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The article should be non-technical and should be of around 2500 - 4000 words. The research articles may be upto 7000 words. But no mathematical expressions or technicalities of methods should be contained in the main text. It should be typed in MS Word in Times New Roman 12 with paragraph spacing 1.5. Figures and simple, small tables can be incorporated. There should not be any notations or equations, at least in the main text. If required, it may be put in Appendix. The article should also contain a short abstract of 150 – 200 words. Full forms of each abbreviation should be mentioned at first instance. All figures and diagrams should be in black and white. Send your manuscript along with your name, institutional affiliation, email ID and contact number to the editorial office at imikonnnect@imi-k.edu.in mentioning the area viz. Marketing, Finance, OB & HR, Economics, Strategy, IT & Operations, Management Education, Others or Themed Issue.

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Ignoring Outpatient Care in National Health Insurance Programmes is a Mistake

Anoshua Chaudhuri* and Subrata Mukherjee**

Abstract

Both Rashtriya Swasthya Bima Yojana (RSBY) as well as the recently announced Ayushman Bharat - Pradhan Mantri Jan Arogya Yojana (AB-PMJAY) did not offer any coverage for outpatient (OP) care. Both these schemes offer insurance for the poorest against catastrophic hospitalization expenditures. In this article, we offer an insight into the extent of OP care need and expenditures faced across the Indian population using data from two rounds of National Sample Survey (NSS) data. We find that though OP expenses may be less compared to hospitalisation expenses, their cumulative figures over an entire year can be substantial, especially for households that have elderly or chronically ill members. We provide a critique of the existing insurance-based health-financing model, which not only offers inadequate coverage for the intended, but also creates perverse incentives on the supply side resulting in a failure to protect households and severely diminishing their welfare.

Introduction

Within the past decade, India introduced national health insurance schemes to cover inpatient care for the poor to help avoid catastrophic expenses related to hospitalization. Both Rashtriya Swasthya Bima Yojana (RSBY) introduced in 2008 to cover those below the poverty line and Ayushman Bharat - Pradhan Mantri Jan Arogya Yojana (PMJAY) to cover 100 million poor and vulnerable families, announced in 2018, do not offer any coverage for outpatient (OP) care.¹ No specific reason was provided

for excluding OP care from the ambit of insurance coverage. It was perhaps assumed that outpatient care expenses are small enough for households to financially withstand any serious impoverishing effects in comparison to hospitalisation expenses (Kashyap, Singh and Sharma 2018; Gupta, Chowdhury, Prinja and Trivedi 2016). There is no doubt that the magnitude of hospitalization expenses is much higher and has a stronger potential for impoverishing a household. However, if OP expenses occur for households with higher frequency, the cumulative amount for a whole

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¹Visit <http://www.rsby.gov.in/> and <https://www.abnhpm.gov.in/> to know more details about the schemes/programmes.

year may not be low, especially for households with members who need regular OP visits or OP-related health care consumption. In short, good quality and affordable OP care, which is an essential part of any health care system, has hardly been discussed systematically in the recent discourse of universal health coverage and health insurance for the poor in India. In this article, we provide evidence using existing literature as well as our own data analysis to emphasize that OP is a crucial component of the Indian health care system. Since OP facilities can help deliver health care to the poor efficiently, ignoring it may lead to greater financial burden, both for the poor as well as for the state.

Outpatient Expenditure can be a Substantial Burden

Using existing studies, we discuss the nature and magnitude of OP utilization and expenses as well as implications of not assisting the poor in covering their OP procedures. *First*, studies have found that like inpatient care expenses, OP care expenses can also be catastrophic for households. Kumar *et al* (2015) using the WHO SAGE data found that annually 8 per cent of the population in India slip below the poverty line due to high out-of-pocket (OOP) health expenditures. In addition to lower wealth status and inpatient care expenditure being significant determinants, OP care expenditure also increases the odds of falling below poverty line. A study of low-income households in Odisha found that even among households with only OP or maternity related

care, around 25 per cent of households experienced financial hardships (Binnendijk *et al* 2012). Gupta *et al* (2016) found that the economically vulnerable spent more on OP care as a proportion of their per capita consumption expenditure and the main reason for high OP expenses was preference for private providers. Bhojani *et al* (2012) in their study on chronic illness of the urban poor in Bangalore found that overall 69.6 per cent of households made OOP payments for OP care spending a median of 3.2 per cent of their total income. Overall 16 per cent of households suffered financial catastrophe by spending more than 10 per cent of household income on OP care. A study based on a vulnerable section of the population (rickshaw pullers in Delhi) finds that average cost of OP care is as high as ₹505 and to finance such expenditures, 27.5 per cent of individuals spent from their household savings and 43 per cent borrowed funds (Kumar, Tiwari, Kumar *et al* 2015). A study by Daga *et al* (2015) found that rural Indian households incur substantial cost for OP visits and most of it is for preventive health care such as immunizations. Using NSS consumption survey data for the years 1999-2000, 2004-05 and 2011-12, Karan *et al* (2014) found that the burden on marginalized populations on account of OP care expenditures has increased over the years 1999-2012.

Second, the need for OP care is higher among households with certain characteristics. For example, the need for OP care is high among households with children, elderly and

chronically ill and therefore such households incur higher annual OP expenses, sometimes above their affordability level. Poor households come up with their own rationing mechanism to prioritize budget allocation for health care. Borah (2006) found that price elasticity of demand for OP care varied with income, with low-income groups being more price sensitive than high-income groups. The same study also found that OP care for children was more price elastic than that for adults which means that a working adult's health is deemed more important than that of a child to preserve the household's economic and financial health. Moreover, gender based discrimination is reported across the spectrum of pediatric health care including OP care. Biases against young girls have been documented for immunizations, seeking medical care for childhood ailments as well as percentage of health care expenditure allocated to them (Khera *et al* 2014).

Third, increased prevalence of non-communicable chronic diseases (NCD) has led to increased use of OP clinics. Chronic illness requires regular doctor visits, diagnostic tests and medications and may not require frequent hospitalisation if properly monitored and managed. For example, diabetes is a growing chronic disease in India and it requires regular care and follow up (Tripathy and Prasad 2018). Binnendijk *et al* (2012) in their study of Bihar and Odisha found that NCDs accounted for around 20-30 per cent of all diseases reported within the one-month recall period. The most prevalent NCDs

representing the highest share in OP costs were musculoskeletal, digestive and cardiovascular diseases. OP costs including consultations, medicines, laboratory tests and imaging related to NCDs represented a bigger share of income than communicable diseases. A study on catastrophic effect of chronic illness, based on World Health Survey data found that angina affected households had significantly higher OOP health spending per person in the four weeks preceding the survey and nearly half of the difference was accounted for by drug expenditures (Alam and Mahal 2014). One of the reasons for the rapidly increasing burden of NCDs in India is an aging population with rising prevalence of multi-morbidities (Lee *et al* 2015). Using WHO-SAGE data for 2007-10, the study found that in India multi-morbidity is associated with a higher likelihood of hospitalization and higher OOP expenditure for OP visits. Another study (Pati *et al* 2014) using WHO-SAGE data found that 28.5 per cent of the sample population had at least one NCD and 8.9 per cent had NCD multi-morbidity. The mean OP visit is much higher for those with NCD (6.2 per episode) compared to those without NCD (2.2 per episode). Joshi *et al* (2015) found that 36 per cent of OP cases had chronic illnesses with 13 per cent cases with single chronic illness and 23 per cent cases with more than one chronic illness. The trend of multi-morbidity is on the rise and there is a positive relationship between average OOP expenditure with increasing number of chronic disease

diagnosis. Thakur *et al* (2011) found that NCDs have become a major public health problem in India accounting for 62 per cent of total burden of forgone DALYs and 53 per cent total deaths. During 1995-2004, the proportion of OP consultation for NCDs increased from 22 per cent to 35 per cent. By using NSSO 2004 data, Mahal *et al* (2013) found that cancer-affected households experienced higher levels of OP visits, hospital admissions and increased OOP expenditures relative to non-cancer households. Cancer affected households also had significantly higher rates of borrowing and asset sales for financing outpatient care. Pati *et al* (2014) found that for OP visits, medicines constitute 70.7 per cent of the cost, followed by provider fees. Using NSS 61st round data (2004-05) Shahrawat and Rao (2012) found that medicines constitute 82 per cent of OP expenditures.

