

## Prevention of childhood drowning in Malaysia

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### Background/Introduction

World Health Organisation (WHO) world data shows that the Western-Pacific Lower and Middle Income Countries (LMIC's) exhibits the highest total fatal drowning rates at 13.9 per 100,000 population (1). No standardised database on childhood drowning in Malaysia exists and preventive measures are limited.

### Aims

To obtain comprehensive data on childhood drowning in Malaysia and review existing drowning prevention measures in place, with a view to institute/improve prevention measures.

### Target

Drowning data from 2000–2007 including general drowning prevalence for the population and specific data on childhood drowning under 18 years of age.

### Methods

A retrospective study using secondary data obtained from government and non-governmental organizations (NGOs) on drowning events from 2000–2007. Sources included government organizations from the Department of Statistics, Ministries of Health, Transport, Education & Sports, police authorities and policymakers. NGOs included Life Saving Society Malaysia, Fire & Rescue Volunteers Malaysia and newspaper sources. Drowning rates per 100,000 total population were calculated. Childhood drowning rates were studied for differences by region, month, gender, age and ethnicity to identify a risk profile. Formal enquiries were made to government and NGOs about existing water safety measures already in place.

### Results

There were between 600–700 notified fatalities due to drowning per year (mean=643.3, SD=43.4 over 8 years). No apparent rise or decrease in volume of fatalities over these years. In 2007 the national fatal drowning rate in Malaysia was 2.3 per 100,000. Drowning rates were highest in east coast states (Terengganu 4.6, Kelantan 4.2), and in monsoon period (November to March). 250–300 children died each year due to drowning from 2000–2007 (mean=286, SD=27.5 over 8 years). This is 40–45% of fatal drowning each year. In 2007, the fatal drowning rates were 3.0 for ages below 18 years and 2.9 for ages below 20 years. Childhood fatal drowning rates were 4.6 in boys and 1.3 in girls. Highest fatality rates were in children aged 10–14 years (3.4), and Malays had the highest number of cases (192).

### Discussion

Key findings: No reduction in drowning fatalities from 2000 to 2007. Most took place in east coast states from November–March. Almost half of total incidents were children. It was 3–4 times more common in boys than girls and was most prevalent in the 10–14 years age group. Current water safety measures and regulations require revision.

### Comparison with other studies

The Malaysian childhood drowning fatality rate in 2007 (2.9) was below the Western Pacific Region LMIC rate of 13.9 for children below 20 years of age. The Malaysia's rate was closer to the HIC region's rate (1).

### Strengths and limitations

This report has not taken into account unreported drowning incidents. We could only capture snapshots of detailed drowning information from local newspaper archives. This is the first national study in Malaysia which hopes to set a platform for more studies in the future.

### Unanswered questions/future research

Effective drowning prevention initiatives in Malaysia.

### Implications for managers

In order to draw up effective drowning prevention measures, it is necessary to understand the nature of drowning, location and how it happens. One mechanism is to classify deaths according to the ICD-10 (1) and this information could be translated into the Department of Statistics database for future use.

## **Conclusion**

Fatalities due to drowning are an unrecognized major child health issue and require national attention.

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## **References**

1.WHO, Global Burden of Disease 2004 Update, World Health Organisation, Switzerland, 2008

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