

Service learning students assisted with the activities. Through an online evaluation survey, over 90% of teachers assessed the program as very positive. One activity was assessed as neutral by all teachers, and this activity was revised. Teachers reported that 75% to 90% of students were highly engaged

**Conclusions** Schools rarely use arts-based approaches to target behaviour change, although they are a promising approach and schools increasingly seek ways to integrate arts into core education.

## Strategies and Policies

Post Tue 2.9

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### STRENGTHENING THE INJURY SURVEILLANCE SYSTEM BY ESTABLISHING A U-HEALTH-BASED SMART DOCTOR SYSTEM

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**Background** Songpa District was initially designated as an international safe community in 2008 and re-designated in 2013. Its Injury Surveillance System (ISS) comprises the Web-based ISS, injury yearbook, and infant and child ISS for the high-risk group. An attempt was made to strengthen the ISS by using the *U-Health-based Smart Doctor Program*, which is being implemented by the Songpa Public Health Centre to more easily and extensively collect citizen injury data.

**Description of the problem** Methods previously used to collect the local community's injury data include home visits, requests to public and relevant organisations for materials, visits to locations with an injury risk environment, local resident surveys, injury reports of nursery facilities and materials from national statistical institutions. Materials of national statistical institutions were mostly on the entire nation, pointing to the need for more personnel and resource input to obtain local community-level data. There was thus a need to strengthen the ISS using the ubiquitous healthcare.

**Results** The U-Health-based Smart Doctor System is an information technology-based health management system that is customizable for individuals. Songpa District residents use kiosks to easily check their health information (physical data, blood pressure, BMI, etc.). Collected data is interfaced to the website and mobile phone application to enable real-time receipt of help from doctors and nutrition and exercise experts. This system is used by a great number of citizens, and is used to collect injury data along with health data to strengthen the local community's ISS.

**Conclusions** The U-Health-based Smart Doctor System is provided free based on Songpa District's independently developed program. It is regarded as an effective system for collecting resident health and injury data in the nation's large cities that have a good ubiquitous mobile environment. Also, system advancements can be made to obtain diverse information using big data.

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### ANALYSIS OF THE SONGPA SAFETY DOCTOR PROGRAM BASED ON SOCIAL NETWORK ANALYSIS

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**Background** Since 2005, the Songpa District has implemented the Safety Doctor Program (SDP), which involves having a dedicated doctor for a nursery facility to quickly respond to safety-related incidents at nursery facilities. By analysing cooperative relations among local community members in a network that was established by the SDP, this study ascertains the characteristics of the safe community program network and defines the direction of development.

**Methods** A social network analysis survey was conducted on 233 people from the Songpa Public Health Centre (SPHC), Songpa Medical Association, and Songpa Nursery Facility Association that are participating in the SDP. This was followed by a network relations analysis using social network analysis indicators – centrality, centralization, density, and exchange relations.

**Results** First, from among the SDP members, the SPHC indicates the highest centrality (degree centrality: 0.650) and the highest centralization (in-degree centralization: 64.469%), and thus leads the flow of information and resources.

Second, network density is overall low. Network density that excluded the SPHC (0.9%) is lower than the network density that included the centre (1.2%). If the SPHC does not participate in the SDP, several subgroups would emerge among the members, preventing the smooth flow of resources and information and resulting in weak exchange relations.

Third, exchange relations of the network that includes the SPHC consist of education, medical services, and public interests. A cooperation evaluation indicated a high level.

**Conclusions** The SDP member network is focused on the SPHC, but the Program has great significance in that it promoted discussions among local community member groups. The social network analysis results can be used to motivate local community members to engage in participation and cooperation, thus further developing the infant and child injury prevention program.

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### ROLE OF A CHAMPION ORGANISATION IN MAKING CHILD INJURY INTO A PRIORITY NATIONAL HEALTH AGENDA IN LOW-INCOME COUNTRY SETTING: BANGLADESH EXPERIENCES

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**Background** Child injury is a major public health problem in low and middle income countries. According to a WHO estimate more than 630,000 children died due to injury globally in 2011. In Bangladesh, injury is the leading cause of death for children after one year of age.

