

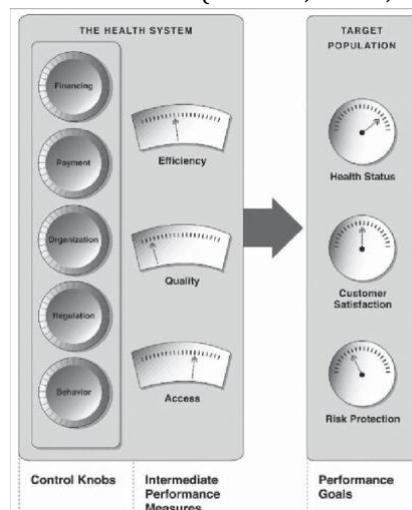
# Status of Health Systems in India at National and Subnational Levels

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## 1. Introduction

Health Systems can be characterised using different frameworks. A commonly used one is the ‘Control Knobs’ (figure 1) framework in which ‘Control Knobs’ which include financing, payment systems, organisation, regulation, and behaviour, can be ‘dialed’ up or down to generate outcomes. These outcomes can be measured using three intermediate indicators of: (i) efficiency, in terms of producing the *right collection of goods and services* to meet the larger health care goals at *minimum costs*; (ii) quality, determined by the *quantity* of care provided, *availability* of necessary inputs (skilled caregivers, appropriate equipment and supplies), and the *state* of the service provided (convenient facilities and respectful caregivers); and (iii) access, both physical and effective. These intermediate indicators determine three performance indicators of: (i) health status of the population; (ii) customer satisfaction; and (iii) financial risk protection, helping people avoid large and unpredictable costs associated with a serious illness. Tuning relevant control knobs, then, determines aspects of health system performance. ‘Financing’, for instance looks at the mechanisms to raise money (e.g. taxes, insurance) thus determining what resources are available. This knob controls the design of the institutions for raising money as well as the allocation of resources to different priorities. ‘Payment systems’ lays down the methods for transferring this money to health care providers (e.g. fees, budgets). These methods create incentives for providers and thus influence their behaviour. ‘Organisation’ determines the kind of provider organisations that exist, their roles and responsibilities and their internal structures. ‘Regulation’ places controls on the behaviour of actors by laying out the rules and ensuring they work as intended. ‘Behaviour’ includes efforts to influence how individuals, both providers and consumers, respond to the health sector.

Figure 1: *Control Knobs Framework (Roberts, Hsiao, Berman & Reich, 2004)*



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In this document we use the framework outlined above to firstly, look at how states in India do on intermediate and performance indicators with the help of some recent evidence. Secondly, we examine the performance of the Indian health system using one of the control knobs, namely, financing. Finally, we explore broad pathways to reform health care financing in India.

## 2. Intermediate measures and Performance goals: Some evidence

### 2.1. Assessing health outcomes in women's health

C-Section rates are helpful proxies for emergency care abilities of a region. The data on C-Section rates in India help us understand the intermediate measure of *efficiency* and the performance goal of *health status*. As can be seen from the map in figure 2 there is a very wide variation in the rates of C-Section by states. States in the north and the east show very low rates, less than the WHO benchmark of 10%. These low rates point towards limited access to critical surgical care in these states, resulting in high rates of morbidity and mortality, and with it a loss in health status. At the other end of the spectrum, we have states in the south and west showing very high rates, with some districts showing rates as high as 80% (Karimnagar, Telangana). The high C-Section rates in these states, then, represent loss of efficiency on a system-wide basis as scarce resources are being deployed at best, with little gain and at worst, with a potential for loss of life with increased maternal mortality at very high C-Section rates (Figure 3).

Figure 2: 2016 C-Section Rates by District (Guilmoto & Dumont, 2019)

