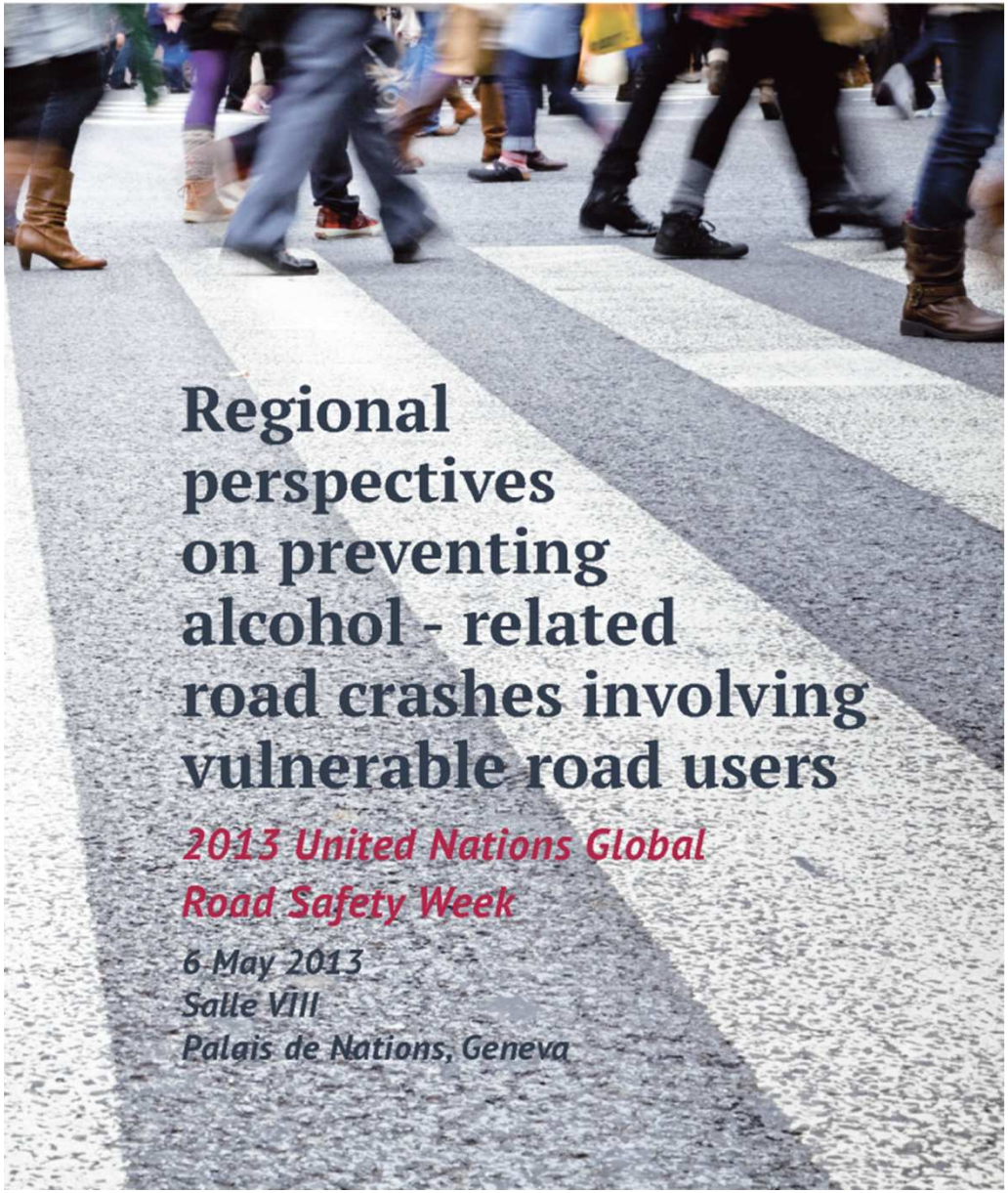
UNITED NATIONS
ECONOMIC COMMISSION
FOR EUROPE

ICAP International Center for Alcohol Policies
Analysis. Balance. Partnership.



Eric Howard

Moderator

Global Picture: Road Crashes and Injuries

- eighth leading cause of death globally
- leading cause of death for 15–29 year olds
- more than a million people die each year on world's roads
- cost of dealing with consequences of road traffic crashes - billions of dollars
- by 2030 road traffic deaths will become fifth leading cause of death unless urgent action taken

Global Picture: VRU Fatalities

Half of the world's road traffic deaths occur among *vulnerable road users,* ie:

- motorcyclists (23%),
- pedestrians (22%) and
- cyclists (5%)

Balance of fatalities:

- car occupants (31%)
- unspecified road users (19%)

VRU Fatality levels by type - examples

Region and country	% pedestrian fatalities	% 2 and 3 wheeler fatalities	% cyclist fatalities	% Total VRU's
HIC , Victoria, Australia	**17**	**17**	**2**	**36**
LMIC's, Africa	**38**	**N/A**	**N/A**	**50+**
LMIC's, SE Asia and W Pacific	**N/A**	**36**	**N/A**	**50+**
LMIC, East Java, Indonesia	**24**	**50**	**N/A**	**74**

HIC = High Income Country **LMIC = Low or Middle Income Country**


TATA SALT
NEW MARKET
SHAADAN
PEARLS

Global Picture: Adequacy of policies and legislation to address VRU crash risks

- only 28 countries, representing 7% of the world's population, have adequate laws addressing all five risk factors (speed, drink– driving, helmets, seat-belts and child restraints).

