White Paper

Transformation of Patient Journey in the Digital Age

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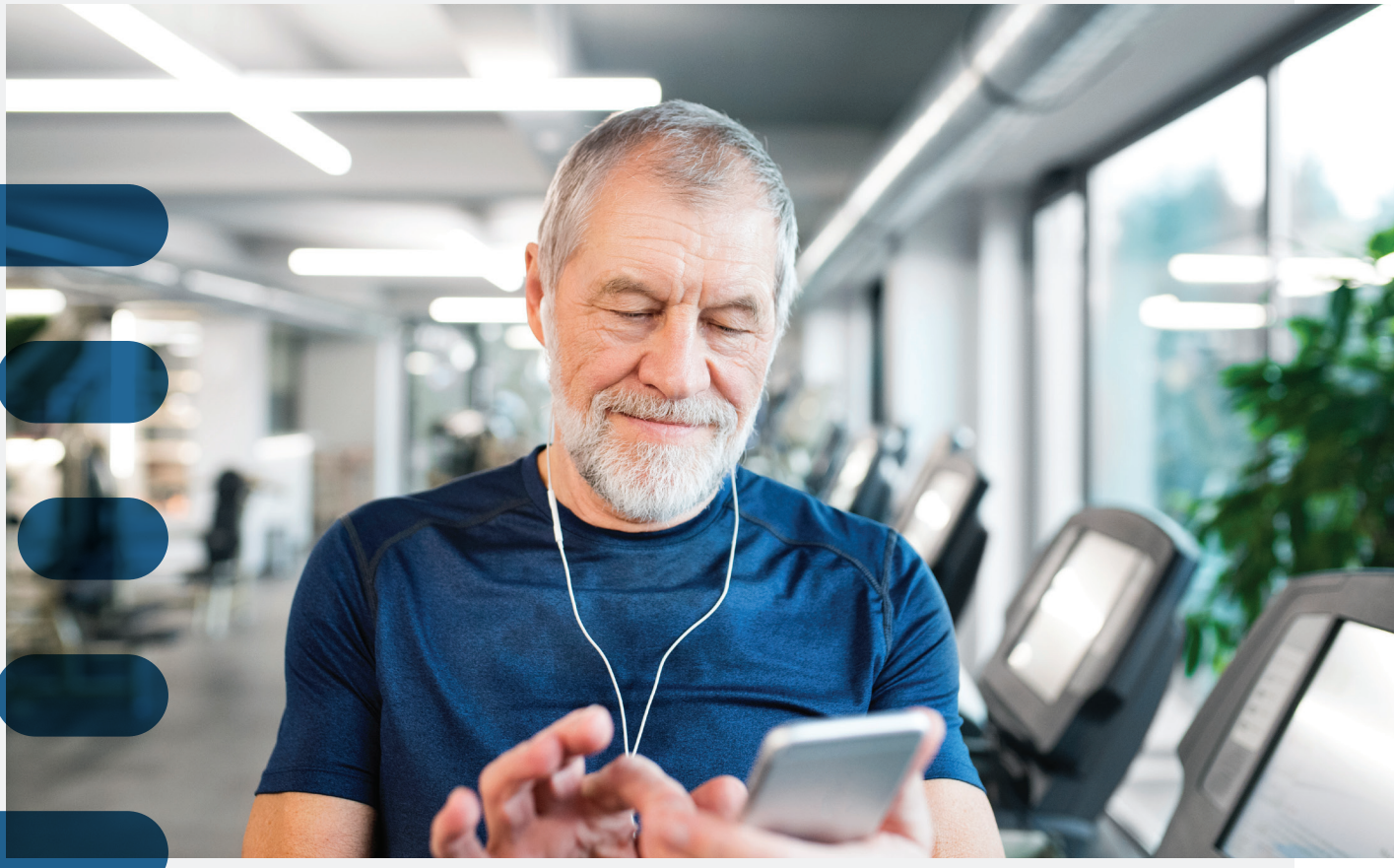

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Introduction

With changing healthcare dynamics and technology reshaping customer experiences, the patient has come center stage on the care continuum. Patients have transitioned from being decision followers to decision influencers. The empowered and powerful patient is on the rise.

This transformation is demanding pharmaceutical companies shift their mindset from solely selling to physicians towards serving and achieving the best experiences for patients. Companies are starting to embed patient centricity in their blueprint for growth, but there's still a long way to go. A truly patient-centric approach demands not only developing drugs to cure disease but also providing services and support to patients to manage and monitor their condition and avert the progression of disease. This implies ensuring success across three critical dimensions: patient access to therapy, patient experience and satisfaction, and patient outcomes and safety.

Patient-centric solutions and strategies vary across companies, and some are yet to fully embrace such an approach, but for those that do, there is much to augment due to the emerging ecosystem. Putting patients at the heart of care is easy to say but far harder to accomplish. The most successful companies stringently map the patient journey to tap into a patient's experience through a disease, from symptom onset to diagnosis, treatment, and management. They then augment that understanding by interacting with patients, caregivers, and advocacy groups to not only spot the practical aspects of living with the disease, but also the areas where emotional support is coveted. Capturing that holistic 360-degree view is imperative because it's only by understanding what is of "value" to patients that companies can develop tailored services and solutions to help patients stay adherent to treatments and improve health outcomes.

In this paper, we will investigate how digitalization has transformed the patient journey and why mapping the digital patient journey in place of the traditional patient journey offers myriad of opportunities for pharma to understand, reach, and support patients, enhancing their experiences and outcomes. We will also explore a framework that pharma companies can employ to successfully map a digital patient journey and become patient-centric during the process.

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Understanding the patient journey

PATIENT JOURNEY – A TOOL FOR DESIGNING SUCCESSFUL BRAND STRATEGIES AND AUGMENTED PATIENT EXPERIENCE

The patient journey describes a patient's experience as they progress across the care continuum for a specific disease or condition. The typical journey begins with symptom onset, followed by presentation of symptoms to a physician for diagnosis. The journey continues with treatment initiation to manage the diagnosed condition and ultimately leads to a cure, long-term disease management, or death (Figure 1). The journey can be much more complex as patients face unknown diagnosis, misdiagnosis, subsequent evaluations, and second opinions.

Patient journey mapping reveals crucial information such as the barriers to care delivery, the efficiency of patient-physician engagement, patient pain points, and the rationale behind various care-related decisions. It helps in a continuous and longitudinal visualization of this information in both quantitative and qualitative aspects such as behavior of patients, caregivers, and providers.

