Reorienting Health Service Delivery for Universal Health Coverage

In this chapter, we describe the structural and functional changes required to develop Universal Health Coverage (UHC) in India, with a special focus on underserved populations. We summarise health system factors related to health outcomes, outline the issues affecting access, equity and quality of healthcare, discuss our rationale for normative reform and finally present a set of overarching recommendations.

1. Situational analysis

a) The need for normative architectural corrections: A global perspective

A well-functioning health system is of paramount importance in ensuring UHC. Marchal and Cavalli et al. (2009) discuss the growing consensus on “the need for health system strengthening by creating the necessary enabling institutional and systemic environment to achieve and sustain [the United Nations’ Millennium Development Goals] in the long term.” A critical strategic and managerial role of any national health system is to identify and target health priorities at national and state level and design context-specific service delivery and financing models. The World Health Report of 2008 identifies ten trends in healthcare delivery that are common across low, middle and high-income countries that need to be addressed adequately to strengthen the health system as a whole. The trends are detailed in Table 1.

Perhaps because of the unique and dynamic challenges facing the country, India’s performance in creating a paradigm of health and wellness for its citizens has been less than satisfactory. The advantages of the availability of large technical human resources, science education and access to the English language have not resulted in better health outcomes for citizens. In matters relating to health, the country ranks below many others that started with similar health indicators and economic bandwidths.
<table>
<thead>
<tr>
<th>Source of inefficiency</th>
<th>Common reasons for inefficiency</th>
<th>Ways to address inefficiency</th>
</tr>
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<tbody>
<tr>
<td>1. Medicines: under use of generics and higher than necessary prices for medicines</td>
<td>Inadequate controls on supply-chain agents, prescribers and dispensers; lower perceived efficacy and safety of generic medicines; historical prescribing patterns and inefficient procurement and distribution systems; taxes and duties on medicines; excessive mark-ups</td>
<td>Improve prescribing guidance, information, training and practice. Require, permit or offer incentives for generic substitution. Develop active purchasing based on assessment of costs and benefits of alternatives. Ensure transparency in purchasing and tenders. Remove taxes and duties. Control excessive mark-ups. Monitor and publicise medicine prices.</td>
</tr>
<tr>
<td>2. Medicines: use of substandard and counterfeit medicines</td>
<td>Inadequate pharmaceutical regulatory structures and mechanisms; weak procurement systems</td>
<td>Strengthen enforcement of quality standards in the manufacture of medicines; carry out product testing; enhance procurement systems with pre-qualification of suppliers.</td>
</tr>
<tr>
<td>3. Medicines: inappropriate and ineffective use</td>
<td>Inappropriate prescriber incentives and unethical promotion practices; consumer demand and expectations; limited knowledge about therapeutic effects; inadequate regulatory frameworks</td>
<td>Separate prescribing and dispensing functions; regulate promotional activities; improve prescribing guidance, information, training and practice; disseminate public information.</td>
</tr>
<tr>
<td>4. Healthcare products and services: overuse or supply of equipment, investigations and procedures</td>
<td>Supplier-induced demand; fee-for-service payment mechanisms; fear of litigation (defensive medicine)</td>
<td>Reform incentive and payment structures (e.g., capitation or diagnosis-related group); develop and implement clinical guidelines.</td>
</tr>
<tr>
<td>5. Health workers: inappropriate or costly staff mix, unmotivated workers</td>
<td>Conformity with pre-determined human resource policies and procedures; resistance by medical profession; fixed or inflexible contracts; inadequate salaries; recruitment based on favoritism</td>
<td>Undertake needs-based assessment and training; revise remuneration policies; introduce flexible contracts and performance-related pay; implement task-shifting and other ways of matching skills to needs.</td>
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<tr>
<th>Source of inefficiency</th>
<th>Common reasons for inefficiency</th>
<th>Ways to address inefficiency</th>
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</thead>
<tbody>
<tr>
<td>6. Healthcare services: inappropriate hospital admissions and length of stay</td>
<td>Lack of alternative care arrangements; insufficient incentives to discharge; limited knowledge of best practice</td>
<td>Provide alternative care (e.g., day care); alter incentives to hospital providers; raise awareness about efficient admissions practices.</td>
</tr>
<tr>
<td>7. Healthcare services: inappropriate hospital size (inefficient use of infrastructure)</td>
<td>Inappropriate level of managerial resources for coordination and control; too many hospitals and in-patient beds in some areas, not enough in others, often reflecting lack of planning for health service infrastructure development</td>
<td>Incorporate inputs and output estimation into hospital planning; match managerial capacity to size; reduce excess capacity to raise occupancy rate to 80-90% while controlling length of stay.</td>
</tr>
<tr>
<td>8. Healthcare services: medical errors and suboptimal quality of care</td>
<td>Insufficient knowledge or application of clinical care standards and protocols; lack of guidelines; inadequate supervision</td>
<td>Improve hygiene standards in hospitals; provide more continuity of care; undertake more clinical audits; monitor hospital performance.</td>
</tr>
<tr>
<td>9. Health system leakages: waste, corruption and fraud</td>
<td>Unclear resource allocation guidance; lack of transparency; poor accountability and governance mechanisms; low salaries</td>
<td>Improve regulation and governance, including strong sanction mechanisms; assess transparency and vulnerability to corruption; undertake public spending tracking surveys; promote codes of conduct.</td>
</tr>
<tr>
<td>10. Health interventions: inefficient mix and inappropriate level of strategies</td>
<td>Funding high-cost, low-effect interventions when low-cost, high-impact options are unfunded; inappropriate balance between levels of care and among prevention, promotion and treatment</td>
<td>Conduct regular evaluations; incorporate into policy of evidence on the costs and impact of interventions, technologies, medicines and policy options.</td>
</tr>
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A comparison of India’s major health indicators with those of several other countries (Table 2) highlights the need for improving health system capabilities in India. Moreover, the relationship between increased Government health spending as a percentage of total health expenditure and the corresponding outcomes for each country deserves closer examination. It is important to note that Brazil, Sri Lanka and Thailand have travelled long and far on the road to Universal Health Coverage. Annexure I lists additional indicators for various nations in the past decade.
TABLE 2: KEY INDICATORS: INDIA COMPARED WITH OTHER COUNTRIES

<table>
<thead>
<tr>
<th>Indicator</th>
<th>India</th>
<th>China</th>
<th>Brazil</th>
<th>Sri Lanka</th>
<th>Thailand</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMR/1000 live-births</td>
<td>50</td>
<td>17</td>
<td>17</td>
<td>13</td>
<td>12</td>
</tr>
<tr>
<td>Under-5 mortality/1000 live-births</td>
<td>66</td>
<td>19</td>
<td>21</td>
<td>16</td>
<td>13</td>
</tr>
<tr>
<td>Fully immunised (%)</td>
<td>66</td>
<td>95</td>
<td>99</td>
<td>99</td>
<td>98</td>
</tr>
<tr>
<td>Birth by skilled attendants</td>
<td>47</td>
<td>96</td>
<td>98</td>
<td>97</td>
<td>99</td>
</tr>
<tr>
<td>Health expenditure as percentage of GDP</td>
<td>4.2</td>
<td>4.3</td>
<td>8.4</td>
<td>4.1</td>
<td>4.1</td>
</tr>
<tr>
<td>Government share of total health expenditure (%)</td>
<td>32.4</td>
<td>47.3</td>
<td>44</td>
<td>43.7</td>
<td>74.3</td>
</tr>
<tr>
<td>Government health spending share of total government spending (%)</td>
<td>4.4</td>
<td>10.3</td>
<td>6.0</td>
<td>7.9</td>
<td>14.2</td>
</tr>
<tr>
<td>Per capita spending in US dollars</td>
<td>122</td>
<td>265</td>
<td>875</td>
<td>187</td>
<td>328</td>
</tr>
</tbody>
</table>


IMR = Infant Mortality Rate

It is important to note that Brazil, Sri Lanka and Thailand have travelled long and far on the road to Universal Health Coverage. Annexure I lists additional indicators for various nations in the past decade.

b) Strengths and weaknesses of India’s health system

The commitment to public provisioning of health services featured in the National Health Policy was a good start. Inadequate resource allocation and poor governance, however, have led to a progressive weakening of services. The substantial development of the private sector has been compensating for the shortcomings of progressively weakening public systems over the years. From 8% in 1947, the private sector now accounts for 93% of all hospitals, 64% of all beds, 80% to 85% of all doctors, 80% of out-patients, and 57% of in-patients.7

Private entrepreneurship has covered all aspects of healthcare markets including health financing, health worker education as well as health equipment manufacturing and service. While this adds strength to the health system, the lack of a regulatory framework has also led to cost escalation and variable quality in the health services provided by this sector.

Meanwhile, the extensive framework of public systems has succeeded in permeating the entire country, even the many difficult, unreachable areas where for-profit providers would not consider venturing and even the presence of Non-Governmental Organisations (NGOs) is minimal.8 State health directorates have evolved robust procedures to recruit personnel, manage cadres, procure equipment and maintain contracts.

India has one of the oldest population stabilisation and family welfare programmes in the world. Its concerted efforts towards eradicating polio have recorded success in recent years.9 The country has created capacity for training and education in healthcare and related streams and also evolved corresponding regulatory platforms like councils and accreditation boards for various cadres. The overall morale amongst health planners is high in view of achievements like elimination of leprosy at national level, elimination of neonatal tetanus from many states,
maintenance of Tuberculosis (TB) cure rate above the
global target of 85% and efficient response to avian flu
and other international health alerts, among others.\textsuperscript{10}

However, those strengths coexist with grave
weaknesses. The National Sample Survey Organisation
report of March 2006 presented the following critical
triggers for health sector reform in India:\textsuperscript{11}

- 18\% of all episodes in rural areas and 10\% in
  urban areas received no healthcare at all.
- 12\% of people living in rural areas and 1\% in
  urban areas had no access to a health facility.
- 28\% of rural residents and 20\% of urban residents
  had no funds for healthcare.
- Over 40\% of hospitalised persons have to borrow
  money or sell assets to pay for their care.
- Over 35\% of hospitalised persons fall below the
  poverty line because of hospital expenses.
- Over 2.2\% of the population may be impoverished
  because of hospital expenses.
- The majority of the citizens who did not access
  the health system were from the lowest income
  quintiles.
- India ranks amongst the lowest in the world in
  public spending on health, yet its proportion of
  private spending is one of the highest. According
  to the National Rural Health Mission Framework
document, “more than Rs. 100,000 crore is being
  spent annually as household expenditure on
  health, which is more than three times the public
  expenditure on health.”\textsuperscript{8}
- Catastrophic healthcare expenditures are a major
  cause of household debt for families and a leading
  cause of poverty in the country.

It is therefore important to identify potential financial
barriers, explore options for scaling up public spending
and provide a strategy for using public resources
efficiently and equitably.

c) Pace of change and interstate diversity in
outcomes

Table 3 compares several health indicators across
the past decades and paints a picture of definite but
unacceptably slow progress.

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</thead>
<tbody>
<tr>
<td>Birth rate</td>
<td>40.8</td>
<td>36.9</td>
<td>33.9</td>
<td>29.5</td>
<td>26.1</td>
<td>23.8</td>
<td>22.5</td>
</tr>
<tr>
<td>Death rate</td>
<td>25.1</td>
<td>14.9</td>
<td>12.5</td>
<td>9.8</td>
<td>8.7</td>
<td>7.6</td>
<td>7.3</td>
</tr>
<tr>
<td>Infant mortality rate</td>
<td>148</td>
<td>129</td>
<td>110</td>
<td>80</td>
<td>70</td>
<td>58.0</td>
<td>50.0</td>
</tr>
<tr>
<td>Maternal mortality ratio</td>
<td>1321</td>
<td>853</td>
<td>810</td>
<td>424</td>
<td>407</td>
<td>254</td>
<td>212</td>
</tr>
<tr>
<td>Maternal mortality ratio*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total fertility rate</td>
<td>6</td>
<td>5.2</td>
<td>4.5</td>
<td>3.6</td>
<td>2.9</td>
<td>2.9</td>
<td>2.6</td>
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</tbody>
</table>

*Source: Ministry of Health and Family Welfare (2007)\textsuperscript{14}

However, progress has not been uniform across the
country: there are wide interstate variations in each
of these health indicators. Although Kerala retains
its status as a well performing state (with an infant
mortality rate, (IMR of 12 and a maternal mortality
ratio, MMR, of 81), Uttar Pradesh (IMR 63, MMR 359),
Madhya Pradesh (IMR 67, MMR 269) and Odisha (IMR
65, MMR 258) continue to under-perform.

Some states have demonstrated substantial
improvements in health indicators between 2001
and 2008: IMR reductions in this period have been
reported in Jharkhand (70 to 44), Chhattisgarh (79 to
These wide interstate (and even inter district) variations in health indicators provide ground for debate on the determinants of differential performance. Annexure II lists the major health indicators of the various states of the country.

d) **Primary healthcare: A view from communities**

Various block-level analytical exercises were undertaken in six districts across the nation by members of the High Level Expert Group (HLEG). This enabled the group to gain insight into local contexts that influence access to healthcare, the role of private providers, the demand for different types of primary, secondary and tertiary care, the growing burden of non-communicable diseases and the need to expand teams of frontline health workers at the village level.