Fourth, an insurance or health protection system which only covers hospitalisation is capable of over producing hospitalisation care beyond its requirement, thereby introducing inefficiency in the system. When only hospitalisation is covered by insurance plans, many ailments which are otherwise treatable by OP care alone or OP care-home care mix are converted into hospitalized care in order to satisfy the requirements of insurance. Sinha *et al* (2014) by analyzing the health claims of a micro insurance scheme VimoSEWA show that a significant proportion of hospitalisation among insured adult women are for common illnesses such as fever, diarrhea and malaria.

The same study found that while fever was the leading cause for hospitalisation among insured women, no uninsured women were hospitalized with fever.

Fifth, it is hard to credibly believe that OP expenses are low and have less severe impact on households because we still lack reliable estimates of annual OP care expenses at the household level. The studies that have examined the impact of OP expenses have carried out the analysis with serious data limitations due to the short recall period used for OP care-related surveys. Whereas information on hospitalisation expenses are typically collected with a one year recall period, the recall period for collecting OP care expenses is always lower – 15 days to 30 days. The short recall period seriously limits the scope of getting an annual estimate for OP expenses. For example, a household reporting no OP expenditure during the 15 day recall period does not mean that it will have no OP expenditure for the whole year. On the other hand, a household reporting 'x' amount of expenditure for the recall period does not mean that it will incur 'x' amount every fortnight. Use of inflation factor (365/15) to get an annual estimate may not bias the total OP expenditure or average OP expenditure for a population, but it may overestimate any catastrophic expenditure. The effect of the methods of data collection on the estimates of out-of-pocket health expenses and catastrophic health expenses is also observed by Raban *et al* (2013) who suggest that survey methods used to assess the catastrophic health

expenditures need to be standardized, validated and accurately tracked.

Sixth, there is no evidence that hospitalisation coverage takes care of some of the OP care needs and expenses of the people. Karan *et al* (2017) did not find any statistically significant effect of RSBY on the level of OP out-of-pocket expenditure and probability of incurring OP expenditure. In contrast, the likelihood of incurring any out-of-pocket spending (both inpatient and outpatient) rose due to RSBY and was statistically significant. RSBY also raised household non-medical spending by 5 per cent.

Finally, possible implications of high OOP expenses for OP care, especially for the poor, could be avoidance or delay in seeking care or seeking health care from less expensive unqualified providers. Delays or low quality care may make an illness episode more severe and force the person to seek higher levels of care or result in hospitalization, if the ailments got complicated, creating higher OOP expenses for households and higher financial burden for the government. Early and timely care can be less costly. A micro study based on health seeking behavior of male tannery workers in Kanpur city of Uttar Pradesh (Kashyap *et al* 2018) found that even though a large section of workers utilized government facilities, pharmacy/drug stores were secondary providers of OP care and also a large number of people sought outpatient treatment from unqualified medical practitioners. It must be noted that less

expensive care does not necessarily indicate low quality care especially if OP care is utilized in government facilities. However, low cost care provided at pharmacies and by unqualified practitioners may be more dangerous than helpful. Almost one-third of the workers thus were seen to seek treatment from private health facility in spite of their poor economic conditions. Cost is also one of the reasons behind people's dependence on non-allopathic care for non-chronic ailments. Rudra *et al* (2017) found that overall 6.9 per cent of all patients seeking OP care have used Ayurvedic/Yoga Unani/Siddha/Homeopathy (AYUSH) without any significant differential between rural and urban India while government facilities played a key role in improving people's access to AYUSH care in the rural areas.

Who Needs Outpatient Care?

With this existing background, we attempt to provide an update, using National Sample Survey data from the 71st and 60th rounds, on the extent of OP care needs, utilization patterns and expenditures of the population in India, and how they vary by population characteristics. Table 1 presents incidence of any illness, chronic illness and hospitalization (not related to childbirth) by individual, household and other contextual characteristics. Reporting any illness has a recall period of two weeks. Using these rates, we are not able to accurately represent the incidence of all illnesses over a whole year. However, if we examine incidence of chronic

Table 1: Percentage of Individuals Reported Any Illness (15 Days Recall Period), had Chronic Ailments and Hospitalisation (in Last One Year) by Different Individual, Household and Contextual Characteristics

	Reporting any illness in last 15 days (%)	Reporting having chronic illness (%)	Hospitalisation (excluding child birth) in last one year (%)
Sex			
Male	4.67	4.18	2.90
Female	5.70	5.53	3.21
Age Group			
0-12 years	6.83	0.64	1.85
13-39 years	3.81	1.83	2.31
40-59 years	5.34	9.46	4.30
60 years & above	7.75	23.72	7.98
Chronic Illness			
No	5.21	—	2.52
Yes	4.40	—	13.63
Hospitalisation (excluding childbirth) in last one year			
Yes	9.97	21.60	—
No	5.02	4.31	—
Insurance Coverage			
Government supported	5.75	9.72	4.23
Employer provided	6.62	7.67	4.12
Household arranged	5.11	10.61	4.02
Others	10.57	8.31	11.86
No insurance	5.05	3.98	2.84
Expenditure Quintiles			
Poorest	4.66	2.15	1.77
2nd	4.99	3.07	2.32
Middle	4.92	4.04	2.93
4th	5.64	5.87	3.55
Richest	5.74	9.46	4.80

Table 1 continued...

	Reporting any illness in last 15 days (%)	Reporting having chronic illness (%)	Hospitalisation (excluding child birth) in last one year (%)
Social Class			
Scheduled Tribe	4.91	2.00	2.14
Scheduled Caste	5.42	3.99	3.06
Other Backward Class	5.19	4.84	3.08
Others	5.05	6.36	3.31
Place of Residence			
Rural	5.07	4.04	2.85
Urban	5.38	6.71	3.53
Region			
North Central	4.51	2.70	2.39
Eastern	5.85	6.61	2.55
North Eastern	2.74	0.67	1.62
Western	4.71	3.87	3.45
Southern	6.34	10.23	4.76
Total	5.17	4.84	3.05

Source: Estimated from NSS 71st unit record data.

illnesses that manifest over longer periods, of the proportion of chronic illness reports, a very small proportion of hospitalization is reported. This means that a considerable amount of chronic episodes are treated in OP facilities.

Regardless of the type of episode, females report higher incidence than males. Among all age groups, children (0-12 years) and elderly (60 years and older) are in greater need of health care, especially the high rates of elderly who report chronic illnesses. There are greater rates of hospitalization with chronic illness. Higher percentage of individuals report

chronic illness with some sort of insurance coverage. Reporting of chronic illnesses show a strong class gradient with upper classes and those in richer quintiles reporting higher rates of chronic illnesses and hospitalizations. The rural-urban difference persists in reporting of any illness but the difference is strikingly high for chronic illness with much higher percentage of individuals reporting chronic illness in the urban area compared to the rural area.

Using these patterns of illness reporting, females, children, elderly, seem to have a greater need for OP care. People with

insurance coverage, in higher expenditure quintiles, living in urban areas, in southern and eastern part of the country report greater incidence of illnesses, particularly chronic illnesses. Incidence of illness is the first step to understanding the extent of demand for OP care. Without adequate access to different kinds of care, incidence may be under-reported. For example, lower percentages reporting any illness or chronic illness among scheduled tribe and people living in the north-east raises the question whether illness, especially chronic illness is underreported by

these groups due to low awareness or lower access to health care.

Who Gets Outpatient Care?

All reported episodes of illness (with 15 days recall period) either result in treatment with medical advice or treatment without medical advice. A portion of illness episodes result in hospitalisation. If we exclude those episodes which led to hospitalization and based on survey recall, we find that close to 85 per cent of all episodes and 90 per cent of all chronic episodes get outpatient medical care (Table 2).

Table 2: Percentage of Non-hospitalised Ailment Episodes with OP Care Sought, Treated by Private Providers and Treated with Allopathic System of Medicines

	OP care (%)		OP care from private providers (%)		OP care with allopathic system (%)	
	All episodes	Chronic episodes	All episodes	Chronic episodes	All episodes	Chronic episodes
Sex						
Male	83.8	90.16	76.31	74.14	94.84	93.38
Female	84.5	90.93	73.80	74.01	93.80	92.56
Age Group						
0-12 years	81.32	88.50	79.09	70.32	96.11	90.35
13-39 years	79.59	86.71	76.81	78.01	93.59	89.16
40-59 years	85.82	90.84	72.92	73.5	93.73	93.13
60 years & above	88.69	92.03	72.94	73.4	94.29	94.26
Insurance						
Govt. supported	83.88	88.88	69.22	69.47	94.41	94.37
Employer provided	76.02	92.81	72.49	72.46	91.54	89.45
Household arranged	91.78	97.57	95.63	95.87	96.29	95.27
Others	79.27	82.67	73.06	64.1	100	100
No insurance	84.25	90.97	75.94	74.97	94.21	92.31

Table 2 continued...