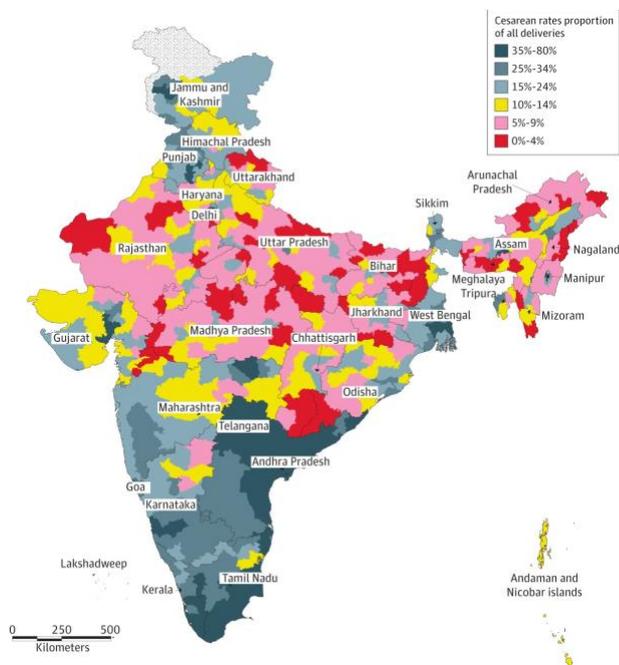
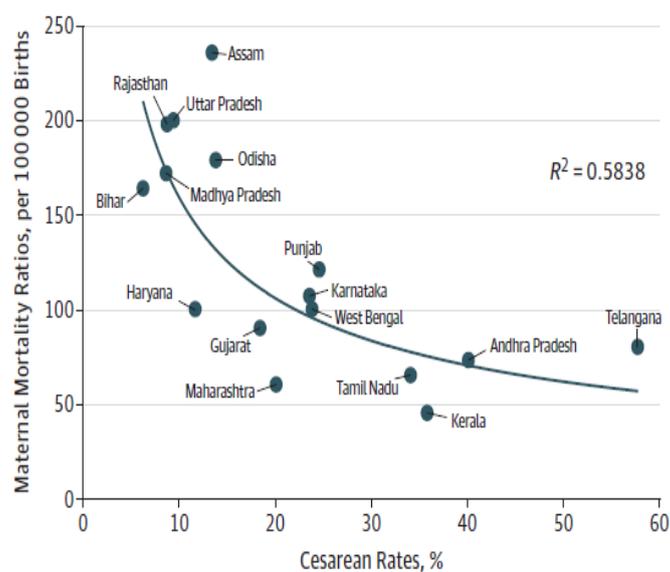


Figure 3: 2016 C-Section Rates & MMR (Guilmoto & Dumont, 2019)



<sup>3</sup> While significant reform would require the 'tuning' of more than one control knob, in the interest of a more focused discussion we concentrate on financing.

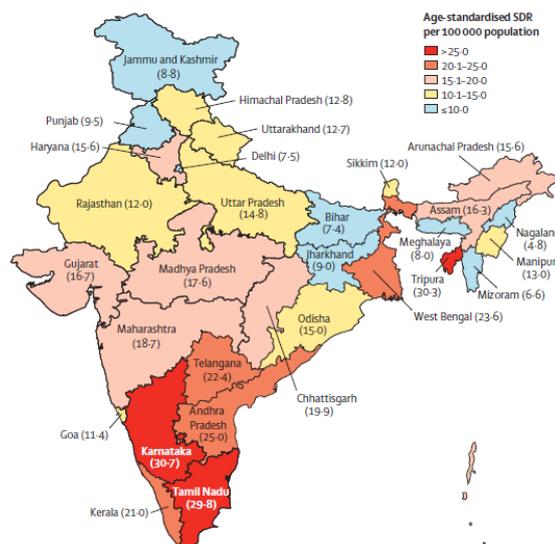
A study conducted in Uttar Pradesh to evaluate the usefulness of WHO Safe Childbirth checklist in maternal health outcomes, illustrates the failure to meet the intermediate indicator of *quality* and performance goal of *health status*. The study found the quality of care in health centres to be too poor for the use of such a checklist to make any difference. Poor baseline quality of health care at the facilities evidenced by the lack of skilled human resources, inadequate capacity to carry out lifesaving interventions including C-Sections, and poor hygiene, did little to reduce the high maternal and perinatal mortality prevalent (Goldenberg and McClure, 2017).

Even when health systems meet clinical quality, effective access to the same may be questionable. Studies pointing towards the systematic abuse and disrespect of women during childbirth is an example of questionable performance in the intermediate measure of *access* and performance goal of *customer satisfaction*. The abuse faced by women includes disrespecting their cultural beliefs (Legare et al, 2020), talking down to them, use of physical force and violence, coercion to use birth-control, devaluation and penalisation of their experience of pain, among others (Madhiwalla et al., 2018). These experiences of poor service, then, impede women’s effective access to maternal health care. The absence of access and service that characterizes this care-process reduces satisfaction with the health system.

