PARTNERSHIP TO FIGHT CHRONIC DISEASE
A VISION FOR A HEALTHIER FUTURE

SANKALP

DISHA, SWASTHA BHARAT KI

COMMITMENT TO REDUCE THE BURDEN OF NON-COMMUNICABLE DISEASES IN INDIA

Prepared by SPAG Asia

PARTNERSHIP TO FIGHT CHRONIC DISEASE
A VISION FOR A HEALTHIER FUTURE

About PFCD

The Partnership to Fight Chronic Disease (PFCD) is an internationally-recognized organization of patients, providers, community organizations, business and labor groups, and health policy experts committed to raising awareness of the number one cause of death, disability, and rising health care costs: chronic disease.

For a collection of statistics and commentary on the impact of chronic disease, please visit almanac.fightchronicdisease.org. For information on PFCD India, please visit fightchronicdisease.in

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We would also like to take this opportunity to sincerely thank all the policy makers, health experts, medical practitioners, academia, industry leaders and associations, patient groups and non-government organisations for their continued support through PFCD’s journey in India for various multi-stakeholder initiatives to find sustainable solutions to manage and curb the growing incidence of NCDs.

Abbreviations

AIDS	Acquired Immuno Deficiency Syndrome
AIIMS	All India Institute of Medical Science
ART	Antiretroviral Therapy
CHC	Community Health Center
CHWs	Community Health Workers
COPD	Chronic Obstructive Pulmonary Disease
CVD	Cardiovascular Disease
DALY	Disability - adjusted Life Year
GDP	Gross Domestic Product
GoI	Government of India
HIV	Human Immunodeficiency Virus
ICMR	Indian Council of Medical Research
IEC	Information Education and Communication
MDG	Millennium Development Goal
MoH&FW	Ministry of Health and Family Welfare
NACO	National AIDS Control Organisation
NCD	Non Communicable Diseases
NCDC	National Centre for Disease Control
NHM	National Health Mission
NHSRC	National Health Systems Resource Center
NRHM	National Rural Health Mission
NPCDCS	National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Disease and Stroke
OOP	Out-of-pocket
PFCD	Partnership to Fight Chronic Disease
PGIMER	Postgraduate Institute of Medical Education and Research
PHFI	Public Health Foundation of India
PHC	Primary Health Center
RSBY	Rashtriya Swasthya Bima Yojna
RGJAY	Rajiv Gandhi Jeevandayee Arogya Yojana
RWA	Resident Welfare Association
SPAG Asia	Strategic Partners Group
WHO	World Health Organisation

Foreword

Dr. Jagdish Prasad
M.S. M.Ch., FIACS
Director General of Health Services

सत्यमेव जयते

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दिनांक/Dated.....
Dated: 16/10/2015

FOREWORD

India today is experiencing a rapid transition in the disease burden, with cases of Non-Communicable Diseases (NCDs) rising sharply. As per recent reports, NCDs contribute to 53% of the total disease burden in the country, resulting into 60% of all deaths.

What holds paramount importance is the prioritization of health in context of this transition and the urgency to strengthen our healthcare systems. The Government of India has been a frontrunner in recognising the threat posed to the social and economic well-being of the society and initiated several measures to address the growing burden of NCDs. What is required at this stage is an increased public-private participation and more such proactive initiatives for making India better prepared to face the challenge.

The Partnership to Fight Chronic Disease (PFCD) has made a significant start to lead a series of multi-stakeholder discussions, and bring together like-minded and committed individuals and organisations to find sustainable solutions to address the growing burden of NCDs. This National Blueprint on NCDs presents realistic and result-oriented programmes introduced in some places and that can be adopted by others.

As an early advisor to this PFCD initiative, it is encouraging to see the meticulous interplay that this document successfully carves out between Policy and Surveillance, Strengthening of Healthcare Systems and Healthcare Financing. I am confident that we will together find an effective response mechanism to take on the challenge of the NCDs burden.

Jrasad.

(Dr. Jagdish Prasad)

Message

Ms. Sujata Saunik
Principal Secretary
Public Health Department,
Government of Maharashtra

MESSAGE

Non-Communicable Diseases (NCDs) act as the primary triggers that push families into a cycle of poverty. Nationwide, NCDs account for 53% of all diseases and the Government of India is putting in significant efforts to curb the NCDs; however there is still scope for collaborative effort by both public and private sector.

One such collaborative partnership is the Partnership to Fight Chronic Diseases (PFCD). PFCD has successfully set the ball rolling through discussions leading to strong advocacy across key stakeholders. Aiming at supplementing the government's efforts, PFCD has empanelled an able group of health experts to develop a comprehensive document - "Sankalp".

This report outlines the thematic determinants of an ecosystem that is equipped to provide comprehensive healthcare to all. Inspired by successful case studies, this paper proposes recommendations for multi-sectoral cooperation, advocacy, use of technology, resource mobilization, capacity building within states and most importantly innovation & IT solutions.

Maharashtra, being a large state, is home to a large burden of NCDs. It is clear that curbing NCDs will not just accelerate workforce productivity but will also help in bringing down the prohibitive cost of lifelong treatment. Several best practices are visible across different parts of the country and I sincerely hope this document can give readers the current scenario of work in NCD sector and the way forward in India.

Message

Dr. Prabhakaran Dorairaj

Executive Director
Centre for Chronic Disease Control (CCDC)

Today, India's health needs are undergoing a dramatic transition due to changing socio-economic and environmental conditions with chronic diseases taking center stage. Chronic diseases are now responsible for more than 50% of deaths in India with a large number of deaths occurring at the most productive years of life. As a result there is huge economic loss to the country as well as to individuals and their families. It is therefore imperative that tangible measures are undertaken by both - the public and the private sectors in combating this crippling epidemic.

Significant efforts have been made by the Government of India to reduce and curb the prevalence of these diseases through the National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Disease and Stroke (NPCDCS). Given that the causes of these diseases are multi-factorial and the prevention strategies are multidisciplinary the need of the hour is to adopt an integrated chronic disease management protocol which engages multiple relevant stakeholders across sectors.

I am pleased that the Partnership to Fight Chronic Disease (PFCD) has initiated a dialogue among key stakeholders for strong advocacy to get attention from multiple players to address the rising NCD burden in India. In consultation with a robust and multidisciplinary panel of experts, PFCD has drafted this blueprint addressing the three key aspects imperative to obtain desired results of achieving the WHO 2025 goal of reducing premature NCD mortality by 25% by the year 2025. These are: Surveillance and Policy, Strengthening of Healthcare Systems and Healthcare Financing. The recommendations which are proposed in this document demonstrate the potential to reap tangible results and are supported by best practices from different regions in the country.

As a public health policy expert committed to finding result-oriented solutions to the growing NCD threat, I look forward to support PFCD in their future initiatives and truly hope that the recommendations presented in this document will meet their logical conclusion.

Message

Dr. Anand Krishnan

Professor
Centre for Community Medicine,
All India Institute of Medical Sciences (AIIMS)

Today, nobody disputes that non-communicable diseases (NCDs) are among the foremost public health challenges facing India and need to be tackled through an unprecedented level of efforts. The vicious cycle of poverty and NCDs needs to be broken and patients protected financially. While government seems committed, only efforts from all of us in tandem with the government, will translate into significant gains. In this context, the efforts of "Partnership to Fight Chronic Disease" are commendable. The key word here is "Partnership". All of us need to work together.

In order to give a push to the national efforts, two of the most important steps are preparation of a blueprint for action and strong advocacy. This document effectively addresses both of these. Supported by an impressive panel of technical experts, the document strikes the right balance between prevention and control. The key role of the government is in developing appropriate multi-sectoral policies, and establishing surveillance and monitoring systems. The role of private sector, both health and non-health, is critical for success. They have to show wisdom and sagacity by introducing self-mandated checks and balances in their ways of working. At the same time, government has to use fiscal and regulatory measures to maximize gains to the common man.

I sincerely hope and wish PFCD all the luck for translating this document into concrete action leading to measurable success.

From the Chairman's Desk

As a not-for-profit committed to raising awareness and finding sustainable solutions to address chronic diseases, the Partnership to Fight Chronic Disease (PFCD) has been working in India over the past several years. Recognising the threat posed by chronic diseases on the social and economic health of a developing country like India, PFCD adopted a tiered stakeholder engagement programme. The first phase comprised of a "listening tour" of key opinion leaders from all related fields including policy, healthcare, research, pharmaceutical, medical technology, finance, insurance, academia, healthcare economics and patient groups to understand the issue. Being a supporter of efforts to promote health and wellness by preventing and better managing chronic diseases, PFCD was encouraged by the increased awareness and articulation on the subject across all relevant stakeholder groups. What emerged was an interesting paradox:

- **Firstly, India is home to an array of best practices, which exist in pockets. These programmes have witnessed long-term results but are sparsely recognized or are in need of scaling up.**
- **Secondly, NCDs are recognized as a huge threat, but the interventions are restricted to 'issue stating'.**

Aiming at an effective response to the evident dichotomy, PFCD launched the second phase of the programme - an extensive advocacy campaign aimed at bringing about a shift in the current conversations from **issue stating to problem solving.** This phase focused on creating an ecosystem of stakeholders from all relevant groups to advocate for action on the issue, and the identification and development of concrete solutions. The final phase is an attempt to **develop an evidence-based plan of action for integrated chronic disease management** in the country.

This paper aims to define a result-oriented action plan to prevent, control, and manage the growing threat of NCDs in India. Saving the nation from the growing human and economic toll of chronic disease requires a realistic policy intervention, efficient surveillance, robust healthcare financing systems, and strengthening the existing healthcare systems. But what is equally important is for the states to be innovative while implementing of the action plan. Thus, adoption of a multi-sectoral approach with definite roles assigned to each stakeholder is imperative to reap the desired results of these evidence-based recommendations.

Dr. Kenneth E. Thorpe
Chairman, Partnership to Fight Chronic Disease
Robert W. Woodruff Professor and Chair of the Department of Health Policy and Management in the Rollins School of Public Health, Emory University

The Pathway

Executive Summary

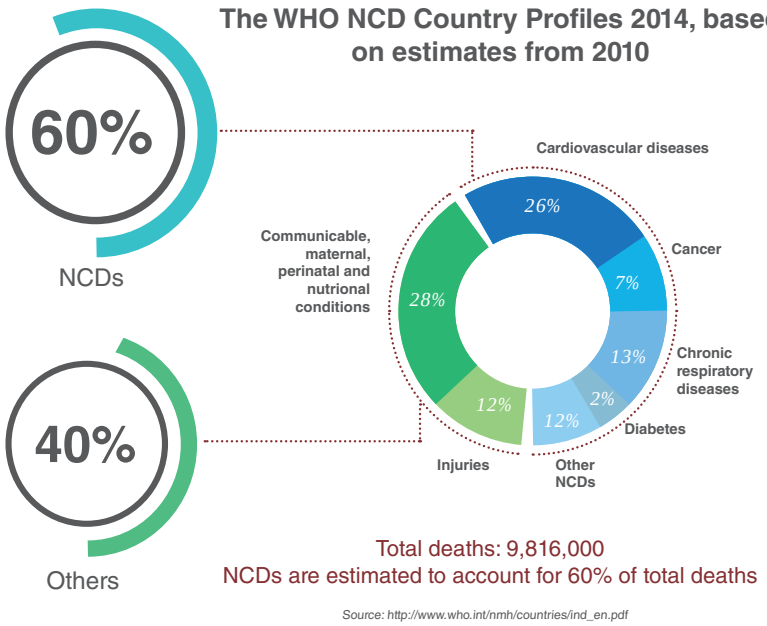
As the world's fourth largest economy, India is growing at a rapid rate, presenting a multitude of business opportunities for global communities. What truly sets it apart is its demographic dividend of 1.27 billion people and the largest number of young workers in the world. With 12 million joining the workforce annually, the government is capitalizing on this demographic dividend to launch the Skill India and Make-in-India campaigns, moving to convert India into a world-class manufacturing hub.

The World Economic Forum and the Harvard School of Public Health, in a separate report, pointed out that India is on track to lose US$4.58 trillion between 2012 and 2030 as a result of NCDs[1]. There is an increased likelihood that people suffering from NCDs will miss work, demonstrate a lower productivity when at work and become unemployed or seek early retirement, making NCDs potentially the top threats to India's economic development in addition to the human suffering connected to these illnesses.

