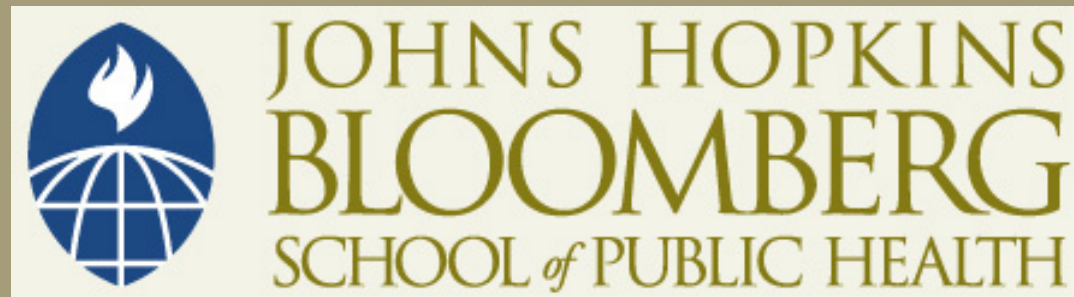


This work is licensed under a [Creative Commons Attribution-NonCommercial-ShareAlike License](https://creativecommons.org/licenses/by-nc-sa/4.0/). Your use of this material constitutes acceptance of that license and the conditions of use of materials on this site.



Copyright 2011, The Johns Hopkins University and Nhan T. Tran. All rights reserved. Use of these materials permitted only in accordance with license rights granted. Materials provided "AS IS"; no representations or warranties provided. User assumes all responsibility for use, and all liability related thereto, and must independently review all materials for accuracy and efficacy. May contain materials owned by others. User is responsible for obtaining permissions for use from third parties as needed.



JOHNS HOPKINS  
BLOOMBERG  
SCHOOL *of* PUBLIC HEALTH

## *Case Study: Motorcycle Injuries in Malaysia*

---

Nhan T. Tran, MHS  
Johns Hopkins University

## *Case Study Overview*

- Burden of road traffic and motorcycle injuries globally and in Malaysia
- Strategies to prevent motorcycle injuries
- Example of intervention using visibility enhancement materials (VEMs)



