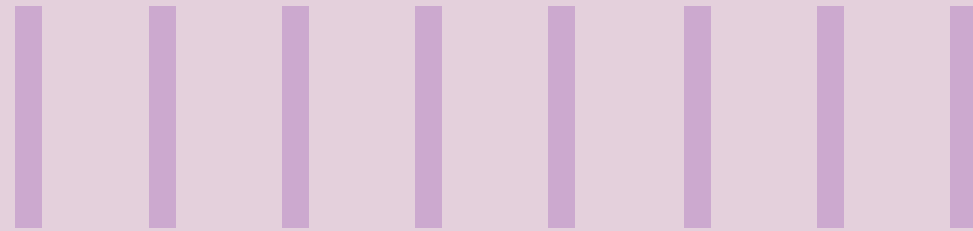




WHERE WILL THE DIGITAL SERVICE DESIGN REVOLUTION TAKE YOU?



Discover the opportunities in healthcare and life sciences

What does the digital service design revolution actually look like? It's a leap in patient care and health outcomes with physicians, specialists, nurses, the community of experts, the community of patients, and the patient's family working alongside the patient to make treatment decisions easy and care personalized. It's a boost to collaborative, supportive care. And it's peace of mind for everybody involved, knowing that all health parameters are constantly monitored, preventive measures ensured, and timely action taken in a closed loop delivery of care. Here's how.

Recently, we designed a digital service use case to enhance Multiple Myeloma (MM) patient engagement and outcome for a global research and development-driven pharmaceutical company. Typically, MM affects the elderly population. However, each patient is different with their own comorbidities, treatment concerns, and preferences. Here is Ben suffering from MM and diabetes. He takes radiation therapy at

regular interventions for symptom control. On a day-to-day basis, Ben tracks his blood glucose level, takes insulin, and most likely, a few drugs such as iron supplement for anemia and aspirin or warfarin to prevent thrombosis. At a broader level, he might be seeing a general physician, an oncologist, a skilled nurse, a radiation therapist and other caregivers. Now let's throw digital solutions into the mix: Ben may have an

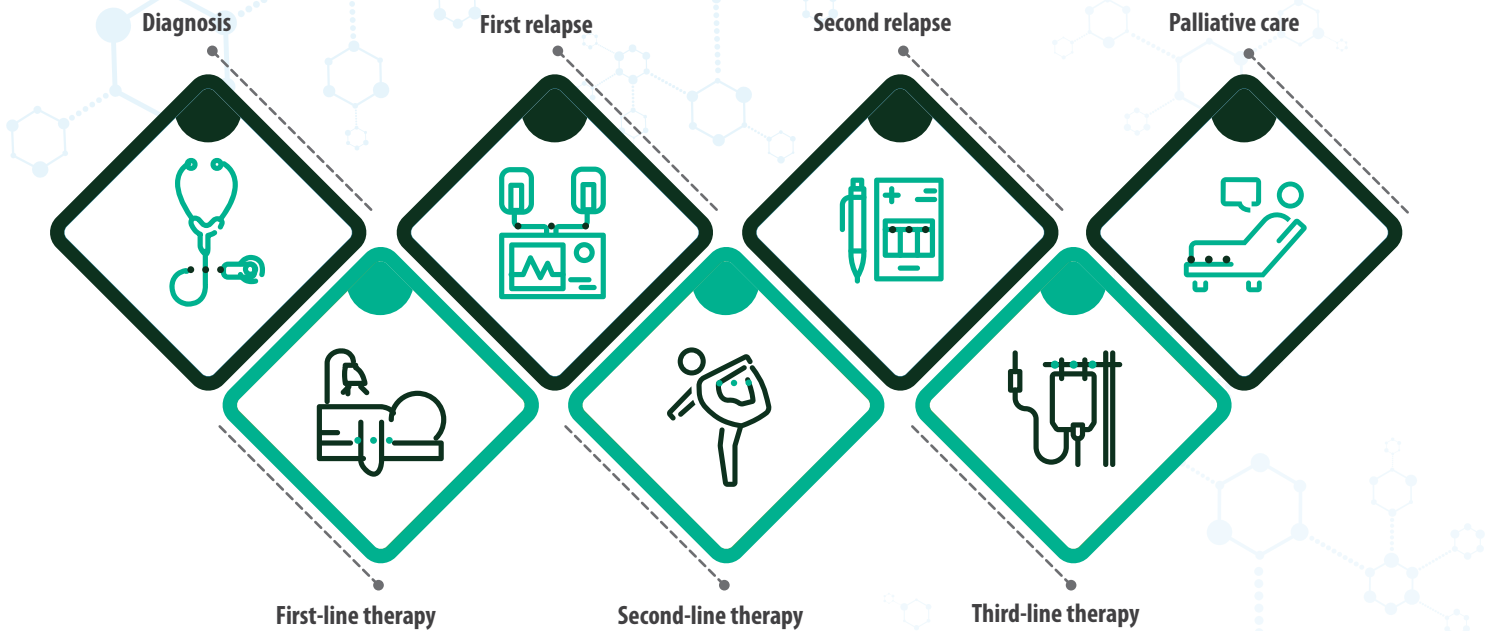
app to track his appointments, another to manage his diabetes, an e-prescription for medicine renewal and monitoring app, a fitness tracker, a digital diary to track his reports, and so on. For a chronic disease sufferer, managing these singular pieces are exceptionally overwhelming. Can we offer a holistic solution that empathizes with his needs and offers care collaboratively and intuitively across the user journey?