Field studies by members of the HLEG highlighted the following issues that need to be addressed adequately if UHC is to be achieved:

- The expectations and demands from the health system are not uniform across different states. The resource needs in various settings are accordingly varied.
- Even from the perspective of basic provisioning of healthcare services, the gaps are wide: the need is often three to six times greater than the current level of provision. Besides human resources for health, essential inputs such as physical infrastructure, hospital beds, drugs and diagnostics are far below the prescribed norms.
- The need for a village-level team of community health workers, who serve as a link between the community and the organised health delivery apparatus, was universally articulated.
- Communities greatly value residential skilled health workers.
- There is a need to train community workers as true health workers, sensitive to the communities’ needs and aspirations.
- Communities often patronise non-governmental providers who may or may not be formally qualified in delivering healthcare. It is important to bring these providers into the health system and appropriately address issues of rational drug use, ethical practice, skills improvement and gate keeping, among several other challenges.

### 2. Summary of India’s health system challenges

a) The public health system in India suffers from weak stewardship and oversight, HR shortages, weak HR management and ineffective service delivery.

b) Doctors, nurses and allied health providers are in short supply for the populations they serve. The ratio is often skewed, resulting in the following shortcomings: i) fewer health providers in rural areas, especially in primary healthcare settings; ii) inefficient secondary services in smaller towns; and iii) a high concentration of tertiary healthcare services in urban cities.

c) The skill mix, autonomy and funding of the medical bureaucracy at the district level need to be augmented.

d) Initiatives for health need to be coordinated with efforts to address social determinants of health.

e) Local community and Panchayati Raj institutions need to play a more proactive role in health programmes and their governance.

f) National health programmes do not comprehensively address morbidities, leaving gaps in critical services. It is imperative for horizontal and vertical programmes to function synergistically.

g) Public health infrastructure has not been able to maintain basic standards of hygiene, patient

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*a* Analytical exercises were conducted by Dr. Abhay Bang in Gadchiroli district in Maharashtra; Dr. Yogesh Jain in Ganiyari block of Bilaspur district in Chattisgarh; Ms. Anu Garg in a tribal block in Kalyansingpur, Rayagada district in Odhisa; Dr. Nachiket Mor in Pattukkottai block, Thanjavur district in Tamil Nadu; Dr. Leila Caleb Varkey in Pahwal, Haryana; and Mr. Amarjeet Sinha in Phulwarisharif block, Patna district of Bihar.
comfort and empathetic care. Adequate processes for recording the transactions of citizens with the public systems and ensuring quality of treatment, referral and transport connectivity have not been developed.

h) Poorly equipped and underutilized facilities continue to function despite limited utilisation, while others are unable to meet demand because of inflexible budgets, limited resources, rising drug costs and supply shortages.

i) Public health surveillance systems in the country are inadequate to measure and monitor health-related events and develop models for health outcomes in the country. An effective system would systematically collect and analyse accurate health data to develop more robust health strategies to combat disease. In addition, it would also map health needs, making the health system appropriately responsive to delivering care where it is needed the most.16,17

j) Despite targeted increases in health spending, many states continue to be hampered by poor governance and inadequate planning. The underperforming states will require the largest infusion of resources but also face challenges in making efficient use of the additional funds already available to them.

k) Referral linkages and follow-up services are very weak, rendering the connectivity between primary, secondary and tertiary services dysfunctional.

3. Rationale for change

a) Need to address health inequities and impediments to UHC

Health equity is a major driver for Universal Health Coverage. India’s health system is currently failing to respond to the health needs of poor and vulnerable populations, particularly women and girls, scheduled tribes, scheduled castes, adolescents, migrant populations and peri-urban communities.18 As Frenz and Vega (2010) have noted,19 “the idea of UHC loses its meaning, if it is not accompanied by equity. Equity of access recognises that everyone has a right to healthcare... Inequitable access means that less advantaged groups use and experience less healthcare than their needs require, resulting in personal, community and societal health losses.”

Bureaucratization of guidelines and highly centralised procedures are a major impediment to the country’s health system, inhibiting flexibility and responsiveness to local diversity and needs. Disaggregated local data leading to needs-based planning of health services and active outreach to disadvantaged populations are essential for promoting health equity. There is, therefore, a strong case to decentralise health systems with an emphasis on resourcing, empowering and enabling communities as a prerequisite for addressing equity.20

The socio-cultural complexities of the country and the presence of multiple dividing lines within communities create additional challenges for the health system in India. Eleven states in the country (including six northeast states) have tribal populations exceeding 25% of the total state population.21

These districts need special dispensations of health infrastructure and health HR as well as higher financial allocations. The absence of commercial opportunities in the tribal areas prevents them, unlike most other parts of the country, from experiencing the benefits of economic reforms.

Tribal populations also face pressures of sustainability, shrinking resources and changing social and cultural values.22 If the country is to ensure inclusive growth, the public systems must make special provisions for these populations. A responsive healthcare system should acknowledge the need to create health HR from within tribal communities, build functional health infrastructure within tribal areas and establish administrative and technical protocols that are compatible with the social framework of these communities. Increasing the density of well-functioning health infrastructure with appropriate human resources in tribal and other underserved areas should be of highest priority to both policy makers and implementers.

India currently has the world’s greatest burden of
maternal, newborn and child deaths. In 2008 alone, India lost 68,000 mothers and 1.8 million children under the age of five to maternal and child morbidity. Thus, in addition to the tribal population, mothers, infants and children constitute the majority of the underserved. There are other vulnerable populations in India as well, such as the elderly and the disabled.

Although disability is often considered a physical condition, it is in fact a normative, cultural and legal construct. According to Census 2001, 21.9 million persons, or 2.13% of the total population, were living with disabilities in India. Alternative estimates from various sources with more inclusive definitions of disability indicate a still higher prevalence, in the range of 80 million to 90 million.

The Government has undertaken various efforts towards improving disability-related healthcare and wellness services in rural areas. However, access to treatment for persons with disabilities is usually seen only in terms of procuring medication; planners tend to ignore disabled people’s other needs, such as physical access (including ramps in medical facilities), complete and accurate information about their conditions in an appropriate format (e.g., Braille), assistance in buying aids and appliances (e.g., hearing aids), access to technological advancements in the field, alternative modes of treatment (psychotherapy, physiotherapy, etc.), health workers trained in disability management, affordable services (especially since a large proportion of disabled people tend to be from lower socio-economic strata), educational and employment opportunities, support for self-help groups and transportation.

Notable among the disabled are people with mental disabilities who face stigma and discrimination, often because of misperceptions about the nature of mental illness. Failure to integrate mental health into the broader public health agenda only increases their social exclusion.

Policy makers must give those issues adequate consideration while formulating policies, devising programmes and building facilities.

b) Need to adopt a primary healthcare approach

“How far can a mother on foot walk with a sick baby? Healthcare must be available within that distance.” - First National Health Congress, China, 1950

Changes in the health system should focus on delivering services as close to the community as possible, driven by a robust system design and clear standard operating procedures, rather than the mere availability of providers. It has been found in public hospitals in Malaysia, Sri Lanka and Thailand that good access to even small facilities, even if not well equipped, helps distribute health benefits more widely. Redistribution of healthcare benefits is greater where there is better access to a range of levels of care. We cannot over-emphasise the fact that service delivery should be re-oriented through a primary healthcare approach, encouraging re-allocation of resources and significant strengthening of primary healthcare provision, including hospital services, so that they ultimately benefit the poor.

The advantages of a primary healthcare model for health service delivery are as follows:

- greater access to needed services;
- better quality of care;
- a greater focus on prevention;
- early management of health problems;
- cumulative improvements in health and lower morbidity as a result of primary healthcare delivery; and
- reductions in unnecessary and potentially harmful specialist care.

In addition, primary healthcare teams promote health equity through increased social cohesion and empowerment. By acting as a navigator through the system to help people get to secondary and tertiary levels of care only when needed, they help achieve overall system cost-effectiveness. The evolution of the primary healthcare approach globally and in India is discussed in greater detail in Box 1.
The absence of a dedicated cadre at the village level, lack of capacity to connect at the last mile and poor responsiveness of public systems to community processes are perceived as major bottlenecks in providing primary healthcare to citizens.

Box 1. Policy Evolution in the Global Context

The Alma Ata Declaration of 1978\textsuperscript{31} envisaged achievement of health for all through adoption of a primary healthcare approach. Primary healthcare was understood as universal healthcare that is acceptable and affordable to all, comprising the preventive, promotive, curative and rehabilitative aspects of health and an integrated and comprehensive approach to development of health services.

Between 1978 and 2000, the agenda of Alma Ata was substantially revisited. Progressively the strategy shifted from welfare to efficiency, with the Government seeking to give a basic package of essential health services and the World Bank supporting health programmes and reform projects. There was growing realisation that the Alma Ata strategy was leaving many health aspirations of a large population unaddressed. Structural adjustment for macroeconomic stability (involving slashing of public expenditure on social services and imposition of user charges) also enfeebled health services and eroded health equity.

In India, the ICSSR-ICMR joint report of 1981\textsuperscript{32} proposed an alternative model for development of health services. This model was based on an integrated approach to development - with an inverted pyramid model, decentralisation, participation of communities and voluntary organisations - and intended to replace the existing top-down, curative-oriented, urban-biased health system.

In line with the Alma Ata Declaration, the National Health Policy 1983 aimed to create a nationwide infrastructure of Primary Health Centres (PHCs) and develop a health system based on greater participation of communities and the voluntary sector.

Despite the articulation of political commitment to the Alma Ata goals, the implementation of NHP 1983\textsuperscript{33} continued along vertical programmes and curative care. During this period, agencies such as UNICEF and WHO that had championed the primary healthcare approach shifted their focus to vertical programmes, such as Universal Immunization Program and Child Survival and Safe Motherhood Programme, among others. In India, primary healthcare almost became synonymous with disease-specific national health programmes with curative content.

The policy discourse in India progressively shifted towards the community needs assessment approach, and eventually the Reproductive and Child Health Programme was launched in 1997. The National Health Policy 2002\textsuperscript{34} recognised that the Government had neither the administrative nor the financial capacity to attain the Alma Ata goals by itself. The policy called on the Government to create an enabling environment through policy, regulation, outsourcing, concessions and subsidies to the private sector. In 2005, the broader, sector-wide reform agenda was implemented under the National Rural Health Mission (NRHM). Over the six years of implementation of NRHM, much ground for movement towards UHC has already been created.

A timeline of major health system reforms in India and their highlights is attached in Annexure III.
c) Need to provide adequate hospital beds

With respect to secondary and tertiary care, India lags behind most other countries in the number of hospital beds per thousand population, despite having a higher absolute number of hospital beds than most other countries. According to the World Health Statistics, India ranks among the lowest in this regard, with 0.9 beds per 1000, far below the global average of 2.9 beds (Table 4). According to the latest National Health Profile (2010), India has a current public sector availability of one bed per 2012 persons available in 12,760 Government hospitals, which is approximately 0.5 beds per 1000. This includes Community Health Centre (CHC) beds, but excludes Primary Health Centres (PHCs) and medical colleges.

<table>
<thead>
<tr>
<th>Country</th>
<th>Beds/ 1000 Population</th>
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<tbody>
<tr>
<td>Sri Lanka</td>
<td>3.1</td>
</tr>
<tr>
<td>China</td>
<td>3.0</td>
</tr>
<tr>
<td>Thailand</td>
<td>2.2</td>
</tr>
<tr>
<td>Brazil</td>
<td>2.4</td>
</tr>
<tr>
<td>USA</td>
<td>3.1</td>
</tr>
<tr>
<td>UK</td>
<td>3.9</td>
</tr>
<tr>
<td>India</td>
<td>0.9</td>
</tr>
<tr>
<td>Nicaragua</td>
<td>0.9</td>
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<tr>
<td>Togo</td>
<td>0.9</td>
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<tr>
<td>Indonesia</td>
<td>0.6</td>
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An alternative analysis of the availability of in-patient capacity, undertaken by Healthcare Management and Consultancy (HOSMAC), presented the following findings:

- The availability of public (government) hospital beds in rural India varies widely, from just 1 per 4471 persons in central India to 1 per 1650 persons in southern India.
- On average, urban India has 1 private sector hospital bed per 422 persons. There are regional variations: western India has more hospital beds than central India. Central India has the fewest private sector hospital beds in the country.
- Although the inadequacy of beds in rural India forces people to travel to the nearest urban centre for healthcare, almost 80% of the patients seeking care across the country in private institutions belonged to middle-income and low-income groups, with 50% of all patients in northern and central India belonging to the lower-income category.
- Private sector utilisation is high for institutional and non-institutional care alike, across all income groups and regions. However, the utilisation rate of any hospital depends upon multiple factors, such as chosen doctor practicing in the facility, the image and reputation of the institution, affordability and convenience of access to infrastructure.
- Patients almost invariably depend upon their doctors to make the right facility choice for them, because of persistent information asymmetry.