JOHNS HOPKINS  
BLOOMBERG  
SCHOOL *of* PUBLIC HEALTH

## *Section A*

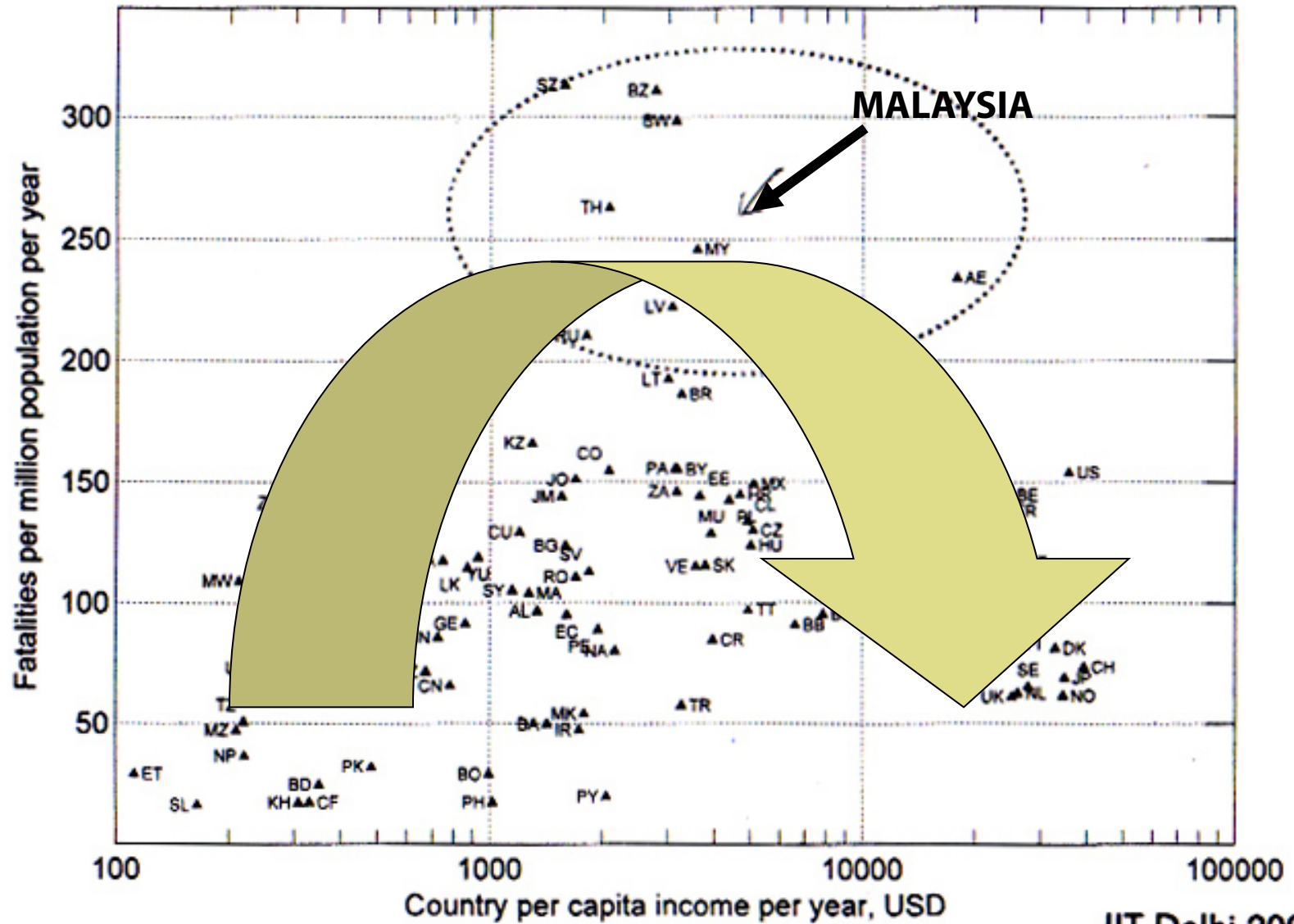
---

Burden of Road Traffic Injuries

## Leading Causes of DALYs Lost

1998	2020
1. Lower respiratory infections	1. Ischaemic heart disease
2. HIV/AIDS	2. Unipolar major depression
3. Perinatal conditions	<b>3. Road traffic injuries</b>
4. Diarrhoeal diseases	4. Cerebrovascular disease
5. Unipolar depression	5. Chronic obstructive pulmonary disease
6. Ischaemic heart disease	6. Lower respiratory infections
7. Cerebrovascular disease	7. Tuberculosis
8. Malaria	8. War
<b>9. Road traffic injuries</b>	9. Diarrhoeal diseases
10. Chronic obstructive pulmonary disease	10. HIV/AIDS

# Road Traffic Fatalities by Country per Capita Income



Low Income

Middle Income

High Income

IIT Delhi 2003

## *Malaysia: Overview*

- Population—23,953,136 (Malaysia 50%, Chinese 23.7%, Bumiputra 11%, Indian 7.1%, Other, 7.8%)
- Life expectancy—72.2
- Total fertility rate—3.07
- GDP/capita—\$9,700

## *Malaysia: Overview*

- Densely populated area—80% of Malaysians live on Peninsular Malaysia (about the size of the state of Michigan)
- Strong economic growth in recent years—the only country other than Singapore in SE Asia that is classified as “middle-income” by WB
- Rapid motorization over the last 20 years—fourfold increase in motor vehicles since 1980

