

# HealthTech in India Are we there yet?

2017



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Published by NASSCOM

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# About the Research & Acknowledgement

## Research Objective

During the development and production NASSCOM Start-up Report 2017 and Emerge 50 Awards, the NASSCOM team observed a significant rise both in the number of healthtech start-ups and the funding that the start-ups were garnering. Healthtech, as a sector, appeared to have the potential to uplift the Indian healthcare industry, which is currently facing several challenges. Keeping this in mind, NASSCOM undertook a healthtech study, with the following objective:

- To highlight some of the latest developments and traction in this space
- Top segments, disease areas, and technologies that Indian healthtech product start-ups are focused on
- Technology adoption and product development capabilities of start-ups
- Outlook for 2020 – highlighting some opportunity areas

## Scope & Methodology

The report was developed via secondary research, primary research (survey-based) and in discussion with industry experts. Since the scope of the report was to highlight the activities of start-ups in India, the examples and analysis in this report are reflective of **healthtech product start-ups incorporated post 2010 only** – the purpose being to focus on what new-age companies are doing in this space. The report has a fine blend of data, insights and examples that highlight the progress made by Indian start-ups and how they are striving to solve issues related to Accessibility, Affordability and Quality of Indian healthcare space. This is one of our preliminary research and with the support of the ecosystem, we hope to initiate several more in the future. We hope you like it and we welcome your suggestions at [research@nasscom.in](mailto:research@nasscom.in).

## Acknowledgement

We would like to extend our sincere thanks to all the healthtech start-ups, who participated in the survey and the industry experts who shared their valuable insights with us.

## About NASSCOM Research

NASSCOM Research is the in-house research and analytics arm of NASSCOM, performing multi-dimensional activities of addressing industry-related questions, generating insights and driving thought leadership for today's business leaders and entrepreneurs to strengthen India's position as a hub for digital technologies and innovation. Backed by robust primary research centric methodology, in-house processes/databases and partnerships with best-of-breed technology, consulting and research firms, NASSCOM Research is the most credible source of technology insights in India.

Have an innovative product, but don't find a mention in the report? We are eager to connect with you and showcase your product on **NASSCOM Community**, which has a dedicated section on **healthtech**. Write to [community@nasscom.in](mailto:community@nasscom.in)



## Global Healthcare Scenario – role of technology in reshaping the industry



## Indian Healthcare Challenges



## Healthtech Product Start-ups Mitigate Challenges

Top segments of focus

Key disease areas targeted

Medical IoT and AI

Quality of start-ups



## Achieving Scale

Funding landscape

Support ecosystem

Outlook



# Global Healthcare Scenario – role of technology in reshaping the industry

# Global Healthcare – The domino effect of rising life expectancy, chronic diseases, geriatric population and health expenditures - are we ready for what is imminent?

Even before the world could have improved access to treatment for communicable diseases, the onslaught of chronic lifestyle diseases is upon us. On the one hand, thousands of people are still dying of AIDS in America in spite of the wide availability of anti-retrovirals. On the other hand, NCDs such as heart diseases, stroke, diabetes and cancer are becoming leading causes of deaths globally. Several countries now have fertility rates below the level required for the replacement of successive generations – that means a larger population of elderly. We are moving towards a future where the current infrastructure and developments may not be able to successfully support what is imminent, culminating to ever-rising healthcare costs. In fact, the healthcare divide between the developed, developing, and under-developed economies is in itself bewildering for the healthcare providers, companies and the governments.

Current population of 7.6 billion expected to reach **9.8 billion in 2050**



**Rising Life Expectancy**

Average life expectancy to rise by **8.75 years** between 1995-2000 and 2045-2050

Chronic disease prevalence is expected to rise by **57%** by the year 2020



**Rise in elderly population**

Number of people aged 60 or above to become **>2X** by 2050

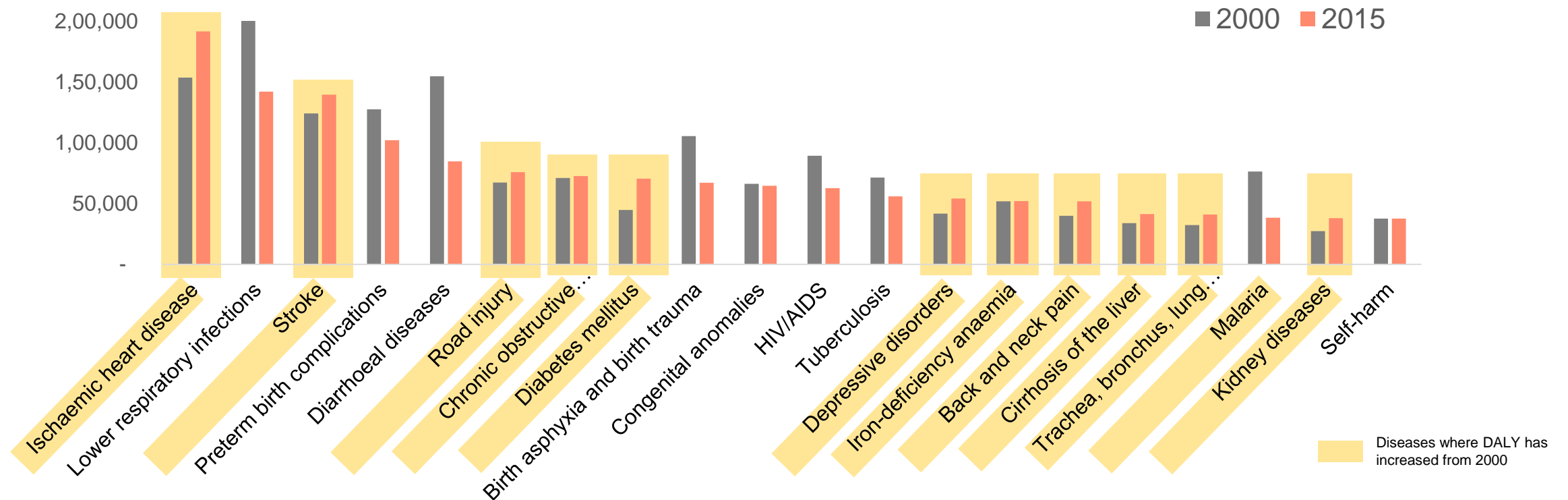
From 2016 to 2030, NCDs are expected to **cost 5X** the amount of money lost during the 2008 financial crisis



