



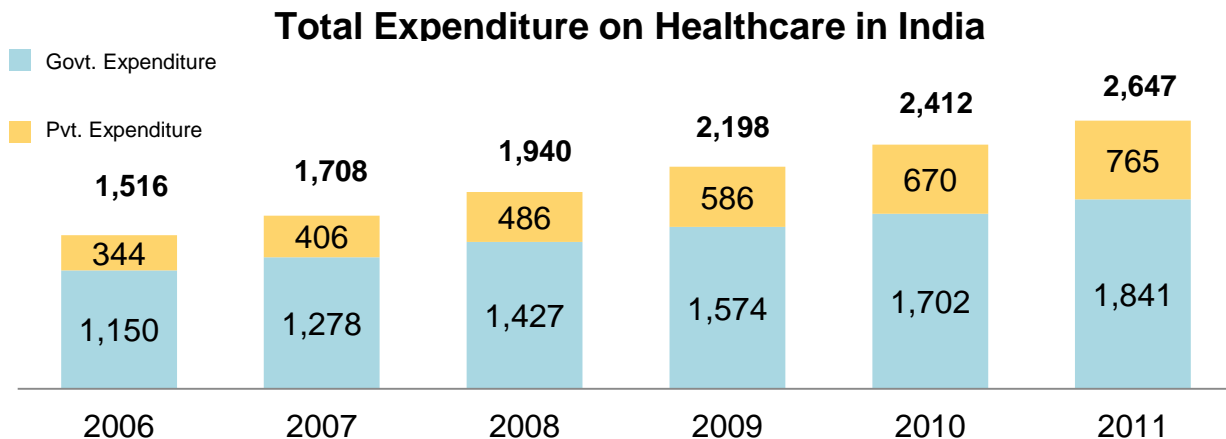
**NATIONAL
CONFERENCE
ON e-GOVERNANCE**
30th & 31st January 2014, Kochi

Delivering e-Health in India

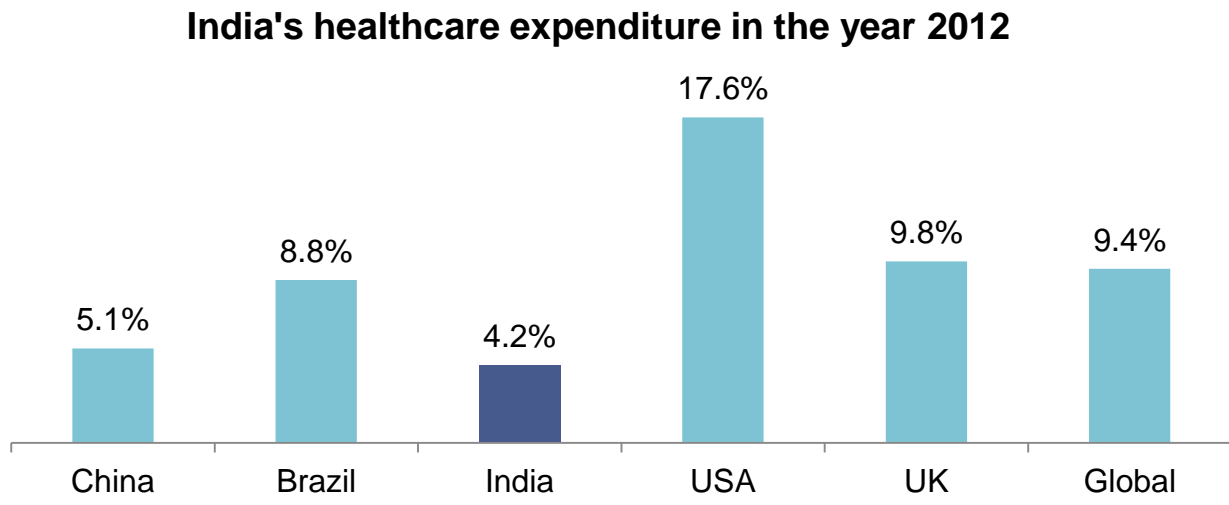
Current Status of Healthcare in India

Despite India's economic prowess, It still lags behind in global and regional standards for healthcare

As a result, India loses 6% of its GDP annually due to premature deaths and preventable illnesses, as estimated by a World Bank report



Even though the expenditure on health has been rising over the past few years...



...The health expenditure in India (as percentage of GDP) is still lagging behind other BRIC countries and Global Standards

While the system structure has evolved over the past 50-60 years, three major challenges persist

Indian healthcare system continues to suffer from underfunding and poor governance which have created significant inequities in providing basic health care

Despite the momentum caused by various reforms, Indian Healthcare faces three major challenges



Substantial gaps in healthcare infrastructure

Hospital bed density in India has stagnated at 0.9 per 1000 population since 2005 and falls significantly short of WHO laid guidelines of 3.511 per 1000 patients' population.

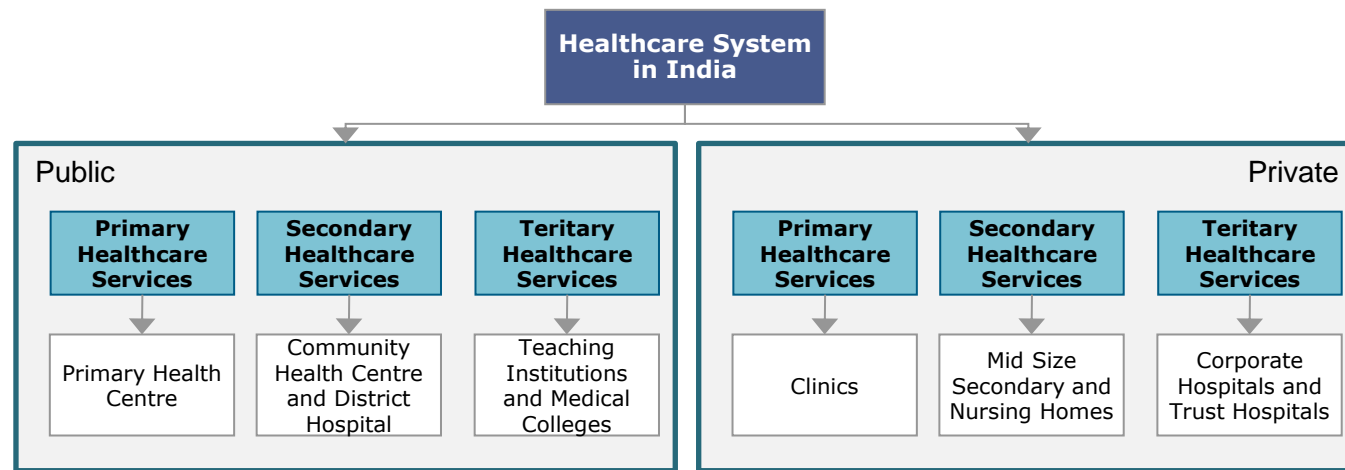
Low Healthcare Insurance Coverage

Leads to high levels of out of pocket spending: Nearly 80% of healthcare spend in India is out-of pocket, which when coupled with the fact that healthcare spending is rising faster than the household income paints a bleak picture

Inadequate Medical Manpower

India is currently known to have approximately 600,000 doctors and 1.6 mn nurses. This translates into a resource gap of approximately 1.4 mn doctors and 2.8mn nurses according to WHO guidelines

There is a huge inequity in utilization of facilities at the village, district and state levels with state level facilities remaining the most strained



Use of IT tools as enablers of efficient and optimal Healthcare delivery

Information Technology has been making inroads into the Health sector in India leading to a slew of systems that are being used very satisfactorily

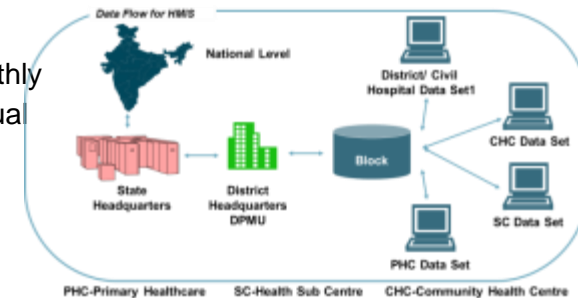
There are a few National Level Health IT Programs which utilize technology and data capture methodologies.

