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GOVERNMENT OF INDIA
MINISTRY OF SKILL DEVELOPMENT
& ENTREPRENEURSHIP



N·S·D·C
National
Skill Development
Corporation

Transforming the skill landscape

Human Resource and Skill Requirements in the Healthcare Sector

(2013-17, 2017-22)



cutting through complexity

This report is prepared by KPMG Advisory Services Pvt Ltd (KASPL).

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Narayanan Ramaswamy

Head – Education Advisory

KPMG India

(+91) 44 3914 5208

Email: narayanar@kpmg.com

Madhavan Vilvarayanallur

Director – Education

Advisory, KPMG India

(+91) 44 39145286

Email: vmadhavan@kpmg.com

Gaurav Kumar

Associate Director – Education

Advisory, KPMG India

(+91) 124 3345203

Email: gauravkumar1@kpmg.com

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We are grateful to the Government of India and its various departments, State Governments, Industry Associations, Sector Skill Councils, Skill Training Institutions, Academia and NGOs, for their contribution towards the successful completion of the Sector Skill Gap study (2013-2017, 2017-2022).

We would like to thank all NSDC's industry and training partners for their active participation. The success of the study has been possible through their collaborative efforts.

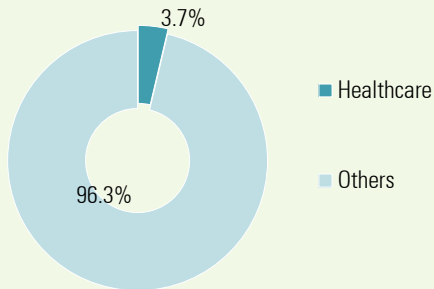
In addition, we convey our gratitude to all those who have, in some way or other, contributed towards the successful completion of this study.

Executive Summary

Industry Overview

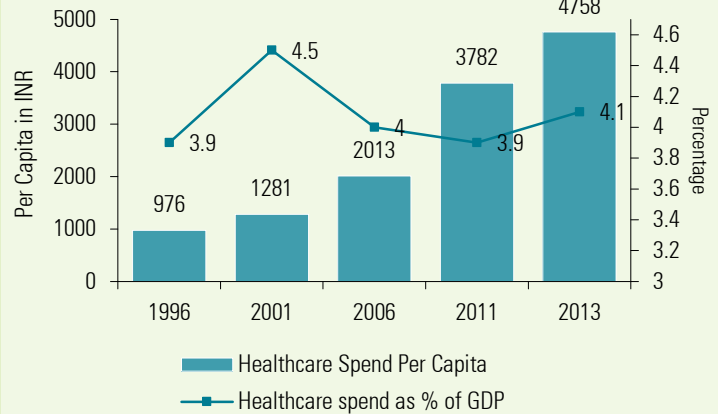
The healthcare sector grew by almost 100% from 2.75 (in 2008) to 4.8 lakh crores (in 2012). It is poised to grow to INR 9.64 lakh crores by 2017

Contribution of healthcare expenditure as a percent of India's GDP (FY13)



Source: World Health Report 2013

Healthcare Spend



Source KPMG in India analysis, IBEF 2013 report and World Bank data

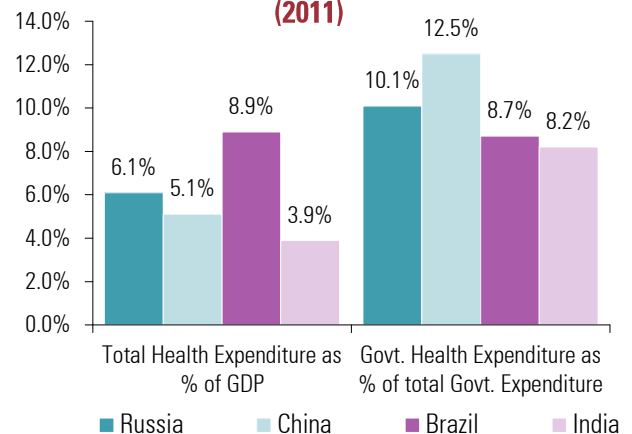
- With a diverse range of medical services, there are over 11 lakh allied health professionals in the country in the categories of nursing associates, sanitarians, medical assistants, medical equipment operators, optometrists, traditional and faith healers, physiotherapists, dieticians and dental assistants which is still short of the current demand.
- Although the expenditure on health has been on the rise, the per capita expenditure on health in India (INR 3844*) is significantly less than that in other developing countries (for example, it is INR 16988* in China)
- In the next few years, changing trends like increasing penetration of insurance, changing demographics, increase in consumer awareness and rise in chronic and lifestyle-related diseases will result in increased healthcare spend

Healthcare spending in India is low as compared to international standards and is dominated by private out-of-pocket expenditure

International comparison of healthcare spending

- Healthcare spending in India stands at a less than 5 percent of GDP, as compared to other developed countries. A significant share of these spending is private.
- Government expenditure on health also ranks much lower in comparison to peer nations
- Out-of-pocket expenditure comprises about 92 percent of private expenditure — as compared to the international average of nearly 50 percent
- In India, private healthcare accounts for about 75 percent of the country's total healthcare expenditure leading to issues such as unaffordability

Comparison of Health Expenditure (2011)

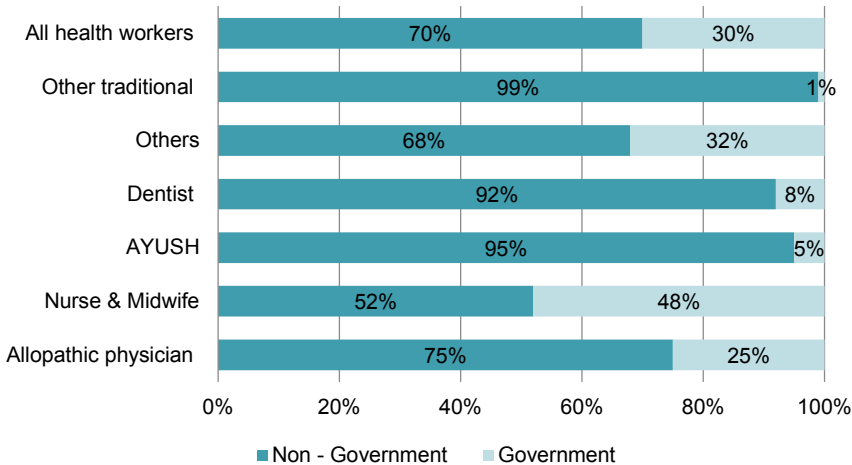


*At current rates of USD 1 = INR 61

Demographic characteristic of workforce

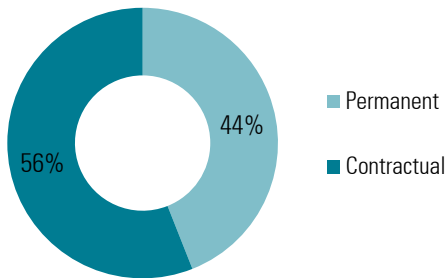
Workforce is largely concentrated in the urban areas and are mostly contractual in nature

Workforce is concentrated in urban regions particularly in the private sector



- Manpower — in terms of physicians — is concentrated in the private sector, increasing the urban-rural disparity
- The majority of dentists are concentrated in the private sector, both across urban and rural areas. This is largely attributed to the fact a majority of the dental services now offered are cosmetic in nature and attract a higher demand in the private sector

Contractual staff form more than half the workforce in Healthcare



- Most Allied Health Professionals (56 percent of the total head count) are hired on a contractual basis
- A majority of therapeutic and technical service providers, such as those in optometry, rehabilitation, dental, medical technology and surgical intervention, are mostly permanent/ In-house employees
- Miscellaneous category AHPs, such as general duty assistants and record keepers, are typically hired on a contractual basis

Need Gap Analysis

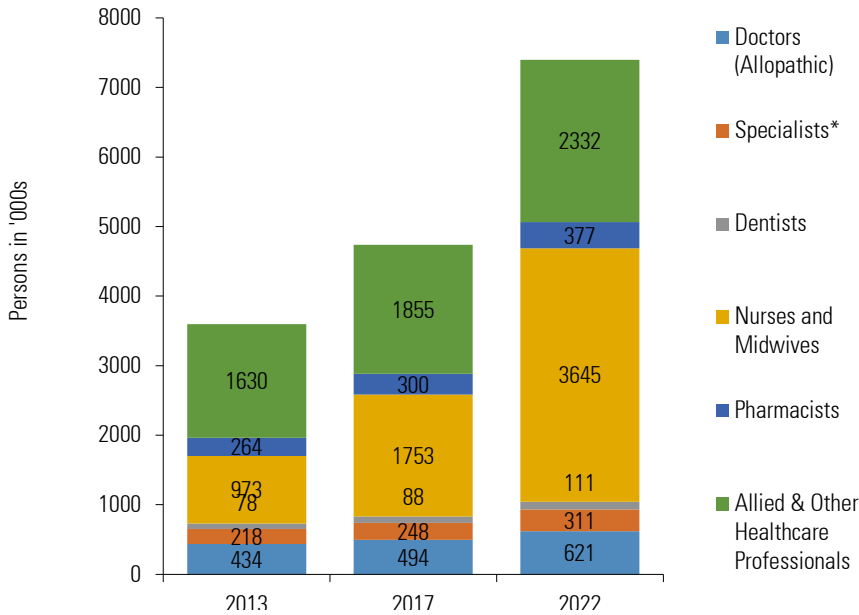
Parameter(per 10,000)	Global Avg.	India
Physicians	14.1	7
Nurses and midwives	29.2	17.1
Dentists	2.7	1
Pharmaceutical Personnel	4.3	5

- There is a significant gap in the availability of allopathic doctors and it is a trend that is likely to continue into the next five years
- There are over 7,50,000 registered Ayurveda, Yoga, Unani, Siddha and Homoeopathy (AYUSH) practitioners in the country
- These numbers, when combined with the total number of physicians trained in allopathy, fulfill, to an extent, the total requirement of medical practitioners required in the country

Incremental Human Resource Requirement (2013 – 22)

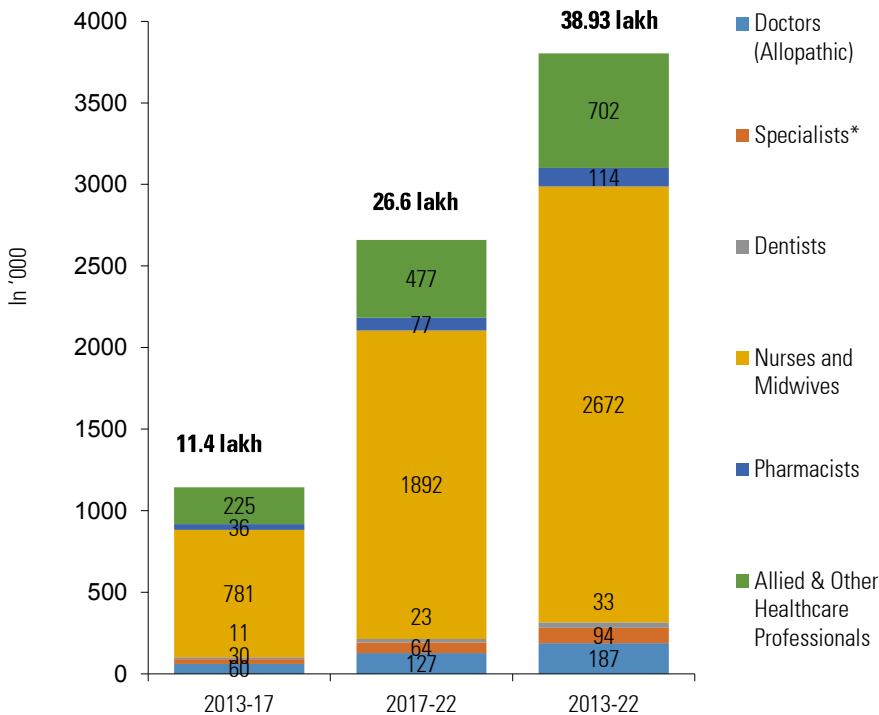
The sector currently employs around 36 lakh employees and is slated to employ more than 74 lakh by 2022

Work Force Demand Projections Across Various Roles in Healthcare



Workforce requirements for the Healthcare sector is expected to grow from 35.9 lakh in 2013 to 74 lakh in 2022 which is more than double its existing workforce to meet the market demand

Incremental demand for workforce in Healthcare



With shift in focus towards quality of service, particularly with the rising demand for tertiary and quaternary care, the industry requires specialized and highly skilled resources

As a result of this shift, a large increase in demand for nurses in particular is anticipated

*Includes MD, MS, MCH and other specialist doctors

Supply and Training Infrastructure

Skewed distribution of healthcare professionals as well as education facilities remains is a matter of concern

Differences in socio-economic, political factors results in inter-state disparity in availability of quality health professionals

- Gujarat, Karnataka, Maharashtra and West Bengal have the maximum number of hospitals
- South Indian states and Puducherry have a better population per hospital ratio than most other states
- There is also significant disparity in the number of hospitals and hospital beds serving the population across states
- The average population served per government hospital bed in states such as Uttar Pradesh and Bihar is way higher when compared to that in Kerala or West Bengal

Geographically skewed distribution of healthcare education facilities

- There are only 356 registered medical education institutions
- The total admission capacity is nearly ~45,000 students at the undergraduate level and about ~24000 students at the post-graduate level in the country

Andhra Pradesh*
Karnataka
Kerala
Maharashtra
Tamil Nadu



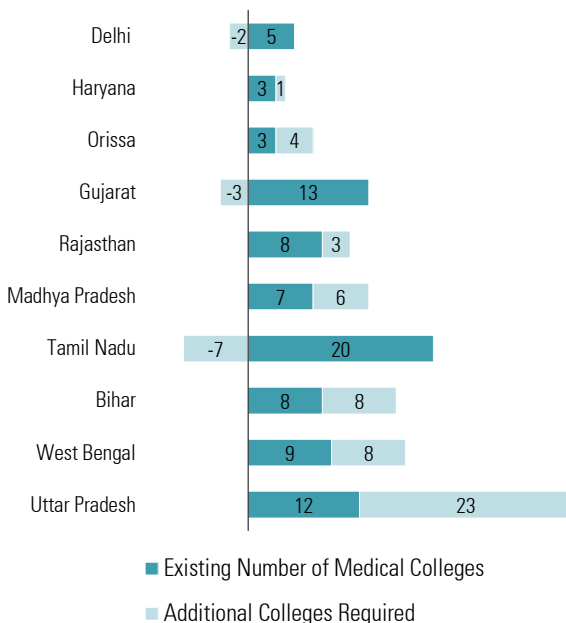
~31% share of population
~58% of medical colleges
~63% nursing colleges

