

The public health implications of natural and man-made disasters

Jeanne Daly and Judith Lumley

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In the past few years the world has had to deal with a variety of disasters. When planes crashed into New York high-rise buildings in 2001 and when bombs exploded on London public transport in 2005, human malice was seen as the cause and we declared war on terrorism. The Asian tsunami of 2004 was caused by a fluctuation of nature but perhaps there was also a human factor involved: tourist resorts had been developed at the expense of the coral reefs and mangrove swamps that could dampen the power of a wave. Human failing is clearly at work in the repeated disasters reported by the coal mining industry in China. There has been no commitment to reversing these human actions. Instead, the emphasis has fallen on early warning systems to allow people to escape the path of the disaster.

The hurricane that devastated New Orleans and Louisiana has seen a more complex response. There were technical causes in the collapse of the levee that shielded the low-lying city but much more serious has been concern with the lack of response to the distressed population. Hurricane Katrina seems to be joining that set of disasters that are of enduring interest to historians, epidemiologists – and film makers. Reconstructing in minute detail the train of events is of secondary importance to reflections on the society and its responses to the disaster.

Simon Winchester, renowned for his account of the compiling of the Oxford English Dictionary, is now writing a book on the earthquake that struck California in 1906. Writing in the *New York Times*¹ he has compared the response to the California earthquake with the ‘shockingly different’ response to the hurricane in Louisiana. In 1906, there were no weather warnings, the earthquake struck the sleeping inhabitants of San Francisco just after 5 am. Gas mains ruptured, fires erupted and spread unchecked because water mains, too, had ruptured. In three days, San Francisco was all but destroyed. There were 3,000 dead and 225,000 homeless.

When the mayor sent a telegram that read ‘Our city needs help’, according to Winchester, “America read these wires and dropped everything”. Morse code messages rapidly brought in vast relief trains, a rescue train and the longest hospital train ever assembled. There was food, there were tents, and 10% of the standing army arrived to help police and firefighters. Family and friends were alerted to the fate of loved ones by letters delivered free of charge by the post office. Winchester sees this as a gesture from a time when action was intelligent and compassionate, when “efficiency, resourcefulness and simple human kindness” had a value.

Let us contrast this with the disaster that captured the public imagination in an unrivalled manner, although the loss of life was miniscule in comparison: the sinking of the *Titanic*, in 1912.^{2,3}

The White Star Line celebrated *Titanic* for the glamour of the first-class appointments but the bulk of the passengers were in third class, labourers from countries like Syria, Norway and Ireland immigrating to the United States. When the ship sank, newspapers reported an awful loss of life. Initial reports celebrated the martyred ‘kings of finance’ who had given up their seats in the lifeboats to save the lives of children and of illiterate peasant women from third class. The rising feminist movement was warned that the changes they wanted would see an end to this privilege of gender, replacing these glorious Anglo-Saxon heroes with the swarthy, violent brutes from third class who had had to be kept out of the lifeboats at gunpoint.

The aftermath of the sinking told a radically different story. Of the first class passengers, 62% were saved, including most of the women and all the children. In third class, 62% drowned including 65% of the children. Despite the rhetoric, 54% of third-class women went down with the ship and 33% of first-class men were saved. One of the men saved was J. Bruce Ismay, chief executive of the White Star Line, who hid under a blanket in a lifeboat.

The disaster exposed the defects of a class-segregated society where third-class passengers were unaware of the passages that could have given them access to first class – and the lifeboats. Comment rapidly evolved into a critique of social structure. Trade unions emphasised the ‘vicious class antagonism shown in the practical forbidding of the saving of the lives of the third-class passengers’. The steamship companies were accused of greed in their search for profit, an accusation that was substantiated when it became known that the White Star Line had reduced the number of lifeboats to increase the space allotted to the first-class promenade. Women’s unions were quick to point out that the fate of poor women and children was unenviable, not only on the *Titanic* but also in the mills, workshops and factories where their lives were ruthlessly exploited. The effects of the disaster saw new laws about the provision of lifeboats but may also have set in place critical attitudes that were to lead to radical changes over the next half century.

In the case of the California earthquake, it may be that a rapid and compassionate response avoided the commentary that accompanied the sinking of *Titanic* – or perhaps the inequities were less. There are indications that the lack of response to the victims of Hurricane Katrina has, as in the case of *Titanic*, exposed inequities that we see as startling: the number of illiterate people, the number of homeless people, and the fate of the poor and the sick.

The public health approach appropriately focuses on the need for an effective, immediate response to a disaster, including attention paid to the potential spread of disease. On the other hand, it is consistent with the commitment of public health to health promotion if we also emphasise the importance of prevention of the social inequities that have dogged the aftermath of the disaster. These commitments were enshrined in the 1986 Ottawa Charter for Health Promotion and have recently been updated in the Bangkok Charter for Health Promotion in a Globalized World. Health is seen as a resource for everyday life,

resting on the provision of peace, shelter, education, food, income, a stable eco-system, sustainable resources, social justice and equity. These factors are even more important in the event of a disaster.

