



A STUDY TO ANALYZE THE TRENDS DISRUPTING THE HEALTHCARE HORIZON

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RATIONALE

In an endeavor to help the stakeholders understand the urgency to react to and navigate through the upcoming opportunities and challenges brought up by the heavy disruptions in the healthcare marketplace, this study aims to prepare an evidence-based comprehensive landscape of the key trends, their driving forces and its implications for the industry stakeholders which they can leverage to fundamentally reimagine their businesses, operating models, and capabilities to remain relevant and competitive considering the impact of these trends over the entire healthcare horizon over the next 3-5 years and build the most sustainable business model



OBJECTIVES

General objective: To assess the evolution of trends and their implications over the next 3-5 years for the stakeholders across the healthcare horizon

Specific objectives:

- To identify the underlying enablers driving the change in the healthcare ecosystem
- To understand how the trends are becoming disruptors
- To scan and analyze the macroenvironment factors driving the trends
- To identify and assess the opportunities and challenges posed by the trends
- To derive the implications of the trends for the healthcare stakeholders





METHODOLOGY

- **Study design:** Descriptive study (Desk review)
- **Source of data:** Market research reports, whitepapers, consulting reports, industry expert's PoVs and interviews, company websites, government websites, news flashes(Forbes, Fiercepharma, HealthITConsultant, Modern Healthcare, HealthAnalytics)

Data collection and analysis:

- Some underlying technological and structural forces driving change across several industries were scanned to identify the underlying enablers for the healthcare trends.
- The qualitative data was collected by structured and targeted secondary research using 'Advanced search' on Google, to gather market evidence to showcase the disruption caused by the trends over Q3'19, Q4'19 and Q1'20, along with tracking the COVID updates across the news flashes and study reports to understand its impact on the trends.
- The adaptive strategies were studied for key market players in different healthcare sectors as a reflection of the impact of the key trends under the scope of study on their businesses for which the data on key M&A activity was collected through news flashes and company websites to describe the strategic intent of the healthcare stakeholders.
- PEST framework was used to analyze the macroenvironment for the trends
- The implications for the healthcare stakeholders were derived through primary research by brainstorming sessions and discussions with industry experts, principals, managers and gathering their PoVs.

KEY TRENDS AND ENABLERS SHAPING THE FUTURE OF HEALTHCARE



Drug Discovery in Silica



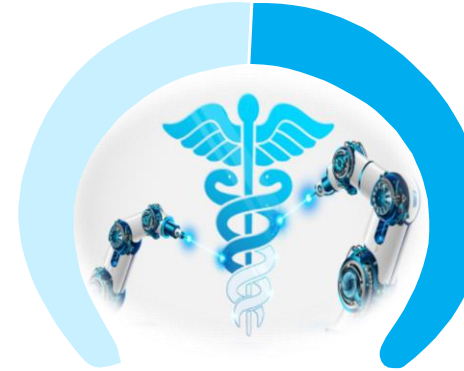
Remote Diagnostics



Vertical integration/ Shift in Site of Care



Consumer Experience and Empowerment



Big Tech Entrance in Healthcare

Underlying enablers

Artificial Intelligence

Declining ROI

Biosensors

Internet of Things

Blockchain

Consumerism

Healthcare ecosystem undergoing innovation-driven transformation

HEALTHCARE ECOSYSTEM

Stakeholders

- Pharma
- Medical Technology
- Tech Vendors & Suppliers
- Intermediaries



- Care Providers
- Health Insurance
- Government & Regulators



DRUG DISCOVERY IN SILICA

The efficiency of pharma R&D has declined for decades pressing the drug makers to find a more efficient way of developing medicines. Artificial Intelligence (AI) have the potential to accelerate scientific research, bringing down the effort from years to months and reducing the cost significantly. The considerable promise of AI and the Coronavirus outbreak has made investment a strategic priority for pharma companies. The AI applications in drug discovery are expected to account for over 35% of the healthcare AI market share by 2022 leading to a marked shift in pharma's operating approach. However, data interoperability and lack of transparent algorithms to meet drug development regulations remain as few major barriers.

