Getting future-ready

Healthcare in India – 2022 and beyond

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Foreword

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Digitization, technological enablement, and automation are affecting industries today in profound ways. Healthcare is no exception. The paradigm of healthcare delivery is changing and is poised for a big leap forward. Healthcare and drug Innovation have come into sharp focus as never before. The COVID-19 pandemic has demonstrated that health care organizations can become more resilient, agile, and innovative through digitally-enabled business models with data at the core. The pandemic added urgency and accelerated the process of change for healthcare to become more digitally enabled.

Healthcare delivery is moving outside the four walls of traditional health system. Health care providers have realized that products or services alone, no matter how strong technically, will not be enough in future. They should look into the future to engage with their users across the health care value chain, whether that be physicians or patients, and deliver to them not just a better care product or care service, but a better care experience. Also, one needs to keep an eye on developments coming from non-core sources like technology companies which could further help in diagnosis or early detection and aid the healthcare ecosystem.

Healthcare delivery in India has witnessed a renewed focus on leveraging digital technology during the pandemic. The sector, predominantly recognized for sick care delivery, has looked at building next-gen capabilities that will be a differentiator in the decade ahead. Various reforms launched before and during the pandemic, such as National Health Digital Mission (NDHM), Teleconsulting guidelines combined with burgeoning health tech start-up ecosystem enabled by innovation have evolved to make the healthcare journey better for Indian population. It is good that the PE/VC funding is also coming to support the health tech start up eco system.

Thus, "new normal" in healthcare ecosystem will be about how healthcare delivery will innovate in the coming decade and what it means for both patients and healthcare providers. As more and more stakeholders will be involved and collaborate with the objective of improving the healthcare experience, they will have to "unlock the power of data". Organizations across the full value chain that are future-ready can take the lead in doing this and will be best placed to integrate the physical and the virtual. These organizations may lead in offering convenient, transparent, personal, and predictive health experience of the future.

Foreword

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COVID-19 pandemic has accelerated the digital and other technological advances in the life sciences and healthcare sector, resulting in a new era of digital innovation in the entire health ecosystem. Technology is empowering patients to take care of their own health, real-time analytics is improving clinical decision making, and virtual monitoring tools are enabling anywhere, anytime health care. There is a paradigm shift from treatment to prevention.

Healthcare organizations need both highly interoperable data and open, secure platforms to engage patients and all other stakeholders involved in patient care (e.g., hospitals, physicians, diagnostic laboratories, etc.). Organizations that focus on creating truly patient-centered, data-driven products and offerings have the greatest opportunity to lead the transformation of health and wellness.

Life sciences industry has also kept pace with these technological shifts. We saw application of digital/data solutions and automation across the pharma value chain to enable continuous manufacturing and supply of medicines despite COVID related challenges. Launch of numerous vaccines, diagnostics, and medicines for COVID is a clear evidence of all the R&D and innovation advances.

India has clearly demonstrated its innovation capabilities during the pandemic time. India has future opportunities in complex generics, speciality pharma, biosimilars and novel biological drugs, vaccines and preventives, and other areas of unmet needs. There is also huge potential to establish the country as the global innovation hub backed by enabling ecosystem. Government can play a very big role in supporting the industry to be "future Ready". Over the last few years, Telangana government has launched several initiatives to establish the foundational innovation ecosystem with the required enablers. For example, the T-Hub, We-hub, Research and innovation circle of Hyderabad (RICH), Innovation cell, Telangana's Government Mentor Program (GMP) – all have been playing a critical role in boosting the innovation ecosystem across industries in the state. City of Hyderabad has over 20 incubation centers focussed only on lifesciences and healthcare.

In our efforts to capture the global and domestic trends in the industry, the thought leadership report has been prepared by EY and will be launched during the 19th edition of its flagship international convention – BioAsia from 24-25 February 2022 with the theme of "Future Ready".

Reimagining
healthcare delivery

1. Five trends shaping health care's data-driven future?

The COVID-19 pandemic has necessitated the health industry to accelerate the adoption of virtual care and enable a digital care transformation. Will history look back on this time as the point at which health care finally realized that it could become virtual?

Although the technology has existed for several years, data-based tools and technologies make a more personalized and virtual approach to health and wellness possible. The world has never needed the industry to embrace these technologies more than it does now. While companies and health care providers have long recognized that new tools to capture and use data have the potential to transform health, they lacked the "burning platform"

to fuel this change. The COVID-19 pandemic — and the global disruption it has caused — has demonstrated that health care organizations could become more resilient, agile, and innovative if they shift to digitally enabled business models with data at the core.

This shift suggests two important opportunities. First, new data streams from new sources and partners offer a more complete picture of patient health and a means to delivering better health outcomes through preventative and personalized care. Second, we can look past the pandemic to what lies beyond. In response to the pandemic, a deep vein of virtual care has arisen and has shown us that technologies are the bridge to building smarter health systems. Virtual care and telehealth offer a permanent way to change clinical and operational models, leading to greater efficiency, more individualized health management and improved experiences.

