Road Traffic Management Corporation

health
Department:
Health
REPUBLIC OF SOUTH AFRICA

Health and Road Traffic Crashes

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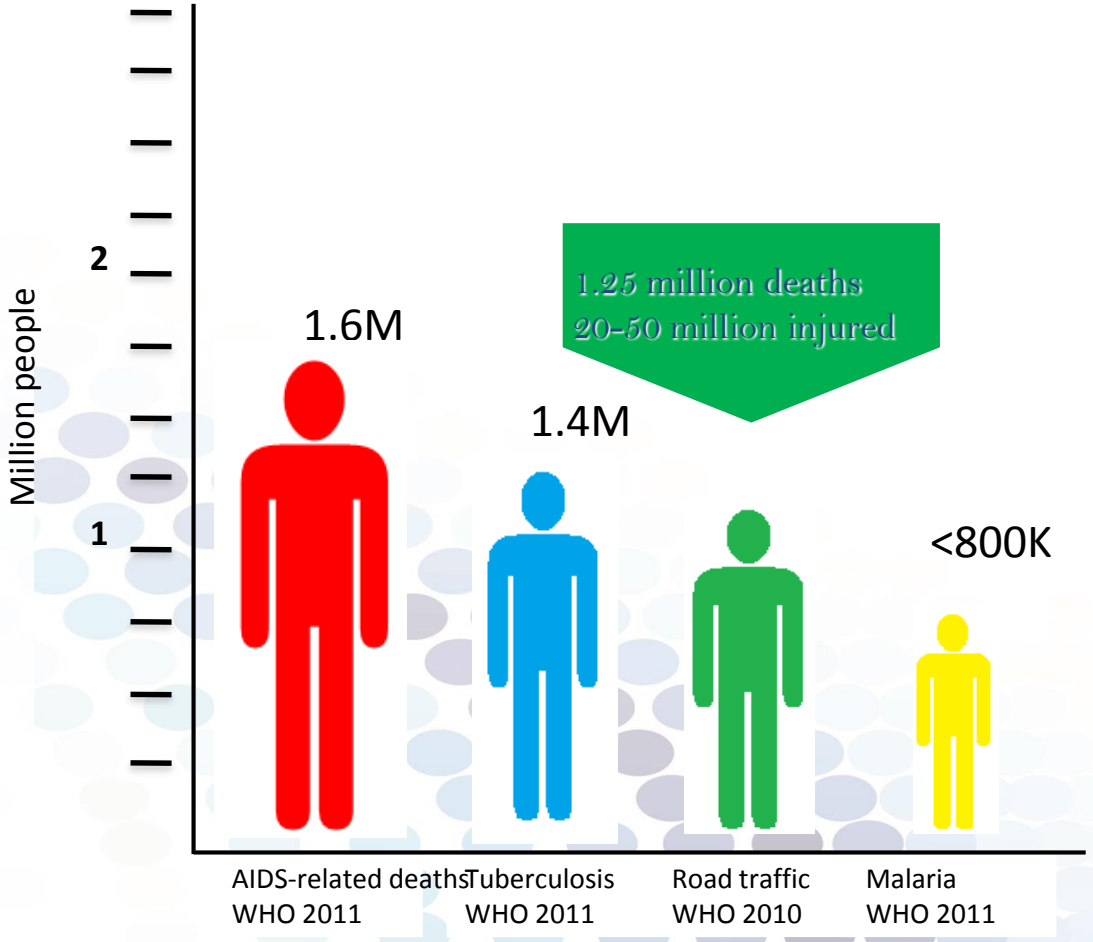
Chief director Non-Communicable Diseases

Road Traffic Crash Injuries place a heavy burden on the national economy, on household finances - as many families are driven deeply into poverty by the loss of breadwinners and the added burden of caring for members disabled by road traffic injuries – but also very significantly on the health system.

Large human and financial resources are required to deal with Mobile Emergency Medical Services, casualty Departments at hospitals, rehabilitation services, forensic laboratories and even mortuaries.

Road Traffic crashes are hence a public health problem requiring a public health approach with an emphasis on PREVENTION (including primary, secondary and tertiary prevention)

- 1.25 million deaths
- 20-50 million injured or disabled
- 9th cause of death worldwide
- Leading cause of death for young people aged 15-29



http://www.who.int/violence_injury_prevention/road_safety_status/2015/en/

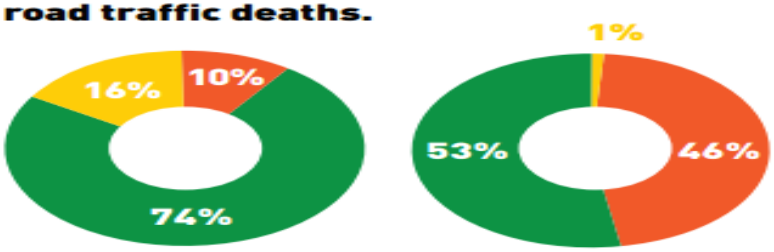
ROAD TRAFFIC INJURIES: THE FACTS

1.25 million
road traffic deaths occur every year

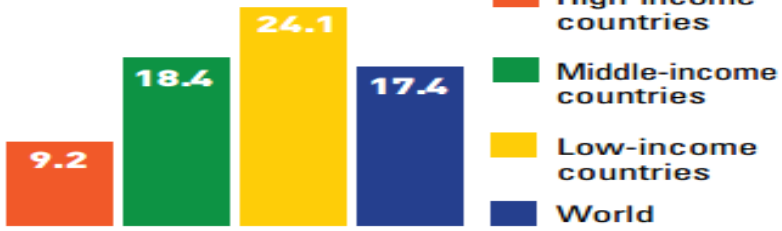
#1 cause of death among those aged **15-29 years**

3 out of 4
road deaths are among men

Although low- and middle-income countries have only half of the world's vehicles, they have 90% of the world's road traffic deaths.

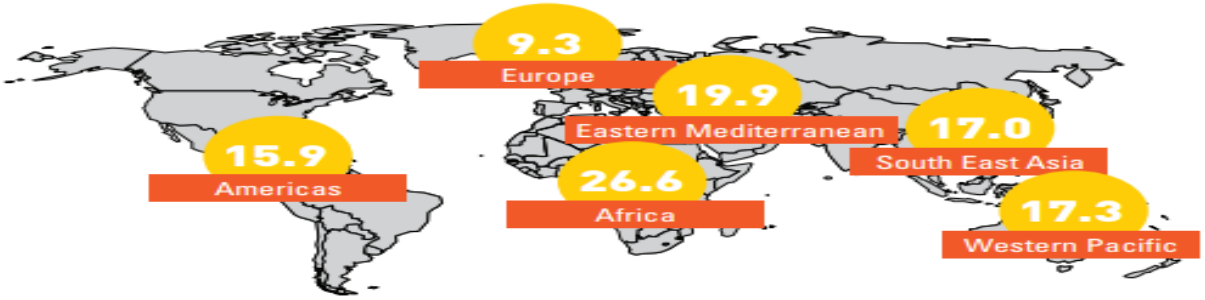


Low-income countries have the highest road traffic death rates.