Figure 1 indicates how many of the beds available in the system are truly functional. A study by Technopak estimates that almost 50% of the total public sector beds are currently nonfunctional, primarily because of health human resource constraints.
d) Need to deliver healthcare to urban poor

According to the 2011 Census, 377 million Indians live in urban areas, and the urban population is expected to increase considerably by 2021. Rapid urbanisation in the country has also resulted in an increase in the number of urban poor, many of whom live in slums and transient squatter settlements. As indicated by Agarwal (2011), in 2004-2005, 80.8 million urban dwellers (25.6%) were below the poverty line. The United Nations projects that if urbanisation continues at the present rate, 46% of the total population will be in urban regions of India by 2030.

Delivering healthcare in urban areas is especially challenging. The health of urban populations is systemically and often simultaneously influenced by several social determinants: the physical environment, migration, unhealthful spatial planning, violence, poverty, social exclusion, governance, economic policy and human security. Historically, urbanisation in India has been unplanned, leading to inevitable shortfalls in water, sanitation, housing and infrastructure. Although the Jawaharlal Nehru National Urban Renewal Mission has attempted to address issues related to urban infrastructure issues, urban health requires immediate attention, especially in the context of migration and urban poverty.

Significant intra-urban inequalities in the country have caused the urban poor to suffer disproportionately from a wide range of diseases and health problems. Families with the lowest incomes in urban areas are most at risk for adverse health outcomes; this is especially so for maternal and child health indicators. Ineffective outreach and a weak referral system limit the access of urban poor to healthcare services: they are ‘crowded out’ by inadequate urban public health delivery systems where the burden of disease is found to increase on a social gradient of wealth. The lack of economic resources curtails access to available secondary and tertiary private facilities. In addition, social exclusion coupled with inadequate information and a lack of prescribed standards, even at the primary healthcare level, puts the urban poor at a greater disadvantage than their rural counterparts.
According to the National Family Health Survey III (2005-06), the under-5 mortality rate among the urban poor, at 72.7, is significantly higher than the urban average of 51.9. More than 46% of urban poor children are underweight, and almost 60% of poor children do not receive complete immunisation before completing their first year. Poor environmental conditions in slums, along with a high population density, make this population especially vulnerable to lung diseases like asthma and TB. The health system planning process in urban areas is more complex, as capacity building for public health activities needs to be addressed by local urban bodies. Primary healthcare access and delivery of services to the urban poor have been sorely neglected, and the possibility of partnerships with the non-governmental sector, which has a large urban presence, needs to be explored very closely.

Implementation of the National Urban Health Mission, complemented by the integration of urban local bodies, is required to strengthen the urban public health system and to effectively address multiple dimensions of urban health.

e) Need for oversight and accreditation of service providers

Given the shortcomings of the public health system, at large, India’s mostly unorganised, poorly regulated private sector has stepped in to fulfill unmet health needs. In urban areas, according to the National Sample Survey data cited by HOSMAC, 81% of patients choose private non-institutional care and 62% choose private institutional care. A survey conducted in 1600 villages across 19 states under the Medical Advice, Quality and Availability in Rural India project (2009-10) examined the availability of medical providers to average rural households. As Figure 2 indicates, almost 90% of the providers in rural India are private providers, whose training may be formal or informal.

![Figure 2: Availability of Health Care Providers within a Village to the Average Village Population](image)

Source: Kulkarni N K (2011)

Middle-class consumers are now exercising greater choice in healthcare services. Where possible, they opt for convenience and access over cumbersome and over-crowded public health systems and are willing to pay an out-of-pocket cost. When patients do seek care at a public health facility, there is no guarantee of ‘free service,’ and user fees, drug costs and corruption impose a financial burden that then makes private healthcare appear attractive. In a recent survey, 30% of patients in government facilities said they had had

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to pay bribes or use influence for basic hospital rights such as out-patient appointments, clean bed sheets and better food.

As Radwan et al. (2005) indicate, one of the biggest problems of India's expanding private sector is the lack of oversight or regulation by the public sector. Absence of licensing and accreditation procedures leads to health services of widely variable quality, a skew towards urban-centric provisioning, unethical healthcare practices and corruption in the access and provision of care. An appallingly large number of healthcare providers and facilities from the private and unorganised sectors are exploiting the lack of regulatory mechanisms and causing poor health outcomes. Private providers range from highly skilled clinicians to totally unqualified quacks. As many as a million unregistered, untrained providers may be practicing in India today, earning the livelihood and status associated with highly qualified doctors.

Despite these deficiencies, this sector continues to be the first choice of healthcare for most of rural and urban India. Thus, any solutions proposed for Universal Health Coverage must keep this reality in mind while addressing the human resource gaps between current availability and what will be needed. The new system must eventually bring these providers into the health system through suitable training, accreditation and regulation after removing those who are fraudulent and dangerous.

f) Need for strong financial management system

The country's health budgeting and costing processes have a direct effect on health financing mechanisms. The present classification system for health budgets in the country makes it virtually impossible to trace the movement of funds and maintenance activities. The aggregation of budget heads is a constantly moving process, making trend analysis very difficult. Several variations exist across the states in budget lines and fund management, with information asymmetry leading to ineffective and often fraudulent fund management. Given the enormous number of autonomous bodies dealing with this process and the lack of uniformity in their accountability structure, the ability to calculate real costs for the system is a daunting task.

In addition, already weak systems of financial management are administered by personnel with little understanding of financial mechanisms, creating issues in oversight. Poor utilisation of technology and information system continues to bog down health systems, leaving room for unwarranted discretion, fraud and major delays in fund movement across the system.

g) Need to objectively measure and manage quality of care

In an independent assessment of Rajasthan, Bihar, Uttar Pradesh and Andhra Pradesh in 2009, Gill reported on healthcare quality in terms of both tangible and intangible components. Whereas the former was assessed through quantifiable measures of healthcare infrastructure, human resources and availability of medicines, the latter was assessed mainly by measuring patient perception. Tangible components - electricity supply, quality and quantity of water supply, adequacy of facility infrastructure, distance travelled to health facilities, wait time to be seen by a provider, availability of free medicines, cleanliness of environment, to name a few - contribute to quality of care. The southern state of Andhra Pradesh performed significantly better than the other states on almost all the questions related to infrastructure and patients' satisfaction with their treatment. Patients' dissatisfaction, where present, correlated with the above-mentioned infrastructure inputs: when the tangible components of care were unfavourable, patients' perceptions were negative. Dissatisfaction was reported by 50.9%, 77.2% and 61.4% of participants in Uttar Pradesh, Bihar and Rajasthan, respectively (details are indicated in Annexure IV).
**h) Need to address referral services and connectivity issues**

Table 5 demonstrates the need for additional investments to be made in ensuring transport and referral connectivity across the nation. Almost a third of the districts lack some form of referral service. Many lives are lost each day because vulnerable populations cannot get to a facility offering any level of healthcare.48

Lack of clear referral norms and logistical complications very often result in denial of care at healthcare facilities, causing unsatisfactory clinical outcomes.21

<table>
<thead>
<tr>
<th>Action Point</th>
<th>India</th>
<th>High Focus, Non North-East (NE)</th>
<th>High Focus, NE</th>
<th>Non High Focus, Large</th>
<th>Non High Focus, Small</th>
</tr>
</thead>
<tbody>
<tr>
<td>Districts equipped with:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MMU under NRHM</td>
<td>461</td>
<td>219</td>
<td>87</td>
<td>147</td>
<td>8</td>
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<tr>
<td>Any other referral service</td>
<td>472</td>
<td>182</td>
<td>61</td>
<td>204</td>
<td>25</td>
</tr>
<tr>
<td>MMUs operational in state/UT under</td>
<td>1787</td>
<td>648</td>
<td>98</td>
<td>1033</td>
<td>8</td>
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<tr>
<td>ERS vehicles operational in state/UT</td>
<td>4764</td>
<td>2058</td>
<td>326</td>
<td>2369</td>
<td>11</td>
</tr>
<tr>
<td>Ambulances functioning in state/UT (at PHCs, CHCs, SDHs, DHs)</td>
<td>8826</td>
<td>3353</td>
<td>1031</td>
<td>4273</td>
<td>169</td>
</tr>
</tbody>
</table>

*State-wise progress, 1.03.2011.*

*Source: Ministry of Health and Family Welfare (MoHFW) (2011)*

*CHC = community health centre; DH = district hospital; ERS = emergency referral services; MMU = mobile medical unit; NRHM = National Rural Health Mission; PHC = primary health centre; SDH = sub-district hospital*

**i) Need to address inter-sectoral issues**

Social determinants play a crucial role in enabling Universal Health Coverage and reducing overall healthcare costs. To bring about equity in healthcare provisioning for UHC in India, the public health system needs to address multiple issues of population, geographical spread, poverty, malnutrition, regional disparities, capacity constraints, poor sanitation and the lack of inter-sectoral convergence.29, 49 The role of political will in ensuring inter-sectoral convergence, a necessary condition for UHC, cannot be over-emphasised.50

**4. Recommendations**

**Recommendation 1:** Optimise the healthcare delivery architecture by providing adequate infrastructure, equipment, drugs, human resources and technology support to respond adequately to Universal Health Coverage entitlements at primary, secondary and tertiary levels (see Figure 3). Prioritise efforts on the under served, tribal and inaccessible areas and the disabled population groups.
a) Village level: At the village level, the goal would be to create a paradigm of good health, wellness and development within the community. A village health team would ensure appropriate focus on primary healthcare, which should be linked to curative teams at the sub-centre level. We recommend that the village team comprise two Community Health Workers (CHWs), who would have monetary and non-monetary incentives and receive generic training with specific competencies, plus one Anganwadi worker and a Sahayaka. Function-time profiles for CHWs were drawn based on evidence gathered by SEARCH Gadchiroli. The following six healthcare components are envisaged for a CHW:

- maternal and newborn health (7 activities, 62 hours per 1000 population per month);
- sexual and reproductive health, including adolescent health (5 activities, 63 hours per 1000 population per month);
- child health and nutrition for children, adolescent girls and women (7 activities, 49 hours per 1000 population per month);
- communicable disease control and sanitation (7 activities, 60 hours per 1000 population per month);
- chronic disease control (5 activities, 60 hours per 1000 population per month); and
- gender-based violence prevention, mental health and health promotion activities (8 activities, 60 hours per 1,000 population per month).

In addition to those preventive, promotive and basic curative activities, CHWs should play lead roles in social mobilisation and community participation. Currently, part-time volunteers called Accredited Social Health Activists perform such functions, each covering on average a population of 1000 people. With the recommendation for doubling the number of CHWs and deploying CHWs in high-need urban habitats, the total estimated number of CHWs is 20 lakhs. The Auxiliary Nurse Midwife (ANM) at the sub-centre should provide outreach to village health teams, and trained traditional birth attendants may also be called on for support.

The village team should seek to maintain free, 24x7 telephone and internet connectivity to its jurisdictional health sub-centre. A demarcated area should publicly display educational and behavioural change messages and information on community meetings. The village health and sanitation committees set up under NRHM should be expanded to include the village patwari, the chowkidaar, and the school teacher in addition to the existing members.b

b) Sub-Health Centre (SHC) level: The SHC would provide curative services as close to the community as possible. Each SHC should cover a population of 5,000 (3,000 in tribal and inaccessible areas) or a Gram Panchayat (using mixed criteria of location, travel time, population, disease profile, health indicators and epidemiology, etc.). Each block would typically have about 20 Sub-Health Centres, but coverage should be expanded where feasible.

Each SHC should have one fully functional observation bed to evaluate, stabilize and monitor a pregnant woman if needed. The SHC should be staffed with a mid-level practitioner with a Bachelor of Rural Health Care (BRHC) degree or equivalent training, two ANMs, one male health worker and one multi-task helper for lab work, store upkeep and dispensing.

The SHC should be located in a Government building with full capability to electronically feed health and wellness data into a web-based health management information system. The SHC should undertake line listing of beneficiaries (household registration of populations in catchment areas) and should be the locus for training of CHWs and volunteers. The SHC would be the custodian of local untied funds, undertake and oversee daily out-patient services.

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b Present composition of VHSC: The Village Health and Sanitation Committee would consist of Gram Panchayat members from the village; CHW, Anganwadi Sevika, ANM; SHG leader, the PTA/MTA Secretary, village representative of any community-based organisation working in the village, and a user group representative. The chairperson would be the Panchayat member (preferably a woman or SC/ST member), and the convenor would be the CHW.
services and list its jurisdictional families for services. Fully functional SHCs should be in place in accordance with recommended norms by 2020.

c) Primary Health Centre level: The PHCs should be the first level of access to the services of allopathic doctors. As the coverage of Sub-Health Centres (managed by the BRHC cadres) expands, the PHCs should become the second port of call and are expected to be functional on a 24x7 basis. PHCs should cover an average population of 30,000 (20,000 in tribal and inaccessible areas). A block may typically have four PHCs. Coverage may be expanded as needed for UHC.

We recommend that a PHC have no fewer than six functional beds, and more as needed. In addition to the BRHC and various administrative staff, the PHC would have general-duty medical officers (holding degrees of Bachelor of Medicine and Bachelor of Surgery) and teams of five nurses along with allied health providers, including two pharmacists, two lab technicians, an accounts assistant, and a data entry operator. A qualified provider should provide dental services once a week at each PHC. The staff from the corresponding CHC would ensure full availability of services at the PHC through rotational staffing as determined by patient load.