But how productive can this workforce be if a disproportionate number of people suffer from frequent illness and poor health, leading to absenteeism at work place, lack of attention and lower productivity? All these factors are inversely proportional to the country's growth.

Good health is a prerequisite for a progressive nation, and the government has a crucial role to play in ensuring effective, quality health care. The nation has made progress on health outcomes over the last 68 years since independence. Life expectancy has more than doubled; communicable diseases like smallpox and, very recently, polio have been eradicated through sustained immunization efforts. In 2000, India was declared free of guinea worm disease[2] through collaborated and concerted multi-stakeholder efforts. Maternal and child health outcomes have seen improvement, and India has emerged as a generic pharmaceutical drug-manufacturing hub. But there are major gaps in the nation's health care efforts that still exist and are, in fact, widening.

India is witnessing a rapid health transition due to changing disease patterns. Historically, communicable diseases stemming from unhygienic practices and contaminated water attributed to high mortality and morbidity rates. The policy environment in India was, thus, focused on achieving better health outcomes related to infectious and communicable diseases. With India making incremental economic advancements, many have seen a significant increase in their purchasing power, leading to lifestyle changes such as reduced physical activity, unhealthy dietary habits, and increased use of tobacco and alcohol. Increased urbanization and industrialization have led to serious environmental issues and in spite of improved living conditions, a large segment of the population continues to use solid, biomass fuels for domestic combustion, responsible for household air

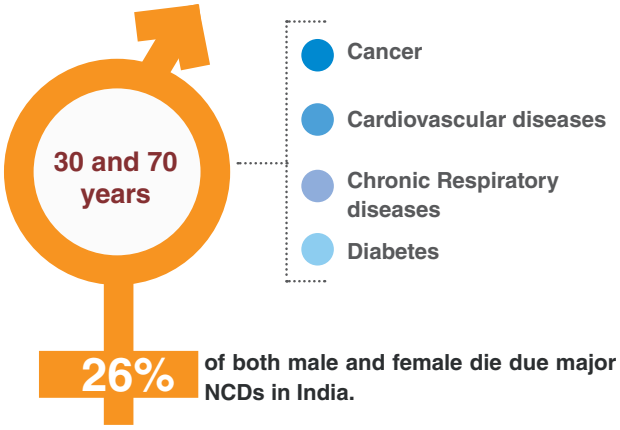


1. http://www.ey.com/IN/en/Industries/India-sectors/Education/Knowledge-paper-on-skill-development-in-India---Where-are-we-on-skills
2. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1117704/

pollution. These factors have led to India falling prey to a lethal modern - day scourge - non-communicable diseases (NCDs), which now account for over 60%[3] of total deaths in the country.

One-third of deaths occur before the age of 60, an alarming degree of premature mortality in the country. The WHO statistical profile 2015 for India[4] states that the probability of dying between ages 30 and 70, from four major NCDs like cancer, cardiovascular diseases, chronic respiratory diseases and diabetes for both sexes is as high as 26%. The paper also identifies the top 10 causes of death in the country, with three NCDs leading the chart - ischaemic heart disease killing approximately 1.2 million people in 2012 followed by COPD killing approximately 1.1 million, and stroke killing approximately 0.8 million. The top three causes accounted for over 30% of India's total mortality in 2012.

Probability of dying between ages 30 and 70, from four major NCDs



Source: WHO statistical profile 2 015 for India

Experts claim that ill health is inextricably linked to poverty, leading to a vicious cycle of declining economic and societal health in countries such as India. According to WHO World Health Statistics 2012, 39 million Indians are pushed into poverty due to diagnostic and treatment costs every year. The latest WHO Global Health Expenditure Database notes that 85.9% of total private health expenditure in India was paid out-of-pocket by individuals in 2013[5] . Also, about 47% and 31% of hospital admissions in rural and urban India were financed by loans and sale of assets. 30% of identified illnesses in rural India and 20% in urban areas go untreated due to financial constraints[6].

Table 1.1 - Statement 3.5 : Percentage distribution of spells of ailment treated during last 15 days by level of care separately for each gender

Level of care	Percentage of spells of ailment treated					
	Rural			Urban		
	Male	Female	Persons	Male	Female	Persons
1	2	3	4	5	6	7
HSC,PHC & others*	10.6	12.3	11.5	3.5	4.2	3.9
Public hospital	15.9	17.5	16.8	17.4	17.3	17.3
Private doctor/clinic	52.7	48.9	50.7	48.9	50.8	50.0
Private hospital	20.8	21.3	21.0	30.2	27.7	28.8
All	**100**	**100**	**100**	**100**	**100**	**100**

** include ANM, ASHA, AWW, Dispensary, CHC, MMU*

Source: "Key Indicators of Social Consumption in India – Health" launched in June 2015 by National Sample Survey Office. In the above table, it is seen that private doctors were the most important single source of treatment in both the sectors. They accounted for around 50% of the treatments in rural as well as urban areas.

In fact the survey finding states that more than 70% (72% in the rural areas and 79% in the urban areas) spells of ailment were treated in the private sector (consisting of private doctors, nursing homes, private hospitals, charitable institutions, etc.)

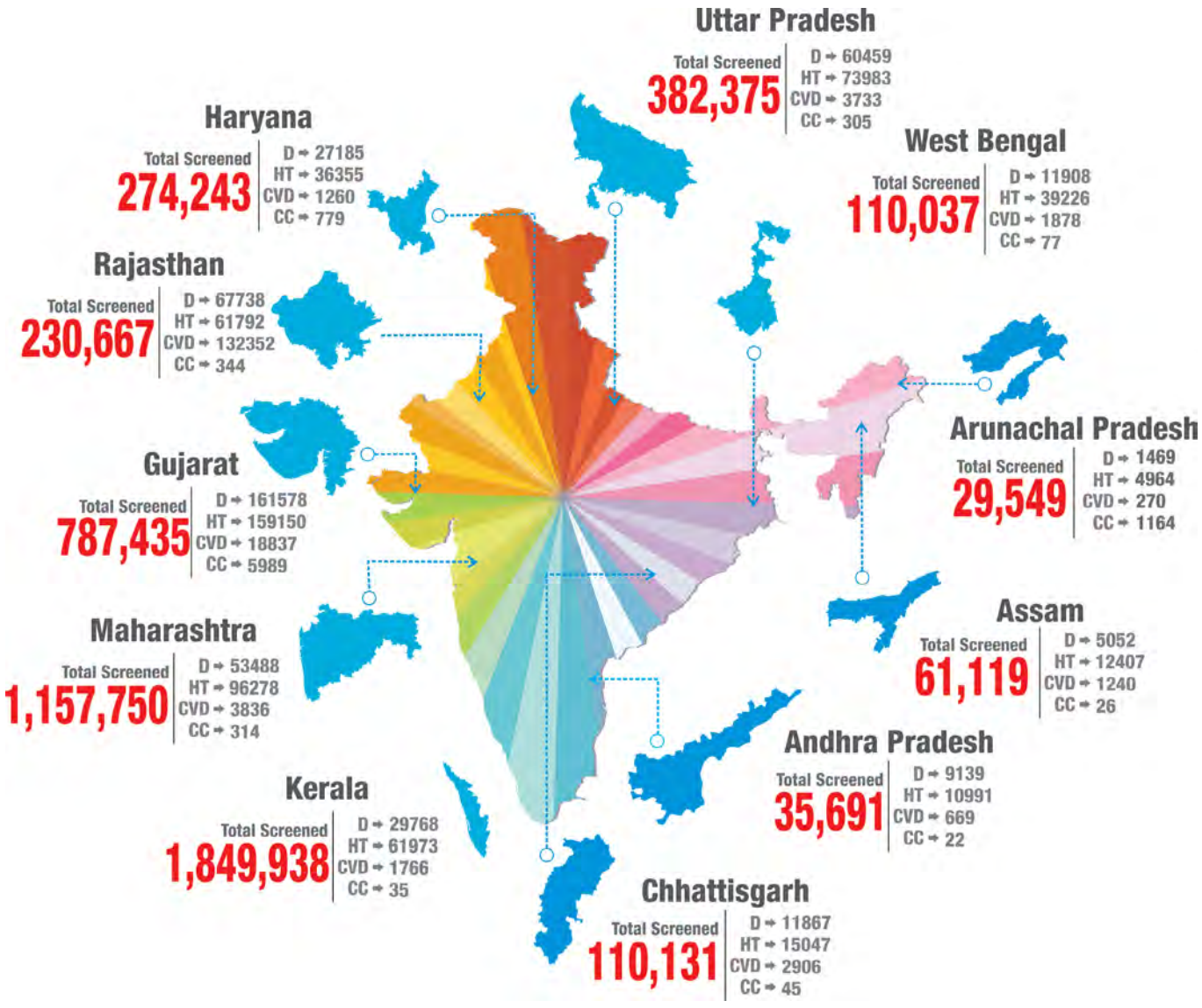
Sensitive to this increased burden of NCDs and common risk triggers associated with major chronic diseases, in the year 2010, the Government of India (GoI) initiated the National Programme for Prevention and Control of Cancers, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS), integrating the existing National Cancer Control Programme under it. The focus of the programme is on health promotion and prevention, strengthening of infrastructure including human resources, early diagnosis and management, and integration with the primary health care system through NCD cells at different levels for optimal operational synergies.

3. http://www.who.int/nmh/countries/ind_en.pdf
4. http://www.who.int/gho/countries/ind.pdf
5. http://apps.who.int/nha/database
6.http://planningcommission.gov.in/aboutus/committee/wrkgrp12/health/WG_1NRHM.pdf

The programme is being implemented in 100 districts spread over 21 States at an estimated outlay of Rs. 1230.90 crore (Rs.499.38 crore for interventions on diabetes, cardiovascular diseases and stroke, and Rs.731.52 crore for cancer control) on a cost sharing basis between the Centre and the States at the rate of 80:20. These districts have been selected taking into account their lack of development, inaccessibility, and poor health indicators.

1.1 National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS)

Programme Data



D	Diabetes
HT	Hypertension
CVD	Cardiovascular Diseases
CC	Common Cancer

Source: National Health Profile 2015

In a major development, GoI has made its intent to tackle NCDs clear by including it, for the very first time, in the draft National Health Policy (2015), made public for comments in January this year. This is definitely reason for optimism for all those who have been urging the government to declare war against this rising threat, but much remains to be achieved to meet the goals set for 2025. For the India NCD goals 2025 please refer to the table 1.2 on page 22.

Yet efforts to combat NCDs remain largely unstructured and lack systematic follow-up and monitoring of chronic clinical care. This results in little information about morbidity or mortality, which is crucial for effective health planning. The bias towards curative care reveals an ecosystem in which prevention and family wellness receive only limited focus. Quality of care remains questionable and hindered by limited accreditation and lack of technology adoption. Restructuring and strengthening of healthcare systems have resulted in a commendable decline in the incidence rate of infectious disease, providing adequate proof that the same is possible for NCDs.

Global evidence on health spending shows that, unless a country spends at least 5-6% of its GDP on health with the majority of that total coming from government expenditures, basic healthcare needs are seldom met.[7] The government spending on healthcare in India is only 1.1% of GDP,[8] which is about 4% of total government expenditure, representing less than 30% of total health spending, and is less than a fourth of the world average. Only a tiny portion of this spending is devoted to combating NCDs.

Lack of adequate funds and incentives at the state, district and zonal levels poses a paradoxical situation. In a country with the largest human capital and the youngest work force, there is a severe dearth of trained human resources who are dedicated to tackling NCDs.

Lack of public healthcare funding forces increased reliance on private healthcare establishments. Inequitable access to healthcare services for NCD treatment and management, especially in the population falling below poverty line, adds to the mortality and morbidity. A large number of elderly citizens within the population, demand for continuity of care for the management of NCDs, low awareness and lack of early diagnosis contributes to excessive treatment costs. Life expectancy has increased from 32 years in 1947 to 65 years in 2012[9], and with the older population more prone to NCDs, it eventually increases out-of-pocket health spending by citizens, which is the highest in Asia.

What is the need of the hour?

As the government takes formative steps towards shaping a healthy India, addressing NCDs takes precedence. Experts observe that India has been one of the early adopters in developing a policy framework towards addressing NCDs, and several effective interventions have been undertaken and implemented by a few states. Experts highlight that an integrated patient-centric approach with a universal chronic disease management framework is currently missing.

