



China's Progress Towards the Health MDGs



The MDG challenge

The Millennium Development Goals* (MDGs) have been enthusiastically endorsed by China.[†] Nearly half concern health, directly or indirectly. The goals call for specific reductions over the period 1990-2015 in a relatively small set of key indicators, such as child malnutrition, child mortality and maternal mortality, and for progress in combating communicable diseases such as HIV/AIDS, malaria and tuberculosis (TB) (see Box 1).

China's record on many of these indicators before 1990 is legendary. In 1960, China's under-five mortality rate stood at 225‰. By 1980, the figure had been reduced to 64‰, an annual rate of reduction of 6.3%. This spectacular achievement occurred despite the slow economic growth over the period 1960-79 (China's per capita income grew at just 4% per year between 1960 and 1979). On maternal mortality China also achieved a remarkable reduction in a very short space of time: in 1950, its MMR is estimated to have been around 1500; by 1980, this had been reduced to just 100.[‡]

How has China fared on these indicators since 1990? And what challenges lie ahead, especially for the health sector? These are the questions addressed by this Briefing Note.[‡] It concludes that China is off-track for the majority of the

health MDGs, and that this is largely due to shortcomings in its health system.

Box 1: The Health MDGs

Goal 1 is to eradicate extreme poverty and hunger. One of the two targets is to halve between 1990 and 2015 the proportion of people who suffer from hunger. Indicators used to monitor progress are the fraction of the population below the minimum level of dietary energy consumption and the prevalence of underweight children under five years of age. Hitting the target would require an annual average rate of reduction of 2.7% between 1990 and 2015.[§]

Goal 4 is to reduce child mortality. The target is to reduce the under-five mortality rate by two thirds between 1990 and 2015, which would require an annual average rate of reduction of 4.3% between 1990 and 2015.

Goal 5 is to improve maternal health, the target being to reduce the maternal mortality ratio by three quarters between 1990 and 2015. Hitting this target would require an annual average rate of reduction of 5.4% between 1990 and 2015.

Goal 6 is to combat HIV/AIDS, malaria and other communicable diseases. The original target is simply to have halted by 2015 and begun to reverse the spread of HIV/AIDS, the incidence of malaria and other major communicable diseases, such as tuberculosis. However, China has joined other countries in WHO's Western Pacific Region Office (WPRO) in working towards a halving of TB prevalence by 2015, which would require an annual rate of reduction of 2.7% between 1990 and 2015.

Malnutrition

During the 1990s, China reduced the prevalence of underweight among under-five children and undernourishment amongst the population as a whole at almost 7% and 5% per year

[§] All rates of change are computed in this note assuming constant proportional growth, not linear growth as in some MDG exercises. Growth estimates are computed on all available data points since 1990 as the slope of a regression of the natural logarithm of the indicator on the values of the years to which they pertain. Where there are data available only for two years—say 1990 and 1997—this is equivalent to computing the rate of change, r , using the formula $r = \ln(y_{1997}/y_{1990})/7$, where y_{1990} is the value of the indicator in 1990.

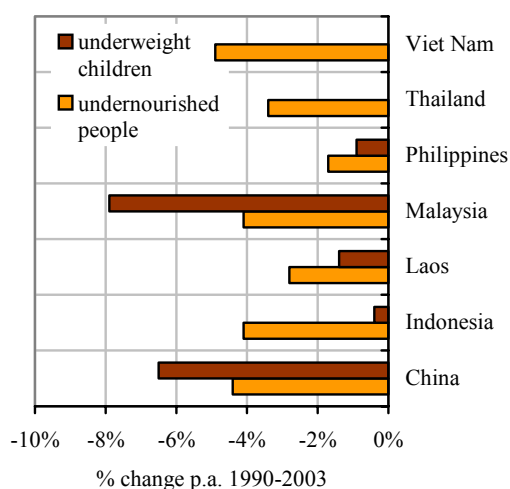
* The goals derive from the UN Millennium Declaration, endorsed on September 8th 2000, at the UN Millennium Summit. China's then president Jiang Zemin was one of 147 heads of state who endorsed the Declaration.

[†] See Assistant Minister Shen Guofang's preface to the UN China team's report on the MDGs¹.

