



# INDIA

## POLICY FORUM

VOLUME 8 2011|12

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## PURPOSE

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*India Policy Forum 2011–12* comprises papers and highlights of the discussions at the eighth India Policy Forum (IPF) held in New Delhi on July 12–13, 2011. The IPF is a joint venture of the National Council of Applied Economic Research (NCAER) in New Delhi and the Brookings Institution in Washington, D.C. The IPF explores India's rapidly evolving—and sometimes tumultuous—economic transition and its underlying policy frameworks and reforms using policy-relevant, empirical research.

An international Research Panel of India-based and overseas researchers with an abiding interest in India supports this initiative through advice, active participation at the IPF, and the search for innovative papers that promise fresh insights. An international Advisory Panel of distinguished economists provides overall guidance. Members of the two IPF panels are listed below.

Papers appear in this publication after detailed revisions based on discussants' comments at the IPF and the guidance provided by the editors after the IPF. To allow readers to get a sense of the richness of the conversations that happen at the IPF, discussants' comments are also included here, as is a summary of the general discussion on each paper. The papers represent the views of the individual authors and do not imply any agreement by those attending the conference, those providing financial support, or the officers and staff of NCAER or Brookings.

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The support reflects the deep commitment of these organizations and their leadership to rigorous policy research that helps promote informed policy debates and sound, evidence-based policymaking. Almost all these funders have been with the IPF since its inception, so their support also reflects their

continuing confidence in the India Policy Forum to promote such research and open debate in India and elsewhere.

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## **CORRESPONDENCE**

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Correspondence about papers in this Volume should be addressed directly to the authors (each paper contains the email address of the corresponding author). Manuscripts are not accepted for review because this Volume is devoted exclusively to invited contributions. Feedback on the IPF Volume itself may be sent to: The Editor, India Policy Forum, NCAER, 11, Indraprastha Estate, New Delhi 110 002 or to [ipf@ncaer.org](mailto:ipf@ncaer.org).

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## Editors' Summary

**T**he eighth conference of the India Policy Forum was held on July 12–13, 2011. This issue contains the final versions of the papers and discussions presented at the conference. The papers cover a range of important policy issues including bank regulation in the aftermath of the global financial crisis, controls on external capital flows, access to health care, and some implications of rising global food prices. In addition to the working sessions of the conference, Montek S. Ahluwalia, Deputy Chairman of the Indian Planning Commission, delivered a public lecture on the challenges faced under the 12th five-year plan. The IPF conference concluded with a lively Policy Roundtable on “From Price Distortions to Subsidies that Work for the Poor.”

The global financial crisis, which began in the fall of 2007 and progressively worsened in subsequent years, hit the Indian economy in 2008. Equity market prices fell by nearly 60 percent in the first 10 months of the year. Foreign capital outflows placed pressure on Indian corporations and banking institutions, leading to a lessening of liquidity and credit. The pressures eventually spilled over into the real economy and the global slowdown also resulted in a slump in demand for exports. GDP growth slowed from 9 percent in 2007 to 6 percent in 2008. Eventually, the Government of India announced wide-ranging stimulus packages in 2009 that appeared to restore the economy back to its pre-2008 growth rate.

An important observation during 2008–09 was the apparent weakness of private financial firms against the (relative) growing strength of public sector or state-owned banks. Historically, Indian banks had been wholly owned by the government. In the 1990s, the government reduced its stake and allowed private banks and foreign players to enter the market, but the Indian financial system retains a substantive public sector ownership. During the crisis, the public sector banks appeared to fare much better than the private ones. Public sector bank deposits grew by 24.1 percent in 2009, as compared to 22.9 percent in 2008, while private sector deposit growth slowed from 19.9 percent to 8 percent for the same period. This apparent strength of public sector banks has raised the issue of whether it might be better to slow down the privatization of the Indian banking system.

The paper by Viral Acharya examines the relative performance of private and public sector banks. Contrary to the above impression, he argues that public banks were riskier than private sector ones, but their sovereign

backing allowed their deposit base to grow in spite of their riskiness, and it actually undermined the performance of the private sector banks. Based on standard measures of systemic risks, public sector banks were actually riskier than their private counterparts. The marginal expected shortfall (MES) measure, used to calculate the systemic risk of financial institutions, was higher on average in 2007 for public sector banks (4.34 percent) compared to private sector banks (3.58 percent), indicating that public sector banks were riskier. During the crisis, however, public sector banks performed better than private banks due to a shift of deposits from private to public sector banks. While private sector banks with high exposure to the crisis experienced substantial deposit contraction during the crisis, counter-intuitively, within the public sector greater vulnerability to a crisis, in fact, led to greater deposit expansion.

Acharya argues that the phenomenon can be explained by the government backing of public sector banks. Perceptions of a greater likelihood that the more vulnerable public sector banks would be bailed out in the event of a failure led to a shift of investor funds and deposits. He shows that as part of the stimulus programs, public sector banks were promised capital injections to maintain their capital ratios. In addition, the generous backing of the Indian government allowed public sector banks to come out in the retail sector with inexpensive housing, auto, and education loans, which instead of drawing in new customers to stimulate the economy actually undercut competitors. Therefore, government measures may have helped bolster public sector banks, but they also made it difficult for private financial firms to compete with them.

The idea of financial firms with access to government guarantees faring better during the crisis is not a case just specific to India, but was seen in other countries as well. A specific example, emphasized by Acharya, was the growth of the government-sponsored enterprises (GSEs)—Fannie Mae and Freddie Mac—in the United States, which had explicit government support and ready access to central bank emergency lending.

The paper points to several parallels between the Indian government's control over financial institutions and the role of Fannie Mae and Freddie Mac in the United States. First, affordable home ownership goals in the United States are similar to "priority sector lending norms" in India. Second, the GSEs in the United States underwrote over 50 percent of mortgage credit risk in the residential housing market, corresponding to the large share of state-owned banks in India. Third, the forbearance exhibited toward the GSEs closely mirrors the reluctance of the Indian government to shut down any state-owned banks. Fourth, the GSEs crowded out the private financial

sector in the prime residential housing market and eventually also in affordable housing loans.

With so many similarities between the two sets of institutions, Acharya argues that it is important to consider whether some of the same negative consequences experienced in the United States case might occur in India as well. There was a “race to the bottom” in finance between the public sector and the private sector in the United States. Also, in the aftermath of the crisis in the United States, the poor were especially affected, and the same could be true in India where the bulk of the priority-sector lending goes to farming loans, but there is no quality control of the loans because these state-owned banks never fail. Indian policymakers should use this and other examples as a note of caution against drawing conclusions favoring a state presence in the financial sector.

Examining the performance of state-owned banks in a systemic crisis relative to private sector banks with lesser access to government guarantees is not a sound basis for assessing the overall attractiveness of state presence in the financial sector. The growth of state-owned banks in the recent crisis thus raises several questions. How will the private-sector banks in India respond to the emerging strength of public sector banks? Can India afford such a race to the bottom? Would it not be better to create a level playing field where all financial firms are private, but are charged upfront for government guarantees in the form of deposit insurance? The Indian state-owned banks are right now in the best of health. Since many of them are already publicly listed, the way to their privatization and creation of a level playing field in the financial sector is relatively straightforward and needs to be undertaken without any further adieu.

The paper by Ajay Mahal and Victoria Fan, focuses on the challenge of reforming the health-care system in India. Accelerated economic growth has brought about a significant increase in public revenues in the last three decades. On the one hand, this has allowed the government to expand the social programs, but on the other, it has also led to increased demands for the services that the programs provide. The right to employment in rural areas and the right to elementary education are already in place in the form of the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) and the Right to Education Act of 2009, respectively. The Cabinet has also approved a right to food bill, and it awaits a vote in the Parliament. The pressure is next building for a right to health bill that would provide universal health coverage. The ensuing debate is taking place in the context of the National Rural Health Mission, which was launched in 2005,

the Rashtriya Swasthya Bima Yojana, and various state-level health insurance programs. A recent High Level Expert Group (HLEG), appointed by the Planning Commission, has called for universal health coverage (UHC) with the government footing the bill for all.

Against this background, Mahal and Fan provide a comprehensive discussion of three aspects of health reform in India. First, what should the UHC cover and what should be the role of the state in implementing it? Second, what are the main challenges in expanding the health coverage in India, and should reform attempt to achieve UHC or something less ambitious? Finally, what are the financial implications of expanded coverage?

The authors begin by noting that government intervention in the health sector can be justified on both efficiency and equity grounds. Interventions aimed at prevention, health promotion, health insurance, and regulatory oversight help to improve efficiency while the support to the poor for inpatient care and, within limits, outpatient curative care are justified on equity grounds. Provisions for disadvantaged groups, including children, can also be defended as improving efficiency.

The authors point to two common mechanisms to combine insurance with assistance to the poor. The first mechanism uses separate pools of funds for the nonpoor and poor. The poor would be subsidized from general revenues, and an additional publicly subsidized fund would be earmarked for child health services and preventive and health promotion services. The nonpoor would pay for their benefits by way of premiums for regulated insurance. Alternatively, if they are left to their own devices, they would pay out of pocket for health services or purchase private insurance when available, although this is sometimes inefficient. The second mechanism involves a common fund pool for everyone and may involve the rich paying for their benefits by way of additional premiums. Again, separate funds could be allocated for elements of a public goods nature or with significant externalities, such as preventive care and health promotion activities.

Both of the approaches can, in principle, lead to UHC defined as access to a minimum set of services that are affordable and physically accessible. Yet, when access to a minimum set of publicly funded services is defined as a legally enforceable “right,” problems of equity will arise if a country is not wealthy enough to support a wide range of services for the full population. In a resource-constrained environment, even if services are in principle accessible to all for free, better-off sections of society will be more adept at obtaining the benefits.

The authors go on to analyze the challenges facing the implementation of expanded coverage including defining the benefits to be covered by public

subsidies, the groups to be targeted, the management of the funds used to provide health services, and the methods used to pay health-care providers. In deciding priority interventions, policymakers could adopt a strategy of prioritizing those interventions for which the health returns are the highest per dollar, which usually means a focus on prevention and promotion programs. From India's perspective, this means that considerable research into the costs and cost-effectiveness of interventions will be needed to support policy on an ongoing basis.

Key gaps in India are in the ability to design payments for health services in ways that serve the objectives of good quality, especially performance-linked payment systems. The managers of the fund may themselves need incentives to carry out their responsibilities effectively, necessitating some form of competition for the "right to manage" and community oversight. How providers are paid can have major implications for the efficiency with which resources are used and the quality of services. Choosing among the different options involves a number of trade-offs. Fee-for-service systems that are the predominant means of paying for health care in India are less likely to have adverse impacts on quality of health services, but they create incentives for excessive and inefficient use of resources. Prospective payment systems, including capitation, can contain costs but could harm the quality of health services received. Prospective payments that are risk-adjusted or combined with performance incentives can potentially achieve a better balance between the goals of quality and efficiency, but they have extensive information requirements.

Transfers to consumers offer another avenue to influence health service use. There is some evidence on the effectiveness of conditional transfers in influencing prevention behavior, both from India (under the JSY program) and elsewhere. Unconditional transfers to poor households in lieu of outpatient care coverage have also been proposed, but evidence on their effectiveness is limited.

The state of the supply—the provision of health services—is a major implementation challenge in the Indian health sector. Both the HLEG report and the National Commission on Macroeconomics and Health (NCMH) report preceding it highlight the need to upgrade health services in the public sector, to create new infrastructure and to contract with private providers. Among the key issues that the government will have to consequently address is the degree of autonomy allowed in the functioning of public providers. In addition, it will need to ensure fair competition between public and private providers, given that the latter will likely be large providers of services under any program to expand coverage. However, considerable challenges remain,

particularly in ensuring access to health services in rural areas. There is a need for better integration of traditional (unqualified) providers who are often the only source of health care for populations in remote areas, as well as implementation of incentive schemes for trained medical personnel to stay in those areas.

The authors conclude the paper with a simple assessment of the resource implications of a policy intended to achieve universal coverage given the available data. India faces serious resource challenges in financing universal coverage, even neglecting long-term trends in demographics, income growth, and technological change that are driving health spending around the world. According to the authors' assessment based on adjustments to estimates presented in the literature, something of the order of 4.5 percent of GDP or higher is required to finance health services for the entire population, of which 1.1 percent will need to come from contributions by households. These estimates place the government contribution at a level higher than currently envisaged, including the projections of the HLEG report. This poses a serious revenue challenge to the government. Achieving a reasonable degree of access to health services for all of India's population is not a trivial task and there are many challenges that will need to be overcome to come closer to "universal health coverage."

The effectiveness of safety nets for the poor is increasingly coming under scrutiny in India, both due to the increasing fiscal pressure and concerns about poor targeting. The paper by Jha and Ramaswami explores problems with in-kind transfer programs by estimating the extent to which they reach the poor. The paper defines a percolation index to measure the effectiveness of food subsidies to the poor in India and the Philippines, which operate similar food-based, transfer schemes. The two countries spend significant resources on these. The cost of India's Targeted Public Distribution System (TPDS) amounts to around 0.65 percent of GDP. The Philippines' program, which is administered by the National Food Authority (NFA), amounts to about 0.3 percent of GDP.

The NFA program subsidizes rice, sourced mainly from monopoly imports, while the TPDS subsidizes rice and wheat, procured primarily from domestic farmers. The two programs have multiple mandates to balance producer and consumer interests. These include access to food by the poor, price stabilization through buffer stocks, and supporting farmers through prices that are often higher than prevailing market prices.

In both countries, government agencies source, store, transport, and distribute the grain to designated retailers who receive a fixed margin on the sale. The NFA program is not targeted, whereas the Indian program is. However, despite its universal nature, only about 16 percent of the population

accesses the Philippines NFA program, partly because of self-targeting due to the supply of inferior quality rice and the unavailability of rice in some parts of the country. In India, all households are entitled to a monthly quota of 35 kg of rice or wheat. The magnitude of the price subsidy is the lowest for households above the official poverty line, a little higher for those below the poverty line, and the highest for the poorest.

While the literature recognizes that the gains to the poor depend on the efficacy of both targeting and of program delivery, most studies have only evaluated targeting performance. Their general finding is that most transfer programs are costly because of many nontargeted beneficiaries and that improving targeting involves both administrative costs and negative economic incentives. The common prescription for cost-effectiveness is to improve targeting by reducing inclusion errors and keeping the magnitude of the subsidy in check. The impact of inefficient program delivery on the poor has not received much attention, and when it has, the focus has been mainly on administrative costs, largely ignoring the cost due to corruption or theft. Jha and Ramaswami attempt to fill this gap by quantifying the extent to which food subsidy expenditures percolate to the poor based on both targeting leakages as well as nontargeting waste due to deficiencies in public program delivery that result in excess costs and fraud.

The authors ask the question: What is the impact of a marginal expansion of a food subsidy program on the poor? The percolation index is based on the breakdown of total expenditures on food subsidies into four components: income transfers to the poor; income transfers to the nonpoor (the leakage due to poor targeting); and two nontargeting leakages, the illegal diversion of subsidized supplies (pilferage), and the excess cost of the public distribution system over the cost of private sector distribution (the inefficiency of public distribution). The authors define the percolation index as the product of the share of the poor in the total cost of the subsidy (the depth of percolation, i.e., the extent to which expenditures reach the poor) and the participation rate of the poor (the breadth of percolation, i.e., coverage among the poor). The index varies between zero and one. If either of the two terms in the product is zero, then the index is zero. It takes a maximum value of one when all poor participate and when they receive the entire subsidy. When the participation rate is one, the percolation index is equivalent to the poor's share of the overall subsidy, the traditional measure of the incidence of targeting.

The authors show that neither the Indian nor the Philippines program scores well on the percolation index: Participation rates are low and households, whether poor or not, do not receive most of the expenditures of the food subsidy.

A principal finding of the paper is that the benefits from improving program delivery by reducing waste are much larger than the gains from lower inclusion errors through better targeting. Even though opportunities exist in both India and the Philippines for reducing targeting errors, this is not only contentious politically but is also subject to caveats in the literature. The literature offers examples where targeting is costly both administratively as well as in economic terms because of incentive effects. Some have argued that programs that are tightly targeted toward the poor (i.e., have low inclusion errors) do not receive political support from the nonpoor and are thus doomed to failure. In addition, there are the severe practical difficulties of targeting in poor governance environments. The authors suggest that problem with targeting in India is not so much that grossly ineligible households have been counted in but that many deserving households have been left out. The dilemma is that while a move toward enlarging the number of eligible households would increase participation rates and hence percolation, it would also increase inclusion errors and perhaps decrease the share of the poor in food subsidy expenditures.

On the other hand, it is more straightforward to recommend policies that reduce waste and improve efficiency. Even without improved targeting, the authors argue that the impact of food subsidies on the poor can be increased by raising their participation rate or by raising the fraction of the subsidy going to the poor, or a combination of both. Reducing the massive waste in the food subsidy programs of both countries (which the authors estimate at 65 percent and higher) provides potentially large cost savings that can be used to increase coverage substantially without a corresponding increase in public spending. The authors end with a discussion of the political economy of reforms in food subsidies and recommend a policy framework that allows for experimentation, learning, and adjustment even if such a framework runs against the bureaucratic impulse to use uniform formulaic mechanisms.

After experiencing low rates of inflation for several years, India has recently seen a return to near double-digit rates of price increase. Because this shift to higher rates of inflation has also been accompanied by relatively large increases in food prices, it has been a politically charged issue. In their paper, Prachi Mishra and Devesh Roy use the disaggregated monthly price data that underlie the Wholesale Price Index (WPI) to provide a detailed account of inflation over the last two decades, with a focus on food prices.