Bihar
Madhya Pradesh
Rajasthan
Uttar Pradesh



~30% share of population
~9% nursing colleges

Supply and demand for medical colleges in select states



- The distribution of medical infrastructure, particularly Hospitals and Medical colleges is uneven across the nation, with some states such as Bihar, Uttar Pradesh experiencing a demand-supply gap, particularly in Medical Education
- As per Mudaliar Committee (1962) recommendations, there should be one medical college for 50 lakh population which explains the situation in densely populated states such as UP, Bihar which require large scale expansion of medical colleges and medical infrastructure
- Highly Urbanized regions including NCR are heavily concentrated with healthcare facilities while rural regions remain underdeveloped

*Including current state of Telangana

Recommendations

Select recommendations and implications

Recommendation	Implications
Develop strong compensation schemes with long term benefits and high value-add	<ul style="list-style-type: none"> ▪ Players in the sector find it difficult to identify, recruit and retain top talent in the industry ▪ One of the key value adds for employees is training recognised by industry. Industry should formalize in-house training and certify the same and introduce more roles with in-house recruitment instead of the current preference for contractual employment
Increased focus on language and communication	<ul style="list-style-type: none"> ▪ Industry bodies to increase attention on soft skills part of the health sector to promote quality service delivery ▪ Training tie-ups could be considered with leading English and communication institutions and soft skills training providers
Set up regulatory authorities for various sub segments	<ul style="list-style-type: none"> ▪ Set up skill councils or regulatory authorities for allied professionals to maintain high quality and standards and to clearly define job roles ▪ Development of Recognition of Prior Learning (RPL) framework whereby current workforce across sub-sectors can register and be certified by the SSC, , increasing their employability quotient
Increase training supply by sector focused training providers with emphasis on rural outreach	<ul style="list-style-type: none"> ▪ Promote training infrastructure for healthcare industry through industry players to increase access to health infrastructure to remote areas ▪ Support private training providers to expand capacity for training in the industry by bringing in greater synergy between government schemes and training providers ▪ Incentivise industry players who offer captive training for niche areas and offer training in rural areas
Launch sectoral awareness programs in urban and rural areas targeting potential labour force	<ul style="list-style-type: none"> ▪ Promote vocational training in the field of Healthcare in rural and remote areas ▪ Tie up with industry, government to provide information on career options, career fairs, school education programs etc.
Launch innovative fee payment schemes	<ul style="list-style-type: none"> ▪ Innovative fee models including industry sponsorship or tie-ups between industry and training institutes or lagged fee structures can help increase the affordability of healthcare education to lower income groups
Provide regular upgrade and certification for training infrastructure and curriculum	<ul style="list-style-type: none"> ▪ Developing industry standards and providing up gradation certificates to training institutes and trainers will allow for continuous education of the sector ▪ Developing occupational standards which are periodically updated will also serve as a benchmark for skills and expertise required for various job roles
Incentivise skill upgrade through skill premium	<ul style="list-style-type: none"> ▪ Provide skill premium for those candidates with formal training experience ▪ Encourage employees to upgrade skills to remain relevant in the changing industry scenario ▪ Formalise the training relationship with employers to certify and credit the employees who have undergone training

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Abbreviations

NIC	National Industry Classification
CAGR	Compounded Average Growth Rate
FDI	Foreign Direct Investment
FI	Financial Inclusion
CET	Comman Entrance test
FY	Fiscal Year
GDP	Gross Domestic Product
GMs	General Managers
R&D	Research and Development
IT	Information Technology
M&A	Mergers & Acquisitions
AHPs	Allied Health Professionals
GNM	General Nursing and Midwifery
PHCs	Primary health centers
CHC	Community health centers
ANM	Auxiliary Nurse Midwifery
ASHA	Accredited social health activists
OT	Operation Theatre
AYUSH	Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homoeopathy
HA (F)/LHV	Health Assistant (Female)/Lady Health Visitor
HA (M)	Health Assistant (Male)
NRHM	National Rural Health Mission
UTs	Union Territories

Context and approach

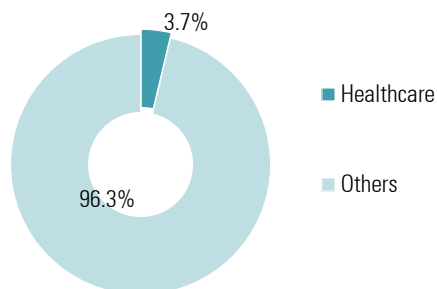
<p>Brief background</p>	<p>NSDC had conducted sector-wise skill gap studies for 19 high priority sectors in 2008–09 .</p> <ul style="list-style-type: none"> ▪ KPMG has been engaged as a consultant to help evaluate the skill gap across 25 sectors and develop actionable recommendations for its stakeholders. ▪ Mandate includes sector and sub-sector level analysis, demand-supply projection, estimation of incremental man-power requirement between 2013-2017 and 2017-2022, identification of key-employment clusters, and SWOT analysis of each sector ▪ Study also aims to take qualitative insights from stakeholders on enablers and challenges for each sector, way forward in terms of specific policy level actionable recommendations,
<p>Inclusions over the previous study</p>	<ul style="list-style-type: none"> ▪ Study led by industry – Sector Skill Councils and a panel of professionals from different sub-sectors were consulted for their inputs on industry trends, key takeaways in terms of skill requirement, qualitative insights to understand specific interventions required for each sector and to validate the quantitative results and recommendations ▪ 6 sectors were added to the list of NSDC priority sectors for studying the skill gaps <p>Updated study also includes</p> <ul style="list-style-type: none"> ▪ Identification of top 20 job-roles in each sector, case studies around good training practices, sub-sector level indicators and growth factors ▪ Study also includes understanding of existing training infrastructure, work-force characteristics and employment clusters, ▪ Macro economic factors, central and state governments policies and their envisaged impact ▪ Synchronisation of the sector wise demand from the district level skill gap studies ▪ Recommendations for key stakeholders - Industry, NSDC, Training organizations and Government ▪ Environment scans every year till 2015-16 including SWOT analysis for the sector

Industry classification

Division 86: Human health activities	
861 Hospital activities	8610 activities of general and specialized hospitals, sanatoria, asylums, rehabilitation centers, dental centers and other health institutions that have accommodation facilities, including military bases and prison hospitals
862 Medical and dental practice activities	8620 medical and dental practice activities
869 Other human health activities	8690 other human health activities
Division 26: Manufacturing of computer, electronic and optical products	
266 Manufacturing of equipment	2660 manufacturing of irradiation, electromedical and electrotherapeutic equipment
Division 32: Other manufacturing	
325 Manufacturing of instruments	3250 manufacturing of medical and dental instruments and supplies
Division 85: Education	
853 Higher education	8530 higher education in medical/biotechnology and related courses leading to a university degree or equivalent
Division 65: Insurance, reinsurance and pension funding, except compulsory social security	
651 Insurance	6512 medical insurance

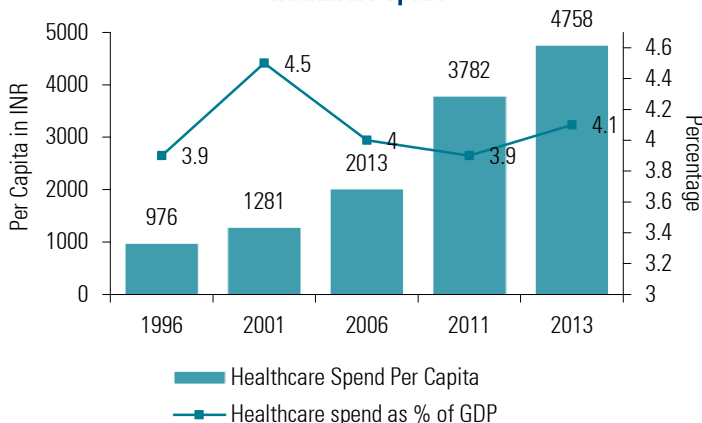
Industry Overview

Contribution of healthcare expenditure as a percent of India's GDP (FY13)



Source: World Health Report 2013

Healthcare Spend



Source KPMG in India analysis, IBEF 2013 report and World Bank data

- With a diverse range of medical services, there are over 11 lakh allied health professionals in the country in the categories of nursing associates, sanitarians, medical assistants, medical equipment operators, optometrists, traditional and faith healers, physiotherapists, dieticians and dental assistants which is still short of the current demand.
- Although the expenditure on health has been on the rise, the per capita expenditure on health in India (INR 3844*) is significantly less than that in other developing countries (for example, it is INR 16988* in China)
- In the next few years, increasing penetration of insurance, changing demographics, increase in consumer awareness and rise in chronic and lifestyle-related diseases will result in increased healthcare spend

Growing Demand

- Rising incomes and affordability
- Growing old age population and an increase in diseases (including lifestyle related ailments)
- Growing health awareness
- Increase in penetration of Health Insurance
- Rise in medical tourism — it is growing at a CAGR of 27 percent during 2011-14.

Innovation

- The potential of Hospital Management Information Systems is increasing (CAGR 10 percent 2010-17)
- Increasing penetration of IT in healthcare in the form of mobile clinics, mobile apps and customized equipment, telemedicine etc..

Advantage

Business Factors

- Outsourcing of hospital services to increase their cost-effectiveness
- Adoption of the hub and spoke model for expansion
- Rising M&A deals and private sector investments

Policy Support

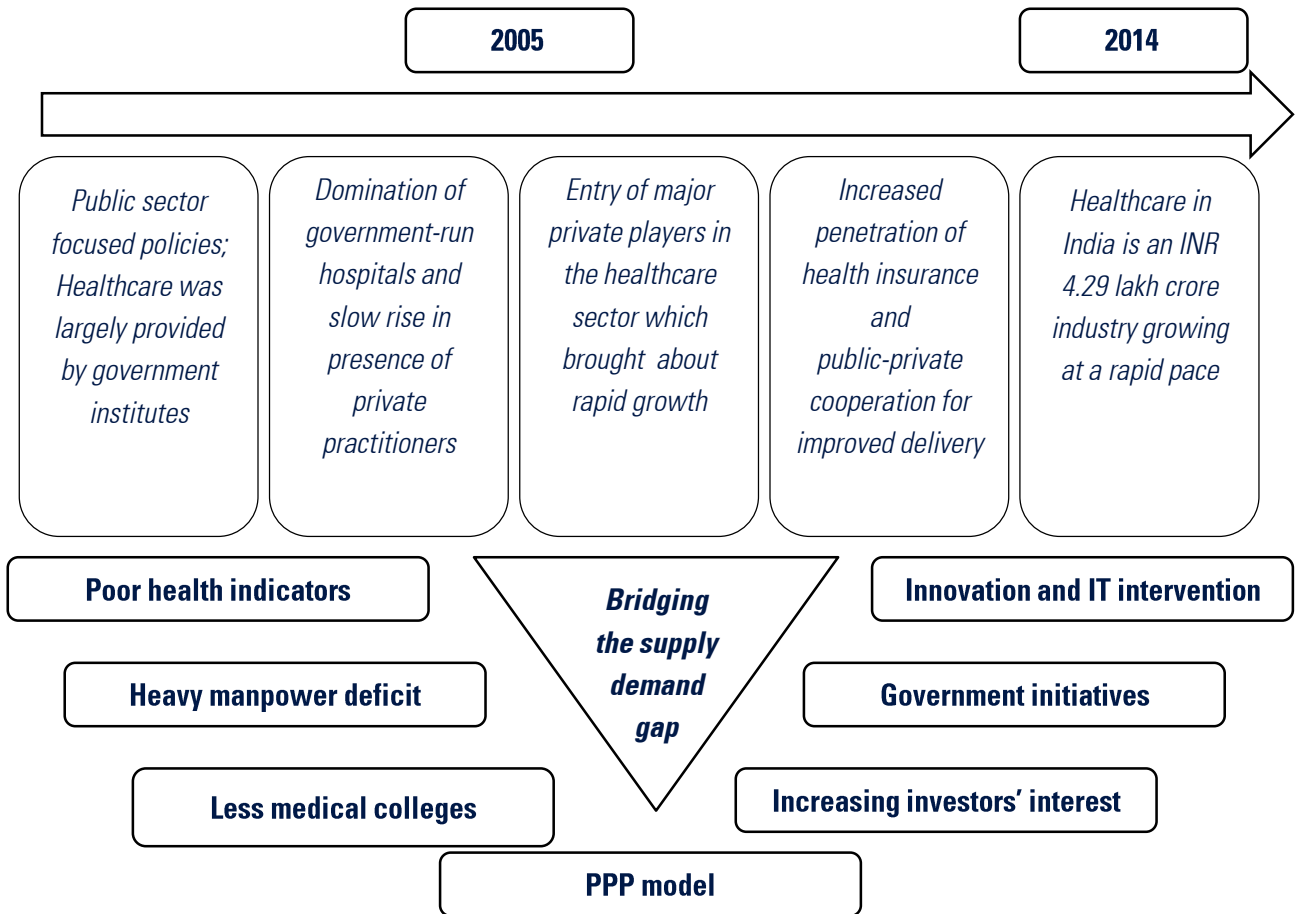
- Encouraging FDI policies and the private sector's involvement
- Reducing Customs duty and other taxes on life-saving equipment
- Allocation INR 30,645 Crore for healthcare and public health under the 2014-15 Union Budget

Sources: Ministry of Health, RNCOS, KPMG, LSI Financial Services, Apollo Investor Presentation, August 2012, Venture Intelligence
*At current rates of USD 1 = 61 INR

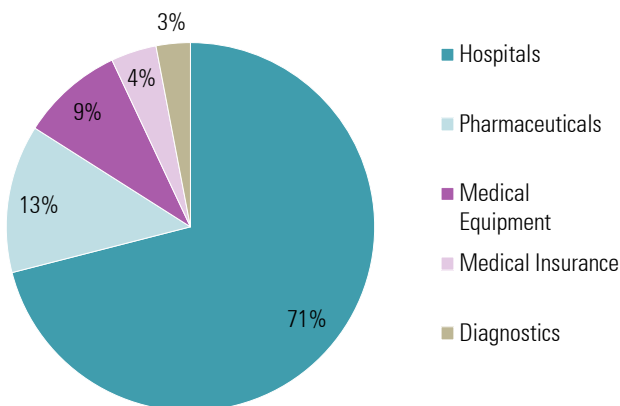
Industry Overview

Evolution, structure and size of Healthcare sector

The sector has evolved considerably in the last decade and experienced accelerated growth in the last five years