## 2.2. Suicide death rates

In 2016, India had 18% of the global population but accounted for 37% of the global suicide deaths among women and 24% among men. In fact, in the age group of 15-39 years, suicide ranks first as the cause of death in India. The disproportionately high suicide rates in India with its varying vulnerabilities are a public health crisis affecting the performance goal of *health status*. As can be seen in figure 4, Suicide Death Rates (SDR) varied across states with suicide accounting for a higher proportion of deaths in the southern states. India also showed a gender-wise variation with SDR for women being nearly three times higher as compared to the rate expected globally for similar geographies. Differences in socially acceptable methods of dealing with stress and conflict for women and men, domestic violence, poverty, differences in care-seeking rates for mental disorders between women and men are some of the reasons identified for causing this gender differential.

Figure 4: 2016 State level Suicide death rate (Dandona et al., 2018)





increased from 28 million to 55 million over a 26-year period. DALY rates owing to chronic obstructive lung disease were highest in the relatively less developed states in India with a four-fold variation across states (figure 7).

The rising non-communicable diseases represent some of the world's largest health losses, with India accounting for 32% of the global DALYs from chronic respiratory diseases and 23% from ischemic heart disease.

Figure 6: 2016 DALY rates of ischemic heart disease

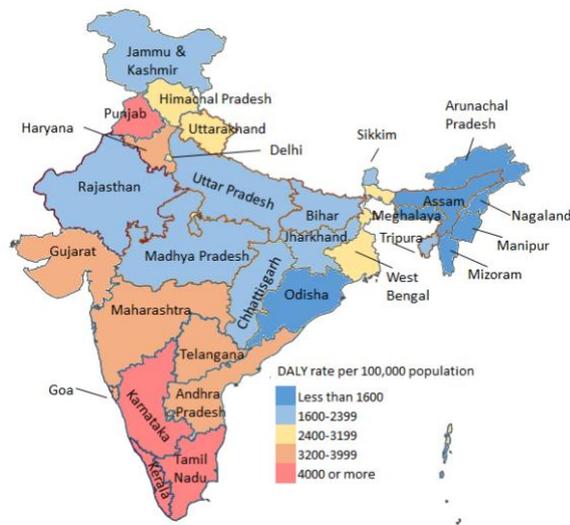
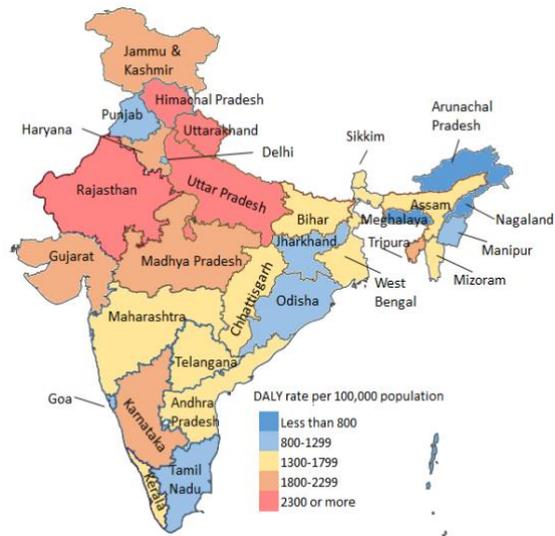


Figure 7: 2016 DALY rates of chronic obstructive pulmonary disease



(Dandona et al., 2017)

### 3. Financing

Significant reform in health care would require the use of more than one control knob. In the interest of a more focused discussion, this document will focus on only one knob: financing. Financing determines how much money is available in the system, how this money is raised, who controls funds and how risks are pooled. Each of these functions have a critical role in deciding the performance of a health system. *Tuning* this knob helps determine who has access to health and thus has an explicit influence on the health status of the population. Financing also decides who is protected against the risk of impoverishment from medical expenses. It additionally influences the availability and quality of health care services, in turn, determining citizen satisfaction with the health system.

