India and China †

“The Art of Prolonging Life”

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Abstract and Keywords

Amartya Sen has often cited the deep historical roots of India and China in sharing knowledge about health and longevity. In health, these two giant civilizations share many commonalities in health and development — the timing of national independence, population size, internal diversity, and their recent embrace of global markets. Life expectancy and child survival are better in China than India, but Chinese health gains have recently slowed. Exceptional health performance may be found in some Indian states like Kerala, but India also faces growing challenges of correcting inequities in health. Rapid economic growth in both countries has generated much stronger fiscal capacities to address these daunting challenges. Future health in India and China is uncertain but will likely be influenced by the major forces of changing demographics and epidemiology, reforms of the respective health sectors, and the development impact of health change.

Keywords: health care systems, development, demography, history, epidemiology, China, India, gender equity, human capabilities
I. Introduction
SHORTLY after rejoining Harvard University twenty years ago, I accompanied Amartya Sen on a field trip to Dhaka, where Marty and I had spent eight of our 14 years of residential work in Bangladesh and India. When we arrived at a BRAC training center in Manikganj, an hour outside of the capital, Amartya proudly reported that this was his ancestral home district. Much animated discussion took place as to how to return Amartya to his home village given the trails, earthen bunds, and riverbeds in between. The most efficient transport, Amartya riding pillion on a motorbike driven by a field worker, was eventually discarded in favor of a very hardy jeep that somehow was able to navigate successfully the narrow paths, returning the man who is arguably East Bengal’s most distinguished intellectual product to his home soil.

That trip marked a “Bengali” bonding between Amartya and me, for our love for East Bengal was shared. My most exciting, and possibly best, research on health, population, nutrition and development was conducted in the 1970s in nearby Matlab thana, Comilla District. Amartya has always been generous in citing these field studies, especially documentation of discriminatory health care and feeding practices against young girls in Matlab families (Chen, Huq and D’Souza 1981).

For the past two decades, Amartya and I have crossed paths and traveled together many times for many activities in many places. A decade at Harvard was devoted to the Center for Population and Development Studies, where Sudhir Anand and we joined to create one of the most intellectually vibrant centers of interdisciplinary research at the university. I recall a marvelous celebration hosted by Sudhir at the Center after Amartya received his Nobel Prize in Economics. With funds from the award, he established two Pratichi Trusts in India and Bangladesh devoted to advancing basic health and education. Pratichi, with the support of Unicef, launched the “Kolkata Group”, a forum for policy exchange and advocacy for children's education and health. These ongoing annual forums bring together Pratichi field researchers with scholars, policy-makers, journalists and philanthropists in India and neighboring Bangladesh.
In these and other intellectual exchanges, Sen has invariably illustrated his points with rich examples from India and China. He has underscored the deep historical connections among these two great civilizations (Sen 2004). Exchange, he postulates, began with trade—mostly following the Silk Road. But over time, exchanges expanded in the transfer of knowledge in science, mathematics, astronomy, health and virtually all aspects of life. Accelerated in part by the spread of Buddhism from India in the first millennium, the exchanges tapered off with the decline of Buddhism in the second millennium. Vividly recounted by Sen are the fascinating observations of India by Chinese travelers and the movement of Indian scientists to China in the fifth through eighth centuries (Sen 2004). The sophistication of these two civilizations is well exemplified by the first printed book in the world: a Chinese translation of an Indian Buddhist treatise, the so-called Diamond Sutra, in ad 868, six hundred years before the Gutenberg Bible in Europe.

For Sen, and for many other Indian intellectuals, China has represented a beacon of light illuminating India's own development experiences, successes and shortcomings, just as India's rich culture has deeply permeated into Chinese tradition. Sen has pointed out that thousands of Sanskrit texts have been translated into Chinese. Sen's own study of Sanskrit during his early schooling in his home in Santiniketan no doubt stimulated his fascination with the interplay among these two great civilizations. Many Chinese visitors, short- and long-term, came to visit Rabindranath Tagore in Santiniketan. Somehow, I always felt that Sen's ease in my presence came from his early acculturation to Chinese people and their civilization.