- Less than 35% of LMIC's have policies in place to protect pedestrians and cyclists

WHO Global Status Report, 2012

VRU alcohol involved serious casualties

All countries have opportunity to make gains

- Understand details of particular VRU alcohol involved problems in each country - starting point for effective action. Characteristics will vary, reflecting culture of alcohol use.
- Determine extent of pedestrian, cyclist and motorcyclist **fatalities** due to excessive alcohol consumption by drivers or riders - or by pedestrians/ cyclists themselves
- Apply proven solutions to address those identified problems

VRU alcohol involved fatality crash categories

- 2 wheeler/ single or multiple vehicle crashes where either operator alcohol impaired
- Pedestrian crashes where vehicle operator alcohol impaired
- Pedestrian crashes where pedestrian alcohol impaired

Pedestrian fatalities and BAC levels

Review of studies (mostly from HIC's):

- > 25% of fatally injured adult pedestrians have BAC exceeding 80-100 mg/100 ml
- distribution of impaired pedestrian BAC's is skewed towards high BAC's
- victims predominantly male
- incidence of alcohol related pedestrian crashes is related to social deprivation, and
- particularly evident amongst indigenous people.

***Preventing crashes involving intoxicated pedestrians*, Cairney P, Stephenson W, Macaulay J, ARRB for Austroads, 2004**

Provision for safe pedestrian movement ?

Pedestrian crash involvement and BAC levels

- Relative risk of involvement in pedestrian crash **increases** with BAC between 0.10 and 0.15 mg/100 ml
- Pedestrians with BAC greater than 0.10 had **double** risk of being involved in crash compared with those with BAC less than 0.10
- Those with BAC greater than 0.15 had **fifteen times** risk of being injured in crash compared to those with BAC less than 0.10

Struik and Rogerson (1988) Study, Victoria, Australia


EGB
New
Star Hotel
TIMBER STORES
EP 7358

Data collection: Drink drive crashes - fatalities and injuries

- Need to know the locations, nature of the problems

- Uniform testing for alcohol and drugs of all pedestrian crash victims presenting at hospitals has to be a key medium term goal.

Identifying potential solutions

Focus on 5 UN Decade of Action *Safe System Pillars*:

- Road safety management
- Safer roads and mobility (speeds)
- Safer vehicles
- Safer road user behaviour
- Post crash emergency care

Identifying potential solutions

Road safety management

Working across sectors to deliver interventions:

- Crash data analysts
- Infrastructure designers
- Footpath and roadside markets managers
- Bus services managers
- Deterrence (legislation and enforcement) officers
- Public education resources
- Working with liquor industry
- Emergency medical care and hospital treatment (+ BAC recording) practitioners

Identifying potential solutions

Safer roads (infrastructure) and mobility (speeds)

- road safety audits (new roads) - assessing safety for all road users, including all VRU's
- International Road Assessment Programme (iRAP) safety assessments to provide star ratings (for existing roads), indicating safety performance and options to lower risk of injury.
- iRAP provides star ratings for vehicle occupants, motorcyclists, pedestrians - for a length of road
- Providing safer road crossings for pedestrians

Identifying potential solutions

Safer roads (infrastructure) and mobility (speeds) (2)

- Lower speed limits in higher pedestrian traffic areas – 30 km/h recommended, with supportive infrastructure treatments
- 40 km/h limits for motorcycles and for other vehicles sharing the road in higher motorcycle activity areas


Running the gauntlet! – Expecting pedestrians to cross 6 lanes of traffic - a busy one way arterial road

Identifying potential solutions

Safer vehicles (Longer term)

Adopting:

- global standard for pedestrian safety
- innovative technologies (eg bonnet airbags and crash avoidance systems) that offer prospect of improved safety for VRU's
- integrated alco-locks in vehicles to prevent alcohol impaired driving

Identifying potential solutions

Safer road user behaviour: Legislation, enforcement & public education

Target:

- Compliance with speed limits
- Impairment with alcohol while driving (> 0.05 BAC)/ walking (> 0.15 BAC?)
- Impairment with drugs while driving/walking
- Wearing of helmets

Legislation and enforcement: VRU BAC involved fatality categories:

(1) 2 wheeler/ single or multiple vehicle crashes where either operator alcohol impaired **or**

(2) pedestrian crashes where vehicle operator alcohol impaired:

- Legislate driver/ rider alcohol impairment laws and **enforce vigorously (Zero BAC level for motorcyclists?)**
- Strategies to:
  - **target higher alcohol use times and locations, (also include general deterrence actions)**
  - conduct longer term public information campaigns – aim to make it socially unacceptable

Enforcement, industry partnership, public campaigns: VRU BAC involved fatality categories:

(3) Pedestrian crashes where pedestrian alcohol impaired

- Enforce vehicle speed limits
- Require responsible serving of alcohol
- Public campaigns
- Licensed premises focused campaigns

Enforcement, industry partnership, public campaigns: VRU BAC involved fatality categories:

- Encouraging local governments to stencil this logo on footpaths outside pubs and clubs in their regions.

