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HEALTH SEEKING PATHWAYS IN FOUR INDIAN STATES (4IS)

EXECUTIVE SUMMARY

Findings from a Survey on Health Care Seeking for Chronic and Acute Illnesses

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NATIONAL COUNCIL OF APPLIED ECONOMIC RESEARCH (NCAER)
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Health Seeking Pathways in Four Indian States

Executive Summary

A. Introduction

The world lacks credible indicators of health system functionality that can be used at multiple levels, from comparing international performance to evaluating localised health service interventions for their health system impact. Three types of indicators are used to measure progress towards Universal Health Coverage: measures of service coverage, measures of health-related impoverishment, and measures of health security. There are large gaps in routinely collected data around measures of service coverage. For service coverage related to non-communicable diseases, proxies such as 'effectively managed blood pressure' are used, and details concerning the adequacy of service quality are missing for all types of health conditions. Measures of health-related impoverishment are more complete but remain somewhat arbitrary and under-specified in some respects. Measures of health security proved poorly predictive of resilience to the COVID-19 pandemic. The research reported here was inspired by the idea that measures of health seeking behaviour may be capable of improving the existing array of health system performance measures and may be usable for a wide range of needs for health system performance measures.

The idea of 'health expenditure transition' has been proposed recently,[1], recognising the increasing convergence of the spending profiles of middle-income countries such as India, towards those of high-income countries. These profiles are characterised with increased domestic and public spending and declining overseas development assistance, as well as increased risk-sharing and public financing and declining out-of-pocket (OOP) spending as shares of total health expenditure. While this is a description of trends, it can also be interpreted more normatively as an approach for measuring health system "development", implying that OOP spending is a measure of dysfunctionality in the health system. Two further measures associated with OOP spending have also been considered as measures of health system functioning: (i) Catastrophic Health Expenditure (CHE), which has multiple definitions, not all of which are comprehensive; and (ii) "Distress Financing", which categorises borrowing and reduced household spending as sources of health expenditure that carry inherent risks and are more likely signals of distress situations than other sources. We sought to explore these measures and the applicability of these normative interpretations.

Analyses that do not adequately account for treatment pathways in responding to illness potentially suffer from two major limitations in their analyses of the implications of illnesses for households and health systems. If treatment pathways are temporally long, estimates of household OOP spending constructed from existing household surveys (with their typical recall periods ranging from 15 to 30 days) will exclude portions of treatment expenses associated with episodes of illness. Relatedly, the longer time

[1] https://www.who.int/publications/i/item/WHO-HIS-HGF-HFWorkingPaper-19.4

span of illness episodes implies that the costs of foregone earnings from work for the ill person and/or their caregivers would be correspondingly larger but not adequately accounted for by the data collected. Secondly, not capturing the sequencing and length of treatments can lead to the omission of important information about the functioning of healthcare systems. For example, consumer perceptions about the quality of the available primary care services (public or private), and the functioning of referral systems and physical and financial access to services could influence the time taken to obtain treatment, and the choice of healthcare provider options. These are major concerns, especially in the case of chronic conditions, which have been increasing as a share of India's disease burden. From the perspective of measuring health system functionality, long treatment pathways are likely to indicate poor regulation, poor patient satisfaction with services, and poor operation of referral systems.

Most datasets that capture health seeking behaviour have limited capacity to distinguish between the conditions that have prompted the decision to seek healthcare. Household survey data rely on the users of healthcare to report their condition. However, users may not have been given a diagnosis or an accurate diagnosis, may not correctly remember the diagnosis they have been given, and for any of these reasons, may not be able to provide a reliable name for their condition. Furthermore, survey tools may have a limited capacity to code and summarise complex diagnostic information in contexts wherein many respondents simultaneously suffer from multiple morbidities. Relying on aggregate data across multiple conditions with varying mixes and contexts is likely to result in unreliable comparisons if the objective is to provide measures of relative health system functionality.

- **Long treatment pathways and associated health expenditures are unlikely to be fully captured by the existing surveys in India, given their relatively short recall periods.**
- **Longer treatment pathways are especially relevant for chronic conditions, which are becoming increasingly prevalent in India.**

Furthermore, without a sense of the nature and severity of the condition, any information about a household not seeking healthcare is difficult to interpret. By capturing a sub-sample of household members whose condition is defined as 'serious enough to warrant treatment', it is more reliable to interpret the failure to do so as a deficit in health seeking behaviour. This too can then be more readily interpreted as a measure of health system (dys) functionality.

This report presents new survey findings that help shed light on key questions pertaining to healthcare such as OOP spending, CHE, distress financing, treatment pathways, and failure to access care when warranted for household members, with one of the three clusters of symptoms consistent with specific conditions, in four States of India, viz., Odisha, Uttar Pradesh (UP), Maharashtra, and Punjab. These four States represent the two ends of the rankings for the performance of health systems created by the NITI Aayog (2018). Punjab and Maharashtra were ranked higher as they are believed to have a relatively well-performing health system, and Odisha and UP were ranked lower, as they are considered to have relatively less well-performing health systems. We focused our inquiry on the following three sets of health conditions (one acute and two chronic): acute respiratory illness among children, chronic severe breathlessness among adults, and chronic common gynaecological conditions among women. While the surveys in UP and Odisha were done prior to the advent of COVID-19, in Maharashtra, and Punjab, the surveys were conducted post-COVID.