Low public expenditure on health, high out-of-pocket expenses and low prevalence of insurance coverage result in poorly-offered and poorly-consumed healthcare services. While we gradually progress towards the government's ambitious universal healthcare coverage plan, short-term steps need to be taken to realise the potential impact of the policy framework, effectively implement the proposed programmes, and empower more citizens of this country, especially those with or at risk of NCDs, to reap the benefits of improved healthcare. These could include creating a favourable policy environment to attract private investment in the healthcare sector by offering tax benefits and easier bank loans, while utilizing regulatory mechanisms to keep medical inflation at bay. Similarly, encouraging public-private partnerships for training, medical education and preventive care delivery support with a diagnostic equipment provision through CSR component can prove beneficial.

Given the magnitude and complexity of the NCD burden, there is an immediate need for a multi-sectoral approach, which entails identifying the key stakeholders and assigning definite roles to each. A collaborative effort by the central government, state governments, and private entities is a prerequisite for this battle against NCDs. Inter-ministerial co-operation is another key aspect of this approach.

7. http://mohfw.nic.in/showfile.php?lid=3014
8. http://mohfw.nic.in/WriteReadData/l892s/12604833581426499390.pdf
9.http://blogs.wsj.com/indiarealtime/2013/08/15/indias-record-since-independence/

Being a federal state, all matters of health rest with the respective states. Many Indian states are spearheading initiatives that can monitor and curb the threat of NCDs, and are progressing towards preventive measures. But there are other states that haven't embraced the subject of health in its entirety. It is imperative to map best practices of successful states as indication of what can be achieved if the less developed states were to adopt from their more progressive counterparts.

This paper recommends an evidence-based action plan that can be adopted by the government and the private sector alike. The paper identifies three thematic tracks converging to form this evidence-based pathway, specifically:

1. **Policy and Surveillance**
2. **Strengthening of Healthcare Systems**
3. **Healthcare Financing**

Representation of the interplay between the three thematic tracks

An integrated policy environment, which is framed on disease trends, risk assessment intelligence and cause-specific mortality analytics is possible only through a uniform, web enabled and tiered surveillance system throughout the country. These evidence-based policies will lead toward strengthening of the current healthcare system, making it robust, accessible for all, affordable, and effective. It will guide a shift from curative to preventive care with a focus on creating awareness, early diagnosis and counselling, and the development of a highly-skilled workforce adequate to meet the health requirements of 1.27 billion people.

India, as it stands at this crucial juncture, has an opportunity to improve the quality of life for its citizens and lay the foundations for a healthier future - a future that will be free of NCDs for generations to come.

POLICY AND SURVEILLANCE

Issues	What is required?	Who will do it?
Health policy skewed towards infectious diseases	Strengthening of the NCD department – Integration of all programmes under one umbrella	Central government
Lack of a universal framework adopting an integrated chronic disease management protocol	Inter-ministerial cooperation to integrate NCDs management protocol across all departments	Central + State government
Scattered and varied surveillance resulting in poor quality or unconsumed data	policy Shift focus from curative to preventive care and make "healthy living" an inherent social norm	State government + Private sector
	Strengthen Health Information System through robust surveillance	Central + State government

STRENGTHENING OF HEALTHCARE SYSTEM

Issues	What is required?	Who will do it?
Disease centric approach over the preferred patient centric	Scale up the "NCD Clinic" model, a Government of India's initiative that currently operates in some states, and establish these clinics at the primary healthcare level in order to promote an integrated chronic disease management	State government
Strong bias towards curative care with little focus on preventive care	Train health care workforce at primary, secondary and tertiary levels on integrated NCD management	Central + State government + Private sector
Lack of adequate skilled workforce across primary, secondary and tertiary sectors	Include a dedicated module on NCDs within the four and a half year MBBS curriculum to strengthen both the effectiveness of physicians and the health system in managing NCDs	Central government
Super specialized image of NCDs limit qualified medical practitioners from treatment andmanagement of chronic diseases		

HEALTHCARE FINANCING

Issues	What is required?	Who will do it?
Low expenditure on health	Increase in public expenditure on healthcare from 1.1% of GDP in 2015 to 3% of GDP in 2020	Central government
Glaring reliance on private healthcare resulting in large out-of-pocket expenses borne by the population	Work toward universal health coverage through a mix of public and private coverage options	Central government
Low insurance coverage	Conducive policy environment to attract private investment in the healthcare sector through possible tax benefits and easier bank loans	Central government
	Encourage Public Private Partnerships for training, medical education, diagnostic equipments and preventive care delivery requirements	Central + State government + Private sector

Mission

To control and prevent the growing burden of non-communicable diseases in India through a collective multi-sectoral response to ensure highest standards of health in the country, optimizing productivity of Indians across multiple age groups.

Aim

This pathway aims to present a result-oriented action plan to effectively facilitate central and state governments, private entities, and healthcare implementers with best practices and preventive measures to adopt innovative programmes for prevention and control of the growing burden of NCDs in India. Through a collective and effective implementation of the recommendations made under the over-arching three key tracks between 2016 and 2020, the country can achieve the goals set for 2025.

Guiding Principles

- Adopt multi-sectoral approach to facilitate “health in all policies”
- Encourage public-private-partnership model for effective policy implementation under resource constraints
- Focus on patient-centric approach over a disease-centric one to curb the rising occurrence of NCDs
- Identify and adopt best practices that have reaped success in control, management, treatment of NCDs
- Develop a robust, integrated monitoring and surveillance system for evidence-based policy and programmes
- Strengthen public healthcare delivery systems for the underprivileged
- Provide innovative, sustainable healthcare financing models that enable all Indians to access needed services for the prevention, diagnosis and treatment of NCDs

Target Audience

Health is a state subject in India. Therefore, the state is responsible for improving public health and the standard of living of its people. However, the limitations of state governments and low levels of public spending are a reality today. This results in poor quality of preventative healthcare for the population. People are then forced to depend on private health providers, leading to excessive and unaffordable out-of-pocket expenditures.

With this pathway, PFCD aims to complement the Government of India’s efforts towards curbing the incidence of NCDs in the country, and to bring about a positive and constructive shift from issue-stating to problem-solving, while working within the constraints that exist. The primary target audiences for this document are all related stakeholders at the central and state governments as well as the private sector.

Methodology

In developing this evidence-based action plan, the authors have adopted a tiered engagement framework, including periodic discussions and interactive sessions with key decision makers from the government, both at the centre, as well as some key states. This includes four regional multi-stakeholder consultations in 2014, and one in 2015. Over 100 key-opinion leaders from across the country representing public and private health providers, policy makers, public and private insurance providers, private diagnostic firms, health economists, and patient groups deliberated over the current scenario and suggested measures to address the growing burden of NCDs.

Subsequently, four prominent health and NCD experts formed a National Advisory Group, aided by a Working Group for each of the three thematic tracks, as noted below, to guide the development of the National NCD Blueprint.

Panel of Consulting Experts

CHAIRMAN

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Robert W. Woodruff Professor and Chair of the Department of Health Policy & Management, the Rollins School of Public Health, Emory University
Chairman, PFCD

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Strengthening of Healthcare System

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India NCD Goals for 2025

Government of India is the first to adapt the Global Monitoring Framework on NCDs set by WHO. In line with WHO's global action plan for the prevention and control of NCDs 2013-2020, India is the first country to come up with a national action plan and monitoring framework for prevention and control of non-communicable diseases[10] through the WHO-GoI 2012-2013 biennial workplan. While the global action plan lists nine targets, India has set a tenth target to address household air pollution, which is a concern in the country and neighbouring regions.

This paper has adopted the goals outlined in the national action plan and monitoring framework for prevention and control of NCDs in India with the aim to complement the GoI's efforts towards control, prevention and management of the NCDs' burden.

Table: 1.2

S.No.	Framework Element	Target		
		Outcome	2020	2025
1.	Premature mortality from NCDs	Relative reduction from overall mortality from cardiovascular disease, cancer, diabetes or chronic respiratory disease	10%	25%
2.	Alcohol use	Relative reduction in alcohol use	5%	10%
3.	Obesity and diabetes	Halt the rise in obesity and diabetes prevalence	No mid-term target set	Halt the rise in obesity and diabetes prevalence
4.	Physical inactivity	Relative reduction in prevalence of physical inactivity	5%	10%
5.	Raised blood pressure	Relative reduction in prevalence of raised blood pressure	10%	25%
6.	Salt/sodium intake	Relative reduction in mean population intake of salt, with the aim of achieving recommended level of less than 5gms per day	20%	30%
7.	Tobacco use	Relative reduction in the current tobacco use	15%	30%
8.	Drug therapy to prevent heart attacks and strokes	Eligible people receiving drug therapy and counselling (including gylcemic control) to prevent heart attacks and stroke	30%	50%
9.	Essential NCD medicines and basic technologies to treat major NCDs	Availability and affordability of quality, safe and efficacious essential NCD medicines including generics, and basic technologies in both public and private facilities	60%	80%
10.	Household indoor air pollution	Relative reduction in household use of solid fuels as a primary source of energy for cooking	25%	50%

10. http://www.searo.who.int/india/topics/cardiovascular_diseases/National_Action_Plan_and_Monitoring_Framework_Prevention_NCDs.pdf?ua=1

Policy and Surveillance

Rationale

As the government takes formative steps towards shaping a healthy India, with a vision to establish a universally "accessible, affordable and effective" healthcare system in the country, addressing NCDs is critical. Experts observe that India has been one of the early adopters in developing a policy framework towards addressing the rise of NCDs, and several effective interventions have been undertaken and implemented by a few states. However, what is missing is a universal framework to spearhead a focused programme for effective awareness and early diagnosis of NCDs, enabling improved prevention and management of disease. This gap prevents scaling up of effective models implemented at the state and intermediate levels.

India has several initiatives like:

National Cancer Control Programme	1975
National Programme for Control of Blindness	1976
National Mental Health Programme	1983
National Tobacco Control Programme	2007
The National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke	2010
National Program for Health Care of the Elderly	2010

There are also national protocols and guidelines for management of NCDs which have been set by the MoH&FW with WHO and ICMR.

The key question is how can the government ensure optimum implementation, evaluate the effectiveness of the policy frameworks, assess the need for private and public partnerships, and finally institute an integrated chronic disease management protocol based on accurate data collection and intelligence?

Action Plan: Proposed steps for an integrated policy and uniform surveillance mechanism

- Strengthen the NCD department within the Ministry of Health and Family Welfare at both centre and state levels
- Inter-ministerial coorporation to integrate NCDs management protocol across all departments
- Policy shift from curative to preventive care and to make 'healthy living' a social norm
- Strengthen Health Information System and establish a robust surveillance system

Strengthen the NCDs department within the Ministry of Health and Family Welfare at both centre and state levels

Rationale

Globally, the Government of India is ahead of the curve in recognising the potential impact of the growing burden of non-communicable diseases. India is the first country to develop specific national targets and indicators aimed at reducing the number of premature deaths from NCDs by 25% by 2025. A national multi-sectoral action plan that outlines actions by various sectors, in addition to the health sector, to reduce the burden of NCDs and their risk factors is in the final stage of development in collaboration with WHO. Inclusion of NCDs in the draft National Health Policy

2015 (currently under revision) further underscores the government's intent. What is missing, however, is an integrated approach in addressing the different types of chronic diseases, making it critical to strengthen the NCD department within the Ministry of Health and Family Welfare.

Specific recommended actions to strengthen the NCD department

- Strengthen the NCDs department within the MoH&FW by integrating all the programmes for chronic diseases under one comprehensive unit, which can carry out policy level decisions across chronic disease management.
- A multi-sectoral response and active involvement of other ministries and departments, both at the central and the state levels, needs to be mobilized. There are already several existing inter-ministerial forums; therefore, the primary focus is to mainstream NCDs in all health facilities. An "empowered" Committee of Secretaries chaired by the Cabinet Secretary will oversee 'health in all policies'.
- Capacity building at the state level and incorporating a good Programme Implementation Plan (PIP) model, which can be routed through the NHM. This will include the states taking responsibility of all programme implementations, especially awareness campaigns across stakeholder groups at an individual, family, community, and governmental level. Incentive-based release of funds by the centre with clear parameters based on the health indicators and linked to the 10-point goals for NCDs 2025.