Pedestrian Council of Australia

Identifying potential solutions

Post crash emergency care

- Early retrieval of crash victims from roadside
- Competent paramedic care at roadside
- Rapid conveyance to hospital
- High quality trauma care
- Quality rehabilitation

Understanding your fatal and serious injury VRU crashes

- Evidence and experience from other countries
- Analysis of VRU FSI data (overall and alcohol impaired) in your country and compare to other countries.
- What are your challenges?
- What can you adapt/ apply from others?

Pedestrian crash involvement and BAC levels

- Accident risk appeared lower at traffic controls, even though intoxicated pedestrians did not use them correctly.
- High BAC crashes (i.e. where pedestrian BAC > 150 mg/100 ml) associated with:
  - Near-side crashes (67%);
  - Weekends (52%);
  - Hours between 6 pm and 6 am (78%);
  - Close proximity to (within 400 m) licensed premises (70%)
  - Inner suburban areas (56%).

***Preventing crashes involving intoxicated pedestrians*, Cairney P., Stephenson W., Macaulay J., ARRB for Austroads, 2004**

Knowing your alcohol impaired pedestrian crash problem in detail

- Foss et al. (1997): rather than attempting to modify pedestrian behaviour - more useful to aim countermeasures at drivers.
- Would require better information required about situational factors characterising impaired pedestrian collisions. These include:
  - Time
  - Lighting
  - Visibility
  - Road type and condition
  - Location
  - Pedestrian actions
  - Driver actions

Knowing your alcohol impaired pedestrian crash problem in detail

- Time of day - a prime predictor of incidence of drinking pedestrians (in high pedestrian flow areas)
- Relative accident risk for male pedestrians with BAC above 100 mg/100 ml (0.10) is significantly higher for fatalities (than for non-alcohol affected male pedestrians); and
- Countermeasures to address alcohol impaired pedestrians may be more successful by adopting a public health approach rather than focussing on road crashes only

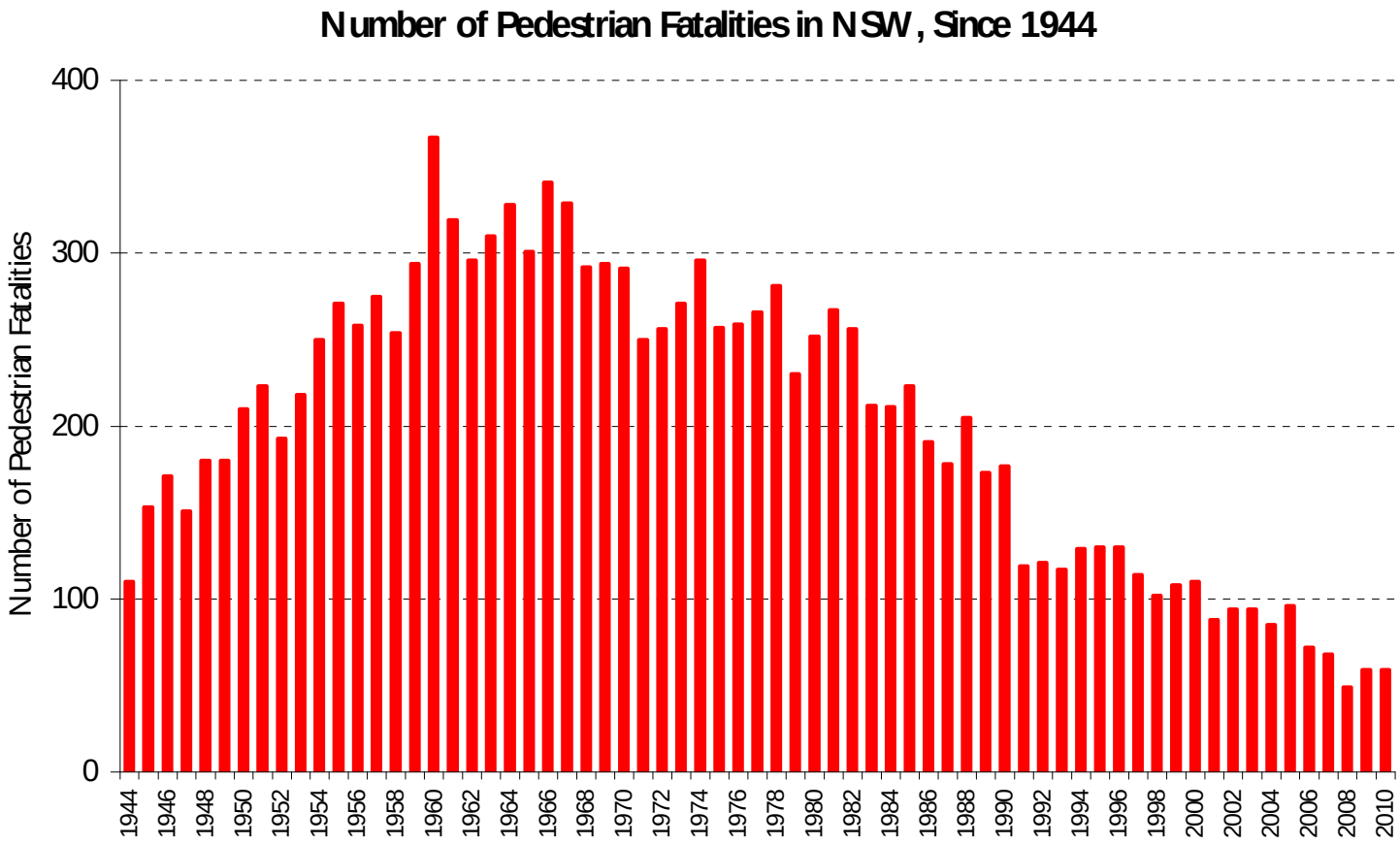
Preventing crashes involving intoxicated pedestrians, Cairney P., Stephenson W., Macaulay J., ARRB for Austroads, 2004