**Description of the problem** Although injury is a leading killer of children, in many countries, it remains an unrecognised, neglected health issues mainly due to lack of data, evidences for solution, and lack of advocacy and communication. Like many

other health issues, there is lack of champion organisation in these countries to work on child injury problem,

**Results Effects/Changes** Centre for Injury Prevention and Research, Bangladesh (CIPRB) has been evolved in Bangladesh more than a decade back and made a significant changes in the health policy. CIPRB conducted number of child injury intervention researches, notably, PRECISE, SOLID, BASS involving the policy makers from very beginning to create convincing evidences for child injury prevention. With many of its innovation, CIPRB has been engaged in advocacy and communication to make the child injury prevention a priority agenda at national level. As a result, National Child Injury Prevention Strategy formulated, Injury included in Health Policy and health sector plan, Child injury prevention committee formed at Prime Minister's office and Child drowning has been included in regular government child health programme. CIPRB has also added a value in the global efforts in child injury prevention.

**Conclusions** A champion organisation can make a significant change in putting a neglected health issue into a priority agenda competing with other health problem. So it is important to identify a champion organisation or form a platform with champion people to address child injury problem in low and middle-income countries.

#### 711 ONTOLOGY APPROACH FOR ANALYSIS OF SAFETY INCIDENTS IN URBAN TRANSPORT

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**Background** The safety measures in Transportation systems are increasing in Roads, Rails design and operations, Vehicles' ergonomics and new safety measures. United Nations General Assembly proclaimed a Decade of Action for Road Safety 2011–20 with a goal of stabilising and reducing road traffic fatalities around the world. Safety acquires a relevance when accounting for transportation systems especially to Public Transport

**Problem** Automotive industry adds latest safety elements inside vehicles, But the accidents and injury still exists. With yearwise planning for Safety Management we still lack a knowledge base of semantic relationship of various aspects of Safety in Urban Transport.

**Results (Effects and Changes)** The aim is to organise available data and create Ontology for safety of Urban Transport Safety. It will be developed as structure by analysis and formulate the knowledge that will be validated once on domain constraints and attributes. Ontology allow the creation of annotations in which the information is organised as a computer readable and understandable content.

Study at various levels in unsupervised, semi-supervised and supervised learning approaches are done to identify the best fit. The ontology will provide framework for hanging rules, probabilistic information and knowledge schema to search, add, update and extract or disseminate information, that can be applied in prediction, behavioural aspects, other issues in a common format globally along with decision making at real time in case of fatalities.

**Conclusions** The Ontology for Safety Management in Public Transport will assist Policy makers, authorities, researchers for creating a baseline of semantics of safety in a Transport System. This standardised system can be used in data sharing, analysis and

knowledge management. Semantic relationship among various parameters and dependency in multiple domain will make this approach scalable and acceptable globally.

**Prob** The major concerns came up was regarding management of these information and utilisation of these information thus collected. The utilisation process should be strategically aligned so that multiple outputs can be created and used in various analysis of Safety

Governments are increasingly establishing restrictive regulations to improve safety on roads and public transportation systems in Urban and Rural context, with an aim of making travel safer.

Ontologies have been proposed to solve the problems that arise from using different terminology to refer to the same concept or using the same term to refer to different concepts.

The identified approach aims to develop a safe system semantically interrelated that can account all parameters of Safety in public transport.

#### 712 A DECADE OF INJURY AND VIOLENCE PREVENTION IN REPUBLIC OF MACEDONIA

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**Background** Violence and injuries are serious public health problem in Republic of Macedonia. Department for violence and injury control and prevention has been established in the Institute of Public Health of Republic of Macedonia in 2004 as a lead agency in health sector. The main objective is to present the achieved activities in addressing this problem in a period of one decade.

**Methods** Public health approach has been applied to assess the implementation of effective national policy interventions for violence and injury prevention and WHO Resolution EUR/RC55/R9 implementation.

**Results** Country responded to a European Council Recommendation of 31 May 2007. Violence and injury were set as priority in the Biannual collaborative agreements signed between the Ministry of Health and World Health Organisation. Specific national policies for road safety and domestic violence prevention have been implemented and amended legislation related with family violence and road safety Inter-ministerial National Coordination Body for family violence prevention and National coordination body for road safety were established. Report on violence and health in Macedonia and guide for prevention and Evaluation Report of the emergency medical services in Macedonia were prepared, Strategy for family violence, Law for prevention and protection of family violence, Protocol for family violence prevention and Strategy for Road Safety were adopted. WHO TEACH VIP capacity building was applied. Resolution EUR/RC55/R9 was successfully implemented in Macedonia with 82% of 99 effective interventions, compared to European Region median score of 73% and much lower mortality of injuries with SDR 28/100000.

**Conclusions** Significant achievements in this decade are in national policy development, injury surveillance, capacity-building, multisectoral collaboration and evidence-based emergency care. Future challenges are evidence-based interventions for safety promotion and reducing socioeconomic inequalities.