Life sciences and medtech organizations are increasingly focused on achieving better patient outcomes, not only through more rigorous science, but through better patient experiences. Life sciences executives surveyed by Deloitte US believe that the leading action their organizations need to take in 2024 is “improving the patient experience, engagement, and trust”—and the trend is now a higher priority for more companies than it was in 2023.

Personalized care and treatments support better experiences, and there are many opportunities for life sciences and medtech companies to improve touchpoints throughout the patient journey. However, effectively and positively influencing a patient’s journey requires a thorough and specific understanding of that patient’s journey in order to be proactive and predictive about what patients may need. As the process becomes more digitally enabled and personalized, it is also expected to become more “straightforward” and seamless.

Every patient’s experience is different, and a patient’s lived experience in a fragmented health care ecosystem may cause frustration. The process of shared decision-making (SDM) can better illuminate what patients may prefer. According to the UK’s National Health Service (NHS), SDM is a process that involves selecting tests and treatments based on evidence, while also considering the person’s individual preferences, beliefs, and values.

Studies show that there is continued need for improvement between the theory and practice of SDM. Practicing SDM can improve patient-reported outcomes and is also a possible link between the best of patient-centered care and evidence-based medicine. The process is ripe for more personalization to deliver the right solution at the right time.
Personalization through technology

In 2024, life sciences and medtech organizations are considering novel ways to make experiences across the patient journey more customized for patients through technology. Many are experimenting with advancements in artificial intelligence (AI) all across the patient journey—from prevention to diagnosis, treatment, and monitoring.

A patient’s journey may start even before a patient contacts the provider. For example, by identifying which patient types are more likely to have a certain disease, AI can raise awareness of the clinical journey that undiagnosed patients may undergo and potentially expedite progress in the journey.

Early interventions are also being made possible through wearables, predictive and propensity modeling (using past data to predict the next action), health assessment tools, and new types of biomarkers and screenings. With more data, health care providers (HCPs) can have a more granular view of the patient.

Growing focus on the patient journey

New patient and provider needs are emerging

In medtech, successful organizations are embracing a more holistic view of the patient care journey beyond the physical device. More patients are taking an active role in their health care journey and turning to health solutions and services tailored to their prevention and wellness preferences over treatment alone. Patients are also demanding customized and convenient care adapted to personal behaviors and routines, with greater ownership of their secure health data.

This engaged patient persona creates a powerful market segment of active consumers with distinct health demands, willing to consider solutions that may better meet their specific needs.

Changing role of chief patient experience officers

Some health care companies have added a chief patient experience officer to their C-suite, and their focus is evolving from the inpatient experience to improving the patient’s entire health care journey. Lisa Allen, Ph.D., chief patient experience officer at Johns Hopkins Medicine says she came from the world of quality, statistics, and research, but her passion was really being patient- and family-centered. “A lot of people were just studying the disease process, and I was asking how it was affecting people’s lives,” she says. Patricia Rosello, M.S.N., R.N., chief patient experience officer at Baptist Health South Florida, says it is crucial to have a passion to see things from a patient’s perspective and look at the whole patient journey.

“Your ability to influence and be very collaborative is going to be key because it takes all these different relationships to make any journey a better journey for a patient. You have to have that broad perspective and a high level of empathy and understanding.”

—Patricia Rosello, M.S.N., R.N., Chief Patient Experience Officer, Baptist Health South Florida

With more focus on the patient journey, the role for chief patient experience officers is evolving and becoming increasingly strategic.
**Integrating patient preferences and values in decision-making**

Care collaboration, where patients feel respectfully engaged in the evaluation of their health, is inconsistent.²⁷ While it is expected that patients should be informed and understand any risks, benefits, and possible consequences of different options through discussion and information sharing,²⁸ it is less understood how to integrate an individual patient’s values and preferences in the process of SDM.²⁹

**Making SDM “collaborative”**

Making SDM collaborative means there is a bidirectional exchange of information between patients and providers that helps patients make individualized, informed decisions about their care.³⁰ The process should consider a patient’s desired level of involvement and autonomy³¹ as well as an individual patient’s values, goals, concerns, and desired quality of life (QoL).³² But the path to values integration is not well defined.³³

While SDM practiced collaboratively can improve informed consent and patient trust, as well as benefit many stakeholders,³⁴ its application in daily practice is still limited—even in the Western world, where collaborative SDM is championed as an ideal.³⁵