Figure 1. Steps in a patient journey

A typical patient journey depicting the stages through symptom onset to disease management

Symptom onset	Presentation and diagnosis	Treatment choice and initiation	Long-term disease management
The patient becomes aware that there is some sort of problem. The most common motivators for awareness are physical or emotional pain. However, occasionally the patient is informed by a friend or family member regarding a health issue that needs attention.	The patient books an appointment and makes initial contact with a health system/provider. The patient is then assessed at a medical facility (physician's office, hospital, etc.) and undergoes diagnostic tests.	Once the diagnosis is established, the provider presents different treatment options to the patient and sets the treatment expectations and timelines. After brand selection, the provider helps in treatment adherence by suggesting a patient support program. The provider also monitors the treatment efficacy and helps in managing the side effects. The patient may also undertake lifestyle changes along with the drug therapy.	The patient manages care between clinical visits. If the symptoms are under control, the provider continues the current treatment and monitors the disease progression in follow-up visits. On the other hand, in case of uncontrolled disease, the provider usually switches the brand or treatment approach for better disease management.

While formulating a brand strategy, patient journey mapping is a vital exercise that helps identify unmet needs in care delivery. Identifying unmet needs help companies spot growth opportunities and inform product positioning decisions with providers, payers, and patients. The process helps uncover issues with current therapy which could range from access to adherence. Pharma companies can then design new treatments to circumvent these challenges.

Patient journey mapping can also be used by pharma companies to quantify the impact of a disease and its therapy on both patients and caregivers. This helps in the identification of areas where companies can build suitable interventions to boost patient outcomes.

The evolution of patient journey

TRADITIONAL PATIENT JOURNEY – A TREATMENT-DRIVEN JOURNEY

Historically, patient journeys built by pharma companies demonstrate the movement of patients in stages from product awareness to product purchase. These journeys have been created by conducting market research with physicians and have acted as a guide for pharma companies' marketing programs.

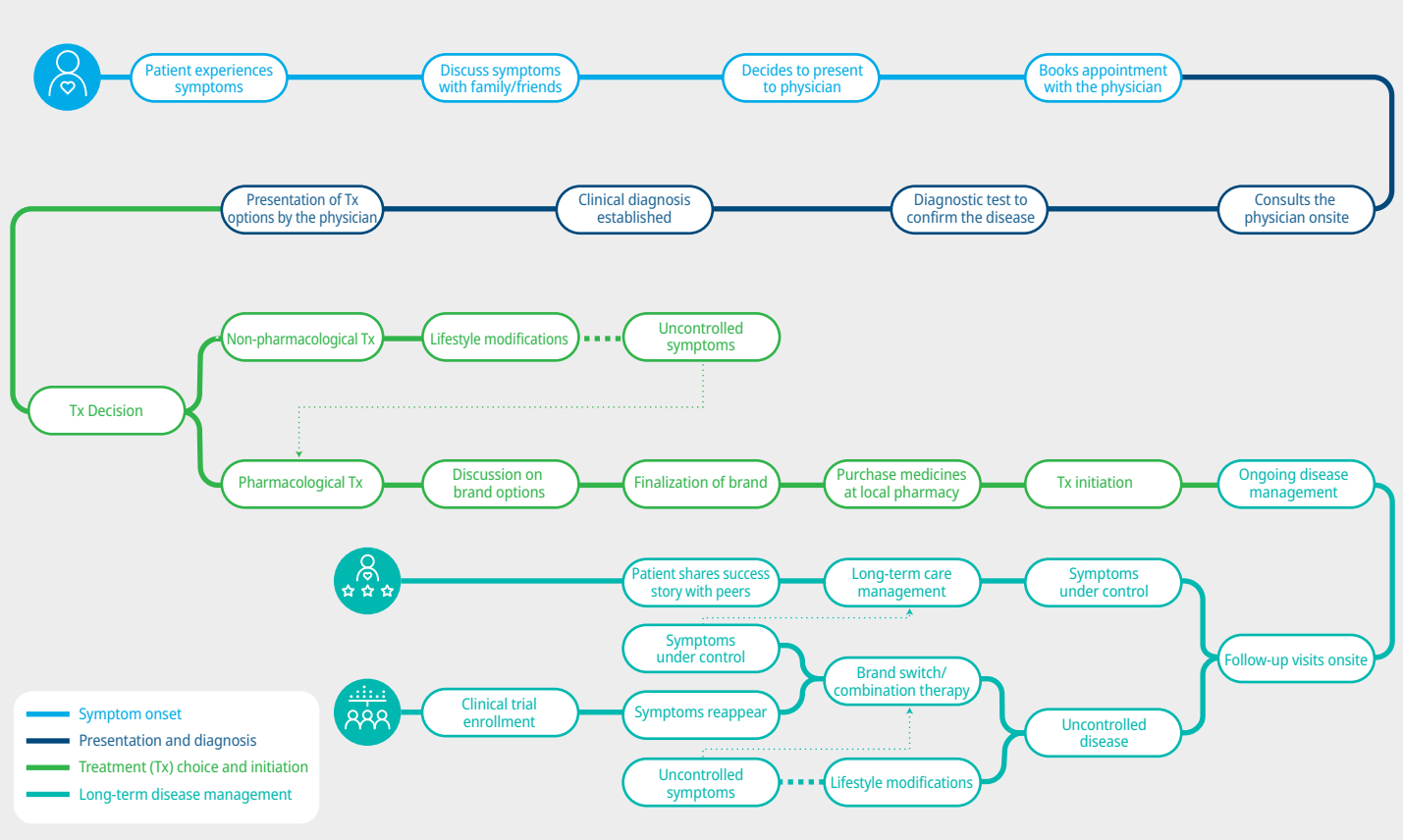
These market research studies, typically involving interviews and quantitative surveys with several hundred physicians, were the soundest approach available in the past. This is because patients had a limited knowledge of available medicines and trusted physicians to prescribe the most appropriate and cost-effective option for their condition.