The authors begin by discussing the different indices that are officially published and outline how food price inflation may be measured. They discuss the trends in overall inflation and establish the commonly overlooked fact that low inflation (defined as 5 percent or less) has been a rare occurrence

in the Indian economy in the last two decades. They argue that the long-term trend in the inflation rate exhibits a U-shaped pattern with a structural break in the year 2000 and an inflection point in 2002. Next, they show that the long-term trend for food inflation has also followed a U-shaped path, with a clear reversal of the declining trend starting in the early 2000s. Further, there is evidence for a moderate correlation between international and domestic food price inflation, albeit with significant variation across commodities based on their tradability. Moreover, the correlation is weaker when world prices are high than when they are low.

Mishra and Roy distinguish between food and nonfood inflation and find that food price inflation is typically higher, with the long-term trend for food price inflation consistently staying above that for nonfood inflation. They also find a significant pass-through from food to nonfood prices. A one unit shock to the annual rate of food inflation, which translates into a 0.2 percentage point increase in the long-run, is associated with at least a 0.05 percentage point long-run increase in the nonfood inflation rate. They argue that their analysis establishes the importance of food prices as a major driver of overall inflation in India.

The authors go on to disaggregate food prices into individual commodity prices and explicitly quantify the contribution of specific commodities to food price inflation. Although there is some variation over time, the top contributors typically turn out to be milk and fish in the category of animal-source foods, and the plant staples of sugar, rice and wheat, onions, potatoes, and to a lesser extent, edible oils.

Finally, Mishra and Roy conduct case studies of some items among the top contributors. The experiences of each of these commodities tell a distinct story about the factors explaining the inflation patterns and the policy responses. The following elements stand out: persistent demand-supply gap in milk owing to shifting demand by consumers; post Green Revolution fatigue in cereals; multipronged government interventions in sugar; high import penetration in edible oils; and inadequate infrastructure for smoothing prices across space and over time for fruits and vegetables.

The authors draw several policy implications. First, combining the macroeconomic and microeconomic analyses, a case can be made that in the context of a developing country like India, both the central bank and the other branches of government can play a meaningful role in tackling inflation. Given the high weight of food in overall inflation and the importance of supply factors or more structural and less interest-sensitive demand factors, the hope is that the RBI can control overall inflation primarily by curbing demand for more interest-sensitive nonfood items. However, even if the

monetary transmission mechanisms operate efficiently, controlling nonfood inflation may only have a limited effect on overall inflation—particularly if the central bank envisages an inflation rate target that incorporates CPI-based indices, which have a relatively small weight on nonfood (31–54 percent).

The authors point to several mechanisms through which monetary policy can influence inflation. First, tighter monetary policy can appreciate the exchange rate and make the imported goods cheaper in local currency. Second, tighter monetary policy can reduce aggregate demand and hence indirectly reduce the demand for food. Finally, higher interest rates could raise the marginal cost of production, and therefore worsen the inflationary pressures (the so-called “working capital” channel). The last of these channels works against the first two and the relative strength of these mechanisms is an empirical question.

Mishra and Roy also note that their work has important implications for the choice of which price index the central bank should target for its measure of target inflation—headline (aggregate) or core (nonfood). The large weight of food in the consumption basket and the finding that food price inflation has been consistently above nonfood—both suggest a focus on the headline rate rather than various core measures. This is supported by further evidence of persistence in food price inflation, and the existence of some pass-through to nonfood. Furthermore, they argue that the CPI is the more appropriate measure of the headline inflation rate because it includes the items that are most relevant to consumers. Thus, a strong case for developing a more comprehensive CPI can be made.

Motivated by a balance of payments crisis in 1991, India has been engaged in a two-decade-long process of capital account liberalization aimed at expanding access to international capital markets. At the same time, it has sought to alter the composition of the capital inflows away from debt toward a greater emphasis on equity-based finance, promoting risk-sharing by foreign investors. The central bank’s strategy has been to open financial markets cautiously while ensuring risk management systems and competencies are in place to strengthen the system’s resilience to foreign shocks. Today, the equity market is relatively open to foreign investors, but the bond market remains quite closed. The primary objective of the paper by Renu Kohli and Agnes Belaisch is to evaluate the extent to which India’s approach to regulation has insulated Indian markets from global shocks.

The paper begins with an extensive documentation of the complex regulatory regime governing foreign financial transactions. It highlights the degree to which the external borrowing of domestic firms is limited in amount, maturity, and cost. Foreign investment in domestic bonds is also

restricted and requires registration as a foreign institutional investor (FII). In contrast, the rules governing foreign direct investment are quite liberal and foreign investors can acquire ownership stakes as large as 100 percent in most sectors. The rules for investment of FIIs in portfolio investments have also been relaxed, but remain subject to quantitative limits.

The authors estimate uncovered interest parity relationships and find that capital controls continue to provide a certain degree of autonomy to the central bank when setting policy rates. Vector Autoregressive (VAR) models are constructed to derive impulse response functions that trace out the transmission of a shock to foreign capital inflows throughout the different segments of India's financial sector, looking in particular at whether it spills over to the closed portions of the system. The paper exploits the differences in relative openness of stock, foreign exchange, debt and money markets within the structural VAR framework to answer the question of whether the capital account restrictions, especially upon debt flows, insulate the system from financial shocks. Uncovered interest parity (UIP) tests are used to evaluate the influence of the capital controls.

Through a three-pronged investigation of the relationship, Kohli and Belaisch find that UIP is routinely rejected by the data. First, the UIP regressions show that the domestic-foreign interest differentials are significantly different from zero for interest rates over a range of time horizons, suggesting imperfect integration. Second, the dynamics of UIP over time indicate that deviations of the uncovered interest differentials from their mean are permanent. And third, the speed at which the empirical interest differential converges to the nonzero "equilibrium" level suggests that capital controls play a significant role in slowing the speed of adjustment. The results imply that capital mobility, the equilibrating mechanism to restore the parity condition, is insufficient to lead to convergence. The comparison of their results for the relatively tranquil years of 2000–05 with the volatile period of 2006–09, suggests that the capital controls lost some of their effectiveness in the second period.

Impulse responses derived from the structural VAR model offer further evidence that capital restrictions on foreign participation in the Indian bond market insulate the bond market, but not fully. Arbitrage behaviors trigger a domestic channel of propagation between domestic financial markets. There is also evidence that central bank intervention temporarily dampens the exchange rate response to shocks to foreign equity flows. Partial sterilization leaves room for a response of interest rates, but with a lag. Inflation ends up higher than otherwise, but they find no significant impact on real variables. In sum, incomplete financial integration, resulting from existing

capital controls in the bond market, provides a degree of short-term monetary autonomy to the central bank. Real economic activity also appears to be relatively insulated from financial shocks. From this perspective, the authors conclude that the regulations have promoted the system's resilience, and increased the autonomy of domestic monetary policy.

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# Expanding Health Coverage for Indians: An Assessment of the Policy Challenge\*

**ABSTRACT** As India’s policymakers consider how best to reform its health system, the goal of “universal health coverage” (UHC) and the steps required to achieve it have garnered considerable attention. In this paper we inquire into some of the conceptual and implementation issues relevant for the expansion of UHC. We revisit the case for government intervention in the health sector and inquire whether the case for UHC can be justified on grounds other than as “human rights.” We assess implications of resource constraints and examine specific questions of implementation pertinent for expanding health coverage. Finally, we assess the resource implications of a UHC policy, and an alternative that focuses on just the poor.

**Keywords:** *Universal Coverage, Insurance, Right to Health, Payment, Public Services, Financing, Risk Protection*

**JEL Classification:** *H4, I1, I13, I18*

## Introduction

As India’s policymakers consider how best to reform its health system, the goal of UHC and the steps required to achieve it have garnered considerable attention. The recent report of the High Level Expert Group (HLEG) set up by the Planning Commission, henceforth referred to as the HLEG report, supports a strategy of achieving universal coverage (HLEG, 2011). Achieving universal coverage in India was also the subject

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of an advocacy piece published earlier in the *Lancet* by some of the authors of the HLEG report (Reddy et al., 2011) which proposed that *all* Indians ought to be able to access treatment to a “full range” of health conditions. These developments are seen as an reaffirmation of the vision outlined in the Bhole Committee Report of 1946, the Directive Principles of India’s Constitution, and various international declarations and covenants to which India is a signatory, including the “Universal Declaration of Human Rights” (HLEG, 2011; Rao, 2012). And they are underlined by recent legislative initiatives, of which one striking illustration is the National Health Bill under consideration in Parliament. The Bill aims to “... provide for protection and fulfillment of rights in relation to health and well-being, health equity and justice” (Ministry of Health and Family Welfare, 2009: 6).

The advocacy of universal coverage accompanies multiple major recent efforts intended to improve service quality and affordability of health services in India. These include the central government-funded National Rural Health Mission (NRHM), initiated in 2005 and aimed at improving service quality of primary and secondary care, and the Rashtriya Swasthya Bima Yojana (RSBY), a health insurance scheme for the poor launched in 2007 that provides (secondary) hospitalization coverage and is funded in a 3:1 ratio by the central and state governments (Palacios, 2010; Swarup, 2011). Health insurance schemes have also been launched by various state governments, such as *Aarogyasri* in Andhra Pradesh, the *Vajpayee* Scheme in Karnataka, and the Chief Minister’s Elaborate Medical Insurance Scheme (previously known as *Kalaignar*) in Tamil Nadu, although these are aimed at tertiary care and provide more generous coverage than RSBY.

### *International Trends*

The developments in India parallel increased recent prominence of the topic of UHC in low- and middle-income countries as a matter of policy and academic interest. Universal coverage was the main theme of a recent World Health Report (WHO, 2010) and of two major recent conferences, the Global Symposium on Health Systems Research held in Montreux, Switzerland in November 2010, and Prince Mahidol Awards Conference, held in Bangkok in January 2012, both including donor organizations, leading health researchers, and policymakers.

Several countries in Asia, Latin America, and Africa have drawn international attention for their health sector reforms aimed at universal coverage. Among Asian countries, Thailand, China, and Indonesia stand out as prominent recent examples in this direction. Thailand introduced a tax-financed

insurance scheme in 2001 that extended financial risk protection to an additional 18.5 million population, thus bringing almost its entire population under insurance cover (Hughes and Leethongdee, 2007). Indonesia launched a health insurance scheme for the poor in 2004, currently covering more than 70 million Indonesians, with the ultimate objective of bringing all Indonesians (including those who are currently enrolled in social insurance schemes for formal sector workers) under one cover (Rokx et al., 2009). The Chinese government embarked upon an ambitious program to extend health coverage to its entire rural population under the New Cooperative Medical Scheme. Currently this coverage extends to more than 90 percent of China's rural population (Yip and Hsiao, 2009; Tang, 2011). A separate urban insurance scheme covers individuals in China's urban areas (Liu, 2002).

In Latin America, the Mexican government expanded coverage to nearly 30 million previously uninsured individuals under the Seguro Popular health insurance program with the aim of reaching the (additional) remaining 18 million uninsured by the end of 2011 (Frenk et al., 2006). In Africa, Ghana introduced National Health Insurance Scheme in 2003, which has expanded in six years to cover nearly 55 percent of its total population (World Bank, 2011), and South Africa shortly plans to launch a National Health Insurance scheme of its own.

### *Key Issues for India*

These country examples and the developments in India reflect two central observations about international trends in health spending. First, total health spending per capita is continuously rising. Second, pre-paid health spending (through government health subsidies or other insuring mechanisms) increases as a share of total health expenditure over time, while the share of out-of-pocket spending decreases (Fan and Savedoff, 2012). Together these two features are explained by a number of factors—rising incomes, a burden of disease that is shifting to chronic conditions that are expensive to treat, and higher demand for financial risk protection, thereby pushing governments to promote expanded levels of coverage. There is also some evidence that countries with multiple risk pools and mixed systems have higher costs because of weak cost control, when compared to countries with a single-payer system, either through a national health service (NHS), UK, or national health insurance model (Xu et al., 2012).

The push toward expanded coverage in India (and elsewhere) is not without concerns. On his popular World Bank blog, Adam Wagstaff (2010)

notes that the usage of the term “universal health coverage” (UHC) may itself be confusing, given that it is often taken as “either-or” state (i.e., a country either has universal coverage, or it does not), instead of visualizing countries as lying on a coverage continuum—something that other authors have also highlighted (Wagstaff, 2010; Scheil-Adlung and Bonnet, 2011; WHO, 2010). Wagstaff suggests that policy steps intended toward achieving universal coverage have a mixed record in achieving desired health outcomes in both developed and developing countries, at least in terms of improving equity in health care use, although its impacts on improving financial risk protection are more substantiated. That leaves open the question of whether other approaches are likely to be at least as effective in influencing outcomes of policy interest.

In the Indian context and despite its recent advocacy, the justification for a strategy aimed at UHC and its implementation are inadequately addressed in policy analyses. The HLEG report envisages a National Health Package accessible to all for free and financed primarily by public spending, expected to increase from about 1.2 percent of GDP at present to 3 percent of GDP by 2022. However, the report does not provide much information on the benefits that would be provided under the proposed UHC or how they would change over time; or crucially, provide a justification of the desirability of a package *accessible equally to all* right at the beginning of the implementation process, other than as a basic right. Nor is the basis for its cost estimates for UHC sufficiently well explained. A recent article argues that the HLEG report falls short on many specifics, including adequately defining the health services to be covered in light of resource constraints, addressing issues of incentives relevant to both public and private providers, and tackling the broader governance and capacity issues that underpin a large-scale expansion of health services. It concludes that the report “... severely falls short in providing a blueprint on what, how, and at what cost, and with what trade-offs, making it difficult to translate the ideas into operational strategies ...” (Rao, 2012, p. 15).

### *Goal of This Paper*

The purpose of this paper is to inquire into some of the conceptual and implementation issues relevant to the expansion of health coverage for Indians, including the proposals of the HLEG report related to universal coverage. In particular, we revisit the case for government intervention in the health sector and inquire whether the case for UHC can be justified on grounds other

than as a “human right.” We assess the implications of resource constraints for health sector policies aimed at expanding coverage in the Indian context. We also examine specific questions of implementation pertinent for expanding coverage: What are the appropriate principles in designing a benefits package? How should health care be paid for? How should prevention and health promotion activities be provided and financed? How can the supply of good-quality health services be ensured? In doing so, the paper will draw upon recent experiences from within Asia and elsewhere. Finally, we assess the resource implications of a policy intended to achieve universal coverage, and an alternative that focuses on just the poor.

### **Is Universal Coverage Appropriate for India?**

We first formulate a conceptual framework to examine the case for government intervention in the health sector. We then draw implications for (a) the health services to be covered and (b) specific population subgroups of interest, such as the poor (and near-poor), females, and children.

#### *When Should Governments Intervene in the Health Sector and How Should Public Funds Be Used?*

A simple framework due originally to Ehrlich and Becker (1972; also Baeza and Packard, 2006) is useful in thinking about what to cover and whom to cover from public funds (for the moment we will abstract from access and quality issues).

Consider an individual who faces a risk of becoming ill, and there is a chance of a bad outcome consisting of both health and financial elements depending on the care that is sought and/or available. When faced with financial (or health) risks on account of illness, risk-averse individuals/households can respond in at least four different ways. First, if available, they can voluntarily purchase insurance policies in the market enabling them to obtain needed health services. Alternatively, they can self-insure themselves up to a point, by either increasing savings or relying on community mechanisms that involve households supporting/lending to each other during times of need. If the likely magnitude of losses is high and formal insurance is expensive, households may be able to reduce (or postpone) the risk of loss through preventive action. Finally, there is the possibility that they cope with the loss itself, which could involve foregoing care, or paying

for treatment. Foregoing care could be either intentional or unintentional; unintentionally foregoing care may arise from refusal to treat by providers against individuals who appear to be unable to pay for care.

The above framework can be extended to children living in households with some modifications, given their lack of decision-making authority. First, adults may not be interested in the well-being of children that they are a guardian of, or they may be interested in a subset of their offspring, such as male children. Thus, if a sick child is left untreated, there may be no treatment costs for adults, but there may still be longer-term adverse implications for children in terms of cognitive skills, schooling attainment, and productivity when they do join the labor market. These effects may be especially significant for female children in some societies. Even if adults in the household are concerned about the well-being of their children, they may lack the vision to address these risks adequately. In these circumstances, self-insurance, community support systems, or voluntary purchase of insurance are not particularly relevant as mechanisms to protect children against the financial risks of ill health.

When losses from the risks in question are small and infrequent, simple coping behavior should suffice, and in any case, formal insurance coverage in such cases is likely to involve relatively high administrative costs. However, if adverse events are low cost but frequent, prevention activities that lower the probability of adverse events, possibly in combination with self-insurance and coping, may be the optimal strategy (for an exception, see later). In both of these circumstances, it is unlikely that the benefits of formal insurance mechanisms would be large enough to make it worthwhile for an individual to obtain insurance.

With respect to losses of significance, insurance is the preferred option. For rare events involving potentially large losses, individuals and small communities are unlikely to be able to self-insure, or cope adequately. Large losses could also occur with high frequency (e.g., chronic conditions). The response in terms of insurance coverage should be for the market to create larger risk pools for purposes of insurance, and cover populations across multiple time periods (for chronic conditions), or across geographic regions. However, it is well known that health insurance markets are inefficient in providing the needed coverage and poor risks may be left underinsured (Newhouse, 1996). Because “large” is relative, this category should be broadened to include frequent small losses for individuals who are living close to impoverishment levels, and for whom every small “shock” is potentially catastrophic. One example is the evidence from developing

countries on high out-of-pocket expenditures on medicines by households (Garg and Karan, 2009).

