

**4B.003 RESOURCES FOR ACUTE PAEDIATRIC INJURY CARE IN MAPUTO CENTRAL HOSPITAL, MOZAMBIQUE**

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10.1136/injuryprev-2021-safety.102

**Background** Injuries are the leading cause of death among children aged 1 to 19 years. To improve paediatric injury care in the hospital setting and set priorities, assessing emergency services capacity is an essential step.

**Methods** An on-site investigation took place at Maputo Central Hospital (MCH), the largest hospital of the country. It was performed by a team led by a senior clinician, applying WHO Emergency Unit Assessment Tool, that encompasses aspects pertaining to e.g. facility metrics, infrastructure, essential equipment, human resources and clinical services. Five staff members from the paediatric emergency unit were interviewed. Interviews and observation of premises took in total 6 hours.

**Results** The assessment revealed a number of limitations in all covered areas, including among others the absence of a triage area, resuscitation trauma room, isolation room (e.g. for burns patients), and CT scan. Considering the caseload (35276 cases/children per year), there were too few clinicians (nurses and surgeons) with sufficient training. As well unavailability of guidelines, protocols for trauma care, infection preventions and control, a systematic process for collecting patient data and inexistent security protocol to protect staff, patients and infrastructure from violence. By contrast, the availability of drug and equipment was generally good.

**Conclusion** At MCH, paediatric emergency care faces worrying challenges that jeopardize good outcomes. As it is very likely that similar challenges arise in most other hospitals from the country, an action plan to redress the situation is much needed

**4B.004 TIME SERIES SPATIAL ANALYSIS FRAMEWORK TO IDENTIFY PROMINENT CRASH LOCATIONS: CASE STUDY DELHI**

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10.1136/injuryprev-2021-safety.103

**Introduction** Road traffic crashes(RTC's) form unresolved burden on developmental goals of most Low and Middle Income countries. Enabling safer road environment by introducing traffic calming and traffic management is mostly resorted strategy to reduce RTC's. Random spatial occurrence of these crashes, unavailability of trained manpower for assessment and financial constraints makes it difficult for planners to prioritize locations for remedial investments.

**Aim** Study aims to demonstrate a framework to identify and prioritize prominent crash locations for further field evaluation and remediation.

**Data and Methodology** Road traffic crash location data is collected for 11 years (2006 to 2016) for crashes with at

least 1 fatality in Delhi from First Information Reports. This time series data is segregated. Independent and cumulative hotspot analysis is performed for all 11 years. Spatial analysis toolbox is used to identify most prominent crash hotspots and assigning them priority order for further on-field investigation.

**Results** Study identifies 17,779 fatal crashes in 11 years. 11 year individual hotspot analysis forms total 1,451 hotspot locations requiring remedial action. 714 locations have been consistent hotspots for 11 years, with 80 of these being hotspots for 3 or more years.

**Conclusion** Focused investment solutions in road safety can be developed based on minimal spatial data. Study identifies stagnant hotspots in Delhi over 11 years. The methodology developed will be useful for policy makers to prioritize actions for maximum reduction in crashes.

**Learning Outcomes** Study provides spatial framework to identify and prioritize actionable locations using limited, generally available data for reducing road traffic crash incidents.

**4C – Strategy, March 24, 2021****4C.001 CONCEPTUALISING 'INJURY' IN NEPAL: BUILDING SHARED UNDERSTANDINGS AS A FOUNDATION FOR ENGAGEMENT**

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10.1136/injuryprev-2021-safety.104

**Background** When designing a logo for the Nepal Injury Research Centre a predicament arose: there is no direct Nepali translation for the word 'injury'. A 'loan-word' was used, but this highlighted a broader issue – what do different stakeholders in Nepal understand when we talk about injuries, and what implications might this have for engaging them in research/intervention?

**Methods** To ground our exploration of this topic meaningfully for different stakeholders, we iteratively refined our research design. Experts in injury prevention/occupational health/sociology prepared a proposal, shared through consultation in academic circles. Feedback informed design of an engagement-workshop in December 2019, involving 36 participants from anthropology/sociology/social-work/development-work and health backgrounds. Outputs informed design of the next stage, which is ongoing.

**Results** Professional backgrounds influenced concepts of injury that emerged; where sociologists highlighted the role of social structures, health professionals referenced disruption of 'health' as defined by WHO. In addition to physical harms, participants mentioned economic, social/cultural, mental/psychological and spiritual harms. Groups defined injury-types differently, and categorized/grouped these in diverse ways—not all perspectives aligned with WHO International Classification of diseases.

**Conclusion** Multi-dimensional concepts of injury have implications for how we engage with policy-makers on prevention, and design of interventions to mitigate harm. Varied concepts of injury could inform epidemiological survey design, to elicit injuries which might not otherwise be reported.

