

Implementing a Hospital Based Injury Surveillance System in Zambia - A Preliminary Report

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Introduction 1

- A public health approach to injury requires for an understanding and definition of both, the types of injuries that affect most frequently a defined population, and the context in which these injuries occur.
- A hospital based injury surveillance system at Lusaka University Teaching Hospital -the main teaching hospital in Zambia, was implemented as part of a multi-national injury surveillance pilot project in five African countries in 2007. Uganda, Nigeria, Kenya and the Democratic Republic of the Congo were the other countries involved.
- This multinational injury surveillance project is an attempt to respond to the World Health Organization's call for multi-sectoral collaborative efforts for the prevention of violent injury and an increase in the capacity for collection of reliable data on injury.



Objectives 2

- To systematically collect, review and evaluate the context in which specific external injuries occur in a great diversity of socio-cultural populations. The three types of injuries of interest are: interpersonal violence (IPV), road traffic injuries (RTI) and self-inflicted injuries.
- To test the implementation of an injury surveillance system in countries where no such system is in place (i.e. Zambia, Democratic Republic of the Congo, Nigeria, and Kenya).
- To provide evidence-based recommendations to local government health authorities to address the incidence of injury in their communities from a public health perspective, as well as other public policy makers and community advocates, in order to encourage the development of injury prevention strategies.



- Lusaka, the capital of Zambia, has an estimated population of over 2 million people (2007).
- The Lusaka University Teaching Hospital (LUTH) is the biggest hospital in Zambia. It is the main medical training institution in the country for medical students, interns, and postgraduate doctors.
- In addition, LUTH serves as the country's specialist centre receiving referrals from all over the country.
- The hospital has approximately 1,655 beds and 250 baby cots. It provides a full range of primary, secondary, and tertiary health and medical services on both an inpatient and outpatient basis.

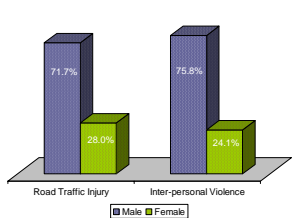
Methods 4

- Between January 1 and June 30, 2007, detailed information on all new patients arriving with specific injuries at the Emergency Department of the Lusaka University Teaching Hospital (LUTH) were included in the surveillance system.
- A surveillance questionnaire developed by a joint project of PAHO and CDC was used to collect the recommended injury data.
- An electronic version of the questionnaire was created using Epi-Info for data-entry purposes.
- Data was submitted for quality control and analysis to the project's coordinating center at Ponce Medical School in Puerto Rico.

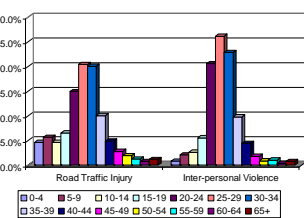
Results 5

- Of a total of 2,714 new incident cases were recorded by the surveillance system, of which 1,332 cases were IPV injuries and 1,352 were RTI (approx. 49% each).
- The remaining cases were reported as self-inflicted injuries (26 cases) and other type of injuries (4 cases).
- This presentation is limited to an analysis of IPV and RTI cases only.

Sex Distribution by Type of Injury

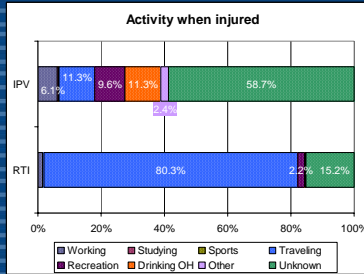
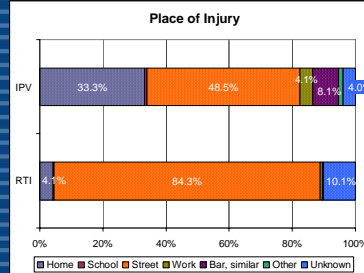


Age Distribution by Type of Injury



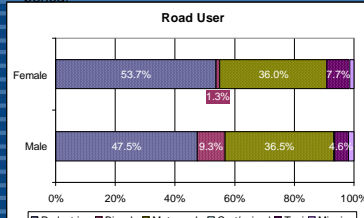
Results 6

- Gender distribution are similar for both types of injuries whereby most of the cases are males (>70%).
- A greater proportion of young age patients are reported with RTI (<15 years of age) than in IPV cases.
- In both types of injuries young adults are most often affected (20-39 years old).
- Significant differences are noted in the age group distribution between the two types of injuries (Chi sq., p<0.01)