Knowing your alcohol impaired pedestrian crash problem in detail

- Know your VRU and VRU alcohol impaired crash problems.
- Use to pilot initial solutions
- If no data, address VRU FSI crashes generally

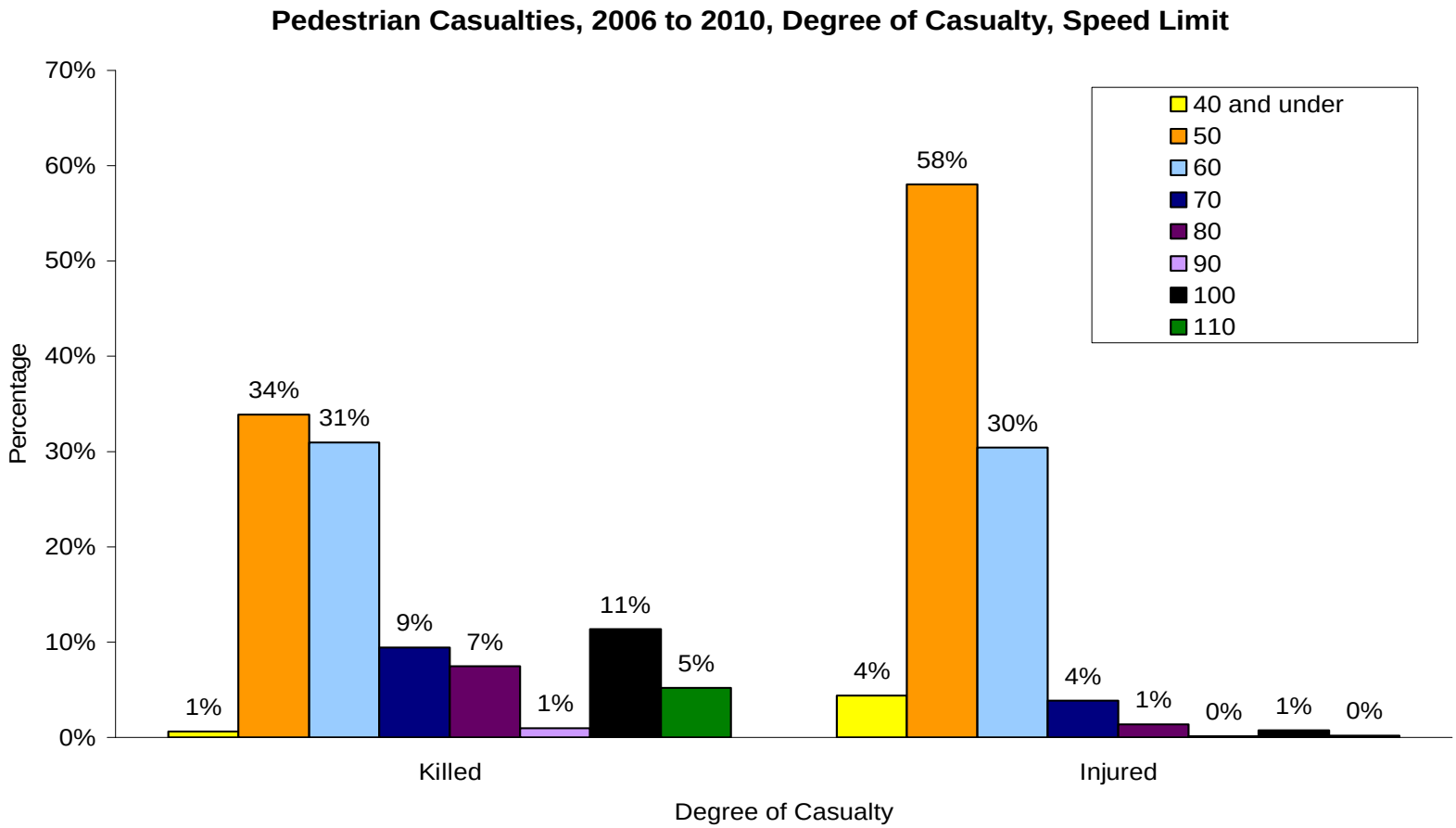
Importance of trend data - Pedestrian Fatalities in NSW, Australia

- From a peak of 367 fatalities in 1960, pedestrian fatalities have fallen cut by 86 percent
- There were 59 fatalities on NSW roads in 2010, the equal second lowest annual total since records began in 1928