# Rise in Chronic Diseases – Rising burden of chronic, non-communicable diseases (NCDs) to become the biggest driver for the adoption of Digital Health solutions

According to a report by WEF & Bain, between 2016 and 2030, NCDs are expected to cost 5 times the amount of money that was lost during the 2008 financial crisis. Diseases such as Ischaemic heart disease, stroke, COPD, diabetes, mental & neurological disorders, musculo-skeletal problems, and cancers are some of the leading causes of disease burden, significantly impacting quality of life and healthcare costs. A longer life-span, crippled by chronic diseases and co-morbidities, has its own implications on productivity and economy. The figure below clearly depicts how the global burden of chronic diseases has risen between 2000 and 2015 – strongly insinuating the need to adopt **inexpensive technology interventions for early diagnosis, prevention and better management of diseases.**

2015 Global top 20 leading causes of disease burden (DALY\* In 000s)



\*DALY - Disability-Adjusted Life Year – Represents overall disease burden, expressed as the **number of years lost** due to ill-health, disability or early death; Note: Cirrhosis of the liver; trachea, bronchus, lung cancer; kidney diseases were not in the top 20 list in 2000 so they do not feature in the comparative graph above, but they notably contribute to global disease burden in current date.

# Technology - the saviour – addressing the 3 main pillars of Healthcare - Access, Affordability & Quality

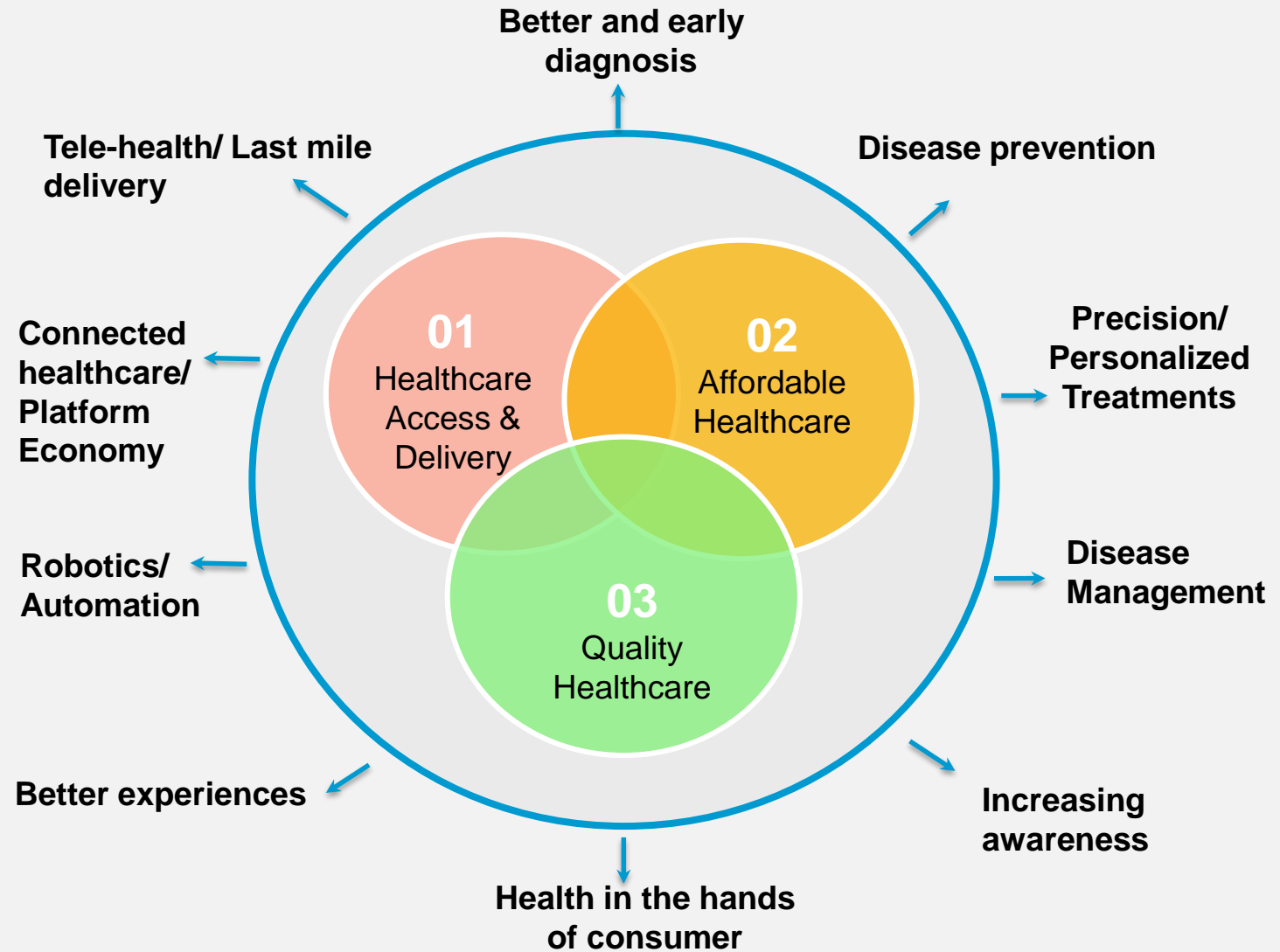
Whether using an **IoT** solution for post-operative care, **Drones** to deliver blood for transfusions to remote areas, or **Artificial Intelligence**-powered systems to detect heart disease risk – technology in healthcare has immense potential in improving healthcare access, quality, and reducing costs.

Healthcare technologies are meant to pervade not only hospitals but also our homes, and while on-the-go, thus reversing the phenomenon of patient going to a delivery centre. Technology is shifting the healthcare epicentre to patient's homes, creating a connected environment and enabling better care and disease management, perhaps just using a mobile phone; and creating DATA that could pave way for more personalized care.

Quality being as important as timely access, emphasis is also on early detection and disease prevention, which will in fact stand to benefit from the data that the technology is generating. Healthtech ROIs are hence mostly long-term, yet substantial and rewarding.