Split of the Healthcare Industry

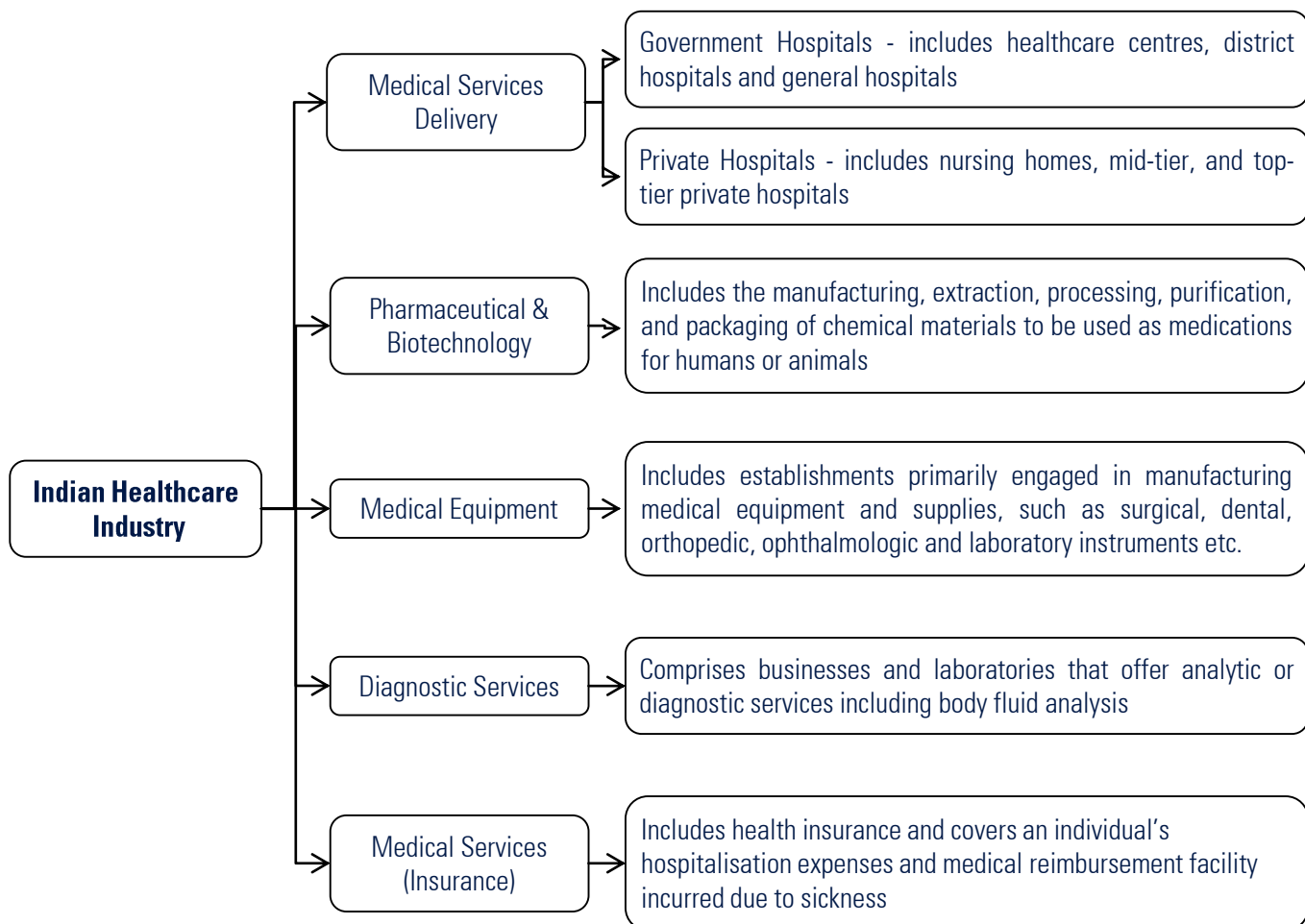


The healthcare sector, which stood at INR 2.75 lakh Crores in 2008, grew twofold to reach INR 4.8 lakh Crores in 2012 and is now poised to grow to INR 9.64 lakh crores by 2017

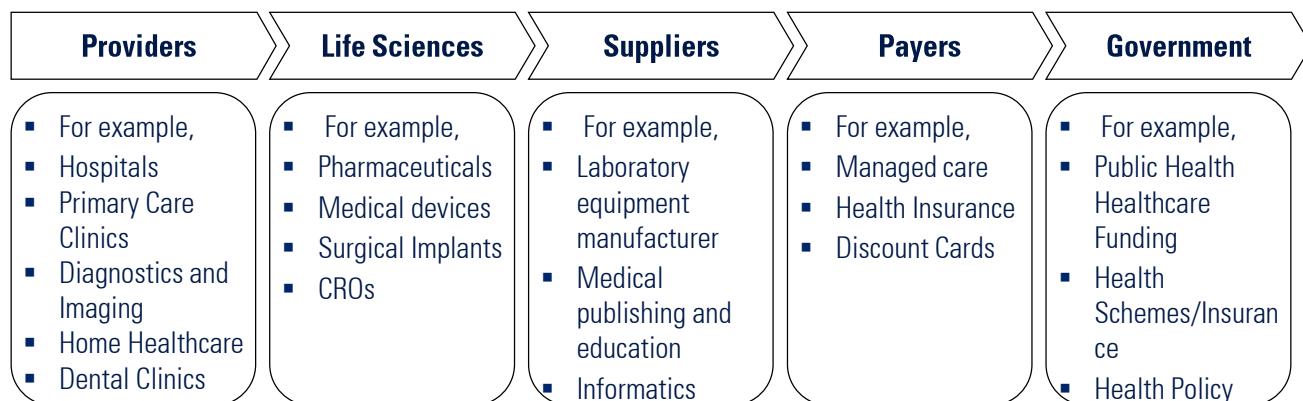
Industry Overview

Sub Sectors and Value Chain

The Healthcare market is split into five major sub-segments



Healthcare Value Chain

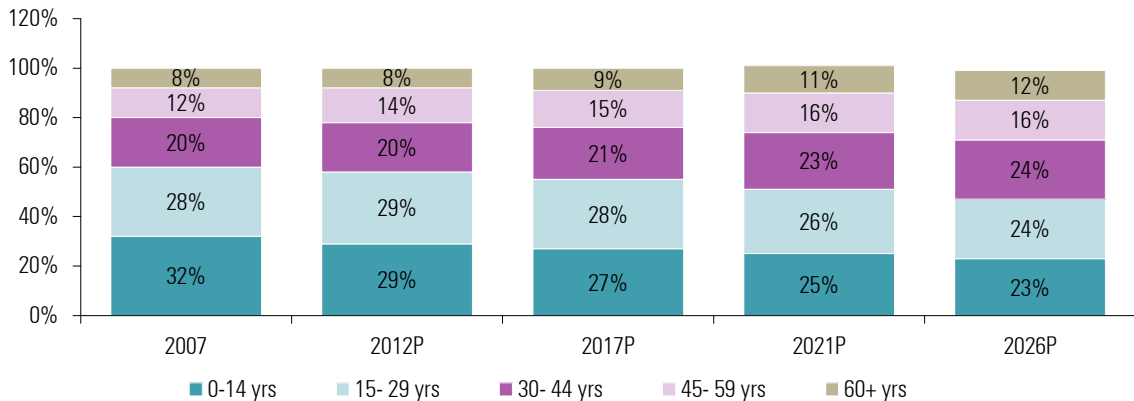


Sources: Healthcare sector skill council , April 2013 , KPMG in India analysis based on secondary / primary research

Changes in economic and demographic patterns

- In the coming years, lifestyle and demographic trends will be key drivers for the demand for healthcare services
- An increasing incidence of lifestyle related diseases coupled with a growing population with a longer life expectancy will boost the demand for health services (particularly tertiary and quaternary care)

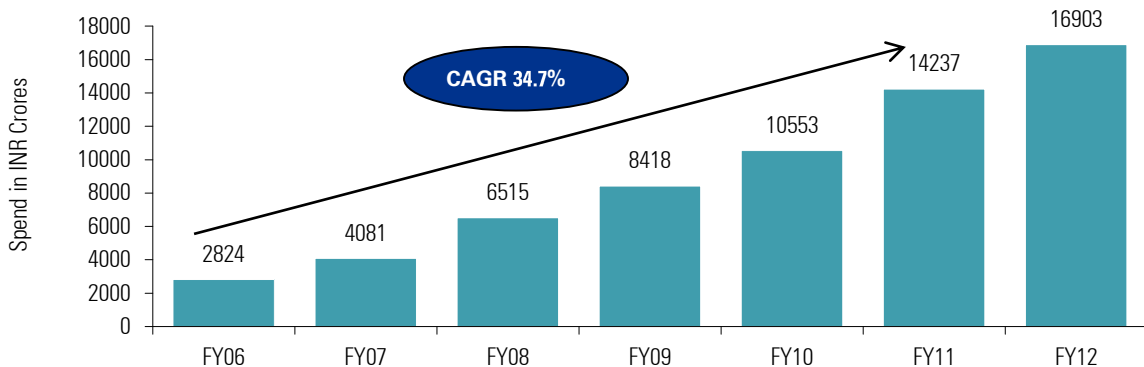
The average age of the population is set to increase



- The Indian health insurance market represents one of the fastest-growing segments in the country, having grown at a CAGR of over 34.7 percent from 2006-07 to 2011-12
- The share of population having medical insurance is likely to rise to as high as 20 per cent by 2015 from the present 2 per cent
- Increased coverage and penetration of Insurance will result in higher spending on healthcare services

Increasing penetration of health insurance

Spend on Health Insurance

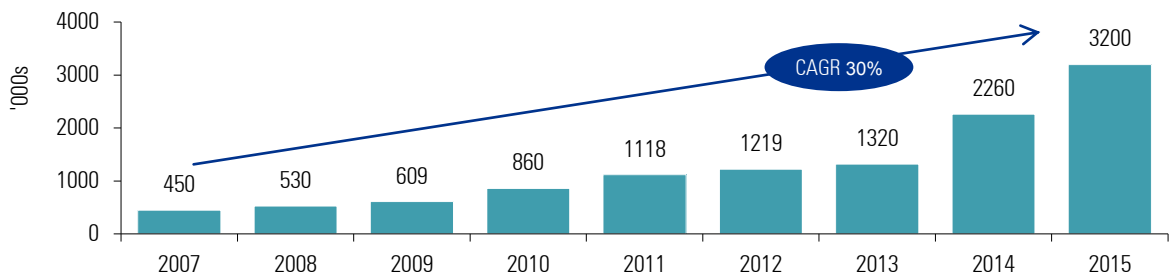


Sources: CRISIL Research, KPMG in India analysis, IBEF 2013 Report

Rise of Medical Tourism

- India has become a hub for medical tourism serving more than 32 lakh foreign patients annually with a 30 percent CAGR
- Superior healthcare facilities such as cardiology, joint replacement, orthopedic surgery, transplants and urology, at significantly lower costs (as low as 1/10th the costs in US, UK etc..) make India a preferred healthcare destination

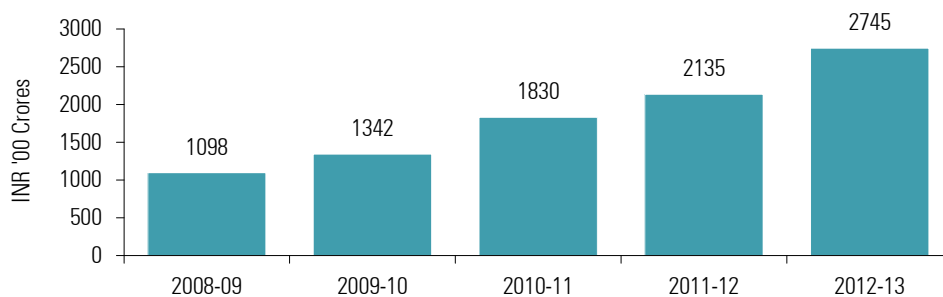
Inbound medical tourists to India have been growing at a CAGR of 20-30%



- The private sector has emerged as a major force in India's healthcare industry, lending it both national and international repute accounting for 82 per cent of the net value of the healthcare market
- The presence of private players is exponentially growing with their penetration of tier II and III cities and rural areas