As we reflect on what comes next, it is an opportune moment to pursue real transformation for better connected and integrated data and information systems. Digital technologies offer a data-driven foundation for the future health industry. There are still major challenges to realizing the vision of a personalized health ecosystem. But health care organizations that focus on creating truly patient-centered, data-driven products and offerings have the greatest opportunity to lead the transformation of health and wellness.

[1] Published by Aloha McBride, EY's Global Health Leader on 3 December 2020

The road to leveraging artificial intelligence is built from good data

As health care organizations consider how to move ahead, creating the right data environment to support a more human-centered approach to health care is an urgent need. Five key trends in data will bring about:

1. **A new ecosystem built around the needs of the individual**

   The explosion of health care data requires a new ecosystem built around the needs of an individual enabled by technical standards, open data models and empowered by governance systems that deliver trust.

   Healthcare is a highly data-driven business with vast amounts of data created both within health systems and externally. Today, the ideal of longitudinal health records from birth (if not before) that records care received and other relevant data and that travels with the individual remains an ambition rather than a reality. But eventually, this goal will be realized: our data will be captured and used over the course of our lifetime.

   To truly leverage the power of this data, health care organizations need to be able to connect and share permissioned data securely and seamlessly. The data must be understandable and able to be analyzed for actionable insights. These will contribute to better decision-making and safer clinical care, improve clinical pathways and productivity, and enable more efficient operations.

   Unifying disparate information from multiple sources and making sense of it call for a health information architecture that can connect and share data, at scale, within and among enterprises and systems.

   The optimal architecture will separate content and technology and will be vendor-neutral, distributed, and modular, incorporating third-party as well as legacy systems. This will not lead to the abandoning of existing core services, such as EHRs, imaging and laboratory systems; rather, these will become part of the broader data ecosystem.

   Good governance and cybersecurity in a trusted system that is secure, safe, and reliable are foundational to a consumer's willingness to share valuable personal information.

2. **The rise of digital remote care supported by data liquidity**

   AI will be fed by sensors in, around and on us, and this data will move at the speed of 5G and beyond.

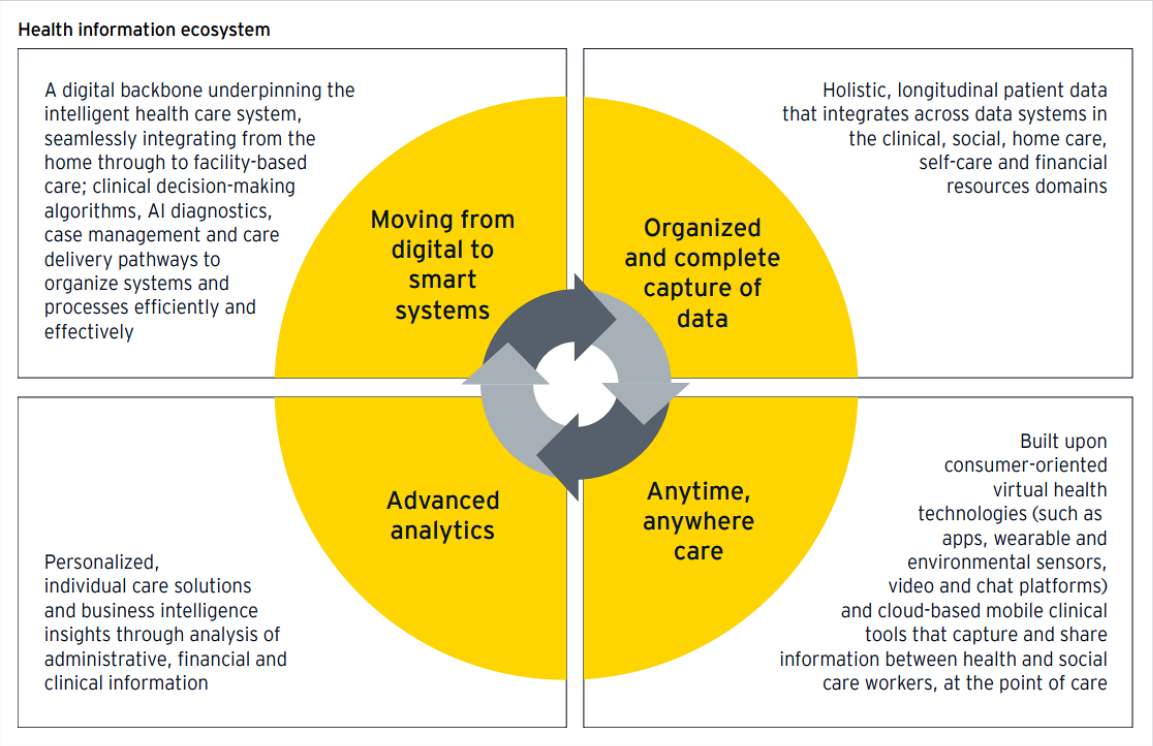
   Anywhere, anytime care is built upon consumer-oriented virtual health technologies and care models. Apps, wearables, and environmental sensors capture and share permissioned information across the care continuum.

   As 5G networks further penetrate, they will make the capture of real-time data much faster and more robust. The potential of 5G is immediately apparent for acute home-based care, new community services and connected hospital devices. More complex health programs and analytics tools become possible, such as virtual reality, gamification, robotics, video coaching and the smart home.