A three-tiered committee should be recommended, which include the following

Committee of Secretaries

An empowered Committee of Secretaries chaired by the Cabinet Secretary would ascertain 'health in all policies'. This committee will frame evidence-based policies on prevention, management, control, treatment, and surveillance of NCDs. The NCDs cell of NCDC should extend technical support (mentioned in the next recommendation). The committee will also closely monitor execution of each programme developed based on the policies laid out. Population-based interventions will need a fundamental shift in policies to witness effective implementation, and this committee will be responsible for to bring about the changes. For example, besides tobacco control, none of the other 21 indicators have focused programmes, even though there exists a "National Multi-sectoral Action Plan for Control of NCDs" developed by MoH&FW, GoI and WHO (2014).The committee is expected to identify similar activities for alcohol control (increasing taxation is a step.), safe and healthy food subsidy, higher taxation on unhealthy food items, regulation on food items available at school and college canteens, and controlling household and ambient air pollution.

Sub-committees

With health and finance ministries spearheading initiatives, each concerned ministry will form a sub-committee to review any policy change and the impact it will have on various programmes. For example, the Food ministry will be a part of the committee for safe and healthy food, the Ministry of Petroleum, Environment and Climate Change for use of bio-fuel, etc.

Health Consultant

Propose commissioning a position of a Health Consultant in each ministry who can ensure that the policies framed are in line with the Ministry of Health and Family Welfare and do not have a negative impact on any of the 21 health indicators.

The tiered committee will:

- Identify and engage relevant departments and stakeholder groups for a multi-sectoral approach
- Articulate roles of each stakeholder groups to achieve a coordinated response
- Evaluate evidence-based policies based on disease trends, cause-specific mortality, region-specific risk assessments, and population risk assessment data developed by the NCDs cell
- Identify prevention based on best practices and chronic care management programmes that can serve as national best practice goals
- Establish a uniform surveillance mechanism, ensuring monitoring and evaluation of the programme
- Seek avenues for cross-functioning of healthcare systems for resource mobilization taking into consideration the financial constraints

- Strengthen the NCDs cell of the National Centre for Disease Control (NCDC): this department can be an independent think tank, and can extend technical support to the high-level committee and the NCD department within the MoH&FW. NCDC was established to replicate the CDC model and has a very small division currently focusing on NCDs.

Case-in-point:

National AIDS Control Organisation (NACO) is an organisation formed by the Ministry of Health and Family Welfare that provides leadership to HIV/AIDS control programmes in India through 35 HIV/AIDS Prevention and Control Societies. In 1986, following the detection of the first AIDS case in the country, the National AIDS Committee was constituted in the Ministry of Health and Family Welfare. In 1992, India's first National AIDS Control Programme (1992-1999) was launched, and the National AIDS Control Organisation (NACO) was constituted to implement the programme.

A National Council on AIDS chaired by the Prime Minister and consisting of 31 ministries, seven Chief Ministers, civil society representatives, positive people's network and private sector organisations was constituted with the following objectives:

- Mainstream HIV/AIDS issues in all ministries and departments by treating it as a development challenge, and not merely a public health problem
- Provide leadership to mount a multi-sectoral response to combat HIV/AIDS in the country with special emphasis on youth, women and the workforce

Key Achievements of NACO[11]

- The National AIDS Control Programme continues to make progress toward the MDG 6, controlling and reversing the HIV epidemic. The adult HIV prevalence at the national level has continued its steady decline from estimated level of 0.41% in 2001, through 0.35% in 2006, to 0.27% in 2011. Similar consistent declines are noted among both men and women at a national level. In adults (15-49 years), HIV prevalence, which was estimated at 0.33% (0.29%-0.37%) in 2007, has declined to 0.27% (0.22%-0.33%) in 2011.
- Declining trends in adult HIV prevalence are sustained in all the high prevalence states (Andhra Pradesh, Karnataka, Maharashtra, Manipur, Nagaland, and Tamil Nadu) and other states such as Mizoram and Goa. However, the low prevalence states of Assam, Arunachal Pradesh, Chandigarh, Chhattisgarh, Delhi, Jharkhand, Meghalaya, Odisha, Punjab, Tripura, and Uttarakhand have shown rising trends in adult HIV prevalence.
- India has demonstrated an overall reduction of 57%in estimated annual new HIV infections (among adult population) during the last decade from 2.74 lakh in 2000 to 1.16 lakh in 2011. This is important evidence on the impact of the various interventions under National AIDS Control Programme and scaled-up prevention.
- The total number of people living with HIV/AIDS (PLHIV) in India is estimated at 21 lakh (17.2-25.3 lakh) in 2011. Children (under 15 years) account for 7% (1.45 lakh) of all infections, while 86% are in the age group of 15-49 years. Of all HIV infections, 39% (8.16 lakh) are among women. The estimated number of people living with HIV in India maintains a steady declining trend from 23.2 lakh in 2006 to 21 lakh in 2011.
- There has been a rapid increase in PLHIV enrolment for antiretroviral treatment since 2004 with high level of drug adherence.

Similar programmes are required to identify and treat patients with NCDs to improve survival and reduce complications; which in turn will reduce expenditure and increase productive years of life.

11. http://www.naco.gov.in/upload/NACSP.pdf

Key stakeholder role:

This recommendation requires structural changes to be made within the central government and MoH&FW. Hence, the National Health Policy 2015 should reflect the action points mentioned above and get a concurrence at the Parliament.

Policy shift from curative to preventive care and to make 'healthy living' a social norm

Rationale

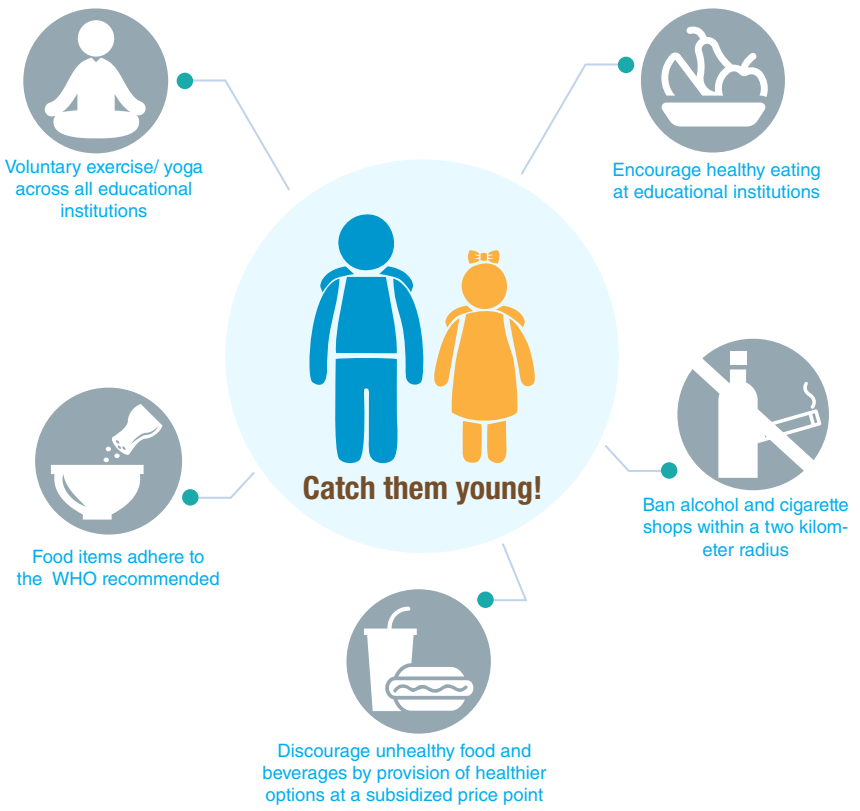
- There is a strong bias towards curative care in the Indian healthcare system, with a significant drop in number of patients along the treatment cycle, due to incorrect diagnosis and inappropriate care
- Apart from unhealthy lifestyle and dietary habits, low awareness of risk factors, low screening of high-risk groups, limited access to public health services, and poor quality treatment are some of the key reasons for the steady rise in NCDs
- There needs to be a shift in social behaviour to make 'healthy living' a reality in India

Specific recommended policy to promote shift in lifestyle

- Catch them young: To make the necessary shift in social behaviour and begin instilling 'healthy living' as a norm, it is essential to start the interventions at a youth level.

Here are some suggested key action points –

- Encourage voluntary exercise or yoga across all educational institutions including schools, undergraduate colleges and universities (both public and privately run), and incentivise healthy habits.
- Healthy food items and menus to be chalked out by state-identified nutritionists, in line with WHO-recommended sugar, salt and transfat content. These healthy food items should be provided in all school, college and university canteens as an alternate to unhealthy food and beverages. Healthy eating should be incentivised through subsidised or affordable pricing.
- Ban alcohol and cigarette shops within a two kilometre radius of all schools and colleges across the country.



- Collaborate with RWAs, MCD, municipalities, and build a conducive environment for the citizens to practice a healthy lifestyle:
    - Build and maintain walking/ jogging tracks and parks
    - Construct pavements and safe walking spaces on roads
    - Strengthen public transport system

Key stakeholder role:

This action item will need inter-ministerial cooperation at the centre and the state. The MoH&FW will have to engage with the Ministry of Human Resource Development, Ministry of Food Processing, Food Safety & Standards Authority, Ministry of Labour & Employment, Ministry of Corporate Affairs, Food and Nutrition Board and ICDS programme, to provide supplementary food to children within the Ministry of Women and Child Development. Engagement with the student unions and labour unions will also prove beneficial.

- Workplaces are an ideal place to introduce behavioural changes due to the significant time spent there by a large portion of the population. Voluntary guidelines can be developed for public and private sector companies to build healthy workplaces. Some of the recommendations are:

Some of the recommendations are:

- Provide gyms at workplaces or subsidise memberships at local gyms, and provide access to yoga and physical education training facilities.
- Ban use of tobacco within the office premises.
- Provide healthy eating options at subsidised rates in office canteens. Refrain from serving aerated beverages and junk food during official meetings.
- Organise annual medical check-up camps for all employees.
- Promote use of stairs and cycles within the campus. Construct adequate pathways within the campus to encourage walking.

These will not only help the employees, but companies as well because these initiatives can result in enhancing productivity and reducing time spent on medical leave.

Among India's residents, a large number is engaged in informal and primary sectors like agriculture. A minor percentage of the population is tribal in nature. Both these communities are forced by economic reasons to survive on food items that may be high in carbohydrates and salt. The dietary habits of these vulnerable groups should be addressed using appropriate IEC strategies and interpersonal communication channels.

Key stakeholder role:

The central and state government will play a vital role in policy formation and implementation. However, the private sector will have a major role in ensuring effective implementation of this recommendation. MoH&FW will have to work closely with Ministry of Commerce and Ministry of Labour & Employment to action this. Phase 1 can see implementation across 4-6 key corporate hubs with scaling up in Phase 2.

- Define target for reduction of salt, sugar and transfat in mean population intake and devise an effective monitoring and surveillance framework. There is sufficient global evidence suggesting reducing salt, sugar and transfat in the diet can prevent major NCDs and mortality. WHO has clearly delineated the specifications for intake of salt, sugar and transfat in the general population. (Please refer to Annexure 1).

Key stakeholder role:

This is a vital action item that has shown measurable impact in developed economies. The NCDs Division of MoH&FW will have to work closely with the Food Safety and Standards Authority to formulate the regulations. The implementation will need multi-sectoral cooperation and support from the state governments to work in partnership with private players to reduce salt and sugar, and eliminate transfat content in processed foods.

Strengthen Health Information System and establish a robust surveillance system

Rationale

Healthcare is one of the biggest social and economic concerns in India, and the steady upswing in the mortality attributed to NCDs is challenging. The severity of the situation amplifies when the government is unable to share the exact epidemiological data supporting cause-specific mortality or the disease burden statistics. All such data is currently scattered, collected and evaluated verbally, and not adequately documented. With a population of over a billion, it is in the best interest of the country to adopt technologies necessary to transition into a robust Health Information System (HIS).

HIS is an effective tool to monitor the health status of the population, consumption patterns, stockpiling of drugs and equipment, financial accounting, and health personnel. Accurate data entry is critical to identify the gaps in the provision of health service and taking informed measures to improve service delivery.