Road traffic fatalities per 100 000 population

The chance of dying in a road traffic crash depends on where you live



Road traffic fatalities per 100 000 population

49%
of all road traffic deaths are among pedestrians, cyclists and motorcycles.

World Health Organization

Global status report on road safety 2015
www.who.int/violence_injury_prevention/road_safety_status/2015/en/

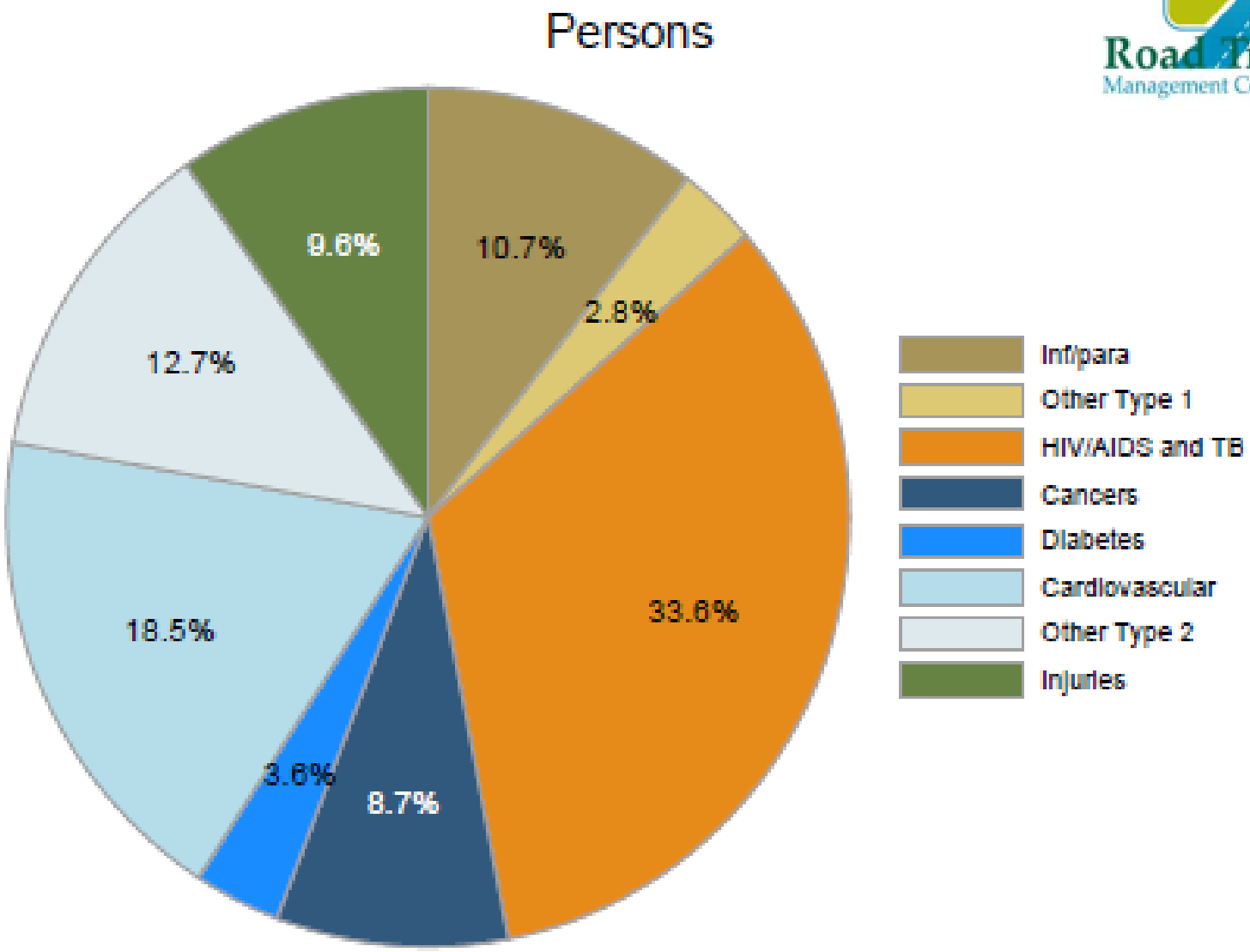
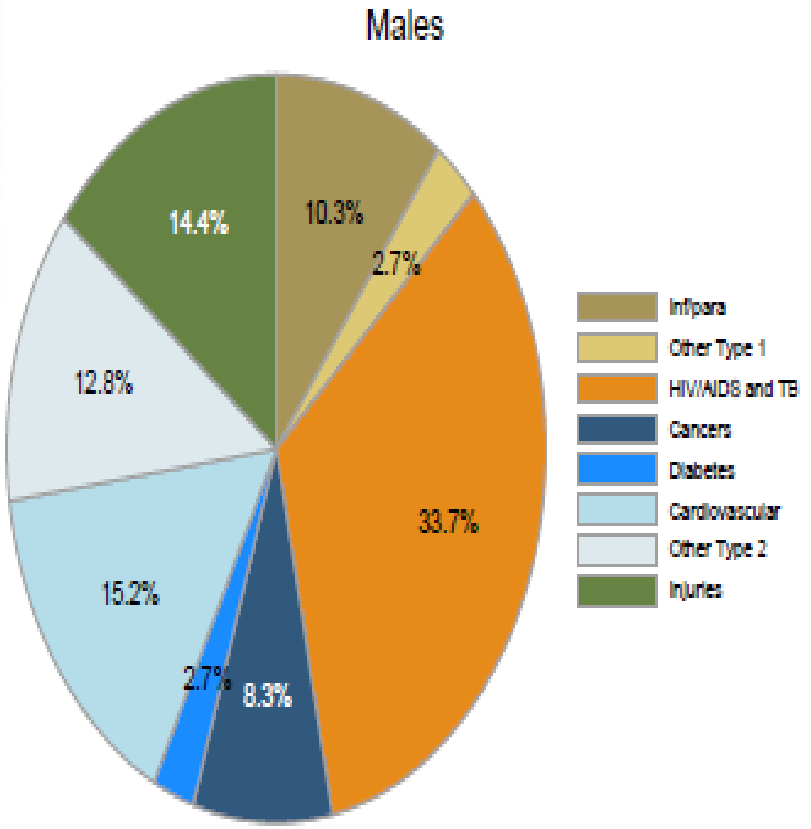
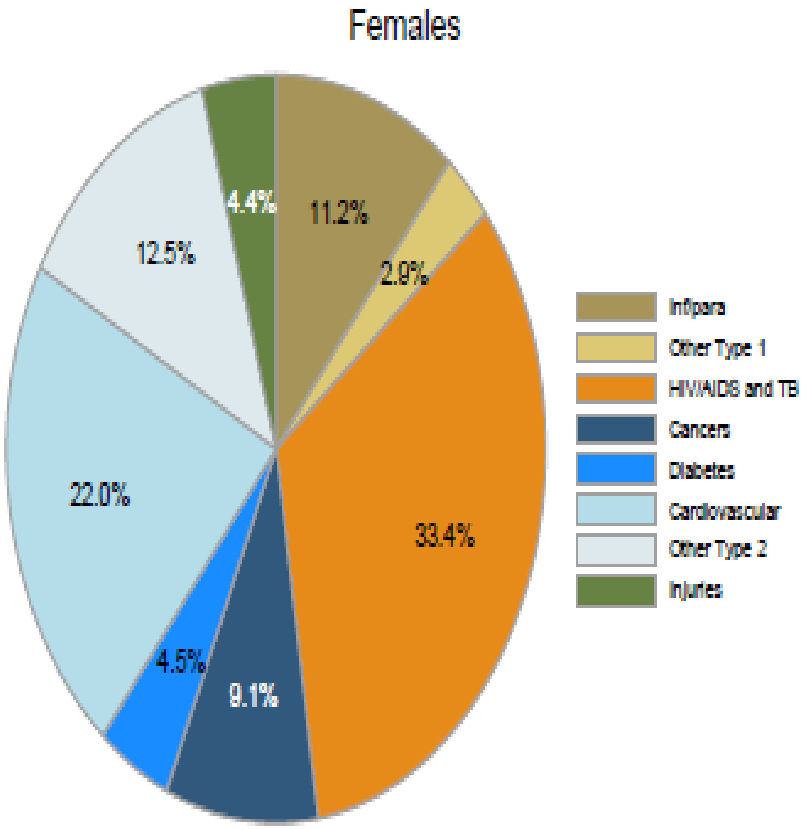