It is the search for contemporary relevance, however, that characterizes the thrust of Sen's inquiries (Sen 1999a: 22–3, 47, 104). Obviously, the sheer demographic weight of India and China is of global importance. Each has grappled with huge development challenges, some of the most dramatic in the twentieth century—war, revolution, famine and epidemics. While it is impossible to capture all of the richness of Sen's comparative studies on India and China, his works have been elegant, pioneering and multidisciplinary—calling upon history, Sanskrit, philosophy, economics, demography
and the health sciences. They have illuminated many issues, such as famine and democracy, human capabilities, gender equity, and freedom and population policies.

Famine and democracy. Stimulated by his first-hand childhood memories of India's Great Bengal Famine of 1943, Sen has examined the Chinese famine during the Great Leap Forward in 1958-61 (Sen 1981). China's famine and independent India's capacity to control famine illustrate one of Sen's astute observations: that famines do not strike democratic polities because an open media exerts powerful political pressures for governmental intervention.¹

Human capabilities. Sen has pioneered the theory of human capabilities, with basic education and health as core human capabilities essential for exercising choice in the pursuit of freedom (Drèze and Sen 2002: chs 3, 4, 6). In these two basic dimensions of human capabilities—but not necessarily in all others—China has outperformed India, but the exceptional performance of India's Kerala state compared to all of China has generated many illuminating insights (Sen 1991).

Gender inequity. A powerful explanatory force affecting human capability is deeply rooted in both India and China. A strong preference for males in both societies generates an unbalanced sex ratio and a neglect of girls that aggregate into millions of “missing women” (Sen 1990). Sen has been at the forefront of those emphasizing that investment in the education and health of girls yields wide-ranging benefits in fertility decline, family health and economic opportunities (Agarwal, Humphries and Robeyns 2005).

Freedom and population policies. India and China, the world's two most populous countries, offer fascinating contrasts in population policies (Sen 1994). Sen has contrasted “override” (compulsory) population control policies with more “collaborative” (voluntary) approaches to demographic change. While India has fluctuated between both approaches, Sen questions precisely how much of China's dramatic fertility decline can be attributed to its compulsory one-child population policies, as China had already generated so many of the social conditions that induce fertility decline—e.g. basic education and health care.

II. “The Art of Prolonging Life”
Exchanges between India and China, Sen has often noted, have been particularly interested in health care, treating diseases, and, in the words of a Chinese traveler to India, “the art of prolonging life”. This historical base has offered Sen a platform (p.51)

### Table 3.1. Health and development indicators, India and China

<table>
<thead>
<tr>
<th>Indicator</th>
<th>India</th>
<th>China</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total population, 2004</td>
<td>1,087,124,000</td>
<td>1,307,989,000</td>
</tr>
<tr>
<td>GDP per capita (PPP$), 2004</td>
<td>3,139</td>
<td>5,896</td>
</tr>
<tr>
<td>Population living below $1 a day (%), 2004</td>
<td>34.7</td>
<td>16.6</td>
</tr>
<tr>
<td>Population living below $2 a day (%), 2004</td>
<td>79.9</td>
<td>46.7</td>
</tr>
<tr>
<td>Adult literacy rate (% age 15 and older), 2004</td>
<td>61</td>
<td>90.9</td>
</tr>
<tr>
<td>Inequality (Gini index), 2004</td>
<td>32.5</td>
<td>44.7</td>
</tr>
<tr>
<td>Population in urban areas (%), 2005</td>
<td>29</td>
<td>40</td>
</tr>
<tr>
<td>Life expectancy at birth (years), 2004</td>
<td>63.6</td>
<td>71.9</td>
</tr>
<tr>
<td>Infant mortality (per 1,000 live births), 2004</td>
<td>62</td>
<td>26</td>
</tr>
<tr>
<td>Maternal mortality ratio, adjusted (per 100,000 live births), 2000</td>
<td>540</td>
<td>56</td>
</tr>
</tbody>
</table>

Sources: WHO (2004); UNDP (2006).

to compare the more recent performances of these two countries (Sen and Drèze 1995). What is their current health situation, and how did they get there?