   These rising technologies generating data will need equally powerful tools to organize, interpret and draw insights from them — and AI is critical in this journey.

   Volumes of patient data can be aggregated from multiple sources. AI and analytics turn complex information into usable insights, including individualized wellness solutions and show how to efficiently provide care across the ecosystem.

   For consumers, this data-driven connected health environment will anticipate their needs, passively monitor their health, and improve the quality and timeliness of their care. For health care organizations, AI analytics help address operational challenges, such as waste across workflows, supply chains and duplicative procedures, as well as help to anticipate clinical risks.



3. **Interconnecting broad-based data for highly personalized care**

   Data regarding a unique individual's habits, social determinants, genomics, and preferences, in addition to traditional medical information, will be leveraged by providers to influence a person's healthy behaviors and outcomes.

   To keep up with the velocity and variety of health data generated today, the health information infrastructure must enable providers to connect, combine, analyze, and share health and social data.

   Combining all relevant sources of data offers the necessary underpinning for a preventive model of health where people have wellness as usual and clinical care by exception. Data analytics can shed light on individual behavior patterns and predict future behaviors, barriers to change and high-probability solutions.

   Well-established scientific consensus holds that behavior is critical to health outcomes. It is now clear that to deliver better outcomes to individuals across the population, lasting behavioral change needs to become a central part of health care.

   Most importantly, behavior change needs to be treated as an integral aspect of the way health care is personalized and managed. Future products and services need to be delivered within an influencing environment where sensors and AI can enable a continuous "judge and nudge" assessment of patient behavior and steer them toward better health.

4. **Trusted intelligence drives participation and engagement**

   Trusted intelligence systems will emerge to secure confidence and participation of consumers and other stakeholders.

   Increasing mobility, transparency and availability of health information bring both benefit for consumers and clinicians, as well as risk associated with a fluid system.

   While data sharing brings immense value, connecting data also brings risk. To share data, you need to trust the other party's data security and have tools that support digital use authorizations, traceability, and control, much of which is currently a serious unmet need across the sector. Governance structures, policies and practices must be sufficiently robust and cover the ethical, legal, and moral aspects of collecting, storing, and sharing of sensitive health data.

   As connectivity becomes more central to health care, regulators will continue to take a strong stance on the need to secure data. Attention will be directed toward providing consumers with control over their health information. Gaining consumer and clinician trust is critical,

particularly when it comes to the safety, validity and integrity of the data generated.

Soon, data will be passively captured by unobtrusive remote monitoring and continuously analyzed via AI. The onus will be on health care organizations to maintain high standards of transparency around the integrity and security of data and devices. All elements must meet accepted data security frameworks and safety standards for personal health and social care information. This includes clarity around the ownership rights regarding personal data, secondary uses of data and the protection of an individual's privacy.

5. **A future-ready culture and workforce that embraces digital**

Clinicians will need to leverage medical, data and behavioral science knowledge and skills in the near future to deliver a personalized care demanded by patients.

To support this shift, health entities must decide now where to invest in education, training and recruiting.

Health care organizations will achieve success when they see that the way forward is built around data, technologies and human capacities that grow the business of tomorrow, rather than just repeating today's procurement and training cycles. The winning organizations will build from an ecosystem mindset, identifying what data are critical and the right strategy to access them. They will understand they must, in parallel, attract the right workforce to fully leverage technology innovations. For these organizations, data will become the central asset in the organization.

Data and technology can be used to foster innovation to create and test blueprints for doing things differently. Health care organizations must adapt operating models and partnering strategies to the realities of the emerging ecosystem, augmenting their skills mix and capabilities by working with other organizations.

Business model architecture should reflect the core capabilities in the new data environment. This includes a governance model that steers the enterprise from a siloed to a frictionless data environment. New commercial and operating models built around creating value will be required to support new ways of delivering care. A workforce strategy will need to address the shifts in workforce supply and demand that arise through automation and a shift in the mix of skills and the nature of job roles. And finally, a new mix of leadership skills will be needed to lead health care providers in the digital era.

Good governance for digital enablement

At the enterprise level, those in a governance role must have a digital fluency and an intimate understanding of the health sector. This includes understanding the economics of technologies disrupting the health industry business and production of care models. A deep knowledge is required of health IT trends and expertise in applications appropriate to the enterprise.

A health data agenda

To build for the beyond, prioritizing a health data agenda may allow health care organizations to anticipate and plan for a connected health ecosystem in the future. Right now, entities should anticipate how they can create future value and enable personalized outcomes driven by the power of data.

Three elements we consider important to a health data agenda are:

1. **Harnessing the volume, variety, and velocity of health data.**

   The potential of massive health data sets may allow organizations to capitalize upon the promise of transformative technologies.

   Data science models are developing that inform clinical decision-making. These are moving past simply reporting data to providers to machine learning algorithms in a dynamic environment of predictive analytical models for application in multiple care settings.

   At the enterprise level, intelligence functions convert data into actionable insights around population health, clinical decision support and streamlining operations for greater efficiencies. Rather than waiting for the ideal data model or vendor, health care organizations need to start implementing data-driven care models and operations in parallel to uplifting capabilities and defining the future state.