[‡] This briefing note was prepared by World Bank staff. The findings, interpretations, and conclusions expressed herein are those of the authors, and do not necessarily reflect the views of the World Bank or those of its Executive Directors or the governments they represent, or the Government of China. The note forms part of the World Bank's ongoing study on China's rural health sector. The study—referred to as the *China Rural Health AAA* (Analytical and Advisory Activities)—is being undertaken in collaboration with the Ministry of Health (MOH) and other government agencies, as well as with selected international partners. For further information, contact L. Richard Meyers (lmeyers@worldbank.org).

respectively, well in excess of the rate required to hit the Millennium target. China's performance compares very favorably with its neighbors in terms of its rate of reduction of malnutrition (Figure 1). It also compares favorably in terms of the *level*: currently China has the lowest prevalence of underweight among under-fives in the region.

Figure 1: China leads East Asia in reducing malnutrition

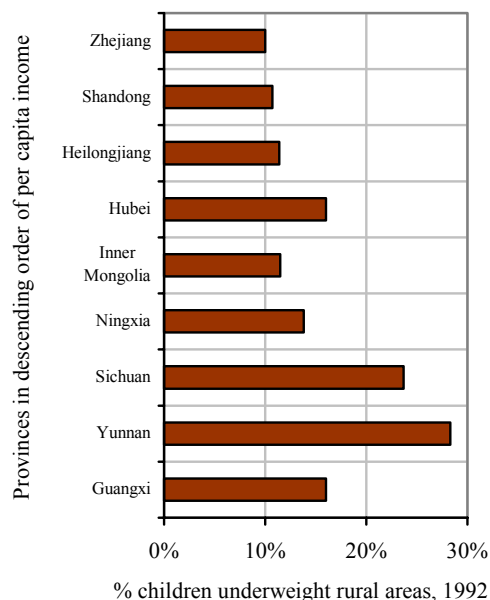


Source: UN Statistical Division Millennium Indicators Database
http://unstats.un.org/unsd/mi/mi_goals.asp.

Malnutrition varies considerably within China, with children living in the poorer central and western provinces (those at the bottom of Figure 2) being much more likely to be malnourished than those living in the richer eastern provinces (those at the top). Furthermore, malnutrition has fallen much faster among children in cities than in rural China.³ During the 1990s, the prevalence of underweight among young children in cities fell at an annual rate of 15.6% per year. In rural areas, by contrast, the annual rate of reduction was only 4.8%—still almost twice the annual required rate of reduction.

The UN's recent report¹ on China's progress towards the MDGs comments that poor nutrition in western China results usually from lack of information on nutritional matters rather than from lack of food.

Figure 2: Children in China's poorer provinces are more likely to be malnourished*



Source: Ge Keyou. The dietary and nutritional status of Chinese population (1992 National nutrition survey). Beijing: Institute of Nutrition and Food Hygiene, 1995.

Child mortality

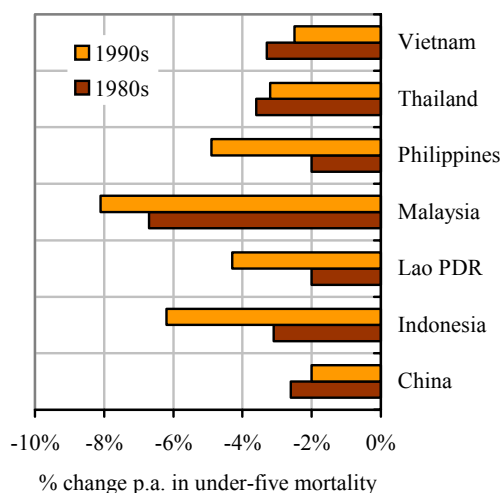
China has made slower progress on child mortality than on malnutrition. In fact, there is some doubt whether it will achieve the required two thirds reduction between 1990 and 2015. Official MOH data suggest that China is well on track to achieve the target, averaging an annual rate of reduction of nearly 5%.[†] However, the data used by the U.N. agencies in monitoring global progress towards the child mortality MDG[‡] suggest the rate of reduction was rather smaller—only 2% per annum.[§]

This rate is less than the 2.7% China achieved during the 1980s (Figure 3). It is also less than that achieved by most of China's neighbors. Furthermore, many of these countries improved their performance during the 1990s. China's rate

* The chart and the study from which the data are taken cover only some of China's provinces.
[†] MOH data from China Health Statistical Yearbook 2004, p. 159.
[‡] The Unicef data are available at www.childinfo.org.
[§] A recent review⁴ concluded that while MOH data are very accurate from 1995 onwards, they tended to overestimate mortality in the early 1990s and hence overstate the rate of reduction during the 1990s.

of reduction is also lower than the developing-country average for the 1990s (2.5%)⁵ and is lower than the 3% annual rate of reduction for the 1990s that might reasonably be expected of China, given its rapid economic growth during the 1990s and bearing in mind its already low rate of mortality in 1990.*

Figure 3: China has reduced child mortality more slowly than its neighbors



Source: Unicef data used by the UN agencies in monitoring progress towards the MDGs, available at www.childinfo.org.