MCTS (Mother and Child Tracking System):

- Launched in 2009 across the country to support India meeting the Millenium Development Goal and especially so by Empowered Action Group States (EAG)
- It captures data of pregnant mothers, new born children along with service providers in name based format
- Incorporation of Electronic payments and direct benefits transfer through Aadhar is an endeavour to improve delivery of services and benefits enabled by this system

HMIS (Health Management Information Systems)

- HMIS logs Monthly Quarterly and Annual Data on various Health indicators



State Level Programs

- TamilNadu, Maharashtra, Rajasthan and Gujarat have implemented Drug Supply Chain systems to achieve cost and time efficiency.
- Tripura, TamilNadu and Rajasthan have implemented Hospital Information Systems to achieve operational efficiency
- Andhra Pradesh, TamilNadu and a few more have implemented a system to monitor the medical health Insurance offered to the BPL patients.

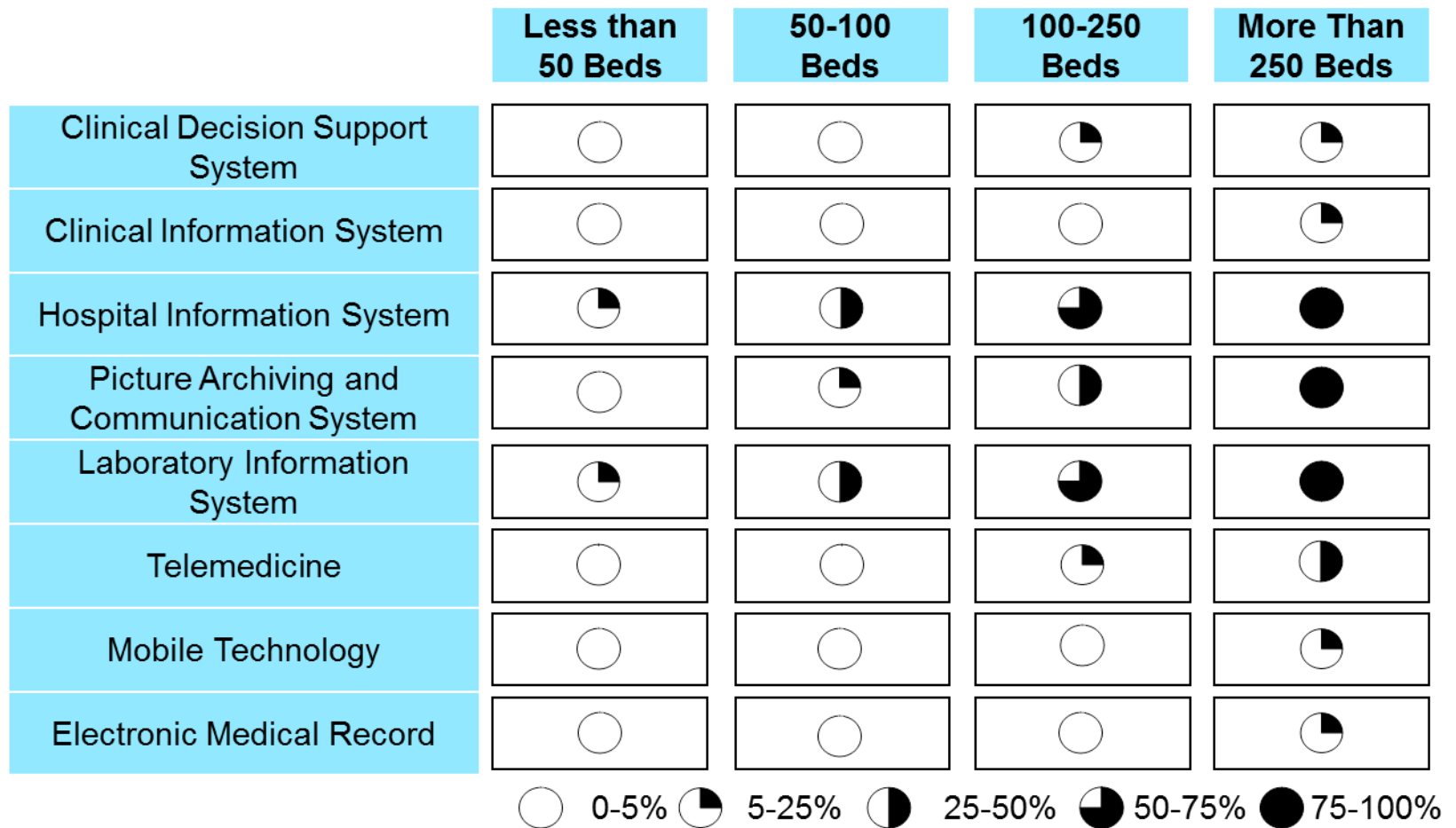
Other Programs

- **Integrated Disease Surveillance Program (IDSP):** for early detection and response to outbreaks.
- **Nikshay:** online tool for monitoring TB control program. Similar programs for Malaria (NAMMIS) and AIDS (NACO) etc. have also been put in place