As a result of this physician-centric approach, these traditional patient journeys (Figure 2) suffer from several major shortcomings, including:

- The use of linear or sequential logic to represent patient behavior misses the complex decision making process of patients that can also be highly subject to bias
- Emotional, informational, and behavioral aspects that affect disease diagnosis, treatment and management are largely overlooked
- Data on events (e.g.: prescription fulfilment, cost burden, etc.) that happen outside the physician's office are largely unnoticed

Figure 2. The traditional patient journey

The traditional patient journey, which is largely a treatment journey, oversimplifies how patients manage their disease and overlooks the emotional, behavioral, and psychographic factors that affect disease diagnosis, treatment and management



- Feedback from patients and payers is not incorporated despite both being important stakeholders
- Disease impact on caregivers is often unrecognized, especially in late stage disease
- Since patients are simply defined as care receivers, a holistic approach to care delivery that includes self-management and self-monitoring is arduous to implement. Due to the lack of a coordinated approach, it is difficult for the patients to 'own' their condition

MODERNIZING THE TRADITIONAL PATIENT JOURNEY – SHIFTING TO DIGITAL

In today's marketplace, we have access to technology around the clock, even in the healthcare industry. More than 4.7 billion people around the world are active internet users which encompasses more than 60% of the world's population[1,2]. With information available so widely and readily, it should come as no surprise that our phones have evolved into symptom-trackers and platforms that can be used to check a doctor's reputation or schedule an appointment. One in every 20 Google searches is related to health. And when researching information about a specific health condition, 57% of consumers go online first and 71% of patients study reviews before deciding on a medical provider.[3-6]

In this digital age, with democratization of information and dilution of cultural barriers, patients are becoming more involved in their own care and hence their needs are also constantly evolving. Patients today actively participate in choosing and controlling their care.

Digital tools such as mobile health apps help patients monitor and manage their personal health. Such apps have increasingly been used for personal disease monitoring, chronic care management, support for health services, and complex population health analysis. As of August 2021, the Google Play Store hosts ~112,500 health and fitness-related apps, while the Apple App Store hosts ~82,000 apps under the same category[7].

In fact, the integration of digital technology in the patient journey has mitigated many of the shortcomings of the traditional patient journey. By connecting patients and healthcare providers through mobile technology, treatment efficiency can be greatly improved by increasing the accessibility of existing or real-time data. Quick and timely access to such information helps healthcare providers take immediate action in their patients' care, enhancing quality of life for patients.

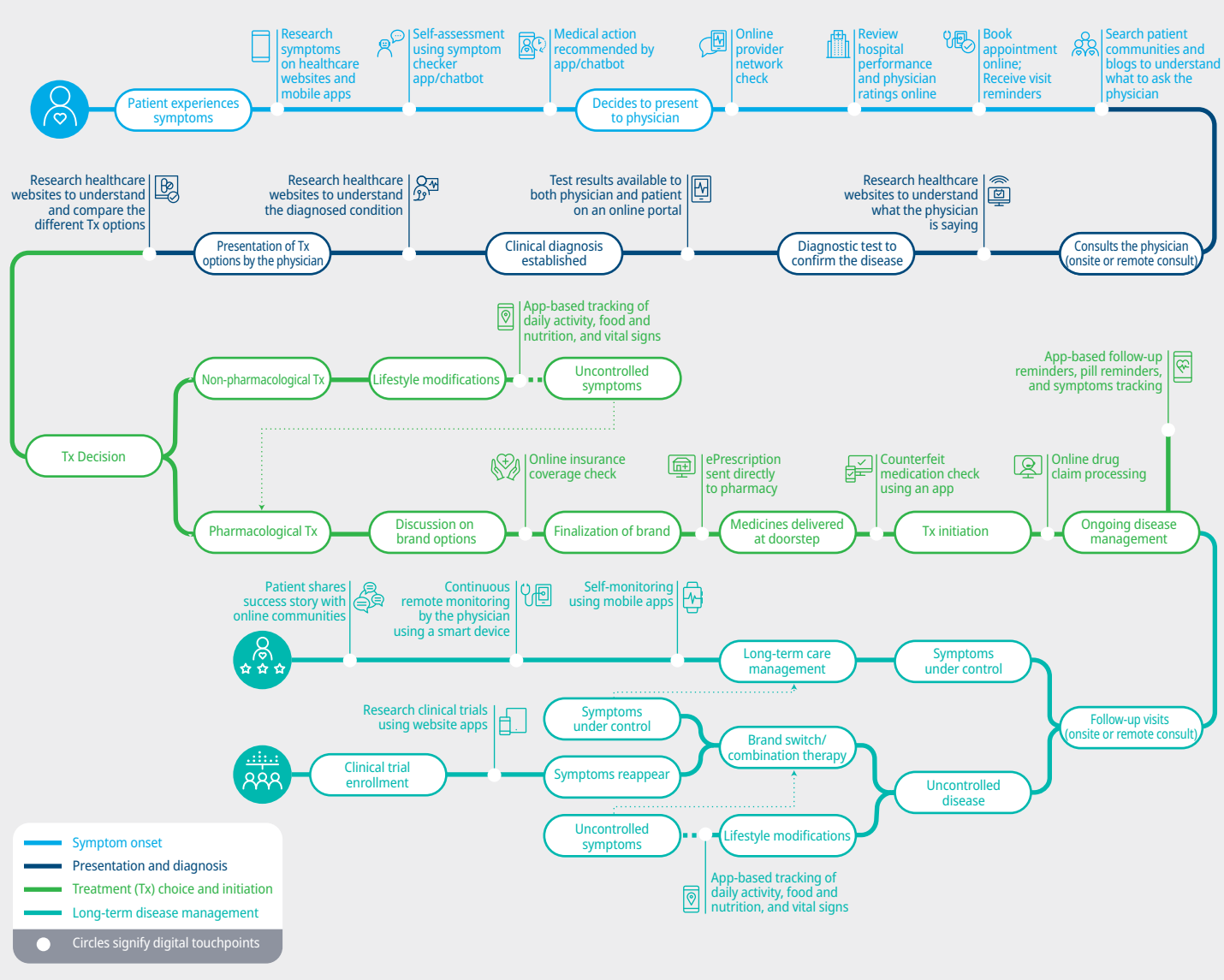
This influx of digital technology into the patient journey has led to the emergence of a digital patient journey.

The digital patient journey (Figure 3) starts long before the patient ever steps into physician's office. Even prior to disease diagnosis, patients are leveraging social media, online communities, blogs, forums, and mobile apps to build disease understanding, support diagnosis, and manage their illness.

One in every 20 Google searches is related to health. And when researching information about a specific health condition, 57% of consumers go online first ...