Researchers say that providers should not make assumptions about a patient’s desired role in decision-making and stress the importance of clarifying patients’ desires.³⁶ Even characteristics such as age, education, and health literacy skills may not be consistent indicators for how involved a patient wants to be,³⁷ and cultural and generational preferences vary.³⁸

**Balancing views for patient-led vs. provider-led care**

On one end of the spectrum, some patients want a more active, or “patient-led” form of decision-making, researching their conditions and treatments available.³⁹ On the other end, patients may prefer a more traditional “physician-led” style, assuming the doctor knows best.⁴⁰ But how providers can balance these needs also depends on the providers’ own views, which are equally as varied.⁴¹

In Ethiopia, researchers identified a gap between patients’ expectations and providers’ perception of the patient’s role,⁴² showing that providers also exist somewhere on a spectrum between person-centered care and paternalistic care.⁴³ A multi-country study in Asia found varying degrees of “concordance” between countries other the amount of involvement patients prefer (figure 1).⁴⁴ Researchers found this to be the first study to examine the associations of perceived roles in decision-making and patient outcomes among advanced cancer patients in low- and middle-income countries. Joint decision-making was associated with higher well-being and perceived quality of care.⁴⁵

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**Figure 1. Distribution of discordance/concordance between perceived and preferred roles in decision-making in five Asian countries**

![Distribution of discordance/concordance between perceived and preferred roles in decision-making in five Asian countries](image-url)

Opportunity for education in a new paradigm of care

One step forward may be gaining a better understanding of various providers’ perceptions of patient involvement in SDM.46 A small study of medical residents in the Netherlands found that young doctors preferred more traditional, physician-led, decision-making.47 Their decision-making appeared to be affected by contextual factors—their medical knowledge and knowledge about SDM—and by their beliefs and convictions about their professional responsibilities as a doctor.48 While trying to provide patients with the best possible evidence-based treatment, these residents confused SDM with acquiring informed consent for their recommendations.49

Education can be an important part of a new paradigm of care, and the international coproduction health network (ICoHN) is an initiative supporting learning in different communities of practice with patients, practitioners, students, and researchers to explore coproduction in SDM.50

Bigger opportunities for life sciences in SDM

Life sciences companies are increasingly focused on “informed” decision-making to support SDM.51 A well-informed patient is more likely to actively participate in the decision-making process and better understand the potential outcomes and risks of any treatments.52 In addition, informed decision-making may help build trust, as even patients who ultimately opt to defer a final treatment decision to a provider are still interested in quality information.53 There is an opportunity to increase awareness about the role of SDM,54 and evidence shows that SDM can promote appropriate care, decrease overtreatment, meliorate health outcomes, and thereby, may reduce health care costs.55

The use of patient decision aids (PDAs) can help patients participate in decisions to improve both the quality of the decision-making process and satisfaction with their choices.56 Life sciences companies that develop PDAs with information on treatment alternatives, potential risks, and benefits might consider how a patient’s preferences and values could be addressed.57

By championing SDM and facilitating collaborative PDA development with clinicians and decision-makers, patient advocacy groups, and patients, life sciences companies have an opportunity to show support for strategies that further respect patient rights and responsibilities in the decision-making process.58

Some AI tools may prove beneficial to increasing the practice of SDM—but the design and use of these tools should also incorporate patient preferences.59 McGill University in Canada, which has been a leader in AI and machine learning (ML) research globally,60 conducted a scoping review of AI interventions that were used to facilitate SDM across several countries.61 Researchers observed a lack of emphasis on patients’ values and preferences in the studies.62

McGill researchers found none of the studies on SDM included health care providers or patients in the design and development of the AI interventions. They suggest further research should be conducted to strengthen and standardize the use of AI in different steps of SDM and to evaluate its impact.63

While AI in SDM is in its infancy, there are multiple advances in AI and Generative AI (GenAI) that focus on improving patient journeys across multiple disease areas—from better diagnostics and use of visualization and characterization functionality to support HCPs, faster reimbursement, and more. See the GenAI section of the Outlook for further elaboration on the power and growth of GenAI/AI.
Optimizing touchpoints in the patient experience

A patient experience touchpoint is any point at which a patient interacts with the health care ecosystem as they manage a given condition/affliction, whether through an in-person service or online, through a website, platform, or app. The sum of all these touchpoints influences a patient’s perception of the care they receive and the patient journey.