#### 3.1. How does India finance its health care?

India's total healthcare spending is at 3.6% of the GDP (Mehra, 2020) of which out-of-pocket (OOP) expenditures paid by households form the largest share. As per a recent NITI Aayog report, nearly 64% of India's current healthcare spending is funded through OOP. Whatever limited risk pooling India does have in the form of fiscal funding, voluntary commercial insurance contributions and mandatory social insurance contributions, is highly fragmented across multiple commercial, social, union-sponsored and state level risk pooling schemes (figure 8).

As can be seen in Table 1, the per capita total spending by states on health is well under PPP\$400<sup>4</sup>. There also exist massive differences in health spending between states, with Bihar spending less than 3 times what Kerala does. The share of OOP expenditure is 50% or higher in almost all states, with pooling being as low as 20% in some states.

Figure 8: Total Health Spending in India (Kumar, 2019)

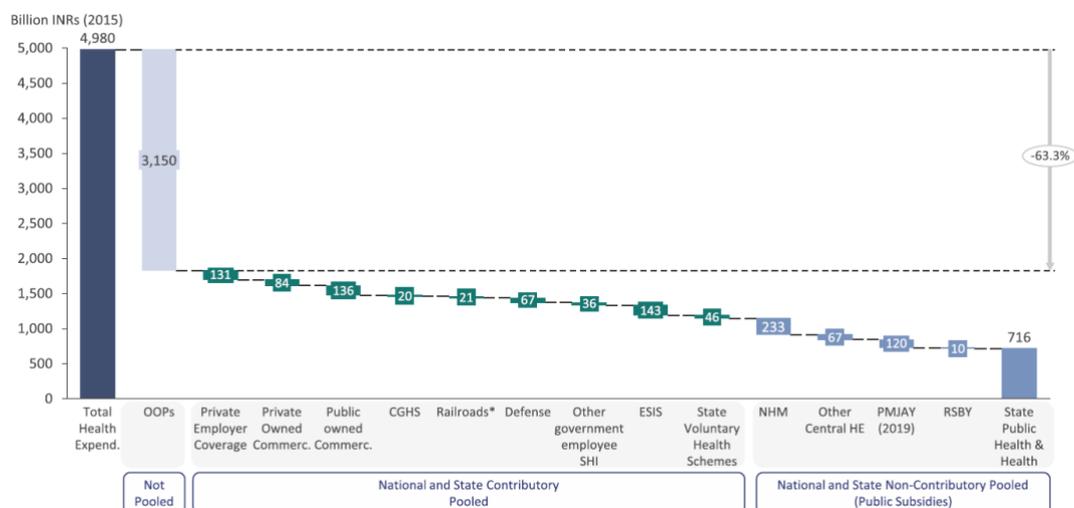


Table 1: Total health and out of pocket expenditures (per capita) across states

State	THE	OOP %	Population
Bihar	120	79.9	10,81,00,000
Jharkhand	122	66.3	3,57,00,000
Assam	129	55.1	3,39,00,000
Madhya Pradesh	145	70.1	7,79,00,000
Uttar Pradesh	174	56.4	21,84,00,000
Rajasthan	174	76.5	7,47,90,000
Gujarat	180	50.4	6,61,00,000
Chhattisgarh	182	58.4	2,82,00,000
Odisha	203	71.5	4,49,00,000
Jammu and Kashmir	206	56.0	1,39,00,000
Uttarakhand	211	61.2	1,02,80,000
Haryana	220	59.5	2,76,00,000
Andhra Pradesh	224	74.7	5,25,00,000
Tamil Nadu	234	65.2	7,78,00,000
Maharashtra	255	58.9	11,96,00,000
Himachal Pradesh	266	49.5	75,00,000
Karnataka	266	49.6	6,60,00,000
Telangana	284	57.9	3,86,00,000
Punjab	302	77.4	2,96,00,000
Kerala	386	71.3	3,66,00,000

Currently India has a DALY rate of more than 35,000. At DALY rates of 23,965 and 29,601 India's neighbouring countries Sri Lanka and Bangladesh seem to be doing a much better job. It is, then, important

<sup>4</sup> This uses Rs.18.55 per US\$ as the PPP exchange rate (IMF, 2019)