Figure 2: Deaths by disease category for persons 2012, N = 528,947


Males
10.3%
2.7%
33.7%
8.3%
2.7%
15.2%
12.8%
14.4%
Infpara
Other Type 1
HIV/AIDS and TB
Cancers
Diabetes
Cardiovascular
Other Type 2
Injuries


Females
11.2%
2.9%
33.4%
9.1%
4.5%
22.0%
12.5%
4.4%
Infpara
Other Type 1
HIV/AIDS and TB
Cancers
Diabetes
Cardiovascular
Other Type 2
Injuries

Intentional injuries, including interpersonal violence, resulted in 49.0% and unintentional injuries (including RTC) resulted in 51.0% of the total deaths due to injuries.

	0-4 years	5-14 years	15-29 years	30-49 years	50+ years	Total
1	Preterm birth complications 1134930	Diarrhoeal diseases 142045	Road injury 325736	HIV/AIDS 882141	Ischaemic heart disease 2087015	Ischaemic heart disease 7352704
2	Lower respiratory infections 994613	Lower respiratory infections 122043	Self-harm 242903	Ischaemic heart disease 430499	Stroke 1807858	Stroke 6669383
3	Birth asphyxia and birth trauma 743767	HIV/AIDS 96275	HIV/AIDS 239228	Road injury 364462	Chronic obstructive pulmonary disease 830169	Chronic obstructive pulmonary disease 3102604
4	Diarrhoeal diseases 622164	Road injury 83604	Interpersonal violence 211519	Stroke 293770	Trachea, bronchus, lung cancers 671878	Lower respiratory infections 3051319
5	Malaria 476192	Drowning 74212	Maternal conditions 150983	Self-harm 243971	Diabetes mellitus 552704	Trachea, bronchus, lung cancers 1599313
6	Congenital anomalies 450050	Meningitis 73745	Lower respiratory infections 103006	Tuberculosis 231652	Cirrhosis of the liver 492154	HIV/AIDS 1533757
7	Neonatal sepsis and infections 430853	Protein-energy malnutrition 52545	Diarrhoeal diseases 85338	Cirrhosis of the liver 226173	Lower respiratory infections 405912	Diarrhoeal diseases 1497672
8	Protein-energy malnutrition 148358	Endocrine, blood, immune disorders 42837	Drowning 75833	Interpersonal violence 175089	Tuberculosis 341116	Diabetes mellitus 1496806
9	Meningitis 143835	Fire, heat and hot substances 41575	Ischaemic heart disease 67686	Lower respiratory infections 154542	Liver cancer 319173	Road injury 1254434
10	HIV/AIDS 102796	Congenital anomalies 33061	Meningitis 56700	Maternal conditions 144900	Hypertensive heart disease 292343	Hypertensive heart disease 1140303

Injuries a leading killer of youth

Leading causes of death by age group, both sexes, world, 2012.

Rank	0-4	5-14	15-29	30-49	50-69	70+	All ages
1	Preterm birth complications 1 134 930	Diarrhoeal diseases 142 045	Road traffic injuries 325 736	HIV/AIDS 882 141	Ischaemic heart disease 2 087 015	Ischaemic heart disease 4 751 019	Ischaemic heart disease 7 352 704
2	Lower respiratory infections 994 613	Lower respiratory infections 122 043	Suicide 242 903	Ischaemic heart disease 430 499	Stroke 1 807 858	Stroke 4 500 209	Stroke 6 669 383
3	Birth asphyxia and birth trauma 743 767	HIV/AIDS 96 275	HIV/AIDS 239 228	Road traffic injuries 364 462	Chronic obstructive pulmonary disease 830 169	Chronic obstructive pulmonary disease 2 164 025	Chronic obstructive pulmonary disease 3 102 604
4	Diarrhoeal diseases 622 164	Road traffic injuries 83 604	Homicide 211 519	Stroke 293 770	Trachea, bronchus, lung cancers 671 878	Lower respiratory infections 1 271 202	Lower respiratory infections 3 051 319
5	Malaria 476 192	Drowning 74 212	Maternal conditions 150 983	Suicide 243 971	Diabetes mellitus 552 704	Trachea, bronchus, lung cancers 830 746	Trachea, bronchus, lung cancers 1 599 313
6	Congenital anomalies 450 050	Meningitis 73 745	Lower respiratory infections 103 006	Tuberculosis 231 652	Cirrhosis of the liver 492 154	Diabetes mellitus 804 342	HIV/AIDS 1 533 757
7	Neonatal sepsis and infections 430 853	Protein-energy malnutrition 52 545	Diarrhoeal diseases 85 338	Cirrhosis of the liver 226 173	Lower respiratory infections 405 912	Hypertensive heart disease 778 827	Diarrhoeal diseases 1 497 672
8	Protein-energy malnutrition 148 358	Endocrine, blood, immune disorders 42 837	Drowning 75 833	Homicide 175 089	Tuberculosis 341 116	Alzheimer's disease and other dementias 659 195	Diabetes mellitus 1 496 806
9	Meningitis 143 835	Fire-related burns 41 575	Ischaemic heart disease 67 686	Lower respiratory infections 154 542	Liver cancer 319 173	Kidney diseases 416 586	Road traffic injuries 1 254 434
10	HIV/AIDS 102 796	Congenital anomalies 33 061	Meningitis 56 700	Maternal conditions 144 900	Hypertensive heart disease 292 343	Colon and rectum cancers 411 108	Hypertensive heart disease 1 140 303
11	Measles 100 698	Malaria 32 260	Tuberculosis 55 832	Breast cancer 123 727	Stomach cancer 288 877	Stomach cancer 375 256	Preterm birth complications 1 134 954
12	Syphilis 67 490	Epilepsy 32 095	War 54 972	Diarrhoeal diseases 111 685	Road traffic injuries 280 568	Falls 355 231	Cirrhosis of the liver 1 020 807
13	Drowning 66 006	Falls 30 798	Stroke 53 499	Liver cancer 108 526	Kidney diseases 266 682	Diarrhoeal diseases 326 499	Tuberculosis 934 838
14	Whooping cough 62 677	Measles 25 115	Epilepsy 50 359	Diabetes mellitus 106 001	Colon and rectum cancers 247 696	Liver cancer 299 075	Kidney diseases 863 810
15	Fire-related burns 62 655	Homicide 21 813	Fire-related burns 49 067	Kidney diseases 100 648	Breast cancer 229 381	Prostate cancer 261 207	Suicide 803 893