Even something like **Virtual Reality** which is mainstream in gaming, is finding huge applicability in the healthcare sector. **Systematic adoption is all that is needed.**

## Technology addressing the 3 main pillars of Healthcare





# Global Technology Companies - How are they responding?

| Examples for illustration only |



AWS to provide cloud services for Cerner's population health management platform. The platform collects data from sources such as EHR and insurance claims, to enable organizations identify and predict risks to individuals or populations – to devise better care plans



Philips investing in a platform business model, working with its cloud partners. Objective is to connect patients, devices, platform, sensors, using Medical IoT (Connected Health) to seamlessly expand the care continuum from hospitals to home



US FDA cleared AliveCor's Kardiaband EKG reader as the first medical device accessory for the Apple Watch - to detect abnormal heart rhythm and atrial fibrillation (AFib)



Watson for Genomics used by universities have been able to scan through data-sets to identify treatment and clinical trial options for 1,000+ patients that had tumors with genetic abnormality. The study indicates that AI can be used by physicians to determine appropriate treatment options



Microsoft set up a healthcare department in its research facility aimed at exploring AI and cloud computing, in order to enter the healthcare market. Research will be focused on developing predictive analytic tools, personal health information management systems, and AI for medical interventions



Parent company of Google





Deep mind, a part of Alphabet, is working on AI for healthcare. One of its app, which is currently on pilot testing, helps to detect early signs of kidney failure. The technology sends test result data to nursing staff's mobile phones, and alerts them if a patient is at the risk of developing acute kidney infection



# Indian Healthcare Challenges

## Indian Healthcare – With 62.4% out-of-pocket expenditure, current bed capacity 70% less than desired, lack of sufficient skilled health professional, Indian Healthcare is looking for a remediation

Healthcare is the backbone of any country, impacting economic, political, social and environmental prosperity. While urbanization, rise in disposable income, and privatisation has improved healthcare in India, the statistics still indicate that there is a long way to go. As highlighted below and in comparison to other BRIC countries, India has higher incidence of communicable diseases like Tuberculosis, at the same time higher mortality rate for NCDs like heart diseases and cancers. Out-of-pocket expenditure is a whopping 62% of total expenditure, but availability of skilled health professionals is the lowest. In fact, the current bed capacity (2015) of 1.5 million is only 47% of the required bed capacity as per WHO standards and only 30% of the desired bed capacity of 5.2 million.

	India 	Brazil 	China 	Russian Federation 
<b>Tuberculosis incidence</b> (per 100,000 population), 2015	217	41	67	80
<b>Mortality rate attributed to NCDs<sup>1</sup></b> , 2015	23.3%	16.9%	18.1%	29.3%
<b>Out-of-pocket health expenditure</b> (% of total expenditure on health), 2014	62.4%	25.46%	31.98%	45.84%
<b>Public health expenditure</b> (% of total expenditure on health), 2014	30.03%	46.03%	55.7%	52.2%
<b>General government health expenditure</b> as % of general government expenditure, 2014	5%	6.8%	10.4%	9.5%
<b>Skilled health professionals density</b> (per 10,000 population) <sup>2</sup>	27.5	93	31.5	78.8

1. Mortality rate attributed to non-communicable diseases such as cardiovascular disease, cancer, diabetes or chronic respiratory disease (Probability of dying from any of cardiovascular disease, cancer, diabetes, chronic respiratory disease between age 30 and exact age 70 (%), 2015); 2. Figures shown for skilled health professionals refer to the latest available values (2005–2015) given in WHO Global Health Workforce Statistics. 2016 update)



# Healthtech Product Start-ups Mitigate Challenges

# Indian Healthtech – In a country with wide economic divide, with prevalence of both communicable and non-communicable diseases, Indian healthtech start-ups are ready to mitigate the challenges

So, while the West might be talking about artificially intelligent robots, the priorities for India are slightly different. India is a complex market, with hugely varying education levels, income levels and access to healthcare. Within the Indian context - **access, awareness, affordability and quality** are all important, and healthcare technologies should be implemented understanding these intricacies and need-gaps. As highlighted earlier, India is one of the nations where the mortalities and morbidities of both communicable and non-communicable diseases are very high – creating a serious need for technology intervention to manage these diseases effectively amidst current infrastructure shortage. **And healthtech start-ups have a critical role to play.** In the last 2-3 years, Healthtech in India has significantly moved from 'Good to have' to 'Must have'. Contributing factors could be many, but primarily attributing to the digital impetus from the Government and the recent release of the National Health Policy, there is not only traction but exponential growth in the number of tech product start-ups and the funding that they are garnering.

## Health-tech product start-ups (For start-ups incorporated in the last 5 years only)

### Total Start-up Base

2017E 320

28% Growth YoY ↑

2016 250

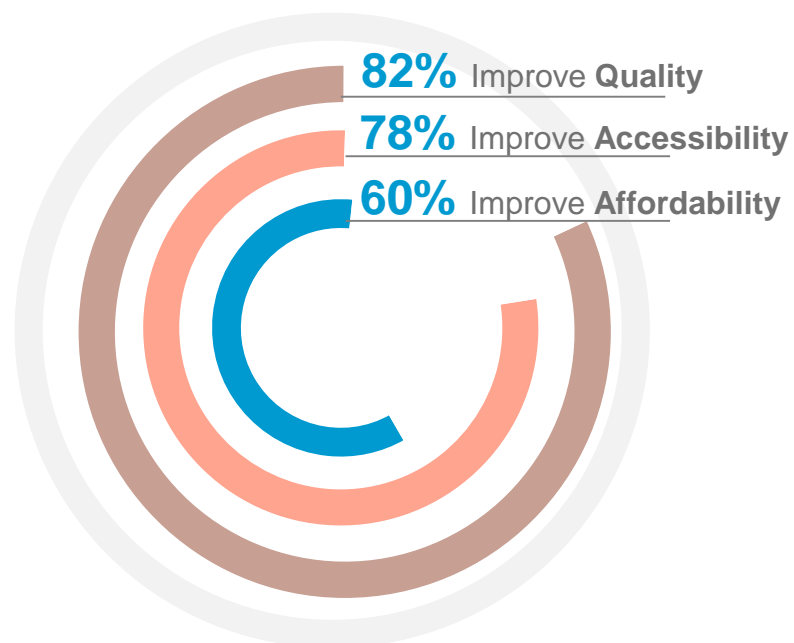
### Total Funding (In USD Mn)

