Implementation of chronic disease control programs –
Insights from NPDCS - India

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Healthcare system in India

An Overview

India-Federal Democratic Republic

28 States
& 7 Union territories

Healthcare is a state subject
Healthcare Specific Functions of the Union Government

• Policy making
• Control of drug standards
• Medical education and research
• National health programs
• Health intelligence
• National medical library
• Central government health scheme
**Service delivery structure**

- **Sub Health Centers** – trained health worker for a population of 5000 in the plains and 3000 in hilly and tribal areas.
- **Primary Health Centers** – medical officer for a population of 30000 in the plains and 20000 in hilly and tribal areas. Supervises 6-8 sub centers.
- **Community Health Centers** – 30-50 beds inpatient and basic specialties. 80000 – 120,000 population.
- **District Hospitals** – district level. Multi-specialty facilities.
- **Medical Colleges** – tertiary level hospitals.
- Small but highly populous state of India
- Highly literate population, esp. women
- Historically good health care system
- Social equity
- Early political activism
- Missionary activities
- Women empowerment
- Land reforms
- Indigenous Systems of Medicine
- Excellent Public Distribution System

And...

Kerala
...an excellent

Healthcare delivery network
**Kerala - A story in numbers**

<table>
<thead>
<tr>
<th>Area (In 1000 Sq Km)</th>
<th>Population (In millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• India : 3287</td>
<td>• India : 1002.1</td>
</tr>
<tr>
<td>• Kerala : 39</td>
<td>• Kerala : 33.4</td>
</tr>
<tr>
<td>• 1.1 %</td>
<td>• 3.23%</td>
</tr>
</tbody>
</table>

Population density is 819 persons per sq. km Second only to West Bengal
## Health Indicators

<table>
<thead>
<tr>
<th>INDICATORS</th>
<th>KERALA</th>
<th>INDIA</th>
<th>SWEDEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>33 Million</td>
<td>1030 Million</td>
<td>9 Million</td>
</tr>
<tr>
<td>Death Rate (000)</td>
<td>6.8 (SRS 2007)</td>
<td>7.4 (SRS 2007)</td>
<td>10</td>
</tr>
<tr>
<td>IMR (000)</td>
<td>13 (SRS 2007)</td>
<td>55 (SRS 2007)</td>
<td>6</td>
</tr>
<tr>
<td>Institutional Delivery</td>
<td>99 % (NFHS3)</td>
<td>39 (NFHS3)</td>
<td>100%</td>
</tr>
<tr>
<td>Crude Birth Rate</td>
<td>14.7 (SRS 2007)</td>
<td>23.1 (SRS 2007)</td>
<td>11.7</td>
</tr>
<tr>
<td>Female Literacy</td>
<td>87.9 %</td>
<td>54.16%</td>
<td>100%</td>
</tr>
<tr>
<td>MMR (100,000)</td>
<td>81</td>
<td>212</td>
<td>8</td>
</tr>
<tr>
<td>Sex Ratio (1000)</td>
<td>1058</td>
<td>933</td>
<td>980</td>
</tr>
<tr>
<td>Immunization Coverage</td>
<td>87.5 % (SES 06)</td>
<td>42 % (NFHS3)</td>
<td>100 %</td>
</tr>
<tr>
<td>HDI (Rank)</td>
<td>0.62</td>
<td>0.47</td>
<td>0.94 (1&lt;sup&gt;st&lt;/sup&gt; in world)</td>
</tr>
</tbody>
</table>
## Health Infrastructure

<table>
<thead>
<tr>
<th>Institutions</th>
<th>Nos</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. General Hospitals</td>
<td>11</td>
</tr>
<tr>
<td>2. District Hospitals</td>
<td>10</td>
</tr>
<tr>
<td>3. W &amp; C Hospitals</td>
<td>5</td>
</tr>
<tr>
<td>4. Number of Sub Div. Hospitals - THQH</td>
<td>66</td>
</tr>
<tr>
<td>5. Number of Community Health Centres</td>
<td>245</td>
</tr>
<tr>
<td>6. Number of Primary Health Centres</td>
<td>839</td>
</tr>
<tr>
<td>7. Number of SC’s</td>
<td>5403</td>
</tr>
<tr>
<td>8. Number of Anganwadi Centres</td>
<td>25382</td>
</tr>
</tbody>
</table>
Rising burden of NCD in Kerala
• Diabetes capital of India – 19.5% (2006)

• Hypertension – 36.1% (2008)

• Central obesity – 85.6% (2008)

• Coronary heart disease – 20% (2008)

• Adolescent obesity – 24%

• Increased life expectancy – increasing geriatric problems

• Musculoskeletal problems – 26% (2008)

• High suicide rates – 44.7 (males), 26.8 (females) per 100,000 (2009)
• Smoking: Men - 28%; Women 0.4% (2008)

• Smoking among children – 11% (2008)

• Smoking among college students – 11.7% (2008)

• Increasing prevalence of oral cancers – 14.1% (2002)

• COPD – 4.1% (2006)

• Lung cancers – 8.1% (2002)
National Program for control of Diabetes, Cardiovascular diseases and Stroke (NPDCS)

Pilot phase launched in July 2008

Trivandrum in Kerala
- Community based diabetes detection and awareness camps - 225

- 22362 individuals screened – 21.6% diabetes

- Work place interventions

- School programs for awareness of life style diseases

- Subspecialty clinics – Cardio, Neuro, Nephro
RAINBOW Ribbon Club
GOVT. BOYS' LOWER PRIMARY SCHOOL
MALAYINKEEZHU
(Under the National Programme for Prevention and Control of Diabetes, Cardiovascular Diseases and Stroke)
Major challenges in implementation
Triple burden of diseases

Demographic transition
Shifting epidemiology of diseases
Communicable diseases
- Emerging viruses
- Epidemics
- Pandemics

Trauma & Injuries
- Rising RTA
- Occupation injuries

Non-communicable diseases
- Life style diseases
- Geriatric problems
- Mental disorders
- Musculoskeletal dis
  - Cancer
  - COPD
Double burden of malnutrition
• Childhood obesity
• General obesity
• Nutritional deficiencies
• Protein energy malnutrition
Screening and surveillance of chronic diseases
• Lack of private sector in surveillance activity
• Lack of infrastructure
• Limited capacity to undertake analysis and response at district level

• National Rural Health Mission
• ASHA workers
• Integrated Child Development Services Scheme – Anganwadis
• Integrated diseases surveillance project
Public - private partnerships
• Bridging social needs and disparities
• Presence of requisite skills and efficiency
• Gaps in accountability and decentralized regulation

• Aim to increase health care access
• Aim to reduce costs
• Aim to improve effectiveness of health programs
• Human resource development
• Strengthening of basic facilities like laboratories
• Sharing of information
Accessibility to medical care
• Health insurance – not very popular
• Referral system – not to the mark
• Better facilities in private sector

• RSBY
• CGHS
• ESIS
• Private health insurance
Reasons for poor penetration of health insurance

• Lack of regulations and control on provider behavior
• Unaffordable premiums and high claim ratios
• Too many exclusions and administrative procedures
• Inadequate supply of services
• Reluctance by companies to promote products
Multi-pronged attack
Interventions for chronic disease prevention

- Health public policy
- Community based programs
- Clinical preventive services