B. Research Questions

The findings in this report answer the following questions pertaining to each of the three conditions:

1. What factors are associated with: (a) the decision to use medical care, and (b) the choice among the available medical providers?
2. What are the health expenditure consequences of both decisions, especially with respect to CHE?
3. What are the patterns of resort or what are the common pathways between providers and provider type, including primary and higher levels; public and private, in relation to a chronic condition common among adults, an acute condition common among and children, and gynaecological problems among

women? These conditions were identified by clusters of symptoms rather than a specific diagnosis, as in many cases, the respondents have not been diagnosed or would not be able to name the condition for which they had been diagnosed.

4. To what extent do the patterns deduced from the study's first four questions provide support for the use of additional data related to health seeking behaviour in evaluating the functioning and dysfunctionality in the health system?

C. Sampling Methodology

The study covered the following three population groups:

1. Children (up to 5 years of age) suffering from severe cough/high fever and difficulty in breathing in the last 30 days. We label this as Acute Respiratory Infection (ARI).
2. Adults (aged 18 years and older) suffering from chronic cough, and severe shortness of breath at rest or on minimal effort, for a period of longer than six months, and with a flare-up of these symptoms in the last one year, even for a day. These symptoms are consistent with Chronic Obstructive Pulmonary Disease but potentially also with other conditions such as asthma or lung cancer. We label this as 'chronic severe breathlessness'.
3. Women self-reporting one or more of the following: abnormally heavy bleeding and/or abnormally painful menstrual periods or abnormal vaginal discharge during the last one year, severe enough to regularly disrupt daily activities and/or to make the patients contemplate seeking treatment. We label this set of symptoms as 'common gynaecological conditions'.

The sampled households containing individuals with the three targeted conditions belonged to 1,017 villages and urban wards, referred to as Primary Sampling Units or PSUs, in eight districts. The districts, including two each from the four sample States, were chosen to be at the median level of human development within each State. Given that district-level health data in India mostly consists of reproductive and child indicators, the districts chosen for this survey were at the median of the indicator, "the percentage share of women making four or more antenatal care (ANC) visits during the birth of the last child" within each State.

For sampling purposes, first the PSUs consisting of villages (for rural areas) and Census Enumeration Blocks (CEBs) for urban areas were chosen. About 125-150 households in each PSU were then listed using a pre-designed listing instrument (the listing survey) and stratified by health condition. In each of the selected PSUs, 3-5 households were randomly selected within each health condition stratum, depending upon their availability to participate in the survey. As a result, about 400 individuals per condition per district (if available) were chosen for participation in the survey. The household member best able to provide details of the health seeking journey, as identified by the household, was administered the survey. For the two chronic conditions, we defined an 'episode' of treatment seeking as a response to a 'flare-up' in the symptoms.

D. Findings

D1. Results from the Listing Survey

The listing survey was undertaken to construct a sampling frame for the "main" survey for the three targeted health conditions.

D1.1 Data from the listing survey were used to estimate the self-reported prevalence rate of the three conditions. The 30-day ARI prevalence for the full sample was 4.1 per cent, with the prevalence being slightly higher in rural areas as compared to urban areas (4.3 per cent versus 3.0 per cent). The ARI prevalence was higher in the samples from the States of Odisha and UP, as compared to those from Maharashtra and Punjab. There were no significant differences in the prevalence of ARI across the three socio-ethnic groups. In the listing survey, there was an overall inverse association between the prevalence of ARI and household size, mostly driven by the samples for UP and Odisha; in contrast, there were negligible differences in ARI prevalence by household size in Maharashtra and Punjab.

The self-reported ARI prevalence rose with income, with the association being particularly strong in UP and Odisha. These trends may reflect under-

reporting of ARI cases among the poorer households. Alternatively, the trends may suggest that richer households are more likely to seek care and are thus more likely to have their children diagnosed with ARI.

D1.2 The listing survey reveals a relatively low prevalence of chronic severe breathlessness—at 1.2 per cent in the eight districts across the four States—with a slightly higher rate of prevalence among rural than urban households. There was some cross-district variation, with the prevalence of chronic respiratory conditions being higher in the districts of Dhenkanal in Odisha and Firozabad in UP, and lower in the two districts of Punjab. The line listing data points to lower prevalence rates among the SC/ST population and the OBC category, and the highest in the General category in UP and Odisha. In Maharashtra and Punjab, there were no significant differences by social group. The self-reported prevalence rates for chronic respiratory conditions were higher among Hindus than non-Hindus.

D1.3 The listing survey gathered self-reported information on common gynaecological conditions, encompassing symptoms such as abnormally heavy bleeding and/or abnormally painful menstrual periods, or abnormal vaginal discharge during the year preceding the survey, and symptoms that were severe enough to regularly disrupt daily activities, or for the individual to contemplate seeking treatment.

The prevalence of chronic common gynaecological conditions is 2.2 per cent, with similar burdens across rural-urban locations. The States of UP and Odisha show a much higher prevalence of gynaecological conditions (4 per cent) as compared to Maharashtra and Punjab (1 per cent). However, prevalence by social group, within and across States, is relatively similar. The prevalence of gynaecological conditions is lower among Hindu women as compared to non-Hindu women, but shows an increase with household income.

The sampling frame for the study (the "line listing") was used to generate prevalence estimates for acute respiratory infections among children, gynaecological problems among women, and chronic severe breathlessness among adult men and women.