	OP care (%)		OP care from private providers (%)		OP care with allopathic system (%)	
	All episodes	Chronic episodes	All episodes	Chronic episodes	All episodes	Chronic episodes
PCCE Quintiles						
Poorest	75.69	81.38	67.45	59.42	95.69	92.19
2nd	77.63	84.42	68.87	62.4	94.40	90.28
Middle	83.06	88.75	73.73	71.25	95.18	93.64
4th	85.35	90.14	76.50	76.13	94.48	93.67
Richest	91.16	95.44	80.01	79.97	93.02	93.07
Caste						
ST	70.74	78.83	51.96	56.81	97.88	97.34
SC	81.89	83.14	70.45	61.88	95.46	94.27
OBC	85.35	91.84	74.47	77.11	93.73	92.51
Others	86.43	93.24	81.48	83.25	94.29	92.54
Place of Residence						
Rural	81.45	88.58	72.08	70.87	94.73	92.66
Urban	88.81	93.24	79.34	78.06	93.50	93.23
Region						
North Central	85.39	90.90	78.40	74.6	90.08	91.92
Eastern	74.33	85.56	72.95	76.88	90.44	87.81
North Eastern	69.71	85.34	23.95	42.28	96.84	98.13
Western	84.83	87.51	81.69	84.14	97.53	96.85
Southern	89.77	93.35	73.05	71.1	94.72	94.53
Total	84.18	90.60	74.92	74.07	94.27	92.91

Source: Estimated from NSS 71st unit record data.

Further, higher percentage of individuals from upper castes, higher economic status and urban areas get OP care for their chronic illnesses.

In India, private providers account for nearly

three-fourths of OP care. Private care is highly heterogeneous in India ranging from unqualified quacks operating clinics in rural areas or slums to very qualified doctors practicing in super-specialty hospitals. When

we consider all types of episodes together, males, mid-age and elderly groups show slightly higher dependence on private care. Dependence on private OP care is higher for individuals belonging to richer class and upper castes and in urban areas. Compared to other regions, dependence on private OP care is very low in north-eastern India. Class, economic status and place of resident matters more for private OP visits in case of chronic illnesses. Compared to all other regions, dependence on private care for chronic health needs is lowest in the north-east.

Costs of Outpatient Care

A comparison between 60th and 71st rounds

of NSS data shows that the average cost of a typical hospitalisation increased from ₹7118 to ₹17074 registering a 140 per cent increase in nominal cost in 10 years. During the same period, the average cost of an OP care increased from ₹409 to ₹696 showing a much lower 70 per cent decadal growth in nominal cost. It is worth noticing that whereas 47.5 per cent of the individuals did not incur any OP expenses in 2004, in 2014 only 8.5 per cent of the individuals got their OP care without incurring any cost.²

Table 3 provides estimates of OP care components for which individuals had to pay (column 1) and in case they paid the mean and median values (columns 4 and 5). The table

Table 3: Mean and Median Costs of OP Care (Component Wise and Total in Rupees) Per Person

Component-wise expenses per person	Positive cost (%) <i>Col 1</i>	All persons		Persons who incurred some costs	
		Mean <i>Col 2</i>	Median <i>Col 3</i>	Mean <i>Col 4</i>	Median <i>Col 5</i>
Doctor's fee	42.7	78	0	182	100
Medicines	84.0	393	200	468	250
Diagnostic tests	13.8	62	0	453	220
Other medical expenses	92.4	22	0	287	100
Total medical expenses	86.7	556	250	641	300
Transport	44.8	48	0	106	50
Other non-medical	23.8	34	0	141	60
Total non-medical expenses	49.2	81	0	165	60
Total OP expenses	91.5	637	280	696	314
Total OP expenses as % of PCCE	—	44	17	48	20

Source: Estimated from NSS 71st unit record data.

²The average costs of hospitalisation and OP care were 10.59 times and 60.86 per cent of average per capita consumption expenditure in 2004. In 2014, they became 9.23 times and 37.66 per cent respectively.

also provides the mean and median values of different components of OP care considering no expenditure as zero expenditure (columns 2 and 3). Since people need to spend for more than 90 per cent of all OP care, the mean OP expenses no matter any expenditure was incurred or not is not much lower than when only positive expenditure is considered.

For little more than 40 per cent of the cases, people need to pay the doctor and if they pay, the average fees turns out to be ₹182 (median ₹100). In more than 80 per cent of the cases, people have to pay for medicines and when paid, the average cost of medicines turned out to be ₹468 (median ₹250). Like medicine, diagnostic test is another component of OP care where people incur higher costs (average ₹453 and median ₹220) but only 13.8 per cent of the individuals incur expenditure on diagnostic tests. Only 7.6 per cent of the individuals incur medical expenses other than doctor's fee, medicines and diagnostic tests, but when they incur it can go as high as ₹287 on average. Other than medical expenses, people also need to pay for non-medical costs for OP care such as for travel. Almost 50 per cent of the individuals incurred non-medical expenses for OP care and when incurred they spend on an average ₹165 (median ₹60).

Considering all the individuals, irrespective of the fact that they incurred expenses on different components of OP care, we can estimate the average (and median) absolute amounts and relative shares of different components of OP care cost from individual's

point of view. Those who utilised OP care spent on an average ₹637. The major portion of total OP expenses is medical expenses (almost 87 per cent) and the rest is non-medical expenses including transport. Medicines account for a majority of the OP expenses (61.7 per cent), followed by doctor's fee (12.2 per cent) and diagnostic tests (9.7 per cent). When we express the OP expenses in terms of per capita consumption expenditure, the average and median do not come out very low. The average values of the per capita OP expenses as a percentage of per capita consumption expenditure can vary between 44 to 48 per cent (the median values vary between 17 to 20 per cent). The prevalence of ailments (per lakh population) which require at least OP care and average cost of treatment per person for each ailment is presented in Table 4. The same table also presents ailment-wise rate of hospitalization (per lakh population) and average cost of hospitalization for a comparison. The table clearly shows that many of the ailments with high frequency which need OP care fall in the category of chronic ailments such as cataract and vision related ailments, diabetes, hypertension etc.

We find that the reimbursement for OP care expenses is almost negligible. Most of the individuals (almost 95 per cent) meet their OP expenses from current incomes and savings but 5 per cent rely on means such as borrowing, selling assets, taking help from friends and relatives for meeting the expenses.

Poor may still face difficulty when they pay for OP care from their current income and savings. Hence OOP expenses for OP care is not a trivial amount for most, definitely for the poor.

Table 4: Rate of Prevalence and Average Cost of Treatment of OP and Hospitalisation Care

Ailments	Reported ailments with 15 days recall period		Hospitalisation (1 year recall period)		
	Rate of ailments per lakh population	Average cost of OP treatment per person (₹)	Rate of hospitalisation per lakh population	Average cost of treatment (₹)	
				Govt. Hospitals	Pvt. Hospitals
Fever with loss of consciousness or altered consciousness	189	475	62	3076	12440
Fever with rash or eruptive lesions	93	448	25	7881	9546
Fever due to diphtheria , whooping cough	229	430	35	3843	8665
All other fever	1864	500	574	2971	12162
Tuberculosis	59	573	53	6680	24177
Filariasis	18	430	4	7368	31130
Tetanus	5	241	3	14368	77033
HIV/AIDS	9	524	9	4158	9412
Other sexually transmitted diseases	0	513	2	14049	27789
Jaundice	23	1080	77	12926	21901
Diarrheas/dysentery/increased frequency of stools	245	435	134	2207	9759
Worms infestation	15	1556	10	6123	16310
CANCERS (known or suspected by a physician) and occurrence of any growing painless lump in the body	21	2557	64	29070	84325
Anaemia (any cause)	69	1262	57	6549	19276
Bleeding disorders	11	1681	23	5898	19753
DIABETES	1009	663	71	5771	20404
Under-nutrition	7	503	8	5207	13248
Goitre and other diseases of the thyroid	169	713	20	7660	25970

Table 4 continued...

