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DEATH IN CHINA

Market Reforms and Health

CHINA HAS UNDERGONE one of the most impressive processes of rapid development in world history.¹ Between the start of Deng Xiaoping's market-oriented reforms in 1978 and 2005, the annual growth rate of national income, according to World Bank data, averaged 9.7 per cent—amounting to more than a twelvefold increase overall. This unprecedented economic growth has been accompanied by qualitative and structural transformations. Prominent among these has been the increasing international integration of the PRC into the global economy, reflected in the growing share in national income of China's international trade, which rose from 14 per cent to almost 70 per cent over the same period. Though this vertiginous growth has been most marked in the cities and in coastal areas, it has been national in its scope.

One of the most important consequences of this growth has been a substantial reduction in income poverty since 1978: according to official statistics, the proportion of the population that is poor in rural China fell by more than half between 1978 and 1985 alone, and seems to have continued to fall dramatically in the 1990s (although this process has been geographically uneven, with the greatest reductions taking place in the more rapidly growing coastal regions). In 2000, senior government officials even went so far as to declare that absolute poverty had been eliminated. Despite controversies surrounding the number of poor remaining, the sheer quantity of people lifted out of poverty in a short period of time remains a formidable achievement in world-historical terms.

In the light of China's advances in poverty reduction, it is important to assess whether it has made commensurate improvements in other spheres of human well-being, such as education, health and access to basic services. It cannot be assumed that progress has been made in these areas in tandem with the growth of aggregate income—not only because income gains have been very unequally distributed, but because factors other than income are crucially involved. Rising incomes are likely to lead to improved nutrition, housing and sanitation, as well as enabling many to pay for marketized health care. This is the basis on which mainstream economists have advanced the thesis that 'wealthier is healthier'.² However, there are grounds for arguing that China's public health infrastructure has been seriously weakened as a result of the withdrawal of state institutions from the provision of health services; the Chinese public is increasingly forced to pay for treatment, and lower state spending has meant the closure of many medical facilities, leaving much of the country's population with little or no access to health care.

Prior to the adoption of the Open Door policy in 1978, the PRC had achieved extraordinary increases in health indicators, despite its low income. Post-revolutionary public health campaigns and preventative health care efforts—for instance, the famous Maoist campaign against the 'four pests': rats, flies, mosquitoes, bedbugs—played an important role. Indeed, China's health achievements continue to surpass, in absolute terms, those of countries at comparable income levels, due to the advances made between 1949 and 1980. China and India, for instance, had similar figures for life expectancy at birth—just above 40 years—in the early 1950s, but by 1962, life expectancy was almost ten years longer in China—54 years to India's 45—and by 1980 the gap had widened to thirteen years: 67 in China, 54 in India.³ The average life expectancy for all low-income countries was much closer to India's than to

¹ I would like to thank Camelia Minoiu for her extensive assistance with research for this paper, going well beyond what could be reasonably expected.

² Lawrence Summers and Lant Pritchett, 'Wealthier is Healthier', *Journal of Human Resources*, vol. 31, no. 4 (1996), pp. 841–68, rely on cross-country evidence; historical evidence is used by Richard Steckel and Roderick Floud, eds, *Health and Welfare during Industrialization*, Chicago 1997, and Steckel, 'Historical Perspective on the Standard of Living Using Anthropometric Data', in Edward Wolff, ed., *What Has Happened to the Quality of Life in the Advanced Industrialized Nations?*, London 2004, pp. 257–74.

³ For more on this comparison, see Jean Drèze and Amartya Sen, *Hunger and Public Action*, Oxford 1989.

China's: 44 years in 1962, 52 years in 1980. Such comparisons serve to underline the exceptional character of the PRC's health achievements prior to 1980.