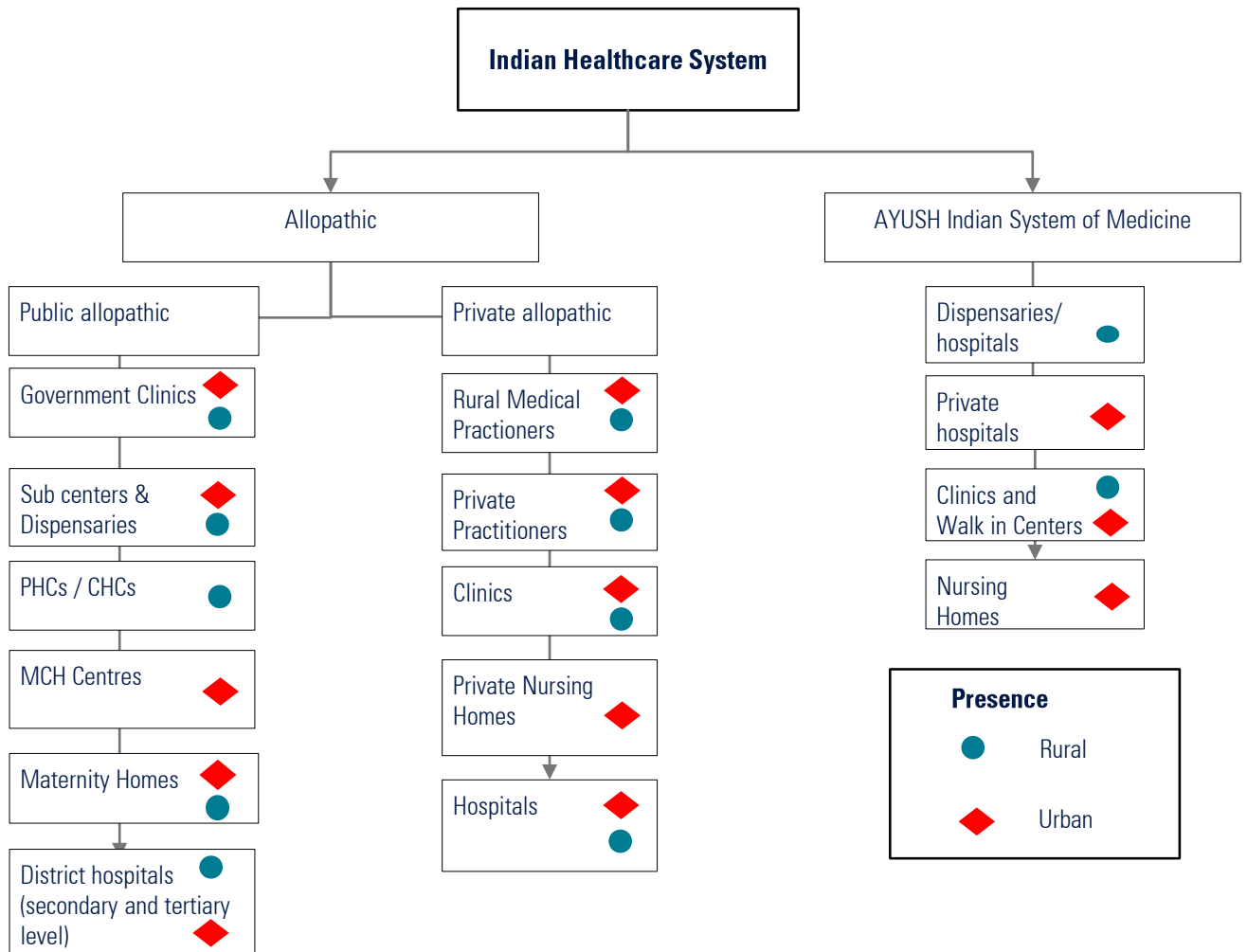
Increasing presence of private players

Market Share of Private Hospitals

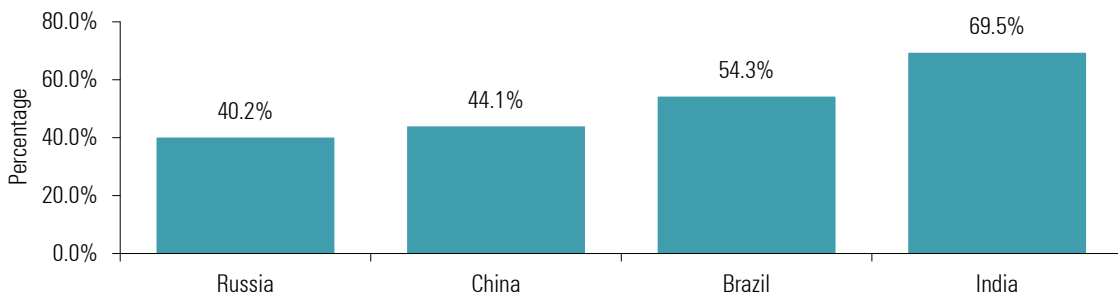


Evolving healthcare delivery models

- Innovative healthcare delivery models for tier II/rural areas are on the rise due to saturation of tier I markets and increasing rural demand
- Developing spin-offs from the core business is an emerging trend — where in the service lines, are identified to create commercially feasible business models
- Examples : Primary care clinic chains (Apollo clinic, Manipal cure & care, Vita life); Short-stay surgery centers (Nova medical centre, Vasan eye care, RG Stone); Specialty hospitals (HCG, Escort)



Share of private expenditure in total health expenditure, 2011



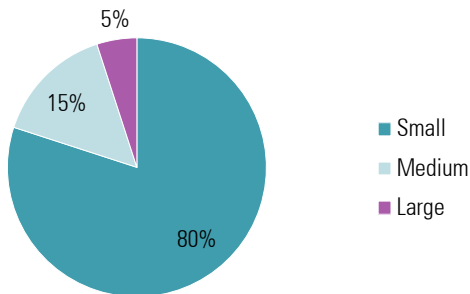
- Healthcare in India is dominated by the private sector with ~90 percent of private spending as out-of-pocket expenditure
- Private sector's share in hospitals and hospital beds is estimated at 74% and 40%
- Private sector's share in healthcare delivery has increased from 66% in 2005 to 82% in 2012

Sources: Primary Health Care – India Scenario, WHO, National Health Profile – 2012, India Pharmaceuticals & Healthcare Report – Q4 2012, BMI, McKinsey Healthcare Report 2020, Equentis Capital, KPMG in analysis and WHO report, WHO 2014

Industry Overview

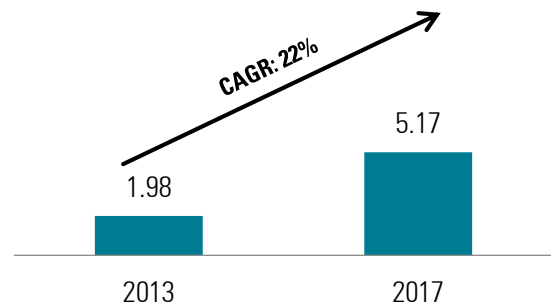
Hospital Services

Private Hospital Segmentation



Source: : Healthcare opportunities in India KPMG in India analysis

Growth of the hospital market (in INR trillion)



Source: CRISIL Research, KPMG in India analysis

Key players in the sub-sector

Apollo Hospitals, Fortis Healthcare, Manipal Health Systems, Care Hospitals and Narayan Hrudayalaya Hospitals

Drivers

- Tax benefits and government incentives encouraging investment
- Growing health insurance market
- Lifestyle related factors which have led to an increase in non-communicable diseases
- Rising middle class which is expected to reach 5.35 Crore in 2017 from 3.14 crores in 2010

Challenges

- Shortage of qualified medical professionals
- Poor IT infrastructure and lack of integration between primary, secondary and tertiary care
- High capital investment and tight regulations act as deterrents to foreign investors
- Inadequate health infrastructure to meet current demand
- Lack of affordability of quality healthcare

Key findings

Opportunities

- Government initiatives to increase hospitals
- Diversified business approach wherein hospitals can penetrate into allied healthcare segments
- Hospitals should ensure self-sufficiency by establishing their R&D divisions for efficient functioning

Key Trends

- Launch of highly specialized models such as speciality clinics, lifestyle centres etc.
- IT enabled services such as mobile applications for hospitals
- Luxury offerings and super premium services
- Increasing the penetration of private players in tier 2 and 3 cities

Sources: Centrum Healthcare sector ,Hospital Market in India , IRDA , KPMG in India analysis

Industry Overview

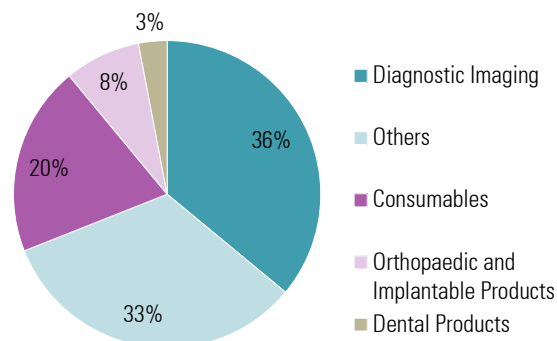
Medical Equipment Sector

Key Indicators

Key players in the sub-sector	Medtronic, Baxter, Philips and GE Healthcare
Market size (2013)	INR 20,000 Crores
Market size (2018)	INR 51,500 Crores
CAGR (2013-2018)	17 percent

Source: BMI, Episcom , KPMG in analysis

Medical Equipment Segments



Source: Media stat Outlook, Medical Devices market, KPMG in India analysis

Drivers

- Shift to integrated care models and affordable healthcare
- Rapid urbanisation, lifestyle and demographic trends
- Emergence of India as a preferred destination for medical tourism
- Adoption of technology and rapid advancement in medical equipment delivery

Challenges

- Most of the medical equipment and pharmaceutical products in India are imported resulting in higher costs
- Regulatory inefficiencies with respect to delays, limited scope or poor implementation pose impediments for the sector

Key findings

Opportunities

- At present, India is a major market for imported healthcare products . Much of India's potential as a primary low-cost labor market is not yet capitalized on but the trend is now shifting from importing to innovation and locally sourcing products
- Scalable models such as dialysis clinics and radiology labs are evolving to complement the traditional healthcare set up

Key trends

- Low labour and material costs are making India a lucrative destination for manufacturing facilities
- For better access and localized knowledge, players are increasingly adopting the hub and spoke model. Major players partner with a local lab of renown and repute
- The industry is continuously upgrading their equipment, older refurbished equipment has become a growing business catering to the smaller city players

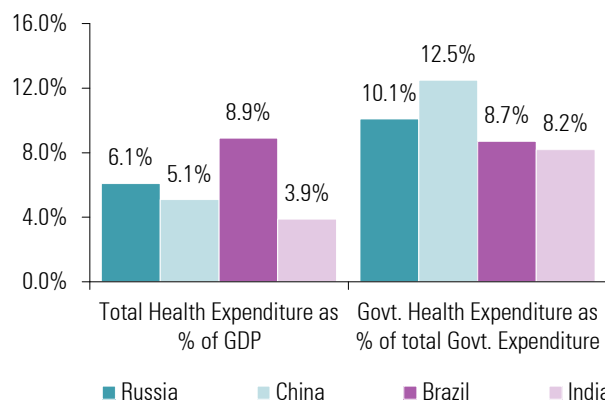
Sources: BMI , Cygnus report, News articles – www.ehealth.iletsonline.com, www.modernmedicare.co.in, KPMG in India analysis

Healthcare spending in India is low as compared to international standards and is dominated by private out-of-pocket expenditure

International comparison of healthcare spending

- Healthcare spending in India stands at a less than 5 percent of GDP, as compared to other developed countries. A significant share of these spending is private.
- Government expenditure on health also ranks much lower in comparison to peer nations
- Out-of-pocket expenditure comprises about 92 percent of private expenditure — as compared to the international average of nearly 50 percent
- In India, private healthcare accounts for about 75 percent of the country's total healthcare expenditure leading to issues such as unaffordability

Comparison of Health Expenditure (2011)



Source : WHO report 2014, KPMG in India analysis

Comparison of basic indicators and health expenditure ratios between India and other countries (2011)

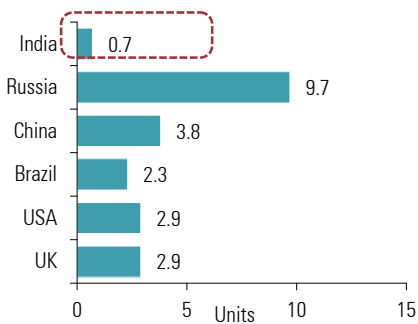
Parameter	India	China	Brazil	USA	UK
Basic Indicators					
Under-five mortality rate (probability of dying per 1,000)	56	14	14	7	5
Life expectancy at birth (years)	66	75	74	79	81
Health Expenditure Ratios					
Total expenditure on health as percentage of GDP	3.9	5.1	8.9	13.6	7.0
Private expenditure on health as percentage of total expenditure on health	69.5	44.1	54.3	52.2	17.2
General government expenditure on health as percentage of total government expenditure	8.2	12.5	8.7	20.3	16.0
Out-of-pocket expenditure as percentage of private expenditure on health	91.8	78.8	57.8	22	56.8
Per capita expenditure on health at average exchange rate (US\$)	62	274	522	8467	3659

Industry Overview

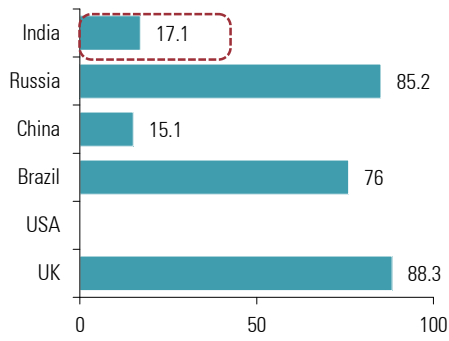
Industry Competitiveness: India's position with respect to peers

- India has an acute shortage of healthcare infrastructure
- Penetration of the healthcare infrastructure in India is lower than that in developed countries and it is way lower than the global average
- 550 additional medical colleges (100 seats/college) are required to be commissioned today itself to meet the global average in 2030.
- 200 additional nursing colleges (60 seats/college) are required to be commissioned today itself to meet the global average in 2025
- Concentration of infrastructure in urban areas— 70% of the hospitals are located in top 20-25 cities limiting accessibility to healthcare for smaller cities, rural and remote areas

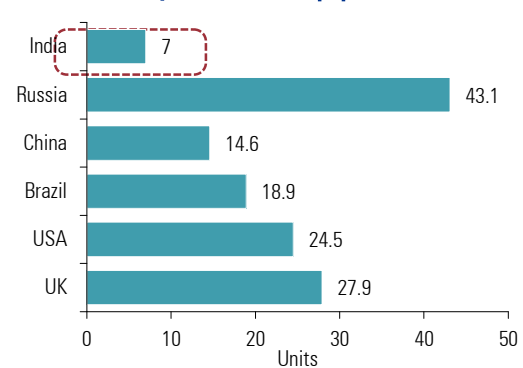
Hospital beds (1,000 population) 2006-12



Nurses (10,000 population) 2006-13

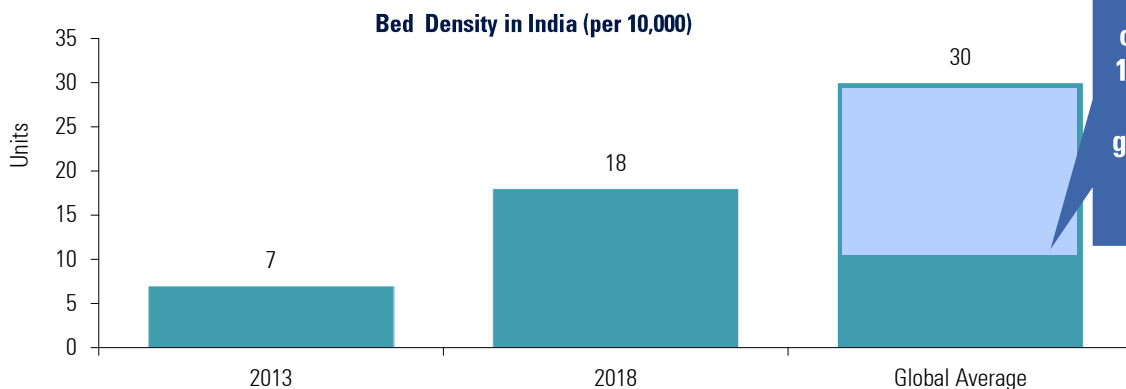


Physicians (10,000 population) 2006-13



Source: Department of Health, WHO, EIU, Espicom estimates, NHP 2010

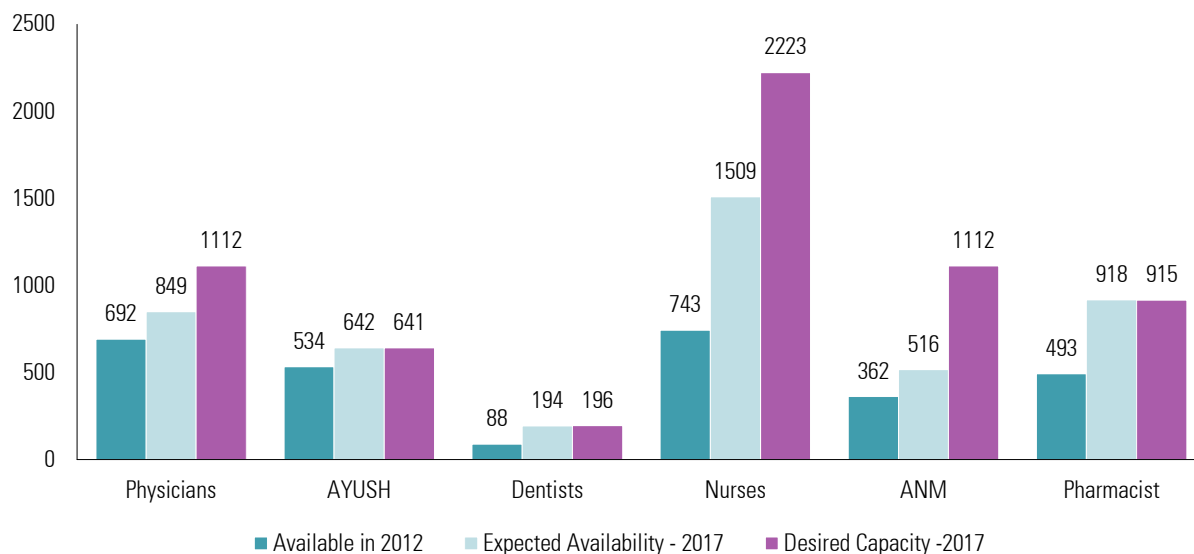
India has to take up massive investment in the long term to achieve the global average of 30 beds for every 10000 people