Snapshot of existing IT in Indian Healthcare

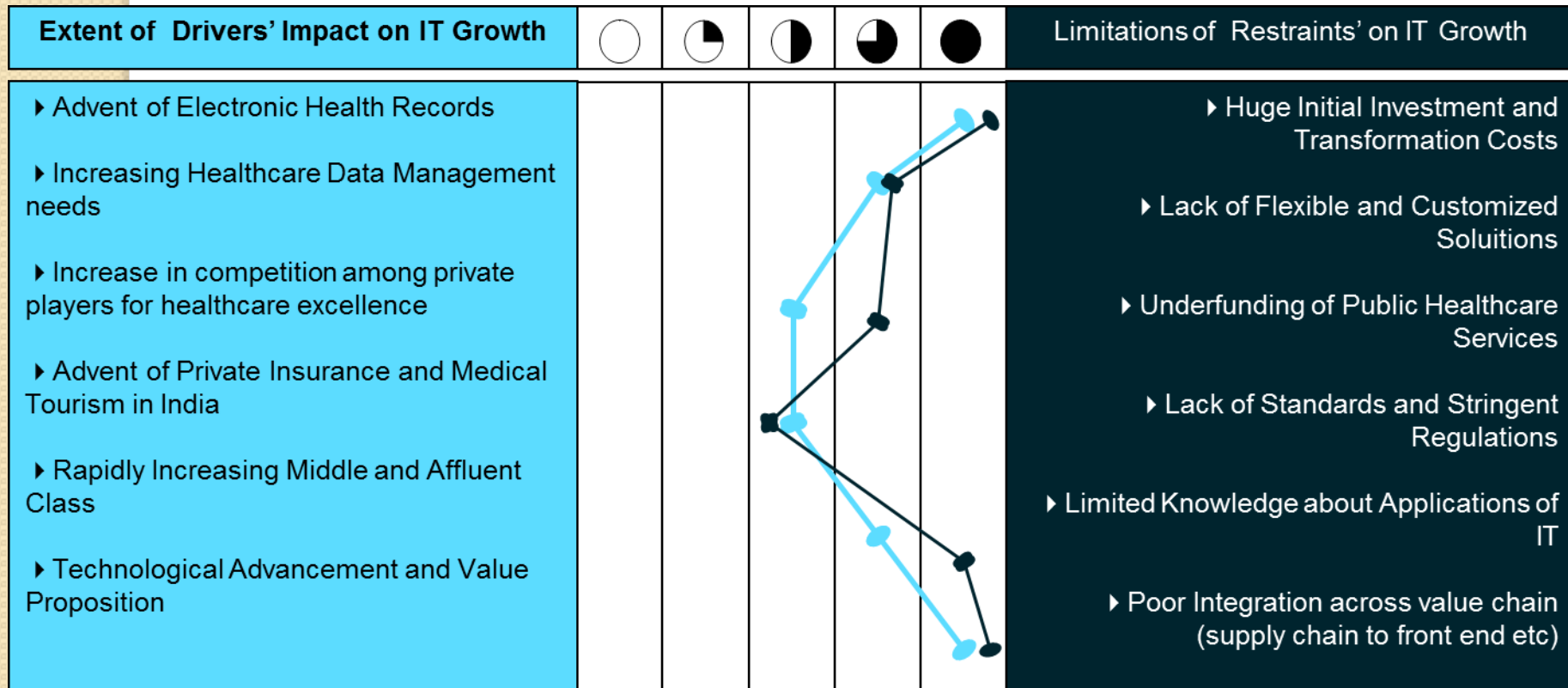
The adoption of IT in Health facilities in India is woefully short of acceptable global benchmarks

The adoption is sporadic and unregulated, with the bigger hospitals taking a more prominent share of IT implementation



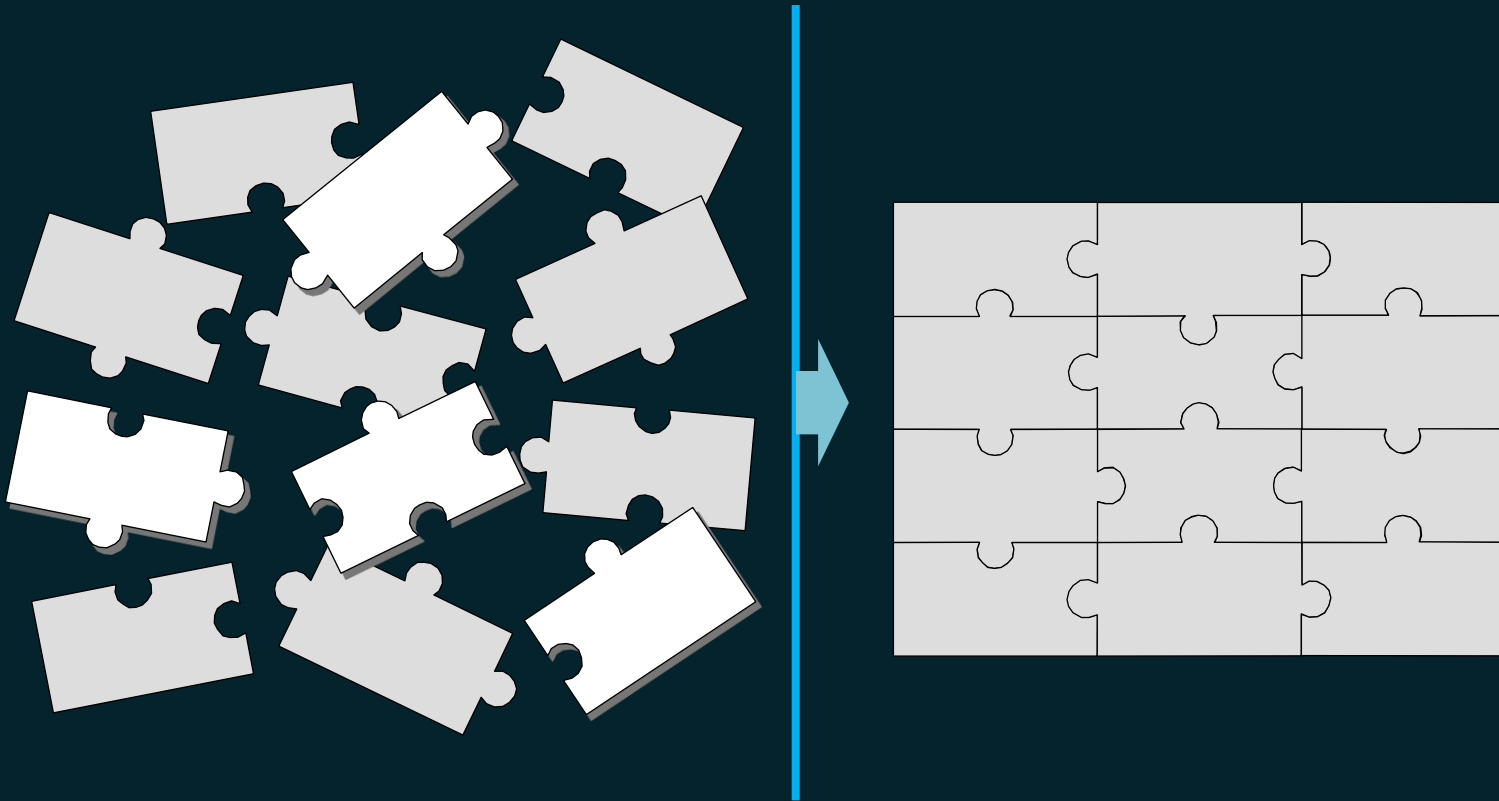
It is imperative to understand the various drivers and roadblocks of IT adoption in health, in order to ensure their successful implementation

Key drivers of IT growth are hindered by restraints that render the progress ineffective when taken as a whole