Has health in China continued on this upward trajectory in the last two and a half decades? Is the PRC still achieving more rapid improvements in health than other countries facing similar constraints? My comparative analysis focuses on one measure of health outcomes alone—life expectancy. There are two reasons for this. Firstly, life expectancy provides a conceptually attractive measure of the overall health of a population, since it is an aggregate of mortality risks at different ages and is straightforward to interpret, as the expected life-span of a newborn child who will face these risks. Measures of infant and child survival, although highly informative, do not provide a comprehensive means of gauging the overall health of populations. Moreover, measures of access to health services or of health insurance coverage are difficult to interpret, as they can have very different meanings in different contexts, and refer to health inputs rather than outcomes. Second, estimates of life expectancy are available over a wider span of space and time than other indicators. Figures can be obtained for individual Chinese provinces from the early 1970s to the present, and for a wide range of comparator countries. Limitations on the data available do not allow for a systematic comparison between rural and urban areas; I have therefore adopted a province by province approach, which provides a relatively disaggregated portrait of the health situation in China.⁴

After examining the improvements in life expectancy of Chinese provinces in three distinct decades, I turn to their relative performance compared to other countries. I compare the performance of China as a whole with that of other countries, and assess the record of individual provinces, measuring the best performers against individual comparators. My main findings are fourfold: firstly, province-level rates of improvement in life expectancy were higher in the 1990s than in the 1970s and 1980s, and were lowest in the 1980s, the first decade of market-oriented reforms, during which the Chinese health system was

⁴ Although estimates of China's infant and child mortality rates are available for earlier years, doubt has been cast on their reliability. See Judith Banister and Kenneth Hill, 'Mortality in China 1964–2000', *Population Studies*, vol. 58, no. 1 (2004), pp. 55–75.

drastically transformed. Secondly, even in the 1990s, when the province-level rates of improvement were highest, they were lower than for many countries with similar initial life expectancy levels (although higher than the average for all such countries). Thirdly, China's life expectancy improvement between 1980 and 2000 was achieved much more quickly by almost all other countries considered here, and in particular by most of the lower-middle income countries that achieved similar gains. Analogous conclusions can be drawn after setting China's life expectancy improvements alongside those of two sets of comparators: selected developed countries and high-growth East Asian states. Finally, even those Chinese provinces that performed best over the period in question experienced rates of improvement significantly lower than those of comparator countries. China's recent improvements in health appear, then, to have been notably less impressive than its achievements in poverty reduction.

Provincial convergence

Province-level estimates can be used to measure average annual rates of improvement in male and female life expectancy between 1970 and 2000. These figures are available at four points in time: an average for 1973–75, 1981, 1990 and 2000.⁵ I have classified each province as falling into a given 'life expectancy class' on the basis of its life expectancy at the beginning of the relevant decade. These classes are defined as spanning five- or six-year intervals, beginning at 59 years, which is the minimum figure for any province in the entire period. The intervals are held fixed over time, but I have allowed provinces to move from one class to another, so as to take account of initial levels of achievement in each decade (which may have influenced the ease with which additional improvements could be made). Table 1 reports the average annual rates of improvement for provinces within each class—59 to 64 years, 64 to

⁵ Life expectancy figures for 1973–75 and 1981 are from Simona Bignami-Van Assche, 'Estimating Life Expectancy at Birth for China's Provinces, 1975–1990: A Note', Population Studies Center, University of Pennsylvania, mimeo 2005. The figures for 1973–75 are derived from the Cancer Epidemiology Survey undertaken in 1976, which was the largest mortality survey in human history, and recorded all causes of death although its focus was deaths from cancer. The figures for 1981 are taken from census data. Life expectancy figures for 1990 and 2000 are from the *China Statistical Yearbook*, Beijing 2003, Table 4-17, p. 118.

TABLE I: *Annual rate of improvement in life expectancy (%), 1970–2000*

Decade	Life expectancy class	Average annual rate of growth	
		Male	Female
1970s (21 provinces)	59–64	0.47	0.47
	64–69	0.45	0.53
	69–74	0.09*	0.24
	74–81	–	–
1980s (28 provinces)	59–64	0.14	0.31
	64–69	0.03	0.20
	69–74	0.04	0.10
	74–81	–	0.24
1990s (28 provinces)	59–64	0.58	0.83 [†]
	64–69	0.45	0.46
	69–74	0.35	0.41
	74–81	–	0.31

* Heilongjiang registered falling male life expectancy from 1973–81, from 69.25 to 67.55 years.

[†] High improvements in female life expectancy among provinces in the class 59–64 were registered in the 1990s in Xinjiang (9.9 per cent), Qinghai (9.3 per cent) and Tibet (7.4 per cent).