The PHC should also have 24/7 electricity, telephone, mobile phones and computers with internet connectivity. The PHC should also be the hub for local communications and reporting, storage and distribution of drugs and supplies, adolescent and school health services, report consolidation in electronic form and performance measurement and monitoring and evaluation of village and sub-centre functions.

d) Community Health Centre level: The CHCs would staff essential specialists, offer in-patient services, and act as 24x7 functioning referral centres for more advanced care. The CHC would provide emergency obstetric care, appropriate pediatric specialist care, surgical services, a sick newborn unit, trauma care, a well-equipped lab, AYUSH services and connectivity for higher-order diagnostics.

One CHC should be located in each block (typically for a population of one lakh), and each CHC should have no fewer than 30 beds by 2017. As needed, all CHCs should expand to 100 beds by 2025. Each CHC should have a direct referral relationship with all PHCs in its jurisdiction and should work as the gatekeeper to higher levels of services. The office of the block medical officer could be co-located at the CHC. A Rogi Kalyan Samiti will ensure the involvement of the Central Statistics Office and guarantee that the core package of services is available at every CHC.

e) District health services: Under the envisioned UHC framework, the District Hospital (DH) becomes a major centre of healthcare delivery and health professional training, both of which will be attuned to the needs of that district while conforming to the national standards. With an adequately equipped and suitably staffed DH, around 90% of the healthcare needs of the people within that district should be met; only a small number would need referral to the higher-level tertiary care centres. This would require an upgrade of district hospitals and sub-district hospitals as a high-priority activity, over the next five years, alongside the strengthening of primary healthcare services.

District health services would have three pillars; the clinical care pillar under the Civil Surgeon, health HR development under the District Health Knowledge Institute, and a public health pillar under the District Public Health Officer. The District Health Knowledge Institute (DHKI) may be mandated to run a BRHC college, nursing school, ANM training centres, district training centres for miscellaneous training and a resource centre equipped with computers, information resources and telemedicine capability. This may be managed through a partnership with universities. The public health pillar would be a purely government function, but delivery of health service could include special facilities created with pro-poor government-private contracting.

The district programme management unit at the DHKI should support the public health arm and be responsible for management information systems, financial management reports and district health
reports. It should develop an integrated district health action plan containing a long-term vision and annual prioritisation, and seek appropriate approvals. This arm, at the district level, should also publish annual district health accounts.

The district level health facility should be a 24x7 functioning referral centre and training school for BRHC, CHWs, ANMs and staff nurses. Larger DHs could also be medical college complexes. The district public health officers and programme managers should be qualified public health experts, and the other government providers (medical and allied health providers) should be managed under a district cadre. Every district should have a fully functioning DH in place by 2020.

f) Referral protocols: Establish referral protocols and transport connectivity to and between facilities in every district by 2020. Every district should have at least one fully equipped, fully staffed Mobile Medical Unit (MMU) and an adequate number of ambulances in place by 2020. All MMUs and ambulances should be fully equipped with basic life-support drugs and devices and phone connectivity to higher-order referral centres, up to medical colleges. Staff in MMUs should be trained to stabilize and manage basic emergencies, especially normal deliveries and cardiopulmonary resuscitation.

In vulnerable areas, MMUs should have all basic diagnostic equipment, supplies, medicines and staff capabilities to perform minor surgical procedures, in addition to life-saving capabilities.
g) Evaluate underserved and inaccessible districts and their existing functional health facilities and increase number and type of new healthcare institutions.

The vulnerability index is a simple yet practical tool to estimate healthcare delivery need based on access. The index should take into account variables such as the percentage of tribal and hilly areas, seriousness of political extremism and related security issues, average travel time to healthcare facility by foot or other modes of transport, density of health workers given the population density and geography, frequency of natural disasters, and difficulty of the terrain. The decision to establish new health facilities should prioritise areas deemed inaccessible and underserved, based on several criteria that extend beyond merely the population size. A sample tool is attached as Annexure V.

h) Ensure that health and supportive services for persons with physical and mental disability are integrated at all levels into UHC.

Some promising interventions currently in place address mental and physical disability in the country. These include programmes on improved nutrition to address iron, vitamin A and iodine deficiencies; efforts to improve reproductive, maternal and child healthcare; and road-traffic initiatives to prevent accidents leading to disability. Poor performance indicators in these areas present major obstacles to the overall prevention of disability in India. Reasonable physical access measures should be created to afford disabled people better access to healthcare facilities. Failure to integrate mental health into the broader public health agenda only increases the social exclusion of people living with mental illness. There is thus a need to combat the stigma associated with mental illness through awareness-building activities, which need to be expanded beyond current levels. This should be coupled with inter-sectoral collaboration and better capacity-building efforts. Moreover, self-help and psychosocial support groups need to be encouraged and empowered. Psychosocial counseling should be made available and accessible for other patient groups and vulnerable populations as well (e.g., HIV/AIDS counseling, women, the disabled, the elderly). The goal would be to systematically integrate mental health services into primary care, in accordance with WHO recommendations. All disability-related interventions should be resourced adequately and evaluated frequently to measure progress towards goals.

i) Address informal provider quality: At a minimum, every unqualified or informal provider should be made aware of when not to prescribe or treat and instead refer a patient to the closest higher-level facility. If managed well, these providers could potentially support the system at the ground level, provide forewarning in case of mass disease breakouts, and help with community awareness. Formerly unregulated private sector providers could be integrated into the health system at the primary healthcare level through appropriate training, accreditation and licensing. Those providers who wish to upgrade their skills by applying for BRHC or other health courses could be supported by the village and district leaders, with incentives such as a position in the village health and sanitation committee, among others.

**Recommendation 2:** Earmark resources for health service entitlement packages at each level to include timely preventive, promotive, curative and rehabilitative interventions.

To develop an entitlement package of healthcare services that would truly have universal reach, we examined national and international research on eight existing UHC packages. Prevalent public health issues in local communities, particularly those in underserved areas such as Gadchiroli in Maharashtra, Ganiyari in Bilaspur, Jharkhand and Kalyansingpuri in Odisha, were considered. Insurance schemes such as the Rashtriya Swasthya Bima Yojana, the Arogyashri scheme in Andhra Pradesh, the Kalaingar scheme in Tamil Nadu and the Apka Swasthya Bima Yojana from...
Delhi were also examined. Where available, incidence data from these health insurance schemes were reviewed.

The packages recommended by this report have been developed and provisioned as follows:

All preventive and promotive aspects of healthcare, such as antenatal checks, screenings, counseling, minor curative services and prescriptions, should be guaranteed at the Sub-Health Centre (SHC) and then appropriately referred to the closest PHC. The packages have been labeled on the basis of the recommended levels of care such that services required at the village would constitute a level 1 package, services at the sub-centre would be a level 2 package and services at the PHC would consist of a level 3 package. The level 4 package has a combination of primary and secondary care services for which primary healthcare components are available at levels 1 to 3 and secondary care is guaranteed at the CHC level. Finally, the level 5 package includes secondary and tertiary level services that would be guaranteed at the DH level upwards.

The aim of this approach is to ensure a specific package of services at every level, with enough overlap to ensure care continuity. Designed to be flexible and progressive, the packages reflect depth of coverage across a range of interventions and include management and rehabilitation for various conditions. Quality standards and care protocols need to be developed and followed for all package components. A list of exclusions of health events at various levels will also have to be developed, based on desirability and necessity criteria.

It is important to note that the recommended entitlement package is intended to be illustrative rather than prescriptive. These are examples, and the services included are not exhaustive. We recommend that an expert committee set up by the Ministry of Health and Family Welfare periodically determine the essential health package for UHC. (Detailed illustrative packages and corresponding levels of facilities are enlisted in Annexure VII.)

**FIGURE 4: PROJECTIONS FOR ACHIEVING PROVISION OF 2 BEDS PER 1,000 POPULATION BY 2022**

*Beds include both government and private sectors

Source: HLEG Secretariat
**Recommendation 3: Expand functional bed capacity to 2 beds per 1000 population by 2022**

Based on population projections and required HR-to-population ratios, we estimated the number of hospital beds that would be required by 2022. The exercise included sensitivity analyses of estimates for 1.5 beds and 1 bed per 1,000 population norms.

Given a population of 1,353 million by 2022, the HLEG estimates that 27.05 lakh beds will be required to achieve 2 beds per 1000 population, shaped by progressive increases in bed functionalization at various facilities (see Figure 4). Based on the population norms discussed in Recommendation 1, the size and spread of India’s population will require a physical infrastructure of 3,14,547 SHCs, 50,591 PHCs, 12,648 CHCs, 4,561 SDHs (201-300 beds) and 642 DHs (301-500 beds).

These basic infrastructure norms and hospital bed projections account for greater coverage in tribal and inaccessible areas, which account for about 25% of the total population, and assume that the private and public sectors will together provide public hospital beds, starting at least at the sub-district level.

a) Leverage public-private partnerships (PPPs) for health system reform through statutory regulation and innovative models.

Several experiments suggest that contracting out healthcare services can improve care in secondary and tertiary levels.

Given that the private sector provides 80% of healthcare services in India and low-income populations currently choose private over the public care, despite unaffordable prices, India’s model for UHC must involve the private sector in its delivery design. The success of such an arrangement will depend upon the public sector’s ability to incentivise private providers to be contracted into the public scheme while holding them accountable for quality and service provision at the same time, which requires a particular set of institutional characteristics (see Box 2).

Although building PPPs will increase capacity in the health system, the private and public sectors are not naturally compatible. Vested and often competing interests between parties impede progress, and different operational norms and priorities increase delays. To ensure successful PPPs, we must do the following:

- adequately synchronize the public and private sectors to achieve cooperative operability by plugging existing gaps in health systems policy documents, with clear delineation of procedures, protocols, regulations, incentives and mechanisms to support the partnerships;
- enable government functionaries to structure, regulate and monitor PPPs;
- prevent vested interests (of either party) from creating legal bottlenecks that delay progress or defeat the public purpose of the partnership; and
- address evidence-based apprehensions about the model, such as the adherence of PPPs to national health programme protocols, the accountability of health providers in the private sector and weak or ineffective regulation of the private sector.

The above issues notwithstanding, the governments of Tamil Nadu, Gujarat, Karnataka and Andhra Pradesh have demonstrated that PPPs can contribute to expansion of healthcare coverage. A 2010 KPMG study has shown that the Aravind Eye Center and Narayana Hrudayalaya - two successful PPPs - improved care quality and efficiency while also reducing cost per client. An illustrative list of PPP models for primary, secondary and tertiary levels of care is provided in Annexure VI.

The High-Level Expert Group favours contracting-in of the private sector to deliver the National Health Package (NHP), through mechanisms described in the Chapter on Health Financing and Financial Protection.
The World Bank Report on Brazilian Healthcare notes the following characteristics of publicly-held private institutions:

1. Essentially public institutions but legally independent from government
2. Legal obligation/mandate specified accountability embedded in government-controlled board structure
3. Direct preservation of public mission

Additional accountability arrangements:
1. Management contract (with robust monitoring and enforcement)
2. Performance-based payment system
3. Independent audit by regulators and/or external monitors

All staff employed by hospital (not government)
1. Selection of managers by board, usually from private sector
2. Generally subject to civil service system
3. Examples of successful models are available globally, such as Colombia, NYC, UK Foundation Trusts, to name a few
4. Co-operative hospitals in some States of India also provide examples

Source: Forgia and Couttolenc (2009)

b) Private sector providers, beds and facilities should be contracted into district health systems and subsequently linked to district accountability mechanisms, such as health councils, to meet rapid capacity increases that UHC will require.

Considering the projected growth trajectory of public and private sectors in India, the HLEG recommends a target lower than the current global average of 2.9 beds per 1000 population.6 The HLEG also anticipates that a comprehensive primary health care approach to universal care with emphasis on early interventions, prevention, curative and promotive health practices, as well as the growing technology-aided trend towards shorter hospital stays and more day care, will ultimately reduce the requirement of hospital beds. A norm of 2 beds per 1000 population should therefore suffice. A recent Technopak study indicates that developments in high-tech diagnostics and interventions will drive a shift in healthcare delivery from predominantly in-patient settings to predominantly out-patient settings.37 The study predicts that 75% of all surgical procedures in India in 2020 will be conducted in out-patient ambulatory surgery centres. If out-patient procedures cost 47% less than their in-patient counterparts - as some calculations suggest - this shift could theoretically double the reach of health system resources.

Recommendation 4: Position norms for quality assurance of facilities and services and leverage use of standard operating procedures, technology and management information systems in monitoring and continually improving standards of care.

Progressively, all public (and co-opted private) health facilities should undergo a licensing process valid up to three years determined by regular accreditation surveys to ensure compliance with the Indian Public Health Standards, as a baseline standard as well
as additional stipulations of being contracted in (following state norms, either as sole NHP providers or adopting the 75% in-patient/50% out-patient NHP provision requirement). This process should become universal by 2017.

a) Identify public facilities that do not have the resources to meet prescribed quality guidelines and ensure shortages are appropriately corrected. The facility’s accreditation status should be prominently visible to the public.