Strategies to optimize the patient journey should integrate the patients’ perspective at each touchpoint. Specifically and accurately mapping the patient journey can also help identify new opportunities to improve a patient’s quality of life (QoL), not limiting actions to acute needs.

Every patient journey can have several stages that are considered inherent to a specific disease. For example, cancer can present suddenly and decisions regarding treatment can be time sensitive, causing a patient’s emotions to run high. Chronic diseases, like diabetes, typically progress gradually and may often be preventable or mitigated with lifestyle changes.

In 2024, as person-centered care continues to be a priority, strategic leaders should be looking at possibilities for their organization to improve patient experiences—even one touchpoint improvement may make a difference in someone’s life.

What can’t be measured, can’t be improved

The health care industry generates a tremendous amount of real-world data (RWD) that provides valuable insights on patients, their diseases, and their patient journeys and care. But up to 80% of health outcomes can be driven by nonclinical factors, such as access to transportation, education, job opportunities, nutritious food, and safe housing.

This nonclinical data—referred to as social determinants of health (SDoH)—aren’t typically captured in traditional RWD. SDoH are the environmental conditions where people live, learn, work, play, and worship that affect a wide range of health and quality-of-life outcomes and risks.

These factors need to be better understood to more effectively enhance a patient’s journey, which is why, for example, Deloitte has invested in combining Komodo’s Healthcare Map with its HealthPrism SDoH data set—one of the largest SDoH data sets in the US—to develop a more comprehensive view of patients, their care journeys, and their outcomes.

For example, digital health technologies and the widespread use of mobile phones can enable, those in low- and middle-income countries, and other disadvantaged patients, to actively participate in their care, despite transportation challenges, through home monitoring devices, health care apps, wearable technology, and telehealth services.
Finding opportunities for digital touchpoints

Because patients have individualized needs and concerns, life science organizations should respond to patients with a personalized engagement approach that puts them at the center of care and connects them digitally.\textsuperscript{79}

Digitally powered personalized health care plays a part in helping improve access to treatments.\textsuperscript{80} Deloitte’s ConvergeHEALTH Connect\textsuperscript{TM} creates enhanced digital touchpoints across patient journeys.\textsuperscript{81} In a stylized manner, you can observe the differences in patient journeys for cancer and chronic disease (figure 2)\textsuperscript{82}

Touchpoints in the patient journey for rare disease

In rare diseases, patients may endure challenging diagnostic journeys and often require multifaceted treatment plans.\textsuperscript{83} The process typically requires patients navigate a convoluted system of specialists, testing restrictions, and reimbursement hassles before they’re even diagnosed, much less treated.\textsuperscript{84} Some companies are working to make a difference by mitigating the burden and personalizing the experience. For example:

- **PANTHERx** streamlines the process associated with getting rare disease medications to patients and incorporates patient education and adherence plans. RxARECARE teams specialize in unique disease states and the select medications patients will receive. Personalized care teams work to ease a patient’s burden by taking care of the billing process from start to finish and handling contingencies, like getting a damaged refrigerator replaced, and getting costs reimbursed so a patient won’t miss a treatment due to improper storage.\textsuperscript{85}

- **MMIT** provides patient access data and analytics to pharmaceutical and health care companies. Carolyn Zele is a rare disease survivor that now works as a market access specialist for the company. She says that she advocates daily for manufacturers to understand the plight of patients. “When patients are at their weakest and most vulnerable, they shouldn’t have to fight for a diagnosis or help coordinating their own care. They shouldn’t have to file multiple appeals to a payer or manufacturer to help pay for their treatment,” she says. Zele advises manufacturers to map the twists and turns of the patient journey to become deeply familiar with the existing access barriers. Pharmaceutical companies may improve access to treatments with a deeper understanding of the patient journey.\textsuperscript{86}

Figure 2. Comparison of patient connect across oncology and diabetes patient journeys

Oncology

- **DIAGNOSIS**
  - Symptom materializes
  - Primary care visit
  - Pathology screening
  - Diagnosis: Stage 4

- **CARE PLANNING**
  - Determine care plan
  - Infusion appointments
  - Response/ Non-response

- **LONG TERM PLANNING**
  - Monitoring/ survivorship planning
  - Palliative care

Diabetes

- **DIAGNOSIS / AWARENESS**
  - On-line portal, visual tools
  - Predictive modeling receptivity willingness

- **RESEARCH / CONSULT / TX CHOICES**
  - Telephonic/Virtual health coaching
  - Mobile technology