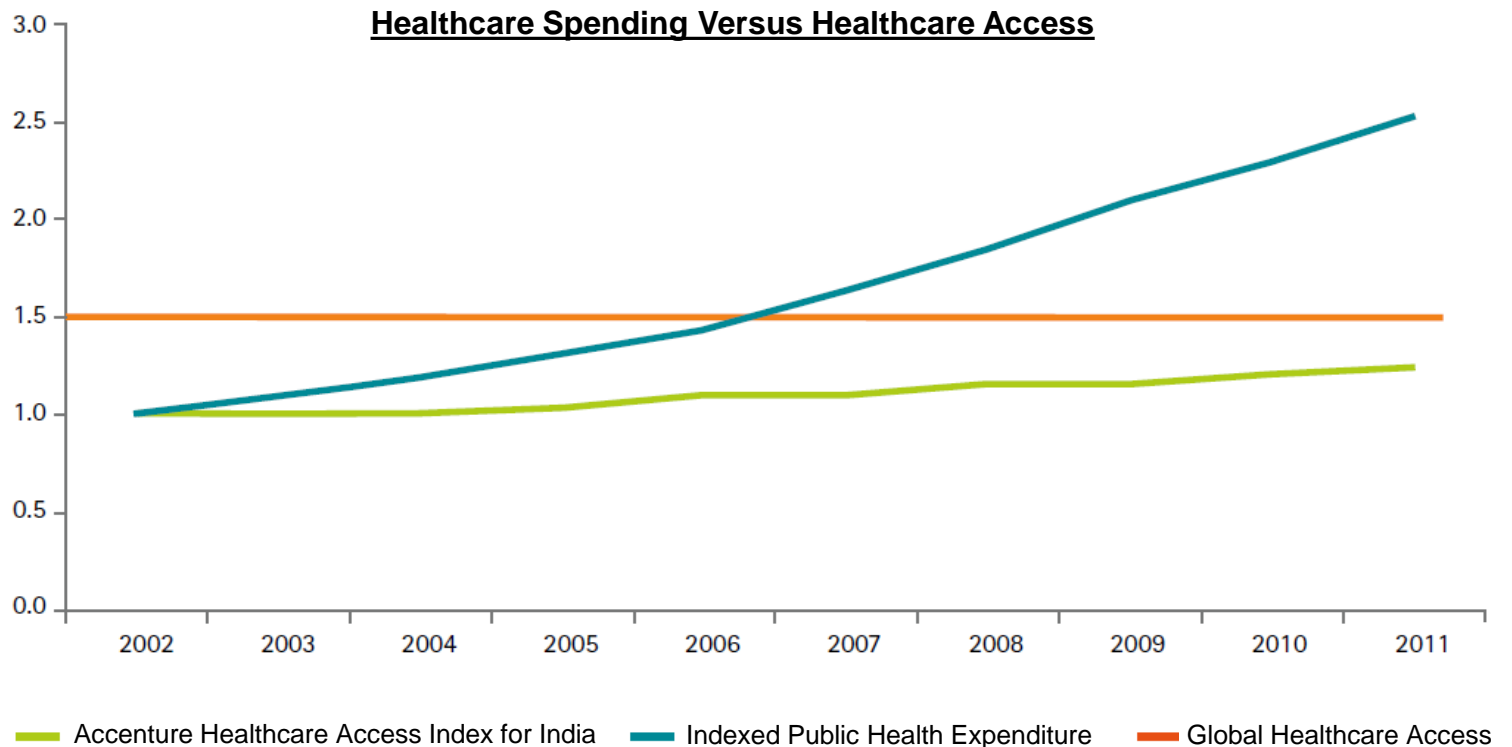
Shifting Landscape: Accenture's View

From “Infrastructure Focus” to “Productivity Focus”



While both spending and access have improved over the past decade, we argue that the returns on increased healthcare expenditure have been suboptimal

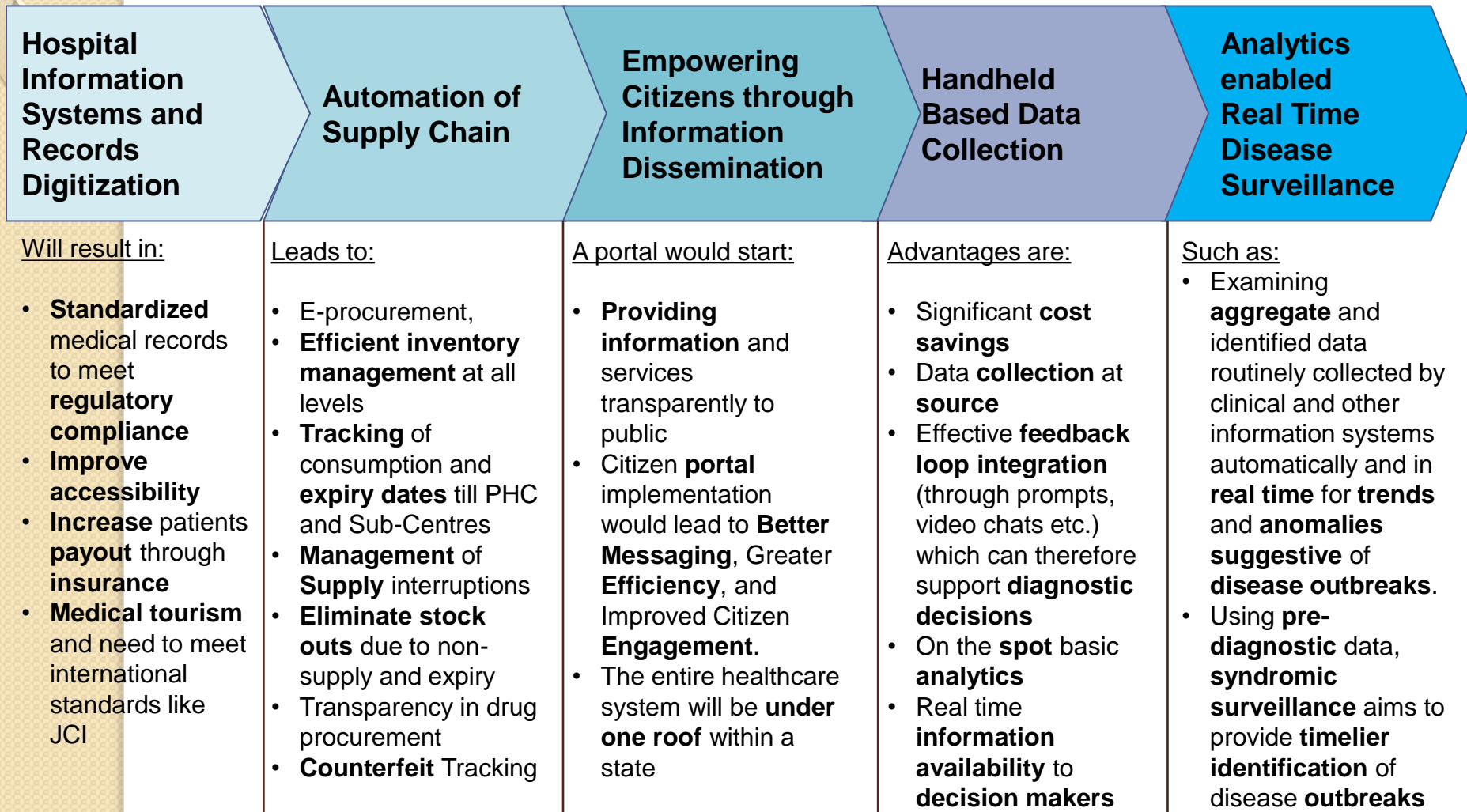
This possibly indicates that a larger funds allocation for healthcare cannot by itself guarantee better access to healthcare unless accompanied by powerful and innovative interventions to improve the healthcare ecosystem



Source: World Health Statistics, World Bank Database, National Health Profile 2011

Recommendations

A coherent holistic effort incorporating latest IT tools and technology is the way forward to counter and overcome the challenges plaguing healthcare delivery



1. Hospital Information Systems and Records Digitization

Hospital Information System can help overcome several challenges like accessibility, portability, affordability, awareness but one of the biggest advantages it offers is enabling patient-centred coordinated care.