Preventive actions are crucial in almost all segments of the cases considered: either lowering the likelihood of a specific condition, or delaying the losses associated with it. Many preventive activities with substantial externalities are also undersupplied if left solely to households and private suppliers. These include not only vaccination and actions toward preventing communicable disease, but also actions like providing information on healthy eating habits, exercise, and hand washing. Preventive interventions are of particular importance to the long-term health and well-being of children and the incentives for household action here is even less for reasons mentioned earlier. Individuals also happen to be poor judges of their own future health, and they may be uninformed about their own benefits from prevention activity, such as from not smoking, or regular medical check-ups, and they may not be adequately forward-thinking, putting off exercise or adopting healthy eating habits. Prevention actions can also involve patients seeking care early for an ostensibly minor illness, thereby preventing potentially serious conditions later. In this category we could also include victims of accidents (whether rich or poor) who are unable to make a decision on their own behalf.

### *Implications for Design of Coverage*

The preceding discussion points to the following efficiency argument for public intervention aimed at raising social welfare. Illness-related risks justify supporting coverage for health conditions that impose large financial risks on households, such as low frequency and high cost events and high frequency and high cost (usually chronic) conditions, such as cancer and diabetes. The latter, as mentioned earlier, could be covered via insurance policies that span multiple time periods. The well-known problems of voluntary insurance markets imply that any such insurance would require government regulatory intervention at the least, including some degree of compulsion for the consumer to participate in such insurance. In addition, governments should intervene to promote preventive actions for communicable and non-communicable conditions for at least two other reasons—disease externalities as well as behavioral concerns relating to individual lack of self-control and efficacy to prevent future health risks (e.g., relating to hyperbolic discounting). Our discussion also supports government intervening to help children access needed health services and preventive services, irrespective of economic status.

A second set of arguments for public intervention stem from an equity justification. These include concerns about gender equity, which can justify public intervention for maternal and child health services. In addition, low incomes impose additional constraints on what households can do, in terms of being able to purchase insurance (if available), or being able to cope with frequent albeit small expenditures. This means that government funding may be required to support insurance coverage for the poor, as well as for prioritizing some categories of prevention and health promotion programs for them.

There are essentially two different ways to achieve these goals. The *first* relies on separate insurance pools for a benefits package on curative care, supplemented by publicly funded health services for children and preventive and health promotion services accessible for all. Both Thailand and Mexico are examples of such a model, and health systems of other countries in the region, such as Indonesia, have these features. In Mexico, there is compulsory contributory coverage for formal sector workers and civil servants in separate pools. For the rest, primarily informal sector workers and others, there is the pool known as *Seguro Popular*, which has means tested and highly subsidized premiums, but with voluntary participation. In addition, there is one pool for infrastructure and human resource development, and another pool for financing prevention and promotion. In Thailand, similarly, there are separate pools for civil servants, social security workers with compulsory participation, and zero premiums for the rest in a separate pool. As in Mexico, there are additional pools for infrastructure (financed out of general revenues) and prevention/promotion.

In Mexico, public subsidies are transferred to *Seguro Popular* through three mechanisms. First, general revenues are used to support some of the subsidies, from both the central and state governments. Second, fund allocations to Mexican provinces which have their separate pools, are inversely related to their level of development; and finally, the (small) portion of the premium contributed by the enrollees into *Seguro Popular* is proxy means tested. In Thailand, 70 percent of the population (all informal sector workers and others not covered by social insurance) is covered under the universal coverage scheme—mostly rural and agrarian—does not pay any premium for the scheme which is financed from general revenues, a form of equity pooling. The key idea is that members of the formal sector and civil servant pools pay higher contributions (and fewer subsidies), albeit they may receive better benefits coverage.

There is, of course, another possibility that is consistent with having separate pools for the rich and poor. Under this option, the government could

choose to limit its subsidies for a fund that provides coverage for specific population subgroups (such as the poor) and leaves the rest of the population to whatever they can obtain in the private sector. This model is likely to result in considerable welfare losses in the presence of insurance market failures and unexploited economies of scale that arise when individuals rely on out-of-pocket payments without a central purchaser to act on their behalf for health services. This seems unattractive as a policy option even if government subsidies are intended solely for the less well-off.

The *second approach* is to rely on common benefits in a publicly funded system, usually with little or no charges to users of health services. One version of the model relies mainly on public provision of health services, as in Sri Lanka and Malaysia (as also India to an extent). A second version involves combining all contributions, including subsidies, into one single pool (or separate pools for curative care and prevention) with options to purchase services from public and private providers, as suggested by Reddy et al. (2011) and also the HLEG report. The latter version of a publicly funded system recognizes both public and private providers, and under the right conditions, competition between private and public health sectors could be used to help to address long-standing problems of poor quality in the public sector.

Because health care services, including preventive care and health promotion activities, are financed out of general revenues to which the relatively wealthier populations contribute more under the second approach; it is sometimes argued that richer populations are paying more than their costs to the system, i.e., cross-subsidizing the less well-off participants of the system. However, this is not a certainty as we argue below, and additional revenues may need to be raised. Australia is an example of a model that imposes additional (earmarked) taxes on the richer individuals who choose to rely on its publicly funded services. Specifically, individuals who choose not to buy private hospital cover to obtain services in the private sector (separate from the government health-care services that are available to everyone for free) have to pay an extra tax of 1 percent of their gross income on provided their income exceeds a specific threshold.

The above models are also consistent with the use of regulation to influence some types of preventive actions, such as the banning of smoking in public places, or rules relating to immunization status for admissions to schools and child-care facilities that are often seen in developed countries. However, developing countries are usually not in a position to implement regulations and India has a poor track record in this area. Strict imposition

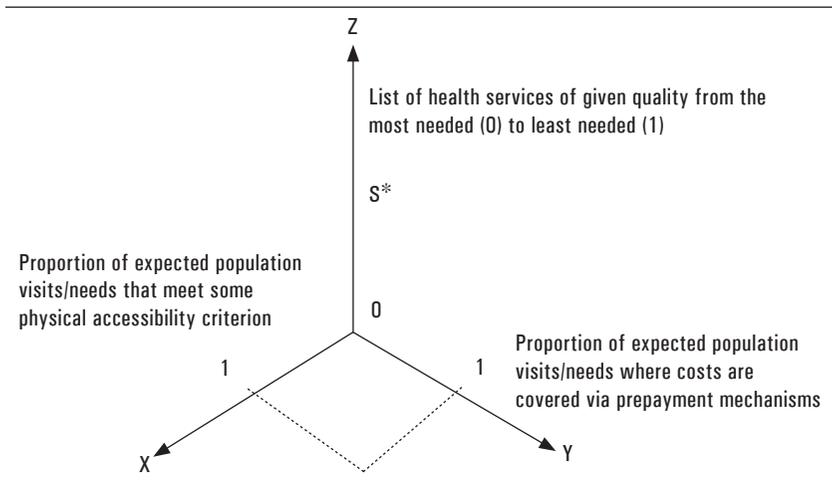
of regulations could also have unintended adverse consequences for other desirable goals, such as school attendance among children.

### *Universal Coverage and Resource Constraints*

As the preceding discussion makes clear, both financing models described earlier—the single pool and multiple pool options—are capable of delivering risk protection for insurable conditions, as well as preventive care and health promotion. If we define “universal coverage” as a multidimensional concept involving access to a minimum desirable set of services (quality a given), a threshold for ease of physical access (distance, timing, appropriateness), and low financial burden (risk and impoverishing effects) as in Figure 1 (see also Scheil-Adlung and Bonnet, 2011; WHO, 2010, for similar definitions), then it is plausible that an outcome that meets UHC thresholds could be achieved by either of the two financing models. Universal coverage as defined here is perfectly consistent with reasonable objectives about efficiency and the well-being of the poor if resources are no object.

In the presence of resource constraints, as in India’s situation, UHC is essentially an aspiration and both models are alternative financing approaches that can be used to get part of the way there. Given that significant differences in financial and locational access exist in India across socioeconomic status, the goal of attaining universal coverage at some point in the future almost certainly requires lowering inequalities in access and enabling the poor to achieve some minimum degree of access, outcomes which would

**FIGURE 1. Understanding (Universal) Coverage**



be desirable under reasonable normative principles. For instance, consider an inequality-averse or, in the extreme, a Rawlsian-type social welfare function. If health status, or protection against financial risk, is considered a major determinant of individual well-being, promoting social welfare will support the principle of enhancing the health (and health services) and financial risk protection of the less well-off relative to their better-off counterparts. Versions of the two pooling frameworks described earlier that require only the poor being subsidized are *prima facie* consistent with social goals, whether couched as a pathway to UHC or justified on the basis of some other welfare criteria.

The current drive to UHC is not purely aspiration though. Specifically, there is underlying legal enforceability, directed toward the government, of guaranteed access to some minimum set of services for *all* (World Health Assembly, 2005). This reflects the influence of the human rights field that emphasizes the "... *right* of everyone to the enjoyment of the highest *attainable* standard of physical and mental health ..." (International Covenant for Economic Social and Cultural Rights, Article 12.1). While there is considerable weight given to the idea that the realization of the "right" is conditional on available resources, there is no doubt that legal enforceability is critical (Rao, 2012; Scheil-Adlung and Bonnet, 2011; Wagstaff, 2010). In the HLEG report itself, there is the statement: "The foundation for UHC is a universal entitlement to comprehensive health security and an all-encompassing obligation on the part of the state to provide adequate food and nutrition, appropriate medical care ..., health related information and other contributors to good health" (HLEG, 2011, p. 3).

If legal enforceability of patient rights, e.g., enables the poor to better access a defined set of health services, then we see no conflict with the preceding discussion. The problem arises when legal rights to subsidized health services are extended to all, as envisaged in the HLEG report. While such a guarantee may be appropriate at a stage where a government is wealthy enough to support a wide range of services for large numbers of people across the socioeconomic divide, it is unhelpful when there are large existing inequities in population access to services in a setting with resource constraints. A good example of this situation is the public sector health services in India which, in principle, are accessible to all for free, but provide far greater benefits to better-off sections of society in a resource-constrained environment (Mahal, 2000). Unequal access was also observed in the Aarogyasri scheme for hospital insurance in Andhra Pradesh, with Scheduled Caste and Scheduled Tribe populations not benefiting from programs as much as other groups (Fan et al., 2011). It is fortunate that access

to a minimum set of public sector-funded services is not yet defined as a legally enforceable “right” in India, otherwise poorer populations in India would be further disadvantaged by their relative lack of access to legal mechanisms compared to the nonpoor.

Guaranteeing everyone the same degree of access to (subsidized) services when resources are very limited usually will not serve the goal of enhanced equity, or help the less well-off achieve some minimum coverage threshold. With limited extra funds, governments will have to decide whether they wish to provide existing levels of subsidies to a larger beneficiary group (breadth of coverage), or a larger subsidy to a subgroup of needy beneficiaries (depth of coverage), or something in between. Nor can it be claimed that the rich pay disproportionately more by way of taxes into general revenues used to finance public sector health services (implying that access is *not equal* even if everyone has the same benefits). The rich tend to use more services (they live longer and are better able to access health care than the poor) so the actual degree of cross-subsidization across economic groups may end up being quite limited. That is, the focus of efforts to improve access should either be exclusively the poor, financed by general revenues; or if the rich also have guaranteed access to the same set of health-care services as the poor, they should pay substantially more, say via additional earmarked taxes, or user fees to allow for adequate levels of cross-subsidy. Separate pools for the rich and the poor, with the latter funded from general revenues as in Thailand and Mexico, and the former being based on employee/employer contributions may be another vehicle to do this (Suchonwanich, 2010). Once this is done, legal enforceability may even be desirable from the standpoint of program implementation.

### **Implementing Options for Coverage: Issues**

Once the subgroups have been decided and the resource envelope broadly determined, multiple issues related to implementation of program coverage must be addressed. There is firstly a need for clarity on the services to be provided and the associated financing mechanisms (country examples discussed in the previous section shed light on some of these issues). Second, if the poor are designated as the beneficiaries of public subsidies, adequate mechanisms will be needed to identify this group. A third issue has to do with how health services are paid for. Finally, supply side issues have to be considered, so that the necessary services are available.

### *Which Services Should Be Provided?*

Given resource constraints, and a social objective that favors reducing inequality, it makes little sense to subsidize better-off populations, other than for the purpose of influencing behaviors with significant spillovers, or when individuals are not in a position to judge their own future health implications of their current actions, such as preventive health check-ups. For the poor, insurance contributions will also need to be subsidized, whereas insurance for better-off groups may need regulatory support.

Should the coverage for financial protection include *all* conditions? Even apart from the issue of constrained resources there are good grounds for arguing against 100 percent coverage due to efficiency considerations, given that administrative costs (of processing multiple small claims, for instance) can be high. Concerns about moral hazard, both on the demand and the supply side of the health-care market, are also legitimate in this context. Disincentives for certain kinds of preventive and coping behavior may result, such as households not seeking their own cough and cold remedies and not pursuing preventive behavior, instead favoring a visit to a health-care provider. Individuals are usually not in a position to effectively judge the quality of care they receive and may err on the side of excess and ineffective care, a tendency facilitated by high levels of coverage and providers for whom financial returns are associated with the services they provide. When there are multiple pools for insurance, it is entirely plausible that better-off people paying for their own insurance coverage enjoy more generous benefits than beneficiaries of a pool subsidized from public funds. Indeed, in an unregulated competitive market with voluntary purchase of insurance, the benefits cover will reflect both costs and buyer preferences.

The existing approach in Mexico is attractive as a strategy of arriving at a benefits package in balancing concerns for cost-effectiveness of the interventions covered (efficiency) with the need for providing financial protection against expensive treatments, some of which may not be as cost-effective. Specifically, the benefits package was broken down into three categories, and within a *specific category*, rare but expensive conditions, common conditions, and preventive action/health promotion—interventions that were the most cost-effective were included. Mexico has been able to cover conditions that account for 95 percent of all outpatient visits and most inpatient stays under its *Seguro Popular* insurance. Cosmetic surgery, transplants, and renal dialysis are excluded, but the latter is expected to be included in the package shortly. Mexico has a separate budget for prevention and promotion

activity, including covering relevant portions of the *Oportunidades* program. Even here, cost-ineffective interventions such as rotavirus immunizations are excluded. And again, Mexico has proceeded in a step-by-step fashion, expanding the number of interventions as resources permitted.

Thailand too, has a similar approach. It offers a “comprehensive” package under its so-called *universal coverage scheme* which essentially covers “everything,” except transplants and cosmetic surgery; and as in Mexico, it has a separate budget for health promotion and prevention, funded by an alcohol tax with revenues earmarked for this purpose.

India is probably not in a fiscal position to offer publicly subsidized benefits to the poor at a level as generous as that of Mexico or Thailand. This could mean restrictions on the types of hospital-based services that are offered. The limited inpatient care benefits offered under the RSBY scheme, ₹30,000 for a family of five annually, reflects this; as also the financial difficulties that Aarogyasri is currently facing with its more generous package of tertiary care. However, cost-effectiveness may still be relevant as a criterion, in defining which inpatient interventions could be supported by the scheme in question. Similarly, an upper bound for allocations for outpatient care coverage could be established, given the specific concerns about moral hazard, and moreover, cost-effectiveness considerations could be introduced.

### *Targeting the Poor*

If resource constraints lead policymakers to direct health subsidies toward the less well-off, whether in a single or multiple pool system, the need for targeting is obvious. Various methods have been used for this purpose, including the use of means (or proxy means) for identifying the poor as has been done in some states under the RSBY program and in Mexico in the *Seguro Popular* program to decide upon premium contributions of enrollees; identification based on geographic location as in the case of Vietnam for the purpose of user fee exemptions and social health insurance; and targeting with the help of local communities, e.g., at the village level. Another possibility is self-identification by means of a “separating equilibrium” where only the poor are likely to come for the benefits, an approach followed by the Mahatma Gandhi National Rural Employment Guarantee Scheme. These methods are often deemed necessary because of the large numbers of informal sector workers whose earnings are hard to track and the generally poor compliance with income tax laws in India.

Krishna (2007) assesses these identification methods, all of which, he suggests, have a high likelihood of type I (exclusion) and type II (inclusion) errors, apart from the cost of collecting and maintaining the information “current” over time, given the dynamic nature of poverty. Rajasekhar et al. (2011) found serious problems with the identification of the poor in the rollout of the RSBY scheme in Karnataka recently which relies on a proxy means method to identify the poor. In the presence of means tests, if the government subsidizes the contributions of the poor (or if there are separate government programs for the poor), better-off informal sector workers, whose earnings are not easily tracked, would have an incentive to mimic the economic circumstances of their less well-off counterparts.

This calls for blunter targeting strategies. In Thailand, the 70 percent of its population not employed in the public sector is covered by the UHC scheme for the less well-off, with all premiums paid from general revenues. Another approach was taken by the Aarogyasri scheme in Andhra Pradesh, where anyone holding a ration card was defined to be poor. This liberal definition led to more than 80 percent of the Andhra Pradesh population (65 million people) becoming eligible to enroll in the program. Alternatively, a relaxed proxy means test could be devised where the criteria of no home ownership, no car ownership, or the lack of other difficult-to-hide assets could be used to define groups targeted for public subsidies. For example, the National Council for Applied Economic Research (NCAER) estimates that about 10 percent of Indian households own cars, and even if we include ownership of two-wheelers, the total of two categories about 40 percent of all households, which could lead to about 50–60 percent households being classified as poor (Desai et al., 2010). Use of such asset-ownership indicators for which ongoing administrative records are more likely to be maintained and updated, would also help reduce inclusion errors arising from households remaining on the rolls of BPL groups, well after they may have improved their economic situation.