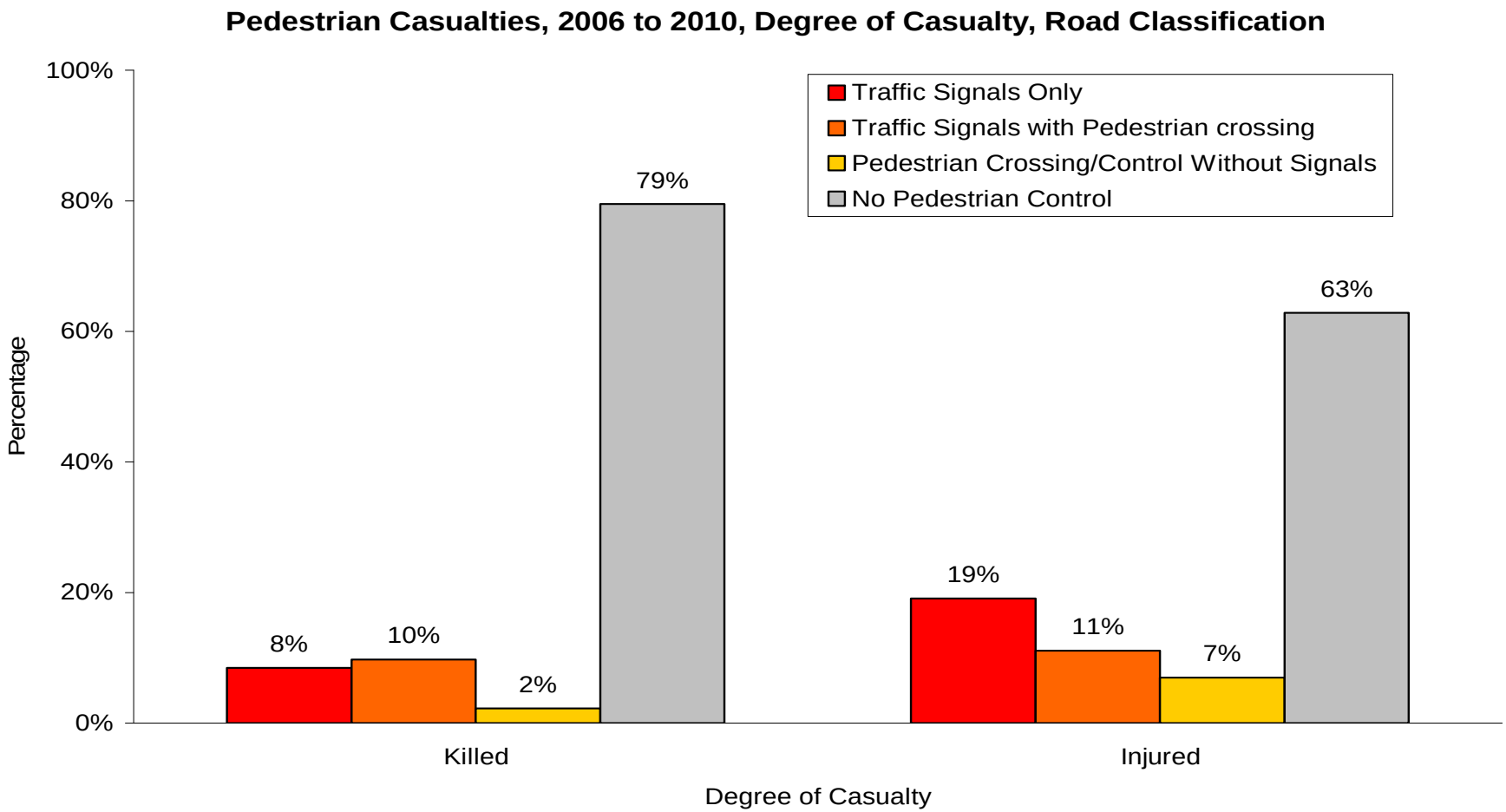
Pedestrian Casualties by Speed Limit: NSW

- The majority of pedestrian casualties occur on roads with a posted speed limit of 60 km/h or less
- One-third of all fatalities occur on roads with a posted speed limit in excess of 60 km/h
- But nearly two-thirds of all injuries occur on roads with a posted speed of 50 km/h or less