Ailments	Reported ailments with 15 days recall period		Hospitalisation (1 year recall period)		
	Rate of ailments per lakh population	Average cost of OP treatment per person (₹)	Rate of hospitalisation per lakh population	Average cost of treatment (₹)	
				Govt. Hospitals	Pvt. Hospitals
Others (including obesity)	13	937	4	10652	24143
Mental retardation	13	1965	12	10929	29191
Mental disorders	57	1037	33	19403	32787
Headache	222	346	37	3995	11439
Seizures or known epilepsy	37	719	31	6799	20749
Weakness in limb muscles and difficulty in movements	114	831	51	6516	28927
Stroke/ hemiplegia/ sudden onset weakness in half of body or loss of speech	36	1091	64	8426	60799
Others including memory loss, confusion	11	869	14	23132	41298
Any difficulty or abnormality in urination	61	668	15	3567	15382
Pain in the pelvic region/reproductive tract infection/ Pain in male genital area	25	386	147	2151	14276
Change/irregularity in menstrual cycle or excessive bleeding/pain during menstruation and any other gynaecological and andrological disorders incl. male/female infertility	12	1103	13	2421	14143
Pregnancy with complications before or during labour (abortion, ectopic pregnancy, abortion, hypertension, complications during labour)	30	1266	11	5062	19960
Complications in mother after birth of child	12	1078	16	5559	20707
Illness in the newborn/ sick newborn	49	1180	17	7507	20970
Discomfort/pain in the eye with redness or swellings/ boils	17	950	5	12484	21723
Cataract	1010	468	116	4159	21353

Table 4 continued...

Ailments	Reported ailments with 15 days recall period		Hospitalisation (1 year recall period)		
	Rate of ailments per lakh population	Average cost of OP treatment per person (₹)	Rate of hospitalisation per lakh population	Average cost of treatment (₹)	
				Govt. Hospitals	Pvt. Hospitals
GLAUCOMA	279	1191	212	17961	57923
Decreased vision (chronic) NOT including where decreased vision is corrected with glasses	820	254	48	6240	16856
Others (including disorders of eye movements – strabismus, nystagmus, ptosis and adnexa)	272	425	36	10091	17861
Earache with discharge/bleeding from ear/ infections	366	980	113	5114	23199
Decreased hearing or loss of hearing	80	603	11	2500	25779
HYPERTENSION	490	731	293	6276	24947
Heart disease: Chest pain, breathlessness	39	1854	95	8028	30234
Acute upper respiratory infections (cold, runny nose, sore throat with cough, allergic colds included)	28	1024	30	12400	22364
Cough with sputum with or without fever and NOT diagnosed as TB	249	529	39	4463	16560
Bronchial asthma/ recurrent episode of wheezing and breathlessness with or without cough over long periods or known asthma	814	625	150	10863	33572
Diseases of mouth/teeth/gums	326	639	46	6361	23415
Pain in abdomen: Gastric and peptic ulcers/ acid reflux/ acute abdomen	79	1353	128	14017	34369
Lump or fluid in abdomen or scrotum	26	1024	51	13189	36165
Gastrointestinal bleeding	58	1047	87	7083	26499
Skin infection (boil, abscess, itching) and other skin disease	14	1462	161	3553	15622

Table 4 continued...

Ailments	Reported ailments with 15 days recall period		Hospitalisation (1 year recall period)		
	Rate of ailments per lakh population	Average cost of OP treatment per person (₹)	Rate of hospitalisation per lakh population	Average cost of treatment (₹)	
				Govt. Hospitals	Pvt. Hospitals
Joint or bone disease/ pain or swelling in any of the joints, or swelling or pus from the bones	3	2479	25	4785	63911
Back or body aches	6	547	35	4656	22951
Accidental injury, road traffic accidents and falls	116	1486	354	9185	39483
Accidental drowning and submersion	3	1543	4	4586	52620
Burns and corrosions	5	2024	21	13687	91047
Poisoning	1	1474	20	9581	20750
Intentional self-harm	0	382	7	7044	13418
Assault	2	2708	9	8351	25292
Contact with venomous/harm-causing animals and plants	8	2608	27	3964	10193
Symptom not fitting into any of above categories	219	646	108	17023	38878
Could not even state the main symptom	10	523	9	5263	22999

Source: Estimated from National Sample Survey 71st round unit record data

Discussion

Currently available cross-sectional survey data do not allow us to estimate the true extent of OP expenses incurred by Indian households for a full year because of its short recall period. However, the incidence and prevalence of ailments, especially chronic illnesses, which require OP care suggest that they are not insignificant. Though OP expenses may not

have as much of an impoverishing effect on households as hospitalisation expenses, the cumulative expenses over an entire year can be substantial, especially for households with elderly and chronically ill members. Our analysis finds that individual OP expenses, as a proportion of per capita consumption expenditure may be high enough to impact well-being of individuals as well as

households. Further, the need for OP care is found to be higher for some, more than others. Children, women and elderly have higher needs for OP care. Women and elderly are also in greater need for OP care due to higher rates of chronic illnesses. Most recent NSS data found that about 17.2 per cent of the households have at least one chronically ill person and 26.9 per cent of households have at least one elderly member.

Need for OP care seems to increase with economic status and this pattern is stronger for those with chronic illnesses. However, the scheduled tribe (ST) community shows a lower need for OP care, especially for chronic illnesses as well as in utilisation of OP and hospitalisation care. There is no other evidence to believe why need for OP care or hospitalisation should be lower for ST population and we are left to wonder if it is a case of under-reporting. Like the ST community, north-eastern India also shows very low need for OP care as well as utilisation of inpatient care. These patterns could be an indication of lower awareness and access to health care for these communities and regions. Since government insurance covers hospitalization, there may be no incentive for the supply-side to make OP care available and accessible, thus exacerbating the under-reporting of OP needs, especially for underserved communities.

Similarly, not all need for OP care is satisfied. In the event of an illness, whether an individual gets OP care or not is found to

depend on her economic status and social identity. In fact, the positive association of economic status and social identity with utilisation of OP care is stronger for chronic illness. In other words, richer individuals belonging to upper castes have higher likelihood of getting OP care when they fall sick and this pattern is stronger for chronic ailments. The huge rich-poor difference found in household spending on chronic ailments such as diabetes (Tripathy and Prasad 2018) could be an indication that chronic ailments are under-detected and under-treated among the poor. For chronic illnesses, medicines account for a large share of OP care expenditure. Other than economic status and social identity, other factors that matter to an individual's realized access to OP care are place (rural/urban) and region of residence. Individuals from rural India and the north-eastern part of the country seem to have lower realized access to OP care. Since it is found in other studies that utilisation of health care by women and children in poor households are more sensitive to price, a strong association of OP care utilisation with economic status observed in our analysis has worrying implications. It implies that by not covering OP expenses under any health expenditure protection mechanism we are not addressing an opportunity to reduce the gender and age-group based discrimination in health seeking behaviors within households.

People mostly depend on private facilities for OP care. In fact, people's dependence on private facilities is higher for OP care than

hospitalisation. The utilisation of private OP care is higher for richer and socially advanced castes and individuals living in urban areas. The better perceived quality of OP care provided by private providers as compared to the government facilities are observed in many studies. For example, Bhatia and Cleland (2004) find that private facilities provide longer length of consultation time, higher likelihood of physical examination and offer explanation of diagnosis and prognosis, better privacy, higher probability of administering medications compared to public facilities. These are the indicators which are important to people in the formation of their perceived quality of the provider or facility. As private OP care in India is very heterogeneous in quality ranging from services provided by unqualified practitioners or quacks to very qualified doctors practicing in multi-specialty hospital, choice of private care may not always indicate better quality of OP care. A higher variation of cost of OP care is also observed in the private sector – a pattern not observed for inpatient care (Peasah *et al* 2015). If government insurance covered OP care, it could be a mechanism to standardize the quality and price of OP care through recognized facilities, thus naturally weeding out unqualified and non-standard OP care.

People predominantly depend on allopathic system of medicines for OP care. Though people's dependence on non-allopathic system of medicine is a little higher for chronic ailments, it does not show any systematic variation with any of the individual or

household characteristics. Since public facilities is found to play an important role in promoting non-allopathic system of medicines especially in the rural areas (Rudra *et al* 2017), one can question if such a policy is backed by evidence of people's preference for non-allopathic AYUSH OP care or scientific evidence of its effectiveness over allopathic system of medicine (Mukherjee *et al* 2013). In spite of higher supply of AYUSH practitioners in many Indian states (Government of India 2018), there is not much preference for the non-allopathic system of medicines. In fact, the use of AYUSH practitioners are seen to decrease for those of higher socio-economic status. Hence lower cost and widely heterogeneous AYUSH care may not be the answer for OP needs for the poor, as suggested by PMJAY.