69 years, 69 to 74 years and 74 to 81 years—for each of the decades considered.⁶

For almost every life expectancy class, the rate of improvement was highest in the 1990s, followed by that in the 1970s; in the 1980s, by contrast, there were meagre improvements. Life expectancy increased for every province in each decade (with the notable exception of Heilongjiang, where male life expectancy fell from 69.25 to 67.55 years between 1973–75 and 1981). The higher average rates of improvement of provinces in the lowest classes suggest a pattern of ‘catch-up’ or ‘convergence’.

⁶ Each class consists of ages higher than the first figure specified, and less than or equal to the second. Admittedly, these intervals are defined in an ad hoc manner. Moreover, different levels of absolute increase in life expectancy can be associated with the same proportionate increase for different provinces within the same class, since each class spans a number of years. A different definition of the life expectancy classes might lead to different conclusions.

TABLE 2: Average annual rate of improvement in life expectancy (%), 1990s

	<i>Initial LE class</i>	<i>Chinese provinces</i>	<i>All countries in class</i>	<i>Best performers</i>		<i>Worst performers</i>	
<i>Males</i>	59–64	0.58	0.34	El Salvador	0.84	Russia	–0.78
	64–69	0.45	0.19	Oman	0.72	Azerbaijan	–0.82
	69–74	0.35	0.30	US Virgin Is.	0.72	Barbados	0.07
	74–81	–	0.25	Sweden	0.34	Honduras	0.10
<i>Females</i>	59–64	0.83	0.66	Maldives	1.26	Iraq	–0.03
	64–69	0.46	0.31	Egypt	0.78	South Africa	–2.79
	69–74	0.41	0.20	St. Kitts & Nevis	0.60	Marshall Is.	–0.74
	74–81	0.31	0.19	Dominica	0.45	Azerbaijan	–0.82

China's superior achievements in the 1990s as compared to the previous two decades might simply be due to the passage of time: health improvements may have become easier to bring about in the 1990s owing to advances in knowledge and experience. For this reason, it is instructive to compare the average health achievements of Chinese provinces with those of countries within the same initial life expectancy class for a single time period, 1990–2000. The underlying premise is that any technological factors aiding China's health improvements in the 1990s relative to the 1970s are likely to have had a similar impact on comparator countries. For each class, I have identified the group of countries with life expectancy figures within the same five-year bracket (for males and females respectively) in 1990. Table 2 shows the average improvement for all countries in the group of comparators assembled in this way, as well as the rates of improvement for the best and worst performing countries in the group.

Throughout the 1990s, Chinese provinces on average had higher improvements in male and female life expectancy than countries in the same life expectancy class. However, the average improvement of Chinese provinces in any given class was both notably lower than the best performing comparator, and notably higher than the worst. India—perhaps the most appropriate comparator for China by virtue of its large population and internal diversity—falls in the lowest life expectancy class, and

during the same period saw an improvement which was higher than that of Chinese provinces for males (0.71 per cent versus 0.58 per cent for China) but lower for females (0.54 per cent for India versus China's 0.83 per cent).

These findings should be interpreted with caution for a number of reasons. Factors such as levels of real income, of public investment in health, and epidemiological developments (such as increases in the prevalence of HIV–AIDS) may have a significant impact on health outcomes; omitting them from the analysis can lead to incorrect conclusions concerning the achievements of Chinese provinces relative to countries with similar characteristics. However, the lack of adequate provincial-level data from China means we cannot directly control for these factors. In order partially to address the neglect of such variables, I now turn to a comparison of China's national improvement in life expectancy with that of other countries.

International parallels

To place China's record between 1980 and 2000 in comparative perspective, I have selected two sets of countries spanning a range of circumstances. The first set of comparators comprises all lower-middle income countries, as designated by the World Bank.⁷ The second contains three developed nations—the US, UK and Japan—and three fast-growing East Asian economies: Hong Kong, South Korea and Taiwan. The second set provides comparisons with countries which historically achieved similar improvements in life expectancy (with the benefit of already high incomes, but the handicap of an earlier period's knowledge of medicine and public health); and with countries that are similar to China in two ways: they are in the same region, and have recently experienced rapid economic growth. India does not appear in this analysis because it had not reached China's 1981 life expectancy level by 2003.

