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Rising Health Expenditure Due to Non-Communicable Diseases in India: An Outlook

Barik, Debasis and Arokiasamy, Perianayagam

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1 Corresponding Author:

2 Debasis Barik,

3 National Council of Applied Economic Research,

4 Parisila Bhawan, 11 Indraprastha Estate, New Delhi,

5 PIN – 110002 (India).

6 Email: debasisbarik25@gmail.com

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8 **Title: Economic Burden of Non-communicable Diseases in India**

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Debasis Barik

11

Associate Fellow

12

National Council of Applied Economic Research, India

13

debasisbarik25@gmail.com

14

15

16

Perianayagam Arokiasamy

17

Professor, Department of Development Studies

18

International Institute for Population Sciences, India

19

parokiasamy@iips.net

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28 **Rising Health Expenditure due to Non-communicable Diseases in India:**

29 **An Outlook**

30

31 **Abstract:** With ongoing demographic transition, epidemiological transition in India has been
32 emerged as a growing concern in India. The share of non-communicable disease in total
33 disease burden has increased from 31 per cent in 1990 to 45 per cent in 2010. This paper
34 seeks to explore the health scenario of India in the wake of the growing pace of non-
35 communicable diseases like diabetes, hypertension among Indian population using data
36 from health and morbidity survey of the National Sample Survey Organisation (2004) and
37 notifies about the resource needed to tackle this growing health risk. Given the share of
38 private players (70 per cent) in Indian health system, results indicate a higher private
39 expenditure, mostly out-of-pocket expense, on account of non-communicable diseases. A
40 timely look into the matter may tackle a more dreadful situation in near future.

41

42 **Background:**

43 Through the early and mid-phase of India's epidemiological transition, the age pattern of
44 morbidity was overwhelmed with infectious diseases (Murray and Lopez 1997). In the
45 recent two decades, the prevalence of non-communicable diseases has escalated immensely
46 in India (Reddy et al. 2005). India's swift progress through demographic and epidemiological
47 transition has resulted into a bigger challenge of dual burden of communicable and non-
48 communicable diseases (Jakovljevic and Milovanovic 2015; Yusuf et al. 2001). With the share
49 of older cohorts increasing relative to that of younger cohorts, infectious and nutritional
50 disorders are being replaced by chronic, degenerative and mental illnesses as the leading

51 causes of morbidity and mortality (Lopez et al. 2006; McKeown 2009). The resulting concern
52 is not just epidemiological but also economic. Non-communicable diseases, which often go
53 with long-standing disabilities, have direct economic consequences at households and
54 community level, both through the expenses on healthcare those divert other expenditure,
55 but also on levels of income through reduced labor productivity (Abegunde et al. 2007;
56 United Nations 2015).

57 Expenditure on health is highly lopsided across the globe, where the developed countries
58 spend the most on health per person (Getzen and Poullier 1992). The Organisation for
59 Economic Co-operation and Development (OECD) countries accounted for less than 20 per
60 cent of the world's population but were responsible for almost 90 per cent of the world's
61 health spending (WHO 2003). Health expenditure, both in terms of percentage of GDP spent
62 on health and per capita health expenditure, is much higher in the developed countries than
63 developing countries. Unlike in economic history of Colonial Age, in recent decade's global
64 share of health spending is undergoing gradual but constant change in favor of developing
65 Third World nations (Jakovljevic and Getzen 2016). Such inevitable and deep changes are
66 led by top BRICS¹ emerging markets (Jakovljevic 2016). In contrast, the ratio of public to
67 private health expenditure in India is extremely low in India. Further, all the private
68 expenditure in India (as in some other countries) is almost exclusively represent household's
69 out-of-pocket health expenses. According to World Health Organization (WHO 2014),
70 private share on total healthcare spending in India is as high as 70 per cent, only next to some
71 poor African countries. In India, 86 per cent of all private expenditure and 72 per cent of total
72 expenditure are out-of-pocket. These high out-of-pocket spending on health often takes a

¹ BRICS refers to the association of five major emerging national economies namely Brazil, Russia, India, China and South Africa.