H1 2017 160

129% Growth YoY ↑

H1 2016 70

## Healthtech start-ups addressing the three pillars of Healthcare<sup>1,2,3</sup>



Overlaps exist

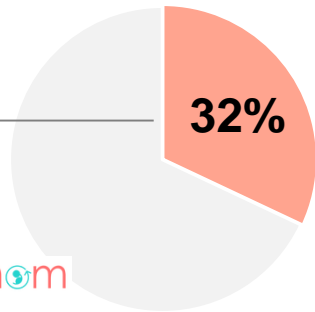
In India, quality, accessibility and affordability cannot be looked at in silos. It is interconnected. Timely intervention for people living in remote areas through tele-medicine can reduce hospitalisation. This in turn will allow hospital staffs to deliver better quality of care to in-patients. Similarly, making people aware of various healthcare choices via a platform not only improves access, but also makes people aware of affordable choices. And Healthtech start-ups are striving to address all of these. When asked what it is that their key product intended to improve in the healthcare space, **82% of start-ups indicated Quality, 78% Accessibility, and 60% affordability.** Affordability to be looked at as solutions that target the rising out-of-pocket expenditure, whichever way possible.

<sup>1</sup> Start-up def. - Healthtech product start-ups, incorporated 2010 onwards; <sup>2</sup> Based on a survey of healthtech start-ups where N=86; <sup>3</sup>Overlaps between Quality, Accessibility, Affordability

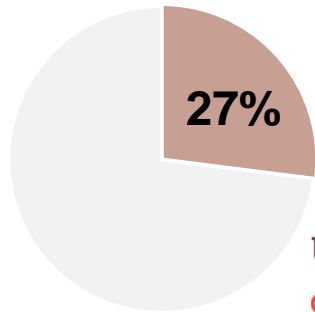
# Top Segments of Focus (1/3) – Telemedicine/tele-health, consumer-centric apps, information management, online aggregators/eCommerce platforms

## Healthtech start-up analysis by segments<sup>1,2,3</sup>

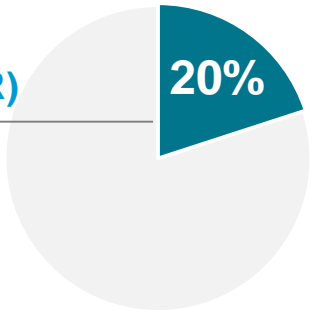
Telehealth/  
Telemedicine



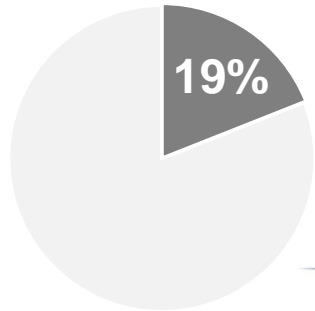
Consumer-centric  
Wearable/  
Lifestyle Apps/  
Content Platforms/  
Health Monitoring



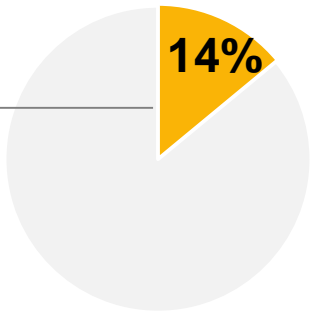
Information  
Management  
(HIS, EMR, EHR)



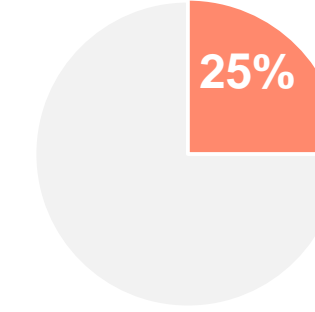
Aggregator/eCommerce  
e/Service Platforms



Technology assisted  
Surgery/  
Diagnosis



Others (Insurance,  
Life Sciences, Medical  
Training, Blockchain,  
Genomics, AR/VR, )



While the previous generation healthcare companies, both in India and globally, have been focused on Hospital Information Management Solutions, most new age companies are now offering a whole host of apps that can improve the way healthcare services are delivered and managed. **Telehealth/Telemedicine** and **Consumer-centric apps** are the two big segments of play for the Indian Healthtech product companies.

Interesting will be to note some comparisons with the Fintech sector – how India had a short stint with plastic money (credit cards particularly) before plunging into the mobile wallets gamut, and thanks to wallets and online payments, **India's FinTech adoption rate in fact exceeded global averages**. Similar analogy can be made to the Indian Healthtech sector which never really witnessed a phase of large-scale adoption of client-server on-premise EHR systems, and jumped straight to digital technologies.

Indian healthtech is emerging and growing at a time of digital era, where we are talking about consumer-centric apps, cloud storage, APIs for integration, IoT for M2M connectivity, more touch-points with end consumers (patients) – all together creating and aggregating data for advanced algorithms to run, and provide personalization.

In fact, across all the six key segments, Indian Healthtech ecosystem is witnessing the rise of promising start-ups which not only understand digital technologies but ingeniously map them with Indian environment and challenges.

<sup>1</sup> Start-up def. - Healthtech product start-ups, incorporated 2010 onwards; <sup>2</sup> Based on a survey where N=86; <sup>3</sup> Overlaps between segments, so 1 start-up can fall into multiple categories

# Top Segments of Focus (2/3) - Illustrative examples of start-ups<sup>1</sup> across segments

**STRIDES**  
software solutions



Blood Bank  
Management System



**netmeds.com**  
India Ki Pharmacy

Licensed pharmacy  
marketplace

Search for Prescription Medicines & OTC Products...