Figure 3. The modern digital patient journey

The emerging patient journey is increasingly digital which captures the emotional, informational and behavioral needs of a patient and tells a connected and patient-centric story



Take for example this simple, albeit common scenario:

An otherwise healthy female experiences certain symptom(s).

- She browses through healthcare websites to study her symptoms and may then examine her symptoms using symptom checker apps, websites, and chatbots
  - » Websites such as WebMD[8] and AI-powered chatbots like Symptomate[9] and Ada[10] offer a wealth of online information and allow patients to research their symptoms
- Even prior to booking an online appointment with a physician, she would likely first review her provider network or hospital's performance on the internet, review physicians' profiles to make an informed decision, and visit patient communities, blogs, and forums for support and advice

As showcased in this scenario, there are numerous digital channels and tools available to patients.

As such, the touchpoints in a patient journey have increased exponentially as patients take control of their health. With the right interventions at these touchpoints, patients can overcome barriers in their care delivery and stay on track with their treatment.

These touchpoints are not just limited to clinical aspects but also to informational, emotional, and behavioral aspects and needs. It is imperative that interventions should be designed to cater to each aspect.

THE ROAD AHEAD FOR DIGITAL PATIENT JOURNEY

As technology evolves and emerging technologies become more widely adopted, the digital patient journey is poised to advance further in the next few years. Integrated care delivery across the patient journey is expected to be the new focal point in healthcare. We will see more fully integrated and connected services as technology facilitates better communication and creates efficiencies across the continuum of care.

Some predictions on how technology will transform healthcare in the next five years include:

Acceptance of AI: With the accelerating scope of artificial intelligence (AI) in healthcare management, machines will become even more efficient in diagnosing disease and its possible treatment. From chronic diseases and cancer, to radiology and risk assessment, there exist immense opportunities to leverage AI. However, to drive this change, it is critical that the designed services are patient-centric and data privacy concerns are resolved.

In the coming future, current voice-based virtual health assistants will evolve into holographic medical assistants. These medical holograms will be able to speak "face-to-face" with patients, answer their medical queries, perform preliminary diagnoses, and help close the gap between patient and physician.

The sophistication of AI-based tools will advance and these health assistants will be able to perform tasks as trivial as setting up appointments, syncing calendars or calling an Uber, and as complex as screening symptoms, preliminary disease diagnosis, solving elementary health concerns and monitoring progression, at incredible speeds and with a human-like brilliance.

Portable and convenient care: With the technological advancements in medical equipment and sensors, these devices will become smaller, efficient, and more portable. Patients will be able to undergo complex tests and procedures non-invasively in the comfort of their homes rather than visiting the hospital. For example, diabetes screening currently involves invasive procedures and requires patients to visit a lab. In the future, handheld devices and sensors will replace these lab-based procedures.

Interoperable health data: The dream of cross-platform, standardized, and regulated health information exchanges will become a reality in the next generation of electronic health record (EHR) systems. Technology such as blockchain will help in establishing trust and increasing transparency. Interoperable data

Integrated care delivery across the patient journey is expected to be the new focal point in healthcare. We will see more fully integrated and connected services as technology facilitates better communication and creates efficiencies across the continuum of care.

along with enhanced analytics capability will promote population health management. The ability to identify the most vulnerable patients before they have an event will enable pro-active care delivery.

The evolution of telemedicine: Telemedicine will become mainstream in the future as it enables healthcare organizations to deliver care at a much lower cost, while increasing access and convenience. Technological advancements such as the advent of 5G cellular mobile communications and elimination of cross-platform incompatibilities will spur the growth of telemedicine.

Embracing wearable technology: Wearables in healthcare are undergoing a revolution from being just activity trackers to medical-grade devices that can track and stream real-time data to the physician and automatically integrate with digital health records. With the miniaturization of sensors and battery technology, biosensors and implantable/injectable medical devices will become the next wave of wearables.

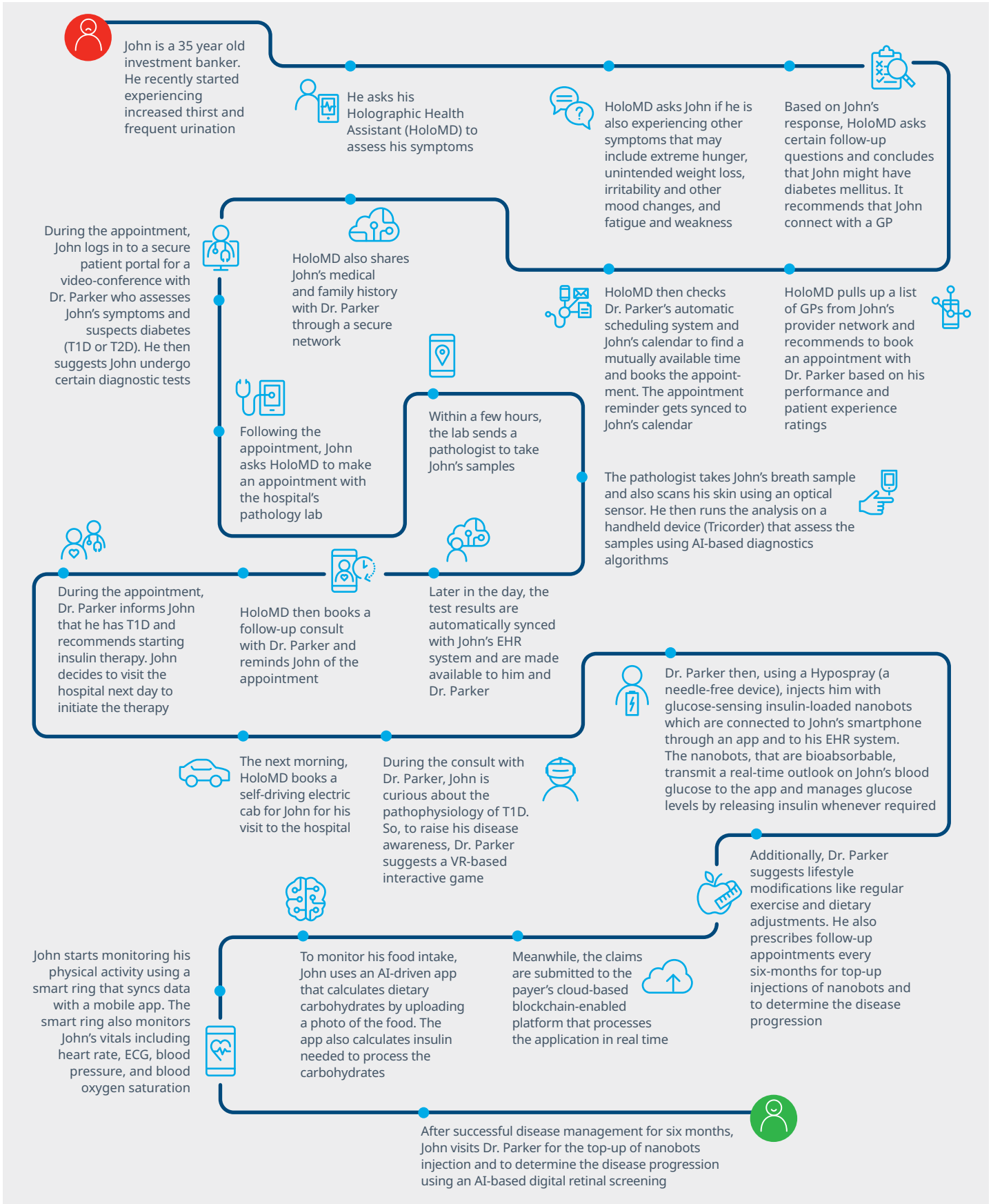
KnowLabs, a Seattle-based company developing medical diagnostics, has created UBAND[11] Continuous Glucose Monitoring (CGM), a noninvasive, wrist-wearable device that connects to a smartphone app via Bluetooth. The wearable's Bio-RFID sensor platform analyses the amplitude of particular radio waves between lowest and maximum concentration levels of whatever is moving through the circulatory system, in this instance analytes like blood glucose, using radiofrequency spectroscopy. The device recently completed pre-FDA scientific research validation in-vitro tests to validate if Bio-RFID is able to precisely and non-invasively measure and identify a variety of analytes.