Table 3.1 summarizes contemporary health and development indicators for India and China (WHO 2004; UNDP 2006). These two countries have nearly comparable populations, but China's GDP in purchasing power parity is nearly twice that of India's. Levels of poverty are correspondingly lower in China,
but in contrast, India's Gini coefficient for income inequality is much less severe than China's. Adult literacy in China is superior to India's. On average, China is able to “prolong life” for eight more years than India—71.9 versus 63.6. This gap in life expectancy reflects the corresponding differences in infant, child and maternal mortality.

Figure 3.1 plots the paths of child survival against per capita economic growth for India and China between 1960 and 2003 (UNDP 2004). Both countries achieved “independence” at about the same time, with roughly similar levels of child survival. From 1960 through 2003, India improved in child survival and GDP at a fairly steady, albeit moderate, pace. In contrast, China experienced, with some setbacks, accelerating child survival and slow economic growth in the earlier decades, followed by rapid economic growth but more modest gains in child survival in the later decades. Sen has cited China's slow health gains despite robust recent economic growth as reflecting China's weak policy support for health and other social sectors (Drèze and Sen 2002). By 2003, China had greater 0–5 year child survival than India (96.3 per cent versus 91.3 per cent) and higher GDP per capita ($4,730 versus $2,730 in PPP$).

Institutionally, India and China have developed national health systems that are state-financed and state-executed. But their development paths have deviated (Bhalla 1992; Chen 1987; MacFarquhar 2005; Malenbaum 1982). India's constitution designates health as a state subject, and health spending and implementation varies widely among Indian states (Sen 1996). Kerala and much of southern India are quite advanced, while the so-called “bimaru” (Bihar, Madhya Pradesh, Rajasthan and...
Implementation is dependent on a public bureaucracy, following a colonial tradition. Neither financing nor execution has followed the ambitions at independence for a public-sector health system able to achieve universal coverage of basic services. In policies and regulations, private-sector health activities have been overlooked. China also has a centrally planned health system, with financing and operations delegated to communes and state enterprises. The system attempts to integrate traditional and modern medicine and aims to achieve universal coverage at low cost. Program implementation by a single political party at least initially was more efficiently implemented under an authoritarian state. Evidence suggests that large-scale hygiene campaigns have had some positive effects against infectious and parasitic diseases. Private provisioning and private financing are not permitted by official regulations.

Caution should be exercised in interpreting these data and institutional comparisons. The quality of data, even of those reported by the UN, is not beyond dispute in either India or China. India more than China, however, produces and disseminates many sources of data which are readily accessible to researchers. Whereas triangulation through different data sources can be conducted reasonably easily with Indian data—censuses, surveys, registration, etc.—validating Chinese data is more difficult. Comparisons, especially modest differences, should not be over-interpreted.

**III. Looking into the Future**

*Fig. 3.1. Child survival and GDP per capita, China and India, 1950–1999*

*Source: <Gapminder.org>.*

Uttar Pradesh) are backward.
What would a “Sen perspective” on the future of health in India and China look like? Only he, of course, can answer that question. But his intellectual trademark would undoubtedly lead to penetrating insights rooted in history, ranging widely across disciplines, and linked to his concerns over human freedom and human capability.

The “art of prolonging life” in the twenty-first century will not resemble that of the past century—in either India or China. Both have joined the global economy driven by private markets. Unprecedentedly rapid economic growth will increasingly thrust these two countries into the center of the global economy (Huang and Khanna 2003). The role of the private market in the health sector is likely to expand, given the inevitable role of markets in new technologies, the economic demands of health professionals, and commercial opportunities for the pharmaceutical, insurance and hospital industries. Unless public interventions are more effective than they have been, income inequalities are unlikely to improve and health inequities may unfortunately worsen. Issues of access to basic services, protection against financial catastrophes due to illness, and popular satisfaction—especially for subgroups who are poor, rural, minorities, or otherwise disadvantaged—are likely to remain challenges.