73 higher toll on the poor than the rich (Jakovljevic 2015). Poor people in India spend about 15
74 per cent of their monthly household income for medical treatment (Barik and Desai 2014).

75 South Asian countries are going through a rapid demographic transition, which often
76 accompanied by epidemiological transition. In this phase, while communicable diseases are
77 still pandemic, non-communicable diseases like cardiovascular disease, diabetes,
78 respiratory diseases, cancer are picking pace. Ghaffar, Reddy and Singhi (2004) pointed out
79 the growing risk of these disease among South Asian population. The non-communicable
80 disease in this region have some special feature in addition to those commonly available in
81 the developing countries. The metabolic syndrome is very common among urban Indians
82 (Gupta et al. 2001; Ramachandran et al. 2003). The high prevalence of glucose intolerance
83 and the distinctive dyslipidaemic pattern of reduced concentrations of high density
84 lipoprotein (HDL) cholesterol and high concentrations of triglycerides characterize the
85 metabolic profile, and abdominal obesity characterizes the phenotype of the urban adult in
86 India. Impaired maternal and fetal nutrition, resulting into low birth weight poses a greater
87 risk of cardiovascular disease in South Asia. While use of tobacco products increases the risk
88 of cancer in the region, indoor air pollution mostly due to burning wood fuel contributes to
89 chronic obstructive airway disease (Ghaffar et al. 2004). Barik, Desai and Vanneman (2016)
90 in their very recent article has argued that richer Indian adults are at greater risk of
91 developing non-communicable diseases like diabetes, heart disease and high blood pressure
92 than their poorer counterparts. The report of the Global Burden of Disease reported that the
93 share of non-communicable disease on the disease burden has increased from 31 per cent in
94 1990 to 45 per cent in 2010 (Charlson et al. 2015).

95 Following the demographic transition, developed western countries have witnessed an
96 epidemiological transition where the share of non-communicable diseases increased in the
97 total disease burden. The non-communicable diseases require a very different health set up
98 than that is required for communicable diseases. In the present paper, we have tried to
99 project the future health scenario of India in the wake of demographic transition and
100 associated health transition. We have estimated the likely scenario of share of communicable
101 and non-communicable diseases among Indians and required economic resource for
102 treatment of these maladies. Various countries have developed their National Health
103 Accounts (NHA) estimates to plan their health budget according to the nature of diseases.
104 India do not have such a comprehensive NHA estimate. This present study may throw some
105 light to plan health budget according to the need of the hour and also for future.

106 **Data:**

107 We have used the Morbidity and Healthcare Survey (2004) 60th round, carried out by the
108 National Sample Survey Organization (NSSO) under the Ministry of Statistics and
109 Programme Implementation, Government of India as the main data source for the analysis.
110 The survey was canvassed between January to June, 2004 across the whole of the Indian
111 Union except i) Leh (Ladakh) and Kargil districts of Jammu and Kashmir, ii) interior villages
112 of Nagaland situated beyond five kilometres of the bus route and (iii) villages in Andaman
113 and Nicobar Islands which remain inaccessible throughout the year. It covered 73,868
114 households of which 47,302 were from rural areas and 26,566 from urban areas. Prevalence
115 of various morbidity and utilization of healthcare services from public and private sources,
116 together with the expenditure incurred by the households in this process have been collected
117 through this survey. The survey collected information if a person was ailing during the last

118 15 days prior to the date of survey. The individual sample size was 383,338; of which
119 195,712 were males and 187,626 females.

120 The data collected can be summarized in three categories:

- 121 • The first category comprises the inpatient healthcare received by the household
122 members as hospitalized cases during last 365 days. The expenses incurred during
123 the reference period for treatment (as an inpatient of a hospital) of such ailments and
124 details of the healthcare finance have been recorded here.
- 125 • Irrespective of the hospitalisation status, the second category documents all such
126 ailments for which the patients were treated during the 15 days prior to the survey.
- 127 • The third category includes all ailments suffered during 15 days prior to the date of
128 survey for which no medical treatment received.