INR 14 trillion is required over the next 10-15 years to reach the global median of 30 beds

Sources: IBEF, Crisil 2013

Healthcare is the key focus area under the 12th Five-Year Plan (2012–17). The planning commissions projections for the 12th FYP forecast a high demand for skilled manpower by 2022



Source: 12th Five-Year Plan, Social sectors, Planning commission, GOI

- Current availability is calculated assuming an a minimum attrition rate of 25 percent for most personnel, however Nurses and ANMs have an average attrition of 40 percent or higher across India
- The current availability of health personnel in the country is below the minimum requirement of 250 per one lakh of population; this number is likely to increase to 354 by 2017
- Particularly, the demand gap for nurses and ANMs is high given the attrition rates, low morale and lack of high quality training institutes
- With the rise of AYUSH physicians wishing to practice allopathic medicine, there is a considerable shift in the demand for AYUSH doctors in the coming years, while it still will constitute a major section of the healthcare sector, the demand for new physicians is rapidly decreasing
- The optimal doctor-to-nurse ratio should be at least 1:3. However in India it currently stands at 1:1.6 and is expected to improve to only 1:2.4 by the end of the 12th Five Year Plan if the planned new colleges are not fully operational thus requiring major policy focus and investment in the next ten years to bring up the ratios to acceptable global standards



✓ **Favourable Foreign Direct Investment (FDI policies)**

- FDI up to 100 per cent is allowed for all health-related services under the automatic route

✓ **Budgetary support**

- The Ministry of Health and Family Welfare has been allocated INR 37330 Crores. The new National Health Mission that combines the rural mission and the proposed urban mission will receive INR21239 Crores, an increase of 24.3 percent over the revised estimates
- An additional INR4727 Crores has been budgeted for medical education, training and research.

✓ **Emphasis on public-private partnerships**

- Governments and public authorities are increasingly turning to public-private partnerships (PPPs) to deliver efficient and cost-effective infrastructure and services

✓ **Incentives and subsidies on capital investments**

- All new hospitals in tier 2 and 3 towns of India are granted a five-year tax break
- Reduction in import duty on equipment from 25 percent to 5 percent
- Customs duty on 24 medical equipment, such as like X-ray, tele-therapy stimulator equipment and goniometer, has been reduced to 5 percent

✓ **Support for the expansion and enhancement of medical education**

- The government has reduced land requirements from 25 acre to 10 acre for the establishment of medical colleges in urban areas
- Private medical colleges are allowed to conduct their own CET and the reservation criteria for government seats and management quota have been relaxed with a uniform pre-decided fee
- The government allocated an additional INR 6765 Crores for six upcoming AIIMS-like institutes and the upgrade of 13 existing government medical colleges
- Additionally, the government has unveiled plans to launch one national and eight regional institutes of paramedical sciences across the country (on the lines of AIIMS), along with the redevelopment of the existing Regional Institute of Paramedical and Nursing Sciences (RIPANS). The total cost of establishing the national institute and regional institutes is expected to be INR120 Crores and INR 1650 Crores, respectively

✓ **Government Investments**

- The central government has increased its healthcare spending through the National Rural Health Mission (NRHM) program launched in 2005 which was later integrated into the National Health Mission (NHM)
- The National Health Mission (NHM) has been formed in 2013 consisting of the already existing National Rural Health Mission and the newly launched National Urban Health mission which have been jointly allotted an amount of INR 21104 Crore expenditure for the year 2013-14

Shortage of Manpower (quality and quantity)

- There is a shortage of skilled professionals, including doctors and nurses, to meet the requirements of the large Indian population
- A significant deficit exists in the number of MPWs (multi-purpose workers), pediatricians and nurses
- Employability of current labour is a challenge due to shortage of quality

Urban–rural disparity

- Though 70 percent of the population lives in more than 600,000 villages across rural India, less than 30 percent have access to modern medicine
- Healthcare penetration is concentrated in urban areas and metropolitan cities. While 70 percent of the Indian population lives in semi-urban and rural areas, 80 percent of the healthcare infrastructure is present in urban areas

Inadequate infrastructure

- The hospital bed to people ratio in India stands at 7:10,000, which is significantly lower than the global average of 27:10,000 (WHO 2014 report)
- Primary care constitutes 20 percent of the healthcare infrastructure in the country, which is required to provide healthcare services to about 75 percent of the total population

Limited funding

- Public healthcare expenditure in India is only 1 percent of the GDP
- Low public spending on health has resulted in high out-of-pocket expenditure. In the long run, this is detrimental to the healthcare finance system in the country, as it leads to high costs being incurred on medicines and outpatient treatment (as opposed to hospitalization)

Limited penetration of healthcare insurance

- Health insurance plays a critical role in improving access to healthcare services in India. However, high insurance premium renders these schemes unaffordable to the ones who need it the most
- Poor penetration deters widening of the risk pool, which, in turn, helps in reducing per person premium. There is, thus, a need to break this vicious circle by introducing innovative health financing models
- However state insurance schemes such as Arogyasri in Andhra Pradesh have helped ease the financial burden for healthcare services

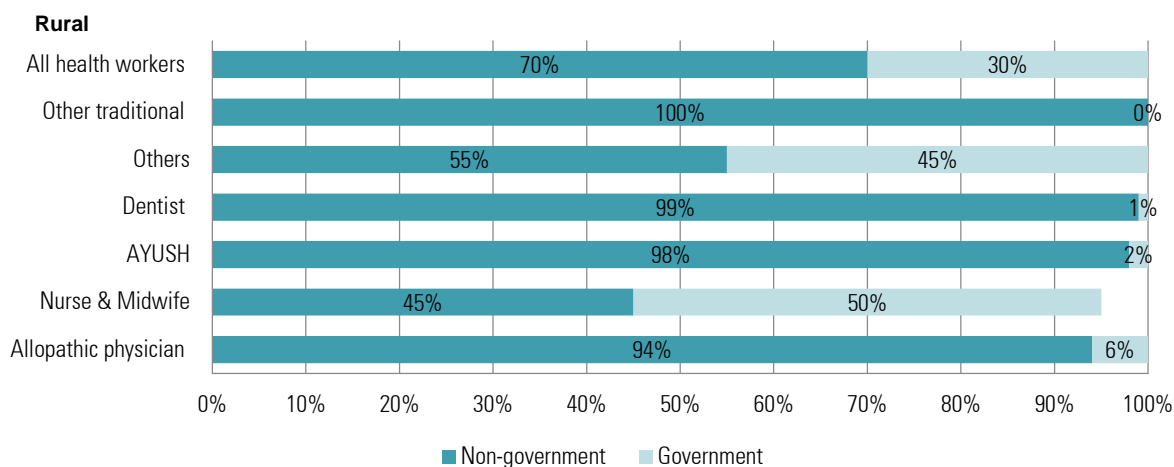
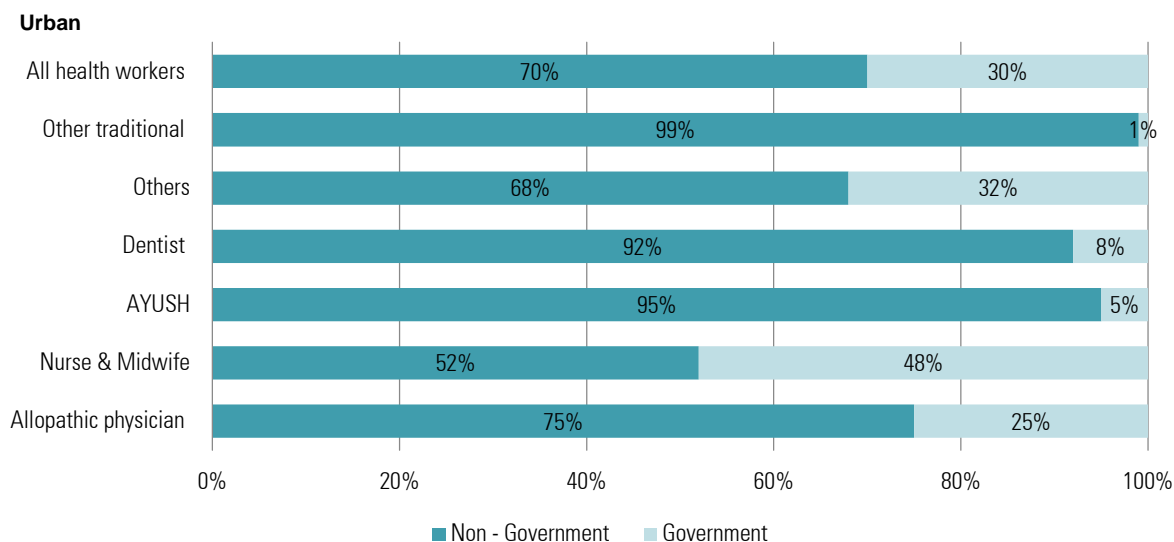
Strengths	<ul style="list-style-type: none"> ▪ Largely volume driven, healthcare in India has the competitive advantage of offering relatively cheaper services ▪ Growing population and rising disposable income will only push the demand for healthcare upward ▪ Economic development and increasing urbanization to contribute to rise in demand for tertiary and quaternary care ▪ Strong Policy including the focus of the 12th FYP on healthcare and budgetary allocation to ease investment burden on the sector ▪ India is one of the fastest growing market for medical devices. Low cost and high domestic demand provide opportunity for players to set up medical device manufacturing plants in India
Weaknesses	<ul style="list-style-type: none"> ▪ Underdeveloped healthcare infrastructure ▪ Regional disparities with limited access to quality healthcare in several rural areas ▪ Low health insurance penetration as a result of low awareness of government and private schemes ▪ Fragmented medical devices industry and low emphasis on quality products ▪ Lack of a structured standardization of quality and emphasis on safety in healthcare ▪ Shortage of quality training institutes/courses ▪ Adoption of technology and IT penetration is still very nascent ▪ Low aspiration among general workforce (particularly nurses, paramedics) leading to high attrition ▪ Limited variety in workforce specialization leading to shortage of quality skilled labour
Opportunities	<ul style="list-style-type: none"> ▪ Rising investment in healthcare infrastructure, hospitals, R&D and education facilities ▪ India is increasingly a popular destination for Medical tourism ▪ Five Year Plan (2012–17) likely to double public health spending ▪ Supporting policy and regulatory framework to encourage sector development ▪ Demographic and lifestyle trends resulting in rising demand for tertiary and quaternary care ▪ Improved access to technology to boost outreach through telemedicine etc..
Threats	<ul style="list-style-type: none"> ▪ Hospital infection burden is a major threat to the provision of quality care in India ▪ A large increase in the number of diseases with limited resources can burden the health infrastructure ▪ Concentration of sector in urban areas limiting access to more than 2/3rds of the population located in rural areas ▪ Low priority for providing affordable healthcare in private sector

Demographic and workforce characteristics

Demographic and workforce characteristics

Distribution of workforce by sector

Workforce is concentrated in urban regions particularly in the private sector



- Manpower — in terms of physicians — is concentrated in the private sector, increasing the urban-rural disparity
- The majority of dentists are concentrated in the private sector, both across urban and rural areas. This is largely attributed to the fact a majority of the dental services now offered are cosmetic in nature and attract a higher demand in the private sector
- Contributing factors include insufficient investment in pre-service training, migration, work overload, inadequate growth opportunities and issues related to work environment

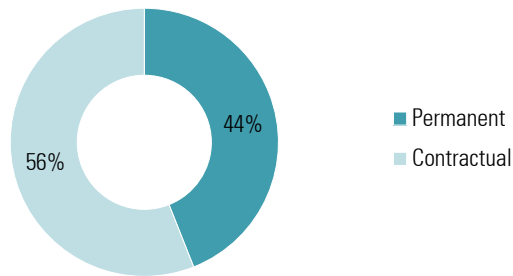
Sources : (Rao , et al., 2012 ,p.6), KPMG analysis based on secondary / primary research

Note : AYUSH: Ayurvedic, Yoga, Unani, Siddha, and Homoeopathy; Others: Dietician & Nutritionist, Opticians, Dental Assistant, Physiotherapist, Medical Assistant & Technician, Other hospital staff; Other Traditional: Traditional medicine practitioner, Faith healer

