

on public roads is a common activity in many occupations and industries. Previous New Zealand (NZ) research suggests that work-related driving contributes significantly to the overall burden of work-related fatal injury. This presentation will identify and describe the contribution of work-related driving injuries to fatalities that occurred on a public road in NZ between 2005 and 2014.

Methods Data collection involved: 1) identifying all possible injury deaths in those aged 0–84 years from mortality records using selected external cause of injury codes; 2) linking these to Coronial case files; 3) reviewing and coding work-related cases; and 4) restricting to motor vehicle traffic crashes (MVTC). Frequencies, percentages and rates per 100,000 workers/persons were calculated. The burden of ‘bystanders to others’ work’ and people ‘commuting to/from work’ was also quantified.

Results A total of 919 work-related MVTC fatalities occurred on public roads (216 workers, 227 commuters, and 476 bystanders). Work contributed to 33% of transport-related deaths in New Zealand. The Transport sector was the major contributor to work-related MVTC fatalities (42%) while the Utilities sector had a notably high rate (8.5 per 100,000 workers).

Conclusions One third of MVTC fatalities in NZ are work-related therefore interventions focusing on occupational and general road safety mechanisms could provide beneficial reductions in the national road toll. These data have informed NZ’s new road safety strategy, Road to Zero, informing the introduction of a new pillar in work-related driving.

1G.004 REMEDIATING DISABILITY SUPPORT WORKERS’ PSYCHOSOCIAL SAFETY USING A WORK SAFETY CLIMATE MEASURE

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Background Disability support workers (DSWs) are at high-risk of psychosocial work hazard exposure. This research reports on the follow-up findings from action research undertaken in three consecutive studies over five years to address DSW psychosocial work safety issues. The first study (n=99) showed DSWs experienced poorer outcomes than norm groups on measures of work safety climate, burnout, physical and mental health, and bullying. In a second study (n=129), stakeholder feedback associated with these measures informed the implementation of seven work safety recommendations. Evaluation after 9 months of implementation showed improved trends using the same measures compared to study 1. A third study investigated whether gains were maintained after 18 months.

Method A follow-up evaluation (study 3, n=138) used the same measures to examine changes overtime and relative to instrument norms.

Results Follow-up findings showed that all health and safety outcomes had continued to improve. There were significant improvements across the three studies in the measures of work safety climate, personal and work-related burnout, witnessed bullying, and mental and physical health. Favourable work safety climate findings were supported by improved incident and workers’ compensation statistics for the organisation.

Conclusions Whilst causation cannot be established (e.g., due to the absence of control groups), progressive improvements in psychosocial safety outcomes support the use of psychosocial measures including work safety climate to assist in the selection and evaluation of work safety interventions.

Learning Outcomes The findings supported the use of standardised measures for benchmarking psychosocial aspects of work safety and for evaluating remedial interventions.

1G.005 DRUG-RELATED DISORDER DIAGNOSES AND DEMOGRAPHIC CHARACTERISTICS ASSOCIATED WITH LEGAL INTERVENTION-RELATED INJURIES

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Background Law enforcement official (LEO) use of force during suspect restraint/apprehension is a serious concern resulting in suspect and LEO injuries. Drug use has been identified as a factor in use-of-force incidents.

Methods This study characterized Kentucky LEO and suspect legal intervention (LI) related injuries and assessed associations between substance use disorder (SUD) diagnoses and demographic characteristics with ICD-10-CM coded LI emergency department (ED) injury visits for years 2016–2018. Logistic regression models examined the most common LEO and suspect injuries.

Results There was a larger proportion of LEO LI hand injury ED visits compared to suspects; there was a larger proportion of suspect LI head injury ED visits compared to LEOs. Among suspect LI ED visits, there were higher odds of head injury ED visits with a SUD (adjusted OR = 1.92), Appalachian county residence (adjusted OR = 1.45), or manhandling LI (adjusted OR = 1.42). No association was found between SUD diagnoses or demographic characteristics and LEO legal intervention hand-related injury ED visits.

Conclusions When de-escalation techniques fail and LI is required, LEO tactics other than use-of-force are recommended to reduce injuries. Crisis Intervention Team and other trainings may prove beneficial by reducing the need for force; in cases involving SUDs, it is recommended that suspects be referred to treatment.

Learning Outcomes LEOs should employ alternative tactics to reduce officer and suspect use-of-force injuries during LI. Safer options include control techniques, striking zones on suspects, and other tools and body parts when LEO de-escalation training techniques have failed.