### *How Should the Benefits Be Financed?*

Previously we examined the question of who ought to pay for their benefits and who should receive a subsidy, concluding that in a resource-constrained environment, public subsidies ought to be directed toward the poor, except for health services involving significant externalities, or interventions that may be underutilized because individuals are unable to adequately account for future health consequences of their actions (e.g., health checks). Here we look at the specific mechanism of financing—such as general revenues,

earmarked payroll taxes, household prepaid contributions for insurance, earmarked taxes on alcohol and tobacco, and other options.

The three major sources of financing are general revenues (earmarked) payroll taxes and out-of-pocket payments for health services. The most common way in which general revenues finance health services in India and in other Asian countries is via allocations to public sector health facilities. Payroll taxes are used to contribute premiums to social health insurance and found in most Asian countries, including in India, under the Employees State Insurance Scheme (ESIS). Some countries also rely on prepayment into voluntary insurance schemes. Table 1, based on the most recent National Health Accounts for India, shows that the share of out-of-pocket spending in total health spending in India continues to be high (with the remainder comprising government spending, private insurance, and external aid). India's out-of-pocket spending share is certainly much greater than some of its natural comparators, such as Brazil, China, and Indonesia which have relied on a combination of general revenues, payroll taxes, and social insurance.

**TABLE 1. Share of Private Sector and Out-of-pocket Spending on Health (2005)**

<i>Countries</i>	<i>Private expenditure as percentage of total health expenditure</i>	<i>Out-of-pocket spending as percentage of total health expenditure</i>
Bangladesh	70.9	62.6
Brazil	55.9	30.5
China	61.2	52.2
India	78.1	71.1
Indonesia	53.4	35.5

Source: Mahal (2010), from WHO (2008) and Government of India (2009).

Note: Private expenditure includes both out of pocket spending as well as contributions from private enterprises, for profit and not-for-profit.

Given that out-of-pocket payments above a certain threshold are undesirable for reasons of financial protection and inefficiency in resource use, general revenues and payroll taxes potentially constitute the main sources of financing health services for expanded coverage, with some limited potential for other kinds of earmarked taxes (on alcohol, tobacco, etc.). With the limited size of the formal sector (more than 90 percent of the employment is in the informal sector), "solidarity" contributions from payroll tax revenues of formal sector workers to financing health care for the poor are not a viable option at present, unlike in Colombia where a small share of funds from the contribution-based pool for formal sector workers has been transferred to support the pool that finances care for the less well-off. Nor would it be

easy, given serious income reporting problems, to rely on earmarked income tax revenues from the broader group of “nonpoor” (presumably extending beyond the formal sector, possibly excluding low-paid formal sector workers) to contribute to a pool for the poor. Thus, general revenues are the most appropriate strategy to finance (insurance coverage for) hospital and outpatient services for the poor in India. Examples of this type of financing for health services include the Aarogyasri, Yeshasvini, and RSBY schemes in India, the insurance scheme for the poor in Indonesia, and PhilHealth in the Philippines. Hsiao (2008) also highlights the point made earlier that general revenues financing, if based on progressive taxes, can result in cross-subsidization from the rich to the less well-off.

For the nonpoor, two options are possible for curative care coverage. The first is to rely on payroll taxes for formal sector workers and (voluntary) prepayments by “nonpoor” informal sector workers to fund a separate pool for the nonpoor without any (or limited) public subsidies. In some versions of this option, the “nonpoor” in the informal sector are left out if there already exist mandated insurance schemes for formal sector workers—as ESIS in India, and similar schemes in Indonesia and elsewhere. For the nonpoor informal sector workers then, the options could be participation in voluntary prepaid insurance provided by private insurers, regulated so that community risk rating is used for setting premiums, as in Australia. Mechanisms to address adverse selection will be needed here. In Australia, premiums that increase by 2 percent above the standard for each year that individuals delay purchasing insurance after age 30, and any exit from being insured results in the individual as being treated as having no prior insurance, should they seek cover later. The second option is to have the “nonpoor” (formal sector and others), simply pay an unsubsidized premium to access the same health services that the poor are getting at subsidized rates. To the extent that participation by some of the nonpoor may be voluntary, safeguards will be needed to avoid adverse selection. Equivalently, one could imagine the poor enrolling in an existing scheme for people in the formal sector, except that their premiums are paid for by the government from general revenues (one example is the Republic of Korea).

The precise model adopted would depend on whether fiscal resources enable both the poor and the nonpoor to enjoy the same benefits package. Single pools face the risk of deadweight losses if differential premiums result in strategic behavior related to labor market participation (formal versus informal sector participation). Differential benefits in multiple pools may also be necessary to ensure political acceptance, or for historical reasons. Because contributory schemes for the urban-based formal sector

employees have existed for a length of time, countries aiming to achieve expanded insurance coverage for the rest of the population tend to start out with separate pools for the informal sector (and the rural population), such as China under its New Cooperative Medical Scheme, and the examples of Mexico and Thailand discussed earlier. Efforts to combine the different pools in Thailand have faced significant resistance, and it looks unlikely that any move will be made in the near future to bring them together (Piya Hanvoravongchai, Chulalongkorn University, personal communication). Thus, we come down on the side of separate pools for the nonpoor informal sector population and formal sector workers as a matter of feasibility. It is sometimes suggested that potential gains in terms of economies of scale from a single pool can justify relying on a single pool, but the recent literature on this subject shows that these economies can be enjoyed even without such a step (as discussed later).

Funds for prevention and health promotion activities could come from general revenues given the significant differences in the perceived private benefit and the social benefits associated with them. In principle, one could rely on subsidies for the poor and regulatory direction for the nonpoor for some of the preventive activities, but it is unclear how effective such regulation might be in India's environment.

Some authors have proposed using revenues earmarked taxes on alcohol, tobacco, and fast-food as an additional source of financing (e.g., Reddy et al., 2011), whereas others do not support it (HLEG, 2011). Thailand funds some of its spending on prevention and health promotion programs from these taxes, but there are questions on their effectiveness in the Indian context. The federal structure of the Indian state, together with the fact that alcohol taxes are one of the few revenue sources over which state governments have some control, suggests earmarking revenues from these taxes could be a contentious issue, unless appropriate center-state compensatory mechanisms are designed. Resistance can also be expected from the tobacco growers and the fast-food industry for tax proposals directed at their businesses. Crucially, revenues from these taxes are sensitive to the price elasticity of demand for "sin" consumption, which has been shown to be quite large in India, and this has implications for the reliability of this source of revenues for health services (Mahal, 2000). That said, taxes on alcohol and tobacco could still serve as a useful tool for curtailing their consumption.

### *Managing Pooled Funds*

A number of different models exist in the region. In India, an autonomous social insurance authority oversees the contribution-based Employees'

State Insurance Scheme. The RSBY scheme is managed by private insurers in states, whereas Aarogyasri health insurance is managed by a quasi-government organization, Aarogyasri Health Care trust. In some countries, Ministries of Labor manage insurance pools, and in Indonesia, a for-profit agency manages multiple schemes: contributory schemes intended for civil servants and the informal sector, as well as noncontributory schemes funded from general revenues for the organizations of local governments. Finally, ministries of health manage budgets that are allocated to public health facilities, or to services purchased from the private sector.

In thinking about the appropriate entity to manage funds, the main objective has to be the efficient management of funds, which requires attention to a number of tasks, especially funding the provision of health services to individual members in need, purchasing of health-care services, and maintaining quality of health services funded from the pool. Correspondingly, there is a need to avoid political interference with what is essentially a technical activity. The RSBY also requires its insurer-managers to enroll beneficiaries into the program, whereas Aarogyasri currently does not require any separate enrolment apart from having a valid “below poverty line” card. Another objective is that any surplus funds should be invested in a way to earn returns without too much risk. This could be important in cases where premiums are set on a life-time basis. (Germany is a prominent example.)

Underpinning the above activities is the ability to organize enrolment, design payment plans, to undertake contracting and legal support activities, designing and overseeing information systems that are appropriate for tracking costs of services, individual providers, beneficiaries, medical records, and for undertaking any other monitoring and evaluating activities, including research capacity. In India, there is now considerable experience in both public and private insurance companies with insurer-managers in Aarogyasri, RSBY, and the ESIS, and in general, so that some of the required skill sets are available, including in accreditation and regulatory roles. Additional support comes from the work of the Unique Identification Authority of India (UIDAI) that should also help in tracking enrollees more effectively and limit fraud.

We believe that one key area where further expertise is needed relates to the ability to design payments for health services in ways that serve the objectives of good quality, especially performance-linked payment systems. As of now, RSBY and Aarogyasri have followed rather blunt strategies of “blacklisting” noncompliant providers for fraud, or cases of blatant deficiency of service. Provider payment is a technical subject in its own right and is addressed in the next subsection.

Also crucial is ensuring that fund managers themselves have the necessary incentives to carry out their responsibilities effectively. This is not always guaranteed as suggested by low enrollment and claims rates observed by Rajasekhar et al. (2011) in the process of the RSBY rollout in Karnataka by private insurers. There has also been some concern in the context of RSBY and Aarogyasri that short-term profits were a major attraction for participating private manager-insurers. Specifically, given the per capita basis (per enrollee) on which the government contributes to these schemes has the potential of generating high short-term profits for companies owing to the low claim rates as enrollees are not always aware of the health services covered by them, at least in the initial stages following their launching. Some of these problems led to the takeover of management responsibilities by government-controlled Aarogyasri Trust in place of a private insurer-manager. However, it is not obvious that increased accountability and better performance will automatically result from this change. Increased accountability requires some form of competition for the “right to manage,” as is currently happening under the RSBY scheme, and it may require additional oversight by a mix of the public sector, civil society, consumer representatives, and other stakeholders. We would argue against direct management by a government entity, given our concerns about frequent government interference.

Ongoing efforts to provide expanded insurance coverage in India are likely to result in multiple pools. The emergence of multiple pools, in turn, will increase the risk of duplication of coverage across population groups and would limit the extent to which economies of scale and scope in the provision of such coverage can be exploited. Thus, one useful fund management model to think about in the Indian context is that of Indonesia, where multiple funds are managed under one entity with a single claims-processing procedure (for instance), although the funds themselves are specific to population subgroups. A recent report prepared at the request of the US state of Vermont that is aiming at a single payer insurance model, proposes just such a manager (Hsiao et al., 2011).

### *Paying Providers for Health Services*

The World Health Report for 2010 suggests that significant savings may be possible, something on the order of between 20 percent and 40 percent of existing health spending, if health systems around the world were to function more “efficiently” (WHO, 2010). Achieving improved efficiency in resource use for health services of acceptable quality is obviously important for the credibility of a plan for expanded (or universal) coverage and contributes

to program sustainability. It turns that how funds are used to pay for health services can have important implications for efficiency, while simultaneously impacting the quality of services provided.

An immediate benefit from large collections of funds is the potential bargaining power they have in purchasing health services, consumables, and equipment. Centralized drug purchases by the government of Tamil Nadu are often cited as a model for replication elsewhere in India, and the same argument could apply to the purchase of other arms-length transactions, including the purchase of health services (Das Gupta et al., 2009). However, it is possible to also structure the payments themselves in ways that could enhance efficiency.

The best known model of how providers are paid is fee for service (FFS) where payment is for each category of service they provide, which is also the typical mode of payment for health care in India. Alternatively, there are “prospective” payment systems, such as capitation systems, DRG-based payment systems, and salary-based and global budgeting. Under the capitation system, the provider is paid a fixed amount for every patient or enrollee, irrespective of the seriousness of the treatment. Payments can also be fixed on the DRG (diagnostically related groups) a patient is categorized in, specifically the disease category further subclassified by type of interventions and seriousness of condition. Examples of DRG-type systems can be found under Aarogyasri and RSBY. Salaries paid to medical personnel are also an example of prospective payment, and this is typical of Ministry of Health medical personnel. Finally, global budgets are a form of prospective payment found in many countries in Europe and in Taiwan that cap the amounts allocated to health sometimes nationally and regionally and sometimes on a facility basis (note this is common for public hospitals in India owing to their reliance on historical budgets). Usually, some form of DRG or capitation-based payment accompanies global budgets to influence provider behavior; and bonuses or other incentives are sometimes added to the basic payment structure, conditional on attaining specific performance targets (Shaw, 2008).

From a health-care provider’s perspective, each patient is like a risky purchase, and for whom the cost of treatment is a priori unknown. Each payment mechanism affects the providers in terms of the financial risk associated with treatment, and this affects their response. FFS payment places the entire burden on the payer and none on the provider. Thus, FFS or similar systems are likely to result in over-treatment and little preventive activity. With no cost constraints to worry about, and as long as the provider values patient health, treatment would continue until the marginal benefit of an added

intervention has reached zero. Thus, FFS is likely to result in high costs and treatment that is not cost-effective at the margin. The dominance of FFS as a mode of payment in India points to opportunities for large efficiency gains.

The reverse of the above is pure prospective systems such as capitation payment. Because the severity of the patients' condition has no effect on the payment, the incentive is for providers to choose the least risky (or least complicated) cases, to underprovide care, and to dump patients on other hospitals of the "last resort," usually public hospitals. Prevention activities are likely to be supported by providers under capitation-based systems because they lower the financial risk to health-care providers. While costs may be controlled, there is the risk of receiving low-quality care. DRG-based payment systems try to balance quality of care with cost containment by linking severity of health condition to payment. Even here, providers have an incentive to increase the number of episodes or bump the patient up to a DRG with a higher level of reimbursement, while undertreating patients within a DRG or episode category. "Mixed" payment systems involving some combination of DRG and actual cost-reimbursement have been suggested as ways to get around the problem of balancing quality and costs. Global budgets are useful in that they help in ensuring sustainability of the financing pool. When combined with further payment incentives to influence allocations across interventions, they can help in addressing allocation decisions. However, the concern about quality of services remains. Many government hospitals in developing countries run on a "historical cost" basis and, although such an arrangement (coupled with low budget allocations, which effectively mean global budget restrictions) ought to keep costs low, misallocation of resources can result as doctors have no incentive to allocate resources cost-effectively, or improve quality.

Developing country literature, although limited, provides some evidence that health-care providers respond to payment incentives. One study for China found that budgetary cuts to public health providers in the early 1980s led them to disproportionately increase services for which prices were not controlled by the government (such as drugs and diagnostics). The upshot was a rapid increase in spending on drugs and diagnostics and overall rapid health-care cost inflation (Wagstaff et al., 2009). Liu and Mills (2003) found that the introduction of a bonus system in Chinese hospitals and greater incentives for doctors led to increases in hospital revenues as well as treatments that were more expensive and capital intensive. A study for Thailand also found that FFS payment mechanisms were associated with rapid health-care expenditure increases (Shaw, 2008). Yip and Eggleston (2001, 2004), on the other hand, found that prospective payment systems

in some Chinese hospitals led to a slower increase in health-care spending compared to other hospitals paid with an FFS system. High rates of absenteeism in many primary care facilities in India are potentially one reflection of a payment policy that emphasizes guaranteed salaries unaccompanied by performance incentives. Moreover, the large private sector presence in the provision of health services and their likely role in any health reorganization suggest that incentives will be a major driver of provider behavior in India. Thus, there is a case for India to rely less on FFS as a means of paying health-care providers on grounds of cost containment.

Evidence of the impact of payment mechanisms on quality is hard to find outside of developed countries, but is key for their viability. Patients cannot judge clinical quality on their own, although they may be able to better assess service quality, such as the availability of drugs, personnel, interactions with personnel, and infrastructure. Assessments of the number of personnel at different levels of expertise, the number of beds and specialties available, and other services can also serve as *ex ante* measures of quality of a health service facility (such as a hospital). Under the Aarogyasri scheme, a team of medical experts assesses the diagnosis before agreeing to the medical procedure for which reimbursement is requested by a health-care provider. However, *ex post* measures such as health outcomes following treatment are desirable as measures of clinical quality for obvious reasons, such as tracking patient health outcomes following discharge. In addition to heavy-handed instruments such as the blacklisting of health facilities as in RSBY and Aarogyasri, the use of “pay for performance” contracts—that include bonuses for meeting certain quantity and quality standards—may be necessary (Witter et al., 2012).

The choice of a specific payment mechanism is obviously conditional on how easily it can be implemented and this may require complementary policy steps. For providers to be able to respond to payment incentives, there must be a reasonable degree of flexibility in how they provide their services in response to the mode of payment, which is not an issue for private and nongovernmental providers, but is for public providers which will require greater autonomy of operation, especially in terms of “residual” claims over resources. This may necessitate additional reform in the public sector, over and above recent changes that have allowed public hospitals to retain some of their reimbursements from RSBY and Aarogyasri, in addition to Ministry of Health (MOH) budgetary allocations. Information on the cost of service provision will be needed to guide funders in setting reimbursement rates. If reimbursement rates are lower than cost, providers may not

agree to work with the financing agent, or may resort to “extra-billing.” If reimbursement rates allow for large variations in net margins across different services, incentives will be created for providers to disproportionately provide the more profitable services, and allocative inefficiency may result. Data on outcome measures will be necessary to set up performance-based payment systems. Thus, some payment systems can be extremely resource intensive (including needing human capital) to implement. Shaw (2008) suggests that salary-based systems and capitation fees are relatively easy to implement. However, payments made on an FFS basis or DRG-type systems put enormous informational burden on payers and health-care providers owing to the complexity of treatments, emergence of new treatments and technology on an ongoing basis, the need for assessing the effectiveness of new technologies and so forth. Pay for performance systems are difficult to administer, because they require a monitoring and measurement capacity related to (complex) outcomes. Finally, the state of the Indian legal system that contributes to poor enforcement of contracts may also need addressing if performance-based contracts are to work.