LEAGUE TABLE OF LEADING CAUSES OF DEATH BY AGE GROUP, 2012

Rank	Age 0–4	Age 5–14	Age 15–44	Age 45–59	Age 60+	All ages
1	HIV/AIDS (20.1%)	HIV/AIDS (50.7%)	HIV/AIDS (51.9%)	HIV/AIDS (34.1%)	**Cerebro-vascular disease (15.4%)**	HIV/AIDS (29.1%)
2	Diarrhoeal diseases (16.5%)	**Road injuries (10.5%)**	Interpersonal violence (8.7%)	**Cerebro-vascular disease (6.4%)**	Ischaemic heart disease (9.2%)	**Cerebro-vascular disease (7.5%)**
3	Lower respiratory infections (13.1%)	Lower respiratory infections (4.1%)	**Road injuries (6.4%)**	Tuberculosis (6.3%)	HIV/AIDS (7.9%)	Lower respiratory infections (4.9%)
4	Preterm birth complications (11.2%)	Diarrhoeal diseases (3.7%)	Tuberculosis (5.3%)	Ischaemic heart disease (4.8%)	Hypertensive heart disease (7.7%)	Ischaemic heart disease (4.7%)
5	**Birth asphyxia (6.0%)**	Meningitis/ encephalitis (3.6%)	Self-inflicted injuries (2.8%)	Diabetes mellitus (4.0%)	Diabetes mellitus (6.6%)	Tuberculosis (4.5%)
6	Protein-energy malnutrition (4.9%)	Drowning (3.2%)	Lower respiratory infections (2.3%)	Lower respiratory infections (3.2%)	Lower respiratory infections (6.1%)	Diabetes mellitus (3.6%)
7	Sepsis/other newborn infectious (3.2%)	Epilepsy (2.0%)	Meningitis/ encephalitis (2.0%)	**Road injuries (2.9%)**	COPD (3.8%)	Hypertensive heart disease (3.5%)
8	**Road injuries (1.9%)**	Interpersonal violence (1.9%)	**Cerebro-vascular disease (1.5%)**	Renal disease (2.9%)	Renal disease (3.8%)	Interpersonal violence (3.5%)

Proportions of road traffic deaths by type of road users and WHO region

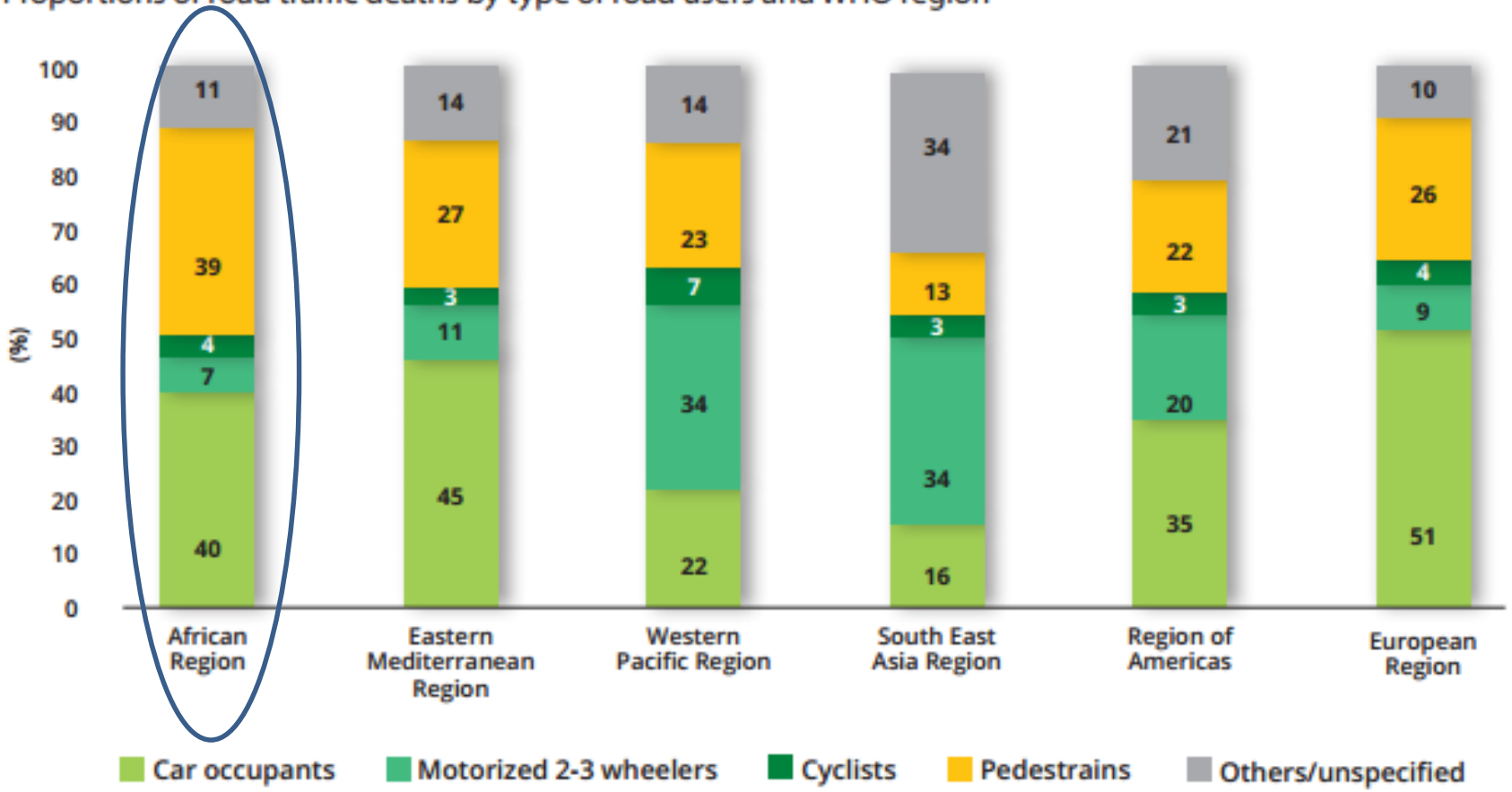


Table 11: Total RTC costs by cost type, category and element (Rand)

