



**HEALTH
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Injury morbidity surveillance at primary healthcare facilities:

*Lessons learnt from periodic cross-sectional surveys and
considerations for future surveillance efforts*

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Overview

- Background
- Current injury surveillance efforts
- Aim and objectives
- Methods
- Lessons learnt
- Recommendations
- Conclusions

Burden of injuries

- **Injuries are preventable** and warrant a **public health approach to prevention** (Krug, 2000 & 2004)
- The Global Burden of Disease Study 2010 highlighted the need for greater policy action on injury prevention (Lozano et al, 2012).
- Prevention requires a comprehensive approach backed by reliable evidence.
- **Lack of morbidity and mortality surveillance systems** - barrier for effective injury prevention especially in sub-Saharan Africa (WHO AFRO, 2010)
- Injuries burden in South Africa is significant:
 - Quadruple burden of disease (Chopra et al, 2009)
 - Mortality rates due to interpersonal violence – 8 (113.4 per 100 000) and 5 (21 per 100 000) times global average for males and females (Norman et al, 2007)

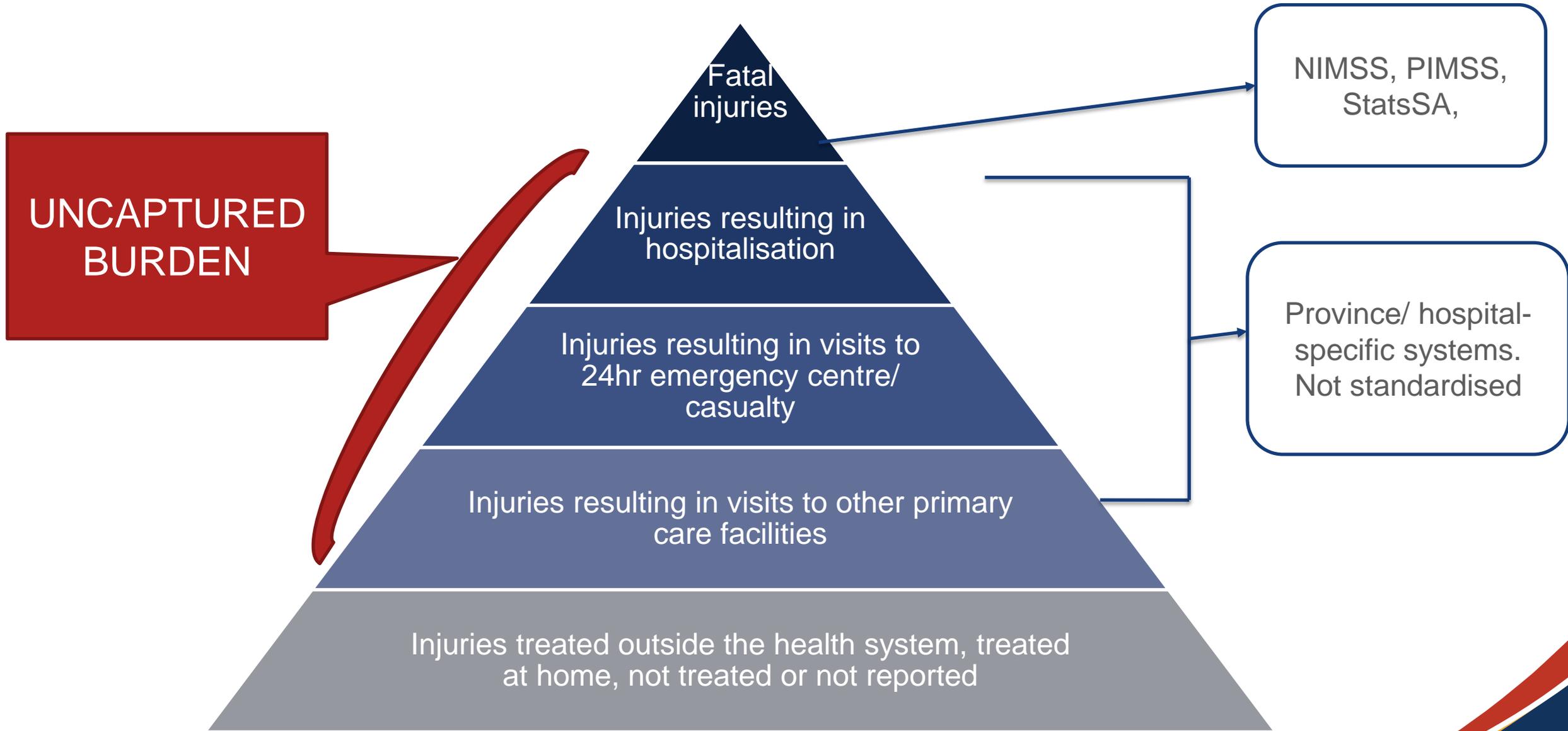
Current injury surveillance systems in South Africa