PRESCRIPTIONS ▾ NON-PRESCRIPTIONS ▾



Touchkin

Predictive care  
start-up, offers  
Wysa – a mental  
health AI-  
conversational  
chatbot



**HRS**  
Navigation



Computer assisted  
technologies for brain  
and ENT surgeries

easyNav™ Navigation System

Single trolley design with flexible camera  
arm

**Cardiotrack**

Clinical grade  
monitor for **12-lead  
ECG**, SpO2 and  
blood pressure  
Uses **AI**, machine  
learning and data  
analytics to provide  
accurate predictive  
diagnosis for faster  
intervention



**Niramai**

AI-based non-  
invasive breast  
cancer screening  
solution - uses  
high resolution  
thermal sensing  
device and cloud  
hosted analytics  
solution for  
analysing thermal  
images



**VitaCloud**










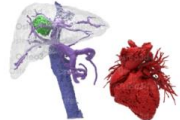


Provides continuous and connected  
care – uses data-driven approach to  
manage chronic health conditions



- Telehealth/Telemedicine
- Consumer-centric Solutions
- Health Information Management Solutions
- eCommerce/Aggregator/Marketplace
- Technology-assisted Diagnosis/Surgery

<sup>1</sup> Start-up def. - Healthtech product start-ups, incorporated 2010 onwards

# Other Healthtech Segments (3/3) – Illustrative examples of start-ups<sup>1</sup>

Segment	Company Name	Product Offerings	Sample Images
Life Sciences Software	 <small>Clinical Trials: A Digital Transformation</small>	Provides solutions for eSourcing, Monitoring and Patient Engagement in clinical trials, for pharma, biotech and med device companies	
Virtual Reality		Offers LoopFit™ – Indoor fitness training that offers immersive VR, IoT and analytics in a multi-player gaming environment	
Medical Training		Offers engaging games to practice infection control methods, based on guidelines by Centre for Disease Control and Prevention (CDC) and World Health organization (WHO) – for medical students, doctors, physicians or nurses	
Genomics (part of life sciences software)		Offers a genomic database - OncoMD powered by software, bioinformatics and computational tools to drive exploratory research in cancer	
3D printing		Develops patient specific 3D printed organs using proprietary software algorithm	
Doctor Social Networking		Social networking for doctors, medical students, healthcare organizations	

<sup>1</sup> Start-up def. - Healthtech product start-ups, incorporated 2010 onwards



## Key Disease Areas Targeted (1/2) – 33% start-ups focused on chronic lifestyle diseases

As per Lancet Journal, the top five leading causes of DALYs\* in India in 2016 were **ischaemic heart disease, chronic obstructive pulmonary disease (COPD), diarrhoeal diseases, lower respiratory infections, and cerebrovascular disease**. Over the years, the disease burden is seen to be gradually shifting from communicable, maternal, neonatal and nutritional diseases (CMNNDs) to non-communicable diseases (NCDs). In line with this trend, Healthtech start-ups in India have a focus on chronic lifestyle diseases namely heart health, obesity and diabetes, offering technology products for increasing disease awareness, early diagnosis, monitoring and maintenance. In fact, across the gamut of NCDs, including oncology, the focus is now beginning to shift towards prevention with several start-ups working on technologies for wellness and early detection – early detection being enabled by data-driven analytics and machine learning. Mental Health as a category is also drawing attention with AI-based conversational chatbots, community/collaboration platforms, remote counselling and so on. Having said that, there are also start-ups who are focused on CMNNDs, which are still rampant in the Asian, African and Latin American countries, including India, and holds promises to curb disease outbreak globally. Take **TrackitNow**, for example, which offers a smart mosquito density monitoring system. The start-up is working with Ministry of Urban Development, India, to create mosquito density heat maps by location, gender and species, thus prioritizing areas for fumigation and measuring its effectiveness. Similarly, there are also start-ups focused on increasing awareness of maternal and neonatal health, and offer solutions for monitoring of pregnant mothers in rural areas.

### 33% start-ups focused on Chronic Lifestyle Diseases<sup>1,2,3</sup>

**Multiple NCDs<sup>4</sup>**

**14%**

**Cardiac-related**

**8%**

**Oncology**

**9%**

**Wellness**

**7%**

#### Others

Mental Health, Neurology, Infectious Diseases, Diabetes, Trauma/Emergency, Respiratory, Disability, Ortho, Women's Health, Oral/Dental etc.

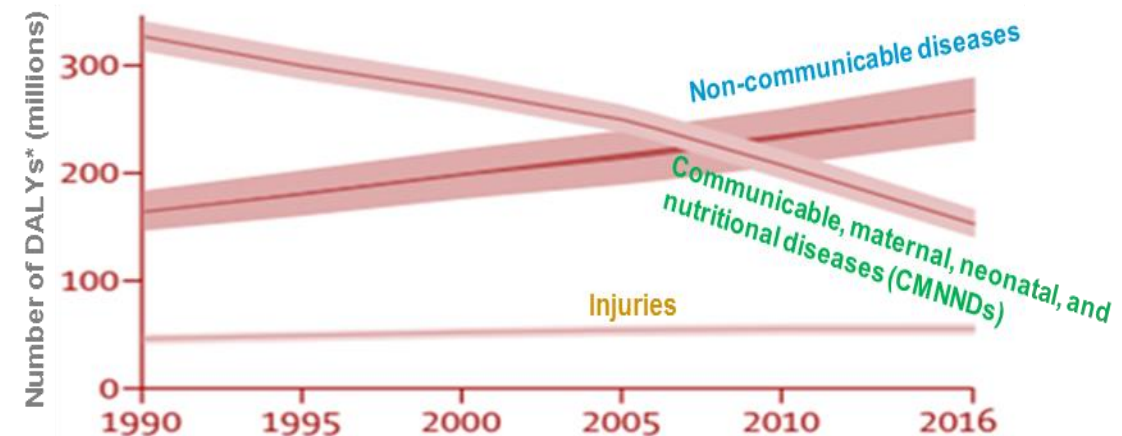
**22%**

49% start-ups do not have a specific focus, namely the aggregators/eCommerce tele-medicine providers, EHR/EMR providers

Overlaps exist



















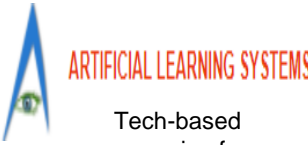



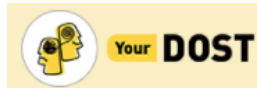







### Rising burden of chronic non-communicable disease (NCDs)



\*DALY - Disability-Adjusted Life Year – Represents overall disease burden, expressed as the **number of years lost** due to ill-health, disability or early death

<sup>1</sup> Start-up def. - Healthtech product start-ups, incorporated 2010 onwards; <sup>2</sup> Based on a survey where N=86, <sup>3</sup>Overlaps exist; <sup>4</sup>Multiple NCDs' generally include heart diseases, diabetes, hypertension, obesity, general wellness

