

Increasing the Percentage GDP Healthcare Expenditure from 1.15 to 2.5% - A Road Map

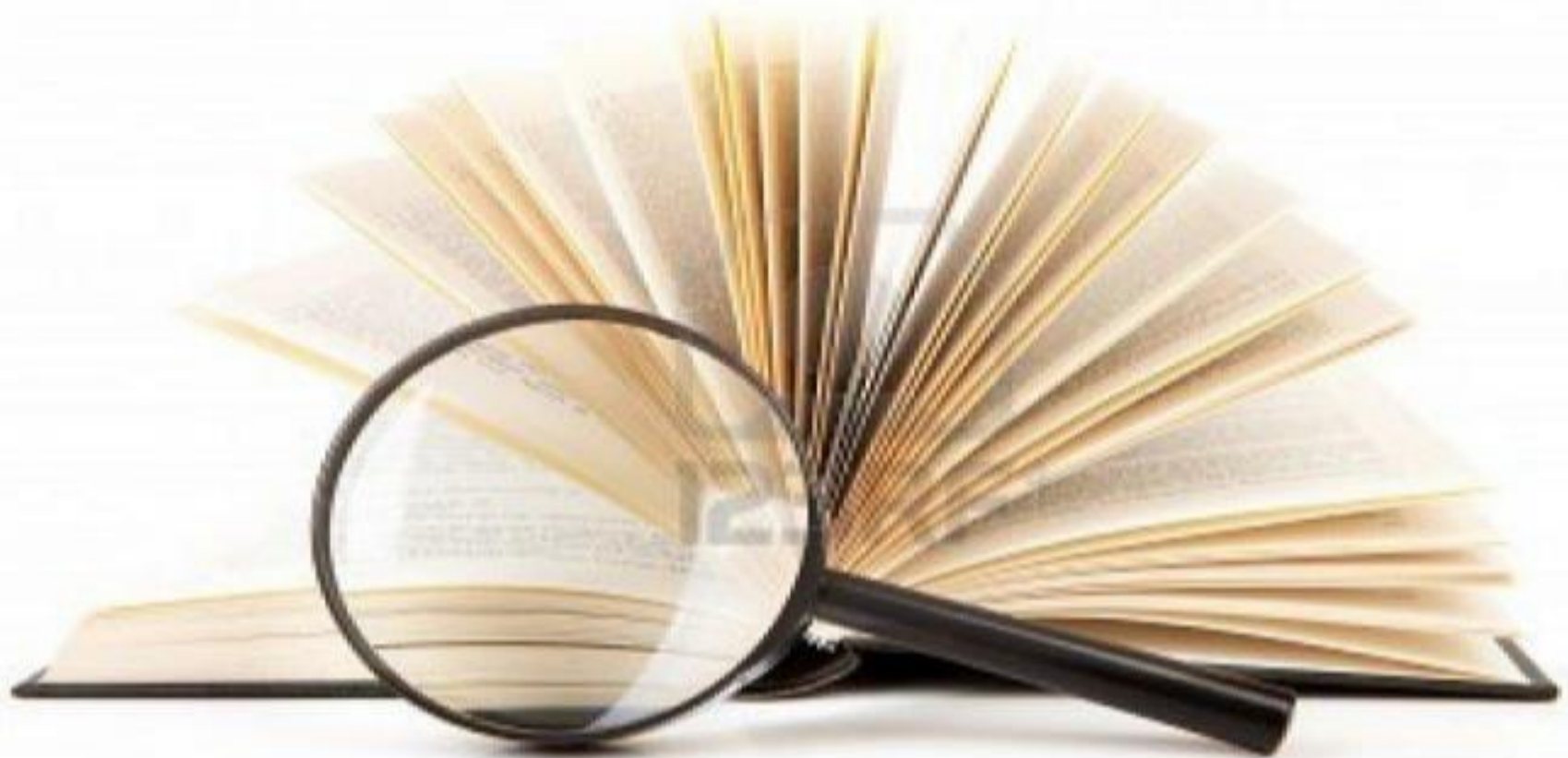
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Enrolment number: 0349

BATCH-20 (2015-17)

Under the Guidance of:

Dr Monika Chaudhary



Literature Review

Global Data on Health Expenditure

Total expenditure for health for 2011: US\$ 6.9 trillion	Average Total expenditure for health per person per year: US\$ 1008
Country with highest total spending on health per person: Norway (US\$ 9908)	Country with lowest total spending per person on health: Eritrea (US\$ 12)
Country with highest government spending per person on: Norway (US\$ 8436)	Country with lowest government spending per person on: Myanmar (US\$ 3)
Country with highest annual out-of-pocket household spending on health: Switzerland (US\$ 2384)	Country with lowest annual out-of-pocket household spending on health: Mozambique (US\$ 1.64)
Average amount spent per person on health in countries belonging to the Organisation for Economic Co-operation and Development (OECD): US\$ 4584	Percentage of the world's population living in OECD countries: 18%
Percentage of the world's total health expenditure on health currently spent in OECD countries: 82%	WHO estimate of minimum spending per person per year needed to provide basic, life-saving services ¹ : US\$ 44
Number of WHO Member States where health spending – including spending by government, households and the private sector and funds provided by external donors – is lower than US\$ 44 per person per year: 26	Number of WHO Member States where health spending is lower than US\$ 20 per person per year: 6
Percentage of funds spent on health in the WHO African Region that has been provided by donors: 9.4%	

Total Percentage of Healthcare Spending and Percentage of Public Spending by Different Countries

Country Name	Total health spending2014	Public health spending 2014
New Zealand	11.0296101	9.082656345
Canada	10.449582	7.411931884
Japan	10.22874408	8.550081685
Australia	9.42230024	6.316592658
United Kingdom	9.11547172	7.578850169
Afghanistan	8.18227382	2.932833722
Greece	8.08426702	4.985039193
Poland	8.0257236	4.507639603
Uzbekistan	7.22213686	3.11124825
Ukraine	7.00385794	3.604521121
Vietnam	5.83852176	3.820019105
Nepal	5.797226	2.337819114
United States	5.58011591	8.278517711
China	5.54822768	3.095174286
Iraq	5.53887318	3.33814899
South Africa	5.02357493	4.24326873
India	4.68508833	1.407237618
Ghana	3.55729189	2.128885085
Sri Lanka	3.50335011	1.96395333
Indonesia	2.84686016	1.075536301

Insurance Density

Countries	2012			2013		
	Total	Life	Non-Life	Total	Life	Non-Life
United States	4,047	1,808	2,239	3,979	1,684	2,296
United Kingdom	4,350	3,256	1,094	4,561	3,474	1,087
France	3,544	2,239	1,304	3,736	2,391	1,345
Germany	2,805	1,299	1,505	2,977	1,392	1,585
Switzerland	7,522	4,121	3,401	7,701	4,211	3,490
Japan	5,168	4,143	1,025	4,207	3,346	861
Hong Kong	4,544	4,025	519	5,002	4,445	557
India	53	43	11	52	41	11
China	179	103	76	201	110	91
Brazil	414	226	189	443	246	197
Russia	182	12	170	199	19	180
South Africa	1,081	882	199	1,025	844	181
World	656	373	283	652	366	285