D2. Chronic Severe Breathlessness (CSB): Use of Health Services, Provider Choice, and Out-of-Pocket Spending

D2.1 Sample Characteristics: The findings are based on a survey of 2,636 individuals from an equivalent number of households sampled from the eight districts, and are representative at the district level in UP, Odisha, Maharashtra, and Punjab. Almost two-fifths of the individuals belonged to the age group of 60 years and above, with the share of individuals aged 46-60 years and 18-45 years being lower, except in the districts of Moga and Hoshiarpur. Men comprised 55.4 per cent of the sample. About 78.9 per cent were married. More than half were educated up to the matriculation (Matric) level, and almost 10 per cent up to the higher secondary level and above. Around three-fifths of the sample of people with chronic severe breathlessness (CSB) were not working, though this share varied widely across districts, ranging from 27.2 per cent in Yavatmal to 72.5 per cent in Moga.

D2.2 Treatment Seeking Behaviours: A large share (about 87 per cent) of the sample of those with chronic severe breathlessness reported seeking treatment. Among those who did not seek treatment (13 per cent of the total) the major reasons were: self-care/self-medication, waiting for recovery, the flare-up episode being not severe enough, and lack of affordability of care. There was cross-district variation, with the share of patients seeking care in response to an acute episode being 98.8 percent in Firozabad followed by Moga (92.9 per cent) and Kolhapur (92.7). Dhenkanal district had the lowest share of patients reporting treatment following an acute episode related to chronic breathlessness, at 72.8 per cent.

The share of individuals experiencing an acute episode of chronic severe breathlessness not seeking treatment was higher in rural areas, whereas the share of self-care was higher in urban areas. A higher number of male respondents received treatment as compared to female respondents.

D2.3 Choice of Provider: Among the respondents who sought care from formal health care providers, nearly 30.2 per cent did so from public healthcare providers and 59.2 per cent from private healthcare providers. Patients whose first visits were to private healthcare providers, also reported using private providers in subsequent visits. The share of public

providers consulted in the first instance was higher among respondents in Odisha as compared to respondents from the other States. Conversely, in UP, Maharashtra, and Punjab, a majority of the patients sought treatment from private health care providers in the first instance.

Most patients (79.2 per cent) made exactly one visit, and only 4.3 per cent of the patients visited more than two healthcare providers. The proportion of patients visiting more than two healthcare providers was the highest in UP. The average time lag between the start of the flare-up episode and the first treatment visit was the least among respondents in Kolhapur, followed by respondents from the two districts of Odisha, and was the highest in Yavatmal followed by Moga. However, no rural-urban differences were observed in the time taken to seek the first treatment.

D2.4 Out-of-pocket (OOP) Expenditure and Financing: Across the eight districts, the sub-sample of patients living in Kolhapur reported the highest share of OOP healthcare expenses in the total household expenditures (4.9 per cent), whereas patients in Dhenkanal reported the corresponding lowest share of OOP spending (1.9 per cent). The OOP expenses for treatments were mostly higher amongst those living in urban areas as compared to their rural counterparts across all the study districts. Three-quarters of all the OOP expenses during an episode were incurred during the first visit, with an additional 19.4 per cent incurred during the second visit. This finding reflects the fact that a large share of the respondents reported making only one visit. The average OOP expenses incurred for treatment was higher for patients in the age group of 46-60 years relative to the other age groups, and increased with the duration of the illness. The average OOP treatment expenses were lower among SC/ST patients than among patients from the OBC and General categories, and increased with household income (as measured by the total per capita household expenditures).

About 5.5 per cent of the households reported that the OOP expenses incurred on the first healthcare provider visited (for an episode of flare-up of severe breathlessness), were catastrophic, in that the OOP expenses exceeded 10 per cent of the household's monthly household. The share of households experiencing CHE at this 10 per cent threshold was higher for rural households, smaller households, households belonging to the OBC and General categories, and poorer households. The data further suggest that the two most frequently used sources of finance for health spending were household savings and borrowing.

D2.5 Factors Associated with Choice of Healthcare Facility: The reputation of the healthcare provider, proximity, and affordability were the three most important considerations determining the choice of healthcare provider. Among respondents choosing public facilities, three-quarters highlighted the availability of drugs as the reason for their choice. Affordability and proximity were two other important factors influencing their choice. Among those who chose private facilities, 75.7 per cent did so because of the good reputation of the healthcare provider.

- **Acute episodes associated with chronic breathlessness usually triggered a visit to healthcare providers, though there were differences across districts.**
- **Although a large majority of the visits were single visits, about one in ten were followed by subsequent visits to healthcare providers, highlighting the importance of treatment seeking pathways even for acute episodes.**
- **Reputation, availability of drugs, affordability, all influenced the choice of healthcare provider.**
- **Even a single visit to a healthcare provider for an acute episode associated with chronic breathlessness was associated with catastrophic OOP expenses for 5.5 per cent of the households.**

D3. Chronic Common Gynaecological Problems: Healthcare Use, Provider Choice, and Out-of-Pocket Spending

D3.1 Sample Characteristics: The findings are based on a survey of 2,510 women reporting chronic common gynecological conditions, from an equivalent number of households. More than 35 per cent of the women were in the age group of below 25 years or 31-45 years. About 72 per cent of the women in the sample were married, 57 per cent of them had matriculation,

and an additional 22 per cent had attained education up to or higher than the higher secondary level. Less than 20 per cent of the sample of women reported working, but there was considerable cross-district variation in the case of occupations. In the Yavatmal and Hoshiarpur districts, about 48.5 per cent and 38.7 per cent of the women in the sample, respectively, reported working.