References

1. Winchester S. Meanwhile: Before New Orleans, there was San Francisco, *The New York Times*, Friday, September 9, 2005. Available on <http://www.iht.com/articles/2005/09/08/opinion/edsimon.php> (cited 14 September, 2005).
2. Biel S. Down with the Old Canoe: A cultural history of the Titanic disaster, New York: WW Norton and Co, 1997, chapters 2 and 4.
3. Daly J. Challenges in public health and health promotion: a way forward. *Health Prom J Aust.* 2000;10:4-8.

In this issue

Chronic health problems are at the opposite end of the spectrum from disasters, being common, predictable, preventable, familiar and – not to mince words – lacking in excitement.

In this issue, Martin Tobias and colleagues throw a small missile into common beliefs about ischaemic heart disease (IHD). Knowledge of the risk factors for IHD is reasonably widespread in Australia and New Zealand but there has been substantial scepticism here and elsewhere about their combined contribution to IHD, a belief often expressed as ‘only 50% of IHD can be explained by known risk factors’. The New Zealand findings, based on data from a national health survey, gave a very different picture: 94-97% of adults with IHD had at least one of the risk factors and 80-85% of IHD was attributable to one or more of the six risk factors, in all groups. Some of the same risk factors (smoking and obesity) turned out to be correlated with both habitual snoring and apnoeas in Mathew Knuiman and colleagues’ new analysis of data from the 1994-95 Busselton Health Survey. This might be a good paper on which to test your prejudices. Which of the following factors are also associated with snoring: male gender, female gender, high alcohol intake, >6 cups of tea or coffee a day, asthma or bronchitis? The third paper deals with stress urinary incontinence, a chronic problem which women are often reluctant to raise and doctors often lack confidence to treat. Patricia Neumann and colleagues’ demonstration that there is a low-cost, low-risk and effective treatment with benefits sustained over a year needs to be widely publicised and implemented. Anne Young and colleagues take on another difficult issue using two waves of the Australian Longitudinal Study on Women’s Health plus Medicare data to assess the health and health service use of women with diabetes. Despite some improvements in compliance with guidelines for management of diabetes – associated with having more frequent GP consultations – there is some way to go. The final paper by Patricia Kenny and colleagues draws attention to the individual and health sector costs of asthma using data from New South Wales pointing out the variation in individual costs and the need for management policies to incorporate schemes to alleviate the impact of costs in some groups.

Two of the five Methods papers pose an explicit question. Richard de Visser and colleagues ask whether studies of sexual risk behaviour among students can be generalised to other young

people, concluding there was little difference between first-year female students and their same-aged peers but advising caution in extrapolation from male students. Eleonora del Grande and colleagues asked if people with and without listed telephone numbers in South Australia provide equivalent information on their health status. The answer is probably yes, with the important and consistent exception of smoking. Two others pose implicit questions. Ruth Walker and Janet Hiller asked how the general population rated the standard indicators used to measure relative socio-economic disadvantage in Australia, finding that young people and those with lower educational attainment were more likely to perceive the indicators as not important. The indicator of disadvantage with the most negative response was ‘houses without cars’. Christine Phillips and colleagues asked whether researchers could improve response rates to two questionnaires completed by parents at school entry by carrying out a cluster-randomised trial of two sets of instructions. The benefits and the tradeoffs were clearly identified. Raina Elley, with colleagues from Auckland, Wellington and Melbourne, contributes to the limited information available on intra-class correlation coefficients with a detailed report from three cluster randomised trials in primary and residential health care.

Each of the final four papers takes up a complex issue for reflection and action. Emma Kowal and colleagues describe four rationales for Indigenous participation in Aboriginal and Torres Strait Islander health research, clarifying ways to move beyond good intentions. A. Fletcher and colleagues present counter-measures to driver fatigue drawing attention to the substantial contribution (10 to 40%) made by driver fatigue to road crashes and to the need for a combination of legal and public awareness approaches. Jason Armfield reports the differences in decayed, missing and filled teeth in children between areas with optimally fluoridated and non-fluoridated communities in New South Wales. The benefits of fluoridation applied across socio-economic strata and across Indigenous and non-Indigenous children. Finally, Christian Enemark reports from the Biological Weapons Convention held late last year on the importance of strong public health surveillance and response mechanisms as vital defences during disease outbreaks whether deliberately caused or of natural origin.

Note the letters in this issue which range from advice on the unsuitability of the SF-36 for use as a measure of health in women’s prisons, problems with media coverage of needle and syringe programs, information on smoking by public health professionals in Beijing, to evidence for the greater involvement of New Zealanders than Australian in sufficient physical activity.

Journal contact details

Mail: Australian and New Zealand Journal of Public Health, PO Box 351, North Melbourne, Victoria 3051.

Street deliveries: c/- SUBStitution Pty Ltd, 1st Floor, 484 William Street, Melbourne, Victoria 3003.

Phone: (03) 9329 3535 **Fax:** (03) 9329 3550

E-mail: anzjph@substitution.com.au