Out of Pocket Spending

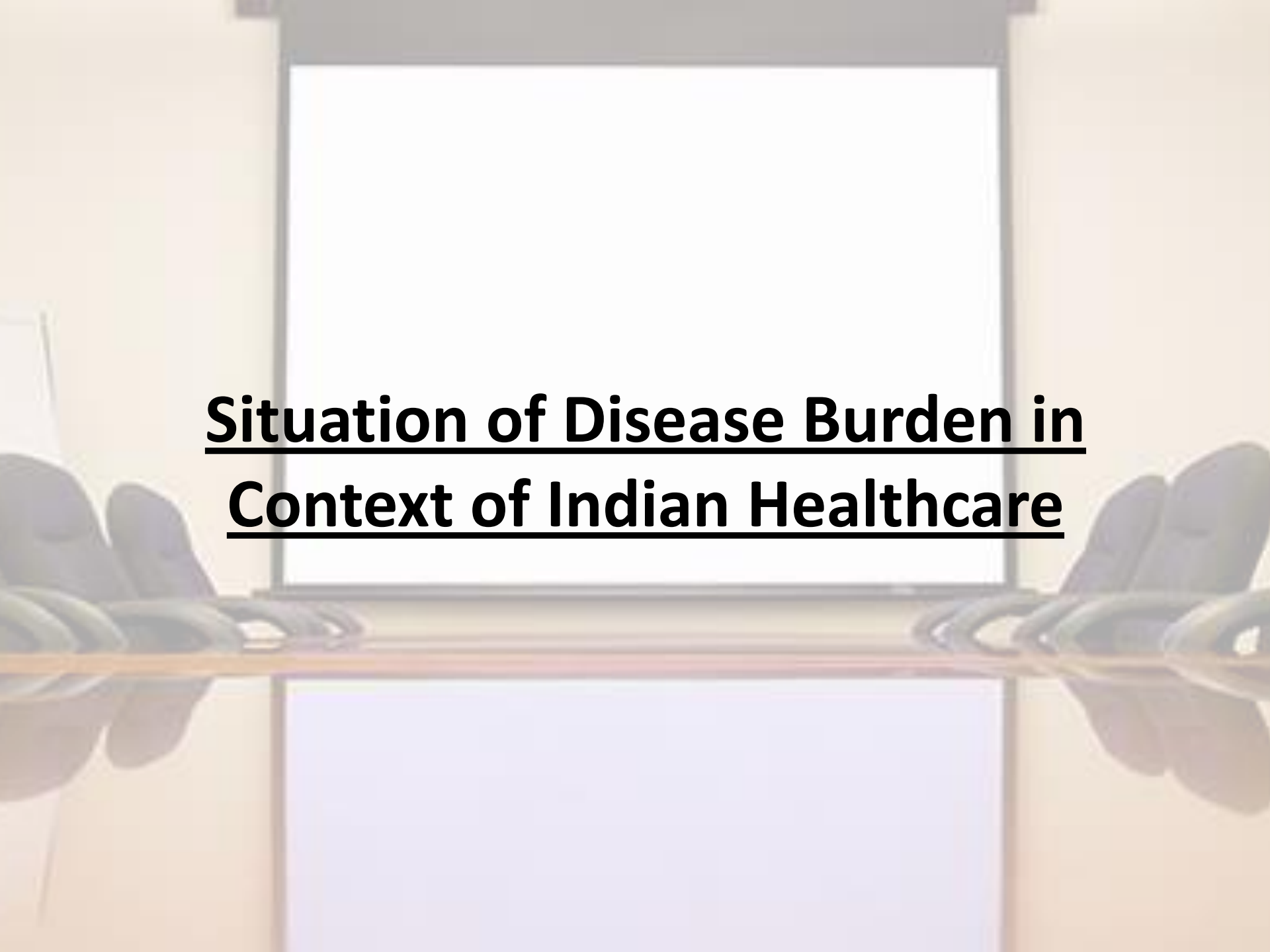
	Out Of Pocket Expenditure	Public Expenditure	Private Insurance
U.S	11.8	47.1	41.1
Euro Areas	14.1	76.1	9.7
Advances Economies	14.7	61.1	24.1
Latin America	32.1	52.6	15.1
China	33.8	55.8	10.3
Asia Ex Japan	34.5	54.9	10.4
Emerging market Economies	35.8	52.5	11.5
India	58.2	32.2	9.5

Global Disease Burden and its Comparison with India

Age-standardized death rates, YLL rates, YLD rates, and life expectancy at birth and health-adjusted life expectancy at birth for 1990 and 2010, both sexes combined