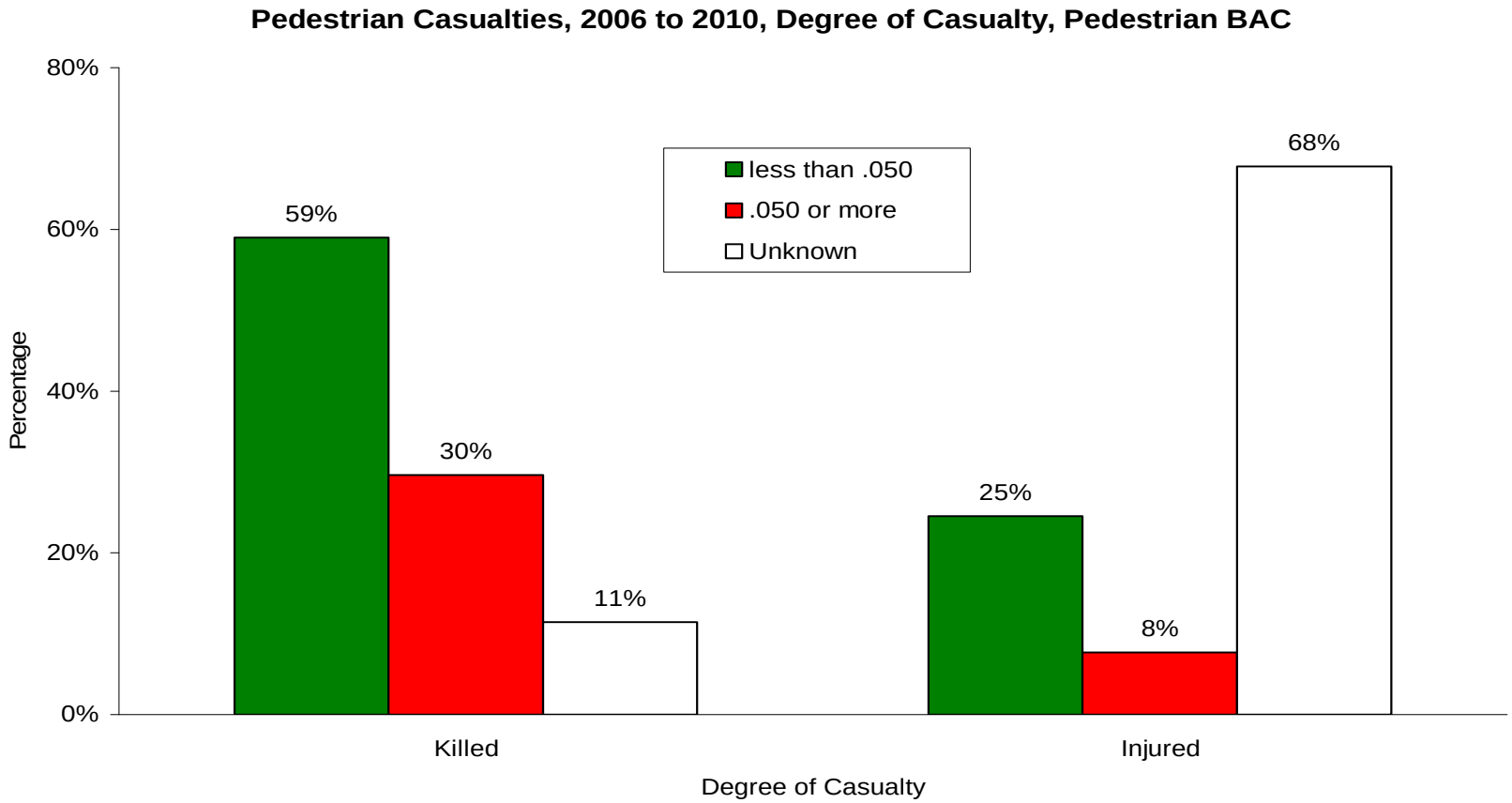
Pedestrian Casualties by type by Traffic/Pedestrian Controls: NSW

- Most pedestrian casualties occur at locations without some form of pedestrian control present



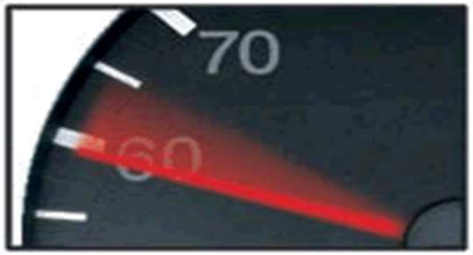
NSW Pedestrian Casualties - pedestrian alcohol impairment

- At least 30% of pedestrian fatalities and 8% of pedestrian injuries have BAC of 0.05 or more
- However, alcohol results unknown for around two-thirds of all pedestrian injuries
- Where alcohol results known, 33% of pedestrian fatalities and 24% of pedestrian injuries have BAC of 0.05 or more



Potential interventions to reduce alcohol impaired pedestrian fatalities

- lower speed limits and speeds
- improved lighting
- low height pedestrian fencing at kerb, outside licensed premises and in bar precincts
- all red phase for traffic lights after hours at intersections in bar precincts
- speed platforms/ tables for pedestrian crossings in urban areas
- medians
- refuge islands
- crosswalks
- pedestrian signals, both intersection and mid-block.

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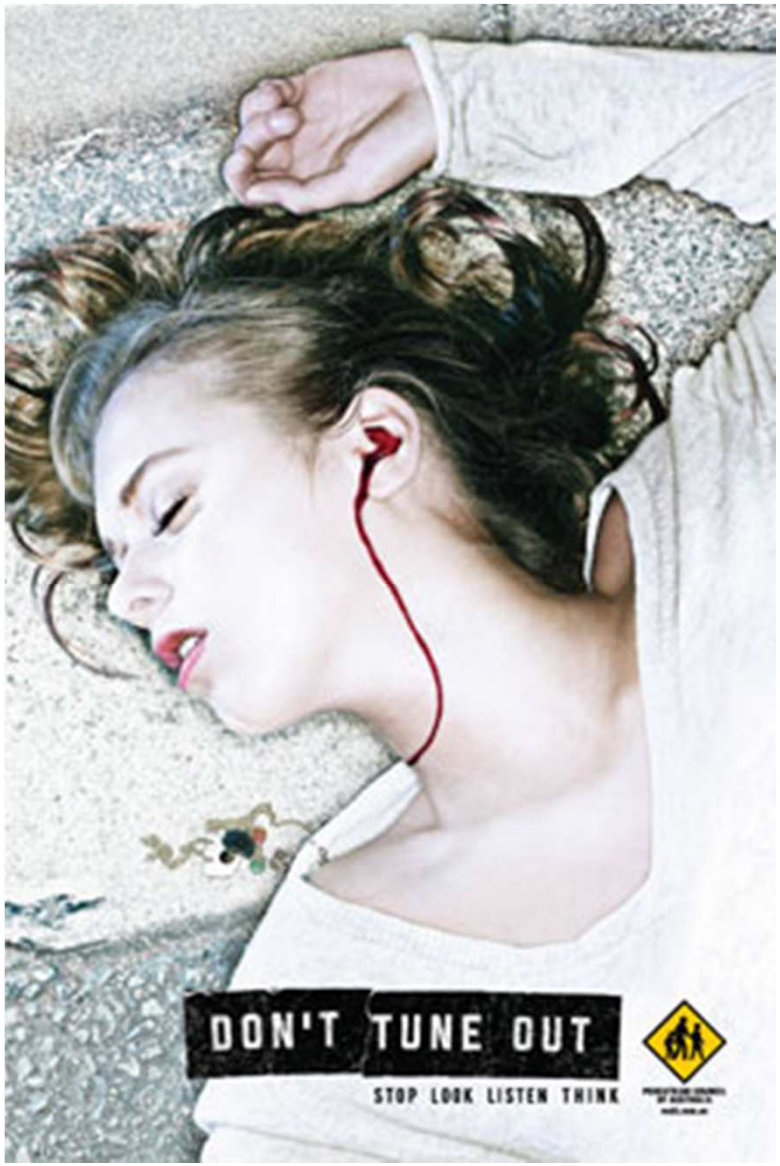
ANURA
SUPER LINE
LANKA ASHOK LEYLAND
NA 6752