Political Factors

FDA is optimistic for approvals of AI discovered drugs
Government led initiatives through consortiums and conducive investment environments

Environmental factors

Uptake in use of AI/ML for focused repurposing of approved compounds against COVID-19

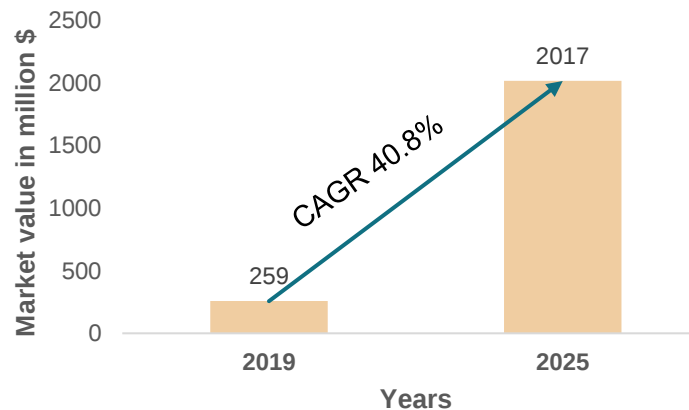
Social factors

In China: Presence of skilled labor(availability of a large quantity of Data scientists and AI specialists) at an affordable cost accelerating growth in APAC

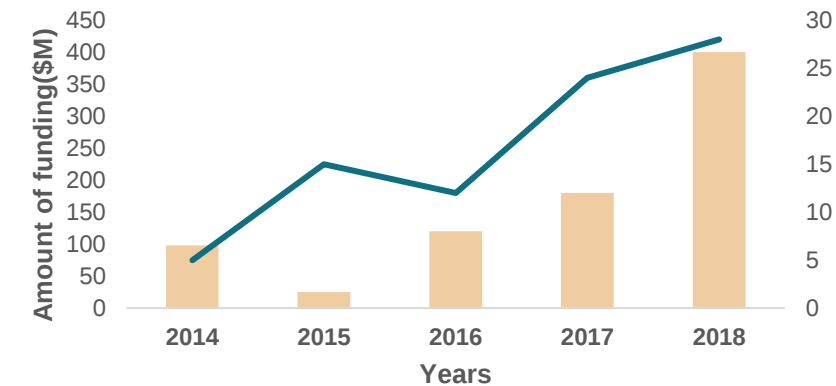
Technological factors

AI developers are building and refining applications that address the needs of the pharma customers leveraging the speed and scalability of AI.

AI in drug discovery market value in million\$



Big Pharma's interest boosts AI drug discovery deals



Big Pharma making strategic investments in AI companies

AstraZeneca

NOVARTIS

INSILICO MEDICINE

BenevolentAI

Microsoft

Celgene

GSK

Roche

Exscientia
DRIVEN BY KNOWLEDGE

GILEAD

HANSOH PHARMA

SANOFI

insitro

Atomwise

Google

Opportunities

- AI in drug discovery market to grow by 40.5% CAGR from 2020-2027
- Regulations and laws are evolving in response to the use of new technologies, requiring biopharma companies to develop legal and ethical expertise in AI drug discovery
- The demand for deploying advanced technologies to accelerate discovery and development of drugs during COVID-19

Challenges

- Lack of availability of quality data, data interoperability as well as data governance
- Not sufficient stringent policies around data privacy and security
- Need for transparent algorithms to meet drug development regulations



Implications

Invest in Data Strategy:

- The future of R&D is likely to rely on data-dependent methodologies like AI for which the pharma companies need to Build data handling and analytical capabilities