- What is a surveillance system? The **ongoing** and **systematic collection, analysis, interpretation** and **dissemination** of health information (Holder et al, 2001).
- Current surveillance systems focus on mortality:
 - National injury mortality surveillance system (NIMSS)- mortuary-based system
 - Provincial injury mortality surveillance system (PIMSS) – expansion of NIMSS in WC, MP and Gauteng
 - Stats SA – vital registration (death certificates)

Current injury surveillance systems in South Africa

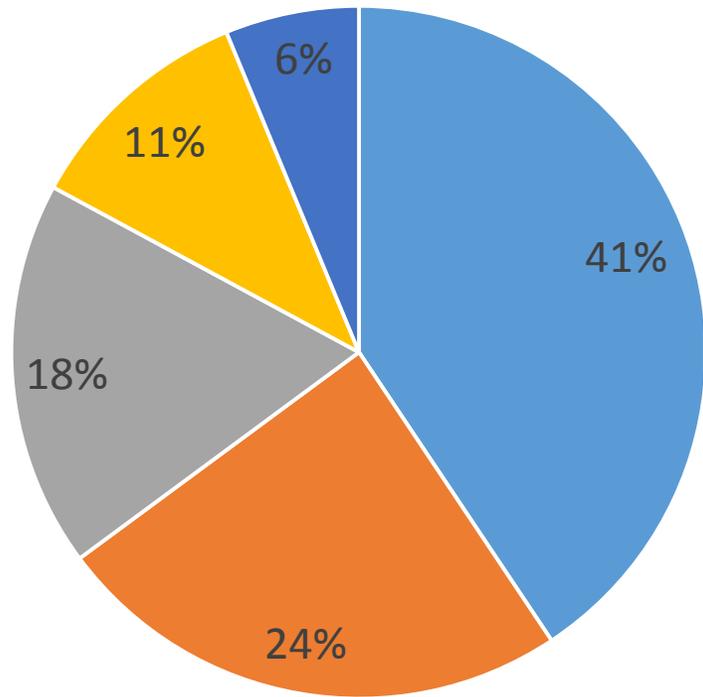
- Morbidity data are scarce. There is **no nationally standardised system** for collection of data on injury morbidity within the health sector.
 - **No injury-specific indicators** in the National indicator dataset (NIDS), KZN however has included indicators in their PIDS (Lutge et al, 2015)
 - Localised hospital and facility-based systems and surveys
 - No systematised data systems to monitor intimate partner violence. Clinical forensic units - collect data on sexual assault/ domestic violence cases
 - National Traffic Information System (eNATIS), Dept of Transport – specific to transport injuries
 - SAPS statistics – issues with underreporting (do not include those who do not report)

Injury pyramid – graphic representation of demand on health sector caused by injuries



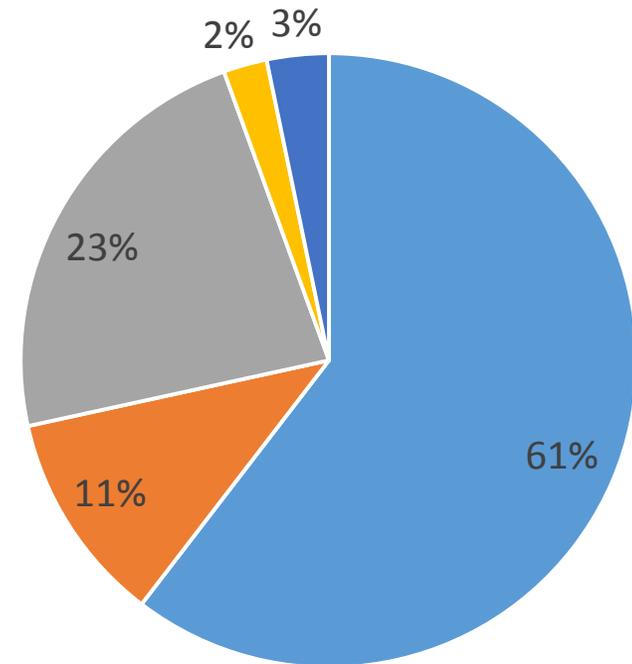
Differing fatal and non-fatal injury profiles