Potential interventions to reduce alcohol impaired pedestrian fatalities

- Public information campaigns to inform re nature and extent of intoxicated pedestrian problem; lessen binge drinking; reduce excessive consumption and establish social norm that is not supportive of excessive alcohol consumption
- Responsible serving of alcohol in licensed premises:
  - House policies to ensure staff know how to refuse intoxicated pedestrians,
  - Free or inexpensive food available when patrons call for drinks after work
  - Abandoning “happy hours”
  - Promoting low-alcohol/ non-alcoholic drinks
  - Providing free non-alcoholic drinks for designated drivers, and displaying warning messages on premises.
  - Alternative transport home for patrons of premises

Example: Innovative mass media campaigns: Pedestrian crash risk and pedestrian distraction



Potential interventions to reduce alcohol impaired pedestrian fatalities

Blomberg and Fell (1979) explored some countermeasures:

- That regulations prohibiting ‘walking whilst intoxicated’ be considered;
- Profiles of ‘at risk’ groups be developed and used as guide to appropriate action by enforcement agencies;
- Lowering alcohol content, especially of beer; and
- Engineering treatments, such as use of barriers or kerbs tilted away from street.

Potential interventions to reduce alcohol impaired pedestrian fatalities

- Good pre hospital care and quick transportation to hospital
- Well trained health care providers and trauma care systems

Case study - Infrastructure

- Using an infrastructure treatment to address a behavioural problem
- Rest-on-red signals
- Trial Australia*: Reduction in mean vehicle speeds 11 km/h (28%) at stop line.
- Reduction (52%) of vehicles travelling at threatening speeds (>30 km/h)
- Trial UK**: 76% fewer fatal and injury crashes and 75% fewer fatal and injury crashes involving pedestrian (combination with puffins crossings)

* MUARC evaluation (Australia)

** Unpublished evaluation report (UK).

What if alcohol consumption is low in a country?

Where alcohol consumption culture not strong (eg., Muslim countries) – and indeed for **all** countries;

- consider what can be done to reduce pedestrian and motorcyclist deaths
- ask *What do we need to do to create a safe system for pedestrians?*
- rely on evidence
- focus on tackling drink driving/ drink riding (and travel speed reductions urban areas) as more effective ways to reduce pedestrian deaths related to alcohol consumption

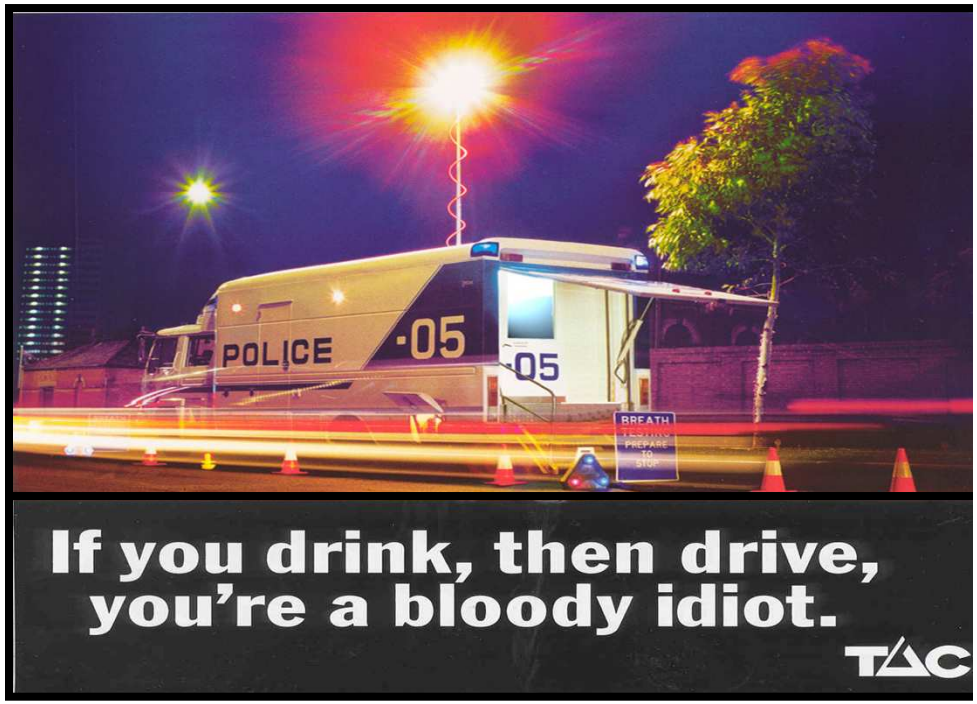
  – compared to targeting intoxicated pedestrians.