Personalization at the nanoscale: Novel emerging concepts in medicine such as nanobots will be used to constantly monitor our body for maladies, deliver drugs, and continually transmit this information to the cloud for close monitoring by medical staff.

The reality-virtuality continuum: Virtual (VR) and augmented reality (AR) as tools for medical intervention are still in their infancy and will likely become more prevalent and advanced in the future. Currently, research is being conducted across the globe to study their application in pain management therapies[12], treatment for phobias[12], as a remedy for post-traumatic stress disorder, as an option to ameliorate other anxiety-inducing conditions[13], and for early detection of Alzheimer's disease[14], amongst others.

The technology mentioned in the above examples is not far-fetched. In fact, most of these technologies are either already in use or under development. Figure 4 explores what a patient-centric, digitally powered journey of a diabetic may look like in the future.

Figure 4. The future digital patient journey



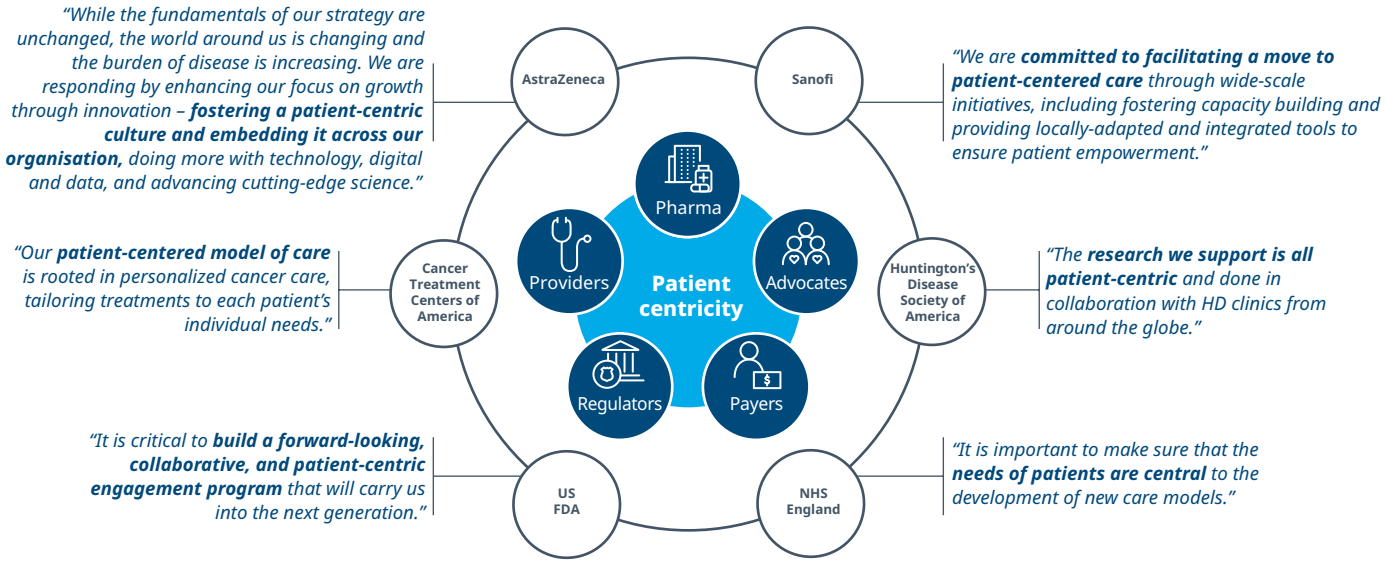
The implications for pharma

MAPPING THE DIGITAL PATIENT JOURNEY IN PATIENT-CENTRIC PHARMA

Due to the wide adoption of digital technology and the resulting rise of connected and informed patients, it has become vital that healthcare stakeholders put the needs and concerns of the patients at the center of every healthcare decision.

Today, patients are already being recognized as a central stakeholder in the healthcare dialogue[15-20] (Figure 5). Physicians, academia, payers, and regulatory agencies have started fortifying their decision-making with patient inputs. The value of patient-reported outcomes has also risen significantly as payers now considerably rely on these for drug reimbursement-related decisions. Patients are increasingly being engaged by payers in health-technology assessments[21].

Figure 5. The buzz around patient centricity



The healthcare model is also shifting towards value-based care. Although, even in the past, payers and pharma companies have engaged in pay-for-performance agreements, the trend has recently started getting significant traction.

These changes to healthcare, foremost as a result of digitalization, have created a patient-centered paradigm. Consequently, pharma needs to become more agile, acquire new capabilities, and adopt new business models.