⁷ Countries are assigned to the lower-middle income group based on their 2004 per capita GDP ranking; see *World Development Indicators 2006*, available online. Between 1980 and 2000, China moved from the low income category to the lower-middle group. It might be thought that low-income countries are therefore the appropriate set of comparators for China. However, none of these countries achieved China's 2000 male or female life expectancy by 2004, and very few achieved even China's 1981 level by the end of the period.

TABLE 3: *Life expectancy: China v. selected lower-middle income countries*

A: Male

Country	Initial LE	Year China's		Year China's		Percentage increase	Years needed
		1981 LE reached	End LE	2000 LE reached			
Cuba	67.0	1967	69.4	1972	3.58	5	
Tunisia	68.6	1990	69.7	1996	1.60	6	
Ecuador	66.7	1990	69.7	1997	4.50	7	
Syria	66.9	1995	70.0	1997	4.70	7	
Colombia	66.1	1995	69.4	2003	5.07	8	
Jordan	66.3	1990	69.8	2002	5.41	12	
Bos. & Herz.	67.4	1977	69.4	1990	2.94	13	
Azerbaijan	66.6	1989	69.4	2002	4.20	13	
Sri Lanka	66.5	1982	69.9	1995	5.12	13	
Tonga	66.5	1980	69.6	1995	4.77	15	
Jamaica	66.7	1970	69.5	1987	4.30	17	
China	66.4	1981	69.6	2000	4.82	19	
Albania	66.0	1972	69.5	1995	5.30	23	
Serb. & Mont.	66.8	1972	69.6	1995	4.19	23	

B: Female

Syria	70.2	1990	73.2	1997	4.33	7
Tunisia	72.1	1990	74.1	1998	2.77	8
Ecuador	69.9	1987	74.1	1995	6.06	8
Albania	69.5	1972	73.0	1982	5.04	10
Bos. & Herz.	69.5	1972	73.4	1982	5.61	10
Sri Lanka	69.7	1980	73.7	1990	5.79	10
Cuba	70.2	1967	74.8	1977	6.55	10
Jordan	69.5	1992	73.3	2004	5.44	12
Colombia	70.2	1982	73.8	1995	5.05	13
Serb. & Mont.	69.8	1970	73.3	1985	4.96	15
Azerbaijan	69.0	1962	73.2	1979	6.09	17
China	69.4	1981	73.3	2000	5.74	19
Tonga	69.5	1982	73.4	2001	5.58	19
Jamaica	69.3	1967	73.3	1990	5.80	23

For each group of comparators, I have calculated whether it took the countries concerned fewer, as many, or more years to achieve the improvement in life expectancy recorded by China between 1980 and 2000. The initial and final life expectancy levels are held fixed for each country. Table 3 shows the annual rate of improvement for each sex, as a percentage, as well as the number of years taken to bring about the change, for a selected group of comparator countries. As can be seen, the corresponding figures for China place it near the bottom of the resulting league table.

A large number of lower-middle income countries could not be included in Table 3A, either because they had not achieved China's 1981 male life expectancy (66.43) by 2004, the last year for which a comprehensive set of indicators is available, or because they had attained it between 1960 and 2003, but had not achieved China's 2000 figure (69.63) by the end of the period considered.⁸ The former group of countries can be concluded to have performed less well than China in absolute terms. However, their improvements over the decades in question are not straightforwardly comparable with those of the PRC. For the second group of countries, the results are more ambiguous. Some had attained China's 1981 male life expectancy long before 1981, but were unable to reach its 2000 figure over the next four decades.