2. **Envisioning the future**

   Envisioning the future should guide stakeholders to see beyond the present to what is not (yet) possible. Implementing futureproof infrastructure and capabilities will be critical. This means adopting the principles of modularity, agility, interoperability, and heterogeneity. Through a lens of "now, next, and beyond," data-generating technologies can be considered as bringing benefit as:

   - Foundational – to bring agility and efficiency into the present.
   - Supporting – to provide appropriate capabilities in the near future.
   - Differentiators – to support new models and advanced technologies into the future.

3. **Laying the foundations for the next generation of patient-centered products and services**

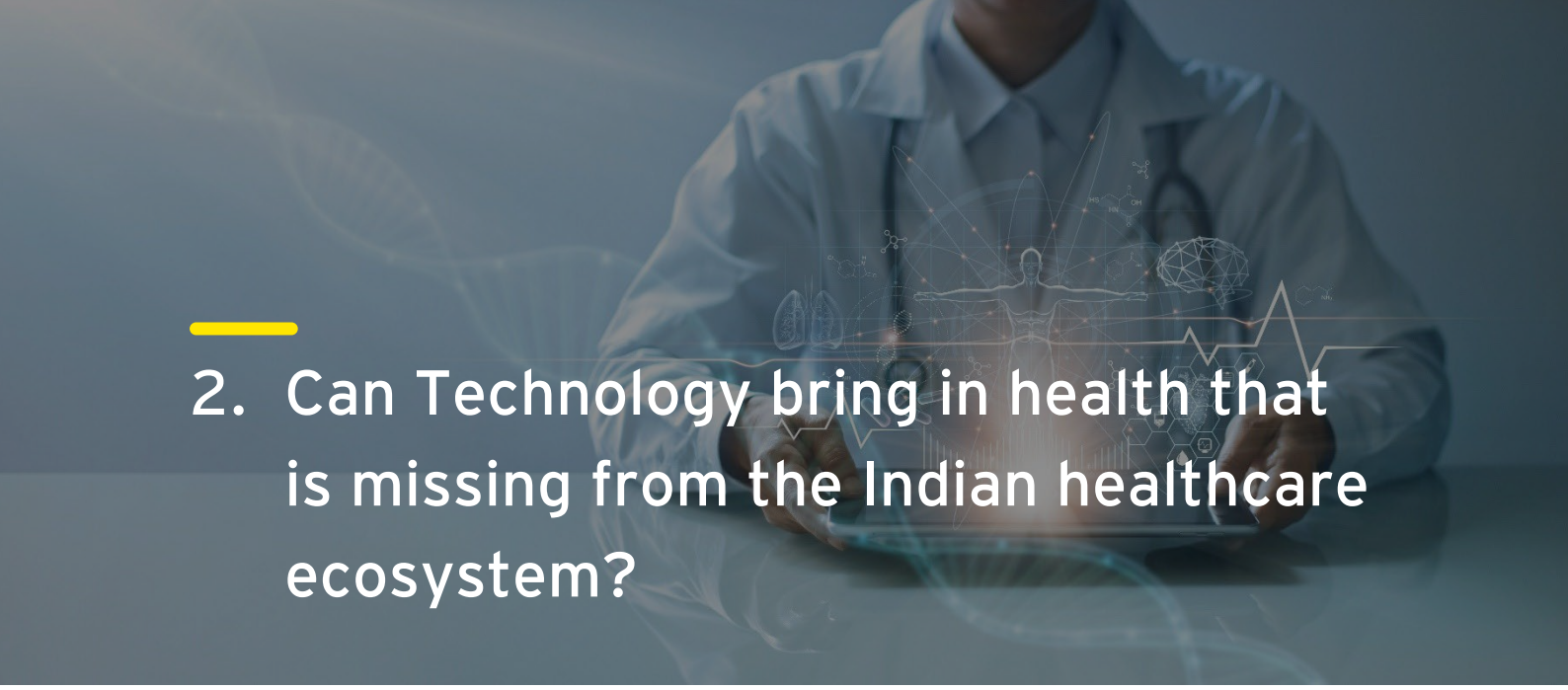
   The next generation of products and services will be built around data-driven intelligence technologies that support key high-value areas of clinician productivity, patient experience, innovation and insights, sustainability, business operations, permissioned and secure access, and asset utilization.

   Centered around the patient, the end result is a connected everywhere ecosystem – connecting all people and all things for better care outcomes, health equity and more sustainable business models.

Top questions for health executives and health care leaders should ask themselves three questions as they reimagine their future data strategy:

1. How do we use the data that is generated in safe and meaningful ways?
2. What is the right data strategy to make operations that are data- and AI-driven, for predictive models of care?

What opportunities exist for partnerships with technology players to build out the necessary technical capabilities for greater data tractability and to take advantage of enabling data sets?



2. Can Technology bring in health that is missing from the Indian healthcare ecosystem?

The Indian healthcare system is little about healthcare and more about sick care that often leaves patients with an underwhelming experience even if outcomes are satisfactory. While there are many explanations about why India landed in this situation, few would disagree that technology is disrupting healthcare in more ways than we can imagine. Additionally, the government's National Digital Health Mission (NDHM) – including Telemedicine, EMR and the issuance of unique digital health IDs will provide a connected electronic health record (EHR) based data lake environment which can further fuel this re-imagination.