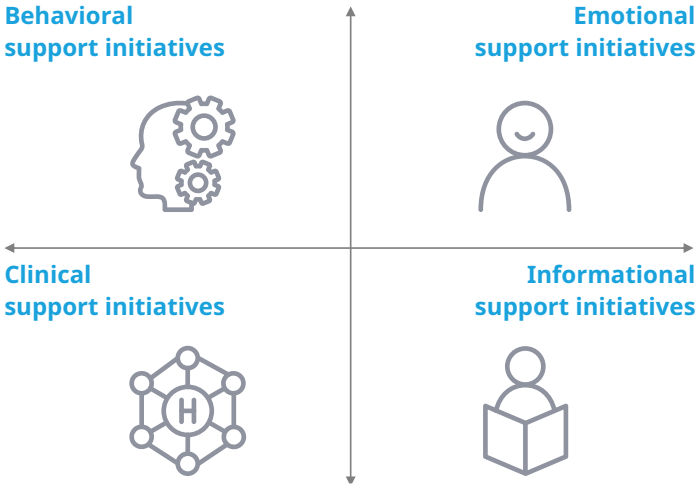
Many pharma companies are adopting the patient-centric culture and moving towards a digital technology-driven transition such as 'beyond-the-pill' or 'around-the-pill' services. For example, Sanofi, for quite some time, has been at the forefront of patient centric activities and was the first large pharma company to appoint a Chief Patient Officer in 2014. The company soon followed that up with "Three Pillars for Patient Centricity," a strategic framework outlining its vision as a patient-focused healthcare provider. Further, the COVID-19 pandemic

has accelerated the patient centric approach more than ever. There is a trend toward virtual clinical trials and telemedicine resulting in increased healthcare access and improved patient experience.

To achieve true patient centricity, pharma must first understand the patients' experience, behavior, and the unmet needs across the care continuum. This necessitates that pharma companies revisit their understanding of the patient journey and its various touchpoints. Companies with the greatest success in the new paradigm will be those who realize that most patient touchpoints extend well beyond physician consults and that the traditional patient journey is significantly limited in the insights it can provide and the positive health outcomes it can realize.

On the other hand, a digital patient journey, accounting for all aspects/needs of the patient (clinical, emotional, informational, and behavioral), creates a broader and more integrated view of the patient experience. Further, establishing the digital patient journey as a replacement for the traditional patient journey creates a myriad of opportunities for pharma to provide holistic support along the lines of below mentioned unmet needs (BECI) framework (Figure 6):

Figure 6. The BECI framework



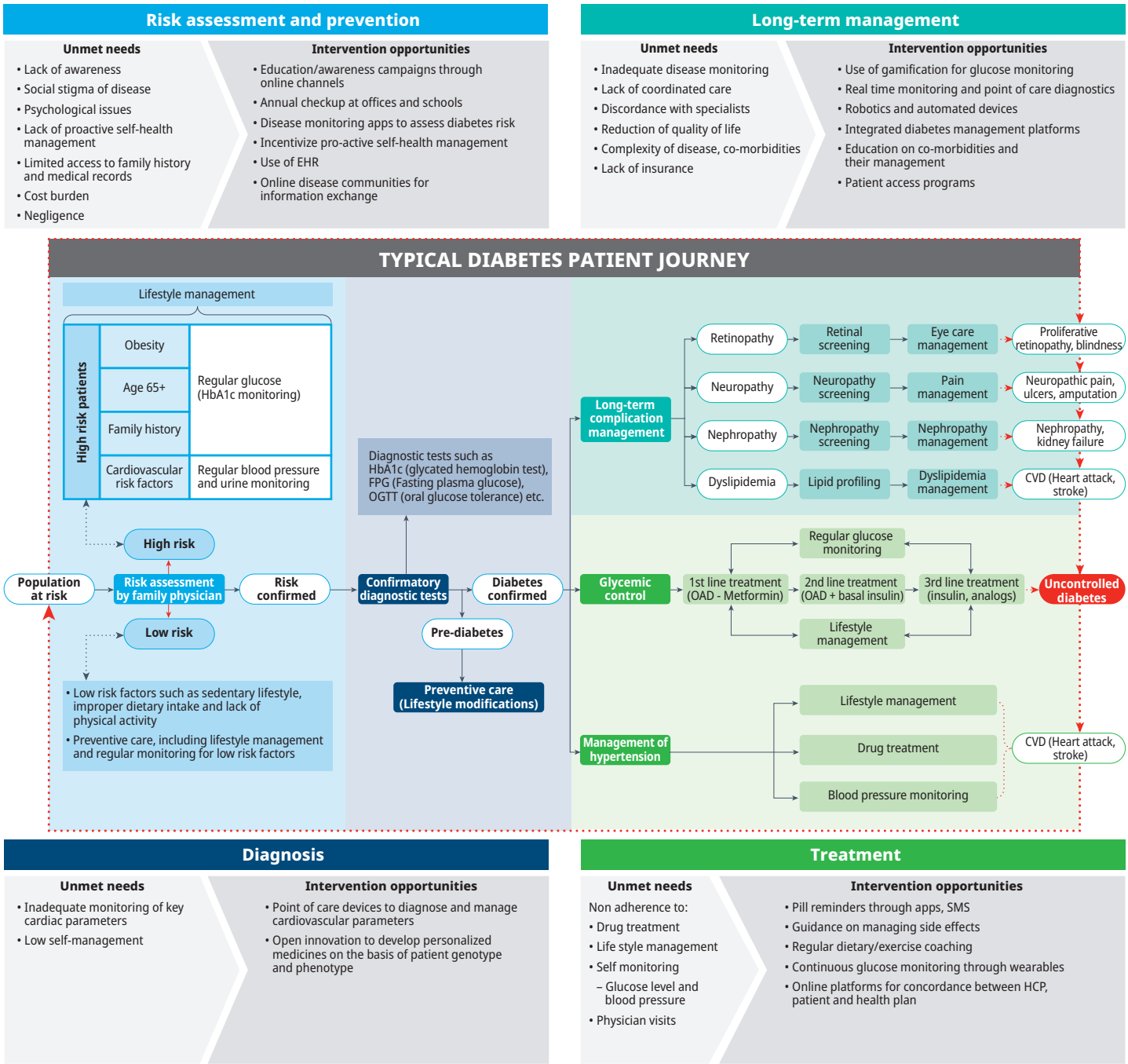
- **B | Behavioral needs:** Emotions, surroundings, and how treatment choices are presented all have an impact on a patient's behavior. Adherence, for example, may be a problem if the patient believes the suggested treatment would be ineffective. As a result, a patient's behavior is critical to the treatment's effectiveness.
- **E | Emotional needs:** Patients need to feel understood and acknowledged. One example is of a healthcare professional demonstrating empathy, which can boost a patient's trust and lead to better communication. Patients who feel heard and understood are more receptive to their doctor's advice.
- **C | Clinical needs:** There may be gaps in the delivery and practice of healthcare at times. One of the causes for late and misdiagnosis of rare illness patients, for example, is thought to be a lack of rare disease awareness among physicians, resulting in physical and mental stress for the patient.
- **I | Informational needs:** To offer high-quality care and ensure that patients receive efficient treatment when and where they need it, they must have access to their health information. For example, a patient's lack of knowledge about their treatment's adverse effects may prevent them from seeking help when they need it.