We recommended that all public and private facilities responsible for delivering the UHC package should adhere to the Indian Public Health Standards (IPHS). This will be the starting point of large-scale commitment to quality assurance in public healthcare delivery.

b) Adopt electronic medical records by the year 2020. Form a state-level accreditation agency and a central coordinating body to oversee operations and administrative protocols of healthcare facilities. This body would be called the National Health and Medical Facilities Accreditation Unit (NHMFAU), under the National Health Regulatory and Development Authority (NHRDA).

A key feature of the Universal Health Coverage plan would involve efficient use of health systems and management information systems to be employed at all levels of healthcare.

NHMFAU should be mandated to oversee the following:

- Definitions of standards for healthcare facilities to qualify for different levels of the pyramid. Healthcare facilities will be required to receive NHMFAU accreditation every three years, based on a score on how well the facility meets the standards of healthcare set for their level of care. The score will provide the healthcare facility with an objective score of performance and comparison with peer facilities. There will also be a process to redefine the universal health entitlement packages according to the needs assessed by a structured review of patient volumes and disease burden.
- Adoption of health information systems and defining standards for use of resources and health management systems infrastructure. NHMFAU will promote use of health systems management information systems and will define stages of use organised over time. Stage I will cover years one to two after introduction of health management information systems, Stage II will cover years three, four and five after introduction, and Stage III will cover criteria after five years. Monitoring protocols and surveillance protocols will be developed and implemented.
- Establishment of criteria and a process to certify vendors’ health system management technology that can support meaningful use criteria. NHMFAU will work on defining a process for vendor certification according to meaningful use criteria and vendor product applicability to diseases of national priority.
- Information documentation, use and exchange among healthcare centres. NHMFAU will develop a standards and interoperability framework to harmonize existing standards and improve sharing of standards across different organisations and federal agencies, making it easier to broaden interoperability through shared standards for data and services.
- Clinical interoperability of information to enable seamless transition of patient data between healthcare facilities. Best practices will be defined and disseminated.
- Knowledge and feedback cell: Drawing from international best practices, NHMFAU would be responsible for analysing system bottlenecks and process breakdowns to the last level of detail on an ongoing basis, analysing group trends where possible, and working with the leadership and stakeholders at each level to continually correct issues.
- Definition and promotion of standards of patient safety, privacy and ethical use of patient data. NHMFAU will develop an accreditation process, standards and monitoring protocol to ensure patient privacy and ethical use.
- Flow of information between allied agencies and healthcare facilities. NHMFAU will develop procedures to monitor exchange of information with public health agencies, research organisations,
regulatory authorities and educational institutes.

- Information analysis, coordination of healthcare strategies and work towards real-time epidemiology.
- NHMFAU will work with other facilities and serve as a regional information exchange hub to allow for epidemiological analysis and real-time surveillance services.
- Promotion and documentation of healthcare innovations in healthcare facilities. NHMFAU will be mandated to document innovations in the healthcare delivery seen in different facilities and develop a national database of healthcare innovations that are known to improve patient care.

The governing body of NHMFAU at the state level should include representatives from the health systems management cadre at the district level, community participation from CBOs and NGOs and public health officials.

**Recommendation 5:** We recommend an urban UHC system that offers the defined package of services at each level and that addresses the health needs of urban slum-dwellers, the urban poor and the urban middle class. Cities and towns should have the flexibility to design such a system that includes community based urban nurse practitioners, appropriate service delivery channels and provider. Special focus shall be paid to population density, better transport and network connectivity, increased provider coverage (especially in the private sector), greater access to human health resources and greater health-seeking behavior.

- The new urban health system must have clearly designated and closely linked primary, secondary and tertiary healthcare facilities, with a defined package of services at each level.

The location of urban health centers and their coverage areas should be mapped spatially so that effective access can be determined. For underserved rural areas, a vulnerability analysis should be undertaken, particularly in slums, to prioritise healthcare services and delivery at appropriate facilities. A sample health vulnerability assessment tool is provided as Annexure VIII.

Facilities should be designated into tiers or levels of care (I, II, III), transfer protocols created and technical and administrative protocols standardised. This would reduce the huge burden on the larger tertiary-care facilities, which often end up serving a disproportionate amount of out-patient-related primary care needs of the urban population. A tier 1 facility could deliver all aspects of the entitlement package at a PHC level and below (private clinics, dispensaries), tier 2 would be equivalent to a rural CHC or DH (private nursing homes, maternity homes), and tier 3 could focus on higher-order secondary and tertiary-care services (medical colleges, super-specialty public and private hospitals). Tables 6 and 7 present the norms for the urban family welfare centres and urban health posts as proposed by the National Urban Health Mission (NUHM).

---

68 A detailed comparative review of three major facility quality criteria setting agencies was performed. These were the Joint Commission International (JCI), the National Accreditation Board for Hospitals and Health care providers (NABH) and the Indian Public Health Standards (IPHS). IPHS has a set of base quality standards, but these are not necessarily accreditation criteria, unlike the JCI or NABH. Accreditation criteria to certify health care facilities should be developed.
### TABLE 6: STAFFING FOR URBAN FAMILY WELFARE CENTRES

<table>
<thead>
<tr>
<th>Category</th>
<th>Population Coverage</th>
<th>Staffing Pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type I</td>
<td>10,000 - 25,000</td>
<td>1 ANM; 1 FP field worker (male)</td>
</tr>
<tr>
<td>Type II</td>
<td>25,000 - 50,000</td>
<td>1 FP Ext. Edu. or LHV in addition to the above</td>
</tr>
<tr>
<td>Type III</td>
<td>Above 50,000</td>
<td>1 MO (preferably female), 1 ANM, 1 storekeeper-clerk</td>
</tr>
</tbody>
</table>

*Source: Ministry of Health and Family Welfare (2010)*

ANM = auxiliary nurse midwife; MO = medical officer; LHV = Lady Health Visitor

### TABLE 7: STAFFING FOR URBAN HEALTH POSTS

<table>
<thead>
<tr>
<th>Category</th>
<th>Population covered</th>
<th>Staffing Pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type A</td>
<td>Less than 5000</td>
<td>1 ANM</td>
</tr>
<tr>
<td>Type B</td>
<td>5,000 - 10,000</td>
<td>1 ANM, 1 multiple worker (male)</td>
</tr>
<tr>
<td>Type C</td>
<td>10,000 - 20,000</td>
<td>1 ANM, 1 multiple worker (male)</td>
</tr>
<tr>
<td>Type D</td>
<td>25,000 - 50,000</td>
<td>1 MO (female), 1 PHN, 3-4 ANMs, 3-4 multiple workers (male), 1 Class-IV woman</td>
</tr>
</tbody>
</table>

*Source: Ministry of Health and Family Welfare (2010)*

ANM = auxiliary nurse midwife; MO = medical officer; PHN = public health nurse

**b)** The HLEG endorses the goals envisioned by the National Urban Health Mission (NUHM) to improve the efficiency of public health systems in cities by strengthening primary urban healthcare and infrastructure and designated referral facilities through the following criteria:

- The NUHM initiative should provide flexibility to states to choose which model suits the needs and capacities of regional actors to best address the healthcare needs of the urban poor. While strengthening public sector health services, states should also be free to choose from a range of partnerships with other categories of providers to ensure adequate coverage and quality of services.
- For strengthening primary public health systems, NUHM proposes a broad framework for rationalising available resources and human resources, improving access through communitised risk-pooling mechanisms and enhancing the participation of the community in the management of healthcare service delivery through a community link volunteer (an urban social health activist). The HLEG proposes utilising community health workers and public health nurse practitioners to perform these functions.
- The NUHM also advocates the establishment of Rogi Kalyan Samitis, ensuring effective participation of urban local bodies and making special provision for including the most vulnerable amongst the poor along with the development of an e-enabled monitoring system. The quality of the services provided should be constantly monitored for improvement (IPHS/revised IPHS for urban areas).
• All services delivered under the urban health delivery system should be preferentially targeted to the most vulnerable urban populations (slum dwellers, migrants, the working poor and homeless).

• The urban health delivery system should ensure inter-sectoral convergence by various local urban governing bodies with strong emphasis on accountability and transparency in urban governance.

• The architecture of the urban health delivery system may need to be substantially different from the rural health delivery system. The requirements of tier II and tier III cities will also be substantially different from the needs of tier I cities or metropolises. It would be therefore necessary to design several menus and models for the various cities in the country. It is also critical to set up better systems for the transfer of patients between healthcare facilities, to be coordinated by the rural and urban health departments in surrounding towns and cities.

• It is important to acknowledge the diversity of available infrastructure and facilities in cities along with flexible city-specific urban planning by urban municipalities. Synergies with other programs with similar objectives like Jawaharlal Nehru National Urban Renewal Mission, Swarna Jayanti Shahari Rozgar Yojana, and Integrated Child Development Services (ICDS) to optimise outcomes is essential.

• The NUHM proposes to measure results at different levels with long term as well as intermediate term view, an approach endorsed by the HLEG

Recommendation 6: Structure transparent, performance-based systems of budgeting and IT-enabled financial management directed by qualified financial professionals with corresponding accountability and audit protocols.

a) Position financial management teams at appropriate levels, supported with integrated professional development system inclusive of training, mentorship, continuing education, refresher courses and long-term engagement.

Day-to-day bookkeeping and accounting procedures should be strengthened and periodic financial review processes instituted. Protocols for concurrent audit (both financial and performance audit), reconciling financial and fiscal progress against plan and periodic public disclosure should be established. Appropriate vigilance mechanisms are needed at all levels. Respective healthcare facility managers should review utilisation of funds against services provided and make mid-course corrections as necessary.

Evidence from Ontario, Canada, shows that such a process helps health system managers understand the financial and physical line-item of resources spent and services demanded, reconfigure resources based on staff availability or even decide to close down a service entirely. They can also regulate the prescription of drugs or diagnostic tests that are found to be unwarranted or excessive.70

b) Rationalise delegation of financial power rules.

The utilisation of funds at any level of care must be accompanied by the appropriate sanction or order detailing how they are to be disbursed to ensure accountability and transparency. This will significantly improve the fund absorption capacity in the system and reduce the turnaround time of financial reporting.

c) Establish a robust financial information system that is accessible to public and provides real-time data on government expenditure.

A strong financial management system is useful in providing timely and accurate information to policy makers and implementers at all levels and greatly improves the quality of decision-making. An exemplar is Brazil, which demonstrated great results in implementing an IT-based financial information system before Universal Health Coverage was announced as a public entitlement.71,72 The main
objective of the system is to capture even the smallest public transactions electronically, thereby ensuring transparency, accurate record keeping, accountability and public oversight at all times.

d) Adopt cutting-edge technologies to establish standardised procurement, logistics and supply chain protocols, similar to the Tamil Nadu Medical Supplies Corporation model.

Taking lessons from the banking industry, the Tamil Nadu Medical Supplies Corporation (TNMSC) has transformed the drug distribution system in the state over the past decade. Stringent quality control to keep out spurious drugs and a robust inventory management system, aided by the smart use of technology and a tightly controlled demand-supply cycle for drugs at each health facility, are the hallmarks of the Tamil Nadu model.73

Transparency in the process at all times and zero tolerance for supplier complaints contribute greatly to its success.74

A central drug procurement proposal is already being developed so that this success can be replicated nationwide. This centralisation process should learn from both the strengths and weaknesses of the models implemented in Tamil Nadu and other states so that ultimately, a best-fit model is implemented across the country.

**Recommendation 7:** Establish legal provisions, policy frameworks and changes to health governance structures to define decision-making responsibilities and authorities between sectors.

We recommend the establishment of inter-sectoral empowered governance structures at each administrative level as follows:

- A sanitation and health committee at the village level that comprises existing members as well as an ANM from the health department, an Anganwadi worker from ICDS, a school teacher from the education department and village patwari from the revenue department.
- Appropriate block-, district- and state-level structures consisting of corresponding-level representatives handling collateral social determinants of health, such as rural development, Panchayati Raj, education, agriculture and environment.
- At the national level, a standing committee with a dedicated secretariat, comprising senior representatives from all relevant departments, to oversee the implementation of UHC. The existing Central Council for Health and Family Welfare should oversee the role of its secretariat.

The governance reforms necessary for UHC are essential but also the most difficult to implement. Strong stewardship and effective governance are critical to ensuring UHC. It is crucial to develop standards for the health directorates and health departments at central as well as state levels to develop adequate capacity and expertise to steer the difficult task of governance reforms.

Governance structures and reforms may not have a large budgetary footprint. However, appropriate delegation of financial power is required, along with financial vigilance and accountability. Over the Twelfth Plan period, the details of the accreditation agency must be worked out through wider discussions. This agency should be set up with an appropriate legal mandate to undertake discussions on other legal and policy components. Community oversight, ensured through publicly mandated and mentored initiatives, is imperative to ensure progress (see chapter on Community Participation and Citizen Engagement).

a) Reconfigure national health programmes75 to ensure collaborative vertical efforts alongside health system strengthening at horizontal levels.76 Where gaps exist, institute appropriate additional NHPs to ensure focused efforts in addressing unmet health needs.

The NHPs were established with the goal of combating public health challenges with the largest epidemiological footprint. The strategy of deploying
narrowly defined, vertical programs to meet the biggest health challenges has been in keeping with the globally accepted public health theory of the past decades. These programmes are completely under the management and jurisdiction of the central government, while their ground-level implementation is through the healthcare delivery systems of the individual states.