129 **Methodology:**

130 The classification of communicable and non-communicable diseases followed the
131 classification adopted by World Health Organization (WHO) in Global Burden of Disease
132 Studies, 2004 (Appendix table 1). The prevalence of any ailment or morbidity has been
133 defined as the number of persons ailing within the reference period per 1,000 persons
134 exposed to the risk of the ailment from the same group of population.

135 The expected change in the share of each category of morbidities has been estimated up to
136 year 2051. The main assumption behind this projection was that the prevalence rate of each
137 morbidity category would remain unchanged among all the age groups over times. This is a
138 very strong assumption, but we did not have a dataset which allows us to examine disease
139 progression in Indian context. However, this demographic projection would help us to

140 foresee the future of Indian epidemiology in the course of demographic transition, the
141 process already started. Utilization of hospitalization services over the 15-day reference
142 period was multiplied by 24.33 (i.e. 365/15) to obtain an annualized counterpart of
143 hospitalizations (after netting out any hospitalizations reported in the 15-day reference
144 period).

145 The yearly cost of treatment for communicable and, non-communicable diseases has been
146 estimated based on per unit cost of treatment for inpatient and outpatient, derived from the
147 NSSO unit level data. Age-specific hospital-days have been estimated for each disease type.
148 The average cost of treatment per stay as an inpatient and average duration of stay were
149 estimated for each disease type to obtain per day average cost of treatment as inpatients,
150 and multiplying it with the estimated hospital-days provide the annual cost of treatment as
151 an inpatient. The annual out-of-pocket expenditure as outpatient has also been estimated
152 following the similar procedure, where out-of-pocket expenditure implies to the expenditure
153 a household bears after deducting the reimbursement from various healthcare financing
154 sources. We reached the annual cost of treatment as an outpatient by multiplying the average
155 cost of treatment with total number of outpatient visit. Age specific inpatient and outpatient
156 visit has been assumed to capture the effect of the increasing prevalence of non-
157 communicable diseases beyond age 30 years.

158 Household level out-of-pocket expenses are the major source of healthcare finance in India.
159 Since the presence of health insurance in India yet to feel, the rest of the health expenditure
160 are met by the government via its provision of free or subsidized public facilities (Mahal
161 2005). Thus, we will focus primarily on only these two sources of healthcare financing,
162 referring to other funding sources when appropriate. Public subsidies for health has been

163 estimated as the difference between total expenditure incurred on private facilities
164 compared to public facilities. The entire analysis has been carried out using appropriate
165 sample weight available in the dataset. SPSS 18 PASW software was used to analyze the data.

166 **Results:**

167

168 *Age-specific prevalence of communicable and non-communicable diseases in India, 2004:*

169 In 2004, the prevalence of the communicable and non-communicable disease reported in the
170 morbidity and health survey was 32 and 48 respectively per thousand Indian population
171 (Figure 1). We see a dominance of communicable diseases in the very early stages of life, but
172 with the advancement of the age, the prevalence of non-communicable disease rises
173 manifold. Though the prevalence of non-communicable diseases rises continuously after age
174 30 years, it becomes dominant mainly beyond age 45 years and increases gradually with the
175 increase in age. The prevalence of either communicable or non-communicable disease is
176 lowest among the population of 15-29 years age group. With the increase in the age, the
177 prevalence of both communicable and non-communicable disease increases, but the latter
178 increased at a much faster rate. The prevalence of communicable diseases has been recorded
179 as 56 and 62 among the old (65+ years) and oldest old (80+ years) people respectively. In
180 contrast, the prevalence of non-communicable diseases for the same age groups was much
181 higher, counting 288 and 340 respectively.

182

[Figure 1 about here]

183 *Non-communicable diseases will take even a higher share among Indian population by 2051:*

184 In India, about half of the disease burden was shared by non-communicable diseases (46.4
185 per cent) like diabetes, high blood pressure, cardiac condition whereas the share of

186 communicable diseases like tuberculosis, malaria was 34 per cent (Figure 2). The share of
187 communicable diseases was likely to reduce to a-fourth by 2051. At the same time, the share
188 of non-communicable diseases has been projected to increase to 57.4 per cent. A minimal
189 decline will be observed in the share of other health condition during the same period. This
190 shift in share will be observed mainly due to the shift in age distribution of population
191 towards elderly hood.