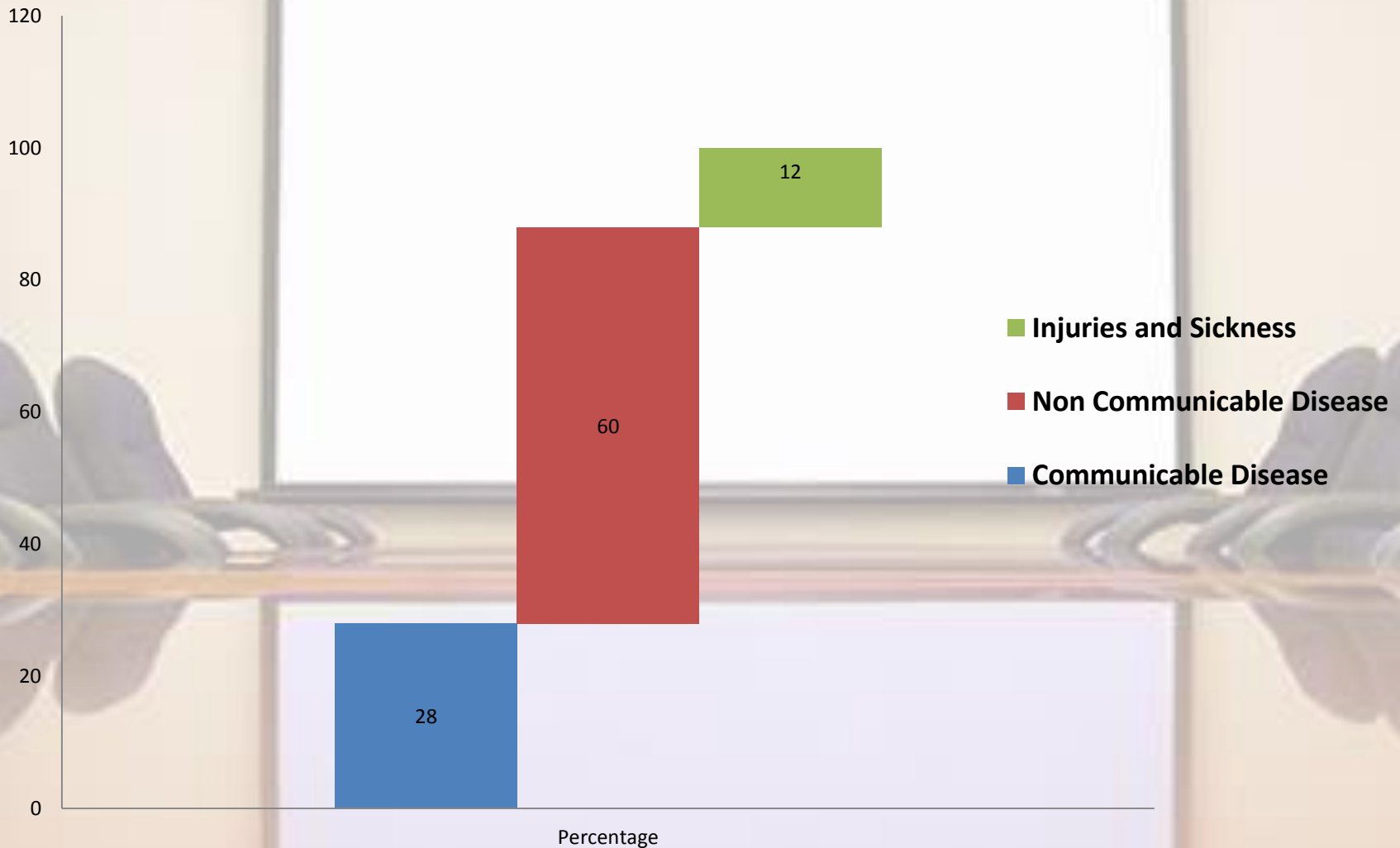
Country	Age-standardized death rate (per 100,000)				Age-standardized YLL rate (per 100,000)				Age-standardized YLD rate (per 100,000)				Life expectancy at birth				Health-adjusted life expectancy at birth			
	1990		2010		1990		2010		1990		2010		1990		2010		1990		2010	
	Rate	Rank	Rate	Rank	Rate	Rank	Rate	Rank	Rate	Rank	Rate	Rank	LE	Rank	LE	Rank	HALE	Rank	HALE	Rank
Iraq	809	4	783	5	24,631	2	22,488	5	12,166	3	11,933	5	69.9	3	70.9	5	59.8	3	60.8	6
Federated States of Micronesia	1,476	13	1,258	13	42,732	10	31,526	9	13,632	11	12,681	11	61.1	10	65.6	11	52.3	11	56.7	9
Kiribati	1,879	15	1,528	15	58,098	14	43,508	14	15,513	15	14,585	15	56	14	61	14	47.2	14	51.8	14
Congo	1,696	14	1,401	14	60,756	15	49,063	15	15,443	14	14,357	14	54.7	15	58.8	15	46	15	49.9	15
Cape Verde	785	2	586	1	25,843	4	16,730	2	13,500	10	12,947	12	69.8	4	75.1	2	59.1	6	63.7	3
Philippines	909	6	868	6	28,515	7	23,262	7	13,334	9	12,483	8	67.8	7	70.1	6	57.8	8	60.3	7
Mongolia	1,283	10	1,218	12	44,720	11	34,325	13	11,523	1	11,482	3	60.5	11	64.6	13	52.8	10	56.5	11
India	1,447	12	1,097	11	50,084	13	33,366	11	13,727	12	12,494	9	58.3	13	65.2	12	49.8	12	56.2	12
Vietnam	876	5	595	2	26,230	5	15,123	1	12,188	4	10,909	1	68.9	5	75.6	1	59.5	4	65.8	1
Moldova	1,000	8	912	8	26,698	6	22,769	6	11,653	2	11,362	2	68.1	6	70	7	59.3	5	61	5
Nicaragua	762	1	652	3	25,101	3	16,911	3	12,459	6	11,835	4	70.3	2	74.4	3	60.1	1	64	2
Palestine	794	3	694	4	23,225	1	18,413	4	12,827	7	12,639	10	70.6	1	73.2	4	59.9	2	62.2	4
Pakistan	1,120	9	982	9	41,231	9	33,518	12	12,877	8	12,323	7	62.3	9	65.7	10	53.3	9	56.5	10
Yemen	1,361	11	1,068	10	47,661	12	32,041	10	15,157	13	14,318	13	59.3	12	65.8	9	49.4	13	55.2	13
Uzbekistan	972	7	911	7	29,477	8	26,063	8	12,381	5	12,150	6	67.3	8	68.8	8	57.8	7	59.3	8

Ranking of leading age-standardized rates of disability-adjusted life years (DALYs) relative to comparator countries in 2010																									
Country	Preterm birth complications	Diarrheal diseases	Lower respiratory infections	Ischemic heart disease	COPD	Tuberculosis	Neonatal sepsis	Road injury	Iron-deficiency anemia	Self-harm	Neonatal encephalopathy	Low back pain	Stroke	Major depressive disorder	HIV/AIDS	Diabetes	Fire	Congenital anomalies	Protein-energy malnutrition	Falls	Meningitis	Cirrhosis	Migraine	Asthma	Measles
Iraq	8	7	6	12	3	2	14	3	9	1	9	11	6	5	2	13	10	13	6	3	8	1	3	8	1
Federated States of Micronesia	2	9	7	8	8	9	7	6	6	12	2	10	13	3	1	14	12	2	11	11	11	9	6	14	12
Kiribati	4	11	9	6	11	12	8	10	4	14	10	9	14	12	9	15	9	4	14	13	14	12	5	15	6
Congo	11	15	13	7	13	15	11	15	12	8	11	3	10	13	15	8	14	14	15	12	15	11	4	10	14
Cape Verde	3	10	3	2	9	4	12	8	13	4	3	8	4	8	14	4	8	1	9	4	10	2	11	9	10
Philippines	10	6	10	10	10	14	5	2	8	5	6	12	7	10	4	10	2	8	7	2	6	5	9	13	13
Mongolia	9	5	11	14	12	8	3	14	2	11	13	5	15	6	5	2	11	9	4	7	9	14	13	2	4
India	15	12	8	9	15	11	15	13	14	15	12	7	2	2	12	5	15	6	13	15	12	7	14	11	15
Vietnam	5	3	2	1	7	5	2	9	1	6	1	2	5	1	11	1	3	3	5	5	3	6	10	5	11
Moldova	1	1	4	13	4	6	4	7	5	13	4	15	9	4	13	3	7	7	1	9	1	15	8	1	3
Nicaragua	7	8	5	3	2	3	9	1	3	7	8	4	1	9	7	9	1	11	8	1	4	8	7	7	5
Palestine	13	2	1	5	1	1	10	5	7	3	7	14	12	15	3	11	4	10	3	6	2	3	1	4	8
Pakistan	14	13	12	4	14	13	13	4	11	9	15	1	3	7	8	7	13	12	10	14	13	10	15	6	9
Yemen	12	14	15	11	6	10	6	11	15	2	5	13	8	14	6	12	5	15	12	8	7	4	2	12	7
Uzbekistan	6	4	14	15	5	7	1	12	10	10	14	6	11	11	10	6	6	5	2	10	5	13	12	3	2
Ranking Legend		1 - 3				4 - 7				8 - 11				12 - 15											