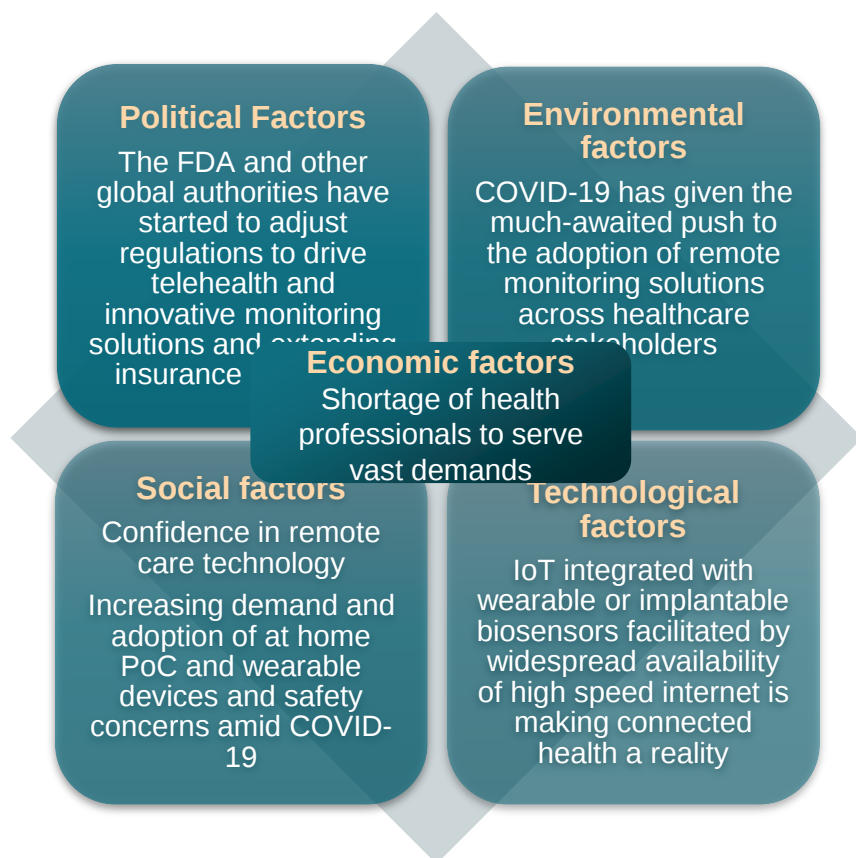
Deploying advanced technologies:

- Replace wet lab work by computer simulation – combining big data + analytics
- Make or buy decision to incorporate AI for understanding disease mechanisms and create better and more effective drugs
- To remain competitive in the evolving R&D environment, pharma companies need to deploy advanced computational tools to make the process of drug development more affordable and less time-consuming.



REMOTE DIAGNOSTICS

An increased focus on patient-centric care and connected healthcare has led to surge in adoption of remote diagnostics. Remote patient monitoring(RPM) is poised for a growth spurt driven by dual tailwind of broader acceptance among the various healthcare stakeholders and positive regulatory developments, catalyzed by COVID-19. The global RPM devices and equipment market stands at \$1.5B (2018) and is expected to grow over \$4.2B by 2025. However, uncertainty of reimbursement, lack of stringent policies around data privacy and security and technological challenges for users remain as few barriers.



Remote patient monitoring adoption by stakeholders		
Manufacturers	Providers	Consumers
MedTech and pharma players are partnering with consumer tech companies to develop diagnostic sensors, remote platforms and utilizing the insights generated to enable preventive and personalized care for chronic disease patients.	- Physician adoption of Remote monitoring for improving patient care jumped from 13% in 2016 to 22% in 2019 while Tele-visits doubled from 14% in 2016 to 28% in 2019 88% of providers have invested or are evaluating investments in RPM services - Providers have recently employed IoT device and wearable sensors to monitor COVID-19 patients and also to fill the void for lost F2F interactions	- Confidence in remote care technology is gaining traction with 56% of Americans currently monitoring their health with at least one digital data collection tool and ~70% wish to share real-time medical information with their doctor especially for chronic conditions - Consumer adoption has skyrocketed, from 11% of US consumers using telehealth in 2019 to 46% to replace cancelled healthcare visits 11% hike in telehealth urgent care amid COVID-19
     		

Opportunities

- Telemedicine Market is set to progress at a rate of 19.3% to reach \$130B by 2025
- Confidence in remote care technology is gaining traction with changing consumer behavior
- COVID-19 acting as a catalyst for the uptake of telehealth and remote services among providers, payers and consumers complemented by regulatory relaxations

Challenges

- Creating a high-speed network between facilities and lack of internet availability to all sections of society in developing countries
- Data processing
- Not enough stringent policies around data privacy and security
- Digital user experience (device safety and user-friendliness)



Implications

Deploying transformative and cognitive technologies

- MedTech companies need to enhance products and services offered and develop safe and user-friendly diagnostic sensors enabling preventive and personalized care for consumers.
- Deploy IoT networks to expand the telehealth services to enable connected healthcare