Key objectives for implementing hospital information system are:

- Integrated healthcare delivery through **efficient processes/workflows** with focus on improving citizens experience
- Maintain and access **patient electronic health record** at point of care delivery for informed decision making across different care settings
- **Unique patient identification** in different care settings across states and centre
- **Exchange of data** between different healthcare delivery units at primary, secondary and tertiary across public and private sector
- **Improve quality of services**
- **E-referral or electronic referral** enables the seamless transfer of patient information from a primary to a secondary treating practitioner's hospital information system.

The need of having digitalized medical record is to:

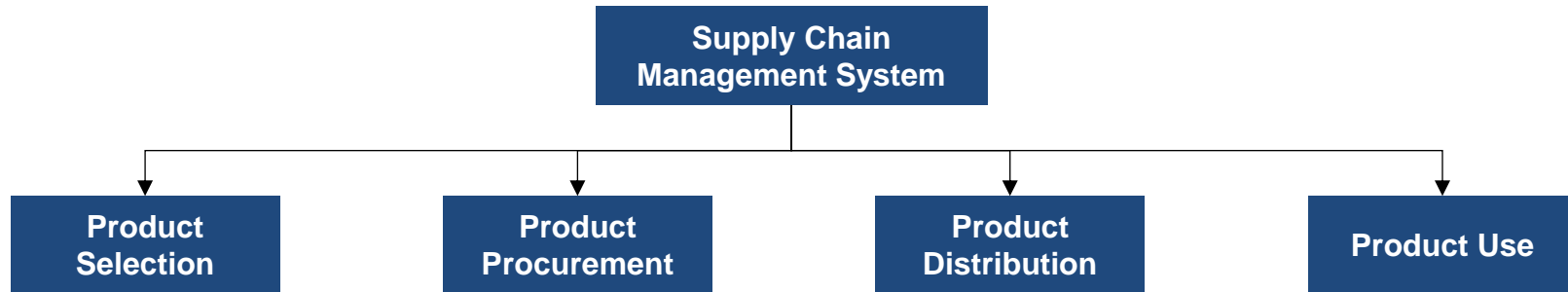
1. Standardize the medical records to meet the regulatory compliance
2. Improve the accessibility
3. Increase in patient getting paid by insurance
4. Medical tourism and need to meet international standards like JCI



In our view the digitization of medical record to take place in following steps:

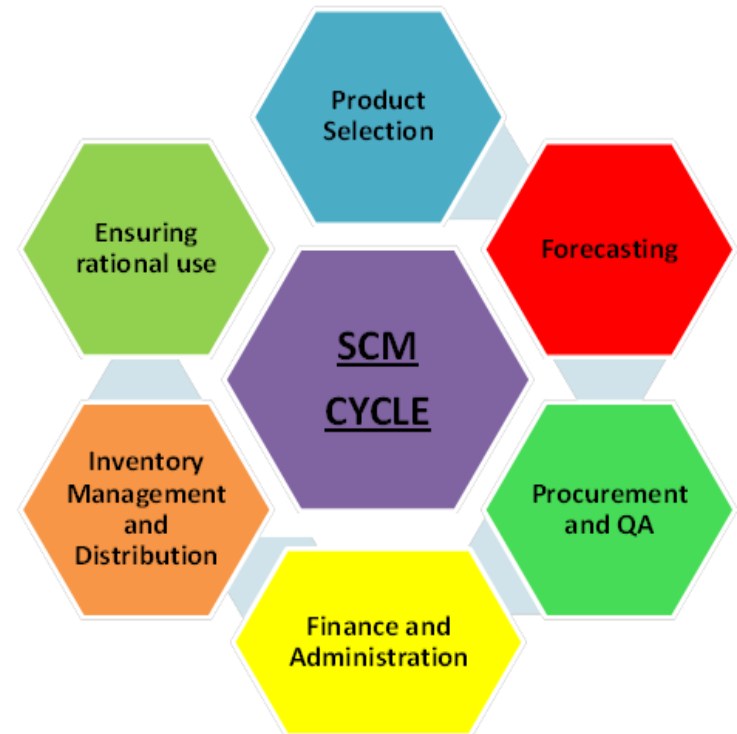
1. Tertiary level hospitals to start off with as early adopters as the infrastructure is available to support this
2. Private hospitals providers as they have the required systems in place and need to train the man power
3. The small medical hospitals which require these system to meet the regulatory compliances and health insurance requirements
4. Outpatient clinics which are not part of any medical facility.

2. Automation of Supply Chain



The key objectives for implementing supply chain management system for drugs, vaccines and medical supplies should be as follows:

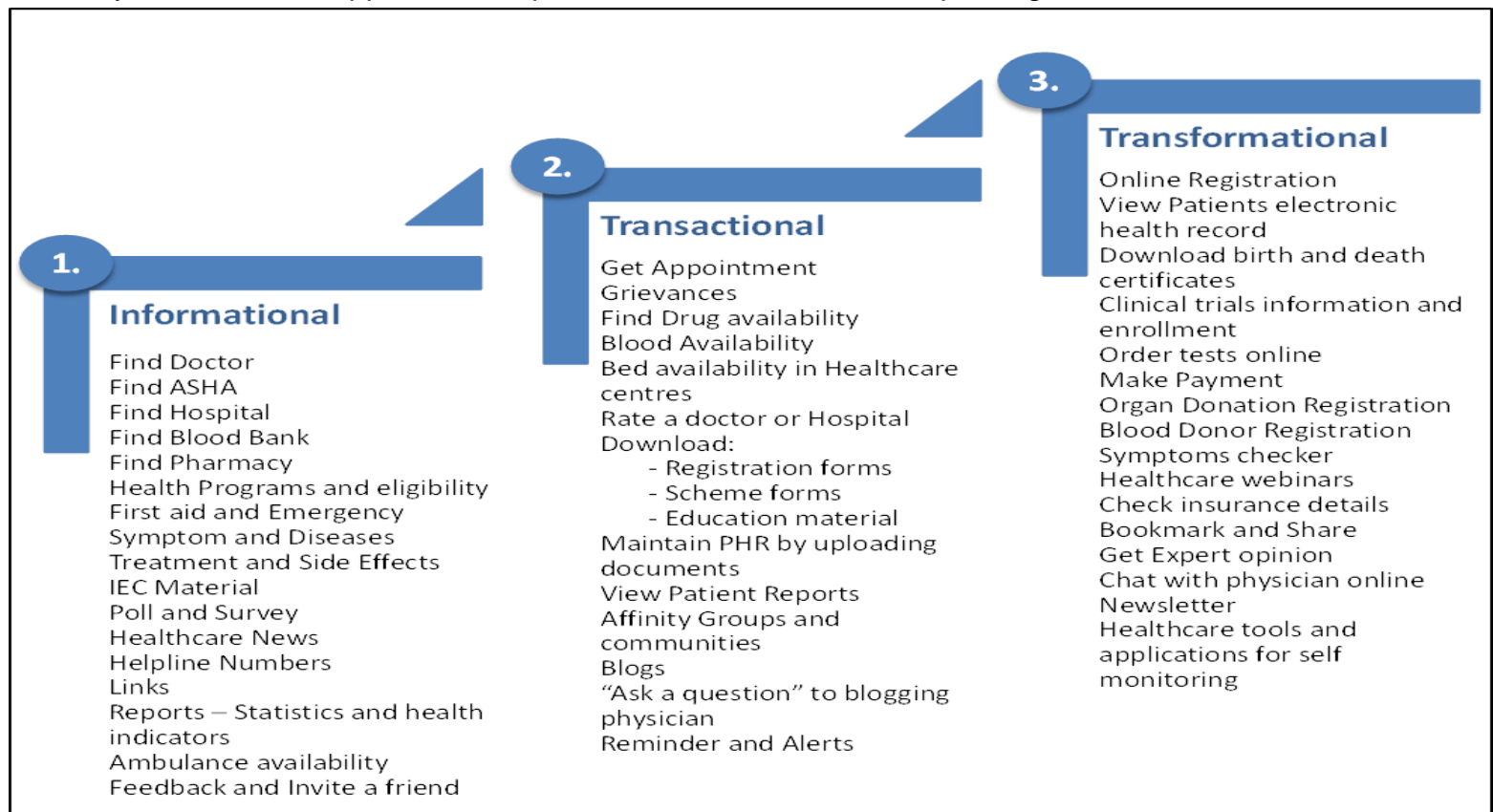
- E-procurement, including auto procure for low value items
- Efficient inventory management at all levels
- Tracking of consumption and expiry dates till PHC and Sub-Centres
- Management of Supply interruptions
- Eliminate stock outs due to non-supply and expiry
- Transparency in drug procurement
- Counterfeit Tracking



