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China and global health



China is the world's oldest continuous civilization. During the past 30 years, the country has emerged as a strong and confident global partner. At home, China has experienced unprecedented material improvements, doubling its gross domestic product per capita, for example, between 2002 and 2006. What are the major challenges for the health of the Chinese people? What are the implications for global health? The authors of the papers in this special issue of *The Lancet* on China's health system were invited to address these questions as China's global engagement continues to expand in the opening decade of the 21st century.¹⁻¹⁸

The reasons for commissioning this report are compelling. Despite accounting for over a fifth of the world's population, the importance of China to global health has been under-recognised by the international health community. This perception is changing rapidly, especially after the August, 2008, Olympics. There are at least four reasons, contemporary and historical, for China's growing role in global health.

First, the sheer demographic weight of China's population undergoing rapid and profound health transitions is of enormous global importance. China is a substantial part of virtually all global health challenges: the prevalence of chronic cardiovascular diseases and cancers; re-emergence of infectious threats such as avian influenza; nutritional transitions due to changing food, diet, and physical activity; and new environmental and behavioural threats.²⁻⁴ For each of these health challenges, what happens in China is a major driver in the dynamics of global health.

Second, China is a major source of health innovation—whether based on its rich traditional pharmacopoeia, its modern cadres of engineers and scientists, or as a source of social experimentation. For example, artemisinin, the most effective drug against the malaria parasite, comes from traditional Chinese medicine.¹⁰ China's universities and modern research laboratories are increasingly attracting outsourced research and development investments.⁸ Community health workers that were pioneered in the 1930s and subsequently refashioned as barefoot village doctors are an acknowledged Chinese innovation for primary health care.¹⁵ China, like many other countries, is struggling to manage the public-private mix in health care; its new efforts to address various market

failures are likely to contribute significantly to global understanding of what does and does not work.^{1,5,6}

Third, China is a major contributor in the control and spread of global health risks, an inevitable aspect of China's growing international participation in the trade of goods, services, and people. In other words, what happens in China is important for the health of others around the world. Emergence of new infectious diseases, such as severe acute respiratory syndrome, and persistence of old pathogens (eg, tuberculosis) illustrate why China's health situation has global importance.² The spread of transnational health risks is an inevitable aspect of China's participation in global transactions, as recently illustrated by controversy surrounding pet foods, cough syrup, and toothpaste. Moreover, as China's energy consumption grows, industrial pollution and carbon production will assume growing global health importance.

Finally, China's customary reserved role in international institutions is changing as the country assumes more global responsibilities, especially in peace and social sectors such as health. Although China's health sector is overwhelmingly internally focused, its global reach is expanding, as shown by its assistance to sub-Saharan Africa, to where China has dispatched more than 40 health teams. China's success in securing the election of the first Chinese head of a UN agency, WHO, marked a turning point of China's participation in global health governance.

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Engineers from China serving with the United Nations—African Union Mission

To probe the scope and depth of China in the context of global health, a collaboration between Chinese and international health scientists—convened by the Peking University Health Sciences Centre, *The Lancet*, and the China Medical Board—commissioned this report, including 19 papers: seven theme papers and 12 commentaries.¹⁻¹⁸ Written by 65 authors, of whom two-thirds are Chinese, the report brings together diverse scientific evidence about China's major health problems, its current strategies, and China's health future.

Like many other developing countries, China has experienced dramatic demographic and epidemiological transitions. With a population that is mainly urbanised and elderly, China's major health threats are chronic diseases, now accounting for more than three-quarters of all deaths.³ Patterns of injury are also changing.⁴ Although China has been successful in the control of infections and maternity-related conditions, these health problems have by no means been eliminated, as exemplified by continuing infectious outbreaks,² reproductive health problems,¹² and persistent schistosomiasis.¹⁴ Evidence underscores the fact that China faces a daunting health future. Behavioural shifts cast a long and dark shadow of burdens due to such risk factors as smoking and changes to diet and physical activity that will be accompanied by new infections, environmental threats, and behavioural pathologies.