D3.2 Treatment Seeking: About 56 per cent of the women received treatment from a healthcare provider following an acute episode associated with their condition, and 22 per cent of the women who sought treatment recovered after their first visits. Among the women who did not recover following their first visits, two-thirds did nothing further in terms of healthcare, or alternatively resorted to self-care/self-medication. The proportion of such women who did nothing further increased in the subsequent visits. Across the sample, the situation after four visits to a provider was that while 44 per cent of the women did not ever seek treatment, only 16 per cent reported recovering from the problem, and 40 per cent could not recover. A higher proportion of women in Maharashtra sought treatment as compared to those in UP and Odisha. There were no differences across urban and rural areas. The proportion of women not seeking treatment after a flare-up of symptoms was, however, slightly higher among women who were living in rural areas; were unmarried, widowed or separated; and were below 25 years of age.

D3.3 Choice of Healthcare Provider: When seeking care, more than 50 per cent of the women consulted private healthcare providers, and this was generally the pattern in all the districts except Firozabad. Higher proportions of women who were living in rural areas, who were married, belonged to the OBC/General categories, had smaller sized families, were more educated, and belonged to the richest expenditure quartile consulted private healthcare providers. About 84.6 per cent of the women who sought treatment visited just one healthcare provider while 11.4 per cent visited two healthcare providers. Only 4 per cent of the women visited more than two healthcare providers. Women living in rural areas, poorer women, working women, and those living in households with smaller family sizes were more likely to have visited a healthcare provider just once.

On an average, across the eight sampled districts, it took around 18 days in rural and 17 days in urban areas for a woman to access a healthcare provider after a flare-up in her gynaecological symptoms. While women in UP took longer to seek medical help, their counterparts in Punjab were quicker in doing so. The trends of recovery by the number of visits further indicates that while 24 per cent of those from rural areas recovered after the first visit to a healthcare provider, the incidence of recovery was only 8 per cent in the subsequent visits. In urban areas, these rates were 17 per cent after the first visit and just 7.5 per cent thereafter. Older women and women from poorer households were less likely to report having recovered from the episode of flare-up of symptoms.

D3.4 Out-of-pocket (OOP) Healthcare Expenditure and Financing: The average OOP treatment expenses were highest in the Dhenkanal district of Odisha, followed by those in Kolhapur and Moga, with the lowest OOP treatment expenses being reported in Yavatmal and Firozabad. The share of OOP healthcare expenditure incurred for gynaecological conditions in aggregate household spending was higher in rural than urban areas, with private healthcare providers accounting for a larger share of OOP spending as compared to public providers. The OOP expenses associated with treatment (for all visits) rose with an increase in the age of the woman and with the duration of illness. Most households drew upon their household savings to meet treatment expenses, whereas about 11 per cent reported borrowing from relatives, moneylenders, and other parties.

D3.5 Factors Associated with the Choice of Healthcare Facility: The two most important factors determining women's choice of healthcare providers were proximity to and good reputation of the healthcare provider. While a larger proportion of women chose public providers due to their proximity, affordability, and the availability of medicines, private providers were chosen because of their good reputation, past experience, and staff qualifications.

- **About 56 per cent of the acute episodes associated with gynaecological conditions resulted in a visit to healthcare providers, and recovery rates were low even at the end of the treatment pathway.**
- **Treatment seeking rates were lower among women in rural areas and among younger women.**

- **Among women seeking treatment, a large majority of the visits consisted of exactly one visit, and private sector healthcare providers were generally preferred, especially by women from richer households and women living in rural areas. Moreover, there are long delays between the flare-up of a condition and seeking care, though the length of the delay varied considerably across districts.**
- **Reputation, availability of drugs and affordability, all influenced the choice of the healthcare provider.**

D4. Acute Respiratory Infections among Children Aged 0-5 Years: Healthcare Use, Provider Choice, and Out-of-pocket Spending

***D4.1 Sample Characteristics*:** The findings are based on a survey of 1,781 children who had experienced an acute respiratory infection during the survey, or during a period of one month preceding the survey, from an equivalent number of households. About 78.6 per cent of the children were from rural areas while the remainder from urban areas. About one-third of the children were below the age of one, 36 per cent were 2-3 years old, and the remainder 30 per cent were 4-5 years old. Boys comprised a majority of the sample across all the sample districts barring Kolhapur, where 70 per cent of the children sampled were girls.

D4.2 Treatment Seeking Behaviours: It was found that 94.7 per cent of the children with acute respiratory infections received treatment from a healthcare facility; of these, 54 per cent recovered after the first visit to the healthcare provider. Of the 46 per cent who did not recover after the first visit, 14 per cent of the families reported doing nothing further in terms of treatment, and 39 per cent reported providing home care. After four visits to healthcare providers, 66 per cent of the children with acute respiratory infections recovered. The incidence of recovery was better amongst children in urban areas whereas the share of children whose guardians opted for self-care and/or did not seek treatment at all was higher in rural areas. The respondents in Punjab and Maharashtra reported much shorter lags between the first identification of the health problem and consulting a healthcare provider, as compared to those in UP and Odisha. The time lag to treatment was shorter for female children as compared to male children in a majority of the districts included in the study.

D4.3 Choice of Healthcare Provider: Among children with ARI who received treatment, about 29 per cent went first to public healthcare providers, whereas 66 per cent received treatment from private healthcare providers. A relatively higher proportion of children were taken to public healthcare providers in rural than in urban areas, though in total, more than half the respondents consulted private healthcare providers in the first instance. A vast majority of children with ARI, that is, about 88 per cent, received care from exactly one healthcare provider. Children living in rural areas, male children, children below one year of age, and children from the richest households were more likely to receive treatment from more than one healthcare provider.