A digital service design for remote and personalized care for MM

Treatment typically entails multiple sequences of drugs and combination therapies such as chemotherapy, stem cell transplant or radiation therapy depending

on the stage of the disease. As the Mprotein cells develop resistance to drugs, myeloma relapses.

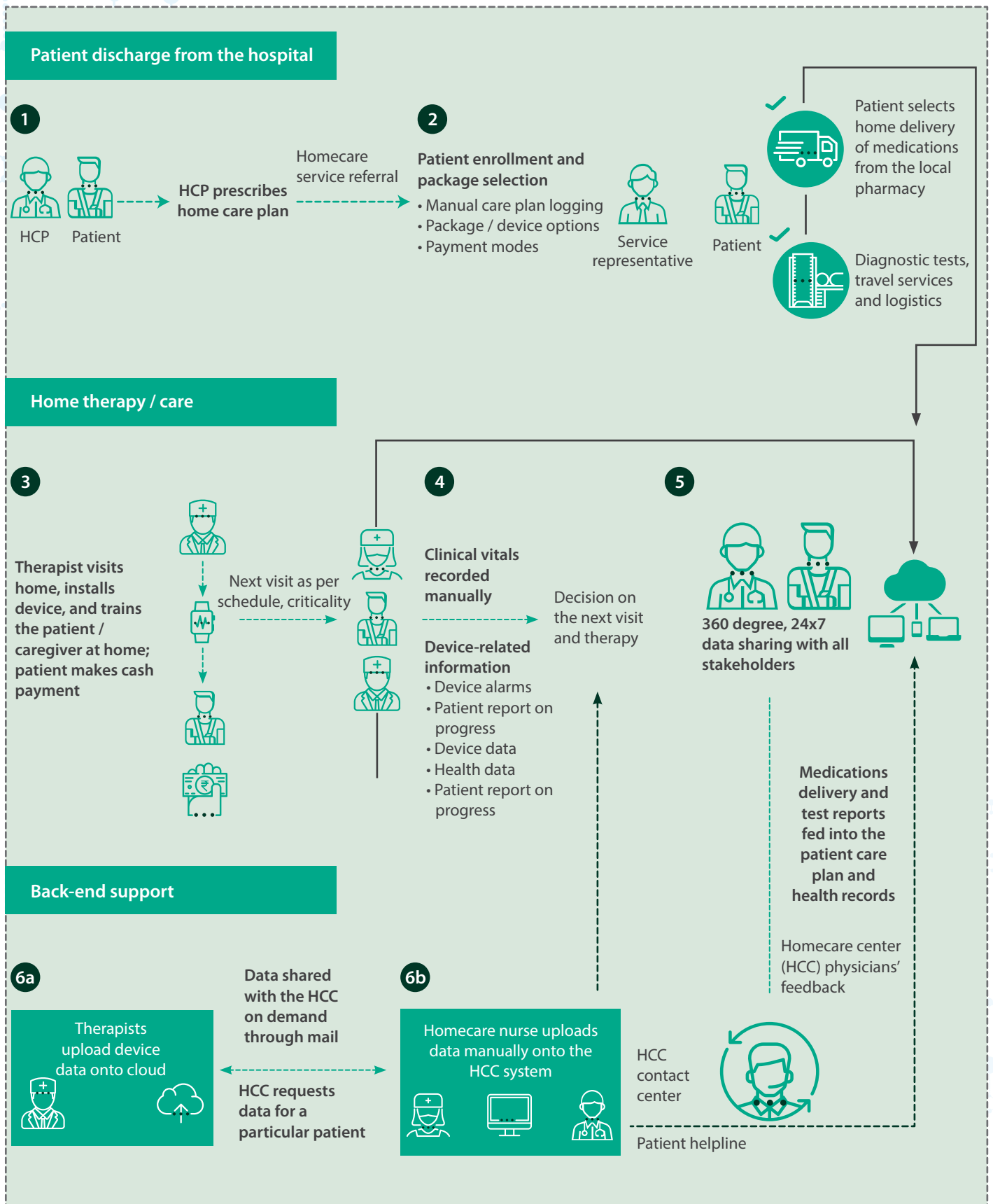
MM stages



Unmet needs of patients and caregivers

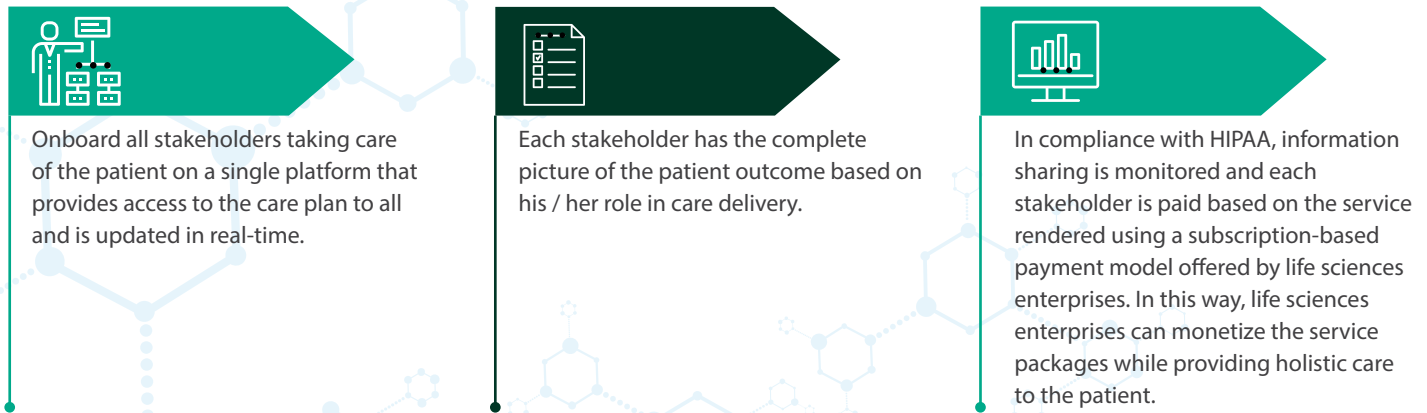


How would digital service design impact the patient journey?