- **PURCHASE / FULLFILLMENT / TRIAL**
  - Provider-based programs
  - Incentive programs

- **CHRONIC MGMT / BEHAVIOUR CHANGE**
  - Monitoring devices

Source: ConvergeHEALTH by Deloitte
Touchpoints in the patient journey in oncology

Amidst a mounting need for care services, the cancer burden is growing globally. For 2022, the World Health Organization reports that an estimated 20 million new cancer cases were diagnosed, and it projects 35 million new cases will be diagnosed in 2050.87

Approximately one in five people develop cancer in their lifetime, but people are living longer after cancer.88 Data shows an estimated 53.5 million are still alive five years following a diagnosis,89 but many aren’t getting the follow-up care they need and face continued health challenges.90 Of those that die from the disease, about one in nine are men, and one in 12 are women.91 Lung, breast, and colorectal cancer are the most prevalent cancers.92

Improving early diagnosis in cancer

To improve the lived experiences of cancer patients, person-centered care should be more than a “nice to have.”93 Patients want to be able to navigate all stages of their cancer care easily and efficiently, and personalized patient journeys should include a needs-based approach for the patient as well as their loved ones.94

Early symptoms and indications of cancer with prompt presentation are key to early diagnosis.95 When cancer care is delayed or inaccessible, chances of survival are lower, more problems are associated with treatment, and costs are higher.96

In the UK, the majority of cancers are diagnosed in an emergency room.97 Only breast and cervical cancer, and to a lesser degree, colon cancer, are found during routine screenings.98 Macmillan Cancer Support, a leading UK charity organization,99 is introducing the electronic risk assessment for cancer (ERICA) trial.100 ERICA is testing six tools as part of Skyline software for clinical effectiveness in improving referral rates particularly in early stages of diagnosis.101

Improving the lived experience with cancer

In a national survey of cancer patient experiences in the UK (figure 3), the NHS fell below 54% in meeting patients’ needs for emotional support during hospital care and subsequent treatment (figure 3).102 Less than half of the patients surveyed felt they had the care and support needed after treatment, including only one-third saying they were given a care plan. An opportunity appears to exist to discuss participation in cancer research as less than 30% say this was discussed with them at any time following diagnosis.103

As many people are living longer with cancer, a future vision relies upon ongoing support for people living with cancer during treatment and beyond.94 People with cancer should always be able to live life fully—in a way that is meaningful for them.105

Deloitte UK and Macmillan Cancer Support conducted research in the UK on shaping the future health care experience for people with cancer.106 One forecast of the January 2023 report was the future ambition related to the lived experience of cancer patients, including where the system is failing and where action is needed (figure 4).107 Organizations may want to engage this vision for scenario planning to help make a better future of health for cancer patients a reality.108
Figure 3. Patient experience survey, National Health Service (NHS) England cancer care

The last time you had an outpatients appointment with a cancer doctor, did they have the right documents, such as medical notes, X-rays and test results?

- 95.84%

Beforehand, did you have all the information you needed about your operation?

- 95.69%

As far as you now, was your GP given enough information about your condition and the treatment you had at the hospital?

- 94.93%

Beforehand, did you have all the information you needed about your test?

- 94.15%

Did hospital staff tell you who to contact if you were worries about your condition or treatment after you left hospital?

- 94.14%

During your hospital visit, did you find someone on the hospital staff to talk to about your worries and fears?

- 53.24%

During your cancer treatment, were you given enough care and support from health or social services (for example, district nurses, home helps or physiotherapists)?

- 53.08%

Once your cancer treatment finished, were you given enough care and support from health or social services (for example, district nurses, home helps or physiotherapists)?

- 45.53%

Have you been given a care plan?

- 36.00%

Since your diagnosis, has anyone discussed with you whether you would like to take part in cancer research?

- 29.25%


Figure 4. The future of health and the lived experience in cancer, strategies for action

- More people will have a better understanding of cancer risk and their own health generally. This will likely mean more people are seeking action sooner over cancer signs and symptoms as they have increased access to screening tests which are accepted widely.

- A customized/localized approach will be taken to increase health literacy and raise understanding, awareness, and trust, particularly in less represented communities.

- People will have equitable access to a personalized care experience.

- There will be greater emphasis on the needs of the individual and measuring outcomes that matter to people living with cancer.