Political rhetoric on health, implemented through recent policy reforms, is growing in both India and China. India has launched “rural health missions” that will develop village-based cadres of health workers who bring basic health services to rural populations (Kumar 2007). China is expanding its “rural cooperative health insurance” to achieve universal coverage by 2010. In both countries, even as these rural health efforts are mounted, high-tech tertiary urban hospitals are growing by leaps and bounds, many driven by profit incentives (Blumenthal and Hsiao 2005).

Moving beyond their economically hindered pasts, India's and China's rapidly expanding economies are generating far greater fiscal capacities, public and private, that could be applied to solve these health sector challenges. In such pursuits, many choices will have to be made and many paths will be possible. All, however, will be influenced by three major forces—changing demographics and epidemiology, reforms of
the health sector, and the development dimensions of health change.
III.1 Demography and Epidemiology

Given current population growth rates, India will overtake China as the world’s most populous country around 2035—each will have around 1.5 billion people, together approaching nearly 30 per cent of the world’s population (UN 2005). Both countries are rapidly urbanizing. Within the coming decade, China will become a predominantly urban country; and its 100 to 150 million rural-to-urban migrants, called the “floating population”, will pose health challenges in terms of new risk factors and demands for appropriate health care arrangements. India’s urbanization is not as marked but its rural-to-urban migrants mostly join the informal economy with little social provision or social security. Gender imbalances plague both India and China, producing their overwhelming share of the world’s “missing women”. The abysmal premature loss of women, from the womb through adulthood into widowhood, exacts a huge human toll. Some have hypothesized that shortages of women may benefit them by changing the dynamics of the marriage market, but just as likely are the negative implications of harmful social practices like the expansion of commercial sex work.

Probably the biggest demographic difference between India and China in future will be population aging. China is experiencing a most dramatic fertility decline and the fastest onset of aging in human history. Aging in India will be less precipitous. By 2050, China is projected to have 432 million people, and India 330 million, over the age of 65. Population aging will obviously change the spectrum of disease threats, with an increase in the prevalence of chronic and degenerative diseases. It will also impose dependency burdens on the national economy, household finances, and family care. In some cases, aging and urbanization are interactive, as young people migrate to the cities, leaving behind the rural elderly without family structures able to manage home-based care. There may be broader macroeconomic effects as well. Bloom et al. (2006) have postulated that societies experience a “demographic dividend” as they shift through the demographic transition from high to low birth and death rates. Proportionately more youthful workers in a changing age structure contributed 2 per cent of the per capita income growth in East Asia during the period 1965–90, even when other factors were controlled. China reaped its demographic
dividend earlier than India, which will enjoy an economic boost in the early decades of the twenty-first century.

Table 3.2 summarizes the leading causes and risk factors of death in India and China. Both countries have a high prevalence of chronic and degenerative diseases—stroke, pulmonary and heart disease, cancers and injury. Epidemiologic forecasting suggests that the burden of chronic and degenerative diseases will weigh even more heavily into the future. Both countries, however, also have significant subgroups plagued by the diseases of poverty—common infections, child undernutrition, and maternity-related risks. Such epidemiologic diversity is greater in India than China. To manage such diversity, the health care systems of both countries will need to build in flexibility to respond to local priorities.