Take significant portfolio and strategic decisions

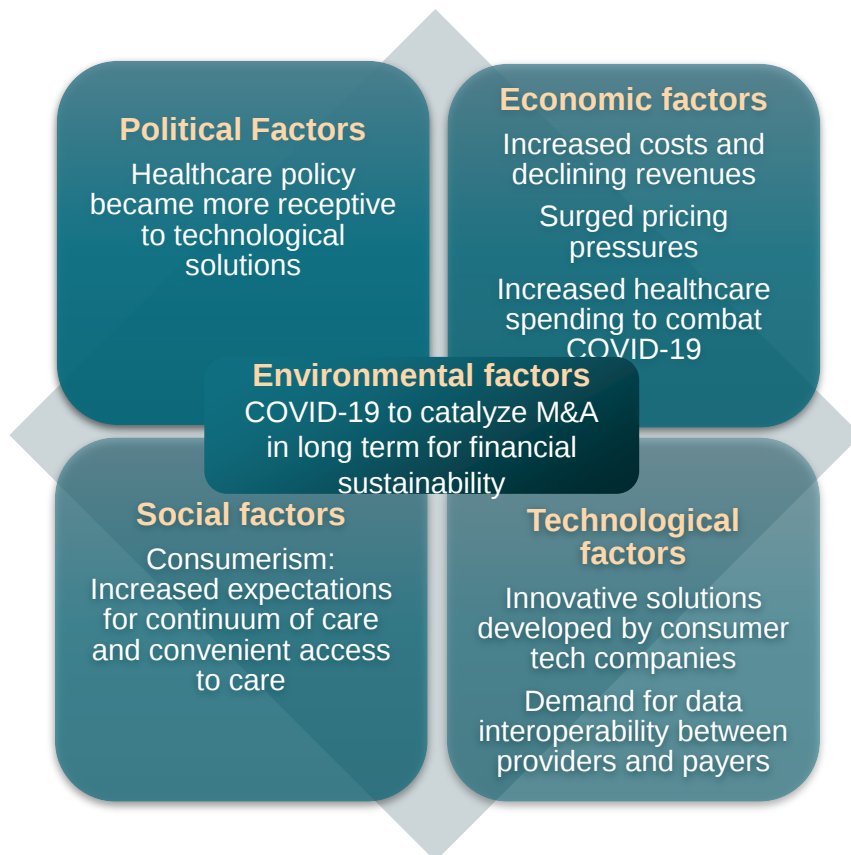
With new entrants disrupting the sector,

- MedTech need to decide divestitures of lower-margin segments, adopt new channels of care and modify GTM strategies.
- Partner with consumer-focused tech and specialized digital health companies



VERTICAL INTEGRATION/ SHIFT IN SITE OF CARE

Vertical Integration continues to show considerable growth as stakeholders are rethinking their strategic identities and modifying their business models to work at scale, thereby improving operational efficiency and tackling the seismic changes brought by new Non-Traditional entrants (Tech companies, Retail giants) in the healthcare industry. A surge in numbers of out of hospital (OOH)/ alternate sites of care is evident and COVID-19 is to accelerate it, propelling OOH care to be a “must-have” over the next 3-5 years to achieve system sustainability. However, heterogenous opportunities and lack of transparency will hinder payer-provider integration.



Vertical consolidation spree continues with varied deal priorities:

- **Health plan and pharma executives** are most concerned with remaining competitive and accessing new markets; **Providers** want access to new technology and to achieve operation efficiencies and offer continuum of care to patients
- About **94 %** of healthcare executives now consider collaboration a key factor to success and about **70%** of payers and providers are already participating in collaborative partnership



MDLIVE



Site of care shifts to non traditional settings driven by consumerism

- By 2025 it is expected that only 50% of current hospital systems will remain.
- Virtual care reported a considerable surge with \$2.6B in funding as 40 states in US adopts more substantive telehealth policies
- Non-traditional players are developing innovative solutions to facilitate OOH care and are now supporting government in expanding testing for coronavirus outbreak



Opportunities

- Competition between health systems heating up
- Surge in financial pressures on health systems amidst COVID-19 pandemic which acts as a catalyst for strong consideration for integrations among organizations for financial sustainability in long term
- Increased funding to virtual care and regulatory relaxations along with adoption surge of digital health services amid pandemic
- The transition to value-based care could accelerate the shift in site of care

Challenges

- Strict federal and state regulations likely to restrict the degree of linkage in a vertically integrated entity
- Lack of transparency and alignment of goals between payers and providers
- The advent of Non-Traditional players threatening the market share of traditional providers (Walmart, Amazon, Google, Microsoft, etc.)