The proportion of population utilizing OP care without incurring any OOP expenses has reduced over the years. The average cost of OP care per person is in fact, a significant amount when compared with average per capita consumption expenditure. Medicines, which is the largest component of OP care, account for a huge share in total OP expenses. Diagnostic tests, though not as common as medicine, can also cost as much as medicines when prescribed. The experience of some states shows that there are achievable ways to reduce the costs of medicines. For example, the centralized procurement system of medicines in Tamil Nadu made it possible to purchase medicines at least possible costs (Chokshi *et al* 2015). In 2012 West Bengal

introduced a public-private partnership scheme called Fair Price Medicine Shops (FPMS) within government hospitals which reduced the costs of drugs by bringing the generic drugs into the system (Dutta and Bandyopadhyay 2018). Though generic drugs are not preferred by private doctors, users of generic drugs do not show any aversion towards it compared to branded drugs. A study by Das *et al* (2017) observed that higher proportion of generic drug users (93 per cent) believed in the effectiveness of their drugs in controlling their ailments compared to branded drug users (87 per cent). No significant difference was observed in reported adverse effects between generic and branded drug users.

The existing insurance, which mostly cover hospitalisation expenditures, does not seem to take care of OP expenses at the individual level. For example, compared to those who do not have insurance, individuals with insurance do not show lower OP expenses. This is consistent with findings of Karan *et al* (2017). However, our analysis shows that once an individual incurs positive OP expenses, having a government provided insurance reduces the amount of the OP expenses. This finding may have implication for the poor since majority of the government supported insurance coverage has targeted the poor population. It is unclear whether the reduction of OP expenses occurs because the poor with insurance are referred to inpatient care. This is another reason to cover OP expenses as just covering inpatient expenses might result in overuse of inpatient

care, raising expenses for the individual as well as the state.

We have tried to argue that the poor especially need to be covered for their OP expenses. An important policy dilemma in this context would be should government finance their OP expenses through the insurance route or should the government directly provide OP care to them through public facilities. Financing the poor's OP care needs through the insurance system may offer more freedom to the poor in choosing their care providers but it may also be an expensive option for the government. There is evidence that OP care is much cheaper in public facilities. A study estimating cost for different types of health care services (such as outpatient visit, inpatient stay, surgery etc) in different categories of hospitals (government, private, charitable etc) found that outpatient visit ranged from ₹94 in district hospital to ₹2213 in private hospital.

Prior studies with exclusive focus on OP care also concluded that improving the availability of medicines and diagnostics for chronic conditions as well as strengthening the referral system of government facilities can improve the financial protection of the poor (Bhojani, *et al* 2012; Gupta *et al* 2016). Some of these studies tend to conclude that by improving the quality and accessibility of public facilities, OP expenses by the poor can be reduced if it leads to higher utilisation of public facilities by the poor.

Whether direct public provision or insurance

based financing for health care is a better system to protect the health of the poor for a country like India is still debatable. If for the sake of argument one accepts the merits of an insurance-based system, one is not convinced in the effectiveness of an insurance system that does not cover OP care. OP expenses can be significant given people's higher dependence on private providers on grounds of better perceived quality and lower indirect costs. Further, increasing burden of chronic non-communicable ailments, which require regular OP care, monitoring and medicines can also significantly increase OP expenses. A broader coverage of benefits that include medicines and OP care for the poor and near poor (those just above the poverty line), especially for chronic illnesses is necessary to achieve significant protection from impoverishment.

In conclusion, two important points need to be emphasized. First, we need to work towards having reliable estimates of annual OP expenses for the country based on a longitudinal survey. Second, the identification of poor and vulnerable – a criterion used for entitling a household with insurance benefits – should be dynamic (rather than based on census as is being done in PMJAY) as individual status as poor and non-poor changes and often, high OOP health expenditure is a significant contributor.

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Clarity in Policy is the Need of the Hour!

Dr. Kunal Sarkar*

Dr. Kunal Sarkar is a renowned cardiac surgeon with more than 38 years of experience. He is also associated with the academic activities of European Association for Cardio-Thoracic Surgery (EACTS) and Indian Association of Cardiovascular and Thoracic Surgeons (IACTS). In this candid conversation with IMI Konnect, he speaks on the pertinent issues in the global healthcare industry, especially in India. The interview highlights various transitions and developments in the healthcare sector.

IMI Konnect: *The incidence of cardiovascular diseases has increased globally and especially in middle-income countries like India. What are the factors that contributed to this?*

KS: This is perhaps a kind of price we are paying for evolutionary changes in certain sense. Broadly speaking, if we look at the history of humanity, on a planet which is 800 billion years old, we have been here for about 300,000 years only. The human species have gone through a sequence of very rapid changes owing to its intelligence and adaptability. Thus, our biological or evolutionary machinery has been subject to lot of adaptability pressures.

Let us look back! We do not eat the same as we did 100 years ago, we do not dress the same, we do not live the same, even we don't speak the same. Thus, our taste, fashion, housing habit, language - all have changed over the years. All these changes have imposed a lot of pressure

on our system. As we are very restless species, the mind is changing, but whether the body can keep pace with the mind is a big question. For instance, if we go out for a quick meal, we first think of fast food. But the biggest fast food that we indulged in has been products of agriculture! We think of system in large scale agriculture as natural, but to our biological machinery it is not. Our systems were made for fruits, plants and animals found in the natural ecosystem.

Growing rice, wheat and other crops and eating those are not natural processes. We were born on the planet to be hunters and gatherers, we were picking up things, living on nature, providing for ourselves and we went along. Agriculture is not more than 15 to 20 thousand years old. So, 280,000 years we lived in a different way. Suddenly over the last 20,000 years, we have decided to do something radically different. So, something

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like eating a plateful of rice is a very disruptive habit. Agriculture was then followed by agricultural animal proteins. So, today we employ our biological system to enormous pressure to change ... is it clever enough to do that? Evolution is a slow process, cannot be fast forwarded.

With industrial revolution, we work less, machines work more! Can anybody now imagine a life without a remote control, an elevator or an escalator? The human machinery is being introduced to rapidly disruptive changes in two levels – first, the amount of energy load we are putting into our system, by consuming different kinds of food and second, the method in which we are trying to spend the energy. So, the energy consumption is increasing, but energy expenditure is decreasing. I think this is too rapid and disruptive. Human brain or thinking is really overpowering the human body. If you compare the carbohydrate consumption of a person today to that of thousand years ago, there is a huge difference. But the weight of the pancreas remains the same, the length of the intestine remains the same, the hypothalamus remains the same! Thus it's an old machinery which is being exposed to more and more pressures, and therefore, doctors today are constantly emphasizing on exercising more, keeping body weight in control and going for a balanced diet. But the fact is that our movement is restrained, our energy intake is not dependent on necessity, but on taste.

The current lifestyle essentially is the major cause of cardiovascular diseases and it may be said that we are currently living in the era of lifestyle diseases. In the global context, infectious diseases have given way to lifestyle diseases. But, in India, infectious diseases like cholera, malaria etc. have not gone down. Unfortunately for India, the burden of both these types of diseases has been high. At present if we compare the total burden, 70 per cent is from lifestyle diseases and 30 per cent from infectious diseases.

IMI Konnect: *What is your take on the supply side of the healthcare in India? Are the infrastructure and facilities sufficient?*

KS: That is a very interesting question. When I look at the supply side of the healthcare, I ought to have the clarity that who is my potential client or to whom I am supplying to my medical service. Pre-1947, at least 90-95 per cent of Indian population had no access to healthcare, no hope for any kind of social security on healthcare. Two hundred years of colonialism had culminated to the notion that access to healthcare was just like having an elite credit card. Today if you walk into the government hospitals, you will find them crammed with people. People are taking local trains in the wee hours to come to the hospitals, standing in queues in the out-patients departments. The wards are full of patients much beyond the stipulated capacity. Thus the expectations of an ordinary man that I can also access the 'medicine', I can also be treated by a doctor I want, is a completely new

phenomenon in the Indian ethos. So, today there is tremendous disbalance between the aspiration of the common mass and the infrastructure available. The infrastructure available is grossly insufficient to cater to the needs of the people. The bottom-line is that the common people are severely underserved. In spite of the strategies developed in the past 5 years by the Central Government, total bed-capacity in India has not increased in the last nine to ten years at all!