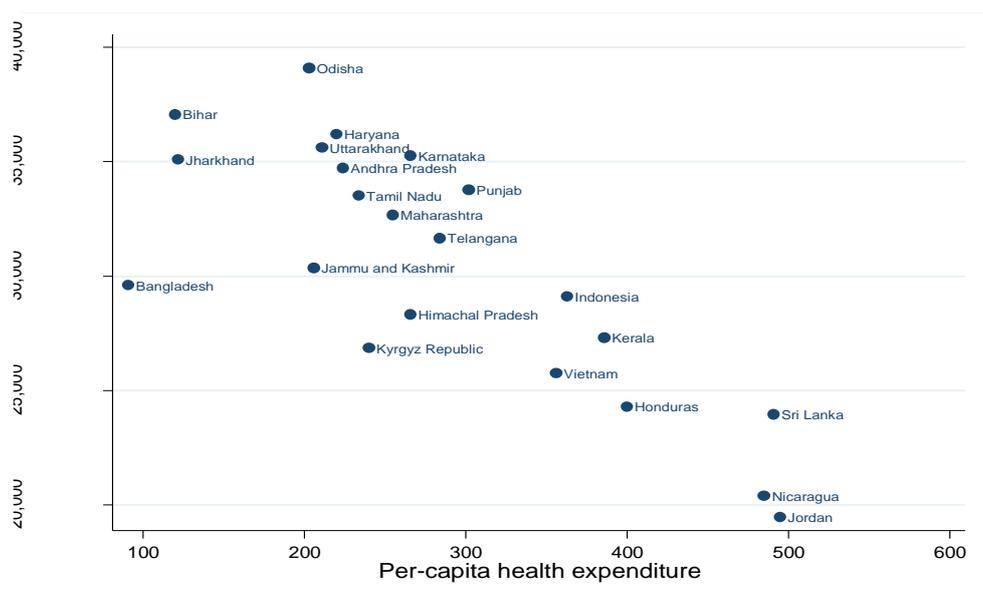
to decode the nuances of health spending to understand how India can tune the ‘financing’ knob to improve performance.

### 3.2. Impact of health spending on outcomes

There is a generally accepted view that levels of total health expenditure in a country lead to better health outcomes. The negative relationship between DALY and total health expenditure as seen in figure 9, confirms this.

There are, however, several countries that spend amounts comparable to Indian states, including Honduras, Vietnam, Indonesia and the Krygyz Republic, that have outperformed most Indian states. States such as Bihar and Chhattisgarh spend a much smaller amount per capita on healthcare compared to Telangana, Punjab, and Kerala, but there are countries such as Bangladesh which spend even less and exhibit better performance than each and every one of these states. Efficient utilization of limited resources raised, be it through effective pooling mechanisms (e.g. Jordan), stronger provision of public-health public-goods (e.g. Krgyz Republic), emphasis on primary care (e.g. Nicaragua) or catalytic role of government systems (e.g. Kerala), can help achieve better health outcomes even at low spending.

Figure 9: Total health expenditure and DALY rates



### **Box 1: High performance at low expenditure: The case of Bangladesh**

Even at a per-capita health expenditure of less than PPP\$91, Bangladesh has an impressive DALY rate of 29601. At the base of its success is the pluralistic health system with many stakeholders including government and non-government organizations (NGO), focusing on health programmes that are nationally targeted, equity oriented and women centric, such as immunisation, oral rehydration therapy, maternal and child health, vitamin A supplementation, and others. One of its most effective strategies include the widespread deployment of community health workers, most of who are women, to bring high-priority services to every household. NGOs and the government successfully collaborate to scale up innovative inventions. The DOTS (Directly Observed Treatment, Short-course) programme for tuberculosis in which the government joined NGOs for a nationwide implementation is an example of this. Bangladesh's consistent prioritization of public health interventions has successfully generated impressive health outputs (Chowdhury et al, 2013).

### **3.3. Role of pooling in health performance**

By distributing risks, pooling brings predictability to large unpredictable individual risks. Large unfragmented pools enable greater financial protection and equity in the distribution of goods and services from a given level of resources (Kutzin, 2013). With pooling mechanisms contributing less than 40% to health expenditures, Indian healthcare can be considered market dominant, i.e., a large number of individuals buying healthcare from a large number of providers and paying out-of-pocket at the point of purchase. The only exceptions to this are the states of Himachal Pradesh and Karnataka where pooling contributes almost 50%. Not only is pooling low in India, the limited pooling we have is also very fragmented as seen in figure 8.

## **4. Reform pathways in Financing**

It is clear that there are a number of areas in which Indian health systems can improve even in the best performing states. The following paragraphs discuss some of these areas.