D4.4 Out-of-pocket (OOP) Healthcare Expenditure and Financing: Children with ARI in Maharashtra and UP had the highest average OOP healthcare expenses in the four states included in the study. The average OOP treatment expenses were higher in urban areas across all the sampled districts. The OOP expenses incurred during the first visits accounted for 82 per cent of the combined expenditure incurred for all visits, followed by 13.7 per cent incurred on the second visits. The OOP treatment expenses incurred on male children with ARI was higher than for female children across all the sample districts, barring Kolhapur. As many as 80 per cent of the households drew from their savings to cover treatment-related expenses.

D4.5 Factors Determining the Choice of Healthcare Facility: For choosing public healthcare facilities, the top three factors that were considered important were proximity, good reputation, and affordability of services. Good reputation of and proximity to the healthcare provider were offered as the reasons for choosing private healthcare providers.

- **Acute episodes associated with ARI among children usually triggered a visit to healthcare providers.**
- **Although a large majority of the visits were only single visits, about one in ten were followed by subsequent visits to healthcare providers, highlighting the**

importance of treatment seeking pathways even for acute episodes.

- **The length of time between the recognition of the health problem and the first visit to a healthcare provider was smaller in Maharashtra and Punjab relative to UP and Odisha, and was somewhat smaller for female children as compared to male children.**
- **Reputation, availability of drugs, and affordability, all influenced the choice of the healthcare provider.**
- **OOP expenses during the first visit accounted for most of the OOP expenses incurred for ARI treatment by the households.**

D5. Conclusions

The conclusions have been structured with reference to our research questions.

What factors are associated with: (a) the decision to use medical care, and (b) the choice among the available medical providers?

For acute respiratory infection in children, resort to healthcare is almost universal (91.2-99.8 per cent by State), and it is also very high for chronic severe breathlessness in adults (85.2-94.5 per cent by State). These high rates may be related to the way we framed our identification of the relevant conditions as 'warranting resort to healthcare', and there is a danger that this framing may have introduced a bias which might hide the determinants of the judgement that a condition warrants resort to healthcare. Nevertheless, for both the conditions, the explanations that the patient was 'waiting for auto-recovery', that the 'illness was not severe enough', that the patient 'got better' and that self-care or medication was used instead of formal healthcare, dominated explanations among those who did not seek care, implying that this stipulation may not have been interpreted strictly. The rates of failure to consult a healthcare provider for common gynaecological conditions among women were much higher but the same explanations predominated. In all the cases, lack of affordability was supplied as the explanation about 10 per cent of the time (8 per cent for CSB, 11 per cent for CGC, and 11.5 per cent for ARI).

For CSB and ARI, the main correlate of failure to consult a formal healthcare provider across all the conditions is rural residence. There is also an economic gradient in the likelihood of seeking care, with those in the upper quartiles more likely to seek care than those in the lower quartiles, for all the conditions. The differences otherwise are quite small—no more than 5 per cent difference in care seeking levels by gender, social group, education category, occupational category, household size, or age category. It is interesting that among children with ARI, girl children are a little more likely to be taken to a healthcare provider than male children. For CGC, married women are more likely to consult a healthcare provider than unmarried women, and older women (aged 45 years or more) are more likely to consult a formal provider than younger women (aged below 25 years).

As regards the choice of a private healthcare provider in the first instance, across all the conditions, there is a socio-economic gradient whereby being in a higher economic quartile and belonging to the OBC/General other ethnic group categories are both associated with a greater likelihood of choosing a private healthcare provider. There is also a U-shaped relationship between education and private sector choice, with both the least and most educated groups most likely to opt for private healthcare. For CSB and ARI, the additional predictors of an initial private sector choice are being a member of a larger household and living in an urban area, whereas the opposite applies in both cases for CGC.

1. What are the health expenditure consequences of both decisions, and with respect to CHE?

Data describing the findings related to health expenditure consequences are summarised in Table ES-1. In terms of the total rupee expenditure, and in line with our expectations (based on literature suggesting that the highest OOP payments are associated with chronic illness, expenditures on chronic severe breathlessness are higher than on other conditions. Expenditures on common gynaecological conditions were overall the lowest, though this was not the case in Odisha, where the lowest expenditures were associated with ARI. There was no clear pattern in relation to the highest and lowest expenditures by State, as may have been expected, given their different levels of economic development. Overall, expenditures were higher in the two richer States,

that is, Maharashtra and Punjab, but with little difference between Punjab and UP. The differences in general were much smaller than differences in per capita expenditures between the four States.[2] Expressed as a share of household income, these patterns largely hold with respect to the relative levels and rankings across conditions and States. The incidence of CHE defined at the 10per cent level differs from those of the total and household expenditure shares overall. While CSB presents the greatest risk of causing CHE, CGC is in second place. And across States, the conditions collectively have the greatest likelihood of causing CHE in Maharashtra, the richest of the four States, and the second greatest likelihood in UP, the poorest. The high levels of CHE in some of India's richest States have been measured previously based on national survey data, and these results suggest that the higher prevalence of rates of more expensive NCDs are not the explanation, or at least the only explanation.

2. *What are the patterns of resort (what are the common pathways between providers and provider type including primary and higher levels; public and private)?*

Table ES-1 shows the estimated average number of visits to healthcare providers across each of the three conditions for each State (contingent on at least one visit). There are fewest health facility visits per health seeking journey for CSG and the most for ARI, a pattern consistent across all the States. Odisha has markedly shorter patient journeys than the other three States.