3. Empowering Citizens through Information Dissemination

A Citizen portal is expected to serve as a single point of access for consolidated health information and services. Keeping population diversity in mind, portal should have multi lingual support. The portal should be available both on web and mobile (also through an SMS/IVR gateway).

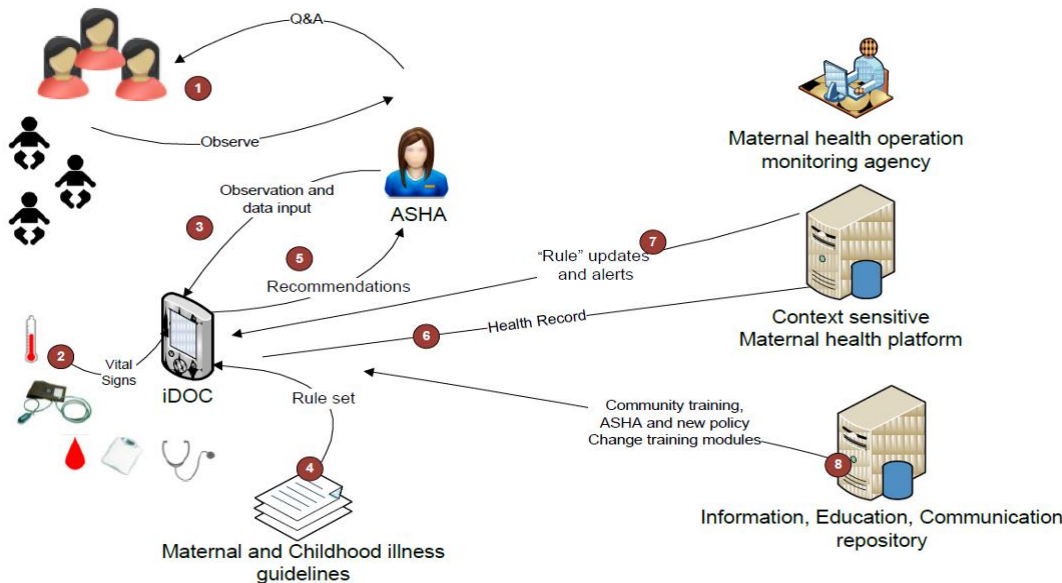
- With the introduction of state health portals for citizens, the use of citizen health portals is likely to skyrocket. If that happens, the impact on health care would be quite significant



4. Handheld Based Data Collection

Given the limitations of providing hard IT infrastructure in the vast reaches of rural India, handheld based data collection modules would result in significant advantages:

- Significant cost savings
- Data collection at source (rather than periodic data updation)
- Effective feedback loop integration (through prompts, video chats etc.) which can therefore enable diagnostic decision support
- On the spot basic analytics
- Real time information availability to decision makers



Such a system presents the following benefits to a healthcare system:

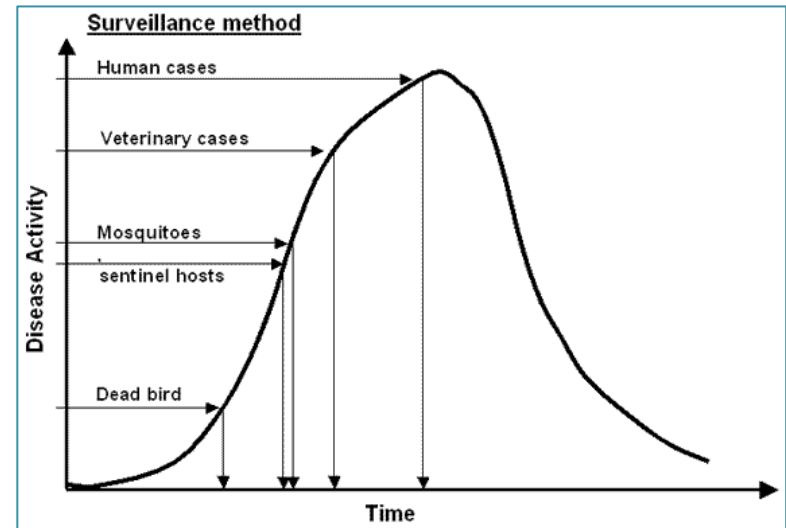
- Increases the process efficiency in hospitals
- Semi-skilled outreach workers can deliver quality healthcare at the point of contact
- Doctors freed up from routine data collection activity, and can focus on diagnosis
- Increase catchment area: due to outreach program run by hospitals (if they so desire)
- Data collected can be used for pro-active follow up and measurements

5. Analytics enabled Real Time Disease Surveillance

The economic impact of infectious disease outbreaks is massive. It ranges from over USD 50 Billion in the case of the SARS pandemic, to less than USD 500 Million for the European epidemic of Avian Influenza . CDC (Center for Disease Control, USA) estimates that by the time human cases of any infectious disease are seen; almost 50% of the epidemic life cycle has elapsed (demonstrated in case of West Nile Virus).

This results in a huge economic burden, not just in terms of containment and treatment costs, but also due to economic loss.

With Real Time Surveillance, these costs, and 'time-to-reaction' are significantly lowered, leading to not only economic savings, but a much more efficient outbreak intervention mechanism as well



Estimated Sensitivity of West Nile Virus Surveillance Methods

Real time surveillance

Middleware for integration of disparate data sources

Aims to integrate various data collections systems. Examines aggregate and de identified data routinely collected by clinical and other systems automatically and in real time for trends and anomalies suggestive of disease outbreaks.