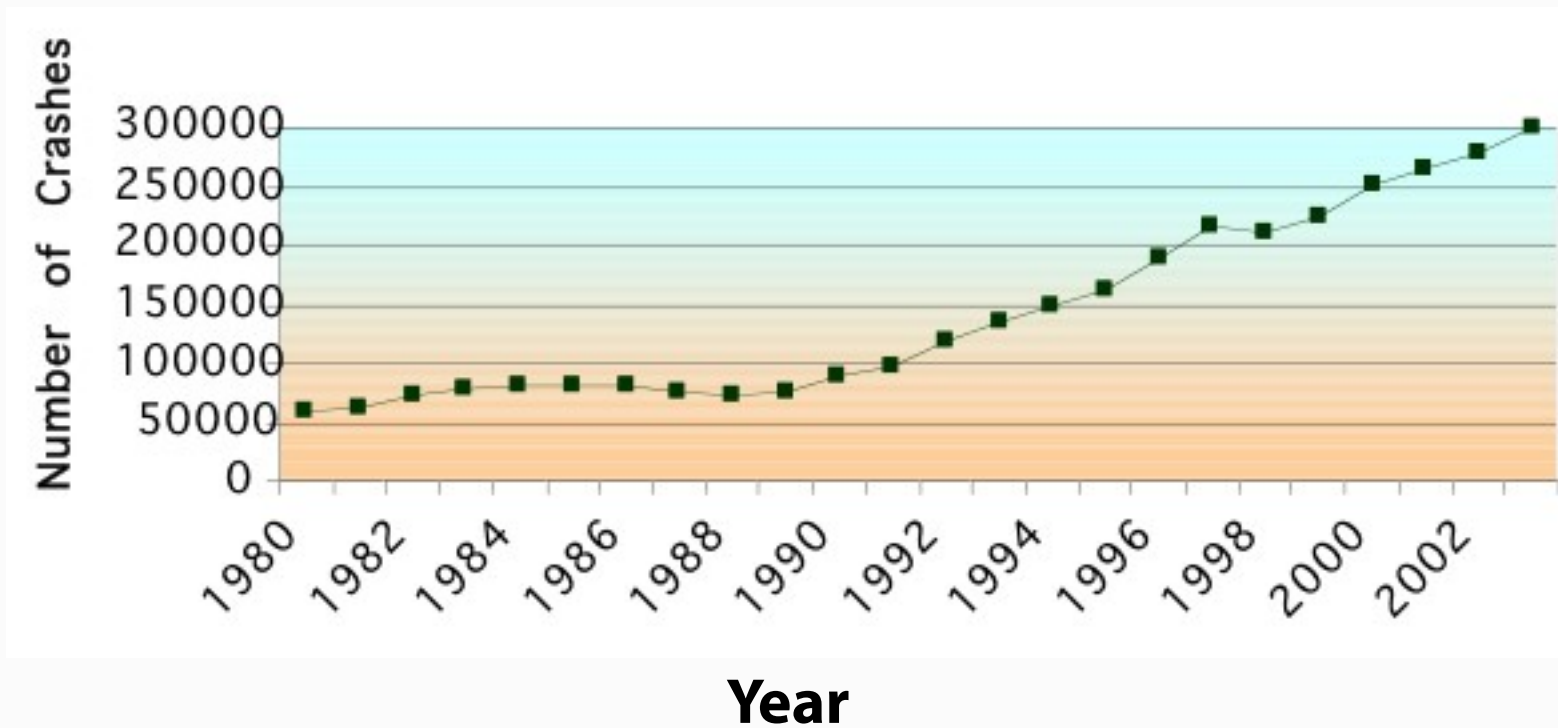


## Leading Causes of Death in Malaysia

2000	2001	2002
1. Heart disease	1. Heart disease	1. Heart disease
<b>2. Road traffic injuries</b>	<b>2. Road traffic injuries</b>	2. Septicemia
3. Septicemia	3. Septicemia	<b>3. Road traffic injuries</b>
4. Asthma	4. Asthma	4. Asthma
5. Stroke	5. Pneumonia	5. Pneumonia
6. Pneumonia	6. Stroke	6. Stroke
7. Diabetes	7. Diabetes	7. Diabetes
8. Hypertension	8. Lung cancer	8. Lung cancer
9. Lung cancer	9. Hypertension	9. Hypertension
10. Colon cancer	10. Colon cancer	10. Colon cancer