Implications

Prioritizing the business opportunities

- Find ways to legally compete, collaborate, or innovate with other healthcare stakeholders
- Considering the rapid increase in the shift in site of care owing to COVID impact (telehealth, virtual promotions etc.)

Change management

- Prepare for the transition from the current care model by expanding roles and partnerships for multiple stakeholders to elevate the quality of B2B and D2C skills & processes
- Providers need to **have technological infrastructure** in place to move service to remote settings
- Clinical goals need to be aligned between payers and providers to achieve a common goal of improving customer experience



CONSUMER EXPERIENCE AND EMPOWERMENT

With 65% of consumers now expecting connected experiences, healthcare and life sciences leaders are making consumer experience a top priority. Health consumers empowered by digital technology now expect personalized experience, better information, and transparency forcing healthcare stakeholders to develop new models of care to compete successfully in the emerging C2B health marketplace. However, gap remains in meeting multigenerational expectations where, ~60% of consumers still struggle to manage their care between different parties themselves, contradicting their expectations for seamless, connected experience indicating ample room for improvement.

Political Factors

Recent HHS interoperability rules require health IT developers to adopt standard application programming interfaces
Efforts to move Health data ownership to consumers

Economic factors

CMS Price Transparency Rules to drive consumer empowerment
Retail giants making healthcare a easily available and affordable commodity

Social factors

Consumerism in healthcare
Increase adoption of digital tools and personal technologies, willingness to experiment and vocal about their care experience

Technological factors

Consumer apps, wearables becoming key propagator in healthcare with the advancements in AI solutions and acting as real time medical monitors.

Consumer Expectations

82%

Consumers would switch providers as a result of a bad experience

Willingness to share personal information in exchange for greater personalization and more value

90%

78%

Positive experience influences their purchasing decision.

Millennials and Gen Z consumers have asked a provider about a medication based on their own research

>50 %

Stakeholder Response

- The healthcare and pharma spending grew **3.7% globally to \$35.7 B**, targeting consumers in a more personalized way
- **Big pharma**(Novartis, Lilly, Roche, Janssen) increasingly incorporating **patients voice** in clinical trial design
- True omnichannel customer orchestration has resulted in a more than **20%** increase in **engagement rates** and an uplift in impactable **sales** that can reach **30 %**
- **One-third of pharma** companies are expected to spend over **50%** of their marketing budget on digital channels by 2022
- **49%** of providers now believe consumer experience(Cx) to be a strategic priority
- **81%** health plans invest 1/3 of their health IT dollars in technology to improve CX

Opportunities

- Consumer willingness to share their health information tracked in apps and medical devices with their health providers
- Health consumers empowered by digital technology
- Service delivery experience is key decision making parameter for consumers while choosing their provider

Challenges

- The right balance between human and digital component and collaborations between cross functional teams is critical
- Understanding multigenerational consumer needs and developing personalized, value-based products
- Training and equipping Physicians to get comfortable with conversations around cost (price transparency)
- Non-traditional players (Tech and Retail giants) leveraging their customer centric experience to reap faster rewards in healthcare industry



Implications

Building internal capabilities

- Leverage digital health technologies to predict, react and improve execution without losing sight of strategy with more adaptive people and processes
- Workforce diversification (from industries such as tech, hospitality, and social services)

Revisit consumer engagement strategies

- Engage more directly with consumers through medical support staff and nurse advisors and drive customer loyalty through a better experience
- Personalized engagement with the HCPs via digital tools and shift to virtual promotions

Transparent and safe service delivery

- Deploy blockchain technology to protect patient data privacy
- Transparent pricing and sharing treatment progress with the patients to aid informed decision making



BIG TECH ENTRANCE IN HEALTHCARE

Big tech is set to disrupt the healthcare market across the continuum are accelerating their pursuit of the \$3.6 trillion healthcare market. Powered by data prowess and tech-savviness, rich consumer experience and global market presence, they have accelerated to hone their core business strengths coupled with the expansion strategy to become attractive partners in specific corners of the ecosystem to attain the domain-knowledge which they lack.