The BECI framework offers a seamless and fully integrated 360-degree view of the patient that can equip pharma to provide the right intervention at the right stage of a patient journey. The opportunity to be able to provide services across the entire length of patient journey is key in the development of patient-centric strategies.

To achieve true patient centricity, pharma must first understand the patients' experience, behavior, and the unmet needs across the care continuum.

Figure 7 below shows an example of a typical diabetes patient journey map. Across each stage of the journey, the patient's unmet needs have been identified across multiple BECI dimensions allowing an insight-rich view of the journey. These unmet needs may vary based on geography. To translate these unmet needs into commercial opportunities, possible intervention opportunities have been recommended.

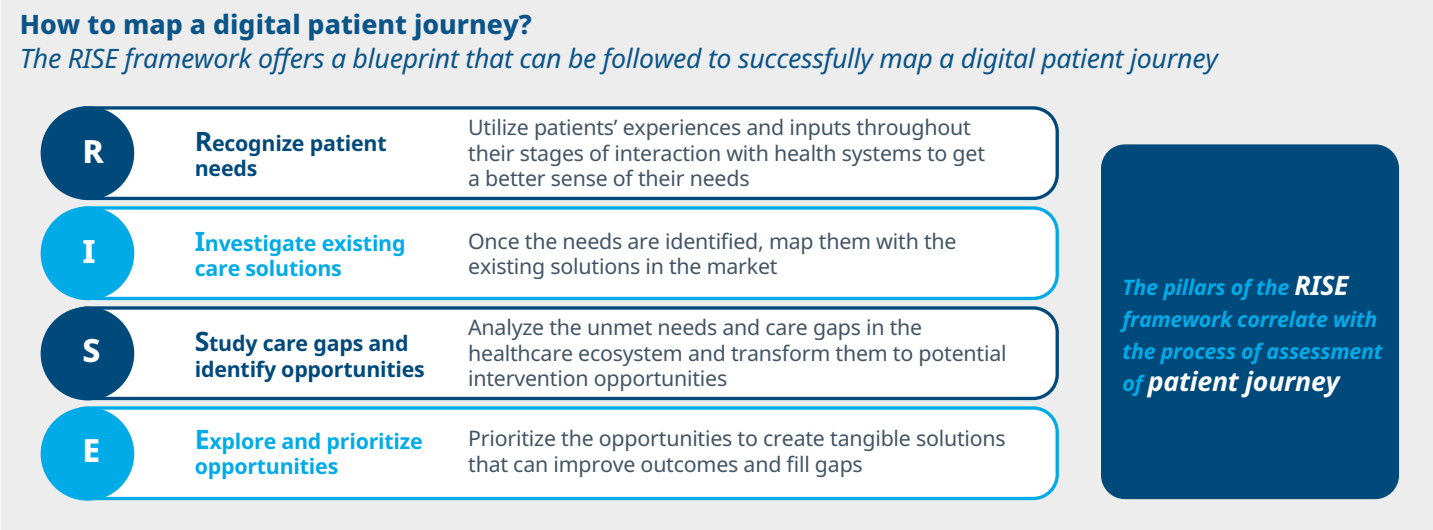
Figure 7. Diabetes patient journey map



RISE – A HOLISTIC APPROACH TO DIGITAL PATIENT JOURNEY MAPPING

While digital patient journeys and the resulting 360-degree view of the patient are valuable and crucial in achieving patient centricity, mapping these journeys is still a challenge for the pharma industry. Given the lack of a comprehensive and precise approach to map a digital patient journey, we propose using the RISE framework (Figure 8). It consists of four pillars which are:

Figure 8. The RISE framework



R | Recognize patient needs: The first step towards mapping a digital patient journey is to understand the patient needs specific to a defined therapy area, while embracing the four dimensions of BECI framework. These needs may may vary by geography so caution should be exercised to avoid the one-size-fits-all attitude.

The input for the identification of patient needs comes from a wealth of secondary data sources, and other diverse and rich databases, including: electronic medical record data from physician offices and hospitals, diagnostic data from labs, longitudinal patient-level databases and claims data covering diagnosis, treatment and adherence, and managed care data covering prescription fulfilment. A purposefully designed holistic qualitative research approach with HCPs, patients, and caregivers is also needed to build understanding of unmet needs.

I | Investigate existing care solutions: Once all the patient needs are identified, the next step is to ascertain if there are existing digital solutions or initiatives in the market that cater to them. It should be noted that the sole presence of an existing solution does not necessarily guarantee an optimal patient experience and there may be need for a refresh. If initiatives are indeed available for some of the patient needs, they offer an excellent opportunity to study the following:

- Which stage of the patient journey does the digital initiative cater to?
- Which geography was targeted and was there any market specific driver or barrier?
- Which company was involved and what was its business model (standalone or in collaboration)?

- What was the outreach of the initiative (e.g. Number of patients benefitted)?
- What was the outlook of different healthcare stakeholders towards the initiative (e.g. Patients, providers, payers)?
- What was its overall impact on care delivery and patient experience?