Digital service design opportunities

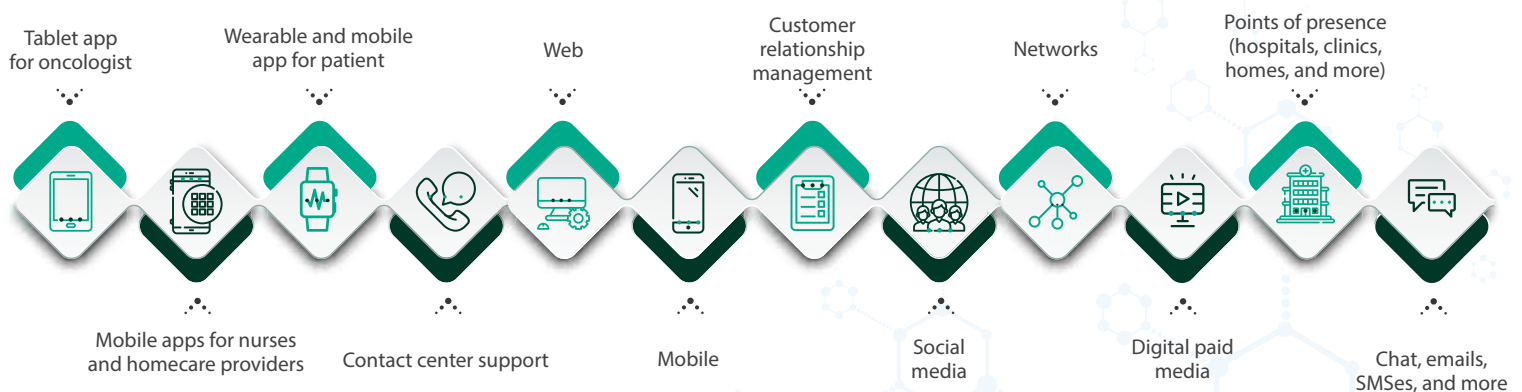
For the various stakeholders involved in delivering care