IMI Konnect: *What is your perspective on setting up of super-specialty hospitals?*

KS: The super-specialty hospitals which have come up in India are nothing but mistakes! The policy makers should have emphasized more on general hospitals rather than super-specialty hospitals. The government should have built secondary hospitals, not super-specialty hospitals, as they are more beneficial to the people. Furthermore, it's easier to find doctors in the general hospitals and these could have been made functional more easily. Whatever, we can be happy with the fact that at least something has been made. Though, these may take a few more years to be fully functional.

IMI Konnect: *As you have already mentioned that the government run hospitals across the country are grossly insufficient and so, overburdened, what may be the solution to this problem?*

KS: As I have mentioned earlier, there is a tremendous pressure on the government

hospitals to cater to the health requirements of the common mass. Though everybody is doing a great job in these hospitals, there is a simmering discontent on why there should be so much crowd and clutter in government hospitals where people are working their hearts out. We must look at the number of doctors per 10,000 population, the number of beds per 10,000 population etc. A parity between the provider and the potential beneficiary of the healthcare services is definitely sought. Nonetheless, what is missing is clarity! That clarity with respect to the services has to come. Private healthcare providers also need to render good quality healthcare at reasonable cost to the people. So, I think a mature healthcare policy announcement is long awaited from which we can benefit from the private players as well as make healthcare services available for all.

Furthermore, clarity is sought regarding how it is viewed - a commodity or a service? Unless that clarity is established by a policy, there are a lot of double-talk happening. Amidst this ambiguity people are finding healthcare expensive whereas governments are trying to provide meaningful healthcare. This is neither fair on the government or on the people nor on the entrepreneurs who are taking up healthcare projects.

IMI Konnect: *Have the various government schemes implemented in India been successful in reducing the out-of-pockets expenses of patients/patient parties?*

KS: There is a governmental expenditure in

healthcare which stands at about 1.15 per cent of GDP and there has been little increase in the same with the government schemes of late. Again the overall national expenditure on healthcare is about 6 per cent which means that 4.85 per cent of this expenditure comes from people's pockets which deals a crippling blow to an average Indian citizen. For a large proportion of the population who become indebted with loans, the single biggest reason behind this in India is not marriage of his/her daughter, education of his/her daughter/son but the incidence of falling sick. Thus, it becomes catastrophic indebtedness. Based on the age old definition of poverty, we are extending social services. Thus, it is quite obvious for a citizen to be aggressively critical about the facilities.

IMI Konnect: *What are your views on the "commodification of healthcare" in India?*

KS: As I have stated earlier, the health infrastructure is grossly insufficient to meet the healthcare requirements of the people of India. Governments, post-independence, have not provided a substantial amount of the available funds to healthcare which was then considered to be less important. So, eventually if we track the journey of the Indian healthcare sector, it is seen that we have turned healthcare into a commodity. Just like a garment, cellphone, a packet of chocolates, a packet of crisp wafers or any other product on the shelf, you can only access it if you have the money. So, this was a contradiction to the framework of our society where we presumed it to be

socialistic. Because of the mismatch between people's aspirations and healthcare infrastructure, private nursing homes and hospitals entered the scene. In an economy where you have a demand for a product but it is less available, it leads to an increase in its price. On one hand, there are over-crowded, ill-maintained government hospitals and on the other hand, there is a kind of artificial garden of Eden in the private hospitals which are trying to create a five-star travel lounge for the people even though it is known that healthcare is all about service and not about giving such comfort. So, health suddenly became a commodity. When people are in the lookout for an avenue to live, pent-up grievance on not difficulty of access and financial ruin has now become imprinted in the psyche of an ordinary citizen. Consequently, of late we have unfortunately witnessed these eruptions of public grief or anger as a result of commoditizing healthcare several times.

IMI Konnect: *What are the most serious issues that should be immediately addressed in the context of the Indian healthcare sector? How may these be resolved?*

KS: I think the most fundamental problem in Indian healthcare system is a paralysis of policies. The various health schemes introduced by the government also have serious side-effects. I think the sooner we are going to have some clarity, the better the system will be. Without a doubt, there were some bad practices in the healthcare industry

as well, such as elevated costs, undue margins kept for marketing expenses etc. Here it is important to look at all that flab, cut them out of the medical expenditure and focus on the delivery of medicines. Indian healthcare industry is crippled by insufficient infrastructure in the government-aided hospitals and high cost of treatment in the private sector.

At present, we have intellectual dishonesty in government's healthcare policy. Between the centre and the state it is nobody's child. At present, it is a mix of government hospitals and private hospitals but somewhere a fabric has to be woven by linking up all these facilities through clear-cut policies.

The policy makers cannot start avoiding the healthcare concerns. Today we have a centralized body, i.e. the National Medical Council, the over-arching body for the health sector, which is a good thing. So, with such centralization of policies, one cannot afford a policy paralysis.

Furthermore, the overall growth of the healthcare industry is plummeting. It was promised that the Indian healthcare industry would grow at 20 per cent CAGR per year. However, it did not grow as rapidly. Why? Because if you look at the CAGR, you will see that the figures are terrible overestimations because in India pharmaceutical industry is considered to be a part of the healthcare growth rate. Pharmaceutical industry should not be a part of healthcare.

IMI Konnect: *What is your take on Universal Healthcare in the global context?*

KS: If you look at the various models of healthcare in the world, one model is Universal Healthcare which means healthcare is accessible to each and every citizen. Essentially it was Asia's idea, specifically Japan's. In 'Universal Healthcare', it is funded by the national healthcare system. Though Universal Healthcare originated from Asia, European countries such as France, Italy, Greece, Spain and even United Kingdom all got interested in this model. The European block embraced Universal Healthcare due to the spread of communism which was assuring welfare to people i.e., education, housing, healthcare etc. However, it collapsed eventually. For countries like Britain, if one pays 30 per cent tax, 10-12 per cent needs to be paid in social security benefits. This concept of increased taxation and funding the healthcare made people antagonistic to Universal Healthcare. Though we say it's a government funded system to provide healthcare to everybody but in reality, it is the top 10 per cent of the high-earning society and the middle-class on whom the tax burden actually falls. Tax burden do not fall on the people who do not earn, so in some ways they are the beneficiaries in this case. The tax burden will be therefore borne by a large section of the population leading to their discontent. Such countries, in order to keep the voters who are paying such taxes happy, try to lower the tax rates and lowering the rates leads to a decrease

in healthcare budget. Hence, the Universal Healthcare, which sounds very good, comes under tremendous pressure. If you look at the NHS (National Health Service) in UK, they say that if the Queen meets with an accident, she will get the same treatment as the tramp in the tube station. Hence, a contradiction is witnessed in this system. For Asia, if we look at countries like Japan, Taiwan, Korea, Malaysia and even Thailand, it can be seen that these countries have progressed a lot in Universal Healthcare. Thailand's healthcare is far better than India. They have a 300 Baht plan at the moment through which they are trying to make healthcare more uniform and accessible to people. The United States followed a mixed model for more than a century till former president Barack Obama introduced Obamacare. In the mixed model there were some benefits for people with low earnings, some benefits for the elderly people as well as the regular healthcare system where the corporate or an individual is purchasing the insurance. So, the government had no compulsion to keep high taxes, taxes could be lower as one is buying the insurance.

IMI Konnect: *As you have raised the topic of 'Obamacare', what impact did it have on US healthcare?*

KS: Everything looked nice till Barack Obama discovered an uncomfortable secret that in a population of 20 crore people in the United States, almost 6 crore equaling a population of the United Kingdom, did not have access to any healthcare. If a person was

knocked down on the streets of Los Angeles the ambulance would perhaps come and try to find whether the person is carrying a health card. In the absence of the card, the ambulance driver usually would conveniently drive by without attending the injured person except in certain cases of some emergency. It took 350 years for U.S. to uncover the fact that almost one-third of its population was without any access to healthcare. So, Barack Obama launched Obamacare which provided insurance to a lot other people through different mechanisms thereby widening the coverage. But as soon as the coverage got widened, the fund had to come from somewhere. So there had to be an increase in premium. The bottom line is that an American citizen has to pay for it. This was a very difficult task. The Europeans, who for the last 60-70 years have practised Universal Healthcare, now want to escape this model of increased taxation to fund healthcare and are trying to introduce some privatization. On the other hand, the U.S., which was 90 per cent privatized is trying to be socialistic to extend more and more healthcare services to the people. Through this disruptive change in social policy, some parity has been however established in the U.S. The socio-economic circumstances fundamentally decide a lot in maintaining such model.