Demographic and workforce characteristics

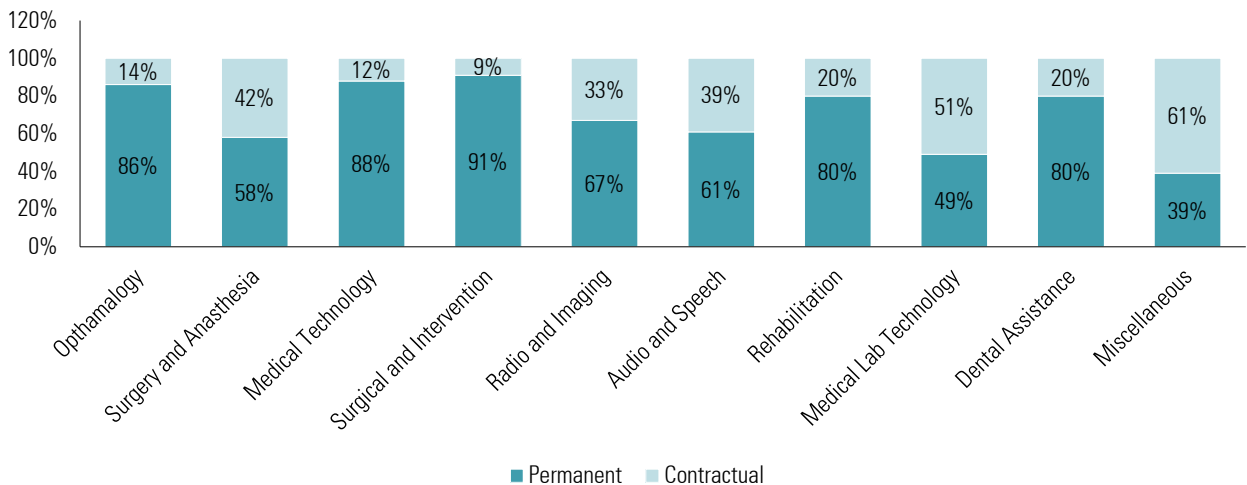
Nature of employment

Split of Contractual and Permanent Staff



Contractual staff form more than half the workforce in Healthcare

Distribution of regular vs. contractual staff in healthcare facilities



- Most Allied Health Professionals(56 percent of the total head count) are hired on a contractual basis
- A majority of therapeutic and technical service providers, such as those in optometry, rehabilitation, dental, medical technology and surgical intervention, are mostly permanent/ In-house employees
- Miscellaneous category AHPs, such as general duty assistants and record keepers, are typically hired on a contractual basis
- Also, diagnostics has been a critical area of recruitment for AHP and it includes medical laboratories (79 percent) as well as radio and imaging services (68 percent)

Demographic and workforce characteristics

Need Gap Analysis

Parameter(per 10,000)	Global Avg.	India
Physicians	14.1	7
Nurses and midwives	29.2	17.1
Dentists	2.7	1
Pharmaceutical Personnel	4.3	5

Source :WHO Statistics 2014

- There is a significant gap in the availability of allopathic doctors and it is a trend that is likely to continue into the next five years
- There are over 7,50,000 registered Ayurveda, Yoga, Unani, Siddha and Homoeopathy (AYUSH) practitioners in the country
- Physicians who have formal degrees in Ayurvedic, Siddha and Unani are legally permitted to offer allopathic services to patients
- These numbers, when combined with the total number of physicians trained in allopathy, fulfill, to an extent, the total requirement of medical practitioners required in the country

State of staff in public health

Staff	Required	In position
ANM	1,69,262	1,33,194
MPW (M)	1,46,026	61,907
Health Assistant (F) LHV	23,236	17,371
Health Assistant (M)	23,236	20,181
Doctors at PHC	23,236	20,308
Surgeons at CHC	3,346	1,201
Gynaecologists at CHC	3,346	1,215
Paediatricians	3,346	678
Radiographer at CHC	3,346	1,337
Pharmacist at CHC & PHCs	26,582	17,708
Lab technicians at CHC & PHCs	26,582	12,284
Nurse and midwives at CHC & PHCs	46,658	28,930
Total	498202	316314

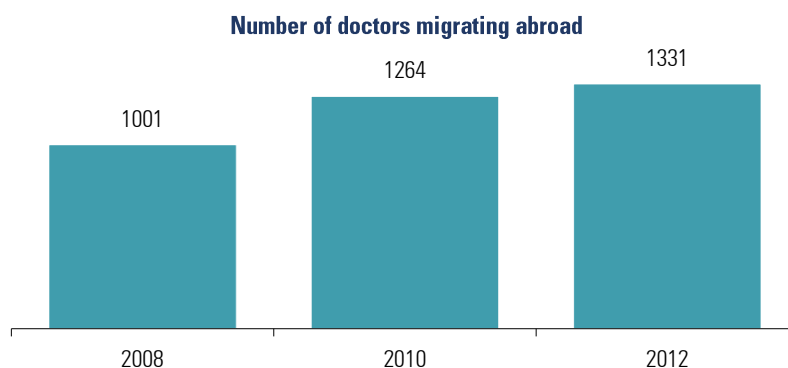
- Staffing in public health organizations is a major challenge in rural India
- Particularly there is an acute shortage of nurses and lab technicians due to low motivational incentives for working in the rural/remote regions
- There exists a gap of over 1.88 lakh positions among allied health staff in public health organizations

Sources :Bulletin on Rural Health Statistics in India, 2006

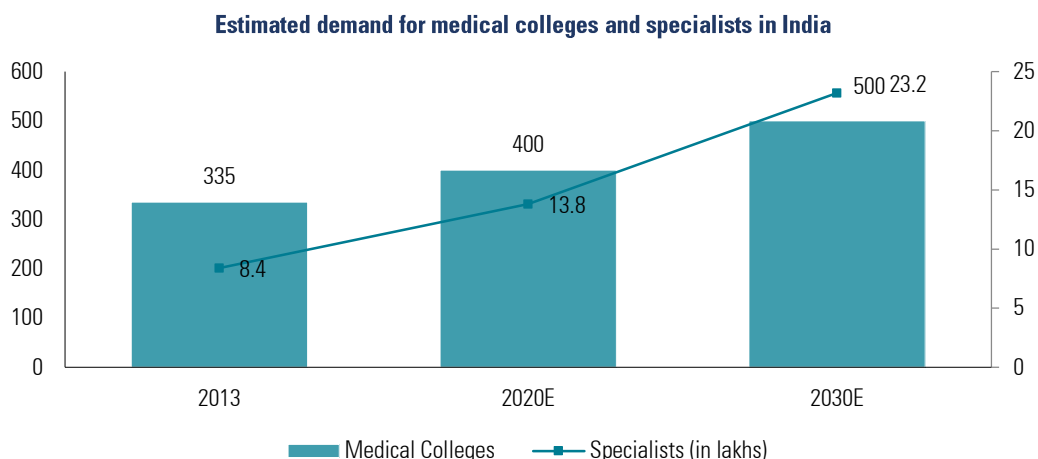
**Incremental
human resource
requirement
(2013-17, 2017-22)
and skill gaps**

Incremental Human Resource Requirement (2013-17, 2017-22) and skills gaps

Skill Gap Analysis



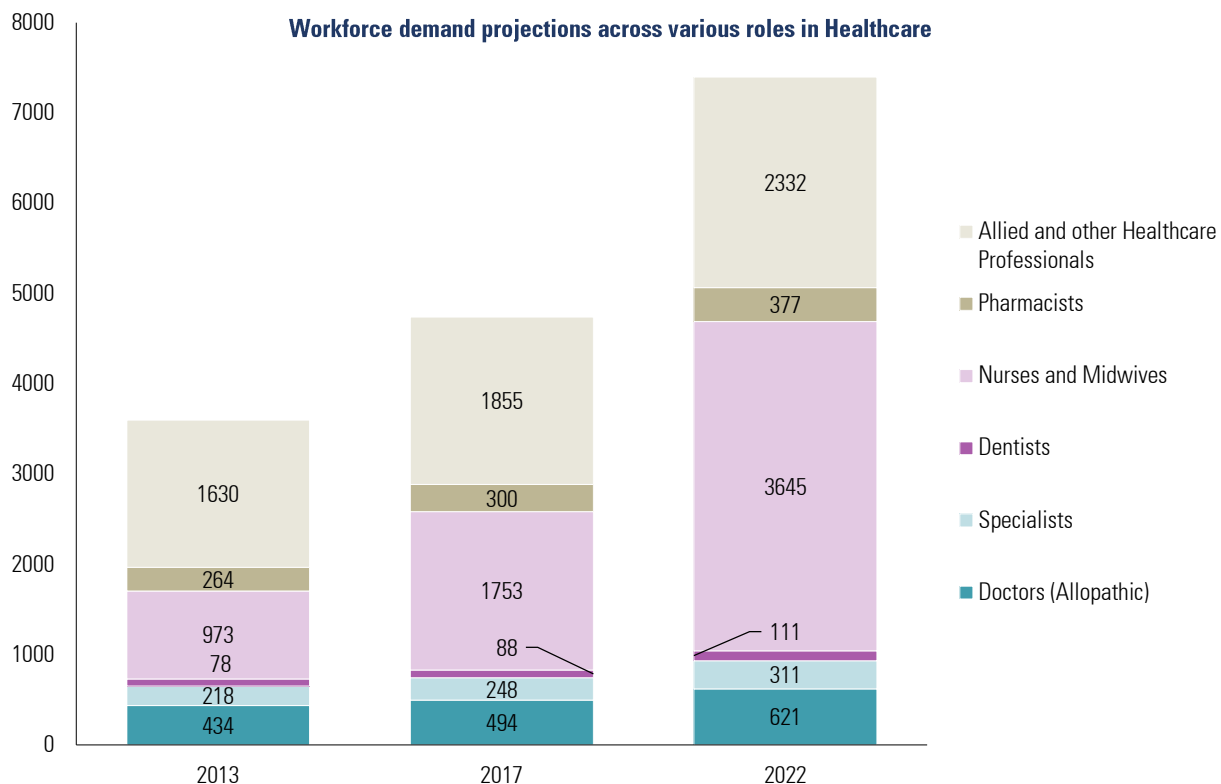
- In January 2014, the central government cleared a proposal for creation of 10000 MBBS seats
- The Medical Council of India (MCI) has also given approval for the establishment of 16 new medical colleges with intake capacity of 2,050 MBBS seats in July 2014
- Even with the recent trends of Indians living abroad moving back to the country, migration still remains is a large drain on current human resources in the medical sector
- Nearly 4-5% of the total doctor workforce migrating annually in pursuit of higher education, fellowship programs and job opportunities



- While nearly 45,000 undergraduates are expected to pass out every year going forward only 24000 seats are available for post graduate education.
- Most new private colleges lack the requisite infrastructure and faculty to run PG programs creating further scarcity of available seats.
- Dearth of post graduate seats in the country is driving the trend of students opting for residency and fellowship programs abroad indicated by outflow of around 3600 doctors over the last three years alone

Sources : KPMG analysis based on secondary / primary research, Planning Commission reports

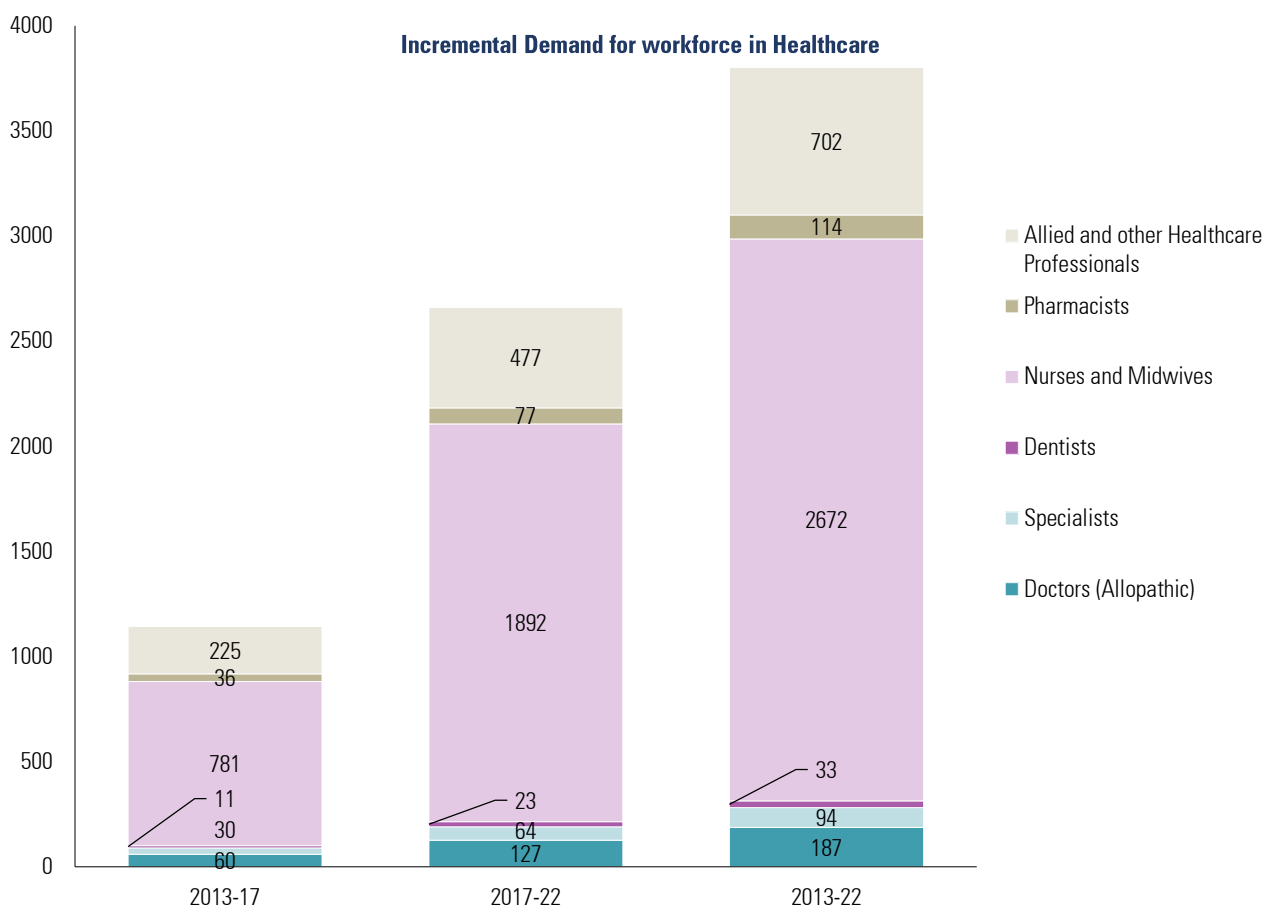
Incremental Human Resource Requirement (2013-17, 2017-22) and skills gaps Workforce Estimation



Sub-Category	Employment in Thousands		
	2013	2017	2022
Doctors (Allopathic)	434	494	621
Specialists*	218	248	311
Dentists	78	88	111
Nurses and Midwives	973	1753	3645
Pharmacists	264	300	377
Allied & Other Healthcare Professionals	1425	1622	2039
Total	3595	4739	7398

- Workforce requirements for the Healthcare sector is expected to grow from 35.9 lakh in 2013 to 74 lakh in 2022 which is more than double its existing workforce to meet the market demand

Incremental Human Resource Requirement (2013-17, 2017-22) and skills gaps Workforce Estimation



Sub-Category	Employment in Thousands		
	2013-17	2017-22	2013-22
Doctors (Allopathic)	60	127	187
Specialists*	30	64	94
Dentists	11	23	33
Nurses and Midwives	781	1892	2672
Pharmacists	36	77	114
Allied & Other Healthcare Professionals	225	477	702
Total	1143	2659	3803