A final issue is whether provider payment methods should vary by category of service. Some type of prospective payment system is desirable for inpatient care as a mechanism to control costs of (complex) care, while allowing for adjustments associated with the complexity of a case as a mechanism to address quality, given how expensive it is. Outpatient services raise a number of tricky issues: such as balancing the need for providing necessary services with containing moral hazard on both the demand and supply sides, serving as a screening device for referral to hospitals (gate-keeping), and providing preventive care. Capitation on a per enrollee basis is attractive, possibly with some adjustment for “case-mix” indicating the likely riskiness of the patient (age or sex) and funds following whomever the enrollee chooses as the primary provider. However, there is the risk that primary care providers will try to offload patients to higher-level facilities. Without appropriate safeguards, the capitation system will resemble the state of referral systems in India where the primary health system has effectively abandoned its gate-keeping role. For the capitation payment model to work, a more “integrated” provision of outpatient and inpatient care is required and could be encouraged by making reimbursement from pooled funds conditional on having an integrated provider network. However, there remain at least two challenges to the workability of the capitation system for outpatient care in India: the lack of access to qualified primary care providers in rural and remote areas and the informational requirements for tracking health service quality. To balance the goal of maximizing public

health with efficiency considerations, it would be useful to have FFS payments for preventive visits (e.g., for immunizations, health check-ups). The remaining categories of outpatient care could be controlled with a designated upper limit on spending for each household.

### *Paying the Consumer of Health Services*

We have not focused on payments to the consumer thus far. In fact, there are reasons to consider paying the consumer to use specific types of services in some circumstances. These include providing incentives to individuals for undertaking preventive visits and for health promotion activities to cover any opportunity costs associated with such visits. Cash transfers provided *conditionally* to parents (mothers) as incentives for obtaining immunizations for their children and maternal and child health services, as in the *Oportunidades* program in Mexico, or the Janani Suraksha Yojana (JSY) in India, are examples of consumer payments of this kind. There is some evidence that JSY has led to an increase in the use of maternal health services in India (Fan et al., 2011). As another example, Australia awards \$125 to households for completing child immunizations. In principle, the same argument could apply to interventions directed at adult behaviors that have long-term implications for their health, such as food consumption habits and physical activity, and for health check-ups, at least among the poorer members of the population.

Some authors have suggested that direct (unconditional) cash transfers including pensions be provided to poor households, which could be used for any purpose, including outpatient health care and nutritional services (e.g., Duflo, 2003; Panagariya, 2008). The main advantages of cash transfers are: administrative hassles and monitoring costs are minimized (as opposed to vouchers) and deadweight losses may be lower. They could also increase the accountability of providers to patients given the purchasing power is in the hands of the household and allow consumer flexibility in choosing providers especially when (funder approved) providers are not readily available. Both demand- and supply-side moral hazards are limited by the fixed amount of the transfer (Panagariya 2008).

The flip side is that unconditional transfers are unlikely to influence behaviors with externalities. Moreover, if individuals are not good judges of their own health, the effect of such transfers on health care-seeking behavior will be less than its desired levels. Relying on households to choose their own care also means foregoing economies of scale that could be exploited by bulk purchases by someone on their behalf. There is also the risk of gender bias

in health-seeking behavior when transfers are unconditional. And, the use of vouchers/conditional transfers would also curb demand-and-supply-side moral hazard if accompanied by an upper limit to the voucher amount (with the proviso that in a corrupt environment, some siphoning off of resources by the administrative machinery is always possible).

In general, we support the idea of transfers conditional on preventive visits to health-care providers to unconditional transfers. The only study that we are aware of that compares the two approaches (and does so in a randomized evaluation framework) is by Akresh et al. (2012) for Burkino Faso, finding that conditional cash transfers had a significantly higher effect on preventive care visits than unconditional transfers and, moreover, that the latter had no effect on the number of preventive visits. That brings us to outpatient health services that do not have a strong prevention focus. There is very little evidence, one way or the other, of the effect of unconditional transfers on health-seeking behaviors relative to conditional funding, despite their many attractive features. We propose that pilot evaluation studies be carried out to investigate this issue further.

## Supply Side Issues

Much of the preceding discussion has focused on the demand side of the health sector, with only limited attention paid to supply, mainly in the context of concerns about service quality related to provider payment systems. There are at least *three* other supply side issues that need careful attention in the context of policies aiming to expand coverage in India which we alluded to previously. The first has to do with redefining the role of public sector health services in India, given significant private sector presence and a need for payment mechanisms that can elicit improved health service performance. The second has to do with ensuring the supply of health services (including personnel) of adequate quality to meet the demands of population, particularly in rural and remote areas. The third has to do with regulatory capacity and oversight mechanisms. We will focus primarily on the first two, since the third has been examined in some depth in Reddy et al. (2011) and the HLEG report.

### *Public Health-care Services*

The HLEG report for India emphasizes public sector health-care providers as a central plank in its proposed model of universal coverage, and the role

of the private sector will essentially be to “complement” public providers. In this vision, as we see it, funding from public pools could be used to pay for private care that fills gaps in public provision (HLEG, 2011). The proposals in HLEG report do not suggest a high level of autonomy for the public sector, although they do seem to go beyond what exists at present. It is well known that limited autonomy and community oversight along the lines of the existing Rogi Kalyan Samitis (and equivalents for lower level health facilities) where public providers possess flexibility with regard to the use of any revenues they raise on their own (say via reimbursements from insurance or user fees) has not been effective (Gill, 2009). In the HLEG report, increased accountability of government facilities is to be ensured by a cautiously phrased “performance-based management” and a greater community and local government role in oversight of health facilities.

We do not believe that the proposed HLEG model is enough, given the public sector performance on record. To be sure, there are examples of acceptable public sector hospital performance such as Kerala’s public hospitals that seem to have operated effectively in the presence of the private sector, including competing for RSBY funds, but Kerala is likely an outlier with a highly informed population, and a long history of decentralized activity and public sector performance there has not been easily replicated elsewhere in India. We believe that public sector responsiveness to competition from the private sector is another pillar in influencing the former’s performance and the current approach does not consider this. Indeed, even in Kerala, the decks are stacked against the private sector because public facilities have separate budget allowances which effectively subsidize their provision of health services and adversely affect the economic attraction of RSBY reimbursements to the private sector, similar to the situation in Thailand. In Thailand, most hospitals are owned by its Ministry of Public Health (MOPH), and while salaries are covered by the Ministry, funds for nonsalary expenditures are based on a mix of revenues from contractual arrangements with risk pools and user fees (Hawkins et al., 2009).

A more pertinent observation is that the private health sector in Thailand is quite small relative to its public sector, a situation very different from India’s. It is difficult to imagine that the private sector in India can simply be left out of a major role in the provision of health care services under plausible scenarios (Banerjee et al., 2008). The very emergence of the private sector has been in large part due to a nonperforming public sector, and it can be imagined that without a competing (and not a complementing) private sector, the public sector would have even less incentive to improve performance. In this context, recent changes in the Aarogyasri scheme in

Andhra Pradesh that have limited specific types of covered care only to public providers reflect the strategy outlined in the HLEG report, and it will be of interest to track the associated implications for quality of health services in public hospitals.

If public and private providers compete for reimbursements from pooled funds, and this is the likely future scenario in India, the preceding discussion on provider payment mechanisms raises two questions of interest. If a large fund is willing to contract with both public and private providers, how can public providers compete effectively with private providers?

We do not think that Indian public facilities can serve as credible competitors to private providers in India, at least in their current organizational form and accountability mechanisms. Instead, considerable health facility autonomy in terms of resource allocations is warranted. Payment systems can be used to influence health facility performance much more directly to achieve goals of equity and cost containment in arms-length contracts with autonomous facilities than where managers and other medical staff are paid government salaries on a permanent basis. And autonomous facilities have greater motivation to use their resources efficiently if they are the residual resource claimant. For example, reforms initiating a purchaser-provider split were introduced into the NHS in the United Kingdom in the early 1990s, and as part of the process many public hospitals became “trusts” with a degree of control over staff hiring, services offered, and right to retain financial surpluses (McPake and Hanson, 2004). For their income, they were dependent on contracts with district health authorities, General Practitioner (GP) fundholders, and private patients. Nontrust hospitals did not have this freedom. Studies found that productivity increased in trust hospitals relative to nontrust hospitals. Over the last decade, Poland has converted several hundred public hospitals into autonomous status with a high degree of decision-making and surplus retention authority (Schneider, 2010). Revenues for these hospitals were obtained from DRG-based payments (for inpatient care) and capitation (for outpatient) from insurance funds; and state budgets covered certain types of highly specialized care, emergency care, blood banks, and capital costs. Public hospitals that have become autonomous in Poland have seen surpluses and staff salaries go up. Again, available evidence points to increased productivity. Information on quality impacts has proved more difficult to find for both the NHS and Polish reforms.

Another relevant experience is that of China, where public sector facilities rely more heavily on user fees than their Indian counterparts, which has effectively turned them into private providers. There the government moved

to providing only a small part of their recurrent expenses following the introduction of market reforms in the early 1980s, with the rest expected to be made up via charges to patients or their insurers. The consequence has been supplier-induced demand for diagnostics, branded drugs, and other services that did not have price controls and that could yield greater surpluses, at the cost of services for which there were price restrictions imposed by the government (Yip and Mahal, 2008). The consequence was resource misallocation and health expenditure inflation. Studies in China have also shown that the introduction of suitable provider payment mechanisms can ameliorate these effects and this means that public facility autonomy and payment systems have to be in sync (Yip and Eggleston, 2001, 2004). China's experience also underlines the need for oversight bodies to direct autonomous public hospital functioning in line with social objectives.

Indian public sector health service providers are likely to be faced with cost inflation pressures of their own. There is the risk of losing top medical professionals in public health facilities to the private sector and its high salaries, without raising earnings opportunities within the public sector itself. Already this is happening in Malaysia which has experienced a significant drain of its top specialists to the private sector (Mahal, forthcoming). Moreover, public sector health facilities would have to keep pace with technological developments in order to stay competitive with the private sector. Certainly, in the case of Colombia whose health reform in the 1990s included a vision for public sector competing with the private sector has found a public sector that has become a less effective competitor over time. In the absence of significant operational and funding autonomy, public sector facilities in India are likely to see a slow death. But granting autonomy to public sector health facilities has not been politically easy when employees have guaranteed jobs, as indicated by previous efforts at increased autonomy of public hospitals in the state of Andhra Pradesh in India.

Finally, we believe that the HLEG recommendations on introducing professional cadres related to public health and managerial functions in the public sector are sound. They fit well with our ideas for an autonomously functioning public sector. But its proposals on autonomy need to go further if the public sector provision is to be envisioned as playing a significant role in the health over the longer run. What types of models of autonomous public facilities are appropriate for India? While we are not firmly wedded to any one set of proposals, there are at least two possible candidates. One model is some form of "integrated" group of primary providers and first-level hospitals (say, at a district level), similar to Thailand, perhaps competing with private sector network(s). Alternately, the model could be of autonomous networks

of primary providers competing with private sector networks, both linked to separate autonomous first-level and tertiary public hospitals (or private hospitals) via a referral chain. This is the type of model being proposed in the context of Malaysian health reforms.

Another critical set of issues has to do with ensuring “fair” competition between the public and private sectors, given the former may have added social goals, and that subsidies from the government may be reaching public hospitals. Policymakers will have to tackle questions relating to subsidies related to the wage bill and investments in infrastructure and investment that tend to go to public facilities and, at the same time, take account of the fact that public hospitals sometimes have unique responsibilities, including serving as providers of the last resort, and often treating more complicated cases. This is why payment systems that reflect patient risks (such as DRG mechanisms) are such a critical element.

The major bottleneck, as we see it, is not in India’s urban areas, where there already exists a high concentration of both public and private providers. It is in rural areas where shortages of both groups of providers exist, and this can potentially create problems for the type of competition we have in mind and associated accountability for performance. Here, alternative models may be appropriate, and these might allow for both private and public providers to deliver services collaboratively.

### *Health Services in Remote and Rural Areas*

A major challenge in expanding social health protections to rural and remote areas in India is the lack of availability of providers there. This is well documented for the public sector. According to the Ministry of Health and Family Welfare (MOHFW) publication on rural health statistics, as of 2010, there was a shortage of 2,115 rural hospitals (Community Health Centers) or about 33 percent less than required as per its own norms, and a 15 percent shortage from an estimated required level of 158,000 (MOHFW, 2011). The data also indicates shortages of between 50 and 70 percent of physicians and various specialists, lab technicians, and radiographers at community health centers. Amenities such as water supply and electricity were reported missing at between 10 and 15 percent at primary health centers. This is the situation after five years of the NRHM which involved substantial infusion of new resources into health services in rural areas. In addition, there are well-known problems with absenteeism in public sector health facilities (Chaudhury et al., 2006). The option of the private sector is not without its limitations either, when it comes to improving accessibility of health services

in remote and rural locations. The quality of private sector services available to the population living in these areas also appears to be poor, with many residents, especially poorer ones, relying on unqualified providers.

Under the NRHM, there have been efforts to improve public sector provision in underserved areas by hiring locally, providing local hires with basic training, and adding incentives to enable them to supply some basic treatment and referral services. Budgetary allocations have also been increased to public facilities, along with some added autonomy of functioning and community oversight. It is too soon to say whether this approach is working, although at least one recent evaluation is somewhat pessimistic on this front (Gill, 2009). An alternative strategy has been tried under the RSBY and Aarogyasri schemes, namely, requiring empanelled private hospitals to provide mobile clinics and conduct health camps, especially in underserved areas, as part of their contractual arrangements. However, it appears that the camps mainly serve as a route to refer patients to private hospitals (International Labour Organization, 2011).

The HLEG report suggests other steps: better management of human resources in the public sector via the development of a public health cadre that would take the pressure on existing clinical staff for activities related to management, prevention and health promotion activities; training and hiring more staff including the introduction of three-year degree programs to train medical staff equipped to work in rural areas; and setting up more nursing colleges and medical colleges in less served areas. These are all good ideas, especially since it is well known that current (highly trained) medical graduates do not always want to be located in remote areas, and the location of the training institution tends to influence where its graduates ultimately locate (Lagarde and Blaauw, 2009). Other approaches have been adopted by Sri Lanka and Vietnam that allow for private practice by public doctors outside of work hours as a way of making rural locations attractive. Thailand, Malaysia, and Sri Lanka require their new medical graduates to serve in rural areas following graduation and have experienced relatively high compliance, at least for graduates of highly subsidized medical colleges. However, countries where private medical schools dominate are likely to have less success in imposing such service requirements, and this is India's situation.

The recommendations of the HLEG report with respect to increasing human resources for health in rural and remote areas—formation of a new class of rural health practitioners, adding more staff, opening training institutions in poorly served areas—are also pertinent. However, they could take a long time to implement, and require investment of significant amounts of

new resources in training infrastructure. With the exception of the focus on local training institutes and the development of a cadre to take on responsibilities from clinical staff, the HLEG report did not focus on incentives that influence public sector personnel location behavior and performance to the extent that it should; and it tends to underplay the potential importance of the private sector in increasing coverage. It is true that private providers generally find service in rural areas unattractive, but this is not the case with the large body of unqualified workers who account for a considerable share of health-care provision there, and could number well in excess of 1 million in the country (Panagariya, 2008). Of course, similar ideas are applicable to lower level staff placed at public facilities in rural areas, for whom additional training to provide some types of simple curative care may be appropriate; in addition, their earnings could be tweaked to allow for performance incentives.

We think there may be scope for alternative approaches in the short run, even if we adopt the HLEG recommendations as the model for the longer run. Berman (1998) mooted the idea of formally bringing in “less than fully qualified” private providers into providing services in a more regulated manner. This is a desirable approach because less than fully qualified providers will continue to be attractive as a source of health care for millions of people, until more accessible, affordable, and higher quality alternatives become available, and they are also the individuals who have a track record of providing services in rural areas. They could potentially contribute to delivering immunization programs or health promotion programs, on some form of FFS or per capita payment system. In addition, we believe that this group could be a potentially rich recruitment base for short-duration and three-year training programs of the type envisaged in the HLEG report. Following such training, they could be engaged in a broader range of health-care services financed from various pools.

Some authors have suggested the “strategic use” of financial incentives to influence the location of medical personnel, although little evidence on this subject is currently available in developing countries. Bärnighausen and Bloom (2009) suggest using scholarships and loans for medical education that are *conditional* on the individual working in a remote/rural area upon graduation for a specific number of years. They present evidence, primarily for developed countries, suggesting that program participants compared to nonparticipants were more likely to work in areas that were designated as “underserved.” Other alternatives that do not involve the location of highly trained medical personnel in remote areas rely on solutions based on an information technology platform, sometimes called “telemedicine.” These

include phone-based medical consultation services such as those provided by the Health Management Research Institute (HMRI) in Andhra Pradesh in India. An approach now being piloted in Africa and India is the use of treatment protocols on hand-held devices by locally based individuals. The treatment protocols can readily be tailored to act as a referral tool for more complex cases. One example of such an effort is that of CARE, a major operator of hospitals in India, which is piloting a scheme using hand-held treatment protocols in the 50 least developed villages in Yevatmal district, one of the poorest districts in the western Indian state of Maharashtra. Similar pilot programs that involve some payment for services rendered by individuals carrying these devices are being tested as well in a number of countries. Yet, in any case, the incentive structures in place for these new technologies need to be considered, as new technology alone is not a silver bullet.