Cost Element	Internal (uncompensated victim)	External (private) (uncompensated others)	External (public sector) (uncompensated public)	Insurance (private) (compensated victim & others)	Total
Human Casualty					
Lost productivity	34 528 857 739	6 017 632 169		5 513 262 664	46 059 552 571
Pain, suffering and lost quality of life	35 121 533 212	4 390 191 652		1 978 009 509	41 489 734 373
Medical treatment			9 354 315 159	1 058 420 917	10 412 736 076
Funeral	157 329 394			27 796 615	185 126 008
Work place re-occupation		883 185 558			883 185 558
Sub-total: Human Casualty Cost	69 807 520 344	11 291 009 379	9 354 315 159	8 577 489 705	99 030 334 587

Table 11: Total RTC costs by cost type, category and element (Rand)

Cost Element	Internal (uncompensated victim)	External (private) (uncompensated others)	External (public sector) (uncompensated public)	Insurance (private) (compensated victim & others)	Total
Incident					
Emergency response			24 403 256	120 434 791	144 838 047
Legal				5 209 274 099	5 209 274 099
Vehicle related				3 379 716 014	3 379 716 014
RTC management			1 903 953 544		1 903 953 544
Infrastructure damage			1 978 138 540		1 978 138 540
Delay congestion and emissions		9 978 752 945			9 978 752 945
Sub-total: Incident Cost		9 978 752 945	3 906 495 340	8 709 424 905	22 594 673 190
Total Cost	82 142 070 853 (57% of total)	21 269 762 323 (15% of total)	13 260 810 499 (9% of total)	26 277 941 258 (18% of total)	142 950 584 934

Ensure healthy lives and promote well-being for all at all ages

3.6

By 2020, halve the number of global deaths and injuries from road traffic accidents

3.6.1 Death rate due to road traffic injuries

- Speed reduction
- Seat-belts
- Child-restraints
- Helmets
- Drinking and driving

Laws
Enforcement
Standards
Behavior

- ✓ Low cost engineering measures
- ✓ Safer vehicles
- ✓ Pre-hospital and Trauma care

SAFER ROAD USERS	
National speed limit law	Yes
Max urban speed limit	60 km/h
Max rural speed limit	100 km/h
Max motorway speed limit	120 km/h
Local authorities can modify limits	Yes
Enforcement	0 1 2 ③ 4 5 6 7 8 9 10
National drink–driving law	Yes
BAC limit – general population	< 0.05 g/dl
BAC limit – young or novice drivers	< 0.05 g/dl
Random breath testing carried out	Yes
Enforcement	0 1 2 3 ④ 5 6 7 8 9 10
% road traffic deaths involving alcohol	58%[d]
National motorcycle helmet law	Yes
Applies to drivers and passengers	Yes
Law requires helmet to be fastened	Yes
Law refers to helmet standard	No
Enforcement	0 1 2 3 4 ⑤ 6 7 8 9 10
Helmet wearing rate	—

Best practice : 50km/h

National seat-belt law	Yes
Applies to front and rear seat occupants	Yes
Enforcement	0 1 ② 3 4 5 6 7 8 9 10
Seat-belt wearing rate	33% Drivers[e], 31% Front seats[e]
National child restraint law	No
Restrictions on children sitting in front seat	No
Child restraint law based on	—
Enforcement	—
% children using child restraints	—
National law on mobile phone use while driving	Yes
Law prohibits hand-held mobile phone use	Yes
Law also applies to hands-free phones	No
National drug-driving law	Yes

[d] National Injury Mortality Surveillance System (NIMSS) (data from 2010).
[e] Traffic Offence Survey RTMC (data from 2010).

Best practice : Yes

Best practice : Yes to both, law based on age/height/weight

The National Department of Health has actively pursued improved access of Emergency Medical Services (EMS) through the implementation of the three digit toll free emergency number - 112.

The number is fully implemented with all mobile telephone network operators with only the fixed lines to be changed which is currently in process.

The imminent promulgation of the Emergency Medical Services Regulations will set minimum standards for emergency care provision in the pre-hospital environment for both private and public EMS providers thereby promoting efficient and equitable health care.

Branding of ambulances, rapid response units, staff uniforms, ranking and medical insignia have been standardized across the country for public sector EMS to create a national corporate image and are currently being phased in.

During peak seasons, EMS throughout the country increase the number of operational ambulances, reduce response times by standing off at high profile/accident points and become actively involved with road safety awareness programmes with our key stakeholders.

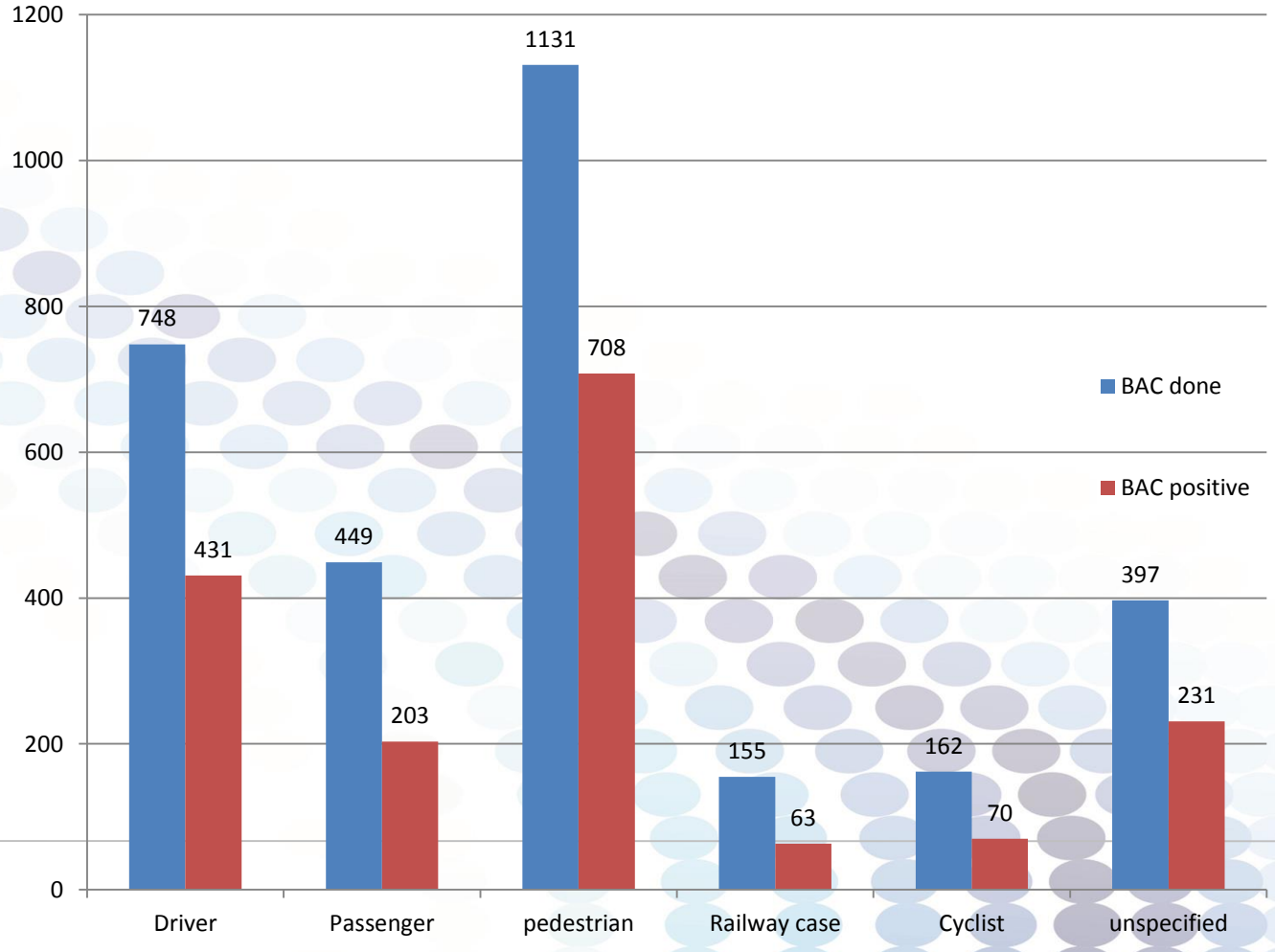
In the area of forensic pathology services we have seen improvement in the turnaround time for performance of autopsies. We have appointed a Ministerial National Forensic Pathology Committee to ensure that services are up to acceptable standards.