192 [Figure 2 about here]

193 *Health spending on non-communicable diseases and government subsidies:*

194 There was 75 million hospitalization cases during January to June, 2004, out of which 35
195 million were in government health facilities and 40 million in private facilities (Table 1). We
196 did not find any remarkable difference in hospitalization due to communicable and non-
197 communicable diseases. Hospitalization in government facilities for communicable diseases
198 was relatively higher than for non-communicable diseases. People usually rush to private
199 facilities for hospitalization in case of non-communicable diseases. Beyond age 45 years, the
200 volume of hospitalized persons due to non-communicable diseases was higher than
201 communicable diseases in both government and private facilities. Again, the average
202 duration of stay as an inpatient was much higher for non-communicable diseases than for
203 communicable diseases (Table 2). Once hospitalized, the average duration of stay in
204 government facilities was higher than private facilities. The number of hospital days was
205 higher for non-communicable diseases than communicable diseases in both government as
206 well as private facilities.

207 [Table 1 about here]

208 The average cost of hospitalization per stay at private facilities (INR 11,552) was much
209 higher than in public facilities (INR 4,935) for any type of illnesses (Table 2). For non-
210 communicable diseases, average cost per stay as an inpatient was as high as INR 14,377 in
211 private compared to INR 6,876 in government. The average cost of treatment either as
212 inpatient or outpatient was higher in private than in public. Each inpatient day accounted
213 more than three times higher cost in private facilities than in public. In government facilities,
214 average per day cost of hospitalization for communicable diseases was high among the youth
215 (age less than 34 years) and the elderly (65 years and above). People of the prime working
216 age (35-44 years) usually spent more on private facilities when suffered from a
217 communicable diseases.

218 [Table 2 about here]

219 There were nearly 1,740 million outpatient visits during 2004, out of which 380 million were
220 in government and 1,360 million in private. Outpatient visit was higher in private facilities
221 than government in all the age groups. Outpatient visit due to communicable diseases was
222 highest in 0-34 year age group in both government and private facilities but resurged with
223 age. Outpatient visit for non-communicable diseases increased with age in both types of
224 health facilities (Table 3). Similar to inpatient care, per visit cost of outpatient treatment was
225 much higher in private facilities than public facilities. Although the cost of treatment in
226 private was higher than public, people rushed to private facilities in need. This signifies the
227 shortfall of public health systems either in reach or in belief or both in Indian context. Cost
228 of treatment for outpatient care was also higher for non-communicable diseases than
229 communicable diseases in both types of facilities.

230 [Table 3 about here]

231 Higher cost of treatment among the elderly age group compared to younger age groups has
232 a clearer implication on future healthcare cost since the proportion of elderly has been
233 projected to increase substantially with a rising burden of non-communicable diseases. Per
234 visit out-of-pocket cost of treatment was similar to the total cost of treatment - indicates the
235 failure of health insurance as a potential tool for effective healthcare finance. This high out-
236 of-pocket health spending leads to the catastrophic level of spending for healthcare and
237 pushes households to poverty trap (Ghosh 2011; Pal 2012; Peter, Ahuja and Bhandari 2010).
238 Barman et al. (2010) pointed out that outpatient care was more impoverishing than
239 inpatient care in urban and rural areas alike.

240 Government subsidies per inpatient and outpatient day were estimated INR 795 and INR
241 103 respectively. Subsidies per inpatient day for all types of diseases were higher than
242 outpatient days. In 2004, Government provided a total subsidy for healthcare of INR 335
243 billion, out of which INR 294 billion was for inpatient treatment and INR 41 billion for
244 outpatient treatment in 2004. The majority share of the total government subsidy was
245 utilized for treatment of non-communicable diseases.

246 [Table 4 & 5 about here]

247 *Healthcare spending on communicable and non-communicable diseases as a share of Gross*
248 *Domestic Product (GDP):*

249 In 2004, 87 per cent of the total healthcare spending in India (approximately INR 100,000
250 crores) was out-of-pocket spending. India spent 3.35 per cent of the GDP and out-of-pocket
251 spending on health accounted 2.94 per cent of it. Half of the out-of-pocket spending on
252 healthcare was on account of the treatment of non-communicable diseases and 30 per cent
253 was due to communicable diseases during 2004.