Private enterprises are driving the tech disruption happening across the ecosystem and here are five areas to watch out for:

1. **Awareness to reduce preventable ailments**

   Tech enabled health monitoring wearables may monitor symptoms such as sleep, cardio health, fitness, and metabolism to prevent onset of diseases and timely detection of health conditions (for instance Apple watch) and a lot more – may unfold in this domain.

2. **Timely and reliable diagnosis**

   India faces under-diagnosis in almost all chronic therapies. While the cost of physical infrastructure requires local incentivization, technologies like genomic sequencing using big data and AI are bringing a steep change in this direction and may reduce the dependence on physical resource investment in the first place. (Example: A leading technology company created an AI for breast cancer analysis. The algorithm outperformed all human radiologists on pre-selected data sets to identify breast cancer, on average by 11.5)[3]

3. **Better, cheaper, and more Accessible Treatment**

   Even when diagnosis is taken care, choosing what is the right treatment for a patient is a complex decision, one in which health care professionals rely on scientific advice of peers, co-morbidity conditions and affordability of patients among other considerations. Much of this information -may get structured using tech as remote consultations start talking to EHR data lakes for quick decision making. Fixed dose manufacturing environments may lead to flexi dose using nanotechnologies and robotics and new bio electric materials and 3D printing usher in highly personalized, affordable, and better treatment choices not visible today.

[2] Published by Sumeet Chandna, EY's ____ on 29 November 2021

[3] https://www.businessinsider.in/science/news/googles-deepmind-created-an-ai-for-spotting-breast-cancer-that-can-outperform-human-radiologists/articleshow/73070327.cms

4. **Adherence and self-monitoring**
   We see a lot of wearable such as pacemakers and blood sugar monitoring devices and sensors making inroads but with localization of manufacturing, a lot more may be expected.

5. **Patient experience management – unique yet standardized**

   This remains at the heart of the healthcare transformation. Ernst & Young released a paper on 'Reengineering Indian Healthcare 2.0', 2019 during the first covid wave that showed that 61% patients surveyed in 2019 believe that hospitals did not act in their best interests, as against 37% patients in 2016. Patients desperately expect a consumer centric approach that is transparent, cheaper, visible, shorter and helps view tangible goals of self-improvement. Technology may do most of these – reduce waiting times, access to specialists, diagnosis at home with a basic personalization interface.

In conclusion, while the Indian startup ecosystem is trying to stitch the healthcare system together it needs more such enterprises so watch out for the next set of unicorns.

3. The age of 'Health Experience'?

The health sciences and wellness industry has never been as "front and center" in our lives as it has been in this last year. As all of us, worldwide, ride the various waves of the COVID-19 pandemic, healthcare and life sciences industry has taken the lead in giving care to those who have needed it most. We have also seen a monumental collaborative R&D effort – at a scale never witnessed before – that has resulted in the creation and delivery of multiple approved vaccines to combat the virus.

At the same time, the industry itself has experienced rapid "virtualization" at both a primary and secondary care level. Arguably a change that is long overdue. The driving forces that have made it imperative for an aging industry to adapt have long been recognized: from spiraling health costs and global disease burdens, to greater consumer expectations and the rapid march of technological innovation. The pandemic added urgency and accelerated the process of change, but the underlying driving forces remain the same. Moreover, the industry's evolution is by no means complete: the vision for future "smart health" systems remains unrealized.

Nevertheless, in the months since the COVID-19 pandemic struck, we have seen a step change in how care is delivered. We've seen rapid acceptance and thus adoption by physicians and patients alike of technologies to support virtual care. This has happened at a pace and universal scale not ever seen before. Having had a taste of virtual care, in the future patients and providers will want more: they will demand additional integrated services that provide a more personalized and convenient health experience.

Digital platforms that have become leaders in their respective industries, such as Amazon, Airbnb, Netflix, and Uber, all share certain key characteristics: they all offer convenience, seamless and transparent access to their services, data vast range of content or service options to select from, and some degree of personalization and even prediction of personal choices. These characteristics appear as constants across the different industries and learning from their success will be key to building a better user experience in health care. Organizations need to target the development of smart health systems that can offer a health experience as efficient, convenient, and personalized as those enjoyed by consumers in other areas of their lives.

In these other industries, the ability to use data is key to creating the enhanced experience. As we know, there is an ongoing health data explosion. Arguably, in the future, medicine will no longer be a clinical science supported by data, but rather a data science supported by clinicians. So, unlocking the power within data will be critical to delivering the new smart health systems desired. Linking together technologies as diverse as genomics, miniaturized sensors (either inside us or on us), 5G, blockchain and artificial intelligence can allow medical and real-world data (both clinical and non-clinical) to be gathered, shared, and used to make health decisions. This will give companies the opportunity to make care more connected, customized, and convenient.

[4] Published by Pamela Spence, EY's Global Health Sciences & Wellness Leader on 16 August 2021

COVID-19 has also accelerated the move toward care delivery outside the four walls of a traditional health system. But to make a real and permanent change in how care is delivered, companies must address the new demands of patients and care providers.