China took longer to increase its male life expectancy (from 66.4 to 69.6 years) than most of the comparator countries listed in Table 3A. The only exceptions are Albania and Serbia and Montenegro, which took more than two decades to achieve a comparable increase in male life expectancy, from a similar starting point. Although these countries were slower in attaining China's 2000 level, they had reached its 1981 figure in the early 1970s. Since it may have been more difficult to achieve the same health outcomes in the past, the performances of Albania and

⁸ The former group of countries consists of Bolivia, Djibouti, Dominican Republic, Fiji, Guatemala, Guyana, Honduras, Indonesia, Iraq, Kazakhstan, Kiribati, Namibia, Swaziland and Turkmenistan. The latter group comprises Angola, Armenia, Belarus, Brazil, Cape Verde, Egypt, El Salvador, Georgia, Maldives, Micronesia, Morocco, Paraguay, Peru, Philippines, Romania, Samoa, Suriname, Thailand, Ukraine and Vanuatu. There is no data prior to 1987 for Macedonia and the Marshall Islands, and Bulgaria had achieved China's 1981 male life expectancy before 1960. These three countries have therefore been eliminated from the analysis, which includes only those states for which both female and male figures are available.

Serbia and Montenegro may not be straightforwardly deemed inferior to that of China.

The results of the analogous exercise for female life expectancy are reported in Table 3B. A number of lower-middle income countries not included in the table have been outperformed absolutely by China. These states—Angola, Bolivia, Djibouti, Guyana, Iraq, Kiribati, Maldives, Micronesia, Namibia, Swaziland and Turkmenistan—had not reached China's 1981 female life expectancy of 69.35 by 2004. The comparative data once again show China's performance to have been relatively modest. It ranks in the lower half of the group of lower-middle income countries which attained the two benchmarks at some point between 1960 and 2004, and has been outperformed by many countries in that income category. For instance, Brazil and Thailand (not shown in the table) took ten and sixteen years, respectively, to make comparable advances in female life expectancy.⁹

Measured against the second set of comparators—selected developed countries and fast-growing East Asian economies—China's performance has also been modest at best (see Table 4). While it took the PRC almost two decades to improve male life expectancy from 66 to 69 years, four of the comparator countries had achieved this in only one decade—and, with the exception of South Korea, did so earlier than China. Moreover, though the US and UK took slightly more than two decades to make the same improvements, they cannot straightforwardly be said to have performed less well than China, since they made these gains in a period when health improvements would have been more difficult to achieve. These findings are further supported by the ranking for female life expectancy, in which China appears at the bottom of the league table. It took two decades for the PRC's figure to improve from 70 to 74 years. In contrast, Japan, the UK, Taiwan and South Korea made the same advance in seven to ten years, and did so much earlier: Japan in the 1960s, the UK in the 1950s, Taiwan in the late 1960s and early 1970s, and South Korea in the 1980s.¹⁰

⁹ Though not shown here, the figures for total life expectancy for specific comparator countries point to similar conclusions; they are available from the author upon request.

¹⁰ The results are not reported, but are available from the author upon request.

TABLE 4: *Male life expectancy: China v. selected countries*

Country	Initial LE	Year China's 1981 LE reached	End LE	Year China's 2000 LE reached	Percentage increase	Years needed
Hong Kong	66.7	1968	69.6	1976	4.29	8
Japan	66.2	1962	69.4	1970	4.79	8
South Korea	66.9	1990	69.8	2000	4.43	10
Taiwan	66.3	1969	69.6	1980	4.98	11
China	66.4	1981	69.6	2000	4.82	19
USA	66.4	1957	69.6	1978	4.82	21
UK	66.7	1952	69.8	1976	4.65	24

In comparative perspective, then, the health of China's population appears to have improved less rapidly than that of other countries. Even in its own income category, the PRC seems not to have performed especially well. These conclusions give rise to yet another question: although China as a whole may not have outperformed any of the comparator countries, are there any individual Chinese provinces which did so?

Star performers?

The rate at which life expectancy improved in China's provinces varied greatly in the twenty years after the initiation of market-oriented reforms. As can be seen from Table 5 (overleaf), Xinjiang registered an improvement of 8.99 per cent over 1981–2000, whereas Guangxi and Guangdong recorded declines of 1.07 and 0.85 per cent. These disparities, however, reflect different starting positions. It is clear that the highest rates of improvement occurred in those provinces with the lowest initial life expectancy, and that provinces with higher initial levels experienced more modest increases; in provinces such as Beijing, Shanghai and Guangdong, which gained the most in economic terms in this period, and which had previously achieved high levels of life expectancy, the improvements were relatively small. An assessment of the performance of Chinese provinces requires the use of comparators with similar starting points.