A considerably higher proportion of those with CSB (26.4 per cent) switched healthcare providers during their patient journey, as compared to those with ARI (12.8 per cent) and CGC (9.6 per cent), respectively. This might be an indicator of dissatisfaction with the first healthcare provider visited and may suggest that the satisfaction level with services provided for CSB is lower than for the other conditions. While Odisha had the lowest rate of switching of healthcare providers for CSB and ARI, and the highest for CGC as compared to the other States.

Patients who started in the public sector were more likely to switch to the private sector than vice versa. For example, of all the patients whose first visits were to private sector healthcare providers, 80 per cent made the second visit to the private sector providers, whereas among those whose first visits were to the public sector providers, the second visits were to the public sector providers in 32 per cent of the cases and to the private sector providers in 65 per cent of the cases.

3. *To what extent do the patterns deduced from the study's first four questions provide support for the use of additional health seeking behaviour-related data in evaluating health system functioning and dysfunctionality?*

The eight variables included in Table ES-1 provide different insights into the level of functionality of the health system in each of the States and are presented in Figures ES-1, ES-2, and ES-3 for the three conditions, respectively in the form of laser charts. Each variable has been scaled to a maximum of 10 and on the basis of a judgement that the scale 0 to 10 goes from 'good' to 'bad'. The highest rates pertain to failing to seeking healthcare from a facility, seeking private care in the first place, absolute OOP expenditure, OOP as a share of the total household expenditure, CHE, facility visits per episode, provider switches per visit, and Distress Financing.

No State clearly outperforms any other in terms of all indicators, and it is interesting to note that the richer States rated highly in terms of the performance of their health systems as per the rankings of the NITI Aayog (2018) did not out-perform those rated less highly with respect to these indicators. With respect to CSB and ARI, Odisha most consistently out-performs the other States: users express more confidence in its public healthcare services by using them more extensively, switching providers less frequently, and the resultant reduced likely risks of financial impoverishment from using healthcare, though it does also have a relatively high level of failure to visit a healthcare facility for both the health conditions, and of distress financing for ARI. The picture is very different with respect to CGC, for which Odisha appears to be largely outperformed by the other States. This underlines the insight that health systems can be better geared towards those with some conditions relative to others. Throughout the analyses, the health seeking behaviour of women with CGC seems to be differentiated from more similar patterns for adults with CSB and children with ARI. One explanation for this may be that howsoever intolerable, CGC is likely not considered

[2] Data from the Reserve Bank of India suggest that Maharashtra has a GDP/ capital of approximately, 3-fold that of Uttar Pradesh for example.

to be life-threatening whereas breathing difficulties are easily recognised as life-threatening. Another explanation is that women's health conditions not commonly recognised as being related to reproduction may be undervalued in healthcare systems and in households.

There is consequently a long list of important questions that cannot yet be explored further with the currently available data. What appears clear to us at the end of this research is that it has been fruitful to compare condition-specific treatment seeking journeys, to more carefully frame the nature of the problem on which health seeking behaviour is predicated than standard surveys are able to do, and to explore patient experience beyond the 'last visit'. We hope that further research will be undertaken in these directions.

Table ES-1: Key Data

	Chronic Severe Breathlessness				Common Gynaecological Conditions				Acute Respiratory Infection			
	Uttar Pradesh	Odisha	Maharashtra	Punjab	UP	Odisha	Maharashtra	Punjab	UP	Odisha	Maharashtra	Punjab
% Seeking health care	95.9	78.7	85.8	83.9	55.3	54.8	66.2	45.4	97.1	92.5	91.9	100.0
% Seeking private care on first visit	68.7	34.3	77.3	67.3	46.0	65.8	64.7	62.6	80.5	43.1	80.8	84.2
Out-of-pocket healthcare expenditure												
Rupees	4309	2576	5287	4319	1964	2439	1965	2435	2875	1823	3230	2654
% Share of the household healthcare expenditure	3.3	2.3	4.7	3.6	0.9	1.8	1.2	1.0	2.5	2	2.6	2.6
% CHE (>10% of the household healthcare expenditure)	4.3	4.3	9.7	5.1	4.4	9.3	4.4	2.5	4.9	2.1	8.5	0.0
Other key parameters												
Mean no. of providers visited per episode	2.2	1.3	1.9	2.5	1.6	1.1	1.8	1.8	2.2	1.3	2.2	2.5
% Provider switches per visit	18.8	6.7	27.7	15.5	5.7	12.9	11.6	4.5	24.1	4.5	41.4	14.8
Distress financing (borrowing + sale of property)	29.9	26.1	25.7	16.7	12.0	17.5	23.3	6.8	18.9	24	17.1	6.2