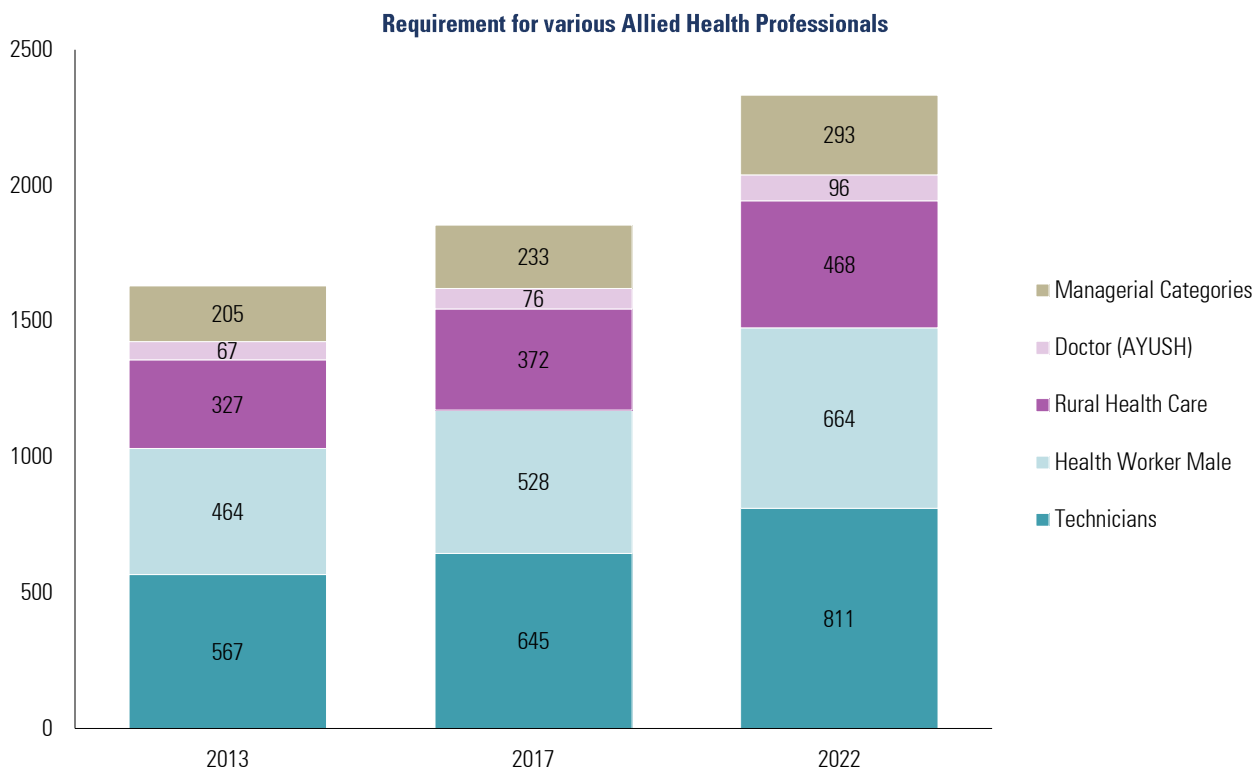
- With shift in focus towards quality of service, particularly with the rising demand for tertiary and quaternary care, the industry requires specialized and highly skilled resources
- As a result of this shift, a large increase in demand for nurses in particular is anticipated

Sources : KPMG in India analysis based on secondary / primary research

Expert opinions on manpower trends for doctors and nurses

- The greatest challenge currently is not the numbers available but also the quality and employability of the workforce
- Diagnostic services and biomedical engineering are two emerging areas that show great promise in terms of employment opportunity particularly lab technicians, research assistants and clinical technicians will be in high demand
- Growth lies in rural areas and Tier II cities for major hospital chains
- Growth drivers of focus will be rising incomes/affordability and introduction of public health insurance schemes
- Specialised manpower is required in evolving categories such as healthcare managers and nursing/physician assistants, stemcell staff, IVF center staff, Biochemists (for advanced diagnostics), emergency/ambulance technicians
- Problems of high attrition is observed in general profiles like nursing and GDAs which see as much as 50% attrition levels, due to low job satisfaction and uncertainty of tenure due to most of the employees being contractual
- however the same is not a challenge niche segments like for laboratory technicians which is a in high demand and personnel are hired as in-house employees
- An increased focus on tertiary and quaternary care will result in a higher demand for nurses and medical care staff
- The current practice is to provide substantial in-house training to all new joiners. This is a requirement for all generic profiles as well as for skilled labour, such as nurses and doctors
- The low degree of morale among students and lack of requisite leads to a lower commitment towards serving the population, especially in rural areas. As a result, doctors tend to flock to metros due to the below -par healthcare infrastructure and standard of living in Tier II and Tier III cities, and rural areas

Incremental Human Resource Requirement (2013-17, 2017-22) and skills gaps Workforce Estimation



Sub-Category	Employment in Thousands		
	2013	2017	2022
Technicians	567	645	811
Health Worker Male	464	528	664
Rural Health Care	327	372	468
Doctor (AYUSH)	67	76	96
Managerial Categories	205	233	293
Total	1630	1855	2332

- There is a large need for technicians comprising of more than one third of the total demand for allied health professionals
- Specialized technicians with high level subject expertise are in severe shortage currently in India

Incremental Human Resource Requirement (2013-17, 2017-22) and skills gaps Identified job roles categorized across sub-sectors

Major job roles in the Healthcare delivery sub-sector

Diagnostic Services	Curative Services	Direct Care	Non-Direct Care	Community related services
Cardiovascular technologist and technician	Anesthesiologist assistant	Doctors	Medical equipment technician	ASHA
Medical and clinical laboratory technician	Emergency and medical technician	Nurses and Midwives	Medical records and health information technician	Diabetes educator
Radiological technician and technologist	Surgical technologist /OT technician	Health Officers	Nursing assistant	Health educator
X-Ray related Technician	Dieticians / Nutrition Experts	Care takers	Pharmacy technician	Sanitary inspector
Pathologist		Dentists		Healthcare Consultants

Major job roles across the value chain of the medical equipment sub-sector

Manufacture of Equipment	Supply Chain	Sales/Client Management
R&D personnel/R&D engineer	Supply chain managers	Instrument maintenance personnel
Plant managers	Distributors	Instrument assembling staff
Operations head		
Quality assurance analyst		
Instrumental engineers		
Data analysts		

Major job roles in the medical insurance sub-sector

Medical Insurance
Medical Professionals
Third Party Administrators
Medical Consultants (Form claims processing etc..)

Sources: Occupational Mapping Report: Allied Health and paramedics sector, Healthcare sector skill council, 2013, KPMG in India analysis based on secondary / primary research

Incremental human resource requirement (2013-17, 2017-22) and skill gaps

Skill requirements of select job roles

Skill set requirements	
Job Role	Skills required
Anesthesia Technician	<ul style="list-style-type: none"> ▪ Knowledge on sterile techniques and the principals of aseptic practice ▪ Understanding of different types and indications for local, monitored anaesthesia care (MAC), regional and general anaesthesia ▪ Awareness about basics of anatomy and physiology as it applies to anaesthesia medicine ▪ Basic understanding of all the human systems ▪ Practical knowledge about: Patient assessment and evaluation, Patient positioning, Insertion of intravenous and other invasive lines, Airway management ▪ Monitor insertion and procedures such as pulmonary artery catheter, central venous access, regional anaesthesia, fibrotic intubation and is familiar with the
Blood Bank technician	<ul style="list-style-type: none"> ▪ How to accurately take vital parameters, such as, pulse, blood pressure, and body temperature of an individual ▪ The prescribed limits of the vital parameters within which blood could be donated by an individual ▪ How to properly document the collected vitals of the potential donor ▪ The importance of proper identification of the potential donor ▪ The risks to quality and safety because of lack of knowledge of the vital Parameters ▪ How to interpret and perform risk management procedures
Operating theatre Technician	<p>KB1. Various methods of preparing theatre and their importance</p> <p>KB2. The importance of cleaning & preparation</p> <p>KB3. How to prepare theatre based on patient condition</p> <p>KB4. Basic equipment care and maintenance</p> <p>KB5. Basic understanding of theatre team responsibility in relation to the surgical count</p> <p>KB6. Organisation procedures for preparation of a deceased patient, who has died in the theatre environment</p> <p>KB7. Work will be performed within a prescribed range of function, generally within a team environment, involving known routines and procedures</p> <p>KB8. All activities are carried out in accordance with organisation policies, procedures and infection control guidelines.</p> <ol style="list-style-type: none"> a. Prepare theatre environment b. Provide support to the theatre team c. Maintain theatre area <p>KB9. Consideration to the following are to be given due importance by OTT when assisting in the preparation:</p> <ol style="list-style-type: none"> a. Carry out all work according to safe working guidelines b. Communicate effectively with theatre team <p>KB10. Ensure work is completed systematically with attention to detail without damage to equipment or harm to patient/personnel</p>

Incremental human resource requirement (2013-17, 2017-22) and skill gaps

Skill requirements of select job roles

Skill set requirements	
Job Role	Skills required
Medical Laboratory Technician	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. Methodology of phlebotomy</p> <p>KB2. The basic structure and functions of the integumentary, skeletal, muscular, nervous, endocrine, cardiovascular, lymphatic, respiratory, digestive, urinary, and reproductive systems</p> <p>KB3. The chemical composition, structure, and properties of substances and of the chemical processes and transformations that they undergo including the use of chemicals and their interactions, danger signs, production techniques, and disposal methods</p> <p>KB4. The cells, their development, identification and functions and the microscopic examination of blood films</p> <p>KB5. The basic concepts of transfusion science, including the application of genetics and immunology to transfusion practice</p> <p>KB6. Major blood group systems, antibody detection and identification procedures</p>
General Duty Assistant	<p>KB1. How to drape and undrape the patient</p> <p>KB2. How to perform back rub</p> <p>KB3. How to shower, complete bed bath, partial bed bath or tub bath the patient</p> <p>KB4. How to ensure that proper procedures and processes are followed</p> <p>KB5. The basic functionalities of the applications that are used during the bathing</p> <p>KB6. During Bathing observe and report any of the following</p> <ol style="list-style-type: none"> Colour changes of the lip Rashes, dry skin, bruises, broken skin, reddened areas, abnormal skin temperature Drainage, bleeding, complaints of pain and itching
Dental Assistant	<p>KB1. How to schedule patient as per the protocols and procedures of the healthcare provider</p> <p>KB2. The operations of the patient scheduling system</p> <p>KB3. The dental conditions and their treatment</p> <p>KB4. How to sequence treatments properly</p> <p>KB5. The modes of disease transmission</p> <p>KB6. How to obtain and record accurate medical/dental histories to accurately determine the treatment needs</p> <p>KB7. How to prepare treatment plan in collaboration with dentist and explain the procedures to the patient and answer patient's queries</p> <p>KB8. How to interpret and perform risk management procedures</p>

Incremental human resource requirement (2013-17, 2017-22) and skill gaps

Skill requirements of select job roles

Skill set requirements	
Job Role	Skills required
Emergency Medical Technician	<p>KB1. Relevant medical equipment used in different types of emergencies</p> <p>KB2. Basic medical terms and principles to evaluate the patient's condition</p> <p>KB3. How to prepare for dealing with different types of hazardous materials like nuclear, radioactive, biological, chemical and explosive substances</p>
Frontline Health Worker	<p>Essentials of nutrition, sanitation and environment for the village:</p> <ol style="list-style-type: none"> Water safety at home Determinants of diseases like malaria, tuberculosis, vector borne diseases, leprosy etc. Nutritional requirements Sanitary latrines How to protect water sources in village Importance of Smokeless Chulah Health hazards presented by rodents Disposal of waste and stagnant water <p>KB2. Social determinants of nutrition and health and prevalence in the local community</p> <p>KB3. How to conduct the household health survey with the ANM and AWW</p> <p>KB4. How to identify key health, nutrition and sanitation risks in the village</p> <p>KB5. How to incorporate risks into the Village Health Plan</p> <p>KB6. The importance of incorporating representatives of all community members in the Village Health Plan</p> <p>KB7. How to motivate representatives from all population groups (all castes, tribes, women and minorities) to participate in Village Health Plan</p> <p>KB8. How to motivate NGO workers, school teachers, representatives of self-help groups to participate in the Village Health Plan</p>
Pharmacy Assistant	<p>How to read the prescription</p> <p>KB2. The prescription is in correct format and as per the protocols</p> <p>KB3. Check the prescription information for completeness</p> <p>KB4. Review the prescription for clarity of abbreviations, medical terminology, drug names, dosage forms, strengths, availability, schedule, route and related information</p> <p>KB5. Consult with the pharmacist regarding questions about authenticity, clarity of prescription information, discrepancies and questions requiring patient assessment, clinical analysis or application of therapeutic knowledge</p>

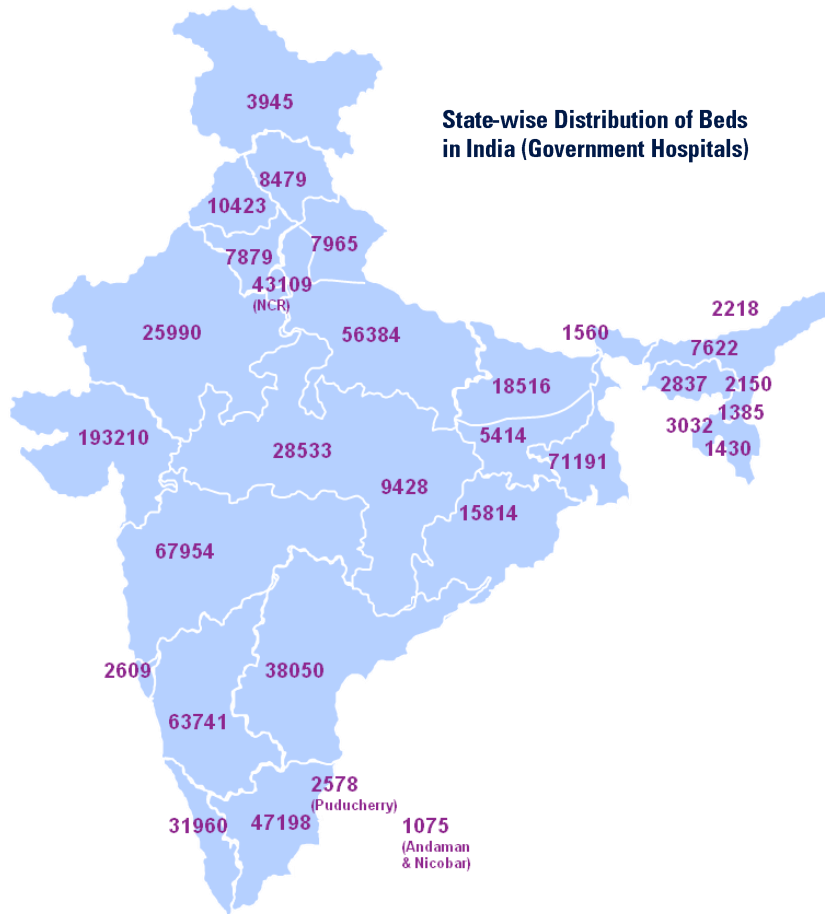
Incremental human resource requirement (2013-17, 2017-22) and skill gaps