TABLE 5: *Total life expectancy in China by province*

<i>Province</i>	<i>1981 LE</i>	<i>2000 LE</i>	<i>Percentage improvement</i>
Xinjiang	61.85	67.41	8.99
Sichuan	65.53	71.20	8.65
Guizhou	62.21	65.96	6.03
Shaanxi	66.15	70.07	5.93
Qinghai	62.40	66.03	5.82
Hubei	67.46	71.08	5.37
Hunan	67.15	70.66	5.23
Yunnan	62.24	65.49	5.22
Ningxia	66.80	70.17	5.04
Jilin	69.87	73.10	4.62
Heilongjiang	69.45	72.37	4.20
Zhejiang	71.74	74.70	4.13
Tianjin	72.15	74.91	3.83
Shanghai	75.37	78.14	3.68
Shanxi	69.13	71.65	3.65
Beijing	73.56	76.10	3.45
Shangdong	71.76	73.92	3.01
Jiangsu	71.90	73.91	2.80
Inner Mongolia	68.07	69.87	2.64
Fujian	70.95	72.55	2.26
Jiangxi	67.60	68.95	2.00
Liaoning	72.10	73.34	1.72
Anhui	70.90	71.85	1.34
Gansu	66.85	67.47	0.93
Hebei	72.10	72.54	0.61
Henan	71.58	71.54	-0.06
Guangdong	73.90	73.27	-0.85
Guangxi	72.06	71.29	-1.07
Chongqing*	-	71.73	-
Hainan†	-	72.92	-
Tibet	-	64.37	-

* Chongqing was a city within Sichuan province until 1997, when it became an independent municipality.

† Hainan was part of Guangdong province from 1921 to 1988.

The provinces with the fastest growth in total life expectancy between 1980 and 2000 were Guizhou, Sichuan and Xinjiang. How do their performances measure against those of comparator countries over the same period? Table 6 summarizes the achievements of these three provinces relative to selected comparators.

TABLE 6: *Total life expectancy: three Chinese provinces v. selected comparators*

<i>Province or country</i>	<i>Initial LE</i>	<i>Year province's 1981 LE reached</i>	<i>End LE</i>	<i>Year province's 2000 LE reached</i>	<i>Percentage increase</i>	<i>Years needed</i>
South Korea	61.44	1972	65.52	1977	6.64	5
Costa Rica	61.86	1960	65.66	1967	6.14	7
Sri Lanka	62.60	1965	66.71	1977	6.57	12
USA	62.10	1932	65.90	1945	6.12	13
Guizhou	62.21	1981	65.96	2000	6.03	19
Costa Rica	65.66	1967	71.05	1977	8.21	10
South Korea	65.52	1977	71.77	1995	9.54	18
Sichuan	65.53	1981	71.20	2000	8.65	19
Sri Lanka	65.37	1972	71.36	1995	9.16	23
USA	65.20	1944	71.20	1972	9.20	28
South Korea	61.44	1972	67.72	1982	10.22	10
Costa Rica	61.86	1960	68.10	1972	10.09	12
USA	62.10	1932	67.20	1948	8.21	16
Sri Lanka	61.14	1962	67.63	1980	10.61	18
Xinjiang	61.85	1981	67.41	2000	8.99	19

Guizhou and Xinjiang rank last in the lists of comparators. It took these provinces two decades to increase total life expectancy from 62 to 66 years. In contrast, Sichuan did better than Sri Lanka and the US, although it was outperformed by Costa Rica and South Korea. Thus even the best performing Chinese provinces did not notably outdo the comparators.

Comparative historical analysis demonstrates that China's recent progress in health is less remarkable than its record in reducing

income poverty. The growth of both its female and male life expectancy between the chosen benchmarks was much slower than that of selected comparators—the US, UK, Japan, Hong Kong, South Korea and Taiwan—despite China having the advantage of undertaking these advances later, with the benefit of greater medical knowledge and experience of public health. Furthermore, China’s performance relative to countries in its own income class—the lower-middle category—has been unimpressive.