The new forensic laboratory in Durban is now functional and will eliminate the need for blood samples in KZN and the Eastern Cape to be transported over a long distance to Cape Town and Pretoria

We have also cleaned the Drunken Driving backlog at the Pretoria, Cape Town and by end of the year we hope Johannesburg will have dealt with the backlog.

The Durban Forensic Chemistry Lab does not have a backlog since being functional in 2014.

1.Reduce Alcohol and Drug Abuse



Source: NIMMS 2009

Figure 2. Total alcohol per capita consumption (15+ years; in litres of pure alcohol), 2010

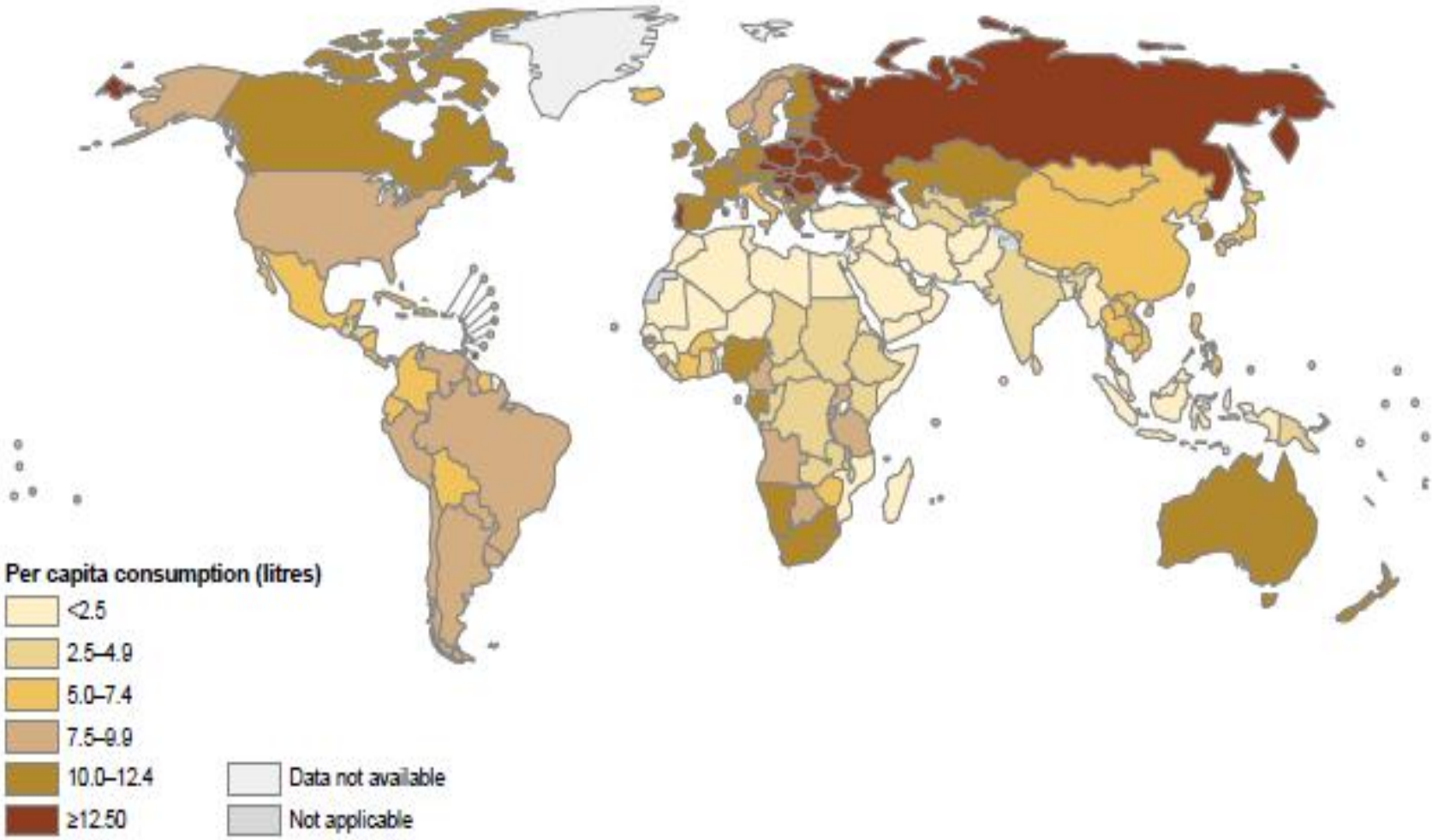
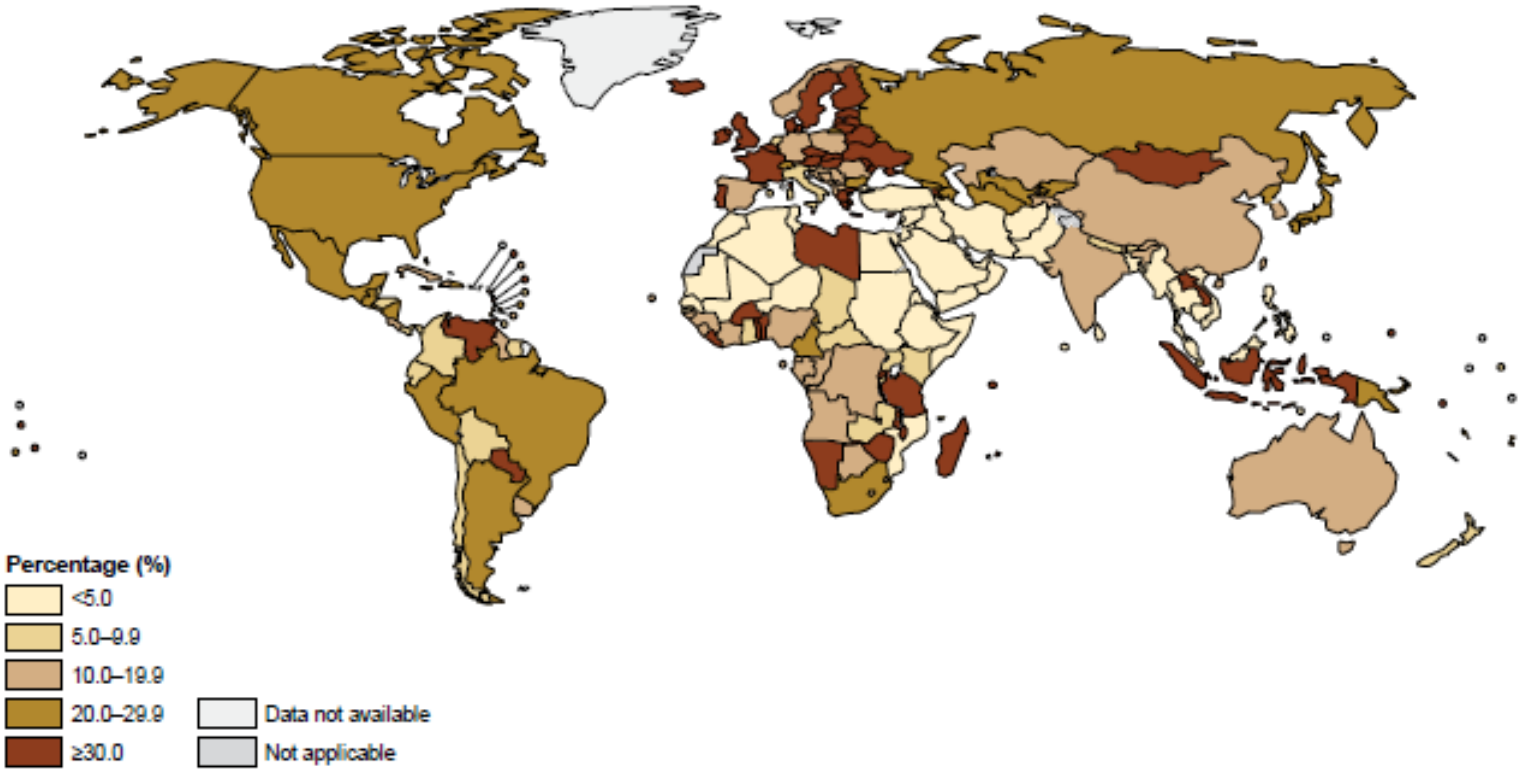