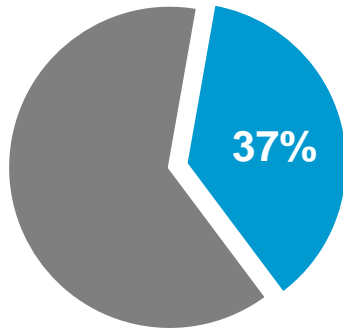
# Key Disease Areas Targeted (2/2) – Illustrative examples of start-ups across disease areas<sup>1,2</sup>

 <p>Cardiac-related</p>	 <p>Oncology</p>	 <p>Diabetes</p>	 <p>Neurology</p>	 <p>Communicable Diseases</p>	 <p>Wellness</p>	 <p>Mental Health</p>
 <p>Provides cardiac monitoring/diagnosis via intelligent systems that enable automatic remote reporting</p>	 <p>AI-based screening and detection of cervical cancer</p>	 <p>Chronic disease management platform focused on diabetes</p>	 <p>Smart watch specifically designed for patients with dementia and Alzheimer's</p>	 <p>Working on technology for early detection of TB</p>	 <p>Integrated health and fitness platform – healthcare services</p>	 <p>AI conversational mental health chatbot, also connects to health apps to extract data for better analysis</p>
 <p>Quick ECGs, <b>screening</b> patients for early warning signals</p>	 <p>Data analytics platform for oncology that aggregates information on cancer patients for research</p>	 <p>Tech-based screening for Diabetic Retinopathy screening</p>	 <p>Clinical diagnostic device for diagnosing the root cause for dizziness and vertigo using a goggle</p>	 <p>A Smart Mosquito Control Management Solution, helps in the eradication of mosquito-borne diseases – offers smart trap, count &amp; classify, and real-time reports</p>	 <p>Personalized genetic testing provider for preventive healthcare and fitness</p>	 <p>An online counselling platform</p>
 <p>mobmon 12.0: 12-Lead Resting ECG with real-time remote monitoring</p>	 <p>AI-based cross-disease healthcare diagnostic solution</p>	 <p>End-to-end diabetes management platform</p>	 <p>Smartwatch for location tracking, fall detection, rescue for Dementia/Alzheimer's patients</p>	 <p>AI-based cross-disease healthcare diagnostic solution</p>	 <p>Gesture control Smart watch with gestures, personal safety, fitness, health and nutrition</p>	 <p>Mood analysis and stress management</p>

<sup>1</sup> Start-up def. - Healthtech product start-ups, incorporated 2010 onwards; <sup>2</sup> Examples not necessarily from survey participants

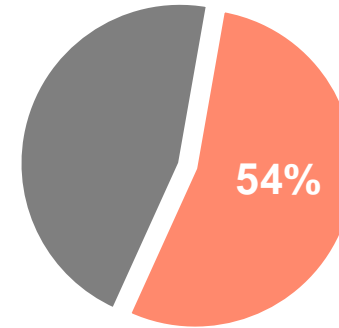
# Medical IoT and Artificial Intelligence – Indian start-ups<sup>1</sup> exhibit strong focus

## Medical IoT<sup>1,2</sup>



Start-ups have/are building IoT component into their products

## Artificial Intelligence<sup>1,2</sup>



Start-ups have/are building AI component into their products

### Technology-assisted Diagnosis/Surgery



Offers IoT solutions for remote diagnosis



IoT-enabled remote diagnosis of eye problems



Leveraging AI to diagnose and recommend personalised treatment plans from healthcare imaging data such as CT, MRI scans and X-rays



Offers AI-powered cervical cancer detection system for early diagnosis.



Using deep learning and cloud computation to help physicians with data-driven clinical insights to enable better care

### Telehealth/Telemedicine



IoT-enabled remote diagnosis of eye problems



Provides cardiac monitoring/diagnosis via intelligent systems that enable automatic remote reporting



Offers IoT solutions for remote diagnosis



POC solutions for cardiac care using AI and IoT approaches



End-to-end health-monitoring AI-enabled IoT platform

### Consumer-centric solutions



Bolt offers wearable solution for fitness tracking and coaching – smart shoes + wristband + app



AI and IoT-enabled smart watch with features like heart monitoring and gesture recognition



AI and IoT-enabled comprehensive lifestyle tracking platform



AI conversational mental health chatbot, also connects to health apps to extract data for better analysis



AI-based health content, consultation, networking platform

### Health Information Management Solutions



Offers portable ECG machines with easy data transfer to mobile phones



Pen to text electronic medical records solution



Encoded pen & paper system to write prescriptions that gets transferred to cloud – adding layers of ML and handwriting recognition

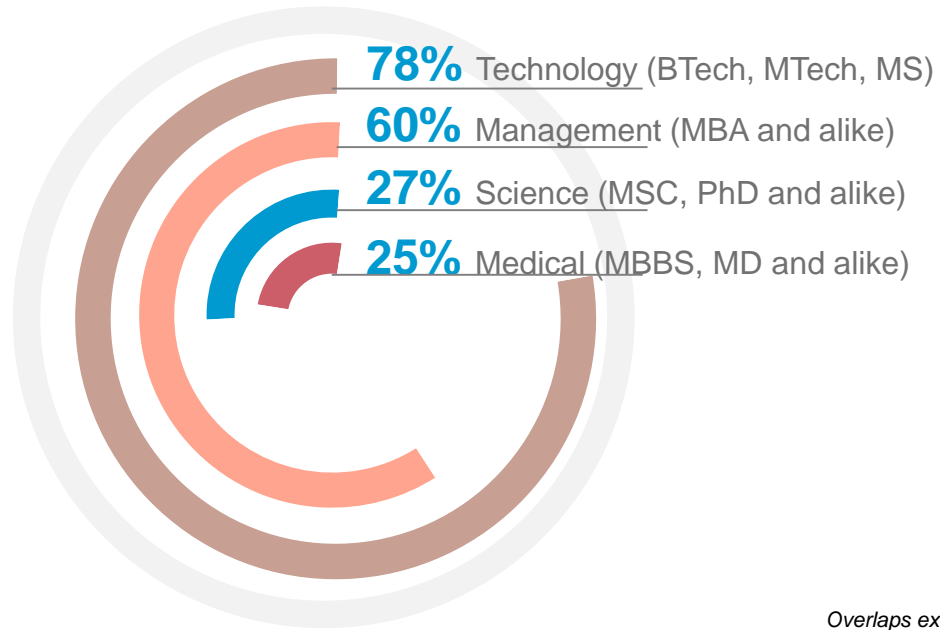


Deploys AI and big data to offer doctors and patients access to clinical data for better health management