As with malnutrition, children living in poorer provinces (those at the bottom of Figure 4) tend to face higher risks (in this case of death) than children living in richer provinces (those at the top). Worryingly, the gaps seem to be widening—rates of infant and under-five mortality fell faster in China’s richer provinces between 2000 and 2002 than in its poorer provinces.

There is another child survival gap that appears to be widening—a trend that if confirmed by surveillance data would be particularly worrisome. China is one of just seven countries in the entire world where boys have a smaller risk of dying before their fifth birthday than girls.⁶ China, in fact, ranks well ahead of the six others in the female-male gap. Recent research concludes not only that this female-male gap in China is widening, but that this reflects *rising*

* This rate of 3% is derived from a regression analysis of a pooled cross-section of time series data for a large number of countries and all the end-of-decade years from the Unicef database. The regression includes per capita income and lagged mortality.

infant and under-five mortality rates among girls.⁴ Between 1982-90 and 1990-2000, while male infant mortality fell at an annual average rate of 2.3% per year, female infant mortality *increased* by nearly half a percent per year.

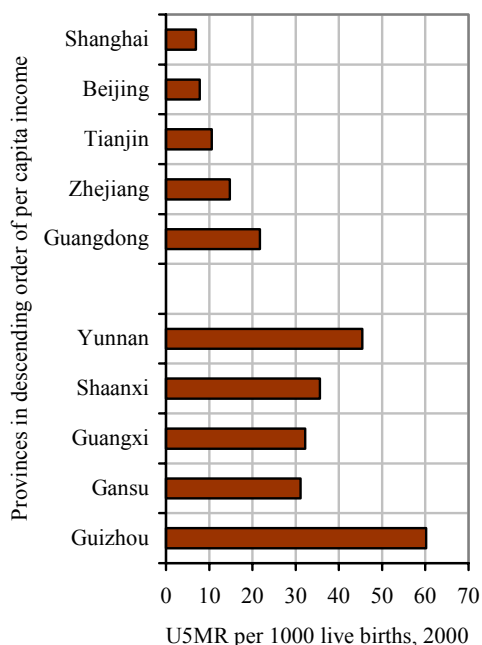
China faces several challenges if it is to successfully bring down child mortality still further.^{1,7}

China’s practice of charging for immunizations goes against the basic economic principle that governments should subsidize in full interventions that generate large benefits for everyone, not just for the recipient of the intervention. The practice stems in part from China’s fiscal decentralization which has left poorer provinces and counties unable or unwilling to find the resources for immunization programs. The price barrier appears to be especially pronounced for migrant children and children born out-of-plan—they are less likely to be registered for preventive health services because of the heavy fees charged. The price barrier applies not just to immunization but to many other professionally-delivered child health interventions.

In addition to the price barrier, households in China often face a knowledge barrier. Too few, for example, are fully informed about the benefits of immunization. On the provider side other problems arise in the delivery of immunization programs. The recent EPI report⁷ drew attention to the weak support for the implementation of clinical practice standards for storing and handling vaccines, and in administering immunizations. It also noted the difficulty of timely administration of the Heb B vaccine when the baby is delivered at home.

Inadequate sanitation—especially in rural areas—is considered to be a major problem in China, and a contributor to diarrhea disease and viral hepatitis. A recent UN report¹ noted that households in China are inadequately informed about the effects of poor hygiene on child health—this is a contributory factor to the low demand for improved sanitation. The report also noted the fragmentation of responsibility across agencies for the delivery of water and sanitation, and the fact that sanitation and hygiene are accorded a low priority in local government spending decisions.

Figure 4: Children die earlier in poorer provinces in China*



Source: MOH's Department of MCH annual report, 2004.