Key components of HIS' functions are as follows:

- Epidemiological surveillance: Identify chronic diseases, associated risk factors, and use of data analytics for policy framing and implementation
- Healthcare service consumption report: Investigation, patient follow-up records, health centre performance indicators
- Administrative record report: Financial accounting, drug stock management (including procurement, storage and delivery), human resource management and asset management

Case-in-point:

Tamil Nadu Hospital Management Information System [12]

Aiming to improve the state's health status, the Government of Tamil Nadu drafted a health policy in 2003. To support the health policy, the Government of Tamil Nadu implemented the Tamil Nadu Health Systems Project. A key aspect covered under this project was to use Information and Communication Technology (ICT) in strengthening the management of government health systems, improve the ability to collect data accurately, and use the analysis for decision-making.

Achievements:

- Phase I of the project was launched in41 hospitals across 5 districts, and this online system went live about 7 months ago. All end users are expected to use the system with NO data entry support. All registration, stores, pharmacy, wards, laboratories, and doctors' outpatient (OP) processes are fully online and no manual records are maintained.
- Real-time data is available 24/7 at these 41 hospitals. The doctors are making direct online entries for diagnosis, ordering lab tests and drug prescriptions. The HMIS reporting system covering clinical, programme, and administrative functions like finance, personnel, and infrastructure modules provides immediate online access to health administrators at the institutional level, district level, and at the state level on various critical data sets.

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12. *http://www.tnhsp.org/project*

- After successful implementation of HMIS in 5 districts, approvals are granted to extend this project to 222 secondary-care hospitals across the remaining 25 districts in the state. The 18 medical college hospitals present in the state will also be included during Phase II. Currently, the government is studying software and hardware feasibility for successful implementation.

Specific recommendations to establish a robust surveillance system

- **Establish a three-pronged surveillance mechanism** with the following key components:
  - **MIS reporting**: A systematically engineered and uniform MIS report generation mechanism across villages, towns and cities tracking the 10-point voluntary goals. This report should be a web-based, computerised mechanism, updated at each level, and monitored by all the states to ensure a daily comprehensive report. This should be supported by Electronic Health Records to:

    a) Measure, store, and analyse the data to improve treatment quality
    b) Manage revenue costs by reducing unnecessary tests
    c) Improve preventive care based on patient health history

  - **State wise NCDs surveys**: Ascertaining the burden of NCDs in each state will aid in effective disease management, control and prevention protocol. These surveys should be mapped against the 10-point voluntary goals for curbing NCDs. The survey analytics can be utilized in ascertaining the economic impact of NCDs, the ROI on the expenditure on asset creation, and the provision of healthcare facilities and workforce.

    Case-in-point:

    Punjab is the first state in India to commission a state level survey through PGIMER to ascertain the burden of NCDs in the state. The survey findings are currently being complied and will be released later this year.

  - **Institutional capacity building**: Develop common tools and protocols that can be used to conduct uniform surveys across the country. These surveys need to be continuously monitored by the high-level committee.

- **E-prescriptions:** Make it mandatory for all CHC and district level hospitals to start using e-prescriptions that are directly linked to the pharmacy, pathology, and biochemistry departments. This will ensure accurate documentation of patient health statistics, diagnostic data, drug disbursement, and supply requirements

- **Telemedicine:** Access to healthcare is a challenge for many citizens who live in rural India. Telemedicine will expand the reach of the healthcare system. Nurses or healthcare workers can note down patient symptoms and share them with the physician based in another location for the required treatment. This will ensure timely disease management and curb the travel cost for the patient

Key stakeholder role:

The MoH&FW along with NHSRC and the NCD Cell recommended within the NCDC should develop a uniform template for each of the monitoring mechanisms. All states should adopt the Health Information System within a four-year timeframe.

Case-in-point:

GoI launched the Integrated Disease Surveillance Project / Programme (IDSP) with the World Bank's assistance in November 2004 to detect and develop timely response mechanism for disease outbreaks.

The objectives of IDSP are:

- Establish a decentralized system of disease surveillance for timely and effective response to disease outbreaks
- Improve the efficiency of disease surveillance for use in health planning, management and evaluating control strategies

World Bank funds were phased out between April 2010 and March 2012. The funds were available for Central Surveillance Unit (CSU) at NCDC, and 9 identified states (Uttarakhand, Rajasthan, Punjab, Maharashtra, Gujarat, Tamil Nadu, Karnataka, Andhra Pradesh, and West Bengal). The remaining 26 states and Union Territories (UTs) were funded through the domestic budget. The Programme continues in the12th Plan under NRHM with outlay of Rs. 640 crore, funded by the domestic budget. Surveillance units have been established in all states and districts (SSU/DSU).

Central Surveillance Unit (CSU) established and integrated in the National Centre for Disease Control, Delhi. Training of State/District Surveillance Teams and Rapid Response Teams (RRT) has been completed for all 35 states/UTs. An IT network, connecting 776 sites in States/District HQ and premier institutes, has been established with the help of National Informatics Centre (NIC) and Indian Space Research Organization (ISRO) for data entry, training, video conferencing, and outbreak discussion. Under the project, weekly disease surveillance data on epidemic prone disease are being collected from reporting units such as sub centres, primary health centres, community health centres, hospitals including government and private sector hospitals, and medical colleges. States/districts have been asked to notify the outbreaks immediately to the system. On an average, the states report 30-40 outbreaks every week.

Over the years, the states have reported and responded to:

- 553 outbreaks in 2008
- 799 in 2009
- 990 in 2010
- 1675 in 2011
- 1584 in 2012
- 1898in 2013(till 8th December)

Target diseases

- Malaria
- Cholera
- Typhoid
- Tuberculosis
- Measles
- Polio
- Plague
- HIV, HBV, HCV
- Unusual Syndromes
- Accidents
- Water Quality
- Outdoor Air Quality
- NCD Risk factors
- State Specific Diseases

During the World Bank Project, IDSP also initiated the first ever NCDs Risk Factor Survey in seven major States through ICMR. It now has the experience and expertise in M&E and surveillance.

NCD risk factor surveillance:

- Monitor trends of important risk factors of NCD in the community over a period of time
- Evolve strategies for interventions of these risk factors to reduce the burden of diseases due to NCDs
- Strengthen NCD surveillance at District level
- Integrate NCD risk factor surveillance with IDSP

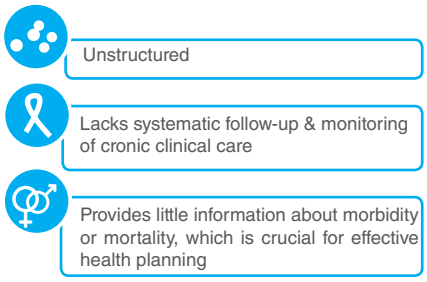
Source: Presentation on Disease Surveillance in India by Dr. Sampath K Krishnan, National Professional Officer (Communicable Diseases Surveillance) and http://www.idsp.nic.in/

Strengthening of Healthcare System

Rationale

The NCDs Country Profiles 2014 released by WHO stated that NCDs account for 60% of all deaths in the country. These include diseases ranging from cancer, cardiovascular diseases, diabetes, and hypertension to mental illness, obesity, and respiratory disorders. Like most developing countries, the health systems in India lean towards communicable disease. The approach to NCDs is unstructured, lacks systematic follow-up and monitoring of chronic clinical care, and provides little information about morbidity or mortality, which is crucial for effective health planning. It is, therefore, critical to strengthen healthcare systems to deliver effective and result-oriented interventions to tackle NCDs in the country with as much intensity as has been devoted to infectious diseases such as tuberculosis and HIV/AIDS. Re-structuring and strengthening of healthcare systems has resulted in a commendable decline in incidence of infectious disease, providing an adequate proof of concept that the same is possible for NCDs.

The approach to NCDs in India:



A key insight that emerged from the multi-stakeholder discussions is the need for a patient-centric approach in the prevention and management of NCDs. An integrated approach will aid a shift from disease-centred to patient-centred prevention and treatment of NCDs. Acknowledging the fact that patients with more than one NCD or those having co-morbidities (For example, diabetes and tuberculosis) would require a comprehensive treatment plan delivered by a multi-disciplinary health professional team. A major benefit of having multi-disciplinary health professional teams is that it enables optimisation of outcomes from all interventions, including medications, and ensures continuity of care. As NCDs management is prolonged, the scope of primary care should be widened, and should include linkages with family caregivers on one hand, and secondary and tertiary care hospitals on the other.

Case Study[13]I:

To gain an insight into 'care in action', it is useful to briefly review the development of the public health approach to provision of antiretroviral therapy (ART) for people with HIV infection. There is extensive evidence that ART can substantially extend the lives of people with HIV infection. Therefore, in their guidelines, developed nations state that specialist doctors must deliver individual patient management. They should prescribe from a wide range of ARVs and opportunistic infections that are supported by routine high-technology laboratory monitoring. Such an approach is not feasible in resource-limited settings where doctors are scarce, laboratory infrastructure is inadequate, and the procurement and supply-chain management is fragile. The difficulty in translating the guidelines from developed to developing nations caused concerns over whether ART scale-up in poor countries was feasible, let alone affordable or cost-effective.

Drawing on the experience of the internationally recommended tuberculosis control strategy, a public-health approach to providing ART was developed. This approach took into account the country requirements, the realities of weak existing health systems, and the experiences of pioneering ART programmes such as those of Médecins Sans Frontières. Standardisation of diagnosis and treatment and simplification of regimens support efficient implementation. A structured public health approach promotes implementation of evidence-based programmes and equity (setting standards for treatment that should be accessible by all in need). The move from an individual-based approach to a population-based one was a key conceptual shift that made ART rapidly accessible to the millions in need. The public health approach to the delivery of individual health interventions has enabled substantial, if still incomplete, progress in rolling out interventions for the diagnosis and treatment of tuberculosis and HIV infection.

Contd.

13. http://www.globalizationandhealth.com/content/8/1/14#B31

Case Study[14] II:

India's success in eradicating wild polioviruses (WPV) has won global acclaim. Until early 1990s, India was hyper endemic for polio, with an average of 500-1000 children becoming paralysed every day. Although, vaccination against polio started in 1978 under the Expanded Programme on Immunization (EPI) in the country, only 40% of the children were immunised in the first six years, and the burden of polio did not fall below that of the pre-EPI era for a decade. In 1995, India adapted WHO's Polio Eradication Initiative, which was launched in 1988; India began its Pulse Polio Immunization Program aiming at 100% coverage. Under this programme, all children under the age of five years were vaccinated against the poliovirus, leading to a vanquishing of the disease. In March 2014, WHO declared India polio free, with no polio cases registered in the last three years.

In this post-polio era, India has the benefit of a robust polio eradication infrastructure that can potentially support the country's routine immunisation system. The recently launched Project Indradhanush by the Minister of Health and Family Welfare that aims to achieve 100% immunisation now stands a chance to be a reality. The polio immunisation network is now helping to increase awareness, build demand for routine immunisations (covering diphtheria, whooping cough, tetanus, polio, tuberculosis, measles, hepatitis B, Japanese encephalitis and haemophilus influenza type B), assist with development of detailed mechanisms, monitor outreach sessions and vaccine availability, and tackle drop-outs, including those related to fear of adverse effects following immunisation (AEFIs). Cross functioning of existing resources and infrastructure can be a boon to combat the financial constraints that pose the biggest threat to execution of worthy policies and guidelines.

As for wide-scale effective ARV treatment and paediatric immunisation programmes, well-trained and well-organized health teams will be a critical component of effective care management for NCDs. A coordinated approach utilising both paramedical staff and medical professionals can improve prevention and management of NCDs, with more effective counselling for adherence to treatment and follow-up, and ultimately produce better clinical outcomes and quality of life for patients.

Experts claim that doctors of modern medicine do not provide a large majority of care episodes at the primary healthcare level. These are provided by alternate systems of medicine or even unqualified individuals. It has also been observed that in poorer areas and slums there are few physicians and healthcare workers involved in diagnosing chronic disease. Well-equipped, qualified, and coordinated health teams including nurses and para-health professionals will be needed to address the needs of patients with chronic diseases, many of whom display multiple chronic conditions that require a patient-centred, integrated care management approach.

Case Study III:

The simplified cardiovascular management programme also known as the SIMCARD Survey

In a first-of-its-kind collaboration between two developing nations, researchers from India and China have together discovered cost-effective ways to improve the quality of primary care and clinical outcomes in resource-limited settings, which could have major benefits for the general population.