### **Financial Implications of Expanding Health Coverage**

Expanding coverage to large numbers of people is not just a matter of rights or social well-being. It is also a matter of what a country can afford financially as reflected in trade-offs with other options, including nonhealth investments. Indeed, resource constraints are acknowledged in the human rights literature as implying the “progressive realization” of rights, or more precisely, restricting interventions only to *Pareto-improving* options. That is, the rights literature takes an even more rigid view toward trade-offs than of most economists. While discussions around expanding coverage in China, India, and elsewhere in Asia reflect the region’s rapid economic advancement and associated fiscal prowess, there are other compelling priorities that compete with the health sector for resources. India’s recent rapid growth of tax revenues has underpinned an expansion of its governments’ resource “envelope,” yet even within the so-called social sector, the government must contend with competing demands, such as the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) and the implementation of the “Right to Food.” In the year 2010–11, support for the MGNREGS exceeded ₹40,000 crores; and estimated public subsidies for food could amount to as much as ₹90,000 crores, which is roughly India’s current public spending on health (Government of India, 2011b). An assessment of the financial requirements of expanded coverage of health services for India, and especially its implications for public and private financing is relevant from this perspective.

Multiple estimates of spending requirements for expanded levels of health coverage are currently available for India, although the methodology is not always clarified and calculations tend to be incomplete. We assess these different estimates and seek to arrive at what we consider a reasonable accurate picture of what the financial implications are, both in terms of spending required, as well as the share the government will need to contribute.

The HLEG report assessed the fiscal implications of “progressively moving” to universal coverage in India and concluded that adopting such a strategy would require public spending on health of 2.4 percent of GDP by 2017 and 3 percent by 2022. This amounted to ₹675 per capita in 2011–12, rising steadily to ₹3,450 by 2021–22 (all at 2009–10 prices) (HLEG, 2011, p. 106). The report itself, however, did not provide enough information to determine the basis for these numbers. To be sure, there are projected trends in additional training costs; infrastructure and operating costs reported in various sections of the HLEG report which, if combined with existing spending on health by the governments at the central and state levels, could explain its projected share of GDP devoted to health spending, but the relationship between the different projections is tenuous.

An earlier study, the report of the National Commission on Macroeconomics and Health (NCMH) (Government of India, 2005) also sought estimate public spending for expanded population coverage. The NCMH report does a better job than the HLEG of sourcing its estimates, even though there are discrepancies at various places. Annexes I–X and Table 4.2 of the NCMH report suggest that the expenditures required to achieve a minimum level of coverage at the primary and secondary levels of care would have been roughly of the order of ₹103,350 crores in 2005 (current prices) (Government of India, 2005, Annexes I and II, pp. 135–39). The coverage in question amounted to ensuring that a specific set of health conditions would be fully provided for at health subcenters, primary health centers, community health centers, and district hospitals. The aggregate cost of this coverage was calculated by multiplying the cost of standard treatment protocols for specific covered conditions by the total number of estimated cases of each condition in India. However, it was also assumed that only 70 percent of the actual cases would present themselves at this aggregate cost—in effect, assessing that health services would be inefficiently provided. That is, actual unit costs would be roughly 40 percent higher than estimates based on the cost of a standard treatment protocol. Overall, estimated aggregate costs of expanded coverage amounted to about 3.1 percent of India’s GDP at factor cost in 2005–06, which is roughly what the HLEG report projects at the time universal coverage is achieved in 2022 (HLEG, 2011; Government of India, 2011a).

Both sets of estimates reported above have limitations. First, as the NCMH report clearly acknowledges, its unit cost estimates were based on staff being paid government salaries. If private sector earnings data was used to assess the cost of human resources to address incentive issues peculiar to the public sector, the requisite expenditures could be as much as 30 percent higher, or closer to 4 percent of GDP, according to the same report. Second, both the HLEG and NCMH reports did not consolidate expenditures on health promotion, research and development (R&D), and regulatory oversight with the costs of treatment when calculating required levels of spending for expanded coverage. Third, expenditure estimation exercises in both the NCMH and HLEG reports do not explicitly account for changes in the epidemiological profile or model of care over time. This would effectively rule out the impacts of health transitions, changes in utilization of prevention interventions, or rising demand (and supply) of high-end care, the last being a major driver of health spending in developed countries (Newhouse 1992). The reports do not directly link expenditure requirements for funding the NCMH benefits package to their recommendations for plan spending by the government. Both the NCMH and HLEG reports adopt the approach of estimating infrastructure and training expenditures independently of the benefits package, by defining human resources and capital requirements according to “norms” as stated by the government, implicitly assuming that fulfilling these requirements suffices for delivering the benefits package, without taking account of actual people needed to provide the package, issues of governance, and incentives for public provider behavior.

Prinjal et al. (2012) provide an alternative set of expenditure estimates for universal coverage for India. The authors upwardly adjusted estimates of health services utilization from the NSS data in 2004 by almost 100 percent and allocated hospital outpatient visits and inpatient stays to different health conditions based on one year of data on outpatient visits and inpatient stays in four public hospitals located in a large city (Chandigarh). Standard treatment protocols were used to derive unit costs of treatment by type of condition and care received, but human resource costs were valued at private sector rates to take account of the fact that public sector salaries are compensated at levels much lower than would ordinarily be sustainable for incentive reasons. Moreover, Prinjal et al. (2012) carried out sensitivity analyses to take account of interstate differences in morbidity profiles. Their estimates of the costs of outpatient and inpatient care at secondary and tertiary hospitals were then added to estimated expenses of primary care coverage in the NCMH report to obtain overall expenses for universal coverage ranging from ₹132,800 crores to ₹429,000 crores in 2011, or about 2.1 percent

to 6.8 percent of GDP at factor cost, with a mean estimate of 3.8 percent (₹281,000 crores). As in the NCMH report, Prinja et al. (2012) did not assess the impact of technological change on health spending, or changes in epidemiological profiles over time. Nor did their study focus on starting and scaling-up costs, or spending on health promotion and regulatory oversight.

### *Consolidating the Findings*

A midpoint estimate of the annual operating costs of a program that provides expanded coverage of health services at the level of primary, secondary, and tertiary care would be around 4.3 percent of GDP (at factor cost) based on available estimates, based on findings from Prinja et al. (2012) and the NCMH report. This is because to be consistent with the NCMH report, Prinja et al. (2012) should have adjusted the cost of primary care for which data was obtained from the NCMH report upward by 90 percent, since NCMH valued human resources at government staff salary rates, and should have accounted for inflation, since the NCMH calculations were for the year 2005.

To the above estimate, we add annual operating costs directed to additional efforts at health promotion, R&D, regulatory oversight bodies; this was estimated to be ₹8,140 crores in the NCMH report for 2005 (Table 4.1 of Government of India, 2005). Assuming that the share of this component of spending remained unchanged (as a proportion of GDP), this would amount to an additional health spending of 0.2 percent of GDP in any given year, including health promotion expenditures of about 0.1 percent of GDP. Overall, therefore, “universal coverage” could cost roughly 4.5 percent of GDP, all else the same, or ₹330,000 crores in 2011.

In principle, infrastructure expenditures (including upgrading existing facilities) ought not be included in estimates of annual spending required to achieve universal coverage because the unit cost calculations in both Prinja et al. (2012) and the NCMH report already include an allowance for depreciation of equipment and buildings and estimates. One could make a similar argument for training costs if, as in the calculations of Prinja et al. (2012), human resources are valued in terms of earnings obtainable in the private sector. In this case, the earnings implicitly compensate for training costs. Both categories of additional spending (infrastructure and training) comprise significant additional start-up expenditures and will have to be paid for by some party, and this will usually have implications for the government budget.

### *Fiscal Implications*

Ignoring start-up costs for the moment, the estimated total spending of 4.5 percent of GDP is unlikely to be financed solely by the government. About 26 percent of the aggregate expenditures comprise public goods (health promotion, R&D, regulatory oversight) as well as primary care which we can assume to be subsidized by the governments at the center and the states. As for the remainder, we have suggested earlier that subsidies ought to be directed only to the poorer groups, and to children. We adopt a generous definition of “poor” and assume that 50 percent of population is defined as poor to account for targeting tools that are blunt. Moreover, given that 31 percent of the population consists of children in the 0–15 age-group and some children are already included among the poor, curative care for an additional 15.5 percent of population would need to be subsidized from public funds. In sum, about two-thirds of the population could end up being covered by public subsidies for health services at the secondary and tertiary levels, including specialist outpatient services, and this translates into government health subsidies of about 75 percent of all projected spending for a program of universal coverage (3.4 percent of GDP at factor cost on an annual basis), including prevention, promotion, research, and regulation-related spending.

### *Start-up Costs and Scaling Up*

The previous calculations refer to annual recurrent spending (including depreciation allowance) for fully fledged coverage once the program for expanded coverage reaches maturity. In practice, reaching this stage will take a number of years, especially considering the gaps on the supply side in the health sector, including setting up new infrastructure for provision of health services, the training of human resources, upgrading infrastructure for health services, research institutions, regulatory entities, and so forth. Unfortunately, none of the estimates that exist provide a reliable set of numbers to go with, owing to the inadequate linkage between the needs of the benefits package and the way start-up spending estimates were derived (essentially satisfying government norms). Nonetheless, projected expenditures in the HLEG report suggest quite substantial spending over a decade (starting 2011–12), averaging at about ₹9,500 crores annually for health services infrastructure and about ₹3,700 crores annually for training infrastructure over the same period.

Capital investments will need to be accompanied by additional operational expenditures, including for human resources, maintenance, utilities,

consumables, etc. The speed at which the additions to infrastructure occur will drive associated operational spending. One estimate from the HLEG report suggests that over the period from 2012 to 2020, aggregate annual operational expenditures would need to increase to about ₹216,000 crores in 2020 from its level of ₹40,000 crores in 2012 (Figure 7 of HLEG, 2011). Although it is unclear whether the 2020 projections of operational costs are at current prices or constant prices, these lie well below the midpoint estimate based on Prinja et al. calculations for the scaled-up program, which would suggest operational expenditures of the order of ₹315,000 crores at 2011 prices (excluding health promotion, R&D, and regulatory oversight).

There remains the question as to who will bear the burden of these initial expenditures. It is possible, provided that staff earnings are based on social valuation/market rates where available, that the private sector finds it worthwhile to invest in training programs, and potential trainees would then find it worthwhile to pay. Of course, if staff earnings remain low, training programs will have to be subsidized by the government. The same applies to infrastructure development. Provided the government can set up credible guarantees for demand backed up by adequate returns, infrastructure investments could well be undertaken by the private sector health service providers, even in rural areas. If that is not feasible, the start-up expenses on infrastructure and training will have to be incurred by the government, especially in earlier years, where the focus will be on expanding facilities in underserved areas.

### *Comparisons of Expenditures to Mexico and Thailand*

How valid are the above numbers based on what we know about other middle-income economies? Mexico and Thailand both recently embarked (in the last decade) on a program of greatly expanded coverage for their populations and could offer a guide to the expenditures involved. While health needs and consumer preferences are likely to differ across countries, both these comparators have significant numbers of poor populations living in rural areas, and both seem to have serious challenges associated with noncommunicable conditions, which is also the case in India. Both also rely heavily on government facilities to deliver the benefits package under their “universal coverage” plans and have good cost and budgetary statistics.

Each year in Thailand, the National Health Security Office (NHSO) produces cost estimates on the basis of which the government budgets its payments to health-care providers—estimates of per capita payment (adjusted for health risk) for outpatient care, estimates for per capita expenditures

for inpatient stays, per capita payments for prevention and promotion, and other categories as a means to transfer funds to providers in province and district-level authorities (Suchonwanich, 2010). Salaries are paid separately and out of a central pool from the Ministry of Public Health of Thailand, amounting to about 55 percent of the total health budget in the most recent year for which data is available (Putthasri et al., 2011). Unfortunately, there is no information on costs of infrastructure development, but Thailand did invest heavily in public sector health-care infrastructure development prior to the introduction of the universal coverage scheme. A second set of estimates on per capita spending are available for Mexico, based on a specific list of health interventions, on a package of basic and medium-complexity interventions (involving both outpatient and inpatient services) and on high-end tertiary-level interventions of a more limited nature (also shown in Table 6 of Gonzalez-Pier et al., 2006). Although estimates of infrastructure and human resource requirements for Mexico are probably not very suitable for the Indian context, the data indicates that infrastructure expenditures increased by 150 percent between 2001 and 2006, the initial years of reform. Directly using the per capita numbers for the different types of health services in Mexico and Thailand (after adjusting for differences in income per capita) to the Indian population, we estimated universal cover to range between 2.2 percent and 4.5 percent of GDP at factor cost, with data from Thailand pointing to the upper end of the range of estimates, and Mexico to the lower end.

### *Prices, Incomes, and Technological Change*

Although the estimates of health spending that we have used appear generous, the actual levels of operational spending required may be higher. The implementation of a universal coverage scheme would lead to a significant reduction in the price at which individuals are able to obtain health-care services. This led Prinja et al. (2012) to assume that health services utilization would be roughly double the rate reported in the 2004 NSS data.

Under the RSBY insurance program, which has a fairly limited cover of ₹30,000 for a poor family of five, beneficiary hospitalization rates were of the order of 2.7 percent. This is 170 percent higher than the 1 percent reported hospitalization rate in the 2004 NSS data for the poorest 20 percent of the population. These are still early days in the RSBY program so that utilization rates could end up being even higher as population awareness of its benefits increases. One benchmark is the hospitalization rate observed among the richer groups which is about 4 percent for the richest urban groups

in the NSS data. Thus, assumptions on health services use made in Prinja et al. (2012) do seem on the conservative end, at least for poorer groups. And even if their assumptions work in the aggregate, for rich and poor combined, governments may have to allocate greater funds to support health spending, given that public subsidies will focus on the poorer groups.

There are also longer-term trends that point to rising health spending over time in India. Data from the World Health Organization shows that between 1995 and 2009, the annual rate of growth of health spending exceeded the rate of growth of income by 1.3 percentage points in Organization for Economic Cooperation and Development (OECD) countries. Over longer periods, the differences are even more pronounced. Evidence of a rising share of health spending in GDP is also evident for developing countries. Over the period 1995–2009 and with the exception of South Asia (SA), developing countries in all other regions saw rates of growth of health spending per capita that exceeded the rate of growth of income by 0.7 percentage points to 1.5 percentage points annually. In China’s case, the difference was 1.1 percentage points annually. Rising levels of underreporting of consumer (and health) expenditure in household surveys likely explains the anomalous finding from India which dominates the South Asian statistics (Bhalla, 2002).

Some of the increase in health spending observed worldwide is due to demographics in the form of rising share of elderly population; and some is due to rising incomes making health-care more affordable. However, existing research points to medical technology, a “catch-all” term used to describe several of the elements that comprise health-care delivery, such as medical devices, drugs, methods of treatment (such as surgical techniques) as the major driver of health spending. Innovations in technology can contribute to rising medical care costs in multiple ways, such as via the introduction of a new and expensive device or drug that replaces preexisting cheaper devices or drugs; by supplementing existing devices or drugs; or by addressing hitherto ineffectively treated conditions. Once introduced, newer and more expensive medical interventions may become more commonly used, thereby adding to higher expenditures and larger budget impact for one set of conditions, even if the intervention is deemed as more cost-effective. Subsequently, such innovations could induce greater attention to hitherto untreated conditions, and a rise in their associated expenditures (Cutler and McClellan, 2001).

Changing medical technology is underpinned by factors on both the demand side (e.g., rising incomes, insurance coverage and greater awareness of newer medical interventions) and the supply side (e.g., provider incentives to offer newer interventions or interventions with higher profit margins).

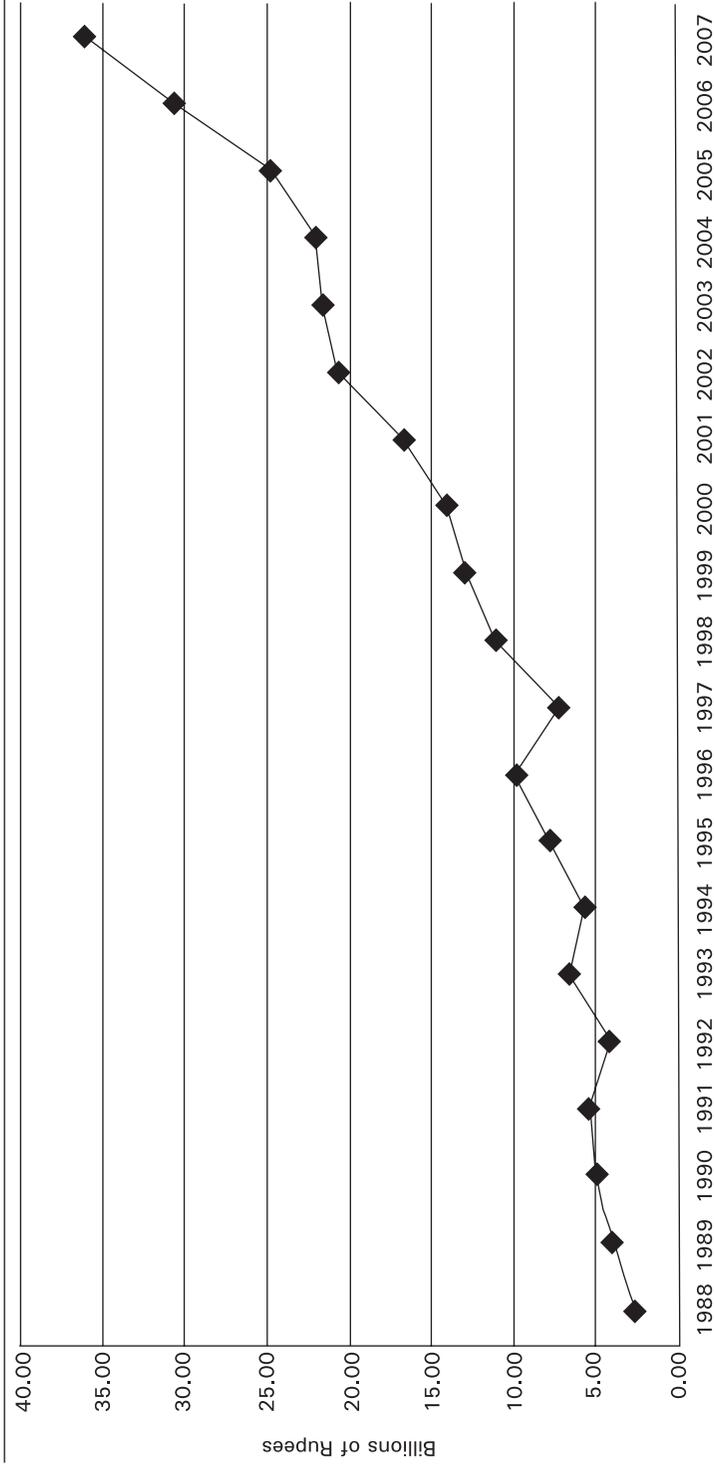
Rising incomes and better insurance coverage contribute to the adoption of new technology by lowering the economic burden on patients, and use of advanced technology in the private sector may create pressures on government-operated facilities to do the same. This is significant in India, given the dominant role of the private sector in its health service delivery. In the United States, between two-thirds and three-quarters of the increase in health spending has been attributed to technological change and a study for Australia estimated that medical technology changes contributed to about one-third of the growth of health spending during the period from 1992–03 to 2002–03 (Newhouse, 1992; Productivity Commission, 2005). While information on the impact of technological change in India is almost nonexistent, we suspect that the future situation will be no different from that observed in developed countries, given rising incomes and the high potential for off-the-shelf use of technologies already available in the developed world. One illustration of this possibility is the data presented in Figure 2 that describes the rapid growth in imports of medical devices in India over the period from 1988 to 2007, following India's liberalization of its import restrictions. Although small in relation to India's GDP, the share of medical device imports (primarily high-tech equipment) quadrupled over this period.