Maternal mortality

China has made more headway recently reducing maternal mortality rate (MMR) than reducing child mortality rate. During the 1990s, China achieved an average 4.8% annual rate of reduction. This is somewhat short of the 5.4% Millennium target, but is considerably higher than the developing-country average of 3.2%.⁵

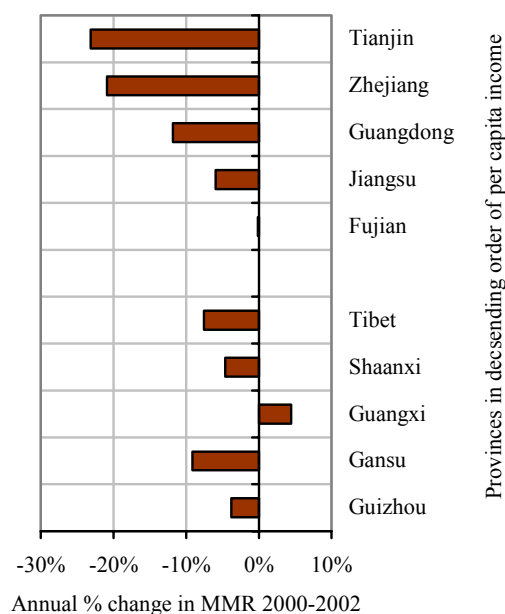
As with child mortality, poorer provinces have higher rates than richer provinces. And as with child mortality, these inequalities are growing—for the most part China's poorer provinces (at the bottom of Figure 5) reduced MMR by a smaller percentage during 2000-2002 than China's richer provinces.

Like many other countries trying to reduce maternal mortality, China faces the challenge of increasing women's knowledge of the importance of prenatal care and a safe delivery, as well as increasing women's status and power within the household.⁸⁻¹⁰ But China also faces the challenge of making maternal care affordable to rural households—poorer households, especially those without insurance

* The chart shows the five poorest and five richest provinces for which data are available.

and with small amounts of savings are less likely to use prenatal and delivery services.^{11,12}

Figure 5: Poorer provinces lag in reducing maternal mortality†



Source: MOH's Department of MCH annual report, 2004.

Malaria

By 1990, after several decades of concerted anti-malaria campaigns, China had contained malaria to Hainan and Yunnan and a few localities elsewhere. By the early 1990s, the number of malaria deaths nationwide had fallen to just 50. During the 1990s, malaria deaths showed no clear trend, hovering around just 30-40 each year.[‡] But between 1992 and 2002, the reported incidence of malaria in China fell by an annual rate of 13%.[§]

Despite the low threat malaria poses to the country as a whole, and the continued progress during the 1990s, challenges remain, as acknowledged by the government in its recent application to the Global Fund.¹³ The border regions of Yunnan and the mountainous regions

† The chart shows the five poorest and five richest provinces for which data are available.

‡ Source http://www.wpro.who.int/themes_focuses/theme1/focus2/t1f2china.asp#graph

§ Source http://www.wpro.who.int/themes_focuses/theme1/focus2/t1f2china.asp

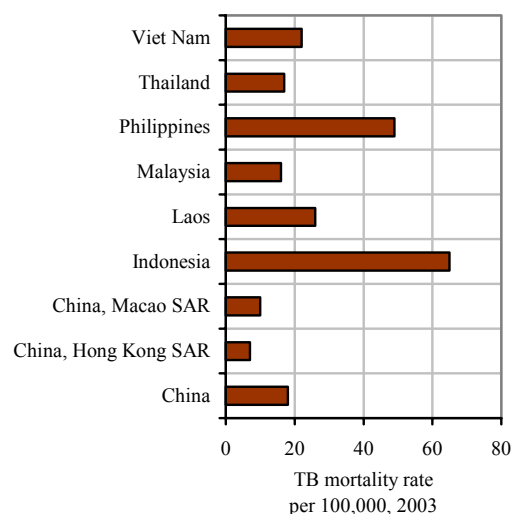
of Hainan where malaria remains endemic are inhabited by poorly educated minorities who have limited knowledge of preventive health. Prescribing pressure by providers is thought to be a contributory factor to the misuse and abuse of antimalarials and the consequent development of drug resistance. Village and private doctors are acknowledged to have limited capacity to diagnose and treat malaria. And the government acknowledges the need for improved surveillance of multi-drug resistance, as well as the establishment of a malaria information network and joint malaria control in southern border regions to ensure rapid sharing of information.