Earlier Warning Systems through Syndromic Surveillance

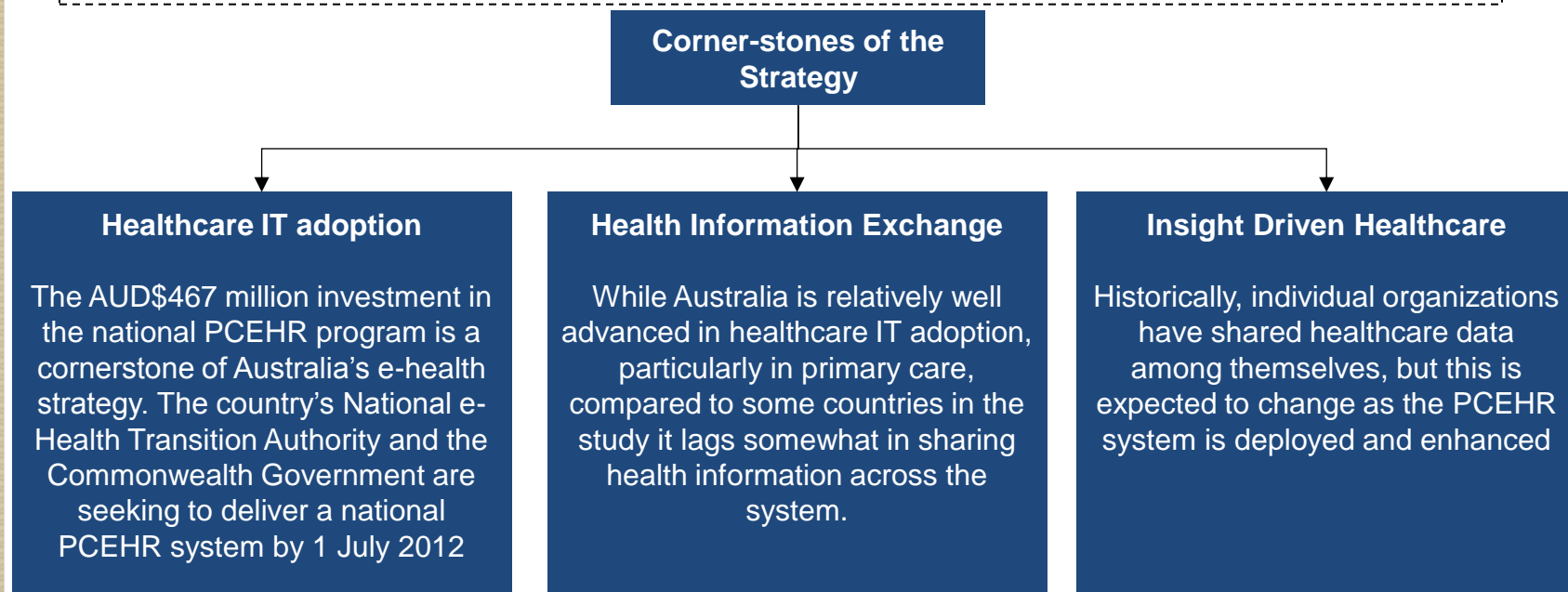
Aims to provide timelier identification of disease outbreaks than can be attained through traditional surveillance methods. Syndromic surveillance could be applied to detect serious but low-frequency threats such as bioterror attacks

Global Case Studies

Australia – Personally Controlled EHR

Australia has embarked on an ambitious strategy to transform its healthcare. This strategy revolves around the concept of “**Connected Health**” and its key characteristics are:

- A nationwide personally controlled electronic health record (PCEHR) system under development for initial deployment in July 2012.
- Investments in point-to-point technologies such as electronic referrals, electronic discharges and event summaries and electronic transmission of prescriptions.
- Significant investment in interoperable infrastructure-including health identifiers (with support by national privacy legislation) interoperability standards and a national compliance body to review, test and certify solutions
- Various programs for delivery of clinical information systems to primary and secondary care settings
- A national vendor accreditation scheme



Singapore – National Electronic Healthcare Record (NEHR)

Singapore's National Electronic Healthcare Record (NEHR) is the cornerstone of its connected health strategy.

The NEHR, which was developed in collaboration with more than 200 clinicians and suppliers, is a summary of healthcare profiles and a consolidated view of a patient's current problems, medications and investigations. The NEHR initiative includes enterprise architecture and standards for interoperability and health information exchange, unique patient identifiers and robust information governance arrangements. The plan is to incorporate learning in phases and exploit rapidly developing technologies.

There are two important trends driving further progress towards connected health in Singapore.

- There is significant growth in portable computing through mobile phones and tablets.
- Singaporeans are becoming more proactive in managing their own health.

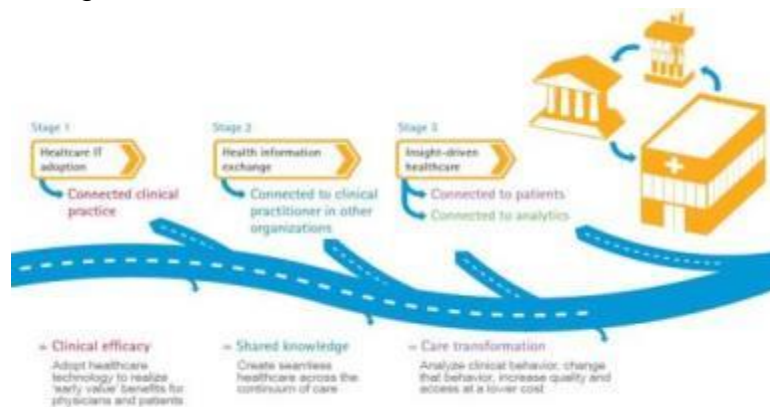
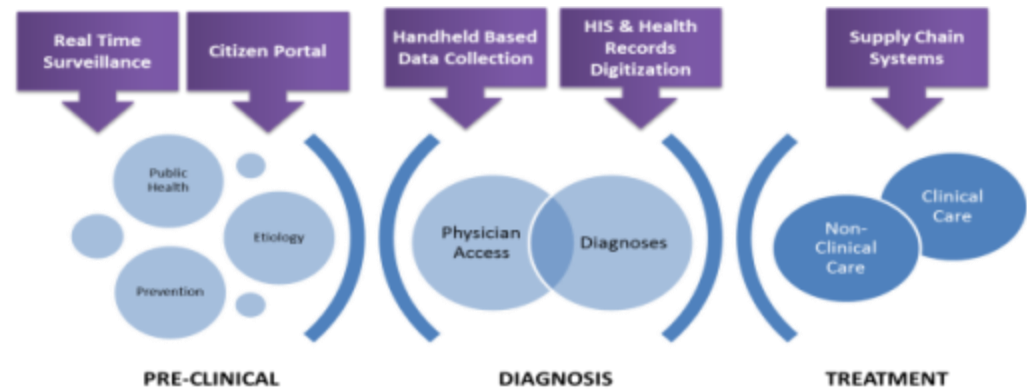
Experts predict that citizens themselves will soon become powerful advocates of connected health and increasingly expect their healthcare providers to make use of healthcare IT.

Accenture's Point of View

The Journey to “Connected Health”

Journey to Connected Health

The recommended interventions will have a potential impact throughout the patient life cycle in the healthcare system. They can address several inefficiencies in the healthcare value chain in India, and provide increased healthcare access to citizens, without significantly increasing the spending on the same.