Two epidemiologic factors are worthy of special attention. Perhaps the single health indicator most decidedly against India is the prevalence of child malnutrition at 46 per cent in comparison to China’s 8 per cent (Kumar 2007). India’s less visible chronic childhood malnutrition, in contrast to acute hunger and starvation, challenges Sen’s theory of how to address these “silent famines” (Sen and Drèze (p.55))
### Table 3.2. Causes of death, burden of disease, and selected risk factors (% of total deaths), India and China

<table>
<thead>
<tr>
<th>Causes of death</th>
<th>Burden of disease</th>
<th>Risk factors</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>INDIA</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heart disease</td>
<td>14.8</td>
<td>Respiratory infections</td>
</tr>
<tr>
<td>Respiratory infections</td>
<td>10.7</td>
<td>Low birth weight 6.6</td>
</tr>
<tr>
<td>Stroke</td>
<td>7.4</td>
<td>Heart disease 5.1</td>
</tr>
<tr>
<td>Low birth weight</td>
<td>5.2</td>
<td>Diarrhoeal diseases 5.1</td>
</tr>
<tr>
<td>Chronic obstructive pulmonary disease</td>
<td>4.7</td>
<td>Depressive disorders 4.9</td>
</tr>
<tr>
<td>Diarrhoeal diseases</td>
<td>4.4</td>
<td>Unintentional injuries 4.3</td>
</tr>
<tr>
<td>Tuberculosis</td>
<td>3.5</td>
<td>Childhood-cluster diseases 3.4</td>
</tr>
<tr>
<td>HIV/AIDS</td>
<td>3.5</td>
<td>HIV/AIDS 3.4</td>
</tr>
<tr>
<td>Childhood-cluster diseases</td>
<td>2.8</td>
<td>Tuberculosis 2.8</td>
</tr>
<tr>
<td>Other unintentional injuries</td>
<td>2.2</td>
<td>Stroke 2.5</td>
</tr>
<tr>
<td><strong>CHINA</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Causes of death</td>
<td>Burden of disease</td>
<td>Risk factors</td>
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<tr>
<td>-----------------------------------------</td>
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<td>------------------------------------------</td>
</tr>
<tr>
<td>Stroke</td>
<td>18.1</td>
<td>Stroke</td>
</tr>
<tr>
<td>Chronic obstructive pulmonary disease</td>
<td>14.1</td>
<td>Depressive disorders</td>
</tr>
<tr>
<td>Heart disease</td>
<td>7.7</td>
<td>Perinatal conditions</td>
</tr>
<tr>
<td>Stomach cancer</td>
<td>4.5</td>
<td>Chronic obstructive pulmonary disease</td>
</tr>
<tr>
<td>Liver cancer</td>
<td>3.6</td>
<td>Road traffic accidents</td>
</tr>
<tr>
<td>Trachea, bronchus, lung cancers</td>
<td>3.5</td>
<td>Unintentional injuries</td>
</tr>
<tr>
<td>Respiratory infections</td>
<td>3.2</td>
<td>Respiratory infections</td>
</tr>
<tr>
<td>Perinatal conditions</td>
<td>3.0</td>
<td>Self-inflicted injuries</td>
</tr>
<tr>
<td>Self-inflicted injuries</td>
<td>3.0</td>
<td>Ischaemic heart disease</td>
</tr>
<tr>
<td>Tuberculosis</td>
<td>3.0</td>
<td>Diarrhoeal diseases</td>
</tr>
</tbody>
</table>

**Note:** Figures for leading risk factors for India are extrapolated from summary data on South-east Asia. **Sources:** WHO Statistics, 2004; Disease Control Priorities Project (www.dcp2.org); Ezzati et al. (2002)
Table 3.3. Health indicators, India and China