Tuberculosis

On TB, China faces a much bigger challenge than it does on malaria. Its mortality rate is not unduly high by regional standards (Figure 6). However, it has lagged behind almost all its neighbors in reducing TB prevalence and mortality—these declined during the period 1990-2003 at annual average rates of only 1.9% and 2.1% (Figure 7), well short of the WPRO Millennium target rate of 2.7%.

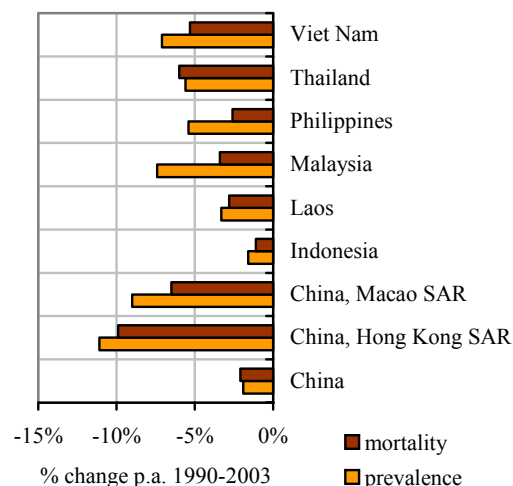
The reduction to date in TB appears to have been due to China's adoption of DOTS (Directly Observed Treatment, Short-course) in 1991 in a World Bank-financed TB control project (also called World Bank Health V Project). A recent study¹⁴ concluded that the reduction in TB prevalence is entirely attributable to the adoption of DOTS—in the non-project areas, no significant decline in TB prevalence was observed. Another study¹⁵ concluded that DOTS had made a sizeable dent in TB mortality, with counties adopting DOTS preventing nearly half of all preventable TB deaths. The adoption of DOTS is estimated to have prevented as many as 30,000 deaths per year.

Figure 6: China's TB death rate is low by regional standards



Source: U.N. Statistical Division Millennium Indicators Database http://unstats.un.org/unsd/mi/mi_goals.asp.

Figure 7: China lags behind its neighbors in reducing TB

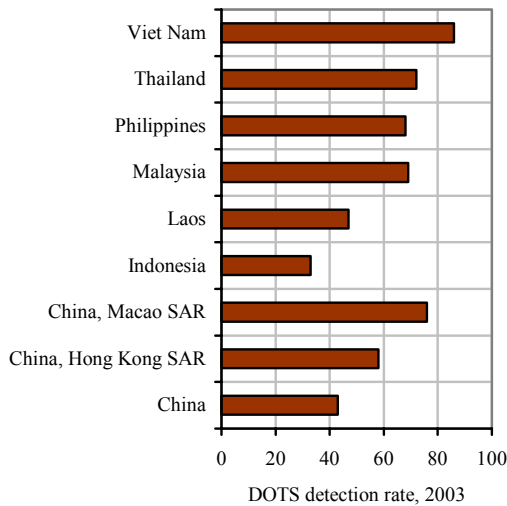


Source: U.N. Statistical Division Millennium Indicators Database http://unstats.un.org/unsd/mi/mi_goals.asp.

One challenge ahead is to scale up DOTS to the remaining half of China's counties, something that is already happening. Another is to increase the impact of the program. The DOTS detection rate* is well below WHO's target rate of 70%, and is considerably lower than the detection rate achieved by other countries in the region (Figure 8).

* This is the fraction of all incident smear-positive cases that are detected by DOTS.

Figure 8: China's DOTS detection rate is low by regional standards



Source: U.N. Statistical Division Millennium Indicators Database http://unstats.un.org/unsd/mi/mi_goals.asp.

Two recent papers^{16,17} draw attention to the health system obstacles that lie in the way. In China's highly decentralized system of government, local governments rely largely on their own resources for TB and other public health programs, including the matching funds for the World Bank-financed TB control project. In Shandong, where the problem has been studied, poorer governments—despite having a higher prevalence of TB—spent less per capita on TB control than richer ones.¹⁷ This meant a smaller sum from the World Bank project because of the matching requirement. The shortfall in health worker salaries was met in these poor counties by user fees. Unsurprisingly, case detection rates turned out to be lower in these poorer counties. The decline in funding since 1998 in the World Bank Health V Project in Qing county appears to have resulted in a drop in case detection.¹⁶