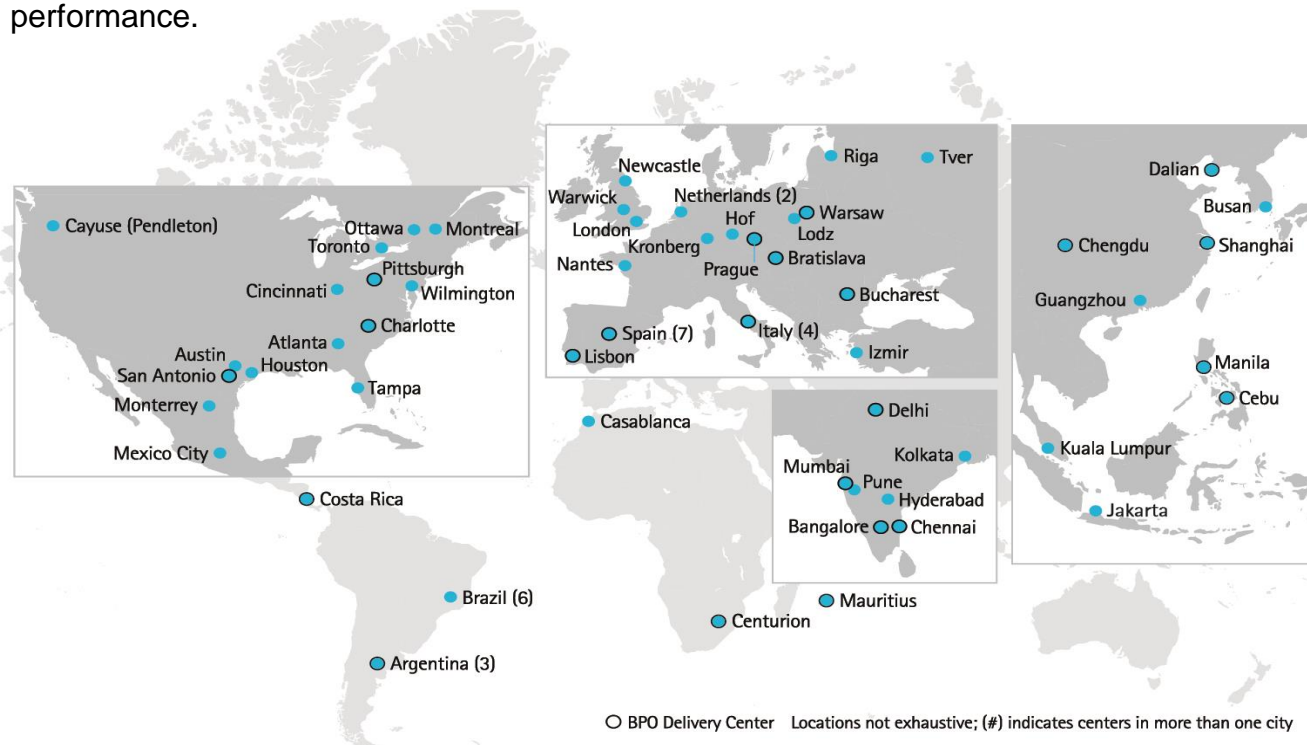
While the recommended interventions would help India “bend the curve” as far as healthcare access is concerned, it would, in the long term, look at technology and connectivity to continuously improve the state of its public healthcare system. This would involve creating greater connectivity between the various care systems and eventually lead to clinical efficacy, shared knowledge and care transformation.

About Accenture

Accenture is a global management consulting, technology services and outsourcing company

- We help organizations assess how to maximize their performance and work with them to achieve their vision
- We develop and implement technology to improve our clients' productivity and efficiency – and may run parts of their business
- Ultimately, we enable our clients to become high-performance businesses and governments

With **174,000 professionals** in more than 50 centers, Accenture offices and client locations, the **Accenture Global Delivery Network** is the largest and most diversified group of management consulting, technology and business process outsourcing professionals in the world. We combine our unmatched breadth of industrialized capabilities with insight-driven business innovations to help our clients achieve high performance.



Accenture's Service Offerings range across Management Consulting, Technology and Business Process Outsourcing



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Strong India presence

Presence across all states in India while serving clients across the public and private sector and supporting growth markets.



True Global Network

Our Delivery Centres are located in the Americas, Europe, Latin America and Asia Pacific providing a true global footprint, working fluently with our people based at client sites.



Development for the 21st Century

Creation of reliable, global and modern approaches across Web, Embedded, Real Time, Mobile, Open Agile, Cloud and other domains.



Business outcome focused

We are committed to delivering tangible results for our clients.

Accenture is present across India through more than 11 facilities and 50,000 employees



Locations not exhaustive; (#) indicates centers in more than one city



Bangalore



Chennai



Mumbai



Hyderabad



Pune



Delhi



Kolkata

Fast Facts

- **Languages Supported:** English, French, German, Italian & Spain
- **Certifications/Standards:** People-CMM® Level 5, CMMI®-DEV Level 5, SSAE16/ISAE3402, BS25999 ITIL/ISO® 20000, ISO® 27001
- **Industries:** Automotive, Communications, Consumer Goods and Services, Electronics and High Tech, Energy, Financial Services, Freight and Logistics, Health, Industrial Equipment, Life Sciences, Media and Entertainment, Retail, Travel and Utilities
- **Management Consulting Services:** Industry, Function, Analytics
- **Technology Services:** All Applications, Infrastructure, IT Strategy, Enterprise Architecture, Security, Cloud, Mobility, Software and Digital
- **BPO Services:** Finance & Accounting, Health Administration, HR, Insurance, Learning, Procurement, Supply Chain
- **Specializations*:** 90+ Centers of Excellence, Innovation Centers, Solution Factories and other locations focused on specific industries, technologies, and BPO offerings



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1000 in consulting

11+ facilities across Mumbai, Bangalore, Hyderabad, Chennai, Pune & Delhi



Deep expertise across Consulting, Outsourcing and Technology

Over 4 million man-hours of consulting experience in India



All major industries - Energy, Communications, High Tech & Electronics, Media & Entertainment, Auto-motive & Industrial Products

Professional staff of highly qualified professionals (Engineers, MCAs, MBAs, CAs, PhDs, etc.) with substantial international experience



CMM Level 5 Certified. e-SCM certification under-way

About Accenture

Accenture is a global management consulting, technology services and outsourcing company, with 257,000 people serving clients in more than 120 countries. Combining unparalleled experience, comprehensive capabilities across all industries and business functions, and extensive research on the world's most successful companies, Accenture collaborates with clients to help them become high-performance businesses and governments. The company generated net revenues of US\$27.9 billion for the fiscal year ended Aug. 31, 2012. Its home page is www.accenture.com.

About Accenture Management Consulting

Accenture is a leading provider of management consulting services worldwide. Drawing on the extensive experience of its 17,000 management consultants globally, Accenture Management Consulting works with companies and governments to identify and deliver value by combining broad and deep industry knowledge with functional capabilities to provide services in Strategy, Analytics, Finance & Enterprise Performance, Marketing, Operations, Risk Management, Sales & Customer Services, Sustainability, and Talent & Organization

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