

how they use the cash and the opportunities they have to participate in high-quality education, health, and nutrition programmes. This type of research might need frequent data collection, a mixed-methods approach, or both. Some conditional cash-transfer programmes have used mixed-methods approaches.<sup>7</sup> From the policy perspective, why the provision of services for poor people seems to be still low in many developing countries should be clarified. There are many reasons, such as the higher costs per person of reaching poor populations with high-quality services (because they often live in isolated areas) and the limited political power and voice of these groups (compared with wealthy populations). However, accumulated global evidence from research on several conditional cash-transfer programmes suggests that they need to be a part of combined interventions to fight poverty rather than isolated programmes that could overcome inequality on their own.

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## Health professionals must act to tackle climate change



Climate change already affects human health, creating problems that will increase if no action is taken. The most vulnerable are the world's poorest people, who already face poor health and premature death, and are least responsible for greenhouse-gas emissions.<sup>1–3</sup>

The only heartening aspect of this bleak terrain is the gathering awareness that many of the measures needed to make the necessary reductions in greenhouse-gas emissions are those needed to protect and improve global health. Overall, what is good for tackling climate change is good for health.

The Comments and Articles in *The Lancet* today provide a needed quantitative underpinning for this vitally important and optimistic health message, a message that offers a radically reshaped political space in which climate-change negotiations can take place.

Additionally, a clear implication is that policies needed to mitigate climate change will exert health effects by acting on many of the determinants of health and health inequality.<sup>4</sup> These determinants include the conditions in which people are born, grow, live, work, and age, and the structural drivers of those conditions: inequities in power, money, and resources. Andy Haines and

colleagues<sup>5</sup> point out that converging to an equal per-head carbon entitlement (the fair shares framework, as exemplified by contraction and convergence<sup>6</sup>) will ensure that these inequities are addressed head on. They include inequities in access to female education and family planning, which are both key to population stabilisation.

Who better to spell out this message than health professionals? We have the evidence, a good story to tell that dramatically shifts the lens through which climate change is perceived, and we have public trust. Health professionals will be in the forefront of developing and delivering a low-carbon health service, and explaining to patients and populations the health benefits of low-carbon living. We will also have an important role in monitoring the effect of the changes that will have to be put in place. If the world does not adequately address climate change, we will be in the forefront of coping with the catastrophic consequences. But at present our voice is muted, and the health arguments are conspicuously absent from the minds of many of those involved in the negotiations.

To maximise our influence, we must be much clearer than we have been to the public, to patients, and to politicians about the risks of doing nothing and the

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benefits to individual and global health of effective action. We should justify this message through personal example, and we should influence the organisations where we work to reduce their emissions. We should be powerful advocates for the fair-shares framework, recognised by many governments to be necessary<sup>7</sup> but proposed without the force of the arguments shown by the papers in today's Series. The discussions in Copenhagen this December are crucial to getting initial agreement to such a framework, but concerted pressure thereafter will be necessary to ensure that the process moves forward quickly. Our advocacy must be directed at those best placed to influence the political process, and based on tried and tested elements: being specific, brief, personal, timely, confident, and factual. Scientific rigour is vital.

Putting the necessary framework in place will take time. However, action on emission reduction and providing resources for low-carbon development must start immediately. A low-carbon development fund of at least US\$150 billion is the minimum requirement of the G77 group of developing countries. This sum could be raised from a \$5 dollar tax on each of the 20 billion barrels of oil used yearly by the countries of the Organisation for Economic Co-operation and Development, plus a tax on airline tickets.<sup>8</sup>

We must be innovative and imaginative in how we amplify the voice of health practitioners, and disseminate the message, its significance to us all, and its urgency, by using all our extensive networks.

The papers in today's Series give us the opportunity to make a step change in our endeavours. There are already several organisations that collaborate to give to the health arguments the prominence they require (eg, the UK's Climate and Health Council<sup>9</sup>). But to have maximum effect, we need an international equivalent to represent our views, and national equivalents to the UK's Council. The Climate and Health Council is approaching colleagues across the world who have expressed interest in this idea, and inviting doctors to put themselves forward, particularly those from the parts of the world that will suffer the most adverse effects of climate change. Let us collectively make sure that we do not fail present or future generations.

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## Climate policy: lessons from tobacco control

Controlling tobacco use is the highest immediate priority for global health,<sup>1</sup> while climate change is the biggest threat to health in the medium and long term.<sup>2</sup> The longstanding efforts to control the impact of the tobacco industry have important lessons for climate control.

Both health threats are underpinned by scientific evidence of increasing robustness. By the early 1950s the association of tobacco use with premature death and disease was clearly identified (figure).<sup>3–6</sup> This scientific evidence was accepted by 1964.<sup>7</sup> Evidence on the harmful health effects of passive smoking about 20 years later<sup>8</sup> galvanised public support for tobacco control policies. In 1999, work started on an international treaty on tobacco control and in 2005 the WHO Framework Convention on Tobacco Control came into force.<sup>4</sup> The 50-year delay between the wide acceptance of the evidence on the harmful effects and the development of a global tobacco control policy has cost more than 100 million lives.<sup>1</sup> Due to appallingly low implementation of effective policies, smoking still kills over 5 million people each year.<sup>9</sup>

How does the tobacco experience relate to the debate on climate policy? The pathway from evidence to action on climate change has been in two stages. First, the scientific community had to prove that climate change was to a large extent man-made (anthropogenic). The assessment of the Intergovernmental Panel on Climate Change (IPCC) of the likelihood that an anthropogenic source is true rose from “more likely than not” (>50% probability of occurrence) in 1995, to “likely” (90% probability) in 2007.<sup>10,11</sup> Second, in 1995, the IPCC

concluded that “climate change is likely to have wide-ranging and mostly adverse impacts on human health”,<sup>10</sup> which indicates that there was sufficient knowledge in 1995 to take action to protect population health from adverse effects of climate change.<sup>12</sup>

The first global treaty on climate policy was signed in Kyoto in 1997 (figure).<sup>5</sup> The treaty covered only 37 high-income countries, excluded major emitters (USA and Australia), and represented about only 34% of all CO<sub>2</sub> emissions from fuel combustion in 1997.<sup>13</sup> Although the targets were far below what was needed, Kyoto marked the first step in the formulation of global policies and mechanisms to control emissions. The major conference to realise the second step of global climate policy convened in Copenhagen in December, 2009, the 15th Conference of Parties to the UN Framework Convention on Climate Change.<sup>6</sup> The conference's main goals are to agree on effective and binding targets for the reduction of emissions to keep global warming below 2°C by the end of the century, and to include low-income and middle-income countries by offering them fair compensation for their costs of emissions reduction and adaptation to limit damage to health.

There are many similarities between tobacco use and climate change. In addition to causing huge damage to population health, both cause substantial adverse social, economic, equity, and gender effects. Both have long lead times between cause and effect, and both require long-term policies and monitoring systems. The number of countries implementing the policies effectively is far too low. Negative effects are increasing over time and

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