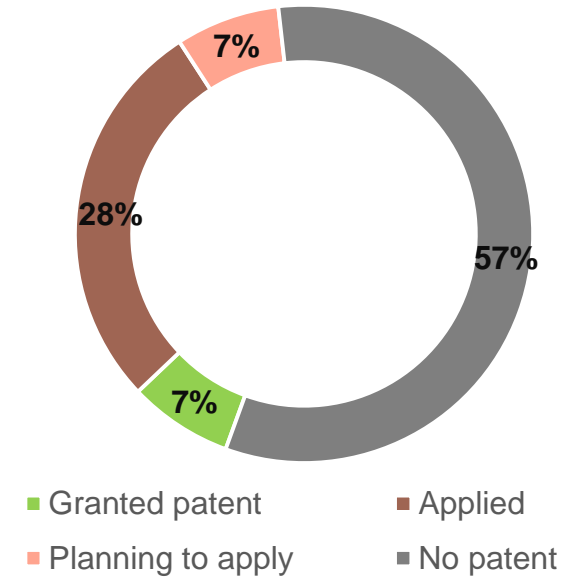
<sup>1</sup> Start-up def. - Healthtech product start-ups, incorporated 2010 onwards; <sup>2</sup>Based on a survey where N=86; <sup>3</sup>Examples not necessarily from survey participants

# Quality of Start-ups – Continues to improve with 25% founders having medical background

1/4<sup>th</sup> of the founders have medical background<sup>1,2,3</sup>



> 1/3<sup>rd</sup> of the start-ups have been granted or applied for patents<sup>1,2</sup>



Like the overall start-up ecosystem, the Healthtech start-up environment is also witnessing a shift in its product offerings. One cannot deny that Health aggregators/eCommerce platforms attract significant chunk of the funding, but it is also important to note that these platform start-ups are also diversifying their offerings. [Practo](#), for example, offers an aggregator platform for patients to search for doctors and book appointments, also offers practice management/information management software for doctors and providers. The company is working on how Artificial Intelligence could be leveraged by doctors for better decision making and better outcomes. Similarly take [Portea](#), for example, which is a platform-based home healthcare service provider, which is also using cutting-edge technologies to improve delivery of services.

And then there are Healthtech start-ups which are working on niche areas, with advanced technologies. While [MapMyGenome](#) analyses genomic data to provide insights on individual's health, traits, lifestyle, drug responses etc., [qure.ai](#) uses cutting-edge deep tech to help diagnose disease and recommend personalized treatment plans from healthcare imaging data. As highlighted earlier, 54% of healthtech start-ups in India have/are incorporating Artificial Intelligence into their product. As we talk, India's healthtech start-up ecosystem continues to delve deeper into technologies and solutions that address healthcare challenges in India, and with the right support and mentorship from the ecosystem, can give rise to robust and scalable products.

<sup>1</sup> Start-up def. - Healthtech product start-ups, incorporated 2010 onwards; <sup>2</sup> Based on a survey where N=86, <sup>3</sup>Overlaps exist



# Achieving Scale

# Funding Landscape – eCommerce/aggregators/service platforms, tech-enabled diagnosis and remote healthcare are the top areas

**\$160+  
Mn**

## Healthtech Start-up Funding in H1 2017<sup>1</sup>

(129% growth in funding from H1 2016)

Within the entire start-up landscape, Healthtech is one such vertical which is getting significant traction. Healthtech funding more than doubled in 2017<sup>1</sup>, and one can clearly take note of the segments where investors are taking interest. eCommerce/aggregators/wellness platforms are investors' favourite; however, tech-enabled diagnostics (for better disease prognosis, early detection, remote diagnosis) and remote-consultation solutions are becoming popular. These solutions have significant relevance in the global markets as well, since they solve critical healthcare challenges. Indian healthtech start-ups are practically shaking up the landscape, with their innovative ideas and offerings. The time is ripe for the ecosystem to come together and propel the promising start-ups, who have the potential to change the way healthcare services are delivered in India, both in urban and rural areas.

### Top funded start-ups of 2017 (Illustrative list)



**(\$25 Mn Funding)**–  
end to end health and  
wellness platform



**(\$18 Mn Funding)**– Order  
and scheduling diagnostic  
check-up



**(\$15 Mn Funding)**–  
online pharmacy



**(\$4.5 Mn Funding)**– Online  
Platform to connect to wellness  
experts and buy healthy food



**(\$5.8 Mn Funding)**–  
Offers membership for  
more than 1000+  
gyms in NCR



**(\$1.35 Mn Funding)**–  
Fitness and coaching  
startup



**(\$14 Mn Funding)**–  
Online pharmacy



**(\$5.8 Mn Funding)** –  
ML-based solution for  
medical diagnosis



**(\$5 Mn Funding)**–  
Messaging app for doctors  
and patients



**DocsApp (\$7.2 Mn  
Funding)**– Chat-based  
Tele-consultation



**(\$1.5 Mn Funding)**– Online  
consultation for women –  
pregnancy, general wellness



**(Funding Undisclosed)**–  
Offers Breast Cancer  
Screening Solutions

Survey  
Results<sup>2</sup>

- **Aggregators/eCommerce/Services Platforms** and **Technology-assisted Surgery/Diagnosis** were the top 2 areas with >70% of start-ups funded, followed by **Remote Patient Monitoring/Remote Diagnosis/Telemedicine/Online Consultation**, with >60% start-ups funded

1. Data taken from NASSCOM-Zinnov Start-up Report - Only considers Healthtech product start-ups incorporated in the last five years; 2. Based on a survey of Healthtech product start-ups incorporated since 2010, where N=86

# Support Ecosystem – Rise in activities, yet need for outcome-driven initiatives and creation of standards for better adoption