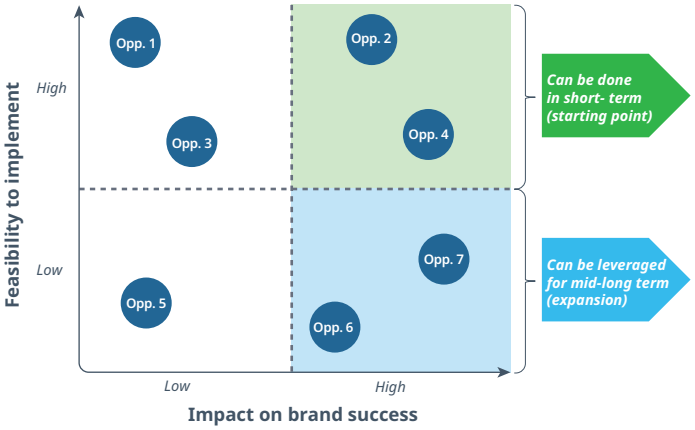
S | Study care gaps and identify opportunities: After mapping and examining the existing solutions/ initiatives, the next step is to analyze the patient unmet needs and transform them to potential intervention opportunities. This exercise should be carried out cross-functionally (e.g. inputs from medical, commercial, market access, etc.) in the organization and care should be taken to make sure that the identified opportunities have the following characteristics:

- **Aligned with the organizational goals:** aligns with short term/ long term goals and priorities of the organization
- **Appeals to all internal stakeholders:** appeal to everyone within the organization and brings value
- **Attractive as per the market needs:** high perceived market need

E | Explore and prioritize opportunities: Once a list of potential intervention opportunities is defined, the next step is to prioritize them to create tangible solutions. For a patient-centric solution to succeed, it should be able to benefit patients, providers, payers, and pharma. A prioritized opportunity should have the optimal win-win for all relevant healthcare stakeholders, i.e. it should be valuable, viable, and acceptable by all.

The prioritization of opportunities can be based on following two dimensions (Figure 9):

Figure 9. The opportunity prioritization matrix



Feasibility to implement: This attribute should be used for internal brainstorming on the capacity of the organization in terms of investment or experience required to leverage an opportunity to create an initiative. The key questions to answer could be:

- How much investment (time and money) is required?
- Does the organization have adequate experience to deliver this?
- Is this opportunity in line with the organization's goals/ vision?

Impact on brand success: This attribute can give the organization a closer look to see if leveraging an opportunity can impact care delivery and ultimately lead to brand success. The key questions to answer could be:

- How would this opportunity drive brand performance?
- Will this give any competitive edge over other companies?
- What is the impact on patients?

This exercise will give pharma companies a list of prioritized opportunities, and help identify the opportunities for which companies can develop patient-centric initiatives.

Conclusion

Digitalization in healthcare has brought a new wave of change, and in order to harness this change efficiently, pharma companies need to understand its characteristics and impact. The proliferation of digital health has enabled the rise of smart and connected patients. These digitally empowered and informed patients expect to be a part of every decision that affects their care journey. Today, healthcare stakeholders are also increasingly incorporating feedback from patients into their decision-making. This has led to the emergence of patient centricity across the healthcare industry.

With this ongoing metamorphosis in healthcare due to digitalization, pharma companies today are looking for new ways to understand patients and their healthcare needs. Pharma's traditional approach of mapping a patient journey offers only a myopic and limited view of the patient and is far from perfect. However, mapping a digital patient journey, in place of the traditional patient journey, offers an outstanding opportunity for pharma to build a 360-degree view of patients across the care continuum.

Although the process of generating this panoramic view with a digital patient journey may seem straightforward, many brand teams struggle with execution. One of the primary reasons could be the lack of a methodical approach that can be followed. The comprehensive RISE framework described in this paper offers a systematic and holistic approach encompassing everything from assessment of unmet needs to transforming those needs to opportunities, and then the subsequent prioritization of opportunities to create patient-centric initiatives. By aligning the brand's value with unmet needs of the patient, mapping a digital patient journey using the RISE framework lays the foundation of a strong brand strategy. Since a brand strategy is not static and is revised multiple times during the lifecycle, the exercise of digital patient journey mapping also needs to be constantly refreshed.

With the advancement in AI and its application in healthcare driving deeper insights, the digital patient journey will continue to evolve, together with the role and influence of patients in healthcare decision-making. Pharma companies that stay ahead of the curve will be those that prioritize digital patient journey mapping while designing and executing brand strategy.

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Sarah Phillips has over 20 years' experience in delivering consulting and market research engagements in the pharmaceutical industries. Her primary areas of interest include developing and executing innovative solutions in the customer and patient voice to best meet client needs, identifying 'why' particular characteristics exist in the market, and developing strategies for changing behaviours. Sarah specializes in advanced qualitative techniques, real world evidence, patient research and KOL and payer engagement to address key business questions. Sarah has also served on the Board of EphMRA, where she has twice received the President's Award for distinguished service to pharmaceutical market research.

Sarah holds an MA (Hons) from Oxford.

SURAJ PRASAD
Principal,
Business Strategy & Insights CoE,
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Suraj Prasad has over 19 years' experience working with Life Sciences and Consulting firms, and currently leads the Business Strategy and Insights Center of Excellence. He has a strong understanding of strategic planning and business development and has executed projects in a range of therapy areas and markets, including onsite delivery in US, Europe, South East Asia, Middle East and Africa. He is also involved in development of AI-based products and solutions in collaboration with multi-disciplinary teams across IQVIA.

Suraj did his postgraduate in Management from Indian Institute of Management, Kozhikode and is a Pharmacy Graduate from NGSMIPS, Mangalore University.

MALLIKA GROVER
Engagement Manager,
Business Strategy & Insights CoE,
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Mallika Grover has over 12 years' experience in Strategy Consulting and Operations working with some of the world's most successful organizations across industries including life sciences. She has a deep experience of working on projects that enable companies to achieve greater commercial success and profitable business growth. She leads the Digital Health practice within the Business Strategy & Insights CoE. Mallika also possesses strong experience in business development wherein she has engaged with C-level executives of Fortune 1000 organizations.

Mallika is a Mathematics graduate from St. Stephen's College, Delhi University and holds a post graduate diploma in management from India Institute of Foreign Trade, New Delhi.

CHETAN TAYLOR
Engagement Manager,
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Chetan Taylor has over 10 years' experience in delivering consulting and market research engagements in healthcare and pharmaceutical industries. Given his expertise in brand management, patient centricity and research, innovative market research approaches and advanced qualitative techniques, his current responsibilities include developing and executing innovative solutions in research to best meet client needs and understanding what drives behaviours and how to influence or disrupt them through models such as COM-B.

Chetan holds a MSc in Life Science Entrepreneurship from University College London and a BSc in Biomedical Science from Imperial College London.

CONTRIBUTORS
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