### **4.1. Increase total health expenditure**

As we saw earlier, not only is the per-capita spending by states on health care low, it varies a great deal between states. While an increase in health spending can potentially improve health outcomes, this is not easy and may require an external thrust in the form of accelerated economic growth. There are other questions that need to be addressed to understand the dynamics at play here: If an amount of PPP\$2,000 is considered "reasonable" then growing annually in real terms at 10% Kerala will take it over 17 years (i.e., by 2037) with Bihar needing 30 years (i.e., up to 2050) to get to this number.

These growth rates may not be feasible for India to sustain but it is important to note that there are numerous examples of countries that had DALY rates lower than or comparable to that of Indian states even with similar or lower per-capita spending. In the context of health therefore it may be more useful to explore these cases further to understand how these countries were able to accomplish this and to learn from them (Mor, 2019).

## 4.2. Increase share of pooled expenditure

In addition to low total expenditure, health financing in Indian states is also characterized by low pooling as we saw in table 1. Countries around the world with pooling as a dominant financing mechanism have made significant progress on health outcomes at all levels of income, and several have chosen to significantly increase the level of pooling over the last 20 years (Mor, 2019). Indian states with their market dominant financing have struggled to make similar progress. The challenges of information asymmetry and uncertainty in healthcare are such that perfectly competitive market structures have tended to yield very poor outcomes even from an efficiency / pareto-optimality perspective leave alone social-optimality (Arrow, 1963). Healthcare also suffers from the feature that there is a high degree of uncertainty associated with the quantum and timing of timing of healthcare expenditures. Pooling allows individuals to pay fixed amounts each year either through their taxes, their salaries, or on a voluntary basis when they purchase commercial insurance, and to both insulate themselves from expenditure shocks and to, in a manner of speaking, “appoint” the pooling agency which can be the government, a statutory corporation like the Employees’ State Insurance Corporation (ESIC), or a commercial insurance company, to act as an “expert purchasing agent” on their behalf. While India has a number of challenges such as a low tax-to-GDP ratio and a high level of informal employment it is possible to increase the share of pooled funds allocated to healthcare, with the most effective mechanism being the increased allocation from state budgets towards healthcare.

It is clear that increased pooling of health expenditures would be beneficial for all Indian states. However, given multiple challenges that they face, this would need a deeper political dialogue to reach a consensus on the development trajectory of each state and the role various levers of change such as agricultural subsidies, development of physical infrastructure, and social sector spending can play in each state. Perhaps more immediate reform opportunities (which may even be pre-requisites for building a political consensus supportive of increasing the level of pooling) may be to improve the effectiveness of existing pools that are already available.

## 4.3. Improve effectiveness of existing pools

There are four important pools that are operative in India (Baeza et al., 2019) (Figure 11). There are a number of challenges associated with each of these pools. Some of these are mentioned below:

Figure 11: Pools operative in India

Managed by	Funded by	Size
Ministries of Health (Central & State)	Tax	Rs. 2 trillion annually 1% of GDP
State Health Authorities (SHAs)*	Tax	Rs. 0.1 trillion annually 0.05% of GDP
Employees’ State Insurance Corporation (ESIC)	Blue collar workers	Rs. 0.15 trillion annually 0.08% of GDP
Commercial insurance companies	Consumers	Rs. 0.5 trillion annually 0.25% of GDP

\*Pradhan Mantri Jan Arogya Yojana (PMJAY)