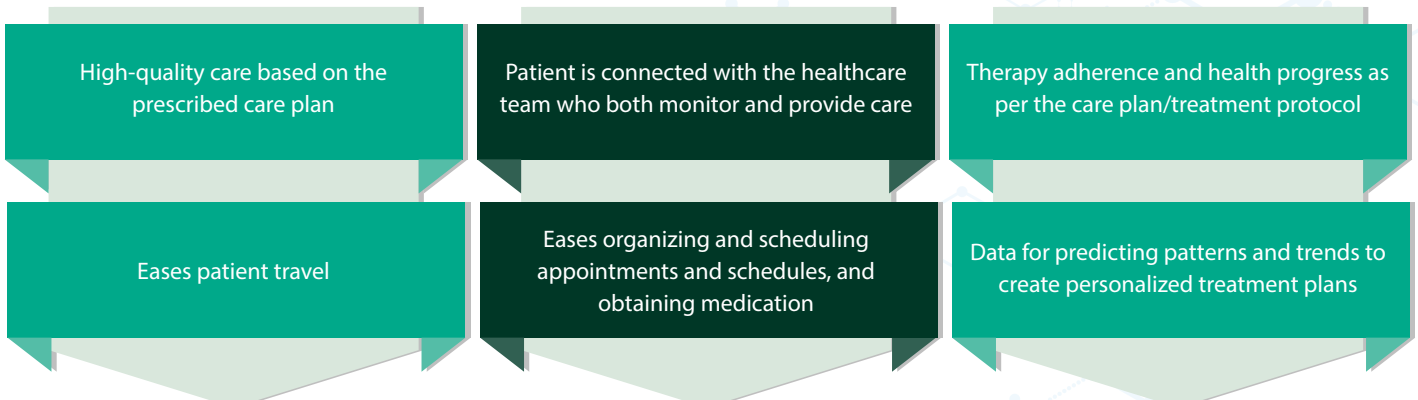
For the patient

<ul style="list-style-type: none"> Deliver medications at home 	<ul style="list-style-type: none"> Enable homecare services with nurses and homecare teams visiting home to deliver care 	<ul style="list-style-type: none"> Enable diagnostic services at home
<ul style="list-style-type: none"> Health tracking and monitoring through wearables, devices and apps 	<ul style="list-style-type: none"> Capture of patient and device data for trend analysis 	<ul style="list-style-type: none"> Enable alerts and notifications
<ul style="list-style-type: none"> Enable virtual consultation and appointment scheduling 	<ul style="list-style-type: none"> Enable online payments, and service and supplies requests 	<ul style="list-style-type: none"> Real-time delivery of care and assurance to patient that his/her health is in the hands of a high-quality care team

Digital solution components



Enabling holistic care



Discover the digital service design opportunity

For those who embrace the digital service design revolution, the dividends will certainly be high. Consider these – the connected health and wellness device market is projected to hit a whopping USD612 billion by 2024* and the virtual

healthcare market is expected to reach USD3.5 billion by 2022.**

While there are several digital solutions available in the market today that offer standalone services to patient, a holistic solution is missing.

- | | | |
|---|---|---|
| <input checked="" type="checkbox"/> Care coordination | <input checked="" type="checkbox"/> One-way self-managed | <input checked="" type="checkbox"/> Free |
| <input checked="" type="checkbox"/> Integrated care team | <input checked="" type="checkbox"/> Offers services to patients | <input checked="" type="checkbox"/> Gamification and motivation |
| <input checked="" type="checkbox"/> Personalized care | <input checked="" type="checkbox"/> QQL surveys | <input checked="" type="checkbox"/> Community connect |
| <input checked="" type="checkbox"/> Routine patient feedback to the care team | <input checked="" type="checkbox"/> Detailed information on on MM but not customized to one | <input checked="" type="checkbox"/> My clinical history with me |
| <input checked="" type="checkbox"/> Patient engagement | <input checked="" type="checkbox"/> Dedicated apps for medication, renal lab | <input checked="" type="checkbox"/> Outcome-driven |
| <input checked="" type="checkbox"/> Education-driven | | <input checked="" type="checkbox"/> Location-based services |

Service design looks at things entirely from the user's point of view: their goals, actions, constraints, and obstacles throughout the user journey. It then adopts a systematic and holistic approach to satisfy key user needs; in healthcare's

case, the patient's need for access, control, value, convenience, and enjoyment. This is accomplished by strategically creating new and engaging experiences across multiple touchpoints – a touchpoint being any interaction between the user (patient)

and other stakeholders (doctors, nurses, pharmacists, and family). In essence, service design looks at all touchpoints, not just as isolated experiences but collectively as a whole. Therefore, a service design is built around four core elements:



- It's holistic:** Considers environments beyond the user device
 - Entails co-creation:** Involves all actors/stakeholders in the service design process
 - Employs sequencing:** Visualizes the service as a series of interrelated actions
 - Applies evidencing:** Visualizes intangible services in terms of physical artifacts
- It involves all the stakeholders in the innovation process and creates value for everybody involved – the patient, the healthcare provider, the pharmacists, and the caregiver.