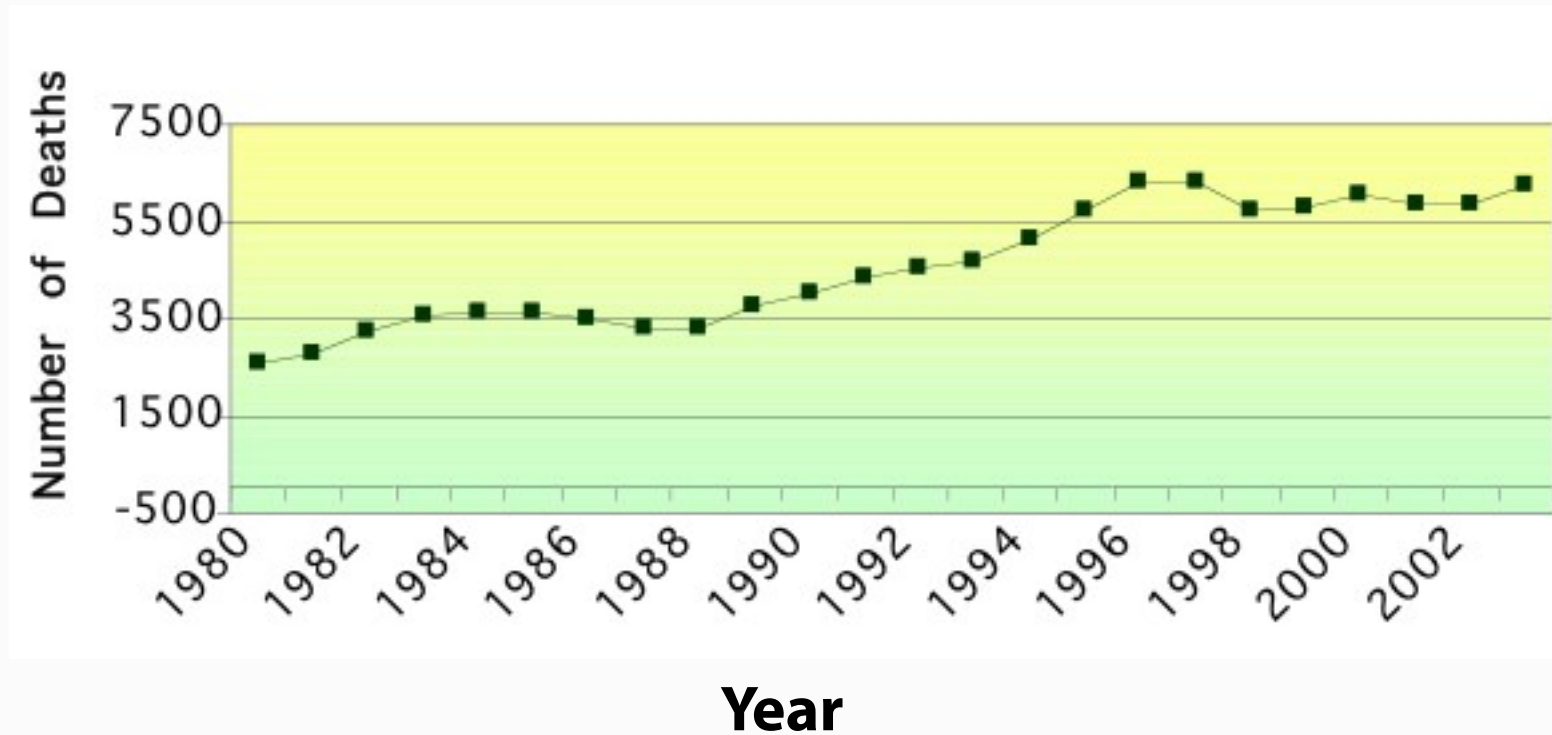
# Road Traffic Crashes in Malaysia 1980-2003