<table>
<thead>
<tr>
<th>Indicator</th>
<th>India</th>
<th>China</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total expenditure on health (% of GDP), 2004</td>
<td>5</td>
<td>4.7</td>
</tr>
<tr>
<td>Public health expenditure (% of GDP), 2003</td>
<td>1.2</td>
<td>2</td>
</tr>
<tr>
<td>Private health expenditure (% of GDP), 2003</td>
<td>3.6</td>
<td>3.6</td>
</tr>
<tr>
<td>Health expenditure per capita (PPP US$), 2003</td>
<td>82</td>
<td>278</td>
</tr>
<tr>
<td>Physicians (per 100,000 people), 2004</td>
<td>60</td>
<td>106</td>
</tr>
<tr>
<td>Hospital beds (per 10,000 population), 2002 (India), 2003 (China)</td>
<td>7</td>
<td>22</td>
</tr>
<tr>
<td>Children under 5 underweight for age (%), 1999 (India), 2002 (China)</td>
<td>44.4</td>
<td>6.1</td>
</tr>
<tr>
<td>One-year-olds fully immunized against measles (%), 2004</td>
<td>56</td>
<td>84</td>
</tr>
<tr>
<td>One-year-olds fully immunized against tuberculosis (%), 2004</td>
<td>73</td>
<td>94</td>
</tr>
<tr>
<td>Births attended by skilled health personnel (%), 1996–2004</td>
<td>43</td>
<td>96</td>
</tr>
<tr>
<td>Prevalence of HIV (% age 15–49), 2005</td>
<td>0.9 [0.5–1.5]</td>
<td>0.1 [&lt;0.2]</td>
</tr>
<tr>
<td>Prevalence of smoking (% of adults), women, 2002–04</td>
<td>17</td>
<td>43</td>
</tr>
<tr>
<td>Prevalence of smoking (% of adults), men, 2002–04</td>
<td>47</td>
<td>67</td>
</tr>
</tbody>
</table>

Sources: WHO (2004); UNDP (2006).
1989). That half of India's children suffer from retarded growth and
development is an abysmal societal failing. On the other hand,
China has an alarming rate of adult male smoking, 67 per cent,
which is nearly half again as high as India's 47 per cent. This casts
a long, dark epidemiologic shadow over China's future. China must
mobilize its political will and implement evidence-based health
policies that have been demonstrably effective against tobacco
consumption. Anti-smoking interventions such as a heavy cigarette
tax, ground rules on advertising, especially among children and
adolescents, and no-smoking zones in workplaces have yet to begin
to be implemented in China, or for that matter in India!

III.2 Reform of Health Systems

Berman (2006) has hypothesized that despite different paths,
there are now many similarities in the health care systems of
India and China. Both countries spend about 5–6 per cent of
GDP on health (Table 3.3). Public funding is dwarfed by
private financing of out-of-pocket payments for drugs and
outpatient care. Rural health care is provided by unregulated,
poorly trained, and unqualified for-profit rural doctors
operating self-employed businesses. Citizens in both countries
have limited access to health insurance and thus little
financial protection against catastrophic expenditures for illness (Mahal
and Yip 2007). Both have underdeveloped professional norms,
standards and associations.

While these similarities are evident, the very different
institutional contexts and capacities in these two countries are
even more noteworthy. Given differing GDP levels, the per
capita health expenditure in China, at US$278, is more than
three times the expenditure in India, at US$82 (UNDP 2004).
While much can (p. 57) be achieved at these per capita
expenditure levels, it has been noted that India's and China's
health expenditures are still modest.² China's number of
doctors per population is nearly double that of India's. India's
struggle to improve the productivity of its publicly financed
system, staffed by civil servants, is constrained by insufficient
resources and lack of incentives and support. China, by
contrast, has a polarized public sector: at one pole, publicly
owned tertiary hospitals driven by for-profit incentives; at the
other, lower-level public facilities that are feebly supported.
China's regulatory system micro-manages health activities
while India's suffers from weak management and poor
enforcement. Public health in India is fragile due to lack of
skilled personnel, funding and systems, while China inherited
a Soviet-style public health system that has only received an
infusion of public resources since the SARS epidemic. Most important of all, the leaderships of both countries must work hard to secure public confidence that current reform efforts are on the right track.