Figure 7. Prevalence of heavy episodic drinking among current drinkers (%; 15+ years), 2010



- Inter Ministerial committee set up under chair of minister of social development.

- WHO “Big 3” for reducing alcohol related harm:-
  - Price
  - Access
  - Marketing

- Also important are things like awareness and education and age.
- DTI liqour Bill addressing a number of public health concerns, including access, advertising and age.

- Should SA increase age of drinking from 18 to 21 from a road traffic perspective?

•Rooms in Cape Town in 2011/12 found that of 18-20 year olds, among those injured, in 91% of instances alcohol was involved. For persons 21 to 24 years the corresponding figure was 85%.

• MRC research in Tshwane in 2014-15 involving a random sample of adolescent and adult drinkers found that of male drinkers aged 18-20 years, 56% reported drinking at least 120g of absolute alcohol (10 standard drinks) on a typical drinking occasion in the past month and 73% of females reported drinking 90g of absolute alcohol or more (7.5 standard drinks) on a typical drinking occasion in the past month.

A review of studies of the impact of moving the age limit of the purchase and consumption of alcohol from 18 to 21 in the USA concluded that increasing the age limit is **the most effective strategy for reducing drinking and drinking problems among youth.**

One study showed that increasing the age limit resulted in a 14% decrease in alcohol consumption and 19% decrease in crashes among youth.