Political Factors

FDA demonstrating dedication to promote innovation with a new approval route for rapidly evolving digital health software (Pre-CERT)

HIPAA-compliance for software and products

Environmental factors

COVID-19 has surged the need for collection of quality data from apps and wearables and interoperable systems to track population movement

Social factors

Willingness to use wearables thereby aggregating patient data on its personal health record.

Increased consumer expectations to access healthcare at hand

Technological factors

Large pools of consumer centric data being captured on cloud

AI data analytics

Digital-tech needed to patch up interoperability and data sharing gaps

Moves by Tech players



Alphabet

amazon

Microsoft

Manufacturers

- Radically transforming drug discovery and development
- Enhancing value proposition through patient data collection through remote care solutions

Apple WATCH

Google
SANOFI

aws

ResearchKit

DeepMind

verily

Providers

- Improving access to care facilities
- Assisting in clinical decisions
- Optimizing provider workflows with data sharing and cloud solutions

Apple Health Records

Google Cloud

aws

Azure

onduo

care

Microsoft Health

Insurers/Payers

- Automating claims processing
- Enhancing patient engagement
- Enabling new patient segmentation

Clover

CHANGE
HEALTHCARE

Microsoft Health

alexia

Big tech actively taking steps to combat COVID-19, leveraging their advanced data handling tech capabilities by integrating with government, health organizations and other tech players

Opportunities

- Increasing demand for data interoperability and real-time health monitoring with disruption of EHR market
- A paradigm shift towards 'Predict and Prevent' leading to a surge in demand for clinical decision support tools
- Health system partnerships
- Growth in telehealth adoption facilitated by improved internet availability and accessibility
- Large testing ground and aggregated consumer demand
- Growing industry focus on personalized care

Challenges

- Rising concerns among regulators and consumers for data privacy and security
- Lack of consumer trust in sharing their health data with tech companies
- Cloud competition
- Variability of the healthcare regulatory environment in different countries



Implications

Competitive or Collaborative?

- The ambitious entrance of Big-Tech in the healthcare industry can prove to be competitive or collaborative for the traditional healthcare players depending upon how the stakeholders leverage the opportunities and make changes to their strategic plans
- HC stakeholders can leverage the customer-centric approach of these new entrants and be in a win-win situation through a collaborative partnership with these firms to reduce the emerging threat of losing the market share
- The Big-Tech need to **gain consumer trust** so as to succeed in the healthcare ecosystem.

CONCLUSION

Riding the waves

- **COVID-19** is acting as a **catalyst** to spark **transformative innovations** across the healthcare value chain and more flexible regulations
- **Emerging technologies** catalyzing the space of innovation adoption and related applications across the healthcare horizon
- Drug makers can no longer ignore the **power of AI**, a shift to an **autonomous drug design** paradigm will make a marked difference in pharma's **operating model**
- Telehealth and Remote care are here to stay and could be a **game-changer** for the healthcare industry - but **scaling** its implementation will require **well-coordinated action** between governments, tech firms and healthcare providers to overcome existing barriers
- Acceleration in vertical consolidation of health systems for **financial sustainability** in long term after COVID
- Big tech **intensifying** their efforts to reshape healthcare realm, will prove to be **collaborative or competitive** for traditional players is yet to be seen

Implications

- Upshift **strategic investment** in data and technology in an effort to reimagine the role of tech as a business innovation partner
- **Prioritize** business opportunities
- **Recalibrate** across value chain
- Re-invent **digital strategy** with agility and user-centric approach
- Modernize the **infrastructure**
- Invest in **team's adaptability**
- Build strong resources and forge **collaboration** that contribute to long term growth objective of the company
- **Optimize execution** of remote customer engagement at a large scale
- Revisit consumer engagement strategies and provide **seamless** member experience across the entire business process
- Build **trust** with continuous and sustained **ethical innovation**

**THANK
YOU**