Meeting these increased expectations will mean expanding the traditional definitions of innovation in health care, which historically have focused on the safety, effectiveness, or efficiency of care. Of course, these remain important, but patients and providers alike now demand a more seamless health experience delivered where and when it is wanted.

Companies have an opportunity to seize this inflexion point, because the reality (as we have seen with other industries) is that products or services alone, no matter how strong, technically will not be enough in future. Biopharmas and medtech companies need to look beyond selling just a product or service. Instead, they should look in the future to engage with their users across the health care value chain, whether that be physicians or patients, and deliver to them not just a better care product or care service but a better care experience.

As more companies increasingly take responsibility for improving the health experience, they will also have the opportunity to build richer and more meaningful relationships with all in the value chain. These relationships will no doubt strengthen customer loyalties and at the same time also build trust.

Ultimately, all companies in this industry need to focus on a fundamental belief or hypothesis:

Future value in health lies in unlocking the power of data to deliver health experience.

Organizations' success will increasingly be measured both by the quality of outcomes that they can deliver and the level of personalization they can achieve. To deliver in these areas, they need to connect data better, combine data sets more comprehensively and share the insights generated from AI and analytics back into a wider network, enabling collaboration at a vast scale to accelerate learning and innovation. Organizations that can take the lead in doing this will be best placed to integrate the physical and the virtual, enable seamless data exchange, and thus offer the convenient, transparent, personal, and predictive Health

Experience of the future.

Any organization that wants to remain relevant in the age of Health Experience needs to ask itself: when experience drives the new health economy, when, how and where do you fit?

4. Overview of Indian Healthcare startup space

The Indian health-tech market is expected to grow at an annual rate of 39% over FY20-FY23 and forecasted to reach US$50 billion by 2033, as per a report by advisory firm RBSA Advisors.

Procuring accessible and affordable healthcare for India's ever-growing population has long been a bottleneck in the system and with the rise of COVID-19, healthcare professionals are racing against circumstances and risks to provide the optimum healthcare. Health-tech ventures have joined this battle by providing cutting edge technology to overcome major challenges through telemedicine, digital records, remote monitoring, or fitness apps. Further, **biotechnology** has also recently emerged as a leading theme and is expected to reach **>US$100 billion by 2025**. A crucial part in promoting this segment is being played by the Department of Biotechnology, Ministry of Science & Technology in collaboration with BIRAC under the 'Make in India' scheme.

The Indian Government had launched the **National Health Policy, 2017 on 15th March 2017**, which has extensive recommendations on the usage of digital health tools and the setting up of a National Digital Health Authority which might be a game changer for digital healthcare and life sciences start-ups. It has also launched the **Unified Health Initiative** (UHI) initiative which, 1) allows patients to access and share health records digitally, and 2) discover labs, pharmacies, ambulances which allows broader access to resources by digital apps. It has already partnered with many of India's leading healthcare provider chains, online pharmacies, teleconsultation platforms and healthcare service aggregators. This app is targeted towards centralizing healthcare services, easing health data exchanges across platforms, and improving discoverability of service providers. This is aimed to further boost the start-up ecosystem by integrating multiple apps across a single platform and increasing reach to Tier 2 and 3 cities.

In addition to the Governmental support, health-tech start-ups across e-pharmacy, fitness and wellness, and telemedicine have started getting significant investor attention to procure sizeable PE/ VC funding in the range of US$200 million to more than US$650 million. A major data-activation platform company secured a funding of US$250 million and emerged as India's first health-tech unicorn in 2021. The platform enables use of data to provide value-based solutions to patients, not only catering to the gaps in the current health systems in terms of patient retention and management, but also promising a potential scope for predictive analytics or AI-driven healthcare through data access.

What VC funds today are looking for are organizations which can bridge the gap between healthcare service providers and patients, reduce cost-burden on patients and systems, lead to more informed decision-making in a generation of preventive healthcare and hence an intervention by digital health/ life sciences start-ups to address this current scarcity has become a hot-bed for investment.

Key drivers

India's current doctor-to-patient ratio stands at 1:1596 which puts India at 145th position out of 195 countries. The statistic reflects the immense potential in digital health to address this lacuna. In addition to insufficient supply of physicians/ medicines, with the increasing lifestyle non-communicable diseases, increase in healthcare expenditure and an ageing population; India Brand Equity Foundation (IBEF) has estimated the **Indian health tech sector** to be valued at **US$372 billion by 2022**. The several health start-ups are striving to address some of the following current structural gaps in the economy such as *1) lack of discounts/ offers, 2) crowded/ long wait lines, 3) unhygienic facilities increasing risks of infection, 4) unavailability of HCPs, travel costs to meet HCPs/ undertake tests, 5) no sample pick-up/ report delivery service, 6) lack of chemists nearby, 7) delay in test results and 8) poor customer service.*

The digital healthcare market, which is projected to grow at a **CAGR of 27.4% to reach US$485.43 billion by 2024** (IBEF), is segmented into tele-health, mHealth, electronic health records/electronic medical records (EHR/EMR), and others (remote diagnostics and healthcare analytics). mHealth followed by telehealth is forecasted to dominate with ~60% share by 2024, considering a rise in health tracking and reduction of hospital visits, triggered by COVID-19. *To give a snapshot, the three main pillars of Indian start-ups: 1) healthcare access & delivery, 2) Affordable health and 3) Quality health for all are being addressed by digital health start-ups through*:

1. **Telemedicine** provides a structured 24X7 quantum of care, reducing consultation time to 10-15 min in both rural and urban areas, also increasing accessibility and reducing costs to half.
2. **Electronic Medical Records** (EMRs) enables HCPs to make more accurate decisions in a shorter duration.
3. **AI** can lead to transformation of health management through driving analysis basis health data being gathered by platforms and automating clinical tasks such as virtual nursing assistants.
4. **Smart health monitors** enable collection of personal vitals, which will help with rapid diagnosis and early-stage treatment, also reducing operational inefficiencies.
5. **Mobile health apps** are rapidly plating a role in preventing serious diseases by increasing patient engagement, providing health education and expert guidance from providers.
6. Certain upcoming **VR** start-ups such as Cyclops (eye-tracking solution) has the potential to transform the way we currently perceive pain management, stress management and rehabilitation, as we witness migration of services beyond clinics/ hospitals to mobiles, headsets, and headphone

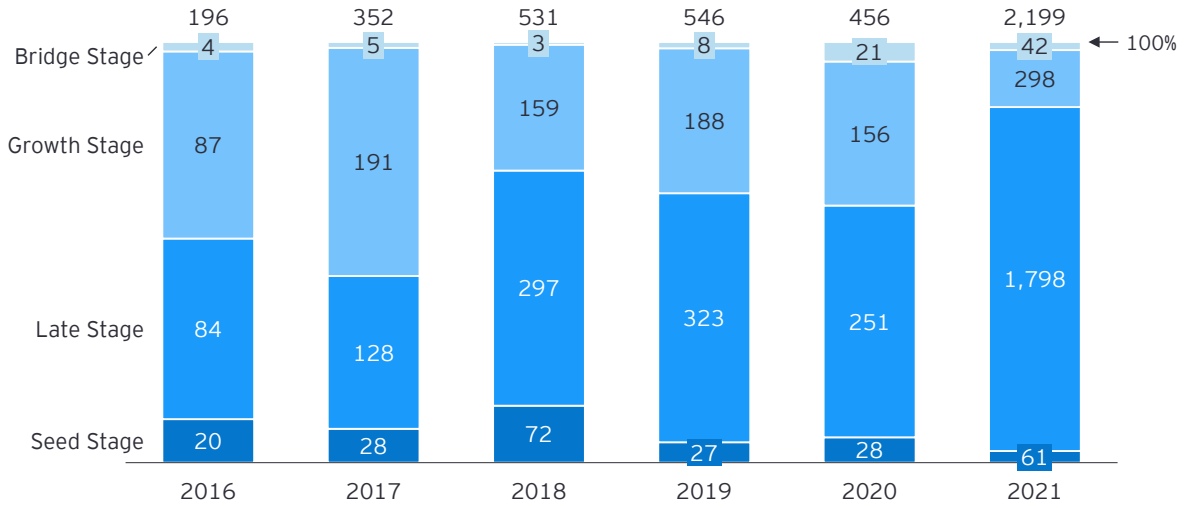
Future Potential

Similar to fin-tech and ed-tech start-ups, health-tech start-ups are attracting investors who eye a huge potential of a **US$370 billion healthcare market in India by 2022**, with **returns up to 35-40%.**

Indian health-tech start-ups raised close to US$2.2 billion across 131 deals which is one of the highest across years; a major share of this year's health-tech funding was driven by four unicorn rounds, seeing the participation of few prominent global investors. The two biggest acquisitions were in the online pharmacy space worth US$600 million and US$230 million each.

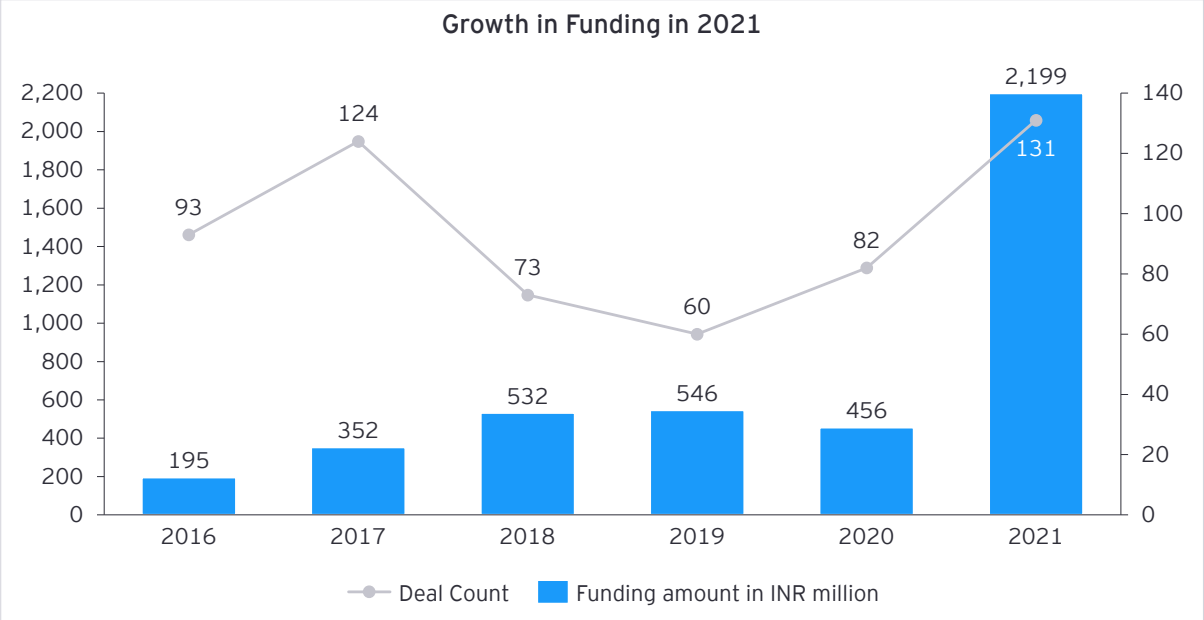
Funding in Indian Healthcare start-ups (2021) in INR million