Situation of Disease Burden in Context of Indian Healthcare

Indian Healthcare Disease Burden



Percent Change of Mortality and Morbidity by NCD in 2005-15

Diseases	Death	DALY	YLL	YLD
Neoplasms	0.32	0.27	0.26	0.47
0Cardiovascular diseases	0.29	0.22	0.22	0.24
Chronic respiratory diseases	0.13	0.07	0.04	0.16
Cirrhosis and other chronic liver diseases	0.15	0.09	0.09	0.28
Digestive diseases	0.05	-0.02	-0.04	0.04
Neurological disorders	0.49	0.21	0.31	0.19
Mental and substance use disorders	0.35	0.21	0.31	0.20
Drug use disorders	0.34	0.24	0.30	0.20
Depression	0.00	0.21	0.00	0.21
Diabetes, urogenital, blood, and endocrine diseases	0.42	0.23	0.28	0.16
Urinary diseases and male infertility	0.39	0.30	0.27	0.38
Gynecological diseases	-0.01	0.12	-0.08	0.12
Hemoglobinopathies and hemolytic anemias	0.01	-0.08	-0.12	- 0.03
Lower Back and Neck Pain	0.00	0.25	0.00	0.25
Musculoskeletal disorders	0.49	0.23	0.41	0.23
Other non-communicable diseases	-0.02	0.14	-0.07	0.23

What Should Be Happening

The Problem Statement

What Is Actually Happening

WHAT PROBLEM ARE
WE TRYING TO SOLVE?

The out of pocket spending in healthcare is very high and the public spending is very low in India



Developing your Research Problem / Question

How to increase the public spending up to 2.5% So that the goal of universal health coverage is achieved and the allocation of funds is made in such a way that out of pocket spending comes to a minimum.

Objectives and Methodology

Objective	Methodology
To study the allocation of the health expenditure sector wise in India.	Literature review of various Government Reports and Policy Papers
To forecast the increased public healthcare spending needs in India.	Literature review of various Government Reports and Policy Papers
To access the health expenditure requirements to attain universal health coverage in India.	Open Forum
To develop a proposed plan for increased public health spending of India.	Literature review of various national and international Government Reports, Policy Papers

Research Context: The context of research is primarily health financing, particularly public expenditure on health in India.

Study Place and Period: Study conducted in IIHMR Jaipur for the duration of 3 Months.

Research Design: The study would be a descriptive Study which will involve description of existing health expenditures both private and public, allocation of budget, availability of resources, suggestions to allocate the increased health spending public and private, to attain universal health coverage.