254 *Healthcare expenditure on communicable diseases and non-communicable diseases in India: A*
255 *futuristic vision*

256 The healthcare expenditure on the communicable diseases were expected grow rather
257 slowly than non-communicable diseases. Healthcare expenditure on communicable diseases
258 in government facilities may rise by about 1.7 times by 2051 than its corresponding figure
259 in 2006 (Table 6). Whereas expenditure for non-communicable diseases in government
260 facilities may increase in a much faster rate by 2.5 times within the same time frame. In the
261 private health facilities, healthcare expenditure on the communicable diseases are expected
262 to increase from INR 26,243 crores to INR 42,222 crores and on non-communicable diseases
263 from INR 45,735 crores to 114,413 crores during the same duration. The rise in healthcare
264 expenditure due to communicable diseases is relatively higher in the first part of the
265 projection period (2006-26) compared to the second part (2026-51).

266 [Table 6 about here]

267 **Discussion:**

268 The study provides some insights into the upcoming health requirements in Indian health
269 system. The age profile of the morbidity indicates a rising risk of non-communicable diseases
270 as the population ages through demographic transition (Ghaffar et al. 2004; Gupta 2004;
271 Mohan et al. 2007; Reddy et al. 2005). In spite of a higher cost of treatment, people prefer to
272 visit private facilities than the public. In India, the private facilities are vast and diverse –
273 ranging from a person from local medical shop to a super specialty hospital catering to
274 medical tourists from abroad (Desai et al. 2010). These facilities are available even in small
275 remote places and offers services as per the convenience of people. The cost of treatment in
276 these private facilities also varies to a great extent. People frequently prefer to go to a nearby

277 private facilities for short term diseases, which requires outpatient visit. Choice among
278 various private health practitioners arises when the disease is more severe and requires long
279 term care.

280 Though government provides subsidized services for public health facilities, people utilize
281 these facilities mainly for inpatient care. The lower level government facilities like the sub-
282 centres and the primary health centres are not well equipped to serve for severe illnesses.
283 The higher level and specialized government health facilities are often concentrated in urban
284 places and travel to these places requires higher level resources and often associated with
285 wage loss (Desai et al. 2010). India, in the past decade has introduced the Rashtriya Swasthya
286 Bima Yojana, a health insurance scheme to cover the inpatient care expenses of the poor. It
287 has also invested on the National Rural Health Mission in 2005, which provides budget
288 support to expand and improve free primary care in public clinics. While these initiatives
289 ensure government's continued effort to improve healthcare services and protect the poor
290 from health related expenses, these barely promise on the step toward combating non-
291 communicable disease risks.

292 **Conclusion:**

293 The non-communicable diseases require attention at a very early stage and once developed,
294 medication continues throughout lifetime. Neglecting these diseases incapacitates a person
295 and may be even life threatening. Ghaffar et al. (2004) attributed the environmental factors
296 as the major determinants of these health condition. Whereas, they noted sedentary life-
297 style, extreme poverty and inadequate health system as the obstacle to tackle the challenge
298 if non-communicable diseases in South Asia.

299 If India wishes to reap the demographic dividend out of its favourable age-structural
300 transition, it need to focus on the health of the youth. Creating an enabling atmosphere for
301 the youth to lead a healthy life-style, create awareness about the ill health effects of smoking
302 and drinking, regular health check-ups, good dietary intake, are the some among the possible
303 ways to avoid health risks from non-communicable diseases. In a nutshell, investing on youth
304 health may result into a higher return in future.

305 **Limitations:**

306 We acknowledge the possible various limitation of the study. The main limitation stands as
307 the prevalence of morbidity is based on the reported ailments, which is subject to the
308 knowledge and awareness of a particular morbidity and may differ from estimates based
309 clinical data. The study produces the shift in disease share on the basis of pure demographic
310 profile, which certainly sets a basic level of alarm to Indian health system, but inadequate in
311 long run. A longitudinal study with clinical investigation will help a more detailed projection.
312 However, we have tried to pinpoint the short fall of the Indian health system to tackle the
313 future health problem, which will come along with the ongoing demographic transition.