Skill requirements of select job roles

Skill set requirements	
Job Role	Skills required
Radiology Technician	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. Essentials of the subdivisions of anatomy, terms of location and position, fundamental planes, vertebrate structure of man, organisation of the body cells and tissues including:</p> <ol style="list-style-type: none"> The cardio vascular system The respiratory system The digestive system The urinary system The reproductive system The nervous system The ear, nose, throat and eye The endocrine system The haemopoietic and lymphatic system The surface anatomy & surface markings of human body <p>KB2. The pathology of various systems: cardiovascular system, respiratory system, central nervous system, musculoskeletal system, gastro-intestinal tract and reproductive system</p> <p>KB3. Basic principles and practical aspects of x-ray machines</p> <p>KB4. Basics of CT machines (basics of plain studies, contrast studies, special procedures)</p> <p>KB5. Basics of MRI machines (basic principles, imaging methods, plain & contrast studies, image contrast, factors affecting image quality)</p> <p>KB6. How to take medical history of the patient and document it as required</p> <p>KB7. How to interpret instructions and requirements documented by the physician in the patient's prescription</p> <p>KB8. How to determine the radiological diagnostic tests required for the patient based on the physician's prescription and the medical history</p>

Training infrastructure

Differences in socio-economic, political factors results in inter-state disparity in availability of quality health professionals



- Gujarat, Karnataka, Maharashtra and West Bengal have the maximum number of hospitals
- States in the South and Union Territories such as Puducherry have a better population per hospital ration than most other states
- There is also significant disparity in the number of hospitals and hospital beds serving the population across states
- The average population served per government hospital bed in states such as Uttar Pradesh and Bihar is way higher when compared to that in Kerala or West Bengal

Geographically skewed distribution of healthcare education facilities

- There are only 356 registered medical education institutions
- The total admission capacity is nearly ~45,000 students at the undergraduate level and about ~24000 students at the post-graduate level in the country

Andhra Pradesh*
Karnataka
Kerala
Maharashtra
Tamil Nadu



~31% share of population
~58% of medical colleges
~63% nursing colleges

Bihar
Madhya Pradesh
Rajasthan
Uttar Pradesh



~30% share of population
~9% nursing colleges

*Including current state of Telangana

Recruitment and retention of skilled Allied Health Professionals however remains a challenge

Recruitment procedures

Category	Recruitment type
District hospitals	Recruitment is done at the state level
Diagnostic facilities	Advertisements and walk-in interviews
Larger facilities	Detailed process of hiring candidates from established institutes
Standalone clinics	Hiring mostly through references/ recommendations

Insights

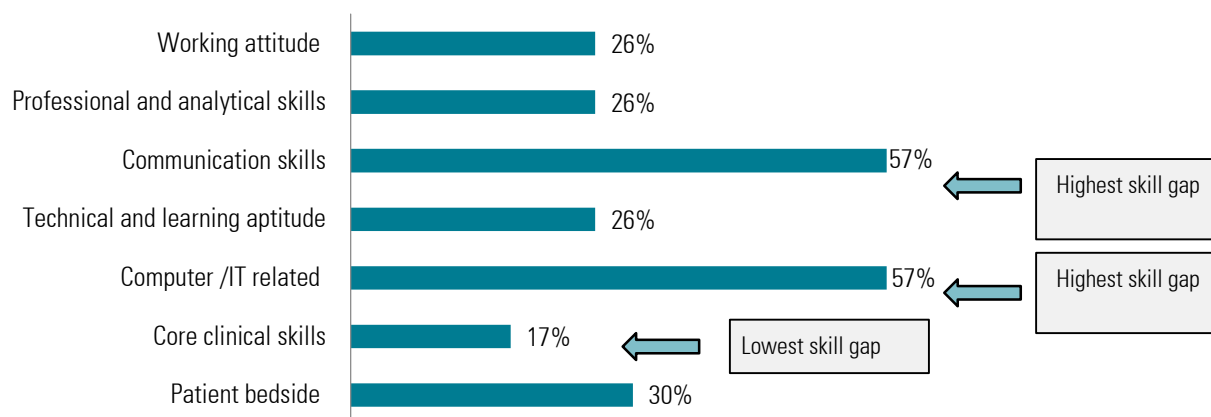
- It is particularly challenging to recruit candidates for medical lab technology, especially those working in histopathology; medical technology, particularly dialysis; CSSD technicians; super-specialty areas (including short care, neonatal and oncology technicians and mammography technicians).
- This challenge is attributed to two major reasons, one- a shortage of skilled personnel and lack of awareness on the demand for these professions and the second due to a lack of specialized training courses offered by education/training facilities.
- Freshers and less experienced candidates are typically hired by small and medium sized providers who provide in-house training as they pay lesser when compared to the major healthcare chains
- Multi and super specialty providers are more selective in their recruitment seeking highly competent and skilled manpower with specialized understanding of each specialty
- Due to similar compensation schemes and low aspiration levels, attrition is higher in small- and medium-sized providers
- Among the sub-segments, the attrition rate is found to be the highest in diagnostics, which includes medical laboratory as well as radio/imaging technology
- The typical migratory pattern among trained manpower is from small to larger facilities seeking better career prospects and quality of work

Trends in skilling of AHPs

- Skill and talent gaps are expected to widen in the coming years due to increasing demand for health care services
- Lack of well-defined career paths across the spectrum leads to a grave differentiation in terms of job roles, salary structures and promotions at entry- and senior-level positions
- There is a lack of motivation and self-worth among several categories of AHPs, which, in turn, drives high attrition rates across the industry, since professionals constantly seek better and more equitable job opportunities

Skills gaps in AHPs

- Communication skills seem to be lacking across all the specialties due to language barrier and, in some cases, due to lack of empathy towards patients
- Improved technical and learning aptitude, computer/IT-related skills and patient bedside manners are required in professionals across specialties
- In some cases — ambulance workers and ward boys, for example — there is an underutilization of skills



Skills required

- Employers in diagnostic facilities specifically look for subject or role related knowledge, willingness to work on holidays and communication abilities in candidates; Any shortcoming in subject related experience is overcome through in-house training
- In standalone clinics, employers stress on eagerness to learn, aspirational value and self-motivation is highly valued
- Employers of medical lab technicians usually stress on phlebotomy as an important skill for professionals working in all kinds of facilities

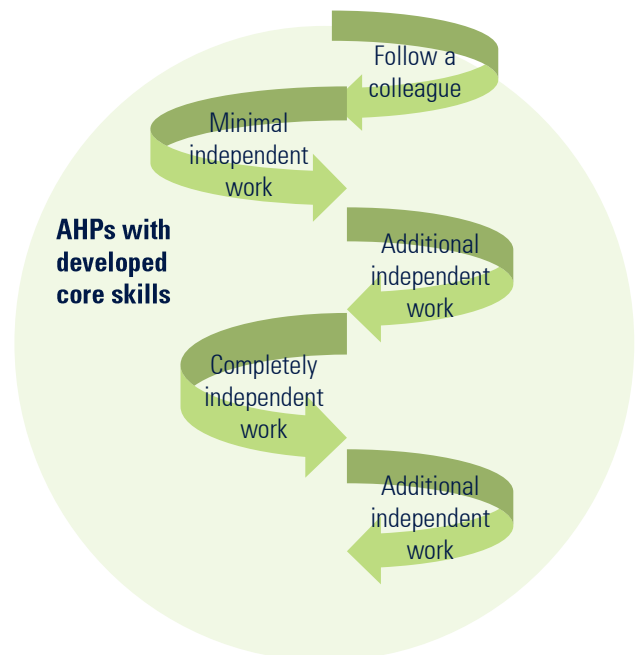
Training requirements and development

- Entry-level candidates are usually trained in-house, except those in specialties that already have internships built-in to their curricula (such as optometry and rehabilitation courses)
- An internship is pursued after the completion of the academic cycle. The internship period allows a practical and hands-on learning experience outside the classroom
- There is a need for Continued Professional Education across specialties for up-skilling due to frequent advancements in technology and patterns of treatment
- Lack of adequate skills and knowledge on patient safety is another key area of improvement
- Regular re-training , adopting a professional approach towards skill- and competency-building together with ongoing training and professional development are a few ways to keep the staff motivated

Employability of current allied health professional with recognized degree

- Candidates are trained from established institutes and made employable
- Additional training is essential for other candidates
- Though some institutions provide students with degrees, they lack allied hospitals, resulting in limited hands-on experience
- In some cases, professionals across specialties possess minimal skills and prefer back-end processes where there is no patient interaction
- A majority of employers find it necessary to provide in-service training through refresher or weekly sessions by the experienced staff
- Technological advancements require professionals in radiology and lab technology to constantly update their knowledge

Model for in-service training



Recommendation for stakeholders

Recommendation for stakeholders

Create long term benefit to increase sector attractiveness

High levels of attritions within the Healthcare industry needs to addressed through provision of long term benefits

- Problems of high attrition is observed in general profiles like nursing and GDAs which see as much as 50% attrition levels
- This leads to varying standards of quality and efficiency amongst players in the industry
- Further, there is no single entity to assess, certify and thus standardize the entire training program for the industry

Recommendation 1: Develop strong compensation schemes with long term benefits and high value-add

- Players in the sector find it difficult to identify, recruit and retain top talent in the industry
- Design long term employment benefit schemes for employees to reduce attrition
- One of the key value adds for employees is training recognised by industry. Industry should formalize in-house training and certify the same and introduce more roles with in-house recruitment instead of the current preference for contractual employment

Increased focus on language and communication in schooling given the deficit in soft skills in current manpower

- Currently a majority of private providers include mandatory in-house training for soft skills
- Healthcare, being a service industry, requires high standards of soft skills and communication skills to ensure client satisfaction
- Additional factors such as etiquette, hygiene are also equally crucial in the sector

Recommendation 2 : Increased focus on language and communication

- Industry bodies to increase attention on soft skills part of the health sector to promote quality service delivery
- Training tie-ups could be considered with leading English and communication institutions and soft skills training providers

Supporting regulatory institutions offer better structure and clarity to sub-sectoral roles

- Significant proportion of the learning happens on the job, which is difficult to quantify and certify
- Despite possessing the required skills in varying degrees of competencies, skill levels are grossly under-reported and job roles are not clearly defined
- Lack of regulation results in skilled labour and unskilled labour being paid the same wage which is often the case in the current industry

Recommendation 3 : Set up regulatory authorities for various sub segments

- Set up skill councils or regulatory authorities for allied professionals to maintain high quality and standards and to clearly define job roles
- Development of Recognition of Prior Learning (RPL) framework whereby current workforce across sub-sectors can register and be certified by the SSC, increasing their employability quotient

Sector specific training programmes need to be designed

Adequate supply of training courses by sector-focused training providers needed to meet burgeoning industry demand and to increase access to rural areas

- Curriculum for most allied support professionals is often not updated and not properly imparted leading to poorly skilled labour
- The industry invests heavily in in-house training to provide adequate skills and expertise to hired staff
- Unregulated training providers train candidates without adequate practical training exposure. This leads to reduced standards of service in the industry
- Regional disparities particularly the skewed concentration of training and educational institutes in urban areas creates a massive gap of training providers in rural areas

Recommendation 4: Increase training supply by sector focused training providers with emphasis on rural outreach

- Promote training infrastructure for healthcare industry through industry players to increase access to health infrastructure to remote areas
- Support private training providers to expand capacity for training in the industry by bringing in greater synergy between government schemes and training providers
- Incentivise industry players who offer captive training for niche areas and offer training in rural areas

Increase awareness through campaigns on benefits of training, career progression etc.

- Low aspirations, lack of awareness of career prospects and limited access to quality training often lead to attrition, job dissatisfaction particularly in general nursing and paramedical positions
- Highly skilled positions such as technicians and specialists are often in shortage due to the lack of awareness on the training options and career path for these areas

Recommendation 5: Launch sectoral awareness programs in urban and rural areas targeting potential labour force

- Promote vocational training in the field of Healthcare in rural and remote areas
- Tie up with industry, government to provide information on career options, career fairs, school education programs etc.

Providing affordable healthcare training will create a larger pool of skilled labour

- A significant part of the industry consists of contractual and permanent workforce from a lower or a lower-middle income background
- Such candidates find it difficult to secure formal loans from institutions to further their educational pursuits
- Support from government in terms of subsidies or monetary schemes would be of immense benefit

Recommendation 6: Launch innovative fee payment schemes

- Innovative fee models including industry sponsorship or tie-ups between industry and training institutes or lagged fee structures can help increase the affordability of healthcare education to lower income groups

Outdated curriculum and teaching methods lead to inefficiencies in labour productivity

- The healthcare sector is a continuously evolving industry with constant innovation and introduction of new techniques, expertise and methods
- A fundamental challenge in India is the lack of regular upgradation of teaching methods, curriculum and courses which results in labour inefficiencies

Recommendation 7: Provide regular upgrade and certification for training infrastructure and curriculum

- Developing industry standards and providing upgradation certificates to training institutes and trainers will allow for continuous education of the sector
- Developing occupational standards which are periodically updated will also serve as a benchmark for skills and expertise required for various job roles

Provide incentives for employees to undertake skill training/skill upgradation, through skill premium

- Initial in-house trainings are almost mandatory for employees. Subsequent training programs for skill upgradation is however often ignored
- Industry does not incentivize skill upgradation as it does not attach a significant premium to skills learnt in a training institution
- Other major reasons for lack of initiative in investing in continuous education include the high attrition and high costs associated with training

Recommendation 8: Incentivise skill upgrade through skill premium

- Provide skill premium for those candidates with formal training experience
- Encourage employees to upgrade skills to remain relevant in the changing industry scenario
- Formalise the training relationship with employers to certify and credit the employees who have undergone training



सत्यमेव जयते

GOVERNMENT OF INDIA
MINISTRY OF SKILL DEVELOPMENT
& ENTREPRENEURSHIP



N · S · D · C
National
Skill Development
Corporation

Transforming the skill landscape

National Skill Development Corporation
Block A, Clarion Collection, (Qutab Hotel)
Shaheed Jeet Singh Marg, New Delhi 110 016
Tel: +91-11-47451600, Fax: +91-11-46560417
Email: skillgapstudies@nsdcindia.org
Web: www.nsdcindia.org