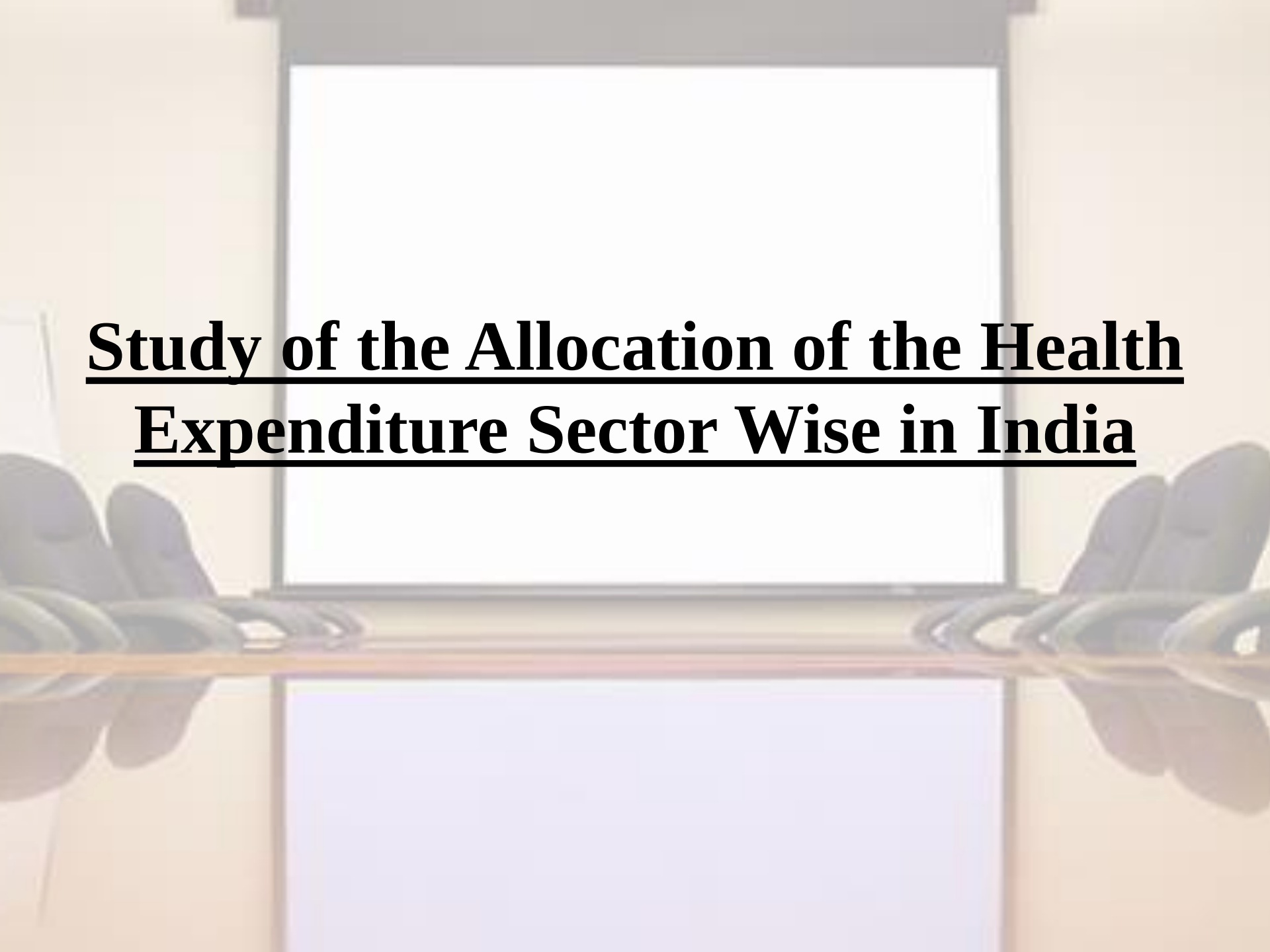
Method of Data Collection

Primary data collection : Open Forum Discussion

Secondary data collection: Government reports and Policy papers

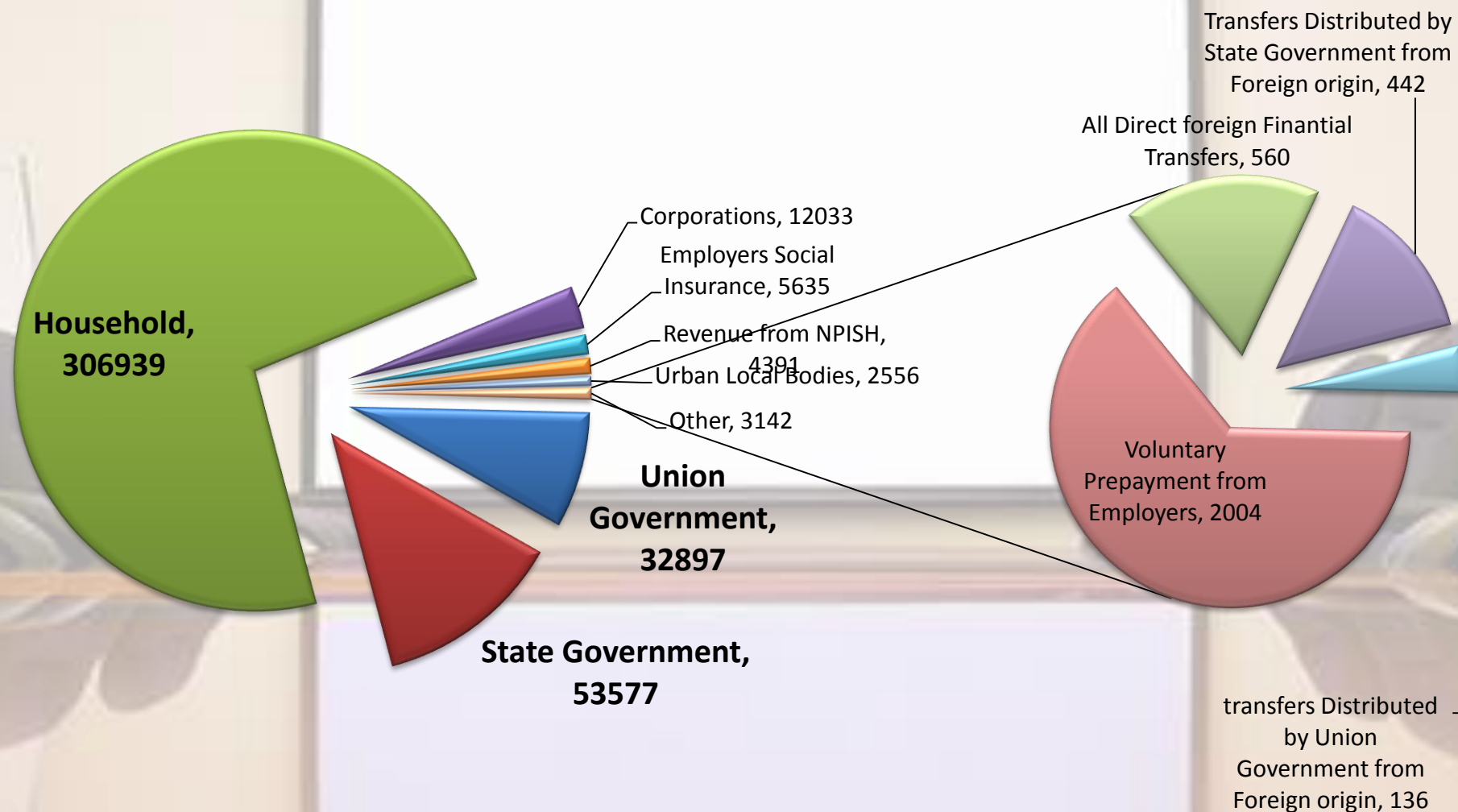
DATA ANALYSIS AND INTERPRETATION



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Study of the Allocation of the Health Expenditure Sector Wise in India

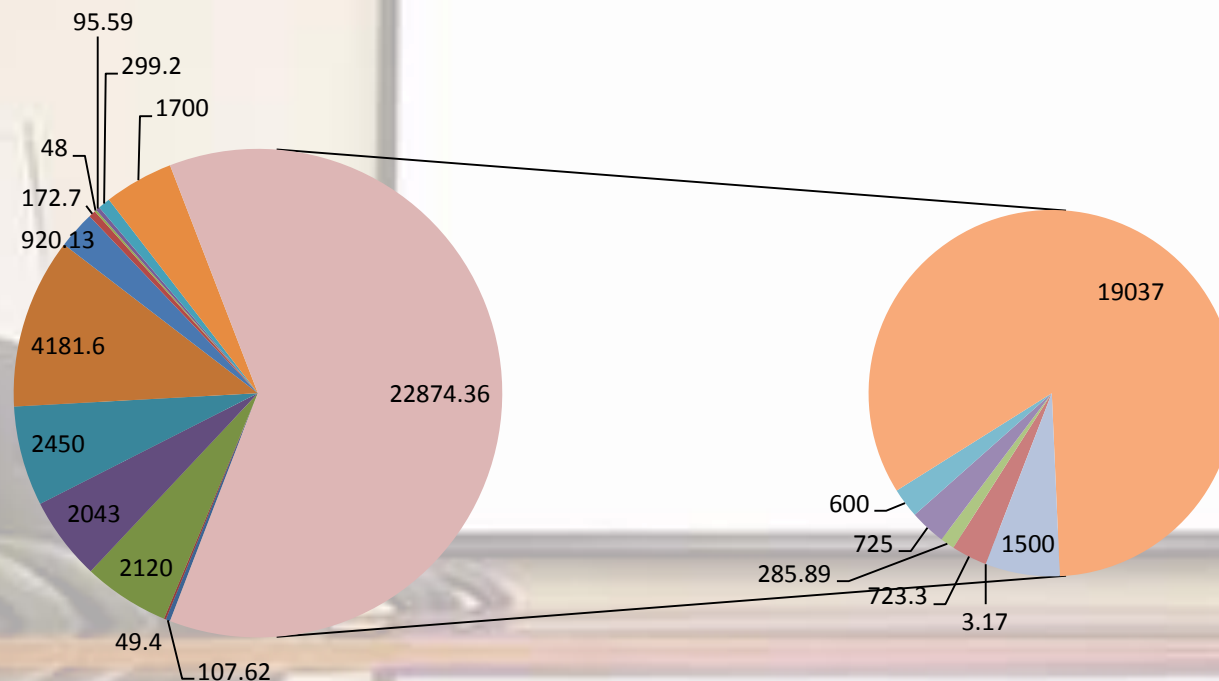
Financing of healthcare



Allocation of Health Expenditure by the Government – Major Heads – 2015-17

Departments	2015-16 (In Crores)	2016-17 (in Crores)
Department of Health and Family Welfare	6254	9100
Department of Health Research	600	750
Department of AYUSH	1008	1050
National Aids Control Society	1397	1700
National Health Mission	14827	19000

