tackling adult injuries, in particular motor-cycle injuries – now addressing need to focus on children through Road Safety Education

Road Safety Education

- Green Cross Code, Safe Kids
- Teaches children how to cross roads safely (classroom and on practice streets)
  - Not to cross mid-block, hold adults hand if possible, where to cross etc
- Proven effectiveness in increasing child's knowledge and behavior in crossing streets
- Impact in reducing RTIs - **not evaluated**

  – *THE JURY IS STILL OUT…*

Road Safety Education in Malaysia

- Government of Malaysia (MoE) have begun to implement a road safety education program as a pilot scheme in governmental schools nationwide
- 916 schools (Malay, Chinese & Tamil)
- Pilot in Standards 2 & 4 (Age 7-8 and10-11)
- National roll-out after 1 year.
- Have asked JHSPH to help them monitor and evaluate this program.

1. Evaluation of ***Impact*** of RSE as

   an intervention to reduce RTIs in LMIC

2. Evaluation of Policy Process

Study 1: Health Outcomes Study

- Time-Series Analysis
- Intervention and Comparison groups
- 2 year period
- Simple questionnaire every 8 weeks
- Triangulation with police & hospital records
- Assess true impact in terms of **injury rates**.

Study 2: Stakeholder Analysis

- Decision making process?
- Evidence-based?
- Barriers?
- Effective use of resources?

- 19 Semi-structured interviews
- Stakeholders: MoE, MoH, MoT, Road Safety Research Team, Police, Teachers, Parents, Media etc.
- Document review

JOHNS HOPKINS BLOOMBERG SCHOOL of PUBLIC HEALTH

Thank you!

ppuvanac@jhsph.edu