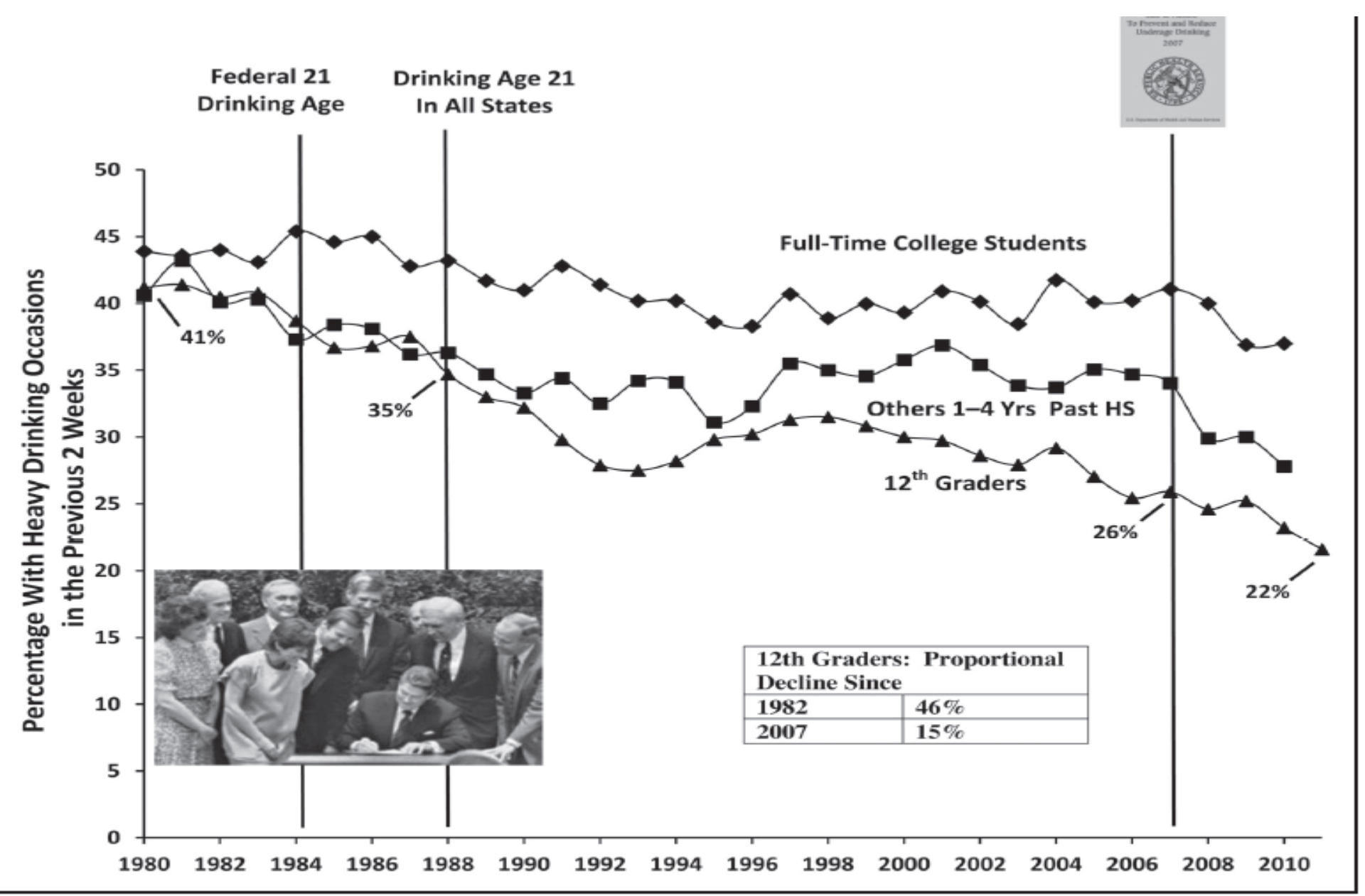
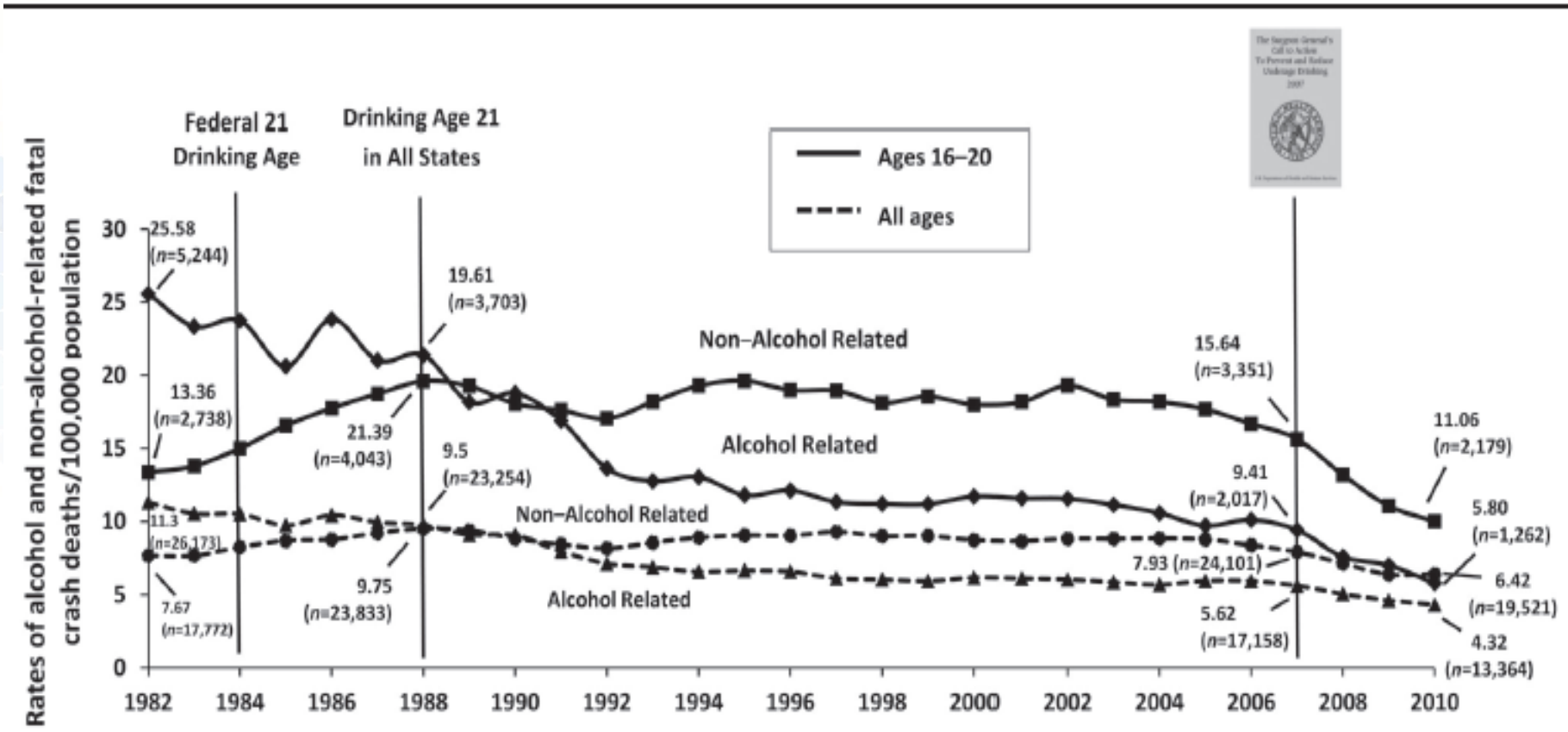


FIGURE 1. Alcohol: Trends in 2-week prevalence of five or more drinks in a row among college students versus others 1–4 years beyond high school, 1982–2010. HS = high school. Adapted from Monitoring the Future data (Johnston et al., 2013). Inset photo: President Ronald W. Reagan signs the national minimum legal drinking age bill into effect at the White House Rose Garden, July 17, 1984 (source: Mothers Against Drunk Driving; reprinted with permission). Book cover image: *The Surgeon General's Call to Action to Prevent and Reduce Underage Drinking 2007* (source: U.S. Department of Health and Human Services; reprinted with permission).



Proportional Decline Traffic Rate			
		Alcohol related	Non–alcohol related
Since 1982	16–20	77%	17%
	All ages	62%	19%
Since 2007	16–20	38%	29%
	All ages	23%	19%

FIGURE 2. Alcohol- versus non–alcohol-related traffic fatalities, rate per 100,000, ages 16–20 versus all ages, United States, 1982–2010. Adapted from U.S. Fatality Analysis Reporting System (National Highway Traffic Safety Administration, 2013b) and U.S. Census Bureau (2013). Book cover image: *The Surgeon General's Call to Action to Prevent and Reduce Underage Drinking 2007* (source: U.S. Department of Health and Human Services; reprinted with permission).

A study conducted in New Zealand this year reviewed the decision in 1999 to lower the minimum purchasing age of alcohol from 20 to 18 years. They found that among young men the ratio of the alcohol-involved crash rate after the law changed to the period before was 12% higher for 18-19 year olds and 14% higher for 15-17 year olds relative to 20-24 year olds as compared to before the legislation was amended.

Among young women, the equivalent ratios were 51% higher for 18-19 year olds and 24% higher for 15-17 year olds. A similar pattern was observed for hospitalised injuries.

The study concluded that significantly more alcohol-involved crashes occurred among 15-19 year olds than would have occurred had the purchase age not been reduced to 18 years.

- I do not have the data, but it is of considerable importance that insurance countries around the world (including SA) either will not insure young adults or will make them pay considerably more premiums because they are known to be especially high risk. (High risk and alcohol are close bedfellows and often completely intertwined)
- Similarly car hire companies will not hire cars to people under 21 and usually not until 25.

- Both the above are based on hard financial considerations calculated on the risk behaviours amongst younger adults.

Should there be a legal age limit for alcohol at all?

If yes, and I think most people and even the industry would agree, then what should that age be?

From a public health point of view, 21 makes far more sense than 18. Not only will many lives be saved and families not devastated, but hospital and emergency services costs will go down – making it possible to provide better health service to the population with the current available resources.

- The arguments that if one is allowed to vote, drive etc at 18 then why should it be different for alcohol is an important one, but there is one precedent in SA law for 21 rather than 18 - and that is ownership of a firearm.
- Where self and others can be harmed by a product/instrument, government needs to take special heed and a public health approach - and in this case it means increasing the age of legal alcohol to 21.

Road Traffic
Management Corporation

Thank you