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P1.001 DEVELOPING THE CITY EMERGENCY-HEALTH RESPONSE CAPABILITY (CERC) TOOL

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Background There is no validated tool to identify gaps in emergency response systems of urban cities in low-and-middle

income countries (LMIC). The objective is to develop a tool that (1) identifies the essential components of an urban emergency response system, (2) outlines methods for identifying gaps among components, (3) recommends best practices for addressing these gaps, and (4) recommends improvement strategies to policy makers.

Methods A systematic review of literature was conducted to identify existing tools, scoring systems and urban emergency response indices. Then, in-depth interviews (IDIs), and focus group discussions (FGDs) were held with key stakeholders to identify essential response components. This was followed by a modified Delphi process with 25 emergency response experts, to score each component on a scale of 1 to 4 (1 being least critical and 4 being most critical). The highest ranked components were included in the City Emergency-health Response Capability (CERC) tool.

Results The literature review yielded 20 articles defining components to an emergency response system. Then 25 IDIs and 12 FGDs independently identified further components, which were subsequently ranked in the Delphi process. The highest ranked components were categorized into 5 domains: service delivery, safety and security, human resource, command and control, policy and procedures. The final CERC tool will use a set of scored questions and observations about these components in implementation.

Conclusion CERC aims to objectively identify gaps in LMIC urban emergency response systems. Using this tool, city officials can identify areas for improvement and resource allocation to increase their disaster-readiness

P1.002 PREHOSPITAL TRAUMA BURDEN MANAGED BY A SOUTH AFRICAN PROVINCIAL EMERGENCY MEDICAL SERVICE

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Background Trauma is one of the leading causes of death and disability in South Africa. There is a paucity of data describing the prehospital trauma burden and the aim of this study was therefore to describe the epidemiology of trauma emergencies managed by the Western Cape government Emergency Medical Service (WCG EMS) in South Africa.

Methods This retrospective study included a descriptive analysis of all trauma patients managed between July 2017 and June 2018.

Results The WCG EMS managed 492 303 cases during the study period. Of these cases, 168 980 (34.3%) were trauma cases. The majority of patients (66.4%) were males and between the socio-economically active ages of 21–40 years old (54.0%). Assaults were the most common cause of trauma emergencies, accounting for 50.2% of the EMS case load managed. The patient acuity was categorised as urgent for 47.5% of the cases, and 74.9% of the prehospital trauma burden was transported to a secondary level health care facility for definitive care.

Conclusion This is the first report of the prehospital trauma burden managed in the Western Cape of South Africa. The

Western Cape suffers a unique trauma burden with a high proportion of assault and violence related trauma

P1.003 ASSESSMENT OF URBAN EMERGENCY RESPONSE SYSTEMS: A LITERATURE REVIEW

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Background Emergency response and preparedness is a global priority, particularly in an urbanizing world. Urban emergency response systems require complex coordination between many stakeholders. However, there are no validated tools that evaluate a city's overall emergency response capacity and preparedness for disasters. To inform the development of such a tool, we conducted a literature review on the components, scoring systems, and the reliability of evaluation methods to measure urban emergency response and preparedness.

Methods A systematic search of PubMed, Google Scholar and EMBASE identified studies, guidelines, measures, and instruments focused on evaluating emergency response and preparedness at the hospital, city, and national levels between 1983 to 2017. Studies focusing on computer simulations, and those without measurement or scoring systems were excluded.

Results Out of 473 nonduplicate citations, 20 studies were included after full-text review describing 1) quantitative scoring methodologies, 2) key components of a response/preparedness plan, and 3) the development of assessment tools. Quantitative assessments of emergency preparedness or response used index scores, summary scores, performance scales, and observational checklists. Key readiness components included staff training, security and safety, leadership, and incident command structure; whereas staff knowledge, vulnerability, and functional recovery were critical for emergency response planning.

Conclusion A comprehensive emergency response and preparedness tool can be developed from clearly defined components, using quantitative methods such as indices or checklists. Such a tool could help in the assessment of a city's emergency preparedness and response capacity in a reproducible and objective manner, but will require validation in an urban environment.

P1.004 IMPACTS OF SAFE COMMUNITY PROGRAMS ON SOCIAL LOSS IN JAPAN

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Background Since 2005 when the Safe Community programs (SC) based on the seven indicators was firstly introduced in Japan, there are 17 communities which have introduced the SC into their community development policies. Among those communities, there is growing interest in what impacts SC has made in their communities.

Methods The social cost of main causes of injuries such as suicide, traffic incidents, falls of the elderly was calculated