

would serve a useful purpose, one could promote flaws in the work of John Snow.

Under the heading 'So, what do we do?' the editorial cites the 53rd World Health Assembly resolution on the need for a national policy framework. However, the resolution is fully consistent with principles outlined in several earlier statements, including the Alma Ata Declaration (1978). Coincident with the Ottawa Charter (1986), for example, Canada released a policy framework entitled 'Achieving Health for All'. According to its website, CINDI provides participating countries with such a framework.<sup>5</sup> Frameworks themselves of course are only a beginning, and a scientifically sound and managerially feasible approach is essential in order to transform them into practical actions.<sup>6</sup> While the CINDI network process has been ongoing for many years (and now includes 24 countries), since 1995, the Pan American Health Organization (PAHO/WHO) has been promoting a similar integrated model for NCD programming (CARMEN), piloted by Chile. CARMEN differs in emphasis from CINDI, in the context-appropriate inclusion of diabetes, cervical cancer and injury prevention, which are important issues for Latin America and the Caribbean.<sup>7,8</sup> Similarly, the Mauritius project is a member of the INTERHEALTH group of projects, another supportive network, similar conceptually and linked to the other networks.<sup>9</sup> The first step in all these models is a policy framework.

The potential of such frameworks for NCD prevention and control is broader than the editorial suggests: many risk factors and underlying determinants for coronary heart disease and stroke are equally applicable to other NCD outcomes. Measures such as tobacco control, dietary and physical fitness approaches, education regarding care seeking and even promoting quality of care where service is already being provided, are scientifically sound and potentially feasible in many developing countries.

#### From ROBERT BEAGLEHOLE

Sirs—I welcome your timely and perceptive views on the prevention and control of the increasing burden of cardiovascular disease in developing countries.<sup>1</sup> Though your comments are particularly addressed to the problems facing developing countries, they are also relevant for wealthy countries. Despite the limited successes in controlling the CVD epidemics in countries such as Australia, the USA, New Zealand and western Europe, these epidemics are completely uncontrolled in many Eastern European countries and CVD are still among the leading causes of premature death in most wealthy countries.

It is timely to encourage the development of surveillance systems for the major CVD and especially their risk factors. Estimates of the global burden of disease will be improved by these data. The surveillance data are also needed to help countries develop, implement and evaluate their prevention and control programmes. Several carefully chosen sentinel sites are required in each region. Ideally these surveillance sites should be based on public health training institutions. In most parts of the world these institutions are vulnerable and need long-term external support, especially for developing career pathways and

University of Auckland and WHO, Geneva.

Lessons from the now many CINDI, CARMEN and INTERHEALTH projects around the world are valuable in helping to find a way forward in the prevention and control of NCD.

#### References

- <sup>1</sup> Ebrahim S, Davey Smith G. Exporting failure: coronary heart disease and stroke in developing countries. *Int J Epidemiol* 2001;**30**:201–05.
  - <sup>2</sup> Murray CJL, Lopez AD (eds). *The Global Burden of Disease—Summary*. Geneva: World Health Organization, 1996.
  - <sup>3</sup> The Ottawa Charter for Health Promotion; an international conference on health promotion. *Health Promotion* 1986;**1**:iii–v.
  - <sup>4</sup> Vaartiaainen, E, Puska P, Pekkanen J, Tuomilehto J, Jousilahti P. Do changes in risk factors in Finland explain the changes in ischemic heart disease mortality? In: Puska P, Tuomilehto J, Nissinen A, Vartiainen E (eds). *The North Karelia Project: 20 Year Results and Experiences*. Helsinki: National Public Health Institute, 1995, pp.241–54.
  - <sup>5</sup> *Noncommunicable diseases and their control: CINDI programme*. <http://www.who.dk/zoro/inv/cindi01.htm>
  - <sup>6</sup> White F. Epidemiology in health promotion: a Canadian perspective. *Bull Pan Am Health Organ* 1989;**23**:384–96.
  - <sup>7</sup> *World Health Report 1997*. Executive Summary. Geneva: World Health Organization, 1997.
  - <sup>8</sup> Peruga A. Conjunto de Acciones para la Reducion Multifactorial de las Enfermedades non Transmisibles. In: *Worldwide Efforts to Improve Heart Health: a follow up to the Catalonia Declaration selected program descriptions*. Washington: US Department of Health and Human Services, Centers for Disease Control and Prevention and Health Promotion, June 1997.
  - <sup>9</sup> Khaltayev NG. INTERHEALTH. In: *Worldwide Efforts to Improve Heart Health: a follow up to the Catalonia Declaration selected program descriptions*. Washington: US Department of Health and Human Services, Centers for Disease Control and Prevention and Health Promotion, June 1997.
- research experience of the junior faculty. Surveillance projects could usefully connect these institutions to the communities they serve and to the ministry of health. Critical decisions need to be made about the choice of risk factors to be measured and when to include disease endpoints. There is a danger in overloading new systems and above all the utility of data to policy and action needs to be demonstrated.<sup>2</sup>
- In terms of programmes and policies, there can be no serious argument with the need to focus on the population approach to primary prevention. In an ideal world, with unlimited resources, covering the full spectrum of preventive strategies would be useful. But nowhere do we have more than pitiful resources for prevention. It behoves us to make the best use of these resources. Working towards environmental change is the logical place to start. It is difficult to convince our professional clinical colleagues of the importance of this strategy and our lay constituency needs to be actively involved in debates on the use of limited resources.
- The primary goal is to shift the risk factor distributions towards the left. Fortunately, we have evidence that this is possible and likely to be highly effective in reducing the burden of CVD.<sup>3</sup> Furthermore, we know that the major risk factors are qualitatively the same in all regions of the world<sup>4</sup> and, that

where the epidemics are fully developed, these risk factors explain the vast majority of new events of CVD.<sup>5</sup>