- The use of digital tools at scale will complement the workforce to support people and meet their holistic needs. A greater range of technologies will allow support to be tailored to each individual's needs, maximizing the impact for people living with cancer and the people that matter to them.

- As people live longer with cancer alongside other long-term conditions, primary, community and secondary care will coordinate better to provide holistic support.

- There will be big shifts away from siloed working to a more multidisciplinary and cluster medicine way of working.

- A large part of end-of-life care will move from secondary/tertiary centres to community/home settings. There will be a cultural shift regarding death and dying and people living with cancer will expect to have open conversations about end of life and their choices.

- Community diagnostics – including blood tests and local diagnostics – will play a much greater role in diagnosing cancer.

- There will be an increased role for community and home-based care to support treatment for less complex cases of cancer care, including innovative solutions (e.g., chemotherapy buses, virtual wards) underpinned by increased cancer knowledge in the generalist workforce.

- This will decrease reliance on specialist centres and increase their capacity to deliver novel therapies to treat complex cancers.

- And there will be a reduced requirement for patients to travel long distances to specialist centres, with virtual multidisciplinary teams (MDTs) connecting specialists in tertiary centres with the wider workforce locally.

Navigating cancer care, including after treatment

Cancer care navigation is growing in importance and is a strategy for helping cancer patients overcome barriers across the cancer care continuum. Emerging evidence suggests that providing patients with navigation services improves quality of life and patient satisfaction for care in the survivorship phase and reduces hospital readmission in both the active treatment and survivorship care phases. Palliative care data is limited.

Other programs help to address the significant racial, ethnic, and socioeconomic disparities in cancer, including access to screenings. After treatment, survivorship programs also help improve quality of life and help patients find resources and a community. Examples of these programs include:

- **Patient navigation services:** In the US, the Biden Cancer Moonshot program is prioritizing supportive services for people affected by cancer, including championing the importance of expanding patient navigation services. The program is providing personalized assistance to patients, caregivers, and families to help identify and resolve barriers to high-quality and timely cancer care through care coordination and advocacy, even after treatment.

- **The first patient navigation program in the US was launched in 1990 by Dr. Harold Freeman to improve health outcomes in marginalized communities in New York. In late 2023, the US Centers for Medicare & Medicaid Services (CMS) finalized codes for Principal Illness Navigation (PIN) services so providers can receive payment for navigation services. In early 2024, seven large private health insurance companies also agreed to cover the cost of cancer navigators.**

- **Collaborating for health equity:** The American Cancer Society (ASC) and Pfizer launched a three-year initiative targeting improvement in health outcomes in medically underrepresented communities across the US. Efforts are underway to enhance awareness of and access to cancer screenings, clinical trial opportunities, patient support, and comprehensive cancer navigation.

- **Collaborating for health equity with non-clinical support:** In late 2023, the ACS launched ACS CARES (Community Access to Resources, Education, and Support), a new multi-channel, customizable program to deliver non-clinical patient navigation support to cancer patients and caregivers. For those not as comfortable with digital tools, the program also places trained college and graduate student volunteers in oncology clinics to help patients and caregivers receive non-clinical, individualized in-person support. A US$1 million commitment from the Deloitte Health Equity Institute (DHEI) is helping to expand the program.

- **Cancer survivorship program:** Physical activity is an important part of cancer recovery. In the US, the “LIVESTRONG at the YMCA” cancer survivorship program organizes small groups of people living with, through or beyond cancer to improve their strength and fitness, while also gaining emotional support from peers. According to research from the Yale Cancer Center and Dana-Farber/Harvard Cancer Institute, participants in the specialized program experience improved fitness and quality of life, as well as significant decreases in cancer-related fatigue. The 12-week program is offered at over 790 YMCAs and serves 400 communities around the country.

Life sciences and medtech companies might consider creating, sponsoring, or otherwise getting involved with these types of programs to gain a better understanding of the cancer survivor’s journey and ongoing needs. For example, some opportunities might include engaging wearables as part of activities in the fitness program, providing transportation to and from facilities for cancer survivors, and hosting events that raise awareness of mental health support resources or answer questions about clinical trial participation.
Growing demand in diagnostics for early detection, rehabilitation, and prevention

More younger people getting cancer

Survival rates for some cancers have improved dramatically since 1975, rising to 68% from 49%. For example, people with non-Hodgkin lymphoma now have a 74% survival rate compared to 47%, 50 years ago. Improved screening has also led to detection and diagnosis of cancers at earlier stages, when treatment has a higher chance of producing a positive outcome.