IMI Konnect: *How do you think can the Indian healthcare framework be improved?*

KS: Today, India is world's 6th largest economy and I think it is because we have the

2nd largest population. Out of 180 countries we are ranked 130 in human development, 145 in healthcare access, our literacy rate has not shifted much in the last 10 years. Therefore, a lot of things need focus. To me the most important thing, which everybody will benefit from, is clarity. Indian healthcare was opened to foreign direct investments since 1980s even before Prime Minister P.V. Narasimha Rao liberalized the economy in 1991. However, still in India, selling healthcare is considered like selling water in a desert. Why is it difficult to sell it in India? It is not because you don't have thirsty people or water but we lack a rational mechanism to deliver this water to the thirsty people. Either the government needs to inform the people that healthcare doesn't cost, one gets it for free or clarify the distribution mechanism by which it is helping them to access it.

There are schemes at present both at the state and the central levels, one of them being 'Ayushman Bharat' which probably is the world's largest healthcare scheme available. The philosophy and objective of this scheme definitely need to be appreciated but the philosophy is being completely mounted on the back of private healthcare system. In a private healthcare system, out of your revenue, you have to pay for the medicines, the wages, the electricity, the land, the doctors' salaries etc. In such a scenario, if the government tells all the hospitals to charge ₹2500 for something that is being charged ₹10,000 at present, it leads to tremendous pressure for the

private hospitals. Because of this ever since Ayushman Bharat has come in, in spite of it being a great idea, it lacks clarity. I must praise the determination and the grit of most of the hospitals that are trying to bear this pressure to sustain. Due to this impact, very few private players entered the healthcare sector. When the government says that treatment in the government hospitals are free, it is free to the patient but not to the taxpayer. At the same time, it's a humane thing that a person with a series of disease does not have to struggle for money over there. That is the hallmark of a civilized society. So, an equipoise needs to be struck. This should mean 50-50 collaboration between both sides i.e. the provider and the potential beneficiary of the services. That clarity of revenue model has to be outlined. Today we have the Sarva Shiksha Abhiyan. Can you imagine all the private schools being told that each one of it has to allow 500 free seats every year? Their entire business model of how they pay the teacher, how they run the school, will be jeopardized. Now you don't mind if the same building or the same infrastructure is being used during the unused hours to give free education to the underprivileged people. So, I think a mature policy announcement in healthcare is long awaited.

IMI Konnect: *What are the notable developments in Indian healthcare?*

KS: Around 2007, Andhra Pradesh Government introduced the 'Aarogyasri' scheme. It was the first time in Indian

democracy that healthcare became a political agenda. If you look at the past 50 years, one of the most important issues during the elections in any major democratic setup has been healthcare. The last two elections in the United States have been fought bitterly on healthcare. In the United Kingdom, if the government tries to close one hospital in the National Health System, it will become a complete zero in ten days' time. Nonetheless, it was the first time during 2014 Indian election that healthcare in the form of Ayushman Bharat became a national agenda. In West Bengal, probably a year or two before that, healthcare was figured out to be an important constituent of governmental services. So, probably we were behind the southern states but were little bit ahead of the central government. One good thing is that much churning of ideas is happening now and healthcare lies at the center of our social conscience. But unfortunately, we, not only as doctors but also as ordinary citizens, are still begging for clarity.

IMI Konnect: *What role can medical tourism in India play in the healthcare sector?*

KS: Some good things have happened in the Indian healthcare industry. India is now one of the world leaders in medical tourism. Actually, for a lot of private hospitals today, their lifeline in terms of getting extra revenue and making them a meaningful commercial entity has been medical tourism. On an average in Eastern India, major hospitals experience about 20 per cent medical tourism. In Delhi

and Gurgaon area, an average hospital again experiences almost 50 per cent medical tourism. We provide a lot of facilities to medical tourists coming from Bangladesh. Delhi and Chennai provide healthcare to Central Asia and to the Middle-East. So, India has quality healthcare, good quality treatment, good doctors standing on their dedication.

IMI Konnect: *What is your opinion regarding the standard of health statistics in India?*

KS: The standard of health statistics has vastly improved in India in the recent times, though there is still a lot of scope for improvement. A quality affirming body called the NABH (National Accreditation Board for Hospitals and Healthcare Providers) which standardizes hospitals has been developed. NABH has been a huge blessing for the Indian healthcare industry. It definitely does a sincere work. So, for quality maintenance, some good work has happened but at the same time the data pertaining to the community and private hospitals needs tremendous improvements. Data on even common diseases are still fragmented, e.g. for an emerging country like us, not knowing the incidence of diabetes is a matter of shame. So, data collecting and auditing need to be focused on. Auditing is very important for a database and the private hospitals are all doing on their own like old isolated fortresses. However in the near future, if all private hospitals do not come on the same page in terms of recording admissions of patients, their disease profiles as

well as the outcome profiles which makes the data acquired more meaningful, it is very difficult to get accurate and reliable data on healthcare in India. If they don't do it on their own, they must do it as a punishment and that punishment by the Government will be well-deserved. For evolution and improvement audit and assessment are mandatory.

On Developments of Infertility Management and Beyond

Dr. Baidyanath Chakravarty*

Dr. Baidyanath Chakravarty is an eminent gynecologist and In Vitro Fertilization (IVF) Specialist. He is the Founder and Director of Institute of Reproductive Medicine, Kolkata. Being a pioneer in the test-tube method of infertility treatment, he shares his valuable insights on the various issues and recent developments in the field of infertility management in the world, especially India. Though he highlighted the marked improvement in the infertility treatment offered, he also expressed his deep concerns over the inadequate infrastructural requirements to treat infertility ailments in India. He was also candid in discussing the future of infertility management in India.

IMI Konnect: *We definitely would first like to hear whether it had been a conscious decision at your end to take up the field of gynaecology and obstetrics fifty years back when the key health indicators had not been impressive at all for the country?*

BC: It was definitely not a conscious decision to join the medical field and take up obstetrics and gynaecology. I was born in a middle-class family of six children and hail from Faridpur district, now in Bangladesh. My father, being a Railway Station Master in B.N. Railway, had a transferable job. We went through severe financial constraints and lack of facilities of education in small towns. However, I managed to overcome these hurdles through the free studentship along with some scholarships with brilliant academic records

throughout my school life. I secured highest marks in the matriculation examination in 1945 of the Chotonagpur division of the Patna University and I received scholarships and got admitted to I.Sc in Ashutosh College. For higher education, I wanted to come to Kolkata which was possible with the help of my friend's benevolent parents who provided me with free accommodation. Finally, I joined Bengal Medical College to pursue M.B.B.S. wherein I eventually did well in obstetrics and gynecology in the final M.B.B.S examination. This proved as a turning point in my academic career and helped me achieve excellence in the field of Medical Science. Though, I was interested in reconstructive surgery for treating the congenital anomalies of the female genital tract in the initial years of my

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career, my interest towards infertility management developed in the 1970s and then onwards, I took it up as a priority for my future professional growth.

IMI Konnect: *Being five decades in the field of Reproductive Medicine, how do you describe the evolution in the infertility healthcare issues and practices worldwide?*

BC: When we were students, infertility ailments were completely unknown to all. There were no such topics as infertility issues. The importance of infertility rose after the World War II. Post the World War II, there was an unexpected global population explosion in the Eastern Hemisphere of the world whereas in the Western Hemisphere, the population rapidly declined. The primary reason of this population explosion was the development of newer technologies in medical science. As a result of these technological innovations like use of fiber optics, ultrasonography, there was a sharp increase in the longevity of human life which led to more population. Minoos Masani wrote a book titled 'Our India' where the life expectancy of an average Indian was 27 years in 1940. Life expectancy in India has increased substantially now.