- 4.3.1. **Ministries of Health Tax Pool:** Each state government has used these pooled funds in different ways. A detailed discussion of the performance of each state pool would be necessary to properly address this issue, but it is the case that almost all the states have chosen to under-invest in public-health (Gupta and Rani, 2004; Gupta, Shukla, et al., 2009; Gupta, Desikachari, et al., 2009; and Gupta et al., 2017) and have given preference to the provision of curative healthcare services. This under-investment in public-health has provided a weak foundation on which strong health systems cannot be built and, for a variety of reasons, the states have had a particularly poor record of even delivering the curative healthcare services that they have chosen to prioritise, with any measure of quality (Das et al., 2012; Das et al., 2018; Madhiwalla et al, 2018). Reforms to this pool are urgent and essential and will need to evolve based on the particular situation of each state and could include, among other ideas, merging the Ministry Pool with that of the State Health Authority Pool and, Thailand style, entering into long-term “Managed Care” contracts with them for the provision of a defined benefits package to a defined population; or continuing with efforts to improve the “Old Public Management” (Khaleghian and Dasgupta, 2005) tools that are currently being employed.
- 4.3.2. **State Health Authority Tax Pool:** The size of this pool is very small, representing a further fragmentation of the already small pools available with the state ministries of health, and is directed at purchasing a small number of secondary healthcare services on their behalf. Given its small size as a scheme, this pool is likely to have only a modest direct impact on the level of impoverishment associated with healthcare expenditures or on health outcomes. However, many of the tools and capabilities it is building such as the National Digital Health Mission (NDHM), have the ability to act as a powerful organizing force within the Indian healthcare landscape and could pave the way for more significant reforms such as the one discussed earlier in the context of the Ministry of Health tax pool.
- 4.3.3. **Employees’ State Insurance Corporation (ESIC) Salary Pool:** This is twice the size of the State Health Authority Pool and, along with the tax-funded pools has an important role to play in the future of Indian health systems. It also has a substantial potential to grow both by expanding its remit to all formal sector workers (not just blue-collar workers) and by participating in the increasing formalization of the Indian economy. And, unlike the Commercial Insurance and State Health Authority Pools has the ability to operate as a “Managed Care Organization” and to truly take on the responsibility of the long-term well-being of its members. However, with a pay-out ratio of under 50% it is today perhaps the worst performing insurance/pooling scheme in the World, and instead of serving its constituents, has built up a cash balance of close to Rs.1 trillion from all of its unspent balances over the years. This pool represents an essential part of any long-term health financing solution for India and is in urgent need of reform. The NDHM could play an important role here as well.
- 4.3.4. **Commercial Health Insurance Voluntary Pool:** This too is an important pool which has served to expand the quantum of pooled funds being deployed in the Indian healthcare system and is carefully regulated by the Insurance Regulatory and Development Authority of India (IRDAI). This pool also has an important longer-term role to play in the Indian health system but needs to be reformed in several important ways if it is to have the desired impact. Some of these reforms involve it taking on a larger role in measuring and controlling the quality of healthcare services that the pooled funds are paying for; substantially lowering capital barriers so that the entry of a much larger group of insurers can be enabled; and allowing healthcare providers to

launch their own “Managed Care” plans. The NDHM could play an important role here as well.

#### **4.4. Improve effectiveness of out-of-pocket expenditure**

OOP currently represents the dominant means of financing healthcare in India and are used to purchase services from over 1 million providers, over 90% of whom employ fewer than five individuals (Forgia et al., 2019), As a result Indian consumers face a nearly perfectly-competitive market (atomistic consumers transacting with atomistic suppliers) but the severe challenges of information asymmetry, uncertainty, and hyperbolicity associated with healthcare (Arrow, 1963, Mor, 2015) are such that, even though there is a measure of price discrimination associated with delivered quality (Das et al., 2018), a perfect-market environment is exactly the wrong one to deliver high quality health outcomes even in terms of efficiency (Arrow, 1963) as is amply demonstrated by the prevailing situation on C-Sections discussed earlier. While using pooled funding, ideally coming from increased tax-based allocations, to purchase and tightly regulate quality of care is perhaps the best longer-term solution, recognizing that this may, at least for now, be an infeasible pathway, there are perhaps a number of interim steps that could be taken to improve the value that consumers currently derive from their out-of-pocket expenditures including among other things, improving the supply of trained human resources at all levels; using tools such as branding to make higher quality more visible to patients; and using a number of mechanisms to improve the quality and quantum of primary care services that are being offered by the current set of primary care providers.

### **5. Conclusion**

Given the range of tools available and the fact that any mature health system will deploy a mix of these tools any reform effort will need to explore each of available tool very carefully and attempt to very clearly outline what can be done to sharpen and it and make it most effective. Focusing-in on just one of the directions (such as growing the tax pool controlled by the ministries of health) is likely to be less effective as a reform direction for India. From the above discussion the most promising immediate opportunities to lie in focussing on improving the performance of the existing pools available within India and to improve the residents derive from their out-of-pocket healthcare expenditures. Increasing overall growth rate of the Indian economy and increasing the amounts allocated towards healthcare are both important and perhaps interconnected levers but will need a far wider dialogue and emergence of greater political consensus on these issues to make happen.

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