A year-long study entailing cluster-randomised controlled trial was carried out in 47 villages in Tibet, China, and Haryana, India, where access to basic cardiovascular disease (CVD) management and medications has been limited.

The study enrolled 2086 (1,036 in China, 1,050 in India) individuals who were over 40 years of age, with high CVD risks - self-reported history of CVD and a measured systolic blood pressure over 160mmHg.
Community health workers (CHWs) were trained to manage the individuals who enrolled for clinical trials. An Android smartphone application consisting of a guideline-based, but simplified CVD management program aided the CHWs to conduct the survey.

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14. *http://www.who.int/immunization/diseases/poliomyelitis/inactivated_polio_vaccine/case_study_india.pdf*

The combined results found in the study strongly demonstrated the effectiveness of this program through an increase in the use of the anti-hypertensive medications, with the primary outcome being a net-difference of 25.5%. In China, a significant decrease in systolic blood pressure (-4.1mmHg), and increase in the proportion of taking aspirin (24.5%) were also observed. No actual lifestyle changes were found in both countries.

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Key takeaways:

- Collaboration works: Collaboration between developing countries on areas of common interests can lead to inexpensive and sustainable health outcomes through pooled resources.
- Potential effectiveness of CHWs: Working with limited resources, and often faced with overburdened and scarce specialists to address the needs of high-risk population base. To provide accessible, affordable and available healthcare, CHWs can prove to be extremely useful if trained well.
- Leveraging mobile technology: Mobile phone adoption and penetration even in limited resource settings is passé. However, it opens a huge window of opportunity in terms of utilising it to create awareness, re-enforcement of continuity of care, linking it to electronic health records, telemedicine, and conducting efficient and cost-effective surveys, etc.

Source: The George Institute carried out the study in 2011 for Global Health at Peking University Health Science Centre (TGI @ PUHSC) in collaboration with Tibet University, China, and the Public Health Foundation of India (PHFI), India. Developed basis information shared by Dr. Prabhakaran Dorairaj, Senior Investigator of the study in India and esteemed member of the National Advisory Group of this paper, and www.georgeinstitute.org.in.

Case Study IV:

Municipal Corporation of Greater Mumbai (MCGM) is implementing a Diabetes & NCDs control programme through primary health care set up using its dispensary network. Under this, programme facilities for screening, treatment, and follow up are made available using existing MCGM infrastructure involving primary, secondary and tertiary care. Patient education, training of doctors and paramedic staff is conducted at regular intervals. All logistics including drugs and diagnostics are utilised from the existing resources without creating a duplicate model. Public-private partnership with local NGOs and pharmaceutical companies has been undertaken for screening of complicated cases, mass awareness campaigns, and health promotion activities.

Public health infrastructure in rural & urban areas for the delivery of health services

Roles and Functions of Different Health Facilities: *Large cities, depending on their population, have a few state-run hospitals, including teaching hospitals. At the district level, usually there is a 150-bed Civil General Hospital in the main district town, and a few smaller hospitals and dispensaries spread over other towns in the district and sometimes in large villages. In the rural areas of the district, there are rural hospitals, community health centres, primary health centres, and sub-centres that provide various health services and outreach services.*

Sub-centre: *There is one sub-centre for 5,000 people in rural areas, and one for 3,000 people in hilly and tribal areas. These serve as the first point of peripheral contact between the Primary Health Care system and the community. At least one female (auxiliary nurse/ midwife) and one male health worker man these sub-centres. There's one Lady Health Visitor (LHV) for six centres. Sub-centres are assigned tasks relating to maternal and child health, family welfare, nutrition, immunisation, diarrhoea, pneumonia control, and control of communicable diseases. ANMs also provide drugs for minor ailments, and for essential material and child healthcare, as well as family planning counselling and supplies.*

Primary Health Centre: *There is one PHC for 30,000 people in rural areas, and one for 20,000 people in hilly and tribal areas. PHC is the first point of contact between village community and the Medical Officer. PHCs are manned by a Medical Officer and other support staff. It acts as a referral unit for six sub-centres, and many PHCs have 4-6 beds for in-patient care. It provides curative, preventive, promotive, and family welfare services. The PHCs are being strengthened under NRHM to provide a package of essential public health services and support for outreach services including regular supplies of essential drugs and equipment, upgrading single-doctor PHCs to two-doctors PHCs by posting AYUSH practitioners at PHC level, and provision of three Staff Nurses in a phased manner based on patient load and delivery load. The states/UTs have to incorporate their proposals and requirement of funds in their Programme Implementation Plans under NRHM.*

Community Health Centre: *There is one CHC for 120,000 people in rural areas, and one for 80,000 people in hilly and tribal areas. CHCs are established and maintained by the State Governments, and as per standards set, they is supposed to be manned by four medical specialists like a surgeon, a physician, a gynaecologist, and a paediatrician. 21 paramedical and other staff should support the medical specialists. Any CHC should have 30 indoor beds with one OT, X-ray, labour room, and laboratory facilities, and serve as a referral centre for 4 PHCs. These centres provide facilities for emergency obstetrics and specialist consultations. Indian Public Health standards stipulates that CHCs should be manned by six Medical Specialists including an anaesthetic and Gynaecologist, and supported by 24 paramedical and other staff with an inclusion of two nurse/midwives in the present system of seven nurse/ midwives.*

With efforts to decentralise governance, many of the functions are being transferred to the district level under Panchayat Raj Acts in various states. But real devolution of power in terms of funds, functionaries and functions has not taken place in many states, and the health system is administered using a top-down approach by large bureaucracies at the centre and state level. In a few states, even at the district level, government officials 'direct and administer' various health programs, it's the same in metropolitan city hospitals.

City hospitals and civil hospitals are basically curative centres providing outpatient and in-patient services for primary, secondary and tertiary care. In contrast, rural institutions provide mainly preventive and promotive services like communicable disease control programs, family planning services, and immunisation services, in addition to curative services.

Action Plan: Proposed Steps to Strengthen Health Care Systems for Chronic Disease

- Scale up the 'NCD Clinic' model, a GoI initiative, which currently operates in some states, and establish these clinics at the primary healthcare level to promote integrated chronic disease management.
- Train health care workforce at primary, secondary and tertiary levels on integrated NCDs management
- Include a dedicated module on NCDs within the four-and-half year MBBS curriculum to strengthen both the effectiveness of physicians and the health system in managing NCDs

Scale up the 'NCD Clinic' model, a GoI initiative, which currently operates in some states, and establish these clinics at the primary healthcare level to promote integrated chronic disease management.

Rationale

- These NCD Clinics provide emergency care and ongoing management of NCDs, enabling earlier diagnosis, immediate treatment, and counselling for adherence and appropriate monitoring.
- These also aid in lowering the risk of disease progression and NCD-related complications, as well as vulnerability to other related diseases and conditions. The goal of an integrated treatment and management protocol for NCDs is to enable effective use of health teams for primary care to improve health outcomes.

- Another key benefit through these clinics is data management - documentation, preferably digital of all patient medical history to build a repertoire of disease occurrence, cause-specific mortality, and specific disease burden in individual locations.

Case-in-point:

- In Tamil Nadu: Nurse-based care model, reliable supply of drugs, robust documentation, and analysis of the data to develop need-based programmes emerged as a key for the success of NCD Clinics in Tamil Nadu. District hospitals in the state are paperless enabled by e-prescriptions with all three departments - hospital, laboratory and pharmacy - linked digitally, ensuring a secure health information system.

- Palliative care initiative undertaken in Maharashtra in 2013-2014: Panned across 24 blocks in 8 districts identified based on the population profile- primarily the backward classes within Maharashtra - this initiative sees counsellors appointed under NHM reaching out to the critically ill patients, and most bed-ridden to provide counselling, drugs, and based on the patient's ailment condition, take them to the district hospitals for further treatment. In the absence of counsellors, field functionaries conduct these visits, and impart health education to caregivers of the patients. This initiative has covered over 3,000 patients with terminal illnesses within 1 year.

Specific Recommended Actions to Scale-Up the NCD Clinic Model:

- Expand the reach of the NCD Clinics to the Primary Health Centres from the existing Community Health Centres based on caseload. This will ensure much wider coverage and improved access to the rural populations. Early diagnosis and treatment facility at this level will help reduce the out-of-pocket expense burden on the rural population.

Case-in-point:

In Tamil Nadu, the programme started in 2007 with World Bank funding focused on NCD Clinics being established at CHC and PHC levels alongwith mobile NCD Clinics, which go to remote parts of the state. The clinics operate on all six days unlike the one-day hypertension clinic arrangement prior to the implementation of the programme. Phase I of the programme saw these clinics emerging across 16 districts with 2,000+ staff (nurses) being recruited. These nurses (one at a CHC and two district hospitals) were placed at NCD Clinics to screen four NCDs- hypertension, diabetes, cervical and breast cancer. The nurses were responsible for measuring blood pressure, weight, height, etc., of patients, and documenting the statistics on a four-page card. Based on the data, the patient is then sent to the medical officer's chamber for diagnosis and drug prescription.

Cardiovascular disease training and awareness conducted at a NCD Clinic in Tamil Nadu

Given the nature of the disease, NCD patients have to be under continued care that will bring them back to the NCD Clinic on a monthly basis for drug replenishment. The nurse conducts the routine screening and documents it in the patient card under the given date. 50-60% of Tamil Nadu's population has visited the NCD Clinics at least once during the project period.

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Phase II of the programme has been established across 16 additional districts.

Currently, World Bank's funding is complete, and the state government is in a transition phase of absorbing the programme within the system. The 2,000 nurses recruited within Phase I are being supported by NHM. The Government of Tamil Nadu permanently recruiting nurses for all 32 districts for the NCD program.

Case-in-point:

In Maharashtra, the programme was launched in 2010 in a phased manner. It entailed establishing NCD clinics across 17 districts in the state at three levels, namely, rural, sub-district and district hospitals. Each NCD Clinic is equipped with a team headed by a medical officer, a staff nurse, a counsellor, an accountant cum data-entry operator), a lab technician, and a physiotherapist. Physiotherapists and specialist doctors are appointed only at district hospitals.

Key health care provisions at the NCD Clinics are:

a. Conduct on-field and in-clinic surveillance
b. Undertake basic screening, diagnostic and counselling services along with medication to the patients.
c. Conduct specialised camp for cervical, breast, and oral cancer screening. Patients diagnosed with cancer are referred to tertiary health centres for further treatment or surgery.

Year			2012-13	2013-14	2014-15	Total
No. of districts involved			6	6	11	11
Population screened (less than 30 years old and ANC)		Male	419450	1375955	1480476	3275881
		Female	576652	1352743	1889060	3818455
		Total	996102	2728698	3369536	7094336
Sex wise prevalence of confirmed NCDs cases (1,000 people)	Diabetes(DM)	Male	34.6	31.9	22.6	28.0
		Female	28.4	26.6	15.2	21.2
		Total	31.0	29.3	18.4	24.3
	Hypertension (HT)	Male	53.6	47.8	33.5	42.1
		Female	46.0	47.0	31.0	38.9
		Total	49.2	47.4	32.1	40.4
	Heart diseases (CVD)	Male	0.7	1.0	1.2	1.1
		Female	0.4	0.8	0.7	0.7
		Total	0.5	0.9	1.0	0.9
	Cancer	Male	0.2	0.4	0.7	0.5
		Female	0.2	0.5	0.5	0.4
		Total	0.2	0.5	0.6	0.5
	Stroke	Male	0.3	0.5	1.1	0.8
		Female	0.0	0.0	0.0	0.0
		Total	0.2	0.4	0.7	0.5

Source: State Health Resource Centre, Government of Maharashtra

Contd.

The process of up scaling has already been initiated by the district-level authorities under the leadership of the state NCDs department. In early 2015, Aurangabad district, which is not currently a part of the NHM-NPCDCS programme, has established diabetes, cancer, and hypertension screening clinics. Patients with diabetes and hypertension are being treated on location, and a follow-up routine has been channelised. Cancer patients are being referred to tertiary care centres.

- Include cancer screening at CHC and PHC levels at the NCD Clinics. Early diagnosis at stage 1 and 2 will significantly bring down cancer-driven mortality in the country. With advanced treatment available in the country, experts have observed a positive upswing in complete cancer cure.

  Common cancer screening does not need a specialised oncologist; a trained female doctor or gynaecologist, and a trained nurse at district hospital scan conduct it.