## Conclusions

In this paper we examined what it means to provide expanded coverage (including one version referred to as "universal" cover), including financial implications. Achieving a reasonable degree of access to health services to all of India's population is not a trivial task and we have tried to provide some clarity to the implementation challenges that are involved.

In a setting with resource constraints, policymakers will have to decide which population groups they should subsidize and for which services. Efficiency considerations suggest that public subsidies should support services with significant levels of externalities and public good characteristics. Second, equity considerations suggest subsidies for the poor and for children and our potentially disadvantaged groups for health services that result mostly in private benefits. For the nonpoor, efficiency considerations and limited resource constraints suggest government regulatory support for insurance that covers health-care services with mostly private benefits and is funded by the members themselves. Alternatively, if both rich and poor groups belong to the same pool, the richer groups will need to pay

**FIGURE 2. India's Imports of Medical Devices, 1988–2007 (at 1999–2000 prices)**



Source: Foreign Trade Statistics of India, Directorate General of Commercial Intelligence and Statistics, Government of India, various years. GDP deflator was used to construct the series at constant prices.

their own premiums. However, there are a number of practical challenges to implementing such a program.

First, in a country such as India with large numbers of preexisting private insurers and health-care providers, considerable regulatory oversight will be required. If richer groups can also buy private insurance coverage, or if their (contribution-based) participation in government-supported insurance programs is voluntary, adverse selection could emerge as a serious problem. Private insurers will offer products that attract good health risks and saddle the public system with sicker patients. This means some thought may need to be given to *compulsory* contributions by nonpoor groups who are allowed to participate in public programs.

Second, given resource constraints, it may not be feasible to instantaneously scale up the program to full coverage in terms of health services covered, as acknowledged in the HLEG report. In this case, policymakers may adopt a strategy of prioritizing those interventions for which the health returns are the highest per dollar, which usually means most prevention and promotion programs. Because financial protection is an important goal as well, Mexico's example serves as a useful guide since it adopted the strategy of prioritizing the most cost-effective interventions for coverage from a separate subgroup of curative services. This also means that considerable research into the costs and cost-effectiveness of interventions will be needed to support policy on an ongoing basis.

Third, policymakers must give considerable attention to the subject of payment mechanisms to address issues of efficiency (and quality). This means increased attention to the capacity of entities that manage financing pools as well as creating an environment where providers respond to payment incentives. Among the key issues that the government will have to address is the degree of autonomy of functioning of public providers, and ensuring fair competition between public and private providers if that is the strategy chosen. The use of provider payment mechanisms, including pay for performance models, have implications for information systems that need to be in place. Possibilities for paying consumers/beneficiaries must also be explored to influence prevention behavior, or to obtain their own outpatient services if issues of fraud or absenteeism in public facilities limit the ability of a funding pool to identify providers in the neighborhood.

Fourth, the state of the supply side—the provision of health services—needs attention. Both the HLEG report and the NCMH report preceding it highlight the need to upgrade health services in the public sector, to create new infrastructure and to contract with private providers. However, considerable challenges remain, particularly in ensuring access to health services

in rural areas, and there is a need for better integrating traditional (unqualified) providers who are often the only source of health care for populations in remote areas.

Fifth, India faces serious resource challenges in financing universal coverage, even neglecting long-term trends in demographics, epidemiological shifts, income growth, and technological change that are driving health spending around the world. According to our assessment based on adjustments to estimates presented in the literature, something of the order of 4.5 percent of GDP or higher is required to finance health services for the entire population, of which 1.1 percent will need to come from contributions by households. Thus, levels of government contribution that are considerably greater than anything seen thus far in the health sector are envisaged, including in the projections of the HLEG report. Payroll tax rates on formal sector workers are unlikely to be set at levels that can support health spending of 1.1 percent of GDP, and steps will be required to ensure contributions by nonpoor informal sector workers and other categories of nonpoor, presumably through some form of surcharge on income or wealth.

Finally, we would like to add that health outcomes are only partially influenced by the nature of health financing and delivery, issues that have been the central focus of this paper. The role of clean water, sanitation, and environmental conditions is well known and obviously relevant in the context of morbidity, health-care use, and financial sustainability. A systematic approach to the design of a health-care financing and delivery system ought to model the likely influence of these and other factors as well.

# Comments and Discussion

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Ajay's paper is rather a comprehensive one in the sense that it covers a lot of ground and quite a lot of details, and he also actually does not have a very strong preference for any particular combination or any particular solution. What I could make out from the paper is that he does have sympathy for a certain combination, but then he is not very strong on that. That makes it a little more difficult to comment on. But still, what I would do is basically to take up some random issues instead of a structured comment on the entire paper. These are the issues which sort of struck me while reading of the paper; I will simply try to put these issues in the bullet form.

The first thing that I would want to talk about is that there seems to be a presumption in the paper in favor of the insurance system, that we have to have insurance as against the publicly funded, publicly provided kind of system. If we are actually going in for an insurance system mainly and given the fact that already much of the health care is actually provided by private parties rather than public institutions (Ajay is saying at some place that he is expecting the public supply to gradually die out and be replaced by the private providers), then with the combination of an insurance-based system and private providers, we need to worry about the actual price of various kinds of health-care products because experience in several countries, where there is the full insurance system, shows that one does need to worry about it. One has to actually think about really effective methods of controlling the spiraling costs of health care and this is particularly so when one thinks about it in a dynamic sense that examines what happens over the years.

One also has to think about the dynamic stability part if one is talking about a resource-constrained kind of system where the public sector has to at least provide some funding for the entire insurance system. A key issue that has to be settled in a system which is partly funded by the government, partly funded by the individuals, and the combination finances the insurance system and then providers are paid for the health-care products. The key question is: would there be equilibrium in the sense of the costs of the providers, the kind of payments that they would demand, being met—would there be enough funds in the insurance system to actually pay the providers? If you do not

have adequate funds then there is a problem because then either you have to cut down on what services you are covering (limited health-care products) or you have to cut down on coverage (subsets of target population). Thus, tricky coverage issues come in particularly when you have a resource-constrained system, and obviously we do have a resource-constrained system in India. We cannot really think of “any amount of cost is okay” kind of situation and, therefore, several issues do get actually linked up: what to cover, who to cover, and also who are the ones that are actually doing the provision of the services. Incidentally, the kind of cost estimates that Ajay comes up with are not very large but at the same time not very small either; the point that I was thinking about is that if we could raise substantive additional resources for the new system, with the same additional resources we could actually beef up the existing system considerably, subject to the constraints which cannot be handled with just money. I suppose anyone would be persuaded to favor the insurance system if it made services available for all, at reasonable costs. But then, one has to think about what is the particular characteristic of the insurance system which really would make it score over the existing system of public supply and also its validity for a country like India. That is something which I think needs to be further discussed, before I am persuaded to accept insurance as the way to go.

There is another issue in terms of coverage: What to cover? Obviously the direct costs are to be covered and Ajay has also talked about some incentive payments for various kinds of services including for children, for healthy habits, and so on. But I would like to add one more consideration in nondirect costs of health expenditure, particularly in the context of India and also particularly in the context of rural people. Because of the lack of access to health institutions, what happens in rural India is that they actually have to travel far to get proper health care. When that happens, there is a substantive transport cost, there is a substantive cost of people accompanying the patient, they have to stay somewhere when they go out of station, particularly for longer durations; all those costs which are not actually direct costs of health care can be and probably are extremely significant for rural people, and I am not sure whether any insurance system would cover that kind of costs because it would be extremely difficult to make sure how much that cost is and to actually check all those costs. A far better solution obviously would be to provide health care close to everybody, but then that is something which cannot happen just overnight. You need to spend quite a lot of money on the health infrastructure itself—it is not something that is automatically going to take care of itself.

Ajay has mentioned health infrastructure shortages, and has even costed the filling of the gap. At National Institute of Public Finance Policy (NIPFP)

we did a series of State studies for various kinds of human development indicators and the kind of costs that are associated with raising those indicators and that kind of thing. Health was one of the human development areas examined. We did some rough estimates of the cost of infrastructure provision to meet the various kinds of norms that are provided in eight individual states. The lessons that we had from those State studies is that, it is first of all very difficult to generalize for the country. There are substantive state-level differences, among other things in the costs that are involved in just providing the infrastructure. I am not talking about other parts of health-care supply, just providing the infrastructure. If I give you the estimated numbers, it does not really help because these were done at different points of time. Thus, one needs to scale the estimates up for population increase, price level, and so on. But let me just say it in a more useful way that for certain states like Maharashtra, West Bengal, and Tamil Nadu, the estimated additional expenditures required to reach the normative levels of supply are not of a scale which could not be met by the respective state governments with a little additional effort and a shift in priorities in favor of health care. But then, there are other states like Chhattisgarh and Orissa, where there is a significant shortage of resources to reach any kind of adequacy in supply of health care. My personal belief is that in the former type of states, because the basic issue of resources is resolved, the systemic issues will also be resolved without much of a problem; in the latter group of states, the basic issue of shortage of resources is not resolved by any of the systems, and hence each of them is as good or bad as another. Then the problem is that we are left with little empirical content in our comparison of one system with another, and thus an informed choice. In fact, I am not quite sure if we need to make a choice for the entire nation. Given the differences between states with respect to several parameters relevant to health care, I could easily plump for a nonuniform health-care system across the country.

One final point on presentation aspect of the paper: Ajay discusses about the systems prevalent in several places, with key details. For uninformed people like me, it would be nice if we could have a brief, tabular comparison of the main features of each of the systems covered, maybe as an Annexure.

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I decided that rather than spend time arguing with the paper, I wanted to see what I knew that might be somewhat useful in answering some of the many important questions it raises. I think that it is a good

time to start thinking about this issue. I will say at the end that it is a bad time to close the debate on it or to do very much about it. I think it would be disastrous if we implement Right to Health right now, though that does not mean it will not happen, given the populist pressures that dominate our public life these days.

I think what the paper does very usefully is making clear just how difficult it is to design a universal health system. It is no overstatement to say that it is probably the single largest challenge that any government anywhere in the world faces today. Take the US, which is totally floundering these days, or for that matter, Britain—these are countries with a fair amount of bureaucratic competence that are just sinking under the challenge of designing an effective system of welfare.

Just to illustrate what makes it so difficult, just think of the set of questions that we will need to answer. I am not going to say anything more than what is in the paper, but I will perhaps say it slightly differently and, in any case, it is a useful way to get to what I want to say at the end. First, who should pay for how much of health care? Should we do redistribution through the health system or should people be guaranteed a certain minimum income that would enable them to buy the health care they want at the market price? I think most countries end up redistributing some amount through the health system, but it varies quite a bit across countries. Next, how should we structure the patient's contribution? The patient could either pay some amount every time they use the health-care system or they could pay a lump-sum amount for health insurance and then not have to pay every time they use the system. And should the patient pay a fixed amount irrespective of the amount it actually costs or should he be the residual claimant? Most health systems try to do both: the base payment is fixed per visit, but most health systems allow the patients some form of top-up which allows them to get more than the basic level of services. Patients face a combination of marginal and infra-marginal payments; the incentive implications of the particular structure can be extremely complex.

Competing insurers or single payer? That is another of these issues where there are multiple points of view. I think the recent debate seems to be moving in favor single payers. I do not know that that is necessarily based on much other than the fact that the US (which has competing insurers) is rather disastrous, but the US is unique in many ways. Should the subsidy for health care come from general revenues or from a dedicated pot of money? Should subsidized care be delivered just by government hospitals? Or should private clinics be included as well? When they deliver care, do the hospitals get rewarded at a per customer basis or an FFS? Fees calculated how? You

can use DRGs, which is a way to standardize how much treatment for each disease costs, or you can do it on an actual cost plus basis. Should subsidized care be for inpatient treatments only, or outpatient as well? Should there be a cap on total public spending per patient? Or per condition? Or no cap at all? If there is a cap per patient, within that cap do you want to cover all conditions or a fixed list of conditions? These are all independent decisions in a sense. You could have cancer treated or not treated, cancer treated only when it is inpatient, cancer treated both when it is inpatient or outpatient, and each of these decisions has enormous cost implications. And there are many more questions: What kinds of doctors? How you decide who is going to be in charge of the insurance system. And so on.

What do we know that is relevant to the design of such a system for India? Let me say three things that I think we know. One is that we have a huge demand problem. In our data, the average number of visits for very poor people was six visits per adult per year, and the income gradient of visits is actually downward sloping. So, richer people go to the doctor less often than poorer people. These poor patients mostly do not seek treatment for long-term chronic conditions, but palliatives for fever, diarrhea, headaches, etc. That is, things that typically do not need treating, and almost surely a lot of the treatment they are getting for them is either unnecessary or just plain harmful. There is a huge emphasis on injectibles—two out of three visits involves an injection or a drip. Most of the drips tend to be saline or glucose drips which essentially do nothing for anyone except those who are dying from dehydration. There is also massive overuse of antibiotics and steroids which are often taken in partial courses to save money, thus contributing to growing immunities in the bacterial population.

In other words, demand is extraordinarily distorted. This is partly a result of the lack of effectiveness and credibility in our public health-care system. Government doctors are both inept and lackadaisical (Jishu Das' work with many coauthors provides ample proof of this) which then pushes patients into the hands of quacks who promise instant cures and use high-potency drugs to ensure that it happens.

In such an environment, insured outpatient care will be extremely expensive to offer. It will surely be heavily used and might actually exacerbate over-medication. The one potential advantage of going to insured outpatient care—which is probably not big enough to outweigh all of these problems—is that people will be more likely to take the full course of antibiotics if drugs could be made free, rather than just a couple of pills (which helps with the immunity issue). On the other hand, this will probably worsen the problem of unnecessary usage of antibiotics.

There is also a massive supply problem—especially in northern India—as qualified doctors are few and far between. People use quacks—meaning people who do not even claim to have a medical degree. In our data, roughly half the visits are to people who do not claim to have a medical degree. I am sure even fewer of them have a real degree. Yet in recent work in Madhya Pradesh, Das et al. (2011) find that these unqualified doctors outperform the qualified doctors in the government health centers on terms of the efficacy of their treatments (though almost none of them meet the Hippocratic standard of doing less harm than good). However, there is no way the government will be able to empanel these unqualified doctors for publicly funded schemes despite the fact that in many places this would mean excluding the only somewhat competent people who are actually there in the villages from the public scheme. This is not the only issue: There is also the problem of how to deal with the clinics that claim to have qualified doctors who are never physically present and where the treatment is carried out by some hired hack who is just renting the name from the qualified guy. How would the system decide which clinic actually has a qualified doctor and which does not?

Finally, we have clearly created a culture of health care that is profoundly cynical. Most government doctors are absent and practice after hours in government facilities. In this kind of environment where everybody knows that all rules can and have been bent, it is very hard to imagine that there would not be collusion between the doctor and the patient to charge the health system. There is strong evidence of moral hazard on the part of doctors in the US health-care system, leading to something of the order of a 30 percent inflation of costs. If you think of what that means for a context where there is enormous corruption on the ground already, and everyone in the health system is quite cynical, the implications are truly frightening.

Given all that, I think it would be wise to stay away from any system that offers outpatient care. Sticking to inpatient care has several advantages; very importantly, it is easier to regulate. The claim that you are having surgery is relatively easy to check, and also generally means that only specialists are being used; at that level there is much less use of quacks. In fact, we know from the data that for inpatient care people do go to clinics and not to quacks. Indeed, if you look at what poor people do when they get very sick, they go to the government hospital. This is the one part of the government system that is actually used (and maybe some of the community health centers), everything else is essentially empty.