## Road Traffic Crashes Over Time



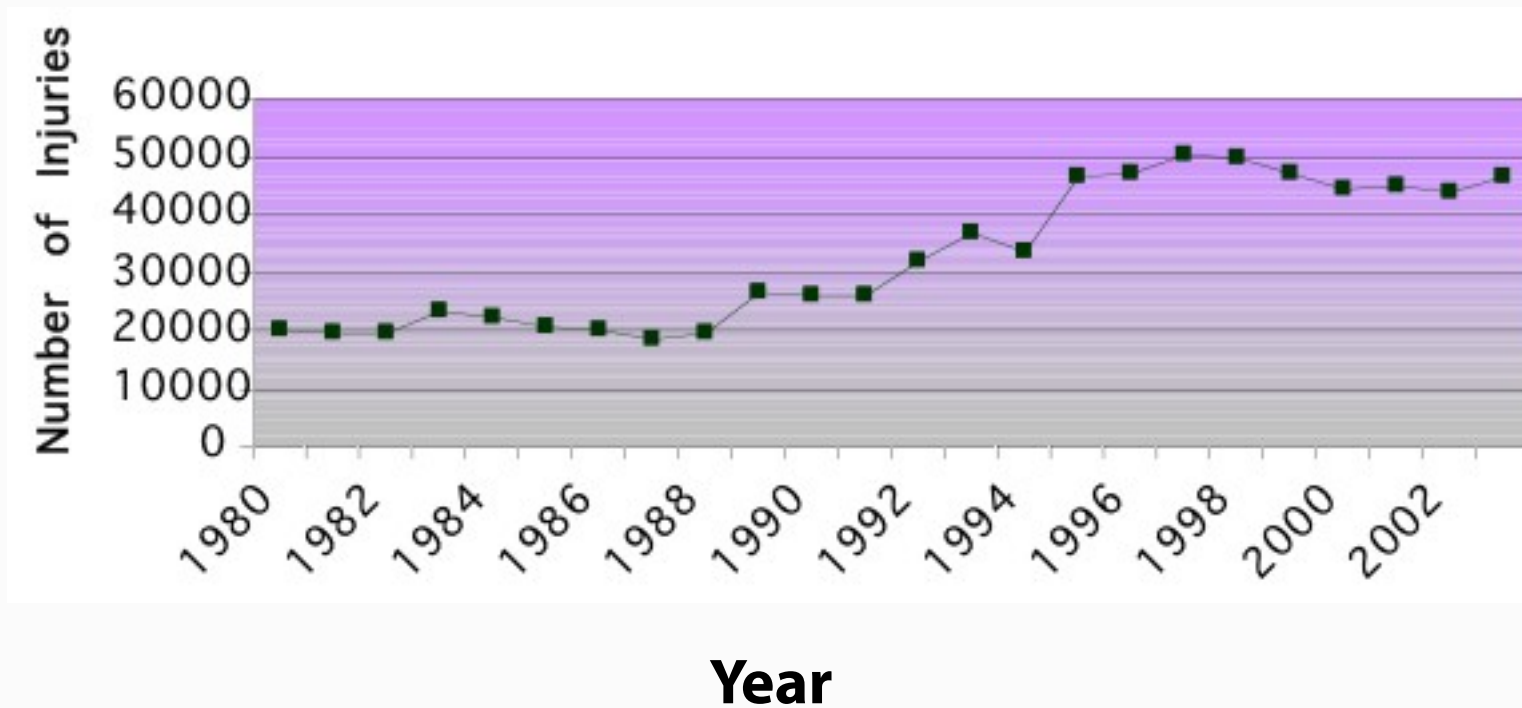
# Road Traffic Deaths in Malaysia 1980-2003