The emphasis on fees as a means of income generation appears to have been a problem even in counties participating in the World Bank's TB control project. Despite the policy of free testing and drugs, * patients have ended up paying considerable amounts out of pocket—equivalent to between 25% and 119% of per capita household income in Shandong. The problem is that providers realize they have an

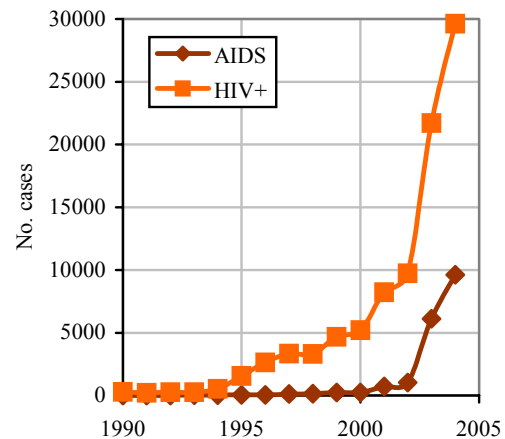
* Under the Health V Project, diagnosis is free for all suspects, and treatment is free for all infectious TB cases, including smear positive and severe smear negative TB cases.

incentive to make additional money by delivering additional care to that in the free DOTS package. In one setting, a local TB control manager explained that the DOTS strategy “has been locally adapted... to improve effectiveness and generate revenue”.¹⁶ This involved treating patients for longer than the recommended six months, and providing non-standard tests and medicines on top of those in the DOTS package. Knowing that in reality DOTS is not free, it is likely that poorer people have simply not bothered getting tested for TB.

HIV/AIDS

A recent report¹⁸ noted that while HIV prevalence in China is low by international standards, HIV/AIDS has spread rapidly since 1990 (Figure 9). The report also notes that China has recently taken major steps to contain HIV/AIDS. These include various preventive measures, and various measures involving treatment, care and support.

Figure 9: HIV/AIDS in China has increased quickly during the 1990s



Source: State Council and UN¹⁸

On the treatment side, there are likely to be considerable health system challenges. A major recent development is the government's launch of its *Four Frees and One Care* (FFOC) initiative. This promises: free ART (Anti-retroviral) drugs to AIDS patients who are rural residents or people with financial difficulties living in urban areas; free voluntary counseling and testing; free drugs to HIV-infected pregnant women to prevent mother-to-child transmission,

and HIV testing of newborn babies; free schooling for children orphaned by AIDS; and care and economic assistance to the households of people living with HIV/AIDS.

Rolling out FFOC nationwide poses a number of challenges, some of which the report acknowledges. It requires a major investment in human resources to ensure that there are people who are technically capable of delivering the care. This investment has already started. As the report also notes, the free ART provided to rural patients is only to be for patients who became infected through blood donations. It urges the expansion of free ART to all rural residents.

As China's experience with DOTS shows, there are broader health systems issues that are likely to pose challenges in the rolling out of FFOC. In China's largely fee-for-service system, it is not simply a question of ensuring that patients can be tested and treated for free. The incentives facing providers are equally important. One key point is that providers must be compensated for providing free testing and free care. But even this may not be enough. As with TB, providers are likely to realize they have an incentive to make additional money by delivering additional care to that in the free package. China's provider payment mechanism is likely to pose as many challenges to the successful implementation of FFOC as it has with DOTS.

Health system strengthening for faster progress towards the MDGs

On current trends, China seems set to hit only the malnutrition MDG. It will come close on the maternal mortality goal, but on present trends it is unlikely to make it.

A common theme in the discussion above—as in a recent global review of the health MDGs⁵—is that it is not a lack of technology that is holding China back from reaching the MDGs but rather the weaknesses in its health system. The lack of and the skewed nature of health insurance coverage, coupled with a fiscal decentralization that has left local governments in poor provinces with responsibilities but few resources, has resulted in a heavy emphasis on fee-for-service. This in turn has left many key interventions—including basic ones such as immunization and a safe delivery—beyond the

means of many rural households. And it has encouraged providers to deliver unnecessary care. This has reduced the impact of programs such as DOTS, where China's case detection rate is well below that of its neighbors, and poses a threat to its HIV/AIDS strategy.

Achieving faster progress towards the MDGs in China will not happen without strong technical programs. But it will not happen either unless the health system is placed upon sounder economic principles.

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