Globalisation: public health threats – and opportunities?

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'Globalisation' usually conjures up images of corporate icons and fervent protestors. Paradoxically, it implies inclusiveness yet promotes divisiveness: rich versus poor, north versus south, power versus powerless, black versus white, good versus evil. Social and ecological change with globalisation is occurring on unprecedented scale, reshaping the ways we interact with our environment, perhaps most profoundly through transforming patterns of health and disease.

Australian Prime Minister John Howard, like many leaders of our time, believes economic competition – the cornerstone of globalisation – increases productivity and trade, which in turn raise living standards. Fundamental to living standards is human health, but this is all too frequently omitted from the globalisation equation. In Australia, overall wealth and health indicators are in good shape, but socio-economic inequalities remain evident, for example the 20-year shortfall in Indigenous life expectancy.[1]

Globally, economic pressures promote rural uncertainty and urban immigration, causing crowding and poor sanitation that amplify infectious disease transmission. Diseases like tuberculosis thrive in such conditions, especially when general immunity is depressed through inadequate nutrition and a continuous presence of other infections. Urbanisation is also positively correlated with air pollution, which in developing countries contributes to 130,000 premature deaths annually and up to 70 million incidents of respiratory illness.[2]

Economic demands encourage industry to burn cheap fossil fuels rather than explore more expensive alternatives. Asia's 'brown cloud' is testament to this, as is Australia's fear of regional economic disadvantage motivating our Government's refusal to ratify the Kyoto Protocol, while per capita Australia remains a leading producer of greenhouse gas. Globalisation is thus a catalyst for climate change, creating more favourable environments for disease vectors such as ticks and mosquitoes and extending the geographic and seasonal range of diseases such as malaria.

With increased human mobility, infectious disease can spread from one side of the world to the other within a day. We are reminded each winter how easily this occurs, with the rapid transmission between hemispheres of the newest influenza strains, and more recently with SARS outbreaks in cities as geographically and culturally distinct as Toronto and Beijing. Forget the golden arches and the swoosh, SARS is the new globalisation pin-up.

Increasingly, food is a commodity traded on a global scale, exacerbating shortfalls in food supply and inequitable distribution between and within countries.[3] Ever increasing mechanisation, although economically cheap, is environmentally unsustainable; more energy may be expended during production than is available through the food produced. Production methods are also potentially detrimental to health in the short term. Monocropping not only reflects the specialisation ideals of globalisation, but requires intensive pesticide use. Residues remain on foods, persist in the environment and accumulate in our bodies. Hormone disruption and cancers are two likely consequences.[4]

Altered dietary patterns towards the consumption of energy-dense foods, combined with physical inactivity, increases likelihood of obesity, diabetes, cardiovascular disease and cancer. Developing countries are beginning to experience the worst of both worlds; infections remain the primary cause of sickness and death while so-called 'diseases of affluence' gain prominence.

Previously subsistence societies now grow cash-crops such as tobacco. Tobacco consumption is not the only health concern: cultivation displaces food crops and requires massive irrigation, causing further environmental degradation in often marginal areas. Workers are exposed to frequently unregulated pesticides and at harvest suffer from 'green tobacco sickness', overdosing on nicotine absorbed through the skin. Curing tobacco has further global health implications through contributions to greenhouse gases. One tree is burned for every 300 cigarettes produced[5] – about 40 trees per year for every pack-a-day smoker.

In our globalising world, those seeking refuge from conflict, famine and political tyranny are at particular risk from disease as they find themselves in makeshift camps near borders or held in detention. Even when major physical needs are met, there is tremendous psychological stress. Children who are institutionalised fail to grow adequately even in the absence of obvious organic causes,[6] a condition potentially detrimental to their long-term health.

The process of globalisation has reached crisis point. For the ancient Chinese, crisis – *wei-chi* – was a conjunction of 'threat' and 'opportunity'.[7] Despite the serious threats to health arising from globalisation, there is also considerable opportunity to employ it to the advantage of global human health and well-being. Globalisation not only increases the flow of goods and capital, but also the flow of information, knowledge and technology, and hence a potential to mobilise, on a very large scale, specific public health interventions. Some of this potential has been demonstrated by international efforts to reduce the spread of HIV/AIDS, as global public health campaigns are implemented with the support of international organisations such as UNAIDS. Although not uniformly successful (developing countries still bear the brunt of the epidemic), this achievement highlights the value of sharing information and technologies. For example, through peer education young people in Uganda are aware of safer sex practices and the incidence of new infections is declining, while the availability of generic anti-retroviral therapy is slowing the Brazilian epidemic.

Rather than enlisting the opportunities for global co-operation, the globalisation paradox is instead becoming more evident. Many Western nations are becoming more insular, closing their borders to refugees and leaving poorer countries to deal with the legacies

of globalisation on their own. International support for public health measures, so crucial to capitalising on the information and technology-sharing opportunities of globalisation, is made less available as political conditions are placed on providing aid. Last year the United States offered to assist Palestine only if Yasser Arafat were no longer leader. The only outcome of such measures will be to exacerbate detrimental effects of economic and socio-cultural disruption, particularly in poorer countries, as they struggle to compete economically in a global market.

Improving public health requires specific intervention and investment in social and environmental capital. We cannot continue to ignore the geohistorical accidents that moulded the world into its current inequitable form. We have an obligation to ensure that the detrimental effects of globalisation are minimised, particularly among developing countries that are under intense economic pressure not to invest in public health. On its current trajectory, globalisation is a serious health hazard.

References

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Is exposure to secondhand tobacco smoke in the home related to daily smoking among youth?

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Children in households that permit indoor smoking are exposed to the harmful effects of secondhand smoke (SHS).[1] In addition, exposed children may be at greater risk of becoming smokers through a variety of mechanisms; for example, there is a moderately strong link between parental and youth smoking.[2,3]

In this communication we report the relation between home SHS exposure, from all sources, and the prevalence of youth daily smoking. We have already reported the smoking policies of schools attended by secondary students participating in the 2002 Youth Lifestyle Study (YLS).[4] Using multi-stage cluster sampling, 141 eligible schools from six geographical regions were randomly selected and 82 agreed to participate (response rate 58.2%). School classes were randomly selected, producing 3,434 students (mean age 15.0 years), 51.7% male and 15.4% self-identified Maori. Probability weights were assigned at the individual student level.

In Table 1 we present odds ratios for daily smoking according to home SHS exposure. Students whose response to the question 'How often do you smoke now?' was 'at least once a day' were classified as 'daily smokers' (12.7%). SHS exposure was measured by responses to the question 'During the past seven days, on how many days have people smoked around you in your own home'. Overall, 43.8% reported SHS exposure at home, 17.7% on all seven days.

Univariable logistic regression models demonstrated a clear dose-response effect (see Table 1). No interaction effects were found between SHS and sex, ethnicity (Maori vs. non-Maori), and school year. There was no evidence that exposure to SHS differed by age, sex or ethnicity.

Study limitations include the cross-sectional design and inability to identify precisely who, in the household, smoked. Neverthe-

Table 1: Odds ratios for daily smoking by exposure to SHS at home.

Frequency of SHS exposure at home	Odds ratio for daily smoking	95% CI
No exposure	1	
1-2 days	3.02	2.22-4.11
3-4 days	3.95	2.59-6.01
5-6 days	4.77	2.66-8.54
7 days	6.71	5.11-8.79

p<0.001 at each level.