**Learning Outcomes** Exploring our research field from first principles can help surface our underlying assumptions, as well as sensitizing researchers to the need to identify/engage with meanings important to stakeholders we seek to influence.

#### 4C.002 THIS IS HOW WE DO IT: INJURY PREVENTION IN WESTERN AUSTRALIA

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10.1136/injuryprev-2021-safety.105

**Context** The Department of Health (DoH) Western Australia (WA) employs a small team to oversee Injury Prevention policy within the Chronic Disease Prevention Directorate. The Injury Prevention team (the Team) contribute to the strategic direction and purchasing of programs for injury prevention. The Team partners with non-government organisations (NGOs) in WA to deliver community-based injury prevention health promotion programs (Programs).

**Process** Four Programs were awarded following an open-tender process in 2013, and ran 1 July 2014 – 30 June 2019. The conclusion of these contracts allowed for a systematic review of priorities, epidemiology, strengths, gaps and opportunities to improve injury prevention practice in WA. This review – both internally and in consultation with the NGOs – has sharpened the focus of the Programs to meet the needs of the WA community.

**Analysis** The DoH used a suite of information to conduct the review, including:

- Key reports, strategic frameworks, and available research
- Service reviews
- Consultations with NGOs
- Practical knowledge and experience

**Outcomes** Following a preferred service provider process, DoH awarded four new service agreements, using innovation to address new and emerging priority areas. Key changes to each of the four programs will be presented and explained. A summary of the ‘building blocks’ to successful partnerships between research, policy and practice will also be suggested.

**Learning Outcomes** WA’s approach to injury prevention will be explained, with an emphasis on the interrelationships between research, policy and practice.

#### 4C.003 STATUS OF NEPAL’S LEGISLATION FOR INJURY PREVENTION AND CONTROL: A CRITICAL REVIEW

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10.1136/injuryprev-2021-safety.106

**Background** A number of sustainable development goals (i.e. SDGs 3, 8, 11 and 16) can be addressed by reducing injuries and incorporating injury prevention into national legislation, plans and policies. Institutions can be more effective if national laws guide prioritisation, development and implementation of plans. No comprehensive review of policy and legislation supporting injury prevention and control in Nepal

has been completed. Therefore, we systematically searched for and critically reviewed existing policy and legislative documents.

**Methods** Using stakeholders from government, NGOs and academia we identified laws and policies that included provisions supporting injury prevention and first response in the home, at work, on the road or in schools. Included documents were critically reviewed to explore their status, scope, and alignment with evidence-based prevention interventions.

Results of 122 documents identified, 61 met the inclusion criteria. Findings indicated that most legislation was not informed by evidence. For example, only 1/22 interventions from the WHO SaveLIVES technical package for road safety was supported by legislation. There is a lack of consideration of capacity and infrastructure for legislative implementation/enforcement and hence a lack of clarity of roles and responsibilities. Few documents considered the health economic argument, or the financial investment necessary, for implementation.

**Conclusion** Nepal has legal frameworks that recognise different injuries in different settings, but they could be strengthened by including objectives clearly aimed at prevention and control.

**Learning Outcomes** The new federal system of government in Nepal, affords multiple opportunities to support injury prevention through legislation and enforcement.

#### 4C.004 SAFETY EFFECTS OF LEGISLATIVE POLICIES IN ESTONIA

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10.1136/injuryprev-2021-safety.107

**Background** Over the last decade several safety related legislations have been adopted in Estonia. In this study I focused on the effects of mandatory smoking alarm regulation (2009), lower ignition propensity (LIP) cigarette standard (2011) and quantitative limits for tobacco products with travelers arriving to Estonia from non-European Union country (2013). The aim of the latter was to combat cigarette smuggling but it also contributed to the implementation of the World Health Organization Framework Convention on Tobacco Control which is one of the targets of Sustainable Development Goals.

**Methods** A time series regression analysis on monthly house fires data for 2007–2019 was conducted. To deal with the autocorrelation I estimated the models with ARIMA errors. Causal claims were established through counterfactual models.

**Results** I found strong intervention effects of smoking alarm and LIP cigarette interventions, both decreased the level of cigarette-related fires by 25% or more ( $p < 0.01$ ). Quantitative limits for tobacco products were also detected to contribute to the reduction of cigarette-related fires but this evidence was weaker. Counterfactual models confirmed causal relationship between the interventions and house fires.

**Conclusions** The legislative policies examined in this study have reduced the level of house fires in Estonia.

**Learning Outcomes** While it was expected that smoking alarm or LIP cigarette regulations affect the house fires, the fire safety effect of border control regulation was an interesting finding. It shows that the legislative measures against illicit trade can also induce other positive safety effects.