Health system reforms undertaken in India in recent years have improved the efficiency of the vertical disease control and eradication programs. However, it may be necessary to reconfigure programme design to facilitate faster realisation of the benefits of systemic corrections. Expanding the role of CHWs and other community-based institutions in the programmes, adoption of decentralised procurement of supplies and medicines, development of cross-linked training programmes, informational and educational campaigns and management information systems across several NHPs can help improve the efficiency and optimise the deployment of resources. At the same time, the need for integration of several health programmes and the launch of NRHM as a unifying platform make it necessary to ensure greater linkages between the existing programmes.

The Government has expanded the range of the NHPs substantially to include oral health, stroke management, cardiovascular disease, diabetes and mental health, but several other areas of public health are vying for focused intervention. As these needs are being addressed, care must be taken not to fragment the health system but rather to consolidate it through the UHC design.

5. Implications of recommendations for stakeholders

a) For policy makers

- Planners, parliamentarians, administrators and technical experts will all need to jointly evolve methods to reprioritise and reallocate the deployment of developmental funds in service of the goals of UHC.
- They will also need to reconfigure governance structures and functions and ensure comprehensive intersectoral communication, cooperation and prioritised decision-making.
- Interse responsibilities between the centre, state and local self-government institutions will have to be redesigned to ensure the desired outcomes.

b) For the Government

- Strengthening of health directorates, including adequate resourcing, will be essential.
- Sturdy oversight and monitoring mechanisms should be established and appropriate corrective measures taken to ensure accountability at all levels and enhance the credibility of public systems amongst the people.
- The real delegation of administrative and financial powers down to the village level institutions is the acid test of an empowered health system.
- Administrators should be more proactive and, in general, much more open to accepting new technologies in the dynamic and rapidly evolving healthcare sector.

c) For the community

- The concept of UHC invites communities to play a lead role in ensuring equitable and accessible care.

  Communities need to be conscious of their rights, articulate their concerns and actively participate in the change process.

- UHC, when achieved, will lead to a better quality of life for the citizens of India and improve our human development index ranking. Citizens will have to commit to health-seeking behaviours and demand opportunities to make positive changes in lifestyle, actively contributing to the goal of achieving health for all while protecting their personal health.
6. Financial implications of key norms

We recognise that the Planning Commission will need to increase investment significantly over the next few plan periods to achieve and implement UHC. Based on the nature of our suggested reforms and in line with our core philosophy of primary healthcare, we recommend prioritising spending at the sub-centre and DH level.

In the initial phase, priority should be given to vulnerable populations so that fully functional subcentres are in place according to the population norms and every district has a functional sub-district or district hospital by 2020.

As described earlier, based on our new norms, we estimate the requirement of 314,547 SHCs, 50,591 PHCs, 12,648 CHCs and 5,203 sub-district and district hospitals combined. Figure 5 presents the increase in number of facilities required at each level. Figure 6 is our recommendation for a phased approach with a focus on bridging the sub-centre and sub-district hospital gap more aggressively in the Twelfth Plan period.

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**FIGURE 5: PERCENTAGE INCREASE IN PUBLIC INFRASTRUCTURE REQUIRED ACHIEVING UHC BY 2020**

Source: HLEG Secretariat
Figure 6 shows the trend in increase in capital costs until 2020 for the recommended phasing of the facilities discussed above. To calculate the total costs, the NCMH assumed an 8% increase every year from 2005 onwards.

![Figure 6: Phasing Plan for Infrastructure Increase Between 2011 and 2020](image)

*Source: HLEG Secretariat*

Figure 7 and Table 8 show the corresponding trend in operating expenses for these facilities. The graph reveals a spending pattern that echoes the overall vision of a robust and dominant primary healthcare system. An annual increase of 15% has been estimated in order to account for the increase in manpower norms at each level.

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*Source: HLEG Secretariat*
TABLE 8. RELATIVE PERCENTAGES OF ANNUAL OPERATING EXPENDITURE AT CORRESPONDING FACILITY LEVELS

<table>
<thead>
<tr>
<th>Year</th>
<th>SHC</th>
<th>PHC</th>
<th>CHC</th>
<th>SDH &amp; DH</th>
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<tr>
<td>2012</td>
<td>34.55%</td>
<td>25.27%</td>
<td>20.19%</td>
<td>19.99%</td>
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<tr>
<td>2013</td>
<td>34.37%</td>
<td>25.13%</td>
<td>18.84%</td>
<td>21.66%</td>
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<tr>
<td>2014</td>
<td>34.23%</td>
<td>25.03%</td>
<td>17.82%</td>
<td>22.92%</td>
</tr>
<tr>
<td>2015</td>
<td>34.12%</td>
<td>24.95%</td>
<td>17.02%</td>
<td>23.91%</td>
</tr>
<tr>
<td>2016</td>
<td>33.96%</td>
<td>24.04%</td>
<td>17.34%</td>
<td>24.66%</td>
</tr>
<tr>
<td>2017</td>
<td>34.15%</td>
<td>23.52%</td>
<td>17.78%</td>
<td>24.55%</td>
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<tr>
<td>2018</td>
<td>32.81%</td>
<td>23.31%</td>
<td>20.07%</td>
<td>23.82%</td>
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<tr>
<td>2019</td>
<td>31.63%</td>
<td>23.13%</td>
<td>22.07%</td>
<td>23.17%</td>
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<tr>
<td>2020</td>
<td>30.78%</td>
<td>22.50%</td>
<td>23.98%</td>
<td>22.74%</td>
</tr>
</tbody>
</table>

Source: HLEG Secretariat
a) Per capita estimations for the entitlement package

In the NCMH package (2005) of health services, outpatient services at PHCs and in-patient services at CHCs and DHs was examined 46 and estimates for 2011-12 and 2020 were extrapolated. Using the cost inflation index calculator for the period between 2005-06 and 2011-12, the NCMH figures were made current. An average inflation rate for this period was computed at 9%, and the current costs were then subjected to a compounded annual increase of 9% until 2020.

The NCMH packages, computed using the standard treatment guidelines methodology, are fairly comprehensive for the purposes of gross estimates at the primary and secondary care level. Tertiary-care data were obtained primarily from insurance agencies (including RSBY) and analysed but subsequently rejected as possibly inaccurate.

We computed an out-patient per capita cost of Rs. 289, an in-patient per capita cost of Rs. 1159 at the CHC level and an in-patient per capita cost of Rs. 2398 at the DH level by the year 2020. All assumptions are based on the NCMH methodology, including a 70% utilisation rate of services, where indicated.

| TABLE 9: ESTIMATED PER CAPITA CALCULATION FOR ESSENTIAL HEALTHCARE PACKAGE |
|---------------------------------|------------------|----------------|------------------|
| Standard treatment guidelines-based costing of basic universal package | 2005 values (NCMH) | (Rupees) 2011-12 (based on CII factor) | 2020 (annualised using average CII rate from 2005-2011) |
| Per capita OP cost at PHC (level 3) | 90 | 133 | 289 |
| Per capita IP cost at block CHC (level 4) | 310 | 490 | 1159 |
| Per capita tertiary care services (DH, level 5) | 699 | 1104 | 2398 |

CHC = community health centre; CII = cost inflation index; DH = district hospital; IP = in-patient; OP = out-patient; PHC = primary health centre

Source: HLEG Secretariat, based on figures from the National Commission on Macroeconomics and Health (2005)46

Disclaimer on costing calculations: All calculations for the purposes of this paper are based on assumptions that have been stated, including data gaps that exist in the source documents, and modeled appropriately. We recommend that the numbers be viewed in light of the overall framework and evaluated for the underlying logic rather than numerical precision alone. Additional sensitivity testing with corresponding changes in assumptions may be applied to any of the models.

The estimates above clearly indicate disproportionately higher per capita cost at higher levels of care, emphasising the need for investing heavily in primary and preventive care. Consequently, the dependence on higher-order tertiary care services that involve expensive hospital stays and specialised curative services, in many cases, would be reduced.

It is important to state that the costing exercise above cannot provide an accurate national cost per capita for the health care package proposed; rather, these are merely estimates to enable the planners to earmark appropriate levels of funding over the next two plan periods. Several detailed modelling exercises will have to be undertaken across a country-wide cross-section of blocks or districts to customise the packages specific to local disease burden and delivery challenges, among other variables.
7. Summary

It is widely acknowledged that economic growth in India has not adequately translated into the desired changes in the health and quality of life indicators of its citizens. Such outcome indicators as IMR, MMR, immunisation rates, antenatal care coverage, and major process indicators of institutional delivery are still far from satisfactory. We acknowledge the gap between the health needs and aspirations of the citizens and the health care delivery system's ability to respond adequately. Access to quality health services on an affordable and equitable basis in many parts of the country remains an unfulfilled aspiration. Much ground still needs to be covered in malnutrition, sanitation and access to drinking water. The country has yet to design and implement a comprehensive umbrella of financial protection to cushion poor people from health-related catastrophic events.

The diversity and complexity of existing health systems in India point to some key issues for developing and understanding physical and financial norms for health services at the ground level. For one, community health requirements and the resources needed to meet them vary greatly. Second, there remains a dearth of human resources for health and physical infrastructure, including hospital beds, drugs and diagnostics. Health care provision by the organised private sector is virtually absent at the primary level, which highlights the need for providing adequate public resources to build a public sector health system. Finally, a large proportion of the population's first point of contact for treatment is the private sector; there are limits to partnerships with this sector in the context of rational drug use, ethical practice, skills upgrade and regulation.

The journey towards UHC will require the judicious adoption of creative and new initiatives and methods. Public as well as private stakeholders must create capacity and phase in their interventions. The early gains expected from these changes justify their continued support to ultimately achieve UHC.
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49. Rajiv Aarogyasri Scheme [Internet]. ND [cited 2011 Jun 30]. Available from: https://www.aarogyasri.org/ASRI/ForwardServlet?requestType=CommonRH&actionVal=RightFrame&page=undefined%3E%3E%3Cb%3ERajiv-Aarogyasri-Scheme%3C%3E%3B%3EpageName=Rajiv-Aarogyasri-Scheme&mainMenu=Know%20More%20


# Annexures

## Annexure I: Cross-Country Comparison Of Movement Of Key Indicators 2001 To 2011

<table>
<thead>
<tr>
<th>Indicators</th>
<th>China</th>
<th>Chile</th>
<th>Brazil</th>
<th>Thailand</th>
<th>India</th>
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<tbody>
<tr>
<td></td>
<td>UHC expected in 2011</td>
<td>UHC since 1981</td>
<td>UHC introduced 1988</td>
<td>UHC since 2001</td>
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<tr>
<td></td>
<td>1.27 billion</td>
<td>1.33 billion</td>
<td>15.6 million</td>
<td>16.8 million</td>
<td>176 million</td>
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<tr>
<td></td>
<td>1.03 billion</td>
<td>1.17 billion</td>
<td>2001</td>
<td>2009</td>
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<tr>
<td>Birth rate</td>
<td>13</td>
<td>14</td>
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<td>Death rate</td>
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## Annexure II: Selected Health Status Outcomes In India & Major Indian States

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<td>India</td>
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**Sources:**
**Annexure III: Time Line Of Health System Reforms In India**

<table>
<thead>
<tr>
<th>Year</th>
<th>Highlights</th>
<th>Recommendations</th>
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</thead>
</table>
| **1946** | **Bhore Committee** | 1. Integration of preventive and curative services at all administrative levels  
2. Short Term- Primary Health Centres for 40,000 population  
3. Long Term (Three million Plan) - Primary Health Centres with 75 beds for each  
   10,000 - 20,000 population  
4. Formation of Village Health Committee  
5. Provision of Social Doctor  
6. Inter-sectoral approach to health services development  
7. Three months’ training in preventive and social medicine to prepare social physicians |
| **1951-55** | **Community Development Programme** | 1. Multipurpose program to cover health and sanitation (through the establishment of primary health centres and subcentres)  
2. Covered other sectors including agriculture, education, transport, social welfare and industries  
3. For each Community Development Block (CDB) comprising of 100 villages and a population of one lakh, one Primary Health Centre was created |
| **1956-61** | **Mudaliar Committee** | 1. Limit the population served by a primary health centre to 40,000  
2. Improve the quality of health care provided by these centres  
3. Provision of one basic health worker per 10,000 population |
| **1967** | **Jungalwalla Committee** | Integration of services, organisation and personnel from the highest to the lowest level |
| **1973** | **Kartar Singh Committee** | 1. To ensure proper coverage, establishment of one primary health centre for every 50,000 population  
2. Division of each primary health centre into 16 sub-centres, each for a population of 3,000 to 3,500  
3. Staffing of each sub-centre by a team of one male and one female health worker  
4. Provision of one health assistant to supervise the work of 3-4 health workers |
| **1975** | **Shrivastav Committee** | 1. Creation of bands of para-professional and semi-professional health workers from within the community  
2. Development of a “Referral Service Complex” by establishing linkages between the primary health centre and higher level referral and service centres |
<table>
<thead>
<tr>
<th>Year</th>
<th>Highlights</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1977</td>
<td>Rural Health Scheme</td>
<td>1. Training of community health workers, reorientation training of multipurpose workers and linking medical colleges to rural health launched</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. To initiate community participation, the Community Health Volunteer - Village Health Guide (VHG) Scheme launched</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. The VHG to be a person from the village, mostly women, who would be imparted short term training and small incentives for work</td>
</tr>
<tr>
<td>1978</td>
<td>Alma Ata Declaration</td>
<td>1. Launched the concept of Health for all by the year 2000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Provision of first contact services and basic medical care within the framework of an integrated health services</td>
</tr>
<tr>
<td>1980</td>
<td>Health For All by 2000 - Committee report</td>
<td>1. Formulation of a comprehensive national health policy through an inter-sectoral approach (including environment, nutrition, education, socio-economic, preventive and curative dimensions)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Set health targets to be achieved by 2000 AD by substantially increasing existing health services and manpower</td>
</tr>
<tr>
<td>1983</td>
<td>National Health Policy</td>
<td>1. Provision of universal, comprehensive primary health services</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Shift of focus from the development of health systems and infrastructure for primary healthcare and ensuring health equity to vertical interventions based on technical justifications and cost-effectiveness analysis</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. To improve child survival, use of a selective approach of GOBI-FFF</td>
</tr>
<tr>
<td>2000</td>
<td>National Population Policy</td>
<td>Development of a one-stop integrated and coordinated service delivery at the village level for basic reproductive and child health services through a partnership of the government with voluntary and non-governmental organisations</td>
</tr>
</tbody>
</table>
### 2002 Highlights