Projected Cases Of Cancer at India Level For Selected Sites and Selected TIme periods (2013, 2014 & 2020)

S.No	Site of Cancer	2013	2014	2015	2020
	1	2	3	4	5
		Males			
	All sites	522164	535324	548844	622203
1	Tongue	33160	34768	36457	46254
2	Mouth	45669	48430	51362	68977
3	Hypopharynx	13078	13023	12969	12727
4	Oesophagus	22529	22343	22161	21319
5	Stomach	22343	22616	22893	24359
6	Colon	15966	16655	17376	21489
7	Rectum	15925	16544	17188	20825
8	Liver	18224	18946	19697	23954
9	Gall Bladder	10730	11162	11613	14176
10	Pancreas	8653	8910	9175	10628
11	Larynx	23590	23877	24169	25696
12	Lung	52685	54235	55834	64615
13	Prostate	35029	37055	39200	51979
14	Kidney	10567	10895	11232	13091
15	Urinary Bladder	17713	18147	18593	21003
16	Brain	14988	14922	14857	14547
17	NHL	21498	21759	22025	23414
18	Lymphoid Leuk	10594	10923	11262	13130
19	Mycloid Leuk	10785	10916	11049	11747

Source: National Health Profile 2015 http://www.cbhidghs.nic.in/E-Book%20HTML-2015/index.html#167/z

Projected Cases Of Cancer at India Level For Selected Sites and Selected TIme periods (2013, 2014 & 2020)

S.No	Site of Cancer 1	2013 2	2014 3	2015 4	2020 5
		Females			
	All sites	564619	581945	599847	698725
1	Tongue	11289	11846	12432	15846
2	Mouth	17958	18406	18866	21366
3	Hypopharynx	3160	3201	3244	3470
4	Oesophagus	15380	15280	15183	14739
5	Stomach	13187	13560	13944	16060
6	Colon	12917	13657	14440	19113
7	Rectum	12035	12629	13253	16895
8	Liver	8514	8835	9168	11049
9	Gall Bladder	20388	21504	22686	29712
10	Larynx	3022	3062	3102	3315
11	Lung	21234	22649	24164	33511
12	Breast	94208	97328	100611	119782
13	Cervix	92731	93786	94857	100479
14	Corpus Uteri	20875	22347	23925	33696
15	Ovary	36423	37726	39080	46661
16	Urinary Bladder	5336	5623	5925	7709
17	Brain	10672	10812	10954	11704
18	Thyroid	16389	17104	17852	22808
19	NHL	13671	13840	14032	14994
20	Lymphoid Leuk	5906	5983	6062	6477
21	Mycloid Leuk	11542	12741	14068	23137

Source: National Health Profile 2015 http://www.cbhidghs.nic.in/E-Book%20HTML-2015/index.html#167/z

Case-in-point:

In Tamil Nadu, nurses at all the PHCs screen using VIA/VILI for cervical cancer, and clinical breast examination for breast cancer. The patients suspected with ailments are sent to gynaecologists at district hospitals. Patients diagnosed with malignancy are referred to tertiary care or cancer hospitals for further treatment.

Cervical cancer screening camp at a NCD Clinic in Tamil Nadu

Case-in-point:

- In Maharashtra, under the Mahila Arogya Abhiyaan, seven lakh people were screened for the three common cancers (oral, cervical, and breast). After diagnosis, the treatment was supported through Tata Memorial Cancer Institute in Mumbai.
- In September 2015, Tata Memorial Hospital's (Mumbai) alumni association of 37 oncologists called Cancer Warriors partnered with the Maharashtra government to provide tertiary care at district hospitals for diagnosis

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and disease management of cancer patients who have been screened at Primary Health Centres. Currently, this initiative covers 23 districts of Maharashtra.

- Fund allocation for the NCD Clinics from state-owned healthcare financing programmes like Rajiv Gandhi Jeevandayee Arogya Yojana (RGJAY) in Maharashtra helps curb the dependence of such initiatives on annual fund allocation by the central government.

Case-in-point:

The Maharashtra government has NCD Clinics in 17 districts with robust data monitoring system. These clinics are aligned to RGJAY. Under the state run insurance system, 470 private hospitals and a few government hospitals are empanelled. Under this scheme, patients screened at primary care centres and diagnosed with ailments that need tertiary care can be referred to the empanelled hospitals. This scheme covers the underprivileged and underserved segment of the society. The recommended way forward is to conduct screenings at the CHC and PHC levels and through referral programmes. The treatment for the diagnosed cases can be availed at the empanelled hospitals under RGJAY. There should be standard reference protocols for NCDs, and all the 17 districts should be transitioned to e-prescriptions to ensure data entry accuracy and enhanced analytics, which can be used to further strengthen the programme. This will become a perfect public-private partnership model.

- Engage with private sector to provide healthcare equipment and supplies under their CSR budge.

Train health care workforce at primary, secondary and tertiary levels on integrated NCDs management

Rationale

- Well-trained and well-organized health teams will be a critical component of effective control and care management of NCDs. A coordinated approach utilising four broad categories of workforce, including medical officers, paramedical staff, community health care workers, and laboratory technicians can improve prevention, timely diagnosis, and treatment of NCDs.

Specific Recommended Actions to build workforce for NCD care:

Develop a standardised course on integrated NCDs care that is illustrative, simple, and concise for each category of the workforce

Case-in-point:

The Indian Institute of Technology (Bombay, Madras, Delhi, Guwahati, Kanpur, Kharagpur, Roorkee) and the Indian Institute of Science, Bangalore, developed a government-funded online training module called[12] NPTEL. This training module provides E-Learning through online web and video courses in engineering, science, and humanities streams. The mission of NPTEL is to enhance the quality of engineering education in the country by providing free online courseware.

Adopt a multi-sectoral approach to involve different organizations in developing the course structure and content for the training modules.

The training module must include soft-skill development to equip medical officers and nurses with counselling techniques. Eliminate the super-specialty image of NCDs treatment amongst medical officers based at community and primary care levels so that patients are treated at the primary care level instead of being referred for tertiary care. This delays treatment and amplifies out-of-pocket expenses.

Include a dedicated module on NCDs within the four-and-half year MBBS curriculum to strengthen both the effectiveness of physicians and the health system in managing NCDs

Rationale

A super-specialty image exists in most NCDs. Medical officers are based in CHC and PHC structures, which leads to referrals to tertiary care units or specialist medical officers. This often defers treatment or leads to unnecessary increase in out-of-pocket expenses for patients, including travel, boarding, treatment, and drugs. It is therefore essential to sensitize medical professionals during their MBBS curriculum and internship.

Specific recommended actions to strengthen the medical workforce in managing NCDs:

- Include a month-long internship at an NCD Clinic for all MBBS students as a prerequisite to be eligible for a degree
- Launch a handbook with a simple and illustrative module for standard screening, diagnosis and treatment protocol to be followed on NCDs

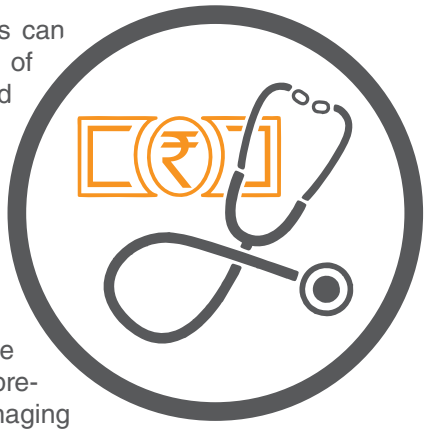
Key stakeholder role:

The MoH&FW will need to work closely with the Medical Council of India for inclusion of the module and relevant questions for examinations. Authorship of the handbook should be assigned to professors at top institutes such as AIIMS and Post Graduate Institute of Medical Education and Research, with the exploration of opportunities for an endorsement by the MoH&FW and vetting by a renowned university.

Healthcare Financing

Rationale

Poverty is a significant risk factor for contracting NCDs, and these diseases can quickly lead to personal financial crises. Because of the limited availability of healthcare coverage and low public expenditure on health in India, an estimated 60-70% of healthcare services are paid out-of-pocket[15] . Given the reliance on out-of-pocket costs, preventive care and early opportunities to manage health risks are often forgone, leading to greater severity of disease, higher costs for the individual, and significant economic losses for society as a whole. National investments are required to mobilise resources, improve health, protect individuals from financial hardship in the event of a catastrophic illness, and to achieve efficiency and equity in providing healthcare. Investment in NCDs should be considered as a poverty alleviation and development initiative because such investments generate significant national returns by reducing premature mortality, increase in productive years of life, and reduced costs of managing chronic illnesses.



60%-70% of healthcare services are paid out-of-pocket.

- The returns on investing in health are impressive. Reductions in mortality account for about 11% of recent economic growth in low-income and middle-income countries, and improved health not only translates into economic wellbeing but better health is of value in itself.[16]

Indeed, the UN Millennium Development Goals have helped to clarify the foundational need of more universal coverage in pursuit of achieving these goals.

Despite significant economic growth, India's level of public spending on health remains one of the lowest in the world, and India's health achievements are low relative to the country's income. According to WHO's World Health Statistics 2015, India spent 1.16% of public expenditure on health as a percentage of GDP, ranking 187th among 194 countries. In per capita terms, India ranked 157th, spending just $60 (PPP int. $)[17]. India's per capita public expenditure on health was 55% of Indonesia's, less than 20% of China's, and 11% of Mexico's and South Africa's[18]. Public spending on health in India has stagnated over the past two and a half decades, varying from 0.9 to 1.2% of GDP from 1990 to 2015.[19]

The government has the lead role in making investments to promote the nation's health and protect the population from avoidable diseases. Historically, healthcare has been low priority for both India's central and state governments. Healthcare is viewed as a state government responsibility, but the ability of the states to spend funds on healthcare varies greatly and suffers from multiple limitations. Most of the low-income states have low capacity and limited avenues for income generation. These limitations have caused cumulative imbalances in the funds, leading to states using federal funding transferred to the states for mitigating previous and recurring liabilities such as salaries, wages, and pensions. Remaining funds, if any, leave little to no room for capacity building, infrastructure development, or improving access to healthcare.

15. *Insurance Regulatory and Development Authority of India (2011)*
16. *D Jamison, et al., "Global Health 2035: A World Converging within a Generation." The Lancet, 2013; 382(9908).*
17. *WHO, World Health Statistics 2015.Available online at http://apps.who.int/iris/bitstream/10665/170250/1/9789240694439_eng.pdf?ua=1&ua=1.*
18. *WHO, World Health Statistics 2015.Available online at http://apps.who.int/iris/bitstream/10665/170250/1/9789240694439_eng.pdf?ua=1&ua=1.*
19. *MG Rao and M Choudhury, "Health Care Financing Reforms in India," March 2012, available online at http://www.nipfp.org.in/media/medialibrary/2013/04/wp_2012_100.pdf*

No healthcare system functions effectively without sustainable financing. Adequate healthcare financing in India would serve to:

mobilise resources to improve health of the population through public health efforts to meet preventive and care needs

provide financial risk protection to the population, through public and private insurance, which will limit financial hardship when facing a catastrophic illness

achieve efficiency in the allocation of funds and equity to provide healthcare across India by encouraging federal, state, and private funding sources for healthcare

Like many countries, India must address complex fiscal and policy challenges to identify and mobilise the resources needed for healthcare while finding a viable mix of financing mechanisms to allocate those resources for building capacity, purchasing services and products, and delivering care efficiently. Pursuing pathways to achieve more universal healthcare coverage offers an efficient way to achieve better health and financial protection for the Indian people .[20]

The public insurance scheme Rashtriya Swasthya Bima Yojna (RSBY) has expanded healthcare access to more than 37 million cardholders living below the poverty level. Its focus is on inpatient care of communicable diseases with limited coverage of non-communicable diseases, outpatient treatments, and technologies that can reduce the NCD burden in India. These limitations leave serious gaps and missed opportunities for health improvement in the prevention and management of NCDs. Estimates of the significant costs involved in developing a universal healthcare system with a limited private sector role, as envisioned in the draft National Health Policy, and subsequent announcements of a cutback in implementation of the draft National Health Policy given those costs highlight the benefits of a blended public-private coverage model.