Department of Health and Family Welfare



- Secretariat-Social Services
- Direction and Administration
- Central Government Health schemes
- All India Institute of Medical sciences, New Delhi
- Pardhan Mantri Swasthyasuraksha yojna
- Major Central Medical institutions
- Other Central Medical institutions
- Public Health laboratories
- Port/Airport Health organisations
- National Centre for disease control
- Food and Drug-administration
- National AIDS and STD control program
- Statutory Bodies
- Family Welfare Schemes
- Other Health Schemes (after deductions)
- tertiary care Programme/Scheme
- Human Resources for health and medical education
- National Health Mission
- RSSY

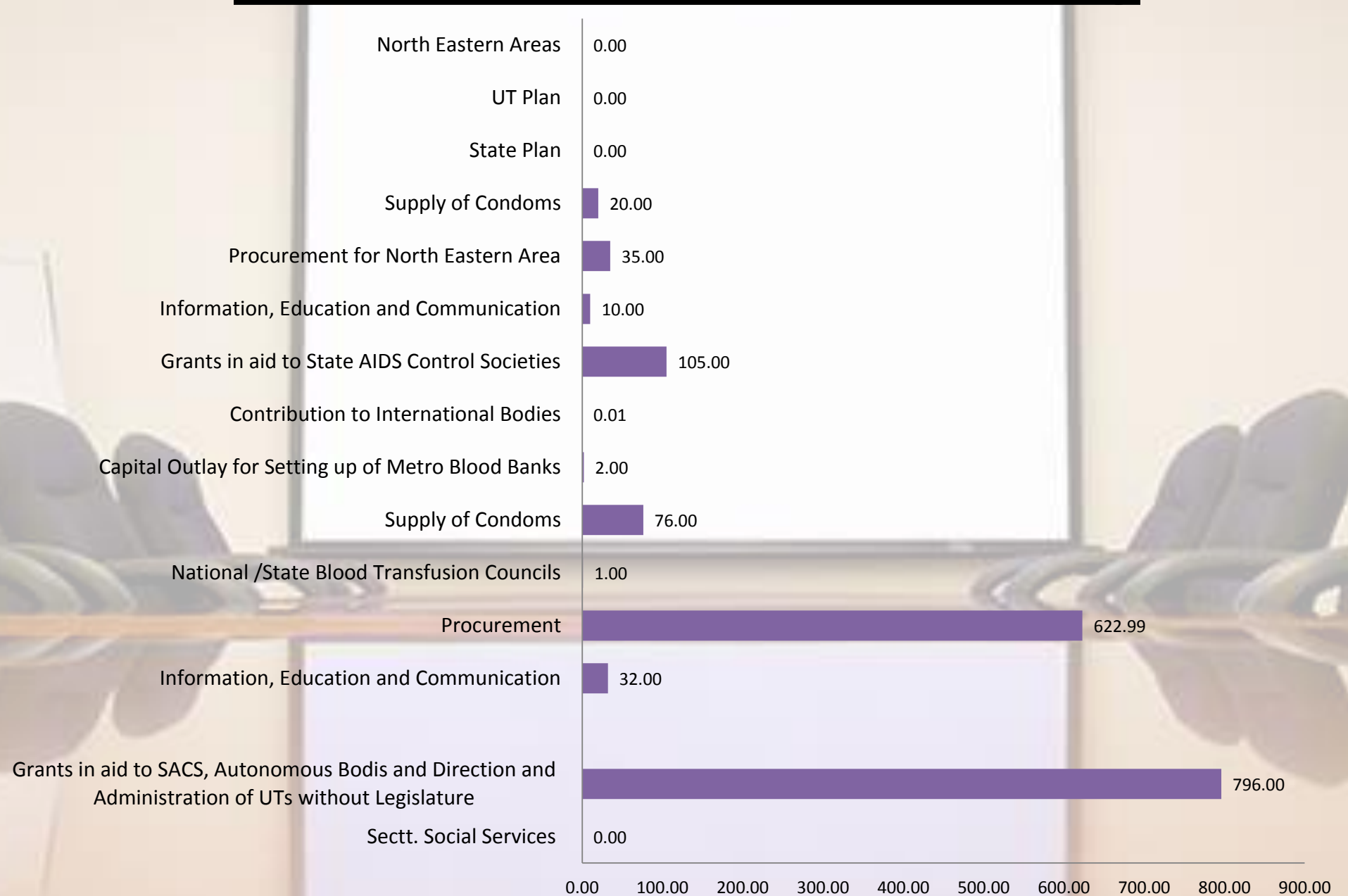
Department of Health Research

Scheme Wise Approved Outlay for Department of Health Research	2016-2017 In crore
Secretariat - Social Services	0.00
Advanced Training in Research in Medicine and Health	13.00
Inter-Sectoral Coordination in Medical, Biomedical and Health Research	14.25
Promotion and Guidance on Research Governance Issues	0.00
Matter Relating to Scientific Societies and Associations, Charitable and Religious Endowments in Medicine and Health Research	0.00
Coordination with Governments/Organizations	0.00
Matter Relating to Epidemics, Natural Calamities and Development of Tools to Prevent Outbreaks	41.50
Promotion , Coordination and Development of Basic, Applied and Clinical Research	24.25
Model Rural Health Research Units	6.00
International Cooperation in Medical and Health Research	1.00
ICMR	610.00
BMHRC	40.00
	750.00