The service design process

Assess existing touchpoints	Formulate service attributes	Develop service design blueprints
Understand and communicate existing service experiences	Strategically generate a differentiated experience across touchpoints	Prototype and validate services with internal and external users
	Develop new service propositions	Downstream iterative development

Digital service design components

Patient information	Record, track, share and research health information
Patient engagement	More focused and timely diagnosis and therapy by creating an ecosystem of partners, caregivers, healthcare professionals and patients
Remote monitoring	Devices that allow patients to self-monitor their health and relay the data to the physicians, who interpret the data and recommend a treatment course – the entire process is virtual
Patient adherence	Medication reminders with mechanism for 'glowing bottles or devices' to indicate it's time for medication, alerts to the physician and caregivers in case of failure to adhere to medication schedule, schedule appointments, e-visits, lab test reminders, prescription renewals

Touching every touchpoint

Patient administration	Lab test order placed by physician	Test results
Diagnosis post the case history check	Second opinion / referrals	E-prescriptions to dispense medicines

Delivering service differently

Service design addresses the inherent industry challenges in healthcare and life sciences – being fragmented, disease-focused, reactive and episodic, disconnected and unintelligent. It offers an opportunity for them to become:



For healthcare providers, it is an opportunity to:

<p>Reduce healthcare costs</p> <ul style="list-style-type: none"> Reduce healthcare costs Accurately forecast hospital occupancy Predict and reduce hospital readmission rates Move care to lower cost settings, including homes Ensure better patient adherence and treatment compliance 	<p>Enhance patient experiences</p> <ul style="list-style-type: none"> Improve patient health literacy Increase self-management More proactive practitioners interventions 	<p>Improve healthcare outcomes</p> <ul style="list-style-type: none"> Leverage automated and intelligent care solutions Leverage remote closed-loop patient monitoring systems Improve population screening, diagnosis, and literacy Increase access to healthcare practitioners Reduce medical errors through information transparency Coordinate and integrate care
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For life sciences, it is an opportunity to:

Reduce healthcare costs

- Foster faster and accurate clinical decisions
- Increase wellness management

Enhance patient experiences

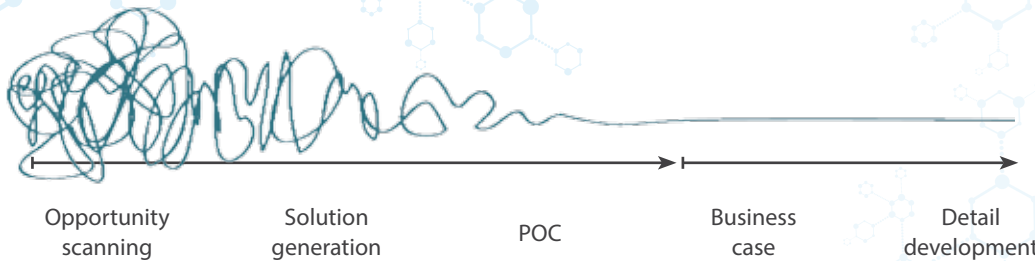
- Improve patient health literacy
- Increase self-management
- Empower patients to participate in their own healthcare decisions

Improve healthcare outcomes

- Improve population screening, diagnosis, and literacy
- Incentivize and drive quality
- Introduce automated and intelligent care solutions
- Introduce remote closed-loop patient monitoring systems
- Enhance device features and capabilities
- Predict health conditions

See how the opportunities fall in place with Infosys

We begin at the fuzzy front-end in designing new service design solutions



1 Disruptive insights



Digital experience strategy

2 Future vision



Customer journey mapping

3 Experience roadmap



Design and development services

4 Experience design



Channel experience

5 Continuous delivery



Usability research and testing

- Stakeholder workshops
- Experience visioning
- Future user stories
- Ideal user journeys
- Service design
- Service blueprints
- Ethnographies

- Plotting user lifecycles
- Ideal and future user journey
- Voice of the user
- Voice of the brand
- Plotting the moments of joy, anxiety, frustrations and truth

- IA and PD
- Interactive prototypes
- Functional specifications
- Responsive design
- NPD

- Web applications
- Mobile applications
- Contact center guides
- Kiosk designs
- Wearables
- Social design

- Heuristic reviews
- Cognitive studies
- Remote testing
- Mobile device testing
- Mockup tests with users

For more information, contact askus@infosys.com



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