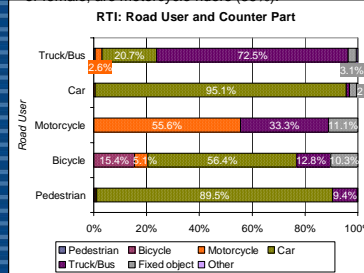
Results 7

- As expected, most RTI injuries were reported to occur on the streets (84.3%) while traveling (80.3%), while approximately half of all IPV incidents (48.6%) occurred on the streets and one third occurred at home (33.3%).
- Unfortunately more than half of IPV cases did not have information on the activity involved when the injury occurred (58.7%), however in 95.6% of cases blunt force was used. Remarkably only 3 gunshot injuries were reported in the six month period.



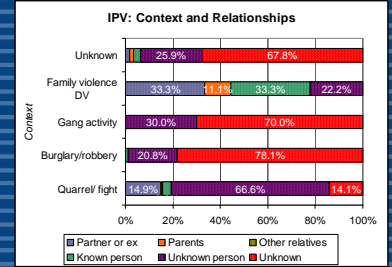
Results 8

- The most frequent road user injured were pedestrians of either gender, representing approx. half of all RTI.
- The second most frequent road user injured, male or female, are motorcycle riders (36%).



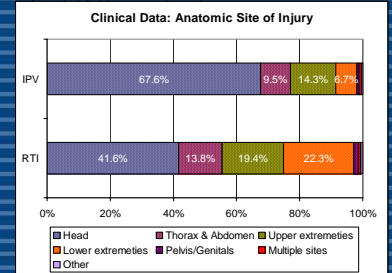
Results 9

- Approx. 9 out of 10 pedestrians injured are hit by automobiles (89.5%).
- Most bicycle riders are injured as a result of collisions with cars (56.4%), while more than half of motorcycle riders injuries are due to collisions with other motorcycles (55.6%) or heavy vehicles (33.3%).
- Most injuries of cases using cars or trucks/buses as a mode of transport are a result of collisions with similar vehicles (95.1% and 72.5%, respectively).
- Approximately 13% of RTI cases showed evidence of alcohol use. However, for 55% of cases this information was unknown (data not shown).



Results 10

- Two out three injuries in quarrels or fights are between strangers (66.4%).
- One third of IPV that occur in the context of family or domestic violence involve a partner or former partner (33.3%). Another third involve a known person (33.3%).
- The relationship between injured cases and perpetrator(s) as a result of gang activity or burglary are largely unknown (66.7% and 77.7% respectively).
- In 43.3% of IPV injury cases, the sex of the perpetrator is not known, otherwise, 53% of the perpetrators were male(s) and only 3% were female(s).



Results 11

- Head injuries are the predominant in IPV (67.6%) and to a lesser extent among RTI (41.5%). Upper extremities are also affected in both types of injuries (14.3% and 19.4%, respectively). Poly-traumatism is more common in RTI (22.3%) compared to IPV (6.7%).
- Head injuries in IPV cases are mostly lacerations (56.3%) and bruises/contusions (35.7%).
- Head injuries among RTI cases are mostly bruises/contusions (54.4%) and lacerations (38.0%).
- There were a total of 6 brain trauma injuries, 4 of which were related to road traffic injuries.

Conclusions 12

- Young adult males between the ages of 20-39 are most frequently affected by IPV and RTI.
- The use of firearms in IPV in Zambia is minimal, but the use of blunt force results in head injuries in approx. 2/3 of all cases.
- Most of RTI occur among pedestrians and motorcycle riders. Pedestrians are mostly injured by automobiles while most motorcycle riders are injured in collisions with other motorcycles.
- IPV results mostly in head lacerations/abrasions while head bruises/contusions are the most frequent injury as a result of RTI.

Conclusions 13

- This is the first time that systematic collection of injury data was successfully implemented at LUTH.
- This pilot project demonstrates that it is possible to collect detailed information on the context in which IPV and RTI that are treated at a hospital with high volume of injury patients.
- Information on the context in which IPV and RTI occur as provided by a surveillance system should become an integral part of the regular information gathering process from patients treated with specific injuries at ED.
- The surveillance system should not be seen as a special, temporary project, but rather as a fundamental element of a long term strategy for the control and prevention of injuries in our communities.