Department of AYUSH



National Aids Control Society



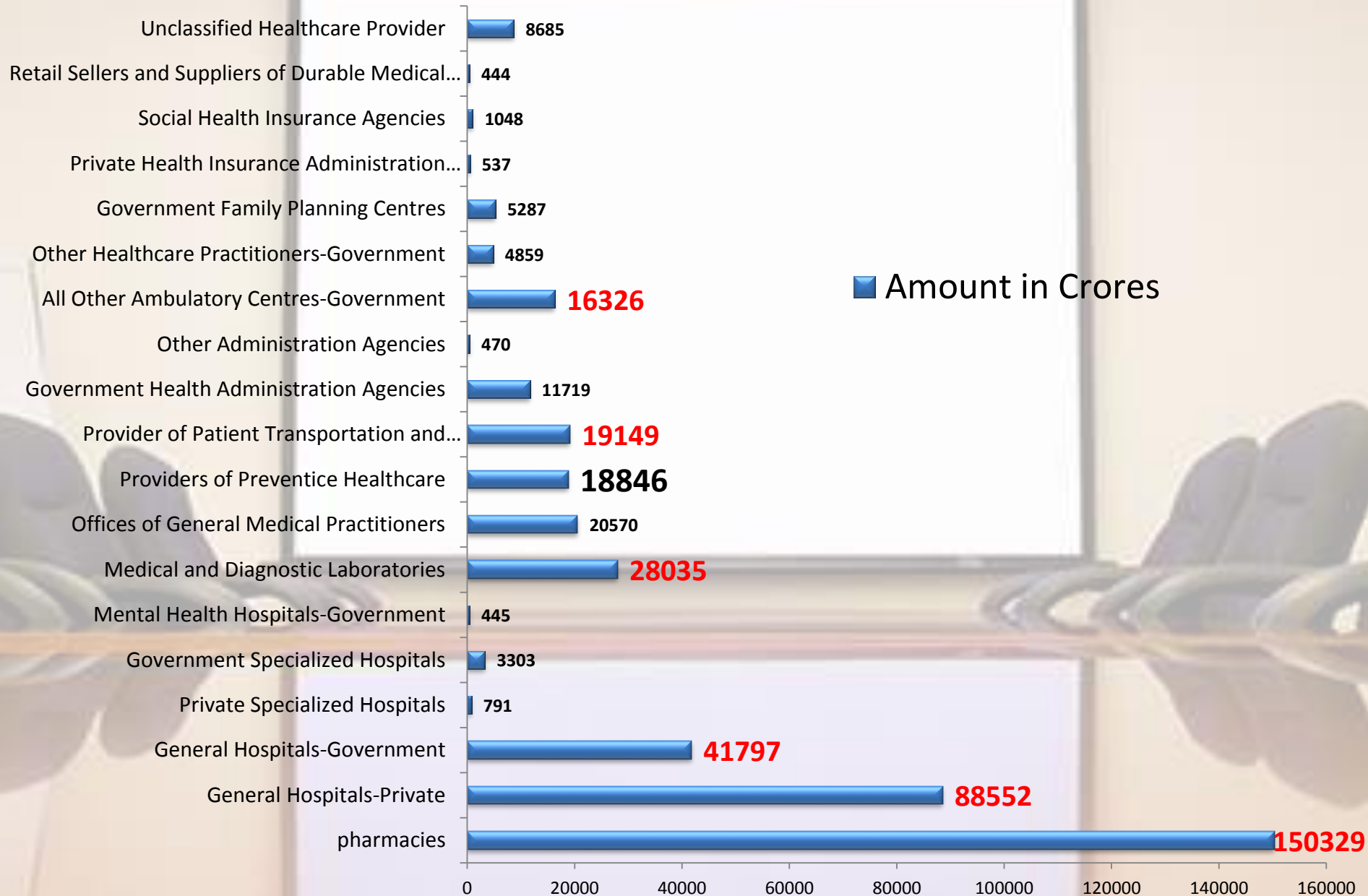
Source: Planning Commission of India, 2017

National Health Mission

Scheme-wise Approved Outlay for National Health Mission (NHM) in India (2016-2017)

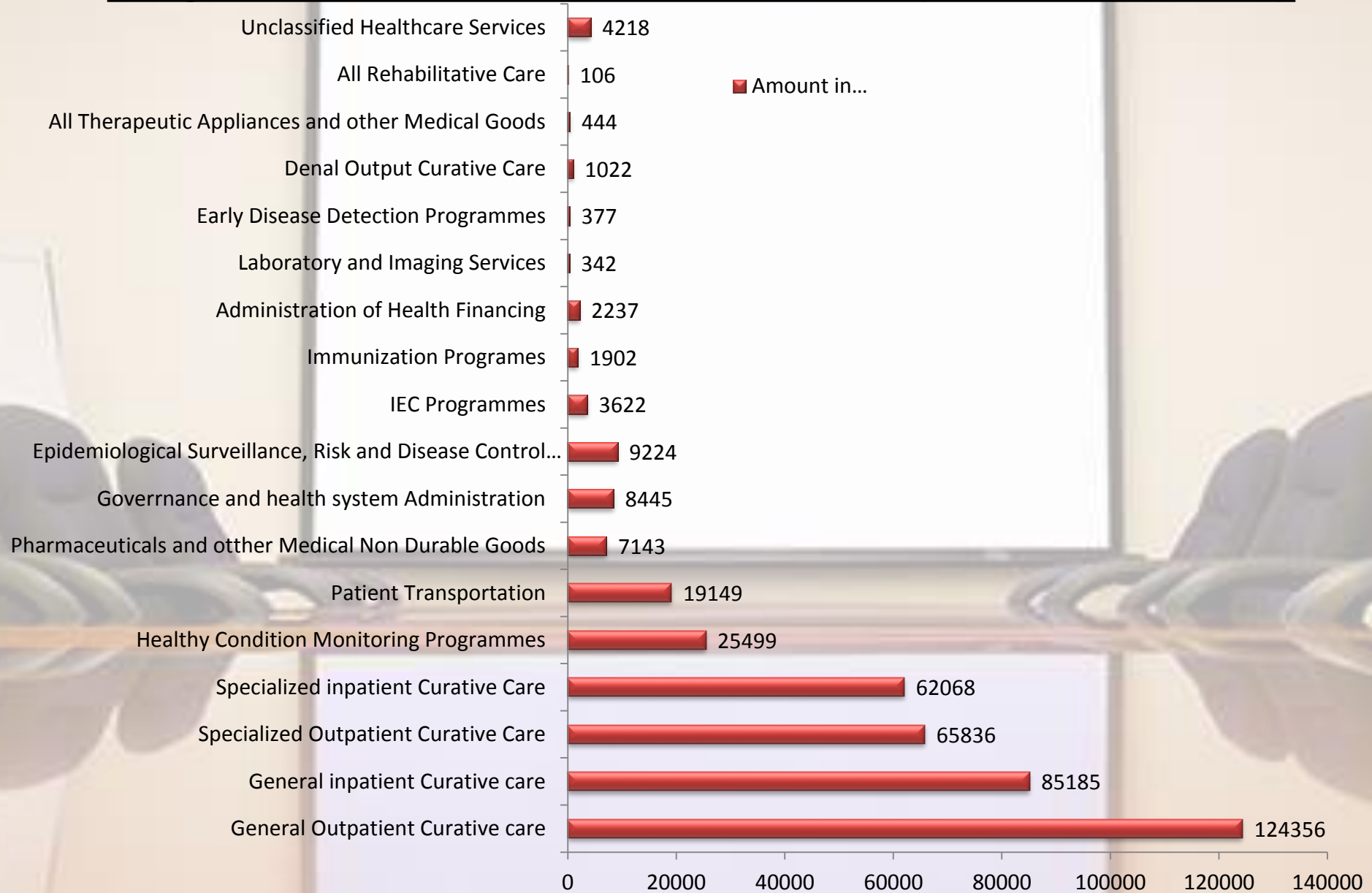
(Rs. in Crore)	
Schemes	Approved Outlay
NRHM-RCH Flexible Pool (Routine Immunisation, Pulse Polio, Iodine Deficiency control programme)	5933.00
Health System Strengthening under NRHM	5226.00
National Urban Health Mission - Flexible Pool	950.00
Flexible Pool for Communicable Diseases (National Vector Borne Disease Control Program, National T.B. Control Programme, National Leprosy Eradication Programme, Integrated Disease Surveillance Programme)	1260.00
Flexible Pool for Non-Communicable Diseases - Injury and Trauma (National Programme for Control of Blindness, National Mental Health Programme, Health Care for the Elderly, National Programme for Prevention and Control of Deafness, National tobacco Control Programme, National Oral Health Programme, Assistance to States for Capacity Building, National Programme for Prev and Control of Cancer, Diabetes, CVD and Stroke, Other New Initiatives under Non-Communicable Diseases.)	555.00
Forward Linkages to NRHM	25.00
Infrastructure Maintenance	4973.00
Pilot Projects(Sports Medicine, Deafness, Leptospirosis Control, Control of Human Rabies, Medical Rehabilitation, Oral Health, Fluorosis	38.00
Human Resources for Health	40.00
Grand Total	19000.00