Between 2020 & 2021, growth stage funding surged (2X) followed by bridge funding (97%), seed stage (123%) and late stage (7.2X)



Some start-ups providing comprehensive and digitally integrated chronic care solutions amidst the pandemic has constantly ensured disease management for patients suffering from cardiovascular, hypertensive diseases and diabetes. A health start-up launched a cost-friendly and simple solution asking patients to give a 'missed call', thus tracking the adherence of TB patients. Such initiatives also enable healthcare providers with better data to track patient adherence and react appropriately to missed doses. E-pharma companies including some backed by digital industry leaders playing the role of pharmacists, threaten removal of traditional pharmacists from the healthcare ecosystem. Online pharmacy space even received 33% of total funding in 2021, leading the space. While digital health start-ups primarily cater to metro city patients, a few start-ups are looking beyond metros and tier-1 cities such as **a leading AI-powered EMR platform** which focuses on making clinical practice convenient by digitizing instructions associated with prescriptions for patients **or a social enterprise focused to improve access to healthcare in rural India**, which provides an 'e-doctor clinics' solution to connect patients in rural areas with urban HCPs. There are even start-ups such as Onco.com which are connecting cancer patients to International HCPs and enabling sharing of standardized oncology reports with HCPs.

The question however arises with the significant **4.8X jump in funding in 2021**, if we are amidst a digital health bubble pushed by COVID-19 or is there irrational exuberance? A school of thought suggests that VC firms (especially Tier 2 and Tier 3 firms) have accurately diagnosed the demand from payers, providers, and pharma to digitize health and COVID-19 has only accelerated this realization. While not all investment might see returns and some areas might see consolidation, there should potentially be enough IPOs, SPACs, and acquisitions to justify the valuation.



While this current influx of funds is sure to increase R&D, innovative ideas and adoption in a sector which has previously been sclerotic and in some cases oligopolistic, the rise in capital might however lead to over investment and public failures in case of start-ups which currently lack product-market fit, thus questioning the entire space. Hence it might be advisable for investors to *1) prioritize partnerships over valuation, 2) consider more evergreen funds versus PE-styled lifecycle funds and 3) stress-test every start-up's capital agenda periodically*.

Sources:

1. https://www.healthcareradius.in/features/business/29530-rbsa-report-puts-indias-health-tech-industry-at-50b-by-2033
2. https://www.business-standard.com/article/companies/govt-expects-biotech-sector-to-hit-100-billion-by-2025-117011900704_1.html
3. India Healthcare Centre, UHI – A game changer in Digital Health in India – Credit Suisse
4. https://inc42.com/buzz/innovaccer-becomes-first-indian-healthtech-unicorn-after-tiger-global-invests/
5. https://timesofindia.indiatimes.com/india/india-145th-among-195-countries-in-healthcare-access-quality-lancet/articleshow/64283179.cms
6. https://www.niti.gov.in/sites/default/files/2021-03/InvestmentOpportunities_HealthcareSector_0.pdf
7. https://www.businesswire.com/news/home/20200221005363/en/Insights-into-the-Digital-Healthcare-Market-in-India-2019-to-2024---CAGR-of-27.41-Expected---ResearchAndMarkets.com
8. https://tracxn.com/explore/Virtual-Reality-Startups-in-India
9. https://www.investindia.gov.in/team-india-blogs/health-tech-india; https://www.ibef.org/industry/healthcare-india.aspx
10. https://inc42.com/features/healthtech-in-the-spotlight-with-4-unicorns-and-2-2-bn-in-investment-healthtech-funding-shoots-up/
11. https://www.ibef.org/blogs/digital-healthcare-to-witness-exponential-growth-in-india
12. https://www.forbesindia.com/article/special/medlifes-acquires-myra-medicines-for-express-delivery-and-data-science-capabilities/53373/1
13. https://www.ibef.org/blogs/digital-healthcare-to-witness-exponential-growth-in-india
14. https://inc42.com/features/healthtech-in-the-spotlight-with-4-unicorns-and-2-2-bn-in-investment-healthtech-funding-shoots-up/

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