

nationwide, this study project to take off the lessons of operations under the implemented YOURS Network projects was conducted from 22 September 2018 to 18 February 2019 in Chanthaburi and Songkhla provinces. The project aims to study the lesson learned, evaluate YOURS Network project development, and draw a guideline for incoming project support in the future. This project also working on review literature both Thailand and International on how to work with children and youth on road safety issues. The study found that important factors to drive the project to success and achieving long-term sustainability consisting of creating a powerful youth leader, integration of cooperation with various parties, driving road safety issues into the educational system in schools, making clear determination of the key coordinator, heightened awareness on road safety, and recognize all channels communication

### 3B.004 THE IMPACT OF POPULATION AGING ON DEATHS IN CHINA, 1990–2017

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**Background** Population aging creates rising need for health care. We estimated deaths caused by population aging between 1990 and 2017 in China.

**Methods** Deaths from 1990 to 2017 were extracted from Global Burden of Diseases (GBD) 2017 estimates. We decomposed changes in deaths between two given years into the contribution of changes caused by three distinct factors: population size, population aging, and age-specific mortality.

**Results** The number of deaths attributed to population aging increased from 85,737 in 1990 to 5,719,591 in 2017. Between 1990 and 2017, deaths attributed to population aging increased by 71.8% in men and by 68.4% in women. The top three diseases most affected by population aging were stroke, chronic obstructive pulmonary disease and ischemic heart disease for both genders. Population aging caused an increase of 141,466 injury deaths between 1990 and 2017 in China (81,447 for men; 60,019 for women). Mortality reductions partially balanced the increased death burden from population aging between 1990 and 2017, -3,056,547 vs. 5,719,591.

**Conclusion** More efforts are needed to reduce mortality and balance the increasing death burden from population aging.

**Learning Outcomes** Population aging caused an increase in number of deaths from 1990 to 2017 in China. Mortality reduction partially counteracted the death burden from population aging.

### 3B.005 SIDS ON FACEBOOK: A QUALITATIVE DESCRIPTIVE CONTENT ANALYSIS OF A MOTHER'S GROUP

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**Background/Aims** Despite prevention efforts, many parents practice unsafe infant sleep and utilize dangerous infant sleep and monitoring devices; thus, SIDS (sudden infant

death syndrome) is a leading cause of infant mortality in the US. Social media offers a unique perspective on SIDS to guide future research and prevention efforts. This study aimed to describe and analyze conversations among mothers engaged in discussions about SIDS on a Facebook mother's group.

**Methods** We extracted and analyzed 20 posts and 912 comments from 512 mothers who participated in a specific Facebook mother's group and engaged in conversations about SIDS. Two reviewers coded the data using qualitative descriptive content analysis. Themes were induced after discussion among researchers.

**Results** The theme of social support emerged. A variety of informational sources for SIDS and safe sleep were identified, as was a continuum of infant sleep practices (ranging from unsafe to safe sleep per the American Academy of Pediatrics standards). There was widespread discussion regarding infant sleep products and monitoring devices. Embedded within conversations was: (1) confusion among commonly-used medical terminology; (2) the practice of unsafe infant sleep; (3) inconsistency in provider communication about SIDS; and (4) maternal anxiety regarding SIDS.

**Conclusions** Mothers who participated in the Facebook group provided and received informational and emotional support regarding SIDS via this format. Future communication regarding injury prevention and safety promotion on the topic of SIDS and safe sleep should be simple, address infant sleep and monitoring devices, maternal anxiety regarding SIDS, and the common practice of unsafe sleep.

## 3C – Road – Systems, March 23, 2021

### 3C.001 FLIRT WITH DISASTER: AUTOMOBILE FIRE: FINDINGS FROM A MIXED-METHODS STUDY

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**Context** The frightening statistics of 33 cars fire reported every hour, 345 deaths, 1300 injuries and \$1.1 billion property loss annually in US alone raises red flags to draw attention of consumers and state for developing stringent strategies to address the growing challenge amid hike in automobiles price and neglect of safety measures in developing countries. Our study explored determinants and risk factors & consequences in terms of affective and affordable strategies for prevention of automobile fire cases.

**Process** A sequential mixed-methods study was conducted in Karachi, from June– November 2019 using purposive sampling. The cross-sectional survey explored the car fire patterns, trauma and safety measures by consumers. The qualitative inquiry (FGDs and interviews) explored the determinants of automobile fire and reasons of fatalities.

**Analysis & Outcomes** Out of 500 drivers, around (300) 60% suffered or witnessed minor to major car fire incidents in in past 6 months with almost all had minor injuries to fatalities. Only (150) 30% had vehicle maintenance annually. As for build quality and maintenance cost (415) 83% considered non-affordable, whereas, (350) 70% considered essential. More than 90% had no safety tools, only (50)10% cited surveillance mandatory. The lack of knowledge about quality

standards and safety measures rendered by (425) 85%. The qualitative inquiry augmented these findings with all the stakeholders.