Mortality



■ Violence ■ Transport ■ Unintentional ■ Self-harm ■ Other

Morbidity



■ Violence ■ Transport ■ Unintentional
■ Self-harm ■ Unknown

Source: Morden et al 2016: WC Mortality Profile

Source: Mureithi et al 2013: HST Report on RA of injury morbidity burden in 3 high-violence communities in the WC

Background to this study

- Injury prevention initiatives within WC:
 - PMISS
 - Selected high-risk area approach
 - Western Cape Liquor Act (WCLA)
 - WC Integrated Violence Prevention Policy Framework
- This 3-year study was a collaboration between the WCDOH, UCT and SAMRC. It also forms part of 2 IDRC-funded studies: *“Evaluating the effectiveness of the Western Cape Liquor Act in Khayelitsha and Evaluating the effectiveness of urban upgrading interventions in selected low-income communities in the Western Cape”*.
- Key intention:
 - to inform the long-term goal of institutionalising injury morbidity surveillance - one of the key components of the WCG’s Integrated Provincial Violence Prevention Policy Framework.

Aim & objectives

- To establish a profile of non-fatal injuries presenting to selected primary/district-level facilities in Cape Town
 - Assess trends in injury-related morbidity
 - Identify key variables that would be useful for future surveillance efforts
 - Determine how one could institutionalise injury morbidity surveillance

Methods

- Conducted repeat periodic cross-sectional surveys
 - 6-monthly over 3 years (Sept 2013- Sept 2015)
 - Data collection occurred over a one week period in each survey (24-hours/ day)
 - In 2 high-violence communities in the Cape Town Metropole – Khayelitsha & Nyanga/ Gugulethu
- Basic demographic data and details on cause and location of injury were collected on all individuals seen in the Emergency Centre by data collectors using a basic two-page questionnaire loaded onto a proprietary software app (Mobenzi Researcher) on a low-cost mobile phone.
- Data were then automatically uploaded onto a virtual study database- exported for further cleaning and analysis

Variables	
Demographics	Age, gender
Reason for visit	
Triage code	According to SA Triage Scale
Details on injury	Time, date, activity, place/ scene of injury
Cause of injury	Violence/ transport/ unintentional/ self-harm
Specific cause/ method	Sharp object/ blunt object/ assault/ firearm/ fall/ burn/ poisoning
Violent injuries	Perpetrator details: known/ unknown, gender, number, relationship to patient. Type of violence: interpersonal, crime-related, gang-related
Transport injuries	Traffic user (pedestrian/passenger/driver) / type of vehicle involved
Location	Sub-area in community where injury occurred – for GIS analysis (identify high-risk areas)
Alcohol/ drug use	

Lessons learnt

- A **simple 2-page tool** enabled the collection of detailed data on injuries that established a risk profile of presenting injury cases including demographics, cause, perpetrator, alcohol use and high-risk areas.
- **Most data were readily available in the patient folders or casualty registers - variable completeness and quality**
- Only variables **NOT** routinely documented:
 - **Alcohol/ drug use**
 - **Perpetrator details**
 - **Time of injury**
 - **Where injury occurred** – useful for targeted prevention, provide data for GIS analysis

Lessons learnt

- Emergency centre registers/ clinical patient notes introduced fields for:
 - Separate tallying of trauma cases (register)
 - Indicating if a patient had an injury
 - Mode of injury (Violence/ road injury/ sexual assault/ other) – rarely completed
- Cross-sectional surveys:
 - Relatively **quick and simple** to implement
 - 24-hour surveillance **labour intensive** therefore costly. Cost of data collectors most significant cost –?sustainability in the long-term
- **Mobile data collection** allowed **real-time availability of data, quick turn-around times**. Although initial set-up cost relatively high (compared to paper), subsequent maintenance costs were low.

Recommendations

- **Clearly distinguish between injury and non-injury cases** in casualty registers – simple measure can provide information on overall injury burden
- Identify, agree on and pilot a **core set of routine indicators/ variables** that are locally appropriate and standardised nationally.
 - External cause of injury
 - Place of injury (relevant for targeted prevention efforts)
 - Suspected alcohol use
- Explore possibility of use of mobile applications for injury surveillance –experience from GSH Electronic Trauma Health record (Zargan et al, 2013).

Conclusion

- Data on non-fatal injury burden is important in depicting the true burden of injuries and would complement existing mortality data.
- The cost of periodic cross-sectional surveys may be prohibitive in the long-term necessitating the need to institutionalise surveillance.
- However, questions remain on how they would be collected and how much would it cost to add to current routine data collection systems.
- Policy action for injury prevention needs to be informed by evidence.
- As we move towards an era of increasing use of mhealth for other forms of data, perhaps this would be an opportunity to integrate injury surveillance into routine data collection systems at a national level

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THANK YOU!

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