Total Expenditure on Healthcare Providers



Source: National Health Accounts 2013-14

Expenditure on Health – (Functional)



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Forecasting the Increased Public Healthcare Spending Needs in India

Calculation of Proposed Increased Expenditure

	Rupees in Lakh Crores
Present GDP of India	152.51
Present GDP on Health given by the Government	1.753865
Future GDP in healthcare, if Increase up to 2.5% by Government	3.431475
Total Money Needed to fill the gap of GDP in healthcare	167761

Planned Allocation of Net Money Needed to Increase GDP to 2.5%:

Areas of Expenditure According to Situation Analysis Draft	Allocated Amount from Net Money Needed to Increase GDP to 2.5% in lakh crores
50% on Lifestyle Modification	83880.5
20% on Biological Factors	33552.2
20% on Environmental Factors	33552.2
10% Health System Related Factors	16776.1
Total	167761



Accessing the Health Expenditure Requirements to Attain Universal Health Coverage in India

List of Potential Areas where public Spending need to be done

Areas Mentioned in the Situation Analysis Policy Draft	Areas Identified in the Open Forum
Lifestyle Modification	Preventive Health and Risk Factors Reduction
Biological Factors	Genetic Factors and birth defects
Environmental Factors	Water and Sanitation, Indoor, Outdoor and Industrial Pollution
Health System Related Factors	Screening of Diseases, Road infrastructure and Design, Human Resource and Public Hospitals and HMIS

Developing a Proposed Plan for
Increased Public Health Spending of
India

Areas Mentioned in the Situation Analysis Policy Draft	Intervention and Study	Cost per Person in Dollars and Rupees	Total Cost of Intervention = Indian Population (1,210,193,422) *cost per person	Total DALY/Life Years Saved
Lifestyle Modification	North Karelia Project (Lifestyle Modification)	1.80-4.50 USD Average 3.15 USD) 202.45 rupees	245,003658,283.9 rupees	1,210,193,422
Health System Related Factors	US and UK Study(Screening of Cancers) East Asia and Pacific (Traffic Safety Legislation Enforcement)	1300-6200 USD Average(3750 USD) 241012.50 rupees US\$14 899.78 rupees	291,671,742,119,755 rupees 1088,907837,247.1 rupees	1,210,193,422
Environmental Factors	African Region (Chlorination of Water Filtration)	US\$53- US\$61 Average 57 USD 3663.79 rupees	4433894557589.38 rupees	1,210,193,422
Biological Factors	Latin America and Caribbean (folic acid fortification of grains to prevent birth defects)	USD36 USD 2313.72 rupees	2800,048,724,349.8 rupees	1,210,193,422

Source: Cost-Effective Strategies for Non communicable Diseases, Risk Factors, and Behaviors, Evaluation of the costs and benefits of interventions to reduce indoor air pollution, Water Quality Interventions to Prevent Diarrhoea: Cost and Cost-Effectiveness

Human Resource

Human Resource	Shortfall of Human Resource	Salary per Annum (7 th Pay Commission) Average Salary	Number of Human Resource Required*Salary Per Annum
Doctors	25471	17,40,216	44325041736
Paramedical Staff	7811	9,41,886	7357071546
Health worker/Assistant	915546	4,12,500	377662725000
Total Expenditure Per Year			429,344,838,282

Health Infrastructure

Entity	Shortfall	Construction Cost for each construction	Shortfall *construction Cost
Community Health Centre	35110	4600000	15799500000.00
Primary Health Centre	6572	2800000	18401600000
Sub Centre	2220	800000	1776000000
Total Cost			178,172,600,000

IIM Ahmadabad, A Study for Comparing Salaries/ Emoluments in the Government Sector Vis a Vis Central Public Sector Undertakings/ Private Sector in India

Brief Write up Note on Proposed PIP proposals for Civil Construction Works for Financial year 11-12:- Sanctions already issued by NRHM up to 31.03.2010

Health Management Information System

Total States and Union Territories in India	Average Expenditure for HMIS Implementation in a State	Total States and UT in India*Average Expenditure for HMIS Implementation
36	128,49,00,000	462,564,000,00

RESULTS



Road Map for Fabrication of the Model for Healthcare Expenditure for increasing GDP to 2.5%

areas of expenditure according to situation analysis draft	extra expenditure to be done (in lakh crores)	allocation areas	allocation amount in crores rupees	total daly/life years saved
Lifestyle Modification	83880.5	Preventive Health and Risk Factors Reduction	245,003658,283.9	1,210,193,422
Biological Factors	33552.2	Genetic Factors and birth defects	2800,048,724,349.8	1,210,193,422
Environmental Factors	33552.2	Indoor, Outdoor and Industrial Pollution(water and Sanitation)	4433894557589.38	1,210,193,422
Health System Related Factors	16776.1	Screening of Diseases	291,671,742,119,755	1,210,193,422
		Road infrastructure and Design	1088,907837,247.1	
		Human Resource	429,344,838,282	
		Public Hospitals	178,172,600,000	
		HMIS	462,564,000,00	

Limitation of Study

- Many states may be having partially or fully established HMIS system which is not taken into consideration in the study.
- Research paper related to outdoor pollution has not been taken in the study.
- Further strategy for the utilization of the forecasted amount has not been planned out due to the duration of dissertation.
- Underutilization of the public healthcare budgeted amount is not the focus area of the study.

Conclusion

- Planning Commission of India mentioned about the increase in percentage GDP healthcare expenditure from 1.15% to 2.5% in their policy draft 2017 along with some specified domains and the proportion of expenditure done on these domains.
- Potential areas are identified based on the guidelines mentioned in Situation Analysis 2017 draft which will aid in increasing the public healthcare expenditure from 1.15% to 2.5% and all the basic calculations are done based on the identified areas, literature review from government journals and International published reports.
- This result in emergence of a road map which can guide the Indian Government regarding the allocation of expenditure in the areas mentioned in the draft.
- The model serves as a prototype for further step wise planning on how to utilize the forecasted budgeted amount in the areas mentioned in the study.
- This leave a research area for the researchers to draw the healthcare model for India keeping in mind the universal health coverage.

Thank

you