- assess crash risks: eg., new app for IOS devices provides ready means of assessing and rating pedestrian crossing locations for safety - on a scale of 1 to 5. Called '*Walk this way*' (MUARC)

- deliver interventions

Main challenges

- Culture of alcohol consumption. Diversity of cultural issues and settings
- Measuring problems more precisely to guide intervention selection
- Many road traffic injuries are largely preventable. Evidence base for effective interventions is extensive.
- Know your problems in as much detail as possible
- Appropriate known solutions then need to be identified and applied



Observations from the regions

- Presenters will refer to their own countries but trying to understand how good practice might be disseminated or shared
- Building capacity in countries?
- Building research, analysis, development capacity - as part of overall capacity?
- How can resources be found and applied?

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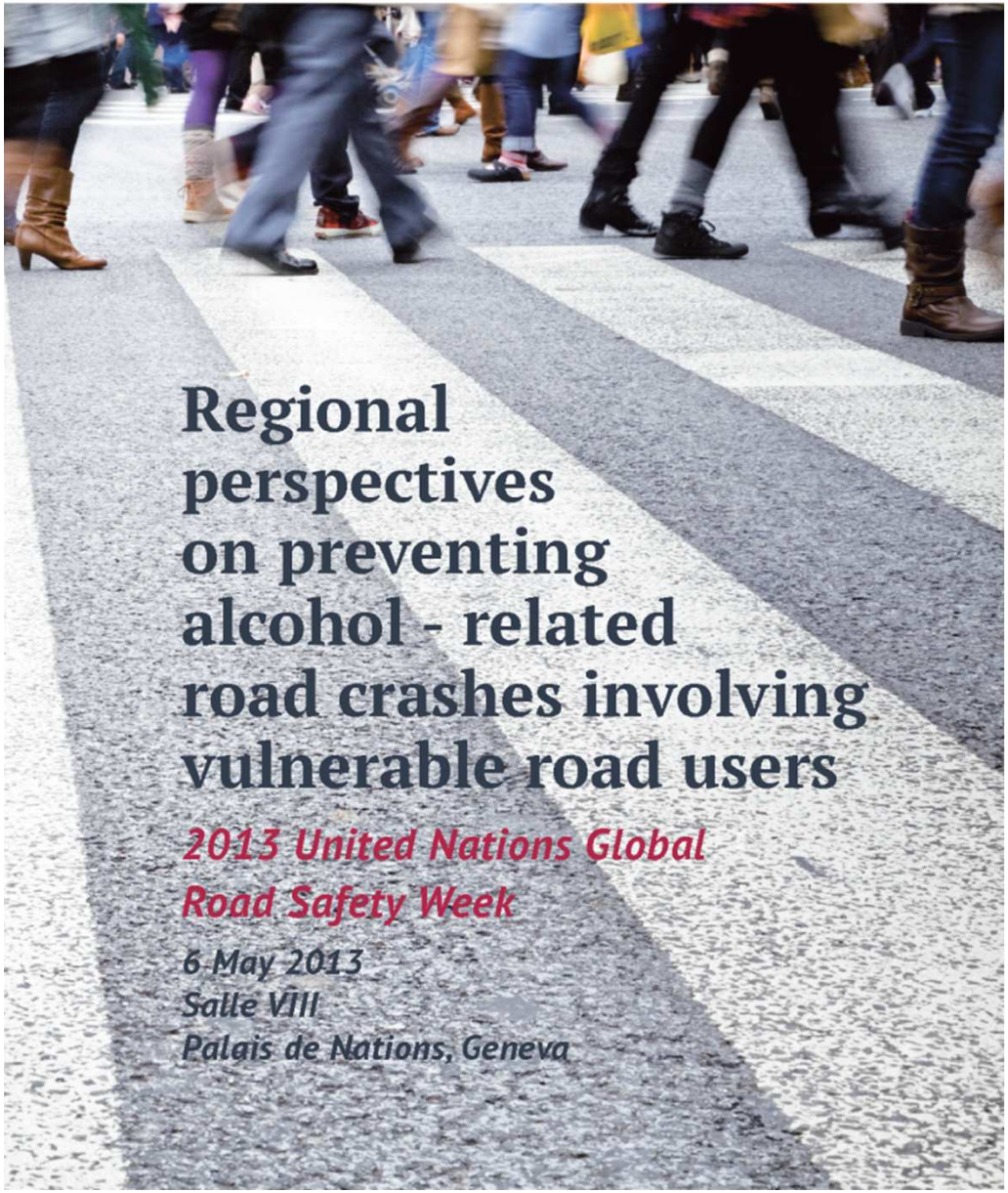

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THANK YOU