## Road Traffic Fatalities Over Time



# Road Traffic Injuries in Malaysia 1980 - 2003

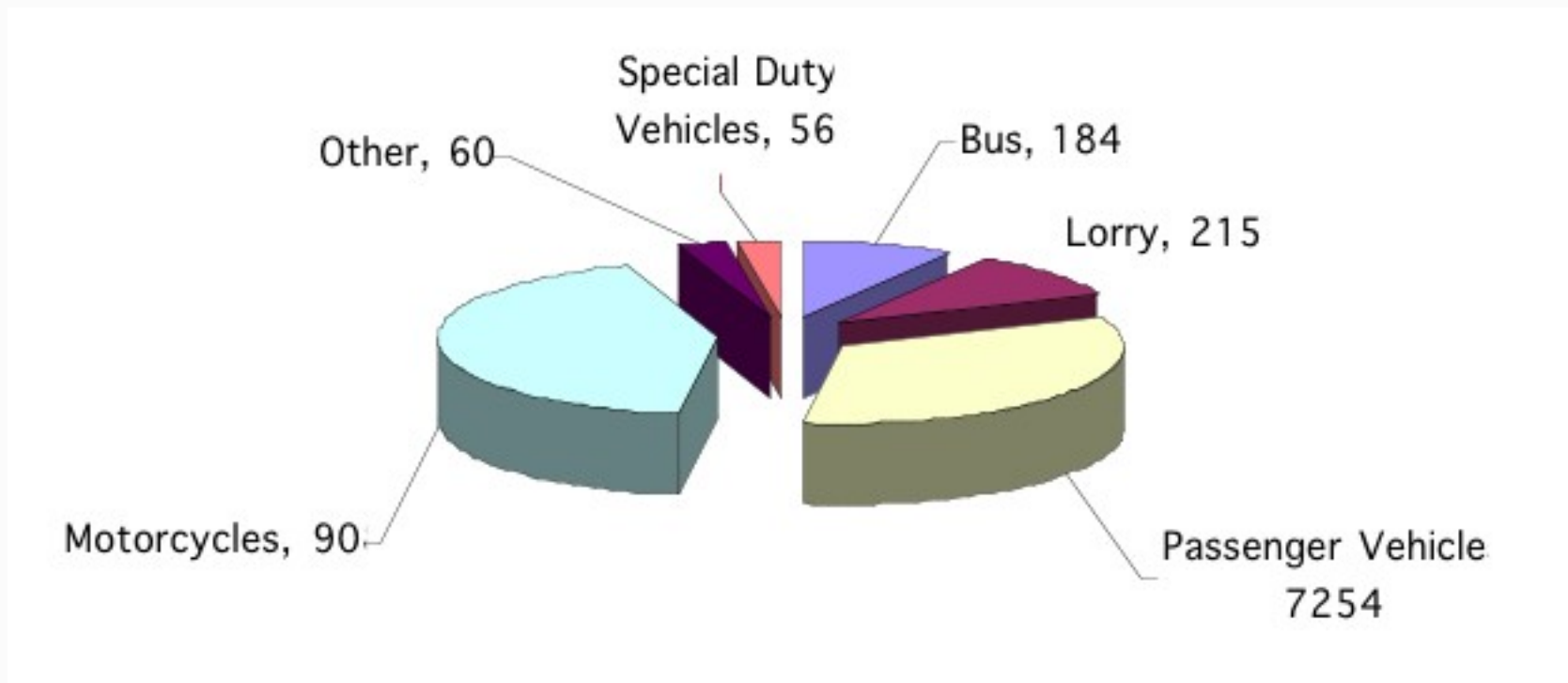
## Road Traffic Injuries Over Time



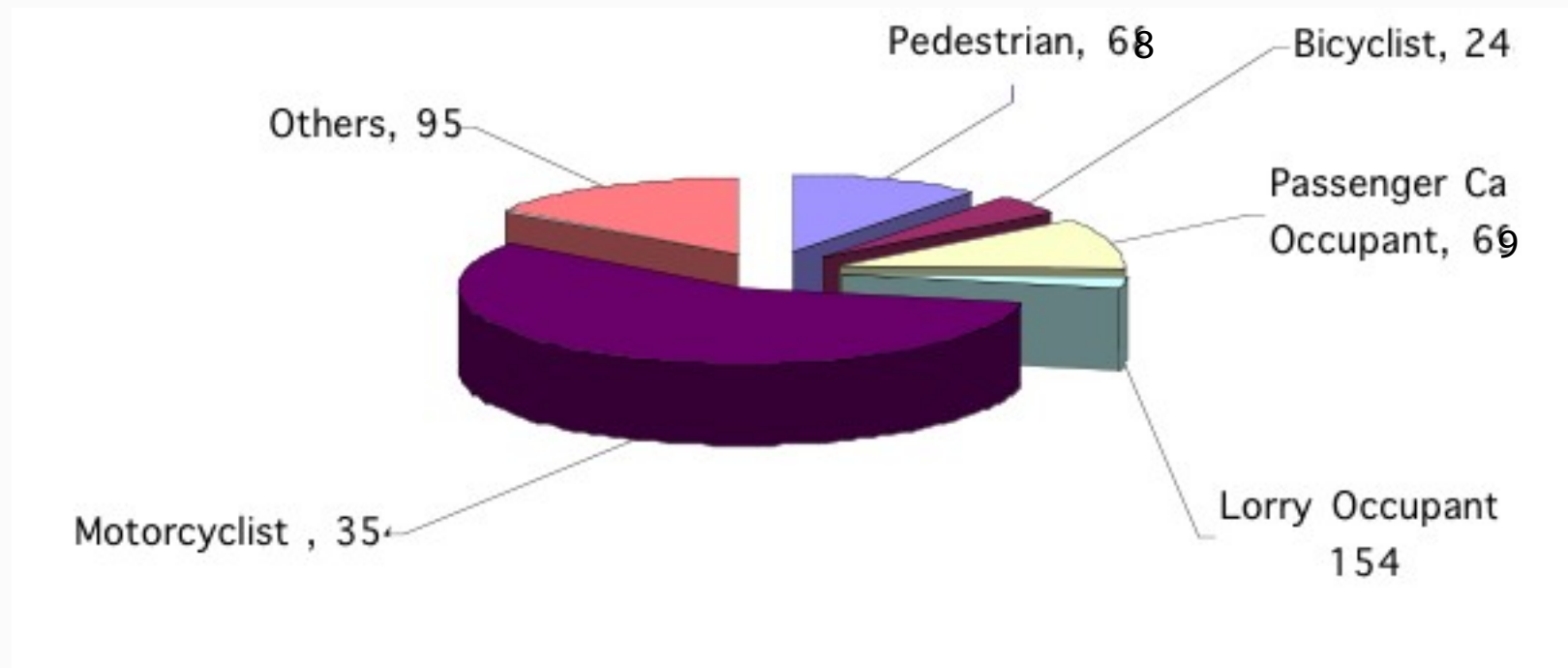
## *Road Traffic Injuries in Malaysia*

- Most victims are young—70% of those admitted to hospitals following a road traffic collision were between 12-44 years old
- Males disproportionately impacted by RTIs—80% of victims are male
- RTIs are the number one cause of DALYs lost among young males 15-29

# Road Traffic Crashes by Vehicle Type in Malaysia (2003)



## Road Traffic Fatalities by User Categories (2003)



## *Road Traffic Fatalities in Malaysia*

- Increased risk for motorcyclists
  - Smaller size-less conspicuous
  - Weaving through traffic
  - Less protection for driver/passenger