***Source:** NCAER-NOSSAL 4IS Health Survey, 2019-2022.*

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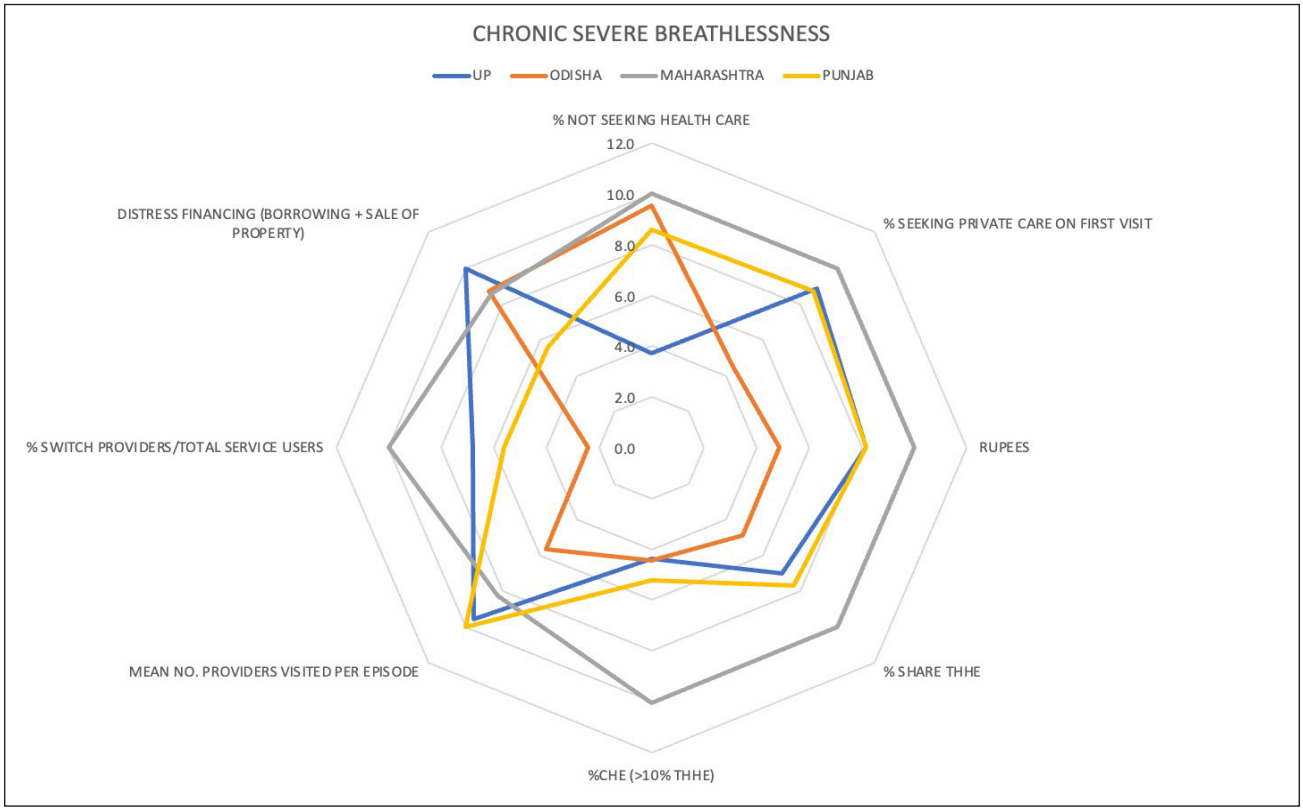
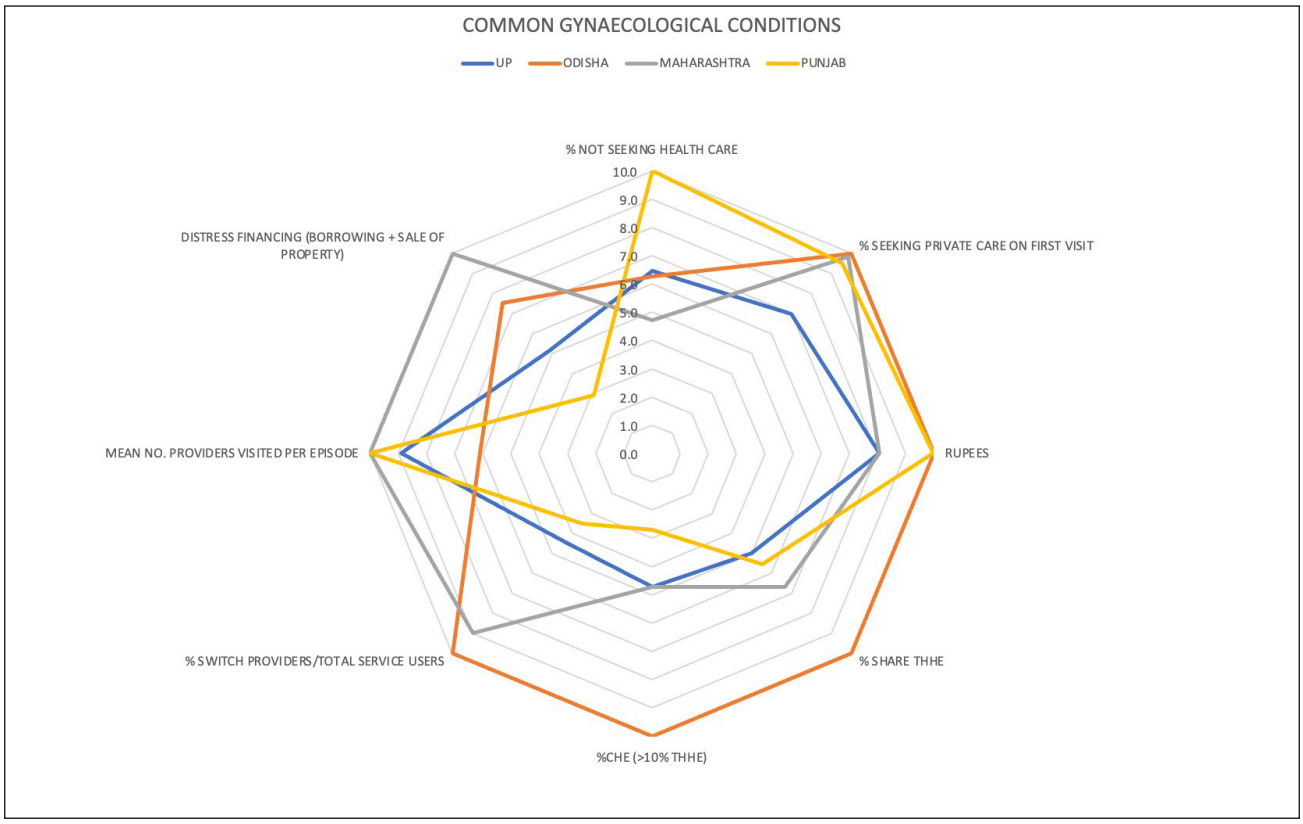
Figure ES-1