On the other hand, inpatient insurance is a difficult product to sell in many ways. In a field experiment in northern Karnataka, we tried to get people to

pay for an insurance product that offered only inpatient coverage; clients found this product very confusing: For example, the insurance only paid for cancer treatment only if there was surgery involved. A client's husband died of cancer, but he never went into the hospital. She spent ₹25,000 on his treatment, but the health insurer refused to reimburse these costs because the insurance was only for inpatient care. The woman, quite naturally, found this very confusing and unfair. In reaction, she and all her friends decided they were going to quit the insurance scheme and, if necessary, quit the MFI that was offering the insurance. More generally, clients really did not like the insurance product. In other words, inpatient care insurance, while much easier to regulate and control, is likely to face an initial lack of demand. This may eventually be overcome by better communication and subsidized pricing (at least until people come to understand the product), but it will take a lot of effort.

Finally, I think the biggest health gains may not be from better health-care funding. The biggest gains are probably in public health and sanitation: getting immunization rates up, getting anemia down, universal access to safe drinking water, and using Oral Rehydration Solution (ORS) for children with diarrhea are probably individually more valuable than anything we can do through the health-care system in the short run. The main case for health insurance is to protect people against the income risk that results from unexpected health-care spending. While this is a very good reason, if I had to pick I would focus on the public health and sanitation issues because they are a lot more straightforward.

## General Discussion

T.N. Srinivasan stated that he strongly advocated not going down the rights route. He added that the normative description of what a basket of health care should consist of is not state-specific. You might ask what about the differential abilities of states to provide the normatively defined care. But our Constitution provides an answer to this question. The Finance Commission provides for the transfer of resources across states.

Govinda Rao stated that he was a member of the high-level committee on universalizing health care and that he had been tasked with estimating the cost of universalizing health care. This requires looking at all levels of health care: primary, secondary, and tertiary. The issue is not that the government should provide all health care. Instead, the idea is for the government to provide a package of services in the primary, secondary, and

tertiary health care with the package and the norms worked out by doctors and various other people on the Committee. One size does not fit all since there are areas where private sector exists and places where it does not and the State must basically take a decision on whether the package should be publicly provided or you can contract it out. Based on a set of assumptions, Rao placed the cost at somewhere around 2.3–2.4 percent of GDP. This compared with the current public health expenditures of 1.3–1.4 percent of GDP. Therefore, a substantial scaling up of the expenditure needs to be done in the medium term. Rao also expressed some skepticism toward making much of Thai and Mexican experiences. He thought that the type of numbers that will work in the Indian system are very different from those associated with these countries.

Ajay Mahal responded that the Thai population and epidemiological profile is different and to that extent, Thai numbers were not relevant to India. But Mahal said that the paper had scaled those numbers down to account for cost-of-living differences, and so forth, across the two countries. Responding to the questions raised by Srinivasan, Mahal said that he mentioned the rights approach not because he favored it but because that it has been taken by civil society and whether or not we like it, we will have to face up to it. There is a very strong push in favor of the rights-based approach in the health sector in India. Mahal also stated that prevention is important and that ultimately some sort of package will have to be decided upon. It did not have to be a full package but some package of interventions will have to be covered, and over time, if resources permit, one may want to expand it.

## References

- Akresh, Richard, Damien de Walque, and Harounan Kazianga. 2012. "Alternative Cash Transfer Delivery Mechanisms: Impacts on Routine Preventive Health Clinic Visits in Burkina Faso," Policy Research Working Paper no. 5958, Washington, D.C., The World Bank.
- Baeza, Christian and Truman Packard. 2006. *Beyond Survival: Protecting Households from Health Shocks in Latin America*. Washington, D.C.: Stanford University Press and the World Bank.
- Banerjee, Abhijit, Esther Duflo, and Rachel Glennerster, 2008. "Putting a Band-aid on a Corpse: Incentives for Nurses in the Indian Public Health Care System," *Journal of the European Economic Association*, 6 (2–3): 487–500.
- Bärnighausen, Till and David Bloom. 2009. "Conditional scholarships' for HIV/AIDS Health Workers: Educating and Retaining the Workforce to Provide Antiretroviral Treatment in Sub-Saharan Africa," *Social Science & Medicine*, 68 (3): 544–51.
- Berman, Peter. 1998. "Rethinking Health Care Systems: Private Health Care Provision in India," *World Development*, 26 (8): 1463–79.
- Bhalla, Surjit. 2002. *Imagine There's No Country: Poverty, Inequality and Growth in the Era of Globalization*. Washington, D.C.: Institute of International Economics.
- Chaudhury, Nazmul, Jeffrey Hammer, Michael Kremer, Karthik Muralidharan, and F. Halsey Rogers. 2006. "Missing in Action: Teacher and Health Worker Absence in Developing Countries," *Journal of Economic Perspectives*, 20 (1): 91–116.
- Cutler, David and Mark McClellan. 2001. "Is Technological Change in Medicine Worth It?" *Health Affairs*, 20 (5): 11–29.
- Das, Jishnu, Alaka Holla, Michael Kremer, Manoj Mohanan, and Karthick Muralidharan. 2011. "Medical Advice, Quality, and Availability in Rural India." Mimeo, Harvard University.
- Das Gupta, Monica, Rajendra Shukla, T.V. Somanathan, and K.K. Datta. 2009. "How might India's public health systems be strengthened?" World Bank Policy Research Working Paper no. 5140, Washington, D.C., The World Bank.
- Desai, Sonalde, Amaresh Dubey, Brij Lal Joshi, Mitali Sen, Abusaleh Sharif, and Reeve Vanneman. 2010. *Human Development in India: Challenges for a Society in Transition*. Oxford: Oxford University Press.
- Duflo, Esther. 2003. "Grandmothers and Granddaughters: Old age Pensions and Intra-household Allocation in South Africa," *World Bank Economic Review*, 17 (1): 1–25.
- Ehrlich, Isaac and Gary Becker. 1972. "Market Insurance, Self Insurance and Self-Protection," *Journal of Political Economy*, 80 (4): 623–48.
- Fan, Victoria. 2011. *Essays on Health Systems and Policy in India*, Ph.D. dissertation. Boston, MA: Harvard School of Public Health.

- Fan, Victoria, Anup Karan, and Ajay Mahal. 2011. "The Impacts of Aarogyasri Health Insurance on Out of Pocket Health Expenditures in Andhra Pradesh, India," Draft. Washington, D.C.: Center for Global Development.
- Fan, Victoria and William Savedoff. 2012. "The Health Financing Transition," Working Paper, Washington, D.C.: Center for Global Development.
- Frenk, Julio, Eduardo Gonzalez-Pier, Octavio Gomez-Dantes, Miguel Lezana, and F. Knaul. 2006. "Comprehensive Reform to Improve Health System Performance in Mexico," *The Lancet*, 368 (9546): 1524–34.
- Garg, Charu and Anup Karan. 2009. "Reducing Out-of-pocket Expenditures to Reduce Poverty: A Disaggregated Analysis at Rural-urban and State Level in India," *Health Policy & Planning*, 24 (2): 116–28.
- Gill, Kaveri. 2009. "A Primary Evaluation of Service Delivery under the National Rural Health Mission (NRHM): Findings from a Study in Andhra Pradesh, Uttar Pradesh, Bihar and Rajasthan," Working Paper no. 1/2009, Planning Commission of India, New Delhi.
- Gonzalez-Pier, Eduardo, Cristina Gutierrez-Delgado, Gretchen Stevens, Mariana Barraa-Llorens, Raul Porras-Condey, Natalie Carvalho, Kristen Loncich, Rodrigo Dias, Sandeep Kulkarni, Anna Casey, Yuki Murakami, Majid Ezzati, and Joshua Salomon. 2006. "Priority Setting for Health Interventions in Mexico's System of Social Protection in Health," *The Lancet*, 368 (9547): 1608–18.
- Government of India. 2005. *Report of the National Commission on Macroeconomics and Health*. New Delhi: Government of India, Ministry of Health and Family Welfare.
- . 2009. *National Health Accounts 2004–05*. New Delhi: Ministry of Health and Family Welfare, National Health Accounts Cell.
- . 2011a. *Economic Survey*. New Delhi, India: Ministry of Finance.
- . 2011b. *Report of the Expert Committee on National Food Security Bill*. New Delhi: Government of India, Economic Advisory Committee. Available at [http://eac.gov.in/reports/rep\\_NFSB.pdf](http://eac.gov.in/reports/rep_NFSB.pdf) (last accessed February 29, 2012).
- Hawkins, Loraine, Jaruayporn Srisasalux, and Sutayut Osornprasop. 2009. *Devolution of Health Centers and Hospital Autonomy in Thailand: A Rapid Assessment*. Washington, D.C.: HSRI and the World Bank.
- High Level Expert Group (HLEG). 2011. *Report on Universal Coverage for India*. New Delhi, India: Planning Commission.
- Hsiao, William. 2008. *Health Care Financing: An Overview*. Washington, D.C.: The World Bank Institute.
- Hsiao, William, Jonathan Gruber, and Steven Kappel. 2011. *Act 128: Health System Reform Design, Achieving Affordable Universal Health Care in Vermont*. Boston MA: Harvard School of Public Health.
- Hughes, David and Songkramchai Leethongdee. 2007. "Universal Coverage in the Land of Smiles: Lessons from Thailand's 30 Baht health reforms," *Health Affairs*, 26 (4): 999–1008.

- International Labour Organization (ILO). 2011. "India: State Government Sponsored Community Health Insurance Scheme (Andhra Pradesh)," Bangkok, Thailand: ILO. Available at <http://www.ilo.org/public/english/region/asro/bangkok/events/sis/download/paper16.pdf> (last accessed on February 29, 2012).
- Krishna, Anirudh. 2007. "For Reducing Poverty Faster: Target Reasons before People," *World Development*, 35 (11): 1947–60.
- Lagarde, Mylene and Duane Blaauw. 2009. "A Review of the Application and Contribution of Discrete Choice Experiments to Inform Human Resources Policy Interventions," *Human Resources for Health*, Vol. 7, Article 62.
- Liu, Xingzhu and Anne Mills. 2003. "The Influence of Bonus Payments to Doctors on Hospital Revenue: Results of a Quasi-experimental Study," *Applied Health Economics and Health Policy*, 2 (2): 91–98.
- Liu, Yuanli. 2002. "Reforming China's Urban Health System," *Health Policy*, 60 (2): 133–50.
- Mahal, Ajay. 2000. "What Works in Alcohol Policy? Evidence from Rural India," *Economic and Political Weekly*, 35 (45; November 12): 3959–68.
- . 2010. "Health Financing in India," in A. Mahal, B. Debroy, and L. Bhandari (eds), *India Health Report 2010*, pp. 109–26. Delhi and Mumbai: Business Standard Press.
- . Forthcoming. "Malaysia Public Expenditure Review: The Health Sector." Washington, D.C.: The World Bank.
- Mahal, Ajay and Victoria Fan. 2010. "The Case for Improving Health in India", in *India Health Report*, pp. 1–20. New Delhi: Business Standard Press.
- Martinez, G., N. Aguilera, and D. Chernichovsky. 2009. "The Mexican Healthcare System and the Emerging Paradigm in Modern Systems," Unpublished. Beersheva, Israel: Faculty of Health Sciences, Department of Health Systems Management.
- McPake, Barbara and Kate Hanson. 2004. "Implementation of Hospital Reform Policies: Lessons of Experience," draft. London, UK: London School of Hygiene and Tropical Medicine.
- Ministry of Health and Family Welfare (MOHFW). 2009. *The National Health Bill 2009*. Available at [http://mohfw.nic.in/NRHM/Draft\\_Health\\_Bill/General/Draft\\_National\\_Bill.pdf](http://mohfw.nic.in/NRHM/Draft_Health_Bill/General/Draft_National_Bill.pdf) (last accessed on June 30, 2011).
- . 2011. *Rural Health Statistics Bulletin: March, 2010*. Available at [http://mohfw.nic.in/RHS%20\\_2010/RHS%20Bulletin-March%202010.pdf](http://mohfw.nic.in/RHS%20_2010/RHS%20Bulletin-March%202010.pdf) (last accessed on June 30, 2011).
- Newhouse, Joseph. 1992. "Medical Care Costs: How Much Welfare Loss." *Journal of Economic Perspectives*, 6 (30): 3–21.
- . 1996. "Reimbursing Health Plans and Health Providers: Efficiency in Production Versus Selection," *Journal of Economic Literature*, 34 (3): 1236–63.
- Palacios, Roberto. 2010. "A New Approach to Providing Health Insurance to the Poor in India: The Early Experience of Rashtriya Swasthya Bima Yojana," RSBY Working Paper no.1.

- Panagariya, Arvind. 2008. *India: The Emerging Giant*. New York: Oxford University Press.
- Prinja, Shankar, Pankaj Bahuguna, Andrew Pinto, Atul Sharma, Gursimer Bharaj, Vishal Kumar, Jaya Prasad Tripathy, Manmeet Kaur, and Rajesh Kaur. 2012. "The Cost of Universal Health Care in India: A Model Based Estimate," *PLoS One*, 7 (1): e30362.
- Putthasri, Weerasak, Siriwan Pitayarangsarit, Supon Limwattananon, Sripen Tantivess, Roongthong Kharamanond, and Viroj Tangcharoensathien. 2011. "Local Level Responses to Budget Allocations Under the Thai Universal Health Care Coverage Policy," *Journal of Public Health and Development*, 9 (1): 39–54.
- Rajasekhar, D., Erlend Berg, Maitreesh Ghatak, R. Manjula, and Sanchari Roy. 2011. "Implementing Health Insurance for the Poor: The Rollout of RSBY in Karnataka." Draft.
- Rao, Sujatha. 2012. "Long on Aspiration, Short on detail: Report on Universal Health Coverage," *Economic and Political Weekly*, 47 (6): 12–16.
- Reddy, K. Srinath, Vikram Patel, Prabhat Jha, Vinod K. Paul, A.K. Shiva Kumar, Lalit Dandona, for The Lancet India Group for Universal Healthcare. 2011. "Towards Achievement of Universal Health Care in India by 2020: A Call to Action," *The Lancet*, 377 (9767): 760–68.
- Rokx, Claudia, George Schieber, Pandu Harimurti, Ajay Tandon, and Aparnaa Somanathan. 2009. *Health Financing in Indonesia: A Reform Roadmap*. Washington, D.C.: The World Bank.
- Scheil-Adlung and Florence Bonnet. 2011. "Beyond Legal Coverage: Assessing the Performance of Social Health Protection," *International Social Security Review*, 64 (3): 21–38.
- Schneider, Pia. 2010. "Introducing Hospital Autonomy," Seminar on Health Financing and Organization, Moscow: The World Bank.
- Shaw, Paul. 2008. "Overview of Provider Payment Mechanisms," Materials for Session 3 of the World Bank Flagship course on October 29, 2008. Washington, D.C.: The World Bank Institute.
- Suchonwanich, N. 2010. "Capitation: For Thai Universal Health Coverage." Bangkok, Thailand: National Health Security Office.
- Swarup, Anil. 2011. "Rashtriya Swasthya Bima Yojana: Some Initial Trends." New Delhi: Ministry of Labour.
- Tang, Shenglan. 2011. "Making universal coverage sustainable in China," Geneva: World Health Organization. Paper presented at the Conference on Universal Coverage in Asia and the Pacific, October 3–4, Bandar Sunway, Malaysia.
- Wagstaff, Adam. 2010. "What's the 'universal health coverage' push really about?" November 10. Available at <http://blogs.worldbank.org/developmenttalk/whats-the-universal-health-coverage-push-really-about> (last accessed on January 15, 2012).

- Wagstaff, Adam, Winnie Yip, et al. 2009. "China's Health System and Its Recent Reform: A Review of Recent Studies." *Health Economics*, 18 (Supplement 2): S27–S23.
- Witter, Sophie, Atle Fretheim, Flora L. Kessy, and Anne K. Lindahl. 2012. "Paying for Performance to Improve the Delivery of Health Interventions in Low- and Middle-income Countries (Review)," *Cochrane Systematic Review* 2.
- World Bank. 2011. *Restructuring Paper on a Proposed Project Restructuring of Health Insurance Project*, Report no. 62850. Washington, D.C.: The World Bank.
- World Health Assembly. 2005. "WHA 58.33: Sustainable Health Financing, Universal Coverage and Social Health Insurance." Geneva: World Health Organization. Available at [http://apps.who.int/gb/ebwha/pdf\\_files/WHA58/WHA58\\_33-en.pdf](http://apps.who.int/gb/ebwha/pdf_files/WHA58/WHA58_33-en.pdf)
- World Health Organization (WHO). 2008. "World Health Statistics 2008." Available at <http://www.who.int/whosis/whostat/2008/en/index.html> (accessed on June 20, 2010).
- . 2010. *The World Health Report: Health Systems Financing—the Path to Universal Coverage*. Geneva: WHO.
- Xu, Ke, Priyanka Saksena, and Alberto Holly. 2012. "The Determinants of Health Expenditure," Working Paper, Results for Development Institute, Washington, D.C.
- Yip, Winnie and Ajay Mahal. 2008. "Health Care Systems of China and India: Performance and Future Challenges," *Health Affairs*, 27 (4): 921–32.
- Yip, Winnie and Karen Eggleston. 2001. "Provider Payment in China: The Case of Hospital Reimbursement in Hainan Province," *Health Economics*, 10 (4): 325–39.
- . 2004. "Addressing Government and Market Failures with Payment Incentives: Hospital Reimbursement Reform in Hainan, China," *Social Science and Medicine*, 58 (2): 267–77.
- Yip, Winnie and William Hsiao. 2009. "Non-evidence Based Policy: How Effective Is China's New Cooperative Medical Scheme in Reducing Medical Impoverishment?" *Social Science and Medicine*, 68 (2): 201–09.