**Learning Outcomes** The loopholes in safety standards of automobile industry, lack of knowledge of customer about safety measures and non-existing surveillance by law enforcement authorities result in compromised quality of vehicle and paves way for looming disaster.

### 3C.002 SAFE SYSTEM ASSESSMENTS – PREVENTING SERIOUS INJURY IN TRANSPORT

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**Context** The Safe System, an internationally recognised philosophy for planning, design and operation of a transport system forms the basis of the Vision Zero movement. Safe System Assessments (SSAs) are a process for quantifying transport projects' alignment with Safe System principles. Austroads documented the process in AP-R509–16 SSA Framework.

**Process** When applied to infrastructure SSAs score existing and proposed infrastructure on alignment with Safe System principles. Scores are based on key crash types and risk so that full Safe System would achieve a score of zero. After scoring, recommendations are provided to further reduce the score.

**Analysis** In Victoria, 327 SSAs have been completed on projects including road upgrades, road duplications, route upgrade projects and new town bypasses. Taking one example, the SSA process was used to analyse a freeway upgrade.

**Outcomes** Analysis of the widening of the Tullamarine Freeway (Melbourne) indicates that for run-off-road crashes the Safe System score before the widening was 30, the original widening design was 24, but a formal SSA reduced the score to 16.

**Learning Outcomes** Reviewing the first 50 SSAs in different road environments identified common issues of planning and road design that have less than desirable alignment with Safe System principles. These include unprotected roadside areas of interest, intersections with high potential kinetic energy crashes, mixing of high-speed traffic with vulnerable road users and designs that cause maintenance and/or emergency vehicle access difficult and dangerous.

### 3C.003 GLOBAL PREVENTION OF NEUROTRAUMA-ROAD TRAFFIC COLLISIONS (GPONT-RTC)

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**Background** Neurotrauma from road traffic collisions (RTCs) is one of the leading contributors to traumatic injury worldwide, particularly in low and middle-income countries (LMICs). As a preventable entity, it is imperative that appropriate measures are put in place to reduce the burden. As research on and implementation of preventative strategies in

LMICs are inconsistent, there is a need for accurate epidemiological and qualitative data collection to better understand the issues surrounding RTCs prevention.

**Methods** This research will utilise a mixed-methods approach that is informed by the Canadian Institutes of Health Research Knowledge-to-Action Framework. It involves a scoping exercise consisting of a scoping review and consultation with key informants, epidemiological data collection, and qualitative work with relevant stakeholders.

**Results** The scoping exercise will map the quantity and breadth of preventative strategies for neurotrauma and RTCs globally, which will be discussed with key informants who would also identify local issues and research priorities. Epidemiological data will capture the determinants and distribution of RTCs, and the qualitative data will provide further depth and explanation of the quantitative findings.

**Conclusions** It is hoped that data from this project will be used for the collaborative development of sustainable, context-appropriate interventions for the prevention of RTCs and neurotrauma in LMICs.

**Learning Outcomes** The consultation exercise and qualitative work exemplify patient and public involvement (PPI), engaging and building networks with a variety of stakeholders who could influence policy and practice. Also, the quantitative exercise would be instrumental in developing monitoring and evaluation systems for RTCs in LMICs.

### 3C.004 SAFER PUBLIC BUS TRANSPORTATION IN INDIA

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**Context** India reports the highest number of road deaths globally, with nearly 150,000 people dying annually. Public buses in India play a major role, serving 70 million passengers daily. Safety of these buses is a major concern. Aligned to SDG 3.6, this initiative is aimed to reduce public bus crashes.

**Process** Between 2015–2017, WRI India and UL studied historical crash data of 13 bus transit agencies to analyze the reasons of crashes and drive programmatic interventions to improve safety. One finding was that a majority of buses were plying with substandard mirrors, which greatly compromised the field of vision of drivers, resulting in crashes involving motorcyclists and pedestrians.

**Analysis** In 2017, we retrofitted 46 buses with standard rear-view mirrors in Bengaluru and evaluated the impact on blind spots and driver experience. The results indicated that the replacement of small mirrors with standard-sized rear-view mirrors improved the field of vision significantly (11% on the driver's side and 103% on the passengers' side). Further, 80% of the drivers surveyed felt this improved their experience and comfort.

**Outcomes** This evidence was used to nudge bus transit agencies to improve the quality of mirrors in their bus fleets; subsequently, two agencies issued tenders to procure standard rearview mirrors.

**Learning Outcomes** To ensure sustainable impact, there is a need for overhauling the current regulatory policies and practices to enforce the usage of standard mirrors in buses. This should include capacity building activities like training the drivers and other agency staff to facilitate compliance.