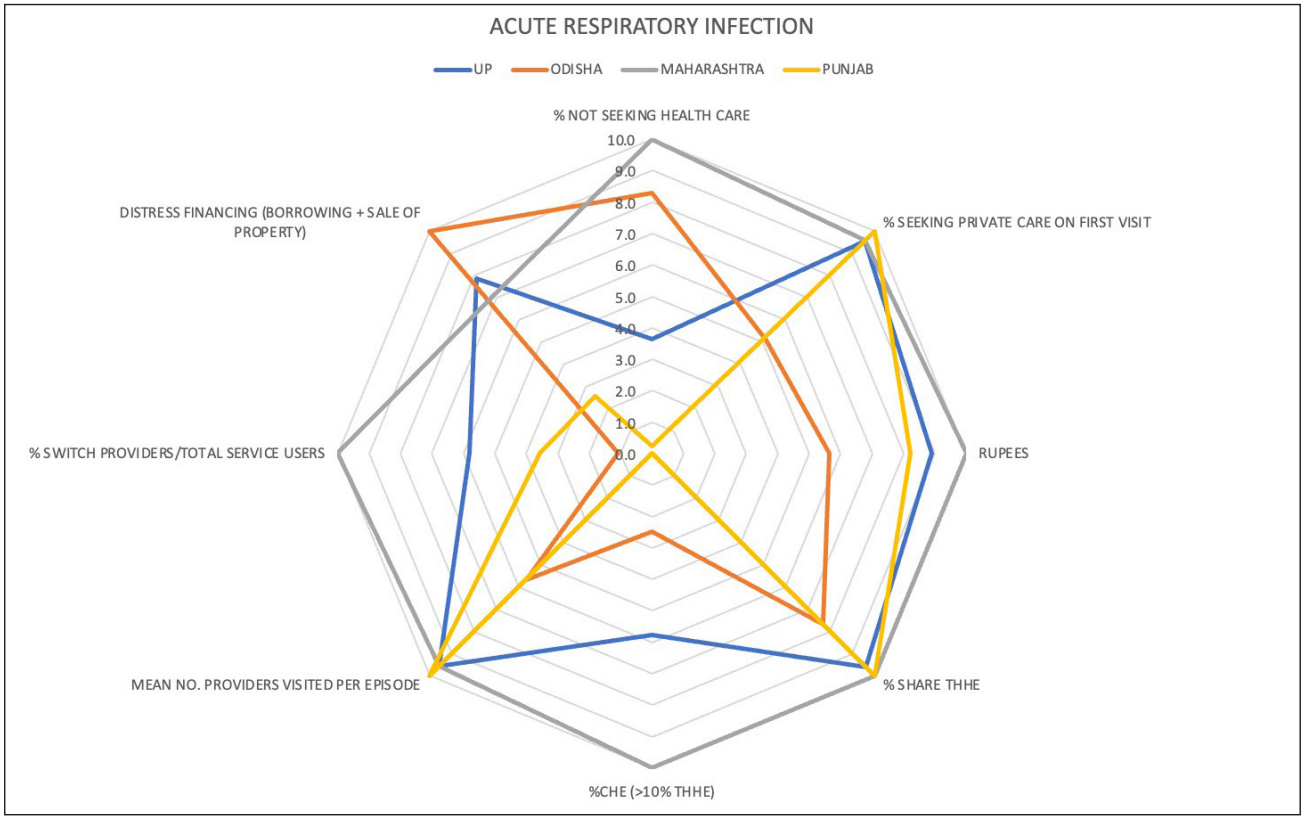
Source: NCAER-NOSSAL 4IS Health Survey, 2019-2022.

Figure ES-2



Source: NCAER-NOSSAL 4IS Health Survey, 2019-2022.

Figure ES-3



Source: *NCAER-NOSSAL 4IS Health Survey, 2019-2022.*

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NCAER, the National Council of Applied Economic Research, is India's oldest and largest independent economic think tank, set up in 1956 to inform policy choices for both the public and private sectors. Over the past 65 years, NCAER has served the nation well with its rich offering of applied policy research, unique data sets, evaluations, and policy inputs to Central and State governments, corporate India, the media, and the citizenry. It is one of a few independent think tanks world-wide that combines rigorous economic analysis and policy outreach with deep data collection capabilities, particularly for large-scale household surveys. NCAER is led by its Director General, Dr Poonam Gupta, and it is governed by an independent Governing Body currently chaired by Mr Nandan M. Nilekani.

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The Nossal Institute for Global Health is a centre of global health housed within the University of Melbourne's Faculty of Medicine, Dentistry and Health Sciences. It's focus is on strengthening the health systems for populations to achieve health equity across the Asia-Pacific region. The Institute's approaches are aimed at supporting evidence building, capacity strengthening, applied research and evaluations, and policy development. The experts at Nossal Institute work with governments, academics, philanthropists, multilateral agencies, and civil society partners, and explore, connect, and assess decisions and policies for their impact on the health and wellness of people. For the Institute's applied research to have the greatest impact, its experts listen to the voices of the partners they work with.

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