Public funding is vital, particularly in providing a safety net for lower income populations. Recently, the Government of Rajasthan announced an ambitious Bhamashah Health Insurance Scheme touted to benefit 4.5 crore people living in the state by providing a smart card through which patients with low income can purchase services at private hospitals. Otherwise, those healthcare services are out-of-reach for these populations. Two other states, Maharashtra and Tamil Nadu have launched a Health Insurance Scheme to assist lower income populations. Building on these existing efforts to include private insurance coverage for more affluent populations would help to provide healthcare coverage for broader populations and direct public resources to those most in need and to building required infrastructure.

"Policies need to be cohesive and consistent with each other. One has to be careful that we do not promote NCD-inducing policies by giving misguided subsidies or other benefits to relevant industries. The other issue is about what works: what are those low-cost interventions that can be easily incorporated in either UHC or other programmes for NCD to begin with. Finally, NCDs comprise a very broad range of diseases, and one cannot be complacent about focusing on just a few."

- Dr. Indrani Gupta
Professor & Head,
Health Policy Research Unit,
Institute of Economic Growth

Public and private funding can coexist and serve a complementary means to assure greater health coverage. Government plays an important role within the private financing of healthcare, through regulation and patient protections that assure the financial viability of the insurer and assure the fairness of insurance contracts. Mixed public-private funding also enables government to ensure greater healthcare coverage with limited resources and serve the unique needs of diverse populations. For example, a social health insurance program designed to provide basic healthcare services for populations with limited or no other means may meet the needs and abilities of the rural and poor socioeconomic populations and align with the public financial resources available. Such an approach, however, may be ill suited for urban, employed populations where other forms of financing such as private health insurance are a better fit.

20. D Jamison et al., "Global Health 2035: A World Converging Within a Generation." The Lancet.2013; 382(9908).

Private sector models also have the benefit of competition shown to drive quality improvements and lower costs, as seen in Kerala. Furthermore, Kerala's health indicators are the highest in India, reflecting the combination of high levels of literacy, a robust private sector fuelling innovation and advancements, and a well-functioning public sector benefitting in part from the efficiencies gained from private sector competition.

Establishing guiding principles should form the foundation to policy development for improving healthcare coverage in India. As gleaned from analysis of evolved healthcare financing systems globally, considerations include assuring equity, efficiency, quality, innovation, choice, and stakeholder engagement.[21]

- **Equity** in healthcare coverage is important. In an equitable system, the government assures all populations have access to quality healthcare services with the government providing a public safety net for lower income populations.

- **Efficiency** is needed to allocate and use resources wisely, and build needed infrastructure that facilitates efficiency in the delivery of care. Aspects of efficiency are critical in building a well-trained healthcare workforce to meet population needs for services, and removing barriers that create inefficiencies in the healthcare supply chain and healthcare financing infrastructure.

- Building mechanisms to assess and improve the **quality** of care provided will assure better access to services shown to reduce the prevalence of NCDs, and improve the health outcomes for people with NCDs. Accountability for quality can ensure access to preventive care services, appropriate treatment, and the coordination of care among providers needed to combat NCDs. Governments can establish expectations for healthcare system improvements through national quality standards in the development and delivery of healthcare products and services.

- **Innovation** plays a critical role in improving the quality of care and outcomes, addressing unmet medical needs, and overcoming inefficiencies and barriers within the healthcare system. Having an environment that stimulates innovation encourages public and private investments in the research and development of new technologies that provide opportunities to improve population health and build efficiencies.

- Patients play an essential role in a well-functioning, sustainable healthcare system. Many of the decisions that affect health take place outside the healthcare system. Accordingly, an **engaged and informed** patient population with choices about coverage and healthcare ensures that their needs and preferences are identified and met, and that their voices help to drive quality improvements and identify healthcare needs.

Many healthcare financing models exist globally relying on public and private financing to various degrees. Examining and learning from the healthcare financing models of other major healthcare markets such as China, Mexico, Singapore, the United Kingdom and the United States can help India shape a viable healthcare financing model [22]

21. Adapted from AS Bhattacharjya and L Fowler , "Universal Health Care and Sustainable Healthcare Financing in India: Lessons from Other Major Healthcare Markets," OPPI, (2015).

22. For more detailed summaries of different healthcare systems, see AS Bhattacharjya and L Fowler, "Universal Health Care and Sustainable Healthcare Financing in India: Lessons from Other Major Healthcare Markets," OPPI, (2015).

Action Plan: Proposed recommendations to strengthen healthcare financing to achieve the recommended goals

- Increase public investment in healthcare at the federal and state levels.

  India should increase the percentage expenditure of GDP on healthcare from the current 1.1% to at least 2.5-3% by 2025, with an increased focus on preventing and treating NCDs.

- Work toward universal health coverage through a mix of public and private coverage options

- Establish policies and an environment conducive to attracting private investment in the healthcare sector through incentives such as tax benefits, underwriting, and facilitating bank loans, especially to supplement care in underserved and difficult to reach areas.

- Encourage Public Private Partnerships for training, medical education, diagnostic equipment, and preventive care delivery requirements to promote efficient use of resources. Ensure adherence to standard treatment guidelines in public and private hospitals to maintain acceptable level of quality and accountability in provision of care.

India's allocation on NCDs programmes should be doubled by 2020 and tripled by 2025 to ensure successful implementation of the action plan under the first two thematic tracks of this paper. Building workforce capacity and addressing infrastructure needs can be accomplished through the development of public private collaborations and funding streams, maximizing the use of public resources by seeking opportunities to work with the private sector.

Healthcare coverage across India is needed to offer protection from catastrophic healthcare expenses and promote access to ongoing care needed in the management of NCDs. As the experience of other nations demonstrates, allowing for a mix of public and private healthcare coverage facilitates broader access to healthcare coverage, particularly given the public resources needed to achieve universal coverage for a large, economically and geographically diverse population. The government also plays a crucial role in regulating private coverage options to ensure patient rights are protected.

> **"For adequate financing, one needs to assess the right infrastructure requirement available across public and private sector facilities to make sure that appropriate utilisation and investment takes place in meeting healthcare delivery objectives.Making sure that the quantum of financing is assessed accurately and the impact of the same is assessed for appropriate deployment."**
>
> - Amit Mookim
> Country Principal South Asia,
> IMS Consulting Group

To help establish a favourable policy environment, India should convene a standing working group that explores models of public and private healthcare financing, identifies gaps and barriers to implementation, and makes specific policy and regulatory recommendations. The working group should include government insurance regulators, public and private insurers, healthcare industry, providers, and other policy experts.

Key stakeholder role:

Ministry of Finance and MoH&FW have to work in tandem and ensure the actual allotment of the funds for their intended purpose. An incentive-based, state-financing model should be framed that has a tiered fund disbursement mechanism based on improved health outcomes evaluated through the surveillance mechanism recommended under track one.

Making central funding conditional should lead to supplementation instead of substitution at the state level, encourage states to make proportional contribution towards the specific programme, and focus on improving health outcomes [23]

Case-in-point:

Public–Private Partnerships (PPP) in Health Sector

Tertiary care: Rajiv Gandhi Super-specialty Hospital, Raichur, Karnataka
Contracting arrangements: Government of Karnataka and Apollo Hospitals
Type of partnership: Joint venture (Management Contract)
Services: Provides super-specialty clinical care services and management of Hospital. Free outpatient services for BPL patients.

Rural health care delivery and management of PHCs
Contracting arrangements: Karuna Trust and Government of Arunachal Pradesh
Type of partnership: Contracting in
Services: Manages 11 PHC's, provides health care facilities to the local population.

Labs, drug supply and diagnostic services: Hindlabs
Contracting arrangements: MoH&FW and HLL Life Care Ltd
Type of partnership: Contracting in
Services: A novel initiative that delivers high-end diagnostic services at CGHS rates

Health insurance: Community Health Insurance Scheme
Contracting arrangements: Karuna Trust, National Insurance Co., and Government of Karnataka
Type of partnership: Joint venture
Services: A community health insurance scheme to improve the access and utilisation of health services

Outreach/health delivery: Mobile Health Service in Sunderban, West Bengal
Contracting Arrangements: Government of West Bengal and a non-profit NGO
Type of Partnership: Joint venture
Services: Mobile boat-based health services and access to health services in remote areas

RCH Services: Merry Gold Health Network (MGHN) and SAMBHAV voucher scheme in UP
Contracting Arrangements: Joint endeavour of Government of India and USAID through UP SIFPSA
Type of partnership: Social franchising network and voucher system
Services: Provide FP/RCH services through accredited private providers

(Source: GoI, 2013, Twelfth Five-year Plan, 2012-2017, Planning Commission, New Delhi.)

23. MG Rao and M Choudhury, "Health Care Financing Reforms in India," March 2012, available online at http://www.nipfp.org.in/media/medialibrary/2013/04/wp_2012_100.pdf.

Way Forward

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Sustained efforts by relevant stakeholder groups across the country are crucial to accomplish the India NCD goals set for 2025 by the Government of India. Post the release of this action plan – "Sankalp", the Partnership to Fight Chronic Disease (PFCD) aims to continue its journey to find sustainable solutions to fight chronic diseases in India through multi-stakeholder co-operation.

Taking a step forward, PFCD aims to adopt a robust engagement plan with the target audience identified earlier in this document and work with them to access the feasibility of the recommendations proposed in this document.
With a sharper focus on states in India which are home to a significant burden of NCDs, the team intends hosting periodic consultations adopting a multi-sectoral approach and engaging relevant stakeholders from the state, private sector, patient groups, non-government organisations etc.

A phase-wise approach will be adopted giving the team an opportunity to undertake deeper engagement with the states and in turn identify and further the repertoire of best practices in the country.

In the subsequent phase of this campaign, the team is preparing to undertake a comparative impact assessment of NCDs on the socio-economic well-being of a community, before and after an inclusive and sustained programme implementation to control and curb the growth of NCDs.

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Annexure I

The World Health Organisation (WHO) has established the specifications for intake of salt, sugar and transfat in the general population, which are as follows:

Salt: Most people consume too much sodium through salt (corresponding to an average of 9-12 grams of salt per day) and not enough potassium. High salt consumption and insufficient potassium intake (less than 3.5 grams) contribute to high blood pressure, which in turn increases the risk of heart disease and stroke. High salt diets are likely to be a significant contributing factor to increasing cases of obesity.

Sugar: Less than 10%of individuals' total energy needs are fulfilled by free sugars equivalent to 50grams (or around 12 level teaspoons), but possibly less than 5%of total energy for additional health benefits. Most free sugars are added to foods by the manufacturer, in cooking or consumptions, and can also be found in sugars naturally present in honey, syrups, fruit juices, and fruit juice concentrates.

Transfat: Reducing the amount of total fat intake to less than 30%of total energy helps prevent unhealthy weight gain in adult population.

Annexure II

Types of PPPs in Health

Contracting in: It is a form of outsourcing that is non-clinical. It can also be support services outsourced to private contractors. For example, maintenance of buildings, housekeeping, canteen, pharmacy and medicine stores, diagnostic facilities, transport, security and communication.

Contracting out: Refers to a situation in which private providers receive a budget to provide certain services and manage a government health unit. For example, government may transfer the physical infrastructure budget and personnel of a health unit to the selected agencies.

Joint Venture: Joint ventures require pre-defined equity participation of government and the private sector. Joint ventures are mostly in building large-scale establishments or super-speciality ventures where government involvement is either not feasible or politically unsound.

Build-Operate-Transfer (BOT): Requires part financing of projects by the government, financial guarantees, subsidised land at prime locations and assurance of reasonable returns. BOT model is used to build large hospitals and to ensure quality services at reasonable rates to the poor.

Franchising: It is a business model in which sale of a product or service is given as an exclusive right to a local entrepreneur (franchise) to conduct the business in a delimited territory in a prescribed manner as per mutual agreement. Branded clinics are subsidiary outlets of larger establishments that use the brand value of the parent organization.

Social Marketing: Seeks to influence behaviours to benefit the target audience and society in general. Social marketing refers to donor-funded programmes designed to make them accessible to the population that needs it with the help of multi-media communication campaigns. The product-based social marketing approach has two variations- the NGO-based model and the manufacturers' model. NGOs often use donated products and sell them at prices that only allow partial recovery of marketing and distribution cost. In contrast, the manufacturer's model products are marketed at commercially viable prices through existing distribution network.

Others: Voucher schemes, donations and philanthropic contributions, collaborating or mobilising resources, technical expertise from corporate or commercial sector, and grants-in-aid payments are other forms of partnership.

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