An important signal of China's stronger political commitment to health is shown by the expanding role of the state in health-care provision and stewardship, together with the mobilisation of communities and civil society for health improvement. The results of these changes are already measurable. China is now on track to reach Millennium Development Goal (MDG) 4, reducing child mortality by two-thirds between 1990 and 2015.¹⁹ This achievement has been made through antipoverty policies, land reform, investments in agriculture, and economic growth, as well as through improved health services. China has also made important progress on MDG 5, the reduction of maternal mortality.¹⁹

Health care in China, however, is distinctive in several ways. First, the scale is vast. Whatever the problem or solution, China's health conditions are gigantic in size—with more than 300 million smokers, 177 million people with hypertension, and an estimated 140 million urban migrants, stretching demand for new forms of health care.^{3,18} Second, the speed of health

change in China has been extremely rapid. Health transitions that took nearly a century in other richer countries have taken place in a few decades in China.^{3,4} Third, China's unique national history and ecology have resulted in great diversity in health conditions and responses. Many aspects of health in China will demonstrate both commonality and exceptionalism within the country and among nation states. An example is medical ethics and human rights, in which China has been moving towards universal norms while at the same time contributing a unique tradition of Chinese philosophy and values.¹⁶ And fourth, China increasingly has the economic capacity to make profound advances in health. China's spectacular economic growth enables it to augment its investments in health substantially.

Like many countries facing complex health and health-care challenges, it is all too easy to oversimplify the situation in China, where there are many unanswered puzzles. Even as China has witnessed increasing numbers of deaths from transport injury, for example, it has had a striking but largely unexplained decline in suicides,⁴ sociocultural dynamics that generate high male but low female smoking rates are inadequately understood,¹¹ and many clinical medicine graduates do not end up working as doctors.⁵ Understanding these and other health conundrums deserves prioritisation, facilitated by a review of research needs and efforts to improve the quality of and access to relevant health information.

Achieving health equity is China's main health challenge, in view of the well documented problems of incomplete coverage, uneven access, mixed quality, escalating cost, and high risk of catastrophic health expenditures.¹ The Chinese Government recognises these challenges and has announced the Healthy China 2020 initiative to reform disease prevention and health promotion, health-care services, pharmaceutical policies, and health insurance.⁹ These efforts are the latest and most ambitious round of health reforms that aim to tackle growing health inequities.^{1,9} Drastic reforms of health financing (more public investment, improved prevention, universal insurance, containment of costs, enhancement of quality, and alignment of incentives) and human resource development (improved quality and distribution of a quantitatively large workforce) will be necessary.^{5,6} China has a unique opportunity to mobilise its resources and to harness global knowledge to achieve advances in health, compressing the time

and reducing the scale of the disease burden that many other developed countries have had.²⁻⁶

How China fares is important not only for Chinese people but also for the global health community. The global importance of China is assured by its size and scale, its wellspring of innovation, and its role in shared risks and interdependent solutions. In the future, China's global-health interactions will undoubtedly accelerate—in areas such as science and technology, research and development, clinical trials, and new procedures such as organ transplantation. China will also be the source of social system innovations, such as its real-time online disease surveillance system. History has shown that China can produce and harness knowledge, create innovative approaches, and implement at large-scale effective solutions for both its own people as well as the world community.

This report aims to initiate long-term collaboration between *The Lancet* and China, together with the China Medical Board and WHO, including critically important partners, such as scientists outside China who have strong interests in working with Chinese colleagues. The purpose of this collaboration is to introduce China's health system, achievements, and predicaments to the world and to foster scientific and institutional alliances that can strengthen the health—and ameliorate the adverse social and environmental determinants of health—of the Chinese people. We are at the beginning of this relationship. Our report, we hope, has the potential to catalyse progress towards enhanced human health and wellbeing in China.

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Biomedical science and technology in China

Advances in medicine in the 20th century, along with an ageing population and changes in lifestyles, have altered the nature of diseases. Malnutrition and traditional infectious diseases have been replaced by chronic non-communicable diseases and emerging infectious diseases. In China, more than 80% of deaths

are caused by chronic non-communicable diseases. These increasing worldwide needs have placed biomedicine centre stage. The development of biomedical research in China, a country with 1.3 billion people, is a massive and unique challenge.¹ Initially when China opened its doors via policy



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