## Role of the Government

The Cabinet approved the National Health Policy in March 2017, 14 years later the last health policy was released. The policy has extensive recommendations on usage of Digital Health tools, including setting up of National Digital Health Authority to regulate, develop and deploy digital health across the continuum of care. Given below are key areas for implementation of Digital Health as per the policy:

Establishing federated national health information architecture, to roll-out and link systems across public and private health providers

Mental health consultation & counselling

Connecting primary, secondary and tertiary healthcare facilities

Using digital tools for epidemiological surveys

Medical education/training

Scaling of digital consultation

Leveraging digital tools for Ayush

## Global players fuelling the Indian landscape (*Illustrative Examples*)

**PHILIPS**

Runs an accelerator program 'Philips HealthWorks' – selected 4 promising start-ups - NIRAMAI, Parentlane, Touchkin, Theranosis

**IBM**

Conducted Smartcamp Challenge for Healthtech, and shortlisted 8 innovative healthtech start-ups



Microsoft Ventures

Established T-Hub Health Tech Innovation Accelerator in collaboration with T-hub and Merck

## Initiatives by Associations



One of the first Healthtech Summit by NASSCOM - **Digital Transformation: Agile, Affordable Healthcare** – that brought together CIOs of healthcare organizations, Ministry of IT, Ministry of Healthcare, Entrepreneurs, Innovators and other relevant stakeholders of the ecosystem



Has a strong focus on healthcare investments in India; has an accelerator program that attracted several healthtech companies; one of the investors for Portea, which is a home healthcare start-up with the widest reach in India

# Outlook (1/2) – The next 2-3 years will be focused on systematic data creation, remote healthcare, more focus on wellness and disease prevention and creation of connected health environment

Given the length and breadth of engagement that Indian Healthtech start-ups have involved themselves in, one can expect innovative products to emerge from India in the next 2-3 years. From IoT and Artificial Intelligence to Blockchain and AR/VR, Indian healthtech start-ups are exploring several new frontiers. Considering the traction seen so far, given below are **six prominent themes** that will emerge in India by 2020:

## Home healthcare

- With the rise in NCDs, geriatric population and the lack of adequate hospital infrastructure, home healthcare is picking up in India
- The concept of old-age home in India is not very acceptable, plus many NCDs and post-surgical care don't even need hospitalisation - just regular care and monitoring
- Start-ups like [Portea](#) and [Care24](#) are changing this space with technology-enabled home healthcare services

## Remote health and mobile health

- Remote healthcare has relevance in two main scenarios - providing healthcare at home OR connecting primary care providers in remote areas to specialized doctors in the cities
- Includes remote consultation, diagnosis, radiology and monitoring
- Companies such as [Apollo tele-health services](#), [ePsyclinic](#), [iCliniq](#), [Savemom](#) and [GrowAyu](#) are enabling remote healthcare in India

## Wellness, disease prevention

- With the rise in lifestyle diseases such as diabetes, cardiovascular diseases and hypertension, most people in tier 1 and tier 2 cities want to take charge of their health, bringing a shift from treatment to prevention
- The rise in wearables and fitness bands is further enabling this
- Wellness-focused start-ups such as [Cure.fit](#) have a range of offerings from online ordering of healthy food, home fitness services to providing meditation sessions
- Most wellness start-ups have quite wide focus, mostly providing integrated end-to-end platforms

## Creation of data – rise of health-records - standardisation – patient driven healthcare system

- More than a theme, this is a major requirement of Indian healthcare landscape
- There is a strong need for hospitals to take patients' medical records on the cloud, to make accessibility of data easier in the hospitals, at home, and while on-the-go
- Only then enough data will be available for advanced algorithms to run and predict patterns
- There is a serious need for timelines/framework to achieve digitisation of health records

## Rise in the use of health service-aggregators/eCommerce

- While there may be a school of thought that feels health service aggregation is not a big innovation in India, the options and avenues that these aggregators/eCommerce have created is phenomenal
- Take [Zoctr](#), for example – this home healthcare aggregator offers multiple services such as consultations, remote monitoring, laboratory, pharmacy, medical equipment and telehealth – all in one place, giving multiple options for consumers to be able to select what seems affordable and most suitable

## Platform economy - connected health

- In line with rest of the themes, IoT in healthcare will pave way for a connected healthcare environment
- IoT enables the care continuum to seamlessly flow from hospital to homes
- MNCs like [Philips Healthcare](#) and start-ups like [Portea](#) and [VitaCloud](#) are using technology and IoT to enable this
- But this seamless integration can only happen when hospitals take their patient data online, and provide a secure way of patient-controlled data transmission



# Outlook (2/2) – Patient engagement, compliance, adherence, remote diagnosis and better management of communicable diseases are areas requiring technology intervention

While the themes discussed previously highlight technologies and initiatives which are already underway and will become pervasive by 2020, here are some **opportunity areas** which are also essential need-gaps for Healthtech companies to pitch in:



## Patient engagement/outreach



Offers customized digital marketing platform with light weight, animated and interactive rich media content for better engagement of patient

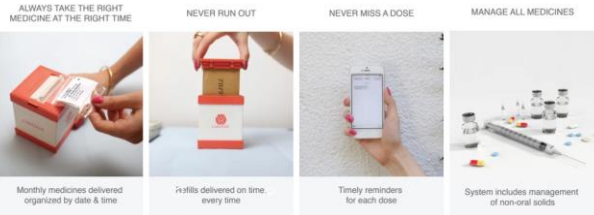
STEP 7



## Managing medication errors, over-medication – better traceability and treatment adherence



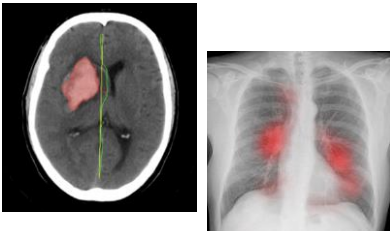
A medicine adherence venture that enables healthcare entities to manage, track & optimise patient care by providing them with proprietary technology & packaging products.



## Remote/better diagnosis of diseases



Leveraging AI algorithms to quickly diagnose and recommend personalised treatment plans from healthcare imaging data such as CT, MRI scans and X-rays



## Technologies to combat communicable diseases



A non-profit organization founded in 2006 to bring tuberculosis treatment to disadvantaged communities. Provides eCompliance solution - an innovative solution allowing them to track every dose taken by each of their 76,089 patients



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