Causes and consequences

These findings echo those of other recent studies. In 2005, Giovanni Cornia and Leonardo Menchini concluded that China’s rates of improvement in life expectancy were lower than those of East Asia and the Pacific region as a whole in every decade other than the 1960s, and fell below the world average in the 1990s. They observed a similar trend for infant mortality, noting that China’s advances were again outpaced by those of high income countries and other East Asian and Pacific states.¹¹ Analysing patterns of spatial inequality in education and health in China, Xiaobo Zhang and Ravi Kanbur show that the ratio of rural to urban infant mortality rates increased from 1.65 to 2.8 between 1981 and 2000. They argue that the widening gap can partially be explained by growing relative differences in access to health care, as measured by rural and urban ratios of personnel and hospital beds to population. The number of medical staff per 1,000 people dropped from 1.81 in 1980 to 1.71 in 1998; the figure for hospital beds went from 1.48 per 1,000 to 1.11 per 1,000 over the same period in rural areas.¹² Meanwhile, the share of recurrent health expenditure accounted for by personal spending has more than trebled, from 18 per cent in 1982 to 61 per cent in 2001. Increasing disparities in income, utilization of, and access to health care have also been documented by scholars using data from national surveys.¹³

There are likely to have been many reasons for the imbalance between China’s remarkable increases in average income and dramatic poverty

¹¹ Giovanni Cornia and Leonardo Menchini, ‘The pace and distribution of health improvements during the last 40 years: some preliminary results’, paper presented at the ‘Forum on Human Development’, Paris, 17–19 January 2005, Tables 5 and 7.

¹² Xiaobo Zhang and Ravi Kanbur, ‘Spatial Inequality in Education and Health Care in China’, *CEPR Discussion Paper* no. 4136 (2003).

¹³ Yuanli Liu, William Hsiao and Karen Eggleston, ‘Equity in health and health care: the Chinese experience’, *Social Science and Medicine*, vol. 49 (1999), pp. 1349–56.

reduction on the one hand, and its lesser record of health improvements on the other. For example, the mechanisms linking rising incomes to improved health may have had diminishing effect over time. Using survey data for urban China, Xin Meng, Xiaodong Gong and Youjuan Wang have argued that nutritional intake worsened for lower income groups during the 1990s. In their assessment, the leading causes of this phenomenon were the rise in food prices between 1993 and 1996 induced by the liberalization of the grain marketing system, and the abolition of the food coupon system by most provinces in 1993.¹⁴ In any event, the health benefits of improved nutrition, as well as of other measures such as education, child vaccination and better water and sanitation, may have been largely exhausted. The most important factor is likely to have been the breakdown of China's existing public health infrastructure, and a consequent rationing of health resources according to citizens' ability to pay. Both the press and academic literature have widely remarked on the growing gulf between the health care available to China's new wealthy and what its poor can afford; the relative deprivation of the latter has been compounded by the absolute financial burdens ill-health now imposes.¹⁵

The roots of the breakdown lie in the diminished economic role of the rural agricultural communes and urban public-sector enterprises on which the health system had previously depended for financing and administration.¹⁶ The famous barefoot doctors, who had provided basic care through village and township medical centres since the 1950s, were dispersed in the early 1980s, and the public health system has since taken on a largely residual role. User fees have been formally implemented, as well as being informally levied in countless cases. Such costs often act as a steep barrier to the use of health facilities, even when these are

¹⁴ Xin Meng, Xiaodong Gong and Youjuan Wang, 'Impact of Income Growth and Economic Reform on Nutrition Intake in Urban China: 1986–2000', *IZA Institute for the Study of Labour Discussion Paper* no. 1448 (2004).

¹⁵ See Yuanli Liu, 'What is Wrong with China's Health System?', *Harvard China Review*, March 2006; Howard French, 'Wealth Grows, but Health Care Withers in China', *New York Times*, 14 January 2006; Louisa Lim, 'The High Price of Illness in China', *BBC News* website, 2 March 2006; and Matthew Forney, 'China's Failing Health System', *Time*, 12 May 2003.

¹⁶ See Yasheng Huang, 'Private Sector Development and Health Care Contributions in China', presented at Harvard Business School and Harvard School of Public Health conference, New Delhi, 25 March 2006; and Liu, 'What is Wrong with China's Health System?'.

supposed to be accessible to the general public. Hospital-based studies suggest that even where exemptions for the poor exist in principle, they are nevertheless not applied in practice. As a result, the less well-off increasingly go without health care altogether.