But, post the World War II, there was a misconception that the birth-rate has increased in India. As an immediate population control policy priority in the 1970s, there emerged a trend of mass vasectomy and tubectomy. Invariably this necessitated newer technologies for the

reversal or recanalization of blocked vas and obstructed tubes. At the same time, the demand of infertility management was increasing. As a consequence, several researches were on to develop newer technologies all over the world, including India. Dr. Robert Winston of Hammersmith, England invented the tubal recanalization at that time. Extensive research and clinical trial continued in two areas of infertility between 1965 and 1975 and various research papers were published on vas recanalization. India was no exception in addressing infertility issues

In the developed countries of the world, changing life style and diet habits rapidly multiplied the incidence of certain gynecological conditions, viz. polycystic ovary syndrome (PCOS) and endometriosis. These are the two most common anomalies for female infertility requiring special attention for infertility management. Thus more interests were shown on the physiological aspects. Comprehensive basic and clinical research on folliculogenesis, preparation of media and in-vitro growth of human oocytes as well as the clinical use of pelviscope (laparoscope) for diagnosis of pelvic pathology were identified. From 1952 onwards, Sir Robert Geoffrey Edwards who was the pioneer of in-vitro fertilization (IVF) started his research. The physiology of fertilization was completely unknown till then. During this period, in order to control the Chinese and Indian population various researches were undertaken. In 1963, people

became more aware of infertility issues in both the Eastern and Western hemispheres of the world. In order to control population explosion in India and China, oral contraceptive pills were introduced in 1960 which was first co-invented by Dr. Gregory Goodwin Pincus.

IMI Konnect: *Being a pioneer in the test-tube method of infertility treatment, what is your opinion regarding the recent developments in this field?*

BC: We can see that the entire world population can be divided into two segments – fertile and infertile population. Countries like India and China are considered as most fertile or highly populated countries whereas Denmark, Sweden, Switzerland are comparatively less fertile countries. This variance in the fertility index is caused by genetic setup and metabolomics setup. All the defects causing infertility in men and women cannot be treated by drugs; so some of the ailments need to be removed through surgical procedures. However, if any of the defects is not addressable by neither drugs nor surgery, then one needs to resort to test-tube baby. This was first realized in 1965 and therefore, to treat infertility issues artificial insemination was introduced. The two areas where extensive research and clinical trial continued were ovulation induction and the microsurgery for correction of tubal/vasal block. Though the first one based on hormones was introduced in 1941, its practical application was implemented in 1960s. In recent times, these

hormones are extensively used in the medical management of infertility especially in induction of ovulation, Intrauterine Insemination (IUI) and In Vitro Fertilization (IVF). IVF, an Assisted Reproductive Technology (ART) initially was also developed by Patrick Steptoe and Robert Edwards in the 1970s to treat female infertility caused by damaged or blocked fallopian tubes. The first test tube baby was born in the late 1970s. In 1993, testicular sperm extraction was first discovered in Belgium. Then researches started to develop tissue reengineering primarily for the development of missing organs in human body since organ donation, may not be feasible in these cases. Today most of the researches are primarily focused on the development of the stem cells globally, including India.

IMI Konnect: *What should be an 'ideal patient care service system' in the healthcare sector?*

BC: An ideal 'patient care service system' should consist of three major things such as a sound platform of basic science, a critical acumen in clinical approach along with the continuous efforts to improve medical service through innovative research and newer technologies. Earlier, the global healthcare sector was under-penetrated in terms of these technology adoption. The scenario is now changing gradually. Fiber optic cables, exponential increase in mobile telephone as well as the deployment of faster internet connectivity will definitely help mobile health service and patient care system to gain

additional momentum. Further, recent reformations include expertise and services of technologies like Hospital Information System (HIS), Picture Archiving and Communication System (PACS) and Electronic Health Record System (EHR). All these have resulted in rapidly increasing volumes of useful data generations. Therefore, an ideal 'health care service' can be provided through a combination of developing various contemporary medical technologies and the recently developed Information Technology.

IMI Konnect: *How is the utilization of In Vitro Fertilization (IVF) in India?*

BC: There were initially three units involved with IVF treatments in India from 1983 to 1986. Two of these were situated in Mumbai and one in Kolkata. The unit in Mumbai was the only one sponsored by the Indian Council of Medical Research (ICMR). The Mumbai unit had the access of importing requisite gadgets for the initial set-up, hormonal drugs and disposables for use. The policies relating to import license and foreign currency were very stringent. In the next one or two years, centers came up in Chennai, Guwahati, Jaipur and Bangalore. Therefore in the 1990s the usage of IVF started rising. Post liberalization in India in 1991, the IVF market witnessed many improvements which made the imports much easier. Several initiatives were undertaken by many national pharmaceuticals to manufacture the gadgets such as incubators, microscopes and medicines. This led to an increase in the number of IVF facilities in

India. We were successful in achieving the first biochemical pregnancy in 1984. In 1986, India's first scientifically documented IVF baby, Harsha Chawda, was born in Mumbai through the collaborative efforts of the ICMR's Institute for Research in Reproduction and the King Edward's Memorial Hospital (KEM). In 2018, there are more than 400 ART clinics in India as recognized by the Indian Council of Medical Research (ICMR).

IMI Konnect: *Why is the demand of infertility management increasing so rapidly in India? As commonly heard nowadays, is stressful erratic lifestyle the major cause of millions suffering from infertility nowadays? What can be the effective solutions to combat such concerns?*

BC: Though there has been a substantial increase in the population of India in recent times, it is expected to decline in the coming years. The major reasons behind this are primarily the adoption of western culture, changing lifestyle, social habits and poor diet habits. Consequently, the Indian society especially young adolescent girls are becoming more prone to certain gynecological conditions like endometriosis and PCOS. This will contribute to a significant rise in the incidence of infertility ailments in India, like the European countries such as Netherlands, Sweden, Denmark and Switzerland. The effective solution can be better knowledge of the reproductive system of the human beings to treat the infertility ailments. Also, greater focus should be given on funding of various

research by the Government as well as the private sector in the field of infertility management. The research interests of the medical practitioners should also improve to a considerable extent.

IMI Konnect: *Is existing health infrastructure sufficient to treat infertility ailments in India?*

BC: No, the infrastructure support in India to facilitate research as well as treatment of infertility ailments in India is not at all sufficient. There is a huge crunch in the funds actually available. One of the major reason is that infertility is still not considered as a primary ailment in India. Since, the infertility treatments are very costly, it becomes very difficult for the common mass to avail that. In order to reduce the costs, Government as well as private sector funding is highly called for. Insurance does not cover infertility issues till date. In the year 1983, I was asked that even though India is an overpopulated country, why we are so worried about infertility problems. My reply was it is because the total infertile population in Indian subcontinent equaled the total population of Australia. Therefore, this shows the magnitude of the problem in the country. Thus, I think infertility treatments should be given more importance in India and substantial funding is required to bring about more developments in this field.

IMI Konnect: *Where does India stand vis-a-vis other developed nations of the world in terms of infertility management?*

BC: I think in the next few years, India will be

considered as one of the leaders in infertility management. We have initiated a national registry called National A.R.T. Registry of India (NARI) in addition to the ICMR guidelines. NARI has helped the country to accurately summarize the overall experiences of all identified clinics performing ART treatment. The Indian Society of Assisted Reproduction (ISAR) has started a journal, i.e., Journal of Human Reproductive Sciences in 2008 covering all the aspects of human reproduction. Various research works and studies on ART have already been published in reputed international journals that are enough to prove the quality of infertility treatment offered by India on the global front. Patients from different parts of the world are availing the high quality-low cost infertility treatment in India. The results of infertility treatments in India are at par with the developed nations and in certain cases we are even better. However, substantial funding from both the Government and private sector, is required for upliftment of the infertility management in India.

It is also extremely necessary to standardize the treatment offered by the ART clinics. To make it happen, it is highly recommended that certain guidelines should be formulated to provide a uniform infertility management. There should be trained professional to guide and provide adequate treatment. Availability of experts in the field such as a clinician, an embryologist, an andrologist, a geneticist, an endocrinologist along with a trained counselor should be ensured.

IMI Konnect: *What are your words of advice to the young health professionals for the inclusive growth of the infertility healthcare sector?*

BC: Primarily, young professionals in this profession must maintain transparency with the patients, avoid false assurance and also, must focus on the predictive approach of treatment. In the field of infertility management, generally, there can be two extremes. These are either satisfaction from unexpected success or complete dejection due to repeated failures. They should maintain the virtue of the discipline and should not misuse the Assisted Reproductive Technology (ART). Secondly, they should know how to criticize themselves and should not be contended with their efforts. For example, young couples should be advised at a young age to start the treatment of IUI or IVF instead of continuing expected treatment with drugs for a long time. There can be three kinds of medical practitioners such as a 'clinician', a 'basic medical scientist' or a 'clinician-scientist'. My advice to young professionals is to be the 'clinician-scientist' and contribute to future research in the field of infertility management while rendering the professional service.



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