I trust that your editorial encourages a greater attention to applying the knowledge gained from decades of careful and productive public health sciences.<sup>6</sup> I also hope that the *IJE* will devote more of its pages to explorations of the policies and programmes needed to implement the population approach to primary prevention.<sup>7</sup>

## References

- <sup>1</sup> Ebrahim S, Davey Smith G. Exporting failure? Coronary heart disease and stroke in developing countries. *Int J Epidemiol* 2001;**30**:201–05.
- <sup>2</sup> Bonita R, Winkelmann R, Douglas K. The WHO STEP wise approach to NCD risk factor surveillance. In: McQueen and Puska P (eds).

*Global Behavioural Risk Factor Surveillance*. Cordrecht: Kluwer (In press), 2001.

- <sup>3</sup> Rodgers A, Lawes C, MacMahon S. Reducing the global burden of blood pressure-related cardiovascular disease. *J Hypertens* 2000;**18** (Suppl):S3–6.
- <sup>4</sup> Eastern Stroke and Coronary Heart Disease Collaborative Research Group. Blood pressure, cholesterol, and stroke in Eastern Asia. *Lancet* 1998;**352**:1801–07.
- <sup>5</sup> Stamler J, Stamler R, Neaton JD *et al*. Low risk-factor profile and long-term cardiovascular and non-cardiovascular mortality and life expectancy. Findings for 5 large cohorts of young adult and middle-aged men and women. *JAMA* 1999;**282**:2012–18.
- <sup>6</sup> Beaglehole R. Global cardiovascular disease prevention; time to get serious. *Lancet* 2001;**358**:661–63.
- <sup>7</sup> Rose G. *The Strategy of Preventive Medicine*. Oxford: Oxford University Press, 1992.

## Editors' Response—exporting failure

From SHAH EBRAHIM and GEORGE DAVEY SMITH

Our editorial described the limited effects of comprehensive cardiovascular disease prevention programmes, widely evaluated in the developed world, and questioned their relevance to developing countries.<sup>1</sup>

Dr Puska complains that we have not read the findings of the North Karelia study carefully enough. Interpretation of what is shown by the North Karelia study depends on understanding the nature of the intervention, the time frame over which changes were examined, and whether one is primarily interested in 'explaining' the changes observed within North Karelia without reference to other studies examining the same question. The intervention comprised five arms: health education, screening, a hypertension programme, 'intensification of treatment' (secondary prevention), and rehabilitation, and as such, was focused mainly on individuals rather than the population at large.<sup>2</sup> As shown in Table 1 of our editorial, the reductions in risk factors were, in fact, very similar after 10 years intervention in the control and intervention communities.<sup>1</sup> CHD mortality trends over the period 1969 to 1995 show a greater decline in North Karelia than the rest of the country, but the 95% confidence intervals for the slopes overlap.<sup>3</sup> An intriguing pattern of decline is hidden in the overall trend. First, North Karelia experienced an almost immediate and rapid decline, a rise and a fall in CHD mortality (1971–1975). Second, rates of decline were significantly greater in the country as a whole than in North Karelia (1976–1985). Finally, death rates tended to approximate to each other (1986–1995). Such trends do not provide unambiguous support for the hypothesis that the intervention was effective.

Dr Puska suggests that we have not made the effort to go through the publications from the North Karelia group. We have made this effort, but like other readers we end up somewhat confused. For example one of the original North Karelia investigators, Jukka Salonen, dissented from the view held by the more enthusiastic members of the team that a favourable effect on mortality could be attributed to the intervention.<sup>4</sup> Both Dr Puska and Dr White cite a paper<sup>5</sup> which concluded that in Finland 'changes in risk factors explained

almost all of the decline in mortality from ischaemic heart disease in the 1970s, but in the 1980s the mortality declined more than predicted by changes in risk factors'. Obtaining a greater than expected payback is a remarkable achievement indeed, but one of the North Karelia project authors on this paper then went on to co-author a paper stating that 'temporal trends in mortality from coronary heart disease are not adequately explained by the lifestyles of Finnish men and women'.<sup>6</sup> Making the effort to go through the publications actually leads to increased uncertainty and confusion. We would suggest that it is precisely those commentators who have not taken the trouble to read the full range of publications who are the ones who repeat the glib—and traditional—declaration of victory that has emanated from some of the less critical members of the health promotion fraternity.

It is less well known than it should be that the North Karelia study was one of a family of studies using a similar protocol and launched by World Health Organization in 1974 called the Comprehensive Cardiovascular Community Control Programme (CCCP).<sup>7</sup> These other programmes were run in Hungary, USSR, Switzerland, Norway, Italy, Yugoslavia and both German republics. Although the North Karelia project has generated many more publications than other comparable projects conducted over the last three decades, these other projects are worthy of our attention in making a balanced decision about what does and does not work. We are rather surprised that neither Dr Puska nor Dr White refer to these.

Most of these CCCP studies did not find their way into accessible peer-reviewed scientific journals and those that did, together with other related studies demonstrated methodological weaknesses and generally rather disappointing findings.<sup>8,9</sup> A WHO report on the CCCP studies edited by Dr Puska<sup>10</sup> attempted to put a gloss on the effectiveness of the projects that was not supported when the effort was made to read the tables actually published in the book. For example in the case of the Swiss project an increase in antihypertensive therapy in the intervention communities was said not to be 'reflected in mean blood pressure levels'. This is something of an under-statement; a