The ultimate direction of health care reform in both countries is unclear. The established models in Western Europe or North America, also embedded in market-based economies, somehow seem to be neither achievable nor affordable in India and China. Public financing of publicly operated service provision may be more equitable in theory but seems insufficiently efficient and affordable, and private systems suffer from market failures of information asymmetry, inability to contain costs, and profit-driven incentives. There is no doubt that each country will craft new health care systems shaped to its political, economic, cultural and health contexts. Although they will have components that resemble those of developed economies, each will most likely develop fresh models for the twenty-first century. Exchange, sharing and joint learning between India and China as they move forward would seem highly beneficial.

III.3 Development and Health

As Sen has so elegantly underscored with his comparative analysis of India’s Kerala state, much of India’s and China’s health performance will depend on developments beyond medical care per se. Two powerful influences on the health status of populations are the social determinants of health and the governance of health affairs.

Basic education has highly positive health effects for individuals, families and communities. Women’s empowerment will improve not only the reproductive health of women but also the health, education and economic well-being of entire families. Sen has examined both of these social determinants but one of enduring interest for him has been the relationship of health and economic performance (Sen 1999c).

(p.58) On the basis of the experiences of India and China, Sen argues that the relationship of health to economic productivity is more nuanced than the customary view that wealth leads to health. Indeed, Sen argues that the production of wealth requires a healthy population. That is why he has emphasized that China’s economic take-off was aided, in part, by the earlier universal provision of basic education and health
care, which prepared the workforce to exploit economic opportunities (Sen 2005). He wryly observes that Mao might have been surprised that these social achievements under communism would eventually help China succeed in global capitalism (personal communication)! One of India's handicaps is an incompletely educated workforce, although India's economic rise was helped by an elite, English-language higher education system that produced a highly competitive skilled labor force. Health also exerts other effects on the economy. Health security and stability is an essential foundation for economic productivity, as demonstrated by the setbacks to India during the plague epidemic in 1996 and China during the SARS epidemic in 2002. In a world economy fueled by trade in goods and services, the spread of infectious diseases can paralyze the economy. Both India and China will likely experience both progress and setbacks in this area.

Sen has also emphasized that healthy people depend on sound “health governance” (Sen 1999b). He often cites a study by Sudhir Anand and Martin Ravallion (1993) showing that it is the level of public expenditure on health and education, not overall income (or GDP), that matters greatly in advancing these two public goods. Sen also highlights the importance of democratic participation. It is an underappreciated fact that a vigorous civil society contributes to public health by complementing governments in service provision and also by operating as a “watchdog” in detecting deficiencies and advocating improvements. A case in point is the control of environmental pollution, where feedback, advocacy and even protests by those affected are important sentinels and leverage points for addressing environmental threats. India's vibrant community of non-governmental organizations provides a robust counterweight to state control and responsibility. While China's civil society and media are expanding, their role and functions are more contained than in India. China may therefore be comparatively handicapped in speedily addressing the emerging environmental and other health threats, which are better addressed through an active citizenry.
IV. Conclusion
In some ways, India and China confront similar challenges to
their health sectors—demographic and epidemiologic change,
health-sector reform, and the development aspects of health
change. Both countries must correct for well-recognized (p.
59) market failures and also policy and regulatory
insufficiencies. However, India and China have very different
institutional foundations for sorting out their health responses.
The nature of health governance differs markedly. For some
health responses, where efficient public-sector management is
important, China may be more effective. For other health
responses, where popular feedback and pressure are
important, India’s reaction may be more robust and durable.

For both India and China, the challenge may be less that of
“prolonging life” and more the “art” of ensuring more
equitable distribution of improvements in health (Sen 2002).
Both nations have enormously diverse populations. The
differences between India and China are as great as those
within India and within China. These are, after all, single
political entities encompassing ancient civilizations, the most
populous in the world. And what happens to the “art of
prolonging life” in these two countries is of undeniable
importance to the future of world health.

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Notes:
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(1) Many feel that Sen should also have been awarded the Nobel Peace Prize for his work on famine.

(2) A senior Chinese policy-maker observed that the cost of providing anti-hypertensive medication to China's 160 million hypertensive adults would essentially consume all of the funds in the health sector.