#### National Health Policy 2002

1. Increase access to the decentralised public health system by establishing new infrastructure in deficient areas and upgrading the infrastructure of existing institutions

2. Set aside an increased sectoral share of allocation of the total health spending to primary healthcare

3. Goals:
   
   i. Eradicate polio and yaws by 2005
   
   ii. Eliminate leprosy by 2005
   
   iii. Eliminate Kala Azar by 2010
   
   iv. Eliminate lymphatic filariasis by 2015
   
   v. Achieve zero level growth of HIV/AIDS by 2007
   
   vi. Reduce mortality by 50% on account of TB, Malaria, other vector and water-borne diseases by 2010
   
   vii. Reduce prevalence of blindness to 0.5% by 2010
   
   viii. Reduce IMR 30/1000 and MMR 100/lakh by 2010
   
   ix. Increase utilisation of public health facilities from <20% to >75% by 2010
   
   x. Establish an integrated system of surveillance, national health accounts and health statistics by 2005
   
   xi. Increase health expenditure by Govt. as a % of GDP from existing 0.9% to 2% by 2010
   
   xii. Increase share of central grants to constitute at least 25% of total health spending by 2010
   
   xiii. Increase the state sector health spending from 5.5% to 7% of the budget by 2005
   
   xiv. Further increase the state sector health spending to 8% of the budget by 2010

### 2005 Highlights

#### National Rural Health Mission

1. Key Components:
   
   i. Provision of a female health activist in each village
   
   ii. Formulation of a village health plan through a local team headed by the health and sanitation committee of the Panchayat
   
   iii. Strengthening of rural hospitals for effective curative care, making them measurable and accountable to the community through the IPHS
   
   iv. Integration of vertical health and family welfare programmes
   
   v. Strengthening of primary healthcare through the optimal utilisation of funds, infrastructure and available manpower

2. Key Approaches:
   
   i. Communitization emphasizing community involvement
   
   ii. Flexible financing for increased monetary autonomy
   
   iii. Capacity building to empower multiple stakeholders for efficient health delivery
   
   iv. Human resource management to generate more manpower
   
   v. Equipping health personnel with adequate multiple skills
3. Core Strategies:
   i. Train and enhance the capacity of Panchayati Raj institutions to own, control and manage public health services
   ii. Promote access to improved healthcare at household level through the village-level worker (Accredited Social Health Activist)
   iii. Health plan for each village through the village health committee of the Panchayat
   iv. Strengthening sub-centre through better human resource development, clear quality standards, better community standards, better community support and an untied fund to enable local planning and action and more Multipurpose workers
   v. Strengthening existing primary health centres through better staffing and human resource development policy, clear quality standards, better community support and an untied fund to enable the local management committee to achieve these standards
   vi. Provision of 30-50 bedded CHC per lakh population for improved curative care to a normative standard
   vii. Preparation and implementation of an inter-sector district health plan prepared by district health mission, including drinking water supply, sanitation, hygiene and nutrition
   viii. Integrating vertical health and family welfare programmes at national, state, district and block levels
   ix. Technical support to national, state and district health mission, for public health management
   x. Strengthening capacities for data collection, assessment and review for evidence base planning, monitoring and supervision
   xi. Formulation of transparent policies to deploy human resources to health
   xii. Developing capacities for preventive healthcare at all levels to promote healthy lifestyles, reduction in the consumption of tobacco and alcohol, etc.
   xiii. Promoting the non-profit sector particularly in under-served areas

4. Supplementary strategies:
   i. Regulation for private sector including the informal rural medical practitioners to ensure the availability of quality service to citizens at a reasonable cost
   ii. Promotion of public-private partnerships to achieve public health goals
   iii. Mainstream Indian system of medicine (AYUSH) to revitalize local health traditions
   iv. Reorient medical education to support rural health issues including regulation of medical care to medical ethics
   v. Effective and visible risk pooling and social health insurance to provide health security to the poor by ensuring accessible, affordable, accountable and good quality hospital care
## Annexure IV: Patient Perception Of Quality Of Service Delivery Offered At PHFs (Public Health Facilities - SHCs, PHCs And CHCs)

<p>| Have you come here for a medical problem before and not received treatment? | No, % of Total | Yes, % of total (If so, why? See columns to right - % of total who mention specific reason/s) | Staff absent | Centre shut | No medicines | No facilities | Long wait | Other-Corruption* |
|---|---|---|---|---|---|---|---|---|---|
| Andhra Pradesh (76) | 67.10% | 32% | 22.40% | 5.30% | 11.80% | 2.60% | 10.50% | 1.30% |
| Uttar Pradesh (114) | 57% | 43% | 37.70% | 5.30% | 26.30% | 1.80% | 17.50% | 6.10% |
| Bihar (136) | 39% | 61% | 49.30% | 0.70% | 55.90% | 1.50% | 24.30% | 8.80% |
| Rajasthan (57) | 64.90% | 35.10% | 26.30% | 1.80% | 35.10% | 0% | 0% | 3.50% |</p>
<table>
<thead>
<tr>
<th>Are you satisfied with your visit today?</th>
<th>No, % of total (if so, why? See columns to right- % of total who mention specific reason/s for dissatisfaction)</th>
<th>Staff absent</th>
<th>Centre shut</th>
<th>No medicines</th>
<th>No facilities</th>
<th>Long wait</th>
<th>Other-Pay for Diagnostics / Post Natal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Andhra Pradesh (76)</td>
<td>25%</td>
<td>5.30%</td>
<td>0%</td>
<td>11.80%</td>
<td>1.30%</td>
<td>14.50%</td>
<td>2.60%</td>
</tr>
<tr>
<td>Uttar Pradesh (114)</td>
<td>50.90%</td>
<td>26.30%</td>
<td>0%</td>
<td>43%</td>
<td>3.50%</td>
<td>9.60%</td>
<td>0.90%</td>
</tr>
<tr>
<td>Bihar (136)</td>
<td>77.20%</td>
<td>24.30%</td>
<td>0%</td>
<td>74.30%</td>
<td>4.40%</td>
<td>35.30%</td>
<td>0.70%</td>
</tr>
<tr>
<td>Rajasthan (57)</td>
<td>61.40%</td>
<td>12.30%</td>
<td>0%</td>
<td>57.90%</td>
<td>7.00%</td>
<td>1.80%</td>
<td>1.80%</td>
</tr>
</tbody>
</table>
Are you satisfied with your visit today?

<table>
<thead>
<tr>
<th>Are you satisfied with your visit today?</th>
<th>Yes, % of total (if so, why? See columns to right- % of total who mention specific reason/s for satisfaction)</th>
<th>Staff present</th>
<th>Centre timings good / 24 hours</th>
<th>Free medicines</th>
<th>Good facilities</th>
<th>No wait</th>
<th>Other-Delivery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Andhra Pradesh (76)</td>
<td>75%</td>
<td>23.70%</td>
<td>0%</td>
<td>71.10%</td>
<td>11.80%</td>
<td>3.90%</td>
<td>0%</td>
</tr>
<tr>
<td>Uttar Pradesh (114)</td>
<td>49.10%</td>
<td>14.90%</td>
<td>2.60%</td>
<td>18.40%</td>
<td>5.30%</td>
<td>0.90%</td>
<td>13.20%</td>
</tr>
<tr>
<td>Bihar (136)</td>
<td>22.80%</td>
<td>0%</td>
<td>0%</td>
<td>10.30%</td>
<td>0%</td>
<td>0.70%</td>
<td>13.20%</td>
</tr>
<tr>
<td>Rajasthan (57)</td>
<td>38.60%</td>
<td>12.30%</td>
<td>0%</td>
<td>5.30%</td>
<td>7.00%</td>
<td>10.50%</td>
<td>10.50%</td>
</tr>
</tbody>
</table>

* 'Other-Corruption' refers to reasons like staff calling patients around back of PHF to charge them for consultation and medicines.
‘Other-Pay for Diagnostics / Post Natal’ refers to having to pay for diagnostics (AP) and demand for ‘diet’ i.e. food and longer time in centre post-delivery (UP, Bihar, Rajasthan).
‘Other-Delivery’ refers to good for institutional delivery.
## Annexure V: Vulnerability Index Calculator: A Sample Tool

### Vulnerability Scoring of PHCs and CHCs

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Vulnerability - Zero</th>
<th>Minimal Vulnerability</th>
<th>Moderate Vulnerability</th>
<th>High Vulnerability</th>
<th>Extremely Vulnerable</th>
<th>Max Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Distance from Block Hqrs.</td>
<td>&gt; 1</td>
<td>1 to 10 Km</td>
<td>10 to 20 Km</td>
<td>20 to 30 Km</td>
<td>&gt; 30 Km</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>2 Distance - PHC/CHC to High Way/ MDR</td>
<td>On Road</td>
<td>Upto 2 Km</td>
<td>2 to 5 Km</td>
<td>5 to 10 Km</td>
<td>&gt;10 Km</td>
<td>3</td>
</tr>
<tr>
<td>PHC/CHC to High Way/ MDR (Public Transport)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>3 Connectivity to FRU/Hospital</td>
<td>All weather connectivity all 12 months</td>
<td>Connected but occasionally disconnected</td>
<td>Not connected &lt; 3 months</td>
<td>Unconnected &gt;3 to &lt;6 months</td>
<td>Unconnected with Black Top Road</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>4 Availability of Transport</td>
<td>Bus Transport Available 2 or more / day</td>
<td>Public Buses Available 1 / day</td>
<td>No Buses, Other Public transport available</td>
<td>Can Access with private transport</td>
<td>No Accessibility by transport</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>5 Availability of Govt. Housing and Others</td>
<td>Very Good Condition</td>
<td>Good Condition</td>
<td>Average condition</td>
<td>Very poor condition</td>
<td>Not Available</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>6 Availability of Rented Housing and Others</td>
<td>Not required</td>
<td>Easily Available</td>
<td>Can be Located</td>
<td>Difficult to find</td>
<td>Not Available</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>SHCs of PHC Not Connected by Black top Road (%)</td>
<td>Zero</td>
<td>0 to 20</td>
<td>20 to 40</td>
<td>40 to 60</td>
<td>&gt;60</td>
</tr>
<tr>
<td>---</td>
<td>-----------------------------------------------</td>
<td>------</td>
<td>---------</td>
<td>----------</td>
<td>----------</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>8</td>
<td>SHCs Not Connected by all weather roads</td>
<td>Zero</td>
<td>0 to 20 (%)</td>
<td>20 to 40 (%)</td>
<td>40 to 60 (%)</td>
<td>&gt;60 (%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>9</td>
<td>Average Population per village</td>
<td>&gt; 750</td>
<td>500 to 750</td>
<td>250 to 500</td>
<td>100 to 250</td>
<td>&lt; 100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>10</td>
<td>Farthest SHC served by PHC/CHC</td>
<td>&lt; 2 Km</td>
<td>2-5 km</td>
<td>5-8 km</td>
<td>8-10 km</td>
<td>&gt; 10 km</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>11</td>
<td>Conflict affected areas</td>
<td>a. Law and Order assessment by District Administration</td>
<td>No Risk</td>
<td>Less Risk</td>
<td>Moderate Risk</td>
<td>High Risk</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b. Perception of Medical Staff</td>
<td>No Risk</td>
<td>Less Risk</td>
<td>Moderate Risk</td>
<td>High Risk</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>12</td>
<td>Tribal Blocks</td>
<td>Plain Area</td>
<td>Agency (notified forest)</td>
<td>25% villages under LWE</td>
<td>26-50% villages under LWE</td>
<td>&gt;75% villages under LWE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>10</td>
<td>50</td>
</tr>
</tbody>
</table>