Table 1: Total number of person hospitalized, average duration of stay as inpatient and total number of hospital days in government and private sector, 2004.

	Hospitalization - Government (in Million)					Average duration of stay - Government (days)					Hospital Days - Government (Million)				
	0-34	35-44	45-64	65+	Total	0-34	35-44	45-64	65+	Total	0-34	35-44	45-64	65+	Total
CD	7.81	2.39	2.98	0.85	14.19	7.39	9.49	11.26	9.6	8.81	57.7	22.7	33.6	8.2	122.2
NCD	3.84	1.79	3.57	1.90	11.69	10.83	15.34	12.75	10.29	11.96	41.5	27.4	45.6	19.5	134.0
OTHERS	5.00	1.80	1.95	0.59	9.44	10.19	14.62	12.65	12.08	11.64	51.0	26.2	24.7	7.2	109.1
TOTAL	16.65	5.98	8.51	3.34	35.32	9.18	13.08	12.24	10.4	10.72	152.8	78.2	104.1	34.8	369.9
	Hospitalization - Private (in Million)					Average duration of stay - Private (days)					Hospital Days - Private (Million)				
CD	7.30	1.91	2.53	0.89	12.79	5.97	6.4	7.73	8.34	6.65	43.6	12.2	19.5	7.4	82.8
NCD	5.15	2.50	4.68	2.35	15.43	8.39	8.76	9.05	8.5	8.68	43.2	21.9	42.4	20.0	127.5
OTHERS	6.00	2.10	2.52	0.91	11.72	8.7	9.92	9.92	10.15	9.33	52.2	20.9	25.0	9.3	107.3
TOTAL	18.46	6.52	9.72	4.16	39.94	7.55	8.36	8.91	8.83	8.21	139.4	54.5	86.6	36.7	317.2

Source: Authors own calculation from NSS 60th round unit level data

Table 2: Average cost per stay and average cost of hospitalization per day by source of providers, 2004.

	Average cost per stay as inpatient (INR)					Per day average cost of hospitalization (INR)				
	0-34	35-44	45-64	65+	Total	0-34	35-44	45-64	65+	Total
CD	2,815	3,079	3,369	3,346	3,034	381	324	299	349	344
NCD	5,643	8,522	8,030	5,918	6,876	521	556	630	575	575
OTH	4,463	5,701	5,748	5,321	5,014	438	390	454	440	431
Govt.	4,071	5,658	5,963	5,120	4,935	444	433	487	492	460
CD	5,763	10,522	9,877	12,347	8,015	965	1,644	1,278	1,480	1,205
NCD	10,262	16,263	17,799	14,244	14,377	1,223	1,857	1,967	1,676	1,656
OTH	10,080	12,278	13,733	14,249	11,718	1,159	1,238	1,384	1,404	1,256
Pvt.	8,454	13,202	14,613	13,835	11,552	1,120	1,579	1,640	1,567	1,407

Source: Authors own calculation from NSS 60th round unit level data

Table 3: Particulars of outpatient care visits, per visit total expenditure and out of pocket expenditure by type of diseases and source of providers, 2004.

	Total number of visit for outpatient care (in millions)					Per visit cost (INR) for outpatient care					Per visit OOP cost (INR) for outpatient care				
	0-34	35-44	45-64	65+	Total	0-34	35-44	45-64	65+	Total	0-34	35-44	45-64	65+	Total
CD	88.7	13.5	29.0	9.4	140.7	189.2	207.2	222.4	236.7	201.0	184.7	205.4	221.2	236.7	197.7
NCD	40.7	22.3	52.6	49.2	164.1	223.3	187.0	238.7	208.6	219.2	221.5	183.9	235.3	202.8	215.6
OTH	38.9	12.8	15.5	11.8	78.7	217.7	406.0	166.1	242.5	241.4	182.0	404.1	164.8	241.7	223.1
GOVT.	168.3	48.6	97.1	70.4	383.6	204.0	250.2	222.3	218.0	217.1	193.0	247.8	219.9	213.8	210.6
CD	381.7	57.5	79.1	32.9	550.9	248.8	274.1	401.8	375.6	281.3	248.5	273.2	399.4	372.6	280.5
NCD	145.3	63.6	180.0	153.2	540.2	321.3	352.6	374.7	339.5	348.2	318.8	351.7	369.1	339.0	345.4
OTH	142.6	38.7	54.6	32.2	267.8	329.7	330.8	314.8	260.1	318.8	323.4	330.8	311.7	259.4	314.7
PVT.	669.6	159.8	313.7	218.2	1358.8	281.8	319.1	371.1	333.2	315.3	279.7	318.4	366.7	332.3	313.0