In recent years, both state- and private-sector employers—the latter playing an increasingly central role in the Chinese economy—have been required to provide workers with ‘medical savings accounts’ to cover health care costs. However, many private firms have not complied with the legislation, and even public-sector and quasi-public sector enterprises have refused to meet their obligations, amid increasing budgetary constraints and intensifying pressures for market survival. The large population of illegal internal migrant workers—estimated by the Chinese Agriculture Ministry to number up to 115 million—generally has no access to publicly provided health care.¹⁷ Survey evidence shows that at most a quarter of the entire Chinese population, and a much smaller proportion of rural inhabitants, possesses some form of health insurance. Moreover this coverage is often nominal and may be insufficient to meet needs. Pharmaceutical costs have also been rising, although price ceilings and increased competition in hospital procurement have recently been introduced as a means of countering this trend; drugs continue to be prescribed heavily, however, as they are a major source of revenue for hospitals and health centres. Hospital profits increased by 70 per cent between 2000 and 2003, despite a reduction in patient visits of 5 per cent; personal spending, at 61 per cent of all health care expenditure, dwarfs the government share of only 17 per cent.¹⁸ In this context, it is unsurprising that studies of the dynamics of poverty in China suggest

¹⁷ *Migration News*, vol. 14, no. 1 (2007).

¹⁸ Lim, ‘High Price of Illness’. The literature on the complex institutional background to China’s health system is extensive; for a concise overview, see David Blumenthal and William Hsiao, ‘Privatization and Its Discontents—the Evolving Chinese Health Care System’, *New England Journal of Medicine*, vol. 353, no. 11 (Sept 2005), pp. 1165–70. For further data, see WHO and Government of China, *China: Health, Poverty and Economic Development*, Beijing 2006; see also four World Bank reports: Mariam Claeson, Hong Wang and Shanlian Hu, *A Critical Review of Public Health in China*; Yuanli Liu, Zhengzhong Mao and Brian Nolan, *China’s Rural Health Insurance and Financing: A Critical Review*; Gordon Liu, Brian Nolan and Chen Wen, *Urban Health Insurance and Financing in China*; Peter Smith, Christine Wong and Yuxin Zhao, *Public Expenditure and Resource Allocation in the Health Sector in China*, all Washington, DC 2004.

that catastrophic and chronic illnesses have become a major reason for downward mobility and persistent poverty, especially in rural areas.

It is also not surprising that the weaknesses of China's health system, and the increasing dependence of health upon private income and wealth, have caused concern at the highest levels of the PRC leadership—not only because of the inherent importance of health, but also because of the potential challenge posed by these developments to the legitimacy of the regime. There is today an active debate in the Chinese intelligentsia and political class on alternative approaches to providing for comprehensive health insurance, and a number of possibilities are being practically explored. For instance, in 2003 China launched the New Rural Cooperative Medical Insurance programme, which aims to provide a mechanism for universal health insurance in rural areas through voluntary paid membership, though its coverage remains limited.

In September 2004, the Central Committee of the Chinese Communist Party endorsed the concept of a 'harmonious society'—signalling an increasing concern that the CCP should be seen to be addressing the evident imbalances between social goals and economic growth. China's health achievements remain considerable, as indicated by its continuing lead in life expectancy, in absolute terms, over countries with similar levels of real income per capita. However, this favourable position reflects its advances prior to 1980 much more than it does any improvements since. As long as its economic trajectory is not fundamentally disrupted, China is unlikely to face a collapse in health indicators on the scale of Russia's catastrophic post-Soviet slump. It is, however, entirely possible that the present health inequalities will become entrenched, making further improvements difficult. The weakness of its public health infrastructure also leaves China potentially vulnerable to crises such as the SARS epidemic or avian influenza. The impact of China's market reforms provides a clear indication that 'the rapid privatization of health care systems carries enormous risks for the health of citizens and the stability of governments.'¹⁹ China's leadership should revitalize its public health infrastructure, ensuring access to services for all, if it is to move towards its stated goal of a 'harmonious society', and close the growing divide separating the rich and healthy from the poor and infirm.

¹⁹ Blumenthal and Hsiao, 'Privatization and Its Discontents', p. 1170.