Source: HLEG Secretariat
### Annexure VI: Illustrative PPP Options In Indian Healthcare Service Delivery

| Primary healthcare level | Management of block level hospitals.  
Example: In Odisha, PHCs have been successfully contracted out. | • Government could handover management of primary healthcare centres (30 bedded block level hospitals and primary healthcare centres providing out-patient and day care services) to private/NGO partners under lease agreements (with or without government staff).  
• Government could provide financial assistance (partial) for upgradation /equipping through channeling grant assistance from multiple donors and negotiate fee agreements with private partners for various services provided to the poor by the healthcare services provided by the centre to a declared list of poor residents in the catchment area of the health centre. |
| Diagnostic Centres  
Examples: The government of Uttar Pradesh is using a private partner to provide round-the-clock laboratory tests at a government hospital | • Government could partner with private players to set up and operate a network of diagnostic centres in a state (hub and spoke model) covering their hospital with appropriate range of diagnostic services on a fee for service basis and profit sharing agreements.  
• Poor can be protected by government agreeing to pay on their behalf.  
• Space can be given to the diagnostic services within the hospitals or these centres can be set-up in the hospital campus or adjoining areas. These agreements would need to be for an appropriate length of time (10-30 years) with suitable exit clauses. |
| Partner with government to provide emergency transportation and trauma care service networks  
Example: EMRI 108 services are functional in state like Gujarat, Rajasthan, MP | • Private players could partner with government to provide emergency transportation and trauma care service networks in States including 24-hour toll free helpline and ambulance and trauma care mobile team attached with emergency wards in private and public hospitals.  
• The partnership can extend to management of emergency wards in public hospitals to provide seamless trauma response and care services.  
• Government could provide start-up financial assistance through funding of infrastructure with private sector partner having the responsibility to maintain and upgrade the infrastructure through user fees agreed with government and possibly having a variable fee structure to cover the poor.  
• Government in this case too could pay for the services on behalf of the poor to keep the service financially healthy. |
| Operate a network of fair price pharmacies | • Private pharmaceutical manufacturers/distributors could partner with government to set-up and operate a network of fair price pharmacies for generic drugs (essential drugs lists) operated from within/outside the public hospital facilities.  
• Prices of drugs and supplies to be agreed by both partners and the agreements run on profit sharing basis.  
• Government could invest in the infrastructure such as warehouse and space for the pharmacies and hand them over to private partners to manage, maintain and operate under lease agreements. |
| Market contraceptives and maternal and child drugs and supplies | • Private distribution and rural marketing companies could partner with the government to related market contraceptives and maternal and child drugs and supplies at agreed prices.  
• Government could part fund the promotion/distribution related costs with the rest including profits recovered through sales. |
| Secondary and tertiary levels |  
| Outsource specialized procedures and services | • Private sector partners/hospitals under agreement specifying service package, quality standards and costs (Diagnosis Related Groups - DRG Models of Australia and Germany)  
• Support services such as diagnostic services could be outsourced to specialized providers meeting quality standards.  
• Government could partner with private hospitals to provide medical services patients and reserve/guarantee a certain number of patients/beds per day/month under fixed/variable price agreements. |
| Upgrade public-private partnerships | • PPPs to upgrade/establish and operate specialised treatment services/wards and facilities (including diagnostic services) within public hospitals on profit sharing basis.  
• The services fees to be negotiated annually and a variable fee structure could apply to cover the poor.  
• Service packages to be agreed with specifications of quality standards and related fees.  
• PPPs on profit sharing basis |
| Government support to private sector | • Government could financially support private sector partners to set-up hospitals (UK Model) and participate in the management board of the hospital to protect the interest of the poor. The private partner may have lease rights for a certain period of time (30 years to perpetual depending on the level of financial participation and investment by both partners). |
| Investment | • Government could invest in land and building of a new hospital and private partners could bring in the equipment and be given the exclusive management role with government participating in the governing board.  
  • The partnership can be in the form of a joint venture or a management consortium with voting rights of both partners protected.  
  • Government could participate in fixing fees for various medical services provided to the poor and could even pay the joint venture a fixed price per poor patient treated in such hospitals. |
| Hospital management | • Government could hand over the management of an existing public hospital (with or without government staff) to a well-established private partner under a partnership agreement with the responsibility of investing in the hospital for its-up gradation/expansion and management.  
  • Government could be an active partner in the governing board with day-to-day executive function in the hands of the private partner. Interest of poor could be protected through fees fixation and government picking up the bill on behalf of the poor. |

### Annexure VII: Criteria For Health Vulnerability Assessment In Slums

<table>
<thead>
<tr>
<th>SLUM STATUS</th>
<th>Extremely vulnerable slums</th>
<th>Moderately vulnerable slums</th>
<th>Less vulnerable slums</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unauthorized settlement i.e. slums not recognized (situated along roadside, on private land)</td>
<td>Land belongs to local authorities and possibility of sanction/leased land</td>
<td>Own land or authorized quarters or a registered slum</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HOUSING</th>
<th>Extremely vulnerable slums</th>
<th>Moderately vulnerable slums</th>
<th>Less vulnerable slums</th>
</tr>
</thead>
<tbody>
<tr>
<td>House is Kuchcha (made with mud, thatch, or other low quality materials) with weak structure; high density in the area; no separate place for cooking; minimal ventilation</td>
<td>Semi-pucca (made with partly low quality and partly high quality material); relatively better than the earlier category</td>
<td>Permanent structure, ventilation present; separate space/veranda for cooking</td>
<td></td>
</tr>
</tbody>
</table>

### BASIC SERVICES

<table>
<thead>
<tr>
<th></th>
<th>Extremely vulnerable slums</th>
<th>Moderately vulnerable slums</th>
<th>Less vulnerable slums</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toilet</td>
<td>No toilets and defecation in the open by adults and children</td>
<td>Bathing in the open, use of common toilets for defecation; children’s use of toilets is low</td>
<td>Majority have bathing and toilet facilities within their homes</td>
</tr>
<tr>
<td>Water</td>
<td>No water supply in the slum. People travel far for water</td>
<td>Number of public water taps disproportionate to the need in the slum and irregular water supply</td>
<td>Many public taps with supply of water at regular intervals</td>
</tr>
<tr>
<td>Drainage</td>
<td>No drains, or drains are clogged, un-cemented roads</td>
<td>Open drains, narrow but cemented lanes</td>
<td>Majority of the slum areas have underground drains and paved roads (cemented)</td>
</tr>
<tr>
<td>Electricity</td>
<td>No electricity or tapped illegally</td>
<td>Pay to the landlord for point wise or otherwise</td>
<td>Metered individual electricity connections</td>
</tr>
</tbody>
</table>

### EMPLOYMENT PATTERN

<table>
<thead>
<tr>
<th></th>
<th>Extremely vulnerable slums</th>
<th>Moderately vulnerable slums</th>
<th>Less vulnerable slums</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pattern</td>
<td>Amount below INR1,000 per family per month; daily wage earner with irregular pattern</td>
<td>INR1,000-2,000 earning per household; daily wage but regular self Employment</td>
<td>&gt;INR 2,000 earning per house- hold; majority service class</td>
</tr>
<tr>
<td>Occupation hazard</td>
<td>Majority are in hazardous work, such as ragpicking, sex work, garbage recycling</td>
<td>Vendors, semi, and unskilled laborers engaged in odd jobs</td>
<td>Private or government job holders, petty traders, shopkeepers, etc.</td>
</tr>
</tbody>
</table>
### STATUS OF HEALTH AND HEALTH SERVICES

<table>
<thead>
<tr>
<th>Morbidity</th>
<th>High incidence of illnesses, malnutrition, and mortality among children</th>
<th>Better conditions than previous category</th>
<th>Lesser morbidity and mortality among children</th>
</tr>
</thead>
<tbody>
<tr>
<td>Services</td>
<td>Extremely low immunization among children; home deliveries by untrained dais</td>
<td>Irregular immunization; majority of deliveries are institutional</td>
<td>Complete immunization; all deliveries are institutional</td>
</tr>
<tr>
<td>Health facility</td>
<td>No public health facility within 2-3 km; visit faith healers, store keepers, and quacks for treatment</td>
<td>Visit quacks and qualified doctors; government facility used only for prolonged illnesses</td>
<td>Visit qualified doctors for all ailments; dispensary or government facility nearby</td>
</tr>
</tbody>
</table>

### DEVELOPMENTAL SUPPORT

| Government NGO/CBO | No government or non-government programmes; limited community-based efforts | ICDS and other programmes present but function irregularly; NGO/CBO activities sporadic | Relatively better supported by government and NGO efforts |

### EDUCATION

<table>
<thead>
<tr>
<th>Children and adults</th>
<th>Majority of children work and are not enrolled in schools; illiteracy among Adult</th>
<th>Children enrolled in schools but dropout rates are high; adults have functional literacy</th>
<th>All children are enrolled in school, absence of child labour; all adults have primary education</th>
</tr>
</thead>
<tbody>
<tr>
<td>GENDER STATUS</td>
<td>Low gender status (seen in high incidence of domestic violence, limited choices over fertility)</td>
<td>Seen as improvement over the extremely vulnerable category</td>
<td>Equitable gender status (seen in improvement over earlier category)</td>
</tr>
<tr>
<td>IDENTITY PROOF</td>
<td>Majority do not have any documents (ration cards, voter ID, caste certificate)</td>
<td>Some have ration cards voter ID, caste certificate</td>
<td>Majority have requisite papers</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Package</th>
<th>Reproductive Health and Sexual Health</th>
<th>Child and Adolescent Health</th>
<th>Family Planning</th>
<th>Disease Control Programs</th>
<th>General and Dental Health</th>
<th>Diabetes</th>
<th>Mental Health</th>
<th>CVD</th>
<th>Chest/Respiratory</th>
<th>Cancer</th>
<th>Neurology</th>
<th>Clinical Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1</td>
<td>Antenatal care (home visits, screening, health education and counseling)</td>
<td>Home-based Newborn Care, Early and Exclusive Breastfeeding</td>
<td>Information, Education and Communication (EC)</td>
<td>Health education, Sanitation, Malaria prevention and treatment</td>
<td>Health education, Self-reporting/Care detection</td>
<td>Education, Diabetes Mellitus</td>
<td>Mental Health Counseling</td>
<td>Hypertension treatment</td>
<td>Acute Respiratory Tract Infections and Pneumonias</td>
<td>Health education</td>
<td>Health education and counseling</td>
<td></td>
</tr>
<tr>
<td>Level 2</td>
<td>Urine test, Blood test</td>
<td>Postnatal care, immunization</td>
<td>Emergency Contraceptives</td>
<td>Blindness</td>
<td>School health</td>
<td>ATEN</td>
<td></td>
<td>Treatment of congestive Heart Failure</td>
<td>Chronic Obstructive Pulmonary Disease, Asthma</td>
<td></td>
<td>Early detection and referral</td>
<td></td>
</tr>
<tr>
<td>Level 3</td>
<td>Normal delivery, Post-delivery care</td>
<td>Acute Respiratory Infection (ARI), Diarrhoea Management</td>
<td>Family Planning package including services from Level 1 to 3</td>
<td>Blindness</td>
<td>School health</td>
<td>ATEN</td>
<td></td>
<td>Non-invasive management of Myocardial Infarction</td>
<td>Respiratory conditions requiring hospitalization</td>
<td></td>
<td>Early detection and referral</td>
<td></td>
</tr>
<tr>
<td>Level 4</td>
<td>Management of early pregnancy</td>
<td>Acute Respiratory Infection (ARI), Diarrhoea Management</td>
<td>Reproduction and complicate pregnancies, neonatal complications</td>
<td>Blindness</td>
<td>School health</td>
<td>ATEN</td>
<td></td>
<td>Intensive care</td>
<td>Respiratory conditions requiring intensive care</td>
<td></td>
<td>Early detection and referral</td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**
- **ATEN:** ATEN is an acronym that stands for various abbreviations related to health education and awareness campaigns.
- **ARI:** Acute Respiratory Infection.
- **Diarrhoea:** Diarrhoea management.
- **Blindness:** Blindness due to refractive error and low vision.
- **School health:** Includes school health, prevention of common mental disorders, and education.
- **CVD:** Cardiovascular Disease.
- **Chest/Respiratory:** Chronic Obstructive Pulmonary Disease, Asthma.
- **Clinical Services:** Neurology (medicines, diagnostic).
- **Neurology:** Early detection and referral.
- **Mental Health:** Mental health counseling.
- **Mental Health Counseling:** Detection of common mental disorders, psectic syndromes.
- **Cancer:** Cancer detection (lab samples, breast and cervix examination).
- **Medical:** Medical management of rheumatic heart disease.
- **Intensive care:** Intensive management of Myocardial Infarction.
- **Respiratory conditions requiring intensive care:** Respiratory conditions requiring intensive care.
- **Cancer:** Cancer, radiation therapy.
- **Palliative care:** Palliative care.
- **CVD:** Cardiovascular Disease.
- **Clinical Services:** Neurology (medicines, diagnostic).
- **Neurology:** Early detection and referral.
- **Mental Health:** Mental health counseling.
- **Mental Health Counseling:** Detection of common mental disorders, psectic syndromes.
- **Cancer:** Cancer detection (lab samples, breast and cervix examination).
- **Medical:** Medical management of rheumatic heart disease.
- **Intensive care:** Intensive management of Myocardial Infarction.
- **Respiratory conditions requiring intensive care:** Respiratory conditions requiring intensive care.
- **Cancer:** Cancer, radiation therapy.
- **Palliative care:** Palliative care.