Source: Authors own calculation from NSS 60th round unit level data

Table 4: Government subsidy per inpatient day and total subsidy for inpatient care by type of disease, 2004.

	Government subsidy Per inpatient day (INR)					Total subsidy in Government (Billion INR)				
	0-34	35-44	45-64	65+	Total	0-34	35-44	45-64	65+	Total
CD	548	1154	770	896	737	31.6	26.2	25.8	7.3	90.0
NCD	655	1072	1011	937	892	27.2	29.4	46.0	18.3	119.5
OTH	644	768	771	699	706	32.8	20.2	19.0	5.0	77.0
Total	621	985	896	872	795	94.9	77.0	93.3	30.3	294.1

Source: Authors own calculation from NSS 60th round unit level data

Table 5: Government subsidy per outpatient visit and total subsidy for outpatient care by type of disease, 2004.

	Government subsidy per outpatient day (INR)					Outpatient visit in Government (Million)					Total subsidy for outpatient care in Government (INR Billion)				
	0-34	35-44	45-64	65+	Total	0-34	35-44	45-64	65+	Total	0-34	35-44	45-64	65+	Total
CD	63.86	67.75	178.16	135.87	82.74	88.7	13.49	28.97	9.44	140.74	5.66	0.91	5.16	1.28	13.02
NCD	97.29	167.8	133.78	136.22	129.81	40.7	22.33	52.64	49.18	164.12	3.96	3.75	7.04	6.7	21.45
OTH	141.4	-73.31	146.86	17.68	91.59	38.9	12.78	15.45	11.75	78.72	5.5	-0.94	2.27	0.21	7.04
Total	86.75	70.63	146.84	118.51	102.45	168.3	48.6	97.06	70.38	383.58	14.6	3.43	14.25	8.34	40.63

Source: National Sample Survey 60 Round, 25.0 sub-round, 2004.

Table 6: Projected annual healthcare cost (INR Crores) in government and private facilities for communicable and non-communicable diseases in India.

	2006	2026	2051
Communicable Diseases			
Government	4,352	5,877	7,364
Private	26,243	34,634	42,222
Non-communicable Diseases			
Government	8,424	13,294	20,722
Private	45,734	72,535	114,413

Source: Authors own calculation from NSSO 60th round unit level data

Appendix Table 1: Classification of communicable and non-communicable diseases

Communicable Disease	Diarrhoea/ dysentery, Gastritis/gastric or peptic ulcer, Worm infestation, Amoebiasis, Hepatitis/Jaundice, Tuberculosis, Diseases of kidney/urinary system, Conjunctivitis, Sexually transmitted diseases, Malaria, Eruptive, Mumps, Diphtheria, Whooping cough, Fever of unknown origin, Tetanus and Filariasis/Elephantiasis
Non-communicable disease	Heart disease, Hypertension, Respiratory including ear/nose/throat ailments, Bronchial asthma, Disorders of joints and bones, Prostatic disorders, Gynaecological disorders, Neurological disorders, Psychiatric disorders, Glaucoma, Cataract, Diseases of skin, Goitre, Diabetes mellitus, Anaemia, Locomotor, Visual including blindness (excluding cataract), Speech, Hearing, and Diseases of Mouth/Teeth/Gum, Cancer and other tumours, c)
Others	Under-nutrition, Accidents/Injuries/Burns/ Fractures/Poisoning, Other diagnosed ailments and Other undiagnosed ailments.

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