But cancer is starting to affect more adults younger than 50 years of age, with an 80% rise in the cancer rate from three decades ago. One US oncologist started noticing the trend 10 years ago. She was asked to treat a teenager that flew in from China for treatment from a gastrointestinal disease typically found in people 65 years or older, but the cancer was too advanced to treat.

Oncologists around the world are seeing more younger patients with cancers uncommon for young people. Worldwide, the most common cancer for young adults under 40 is breast cancer, and more than 90% of women under 40 in the US are diagnosed between 30 and 39. More than a dozen types of cancers are rising in multiple countries. In the US, colorectal cancer has become the leading cause of death for men under 50. There is a growing need for better screening, awareness, and treatments.

Patients with certain cancers, like ovarian cancer and leukemia, also often experience ongoing recurrence and remission, and these diseases may be managed like a chronic illness. As people live longer with various cancers, and the number of people with chronic disease increases, reevaluating the role of patient autonomy in chronic disease and cancer may prove beneficial in rebuilding trust and advancing patient-centered care.

New biomarker research underway for earlier diagnosis of Alzheimer’s disease

However, more than 21% are under the age of 60 and are working age, creating a demand for earlier screening and diagnosis. Currently, Alzheimer’s disease (AD) affects nearly 7 million people in the US and approximately 32 million people worldwide.

The development of more biomarkers offers one of the most promising paths to early diagnosis for AD. Beyond imaging and cerebrospinal fluid (CSF) tests, an urgent need exists for simple, inexpensive, noninvasive, and easily available diagnostic tools such as blood tests to diagnose the disease.

“The biomarker space right now is advancing rapidly. Plasma and blood biomarkers are moving beyond what we’ve seen—more highly correlated with stage of disease and presence of pathology and will contribute to improved and earlier detection and the possibility of tailoring treatments for patients.”

—Dan O’Connell, CEO, Acumen Pharmaceuticals

Acumen’s sabirnetug program (ACU193) is developing a deeper understanding of key biomarkers related to AD. A humanized monoclonal antibody (mAb), sabirnetug (ACU193) was discovered and developed based on its selectivity for soluble amyloid-β oligomers (AβOs). By selectively targeting toxic soluble AβOs, sabirnetug aims to directly address a growing body of evidence indicating that soluble AβOs are a primary underlying cause of the neurodegenerative process in Alzheimer’s disease. One of its distinguishing factors is the potential for cognitive improvement, in addition to slowing the disease progression. Acumen recently announced the first patient dosed in the company’s ALTITUDE-AD study a Phase 2 trial evaluating sabirnetug in early AD patients.

Other emerging biomarkers include retinal imaging and skin and saliva tests. Tests with these types of biomarkers are exploratory.
Smart devices for more personalized care and rehabilitation

Smart devices are being used for quicker diagnosis and rehabilitation by enabling remote collection of user data and providing health-related feedback for faster, more personalized, and more accurate health care conclusions.148

• Smart implants: Persona IQ “The Smart Knee” by Zimmer Biomet is being used to detect if a patient is progressing as expected through rehabilitation by remotely tracking range of motion, gait disturbance, function, pain, etc.149 The goal is to reduce readmissions and revisions. The software provides personalized post-operative smart metrics that connect patients through a care management platform and automated data flow.150

• Computer vision: Senseye’s novel diagnostic platform for mental health expresses by eye physiology.151 The brain-based methodology uses computer vision and a proprietary machine learning algorithm that works on any smartphone.152 The company’s first target is post-traumatic stress disorder (PTSD). The device was designed to help clinicians personalize care and diagnose PTSD with a 15-minute ocular test, rather than over months using other forms of evaluation.153

Preventative care and direct-to-consumer diagnostic services

As some patients strive for more autonomy, life sciences companies are exploring new channels and partners to engage directly with patients rather than relying solely on HCPs.154 More direct-to-consumer (DTC) health services are launching to address patient concerns and preferences more expeditiously.155 As these services become more prevalent, effective, safe, and cost effective, it’s likely that they will grow in popularity.

There are blood tests and screening procedures that many feel are informative and preventative, but they may not be covered by insurance, or alternatively, consumers may not want to wait, or pay, for a doctor’s appointment to get access.156 Patients may be told that a test is not necessary, when it might prove lifesaving157 and others may be a waste of time.158

• DTC MRI: On Prenuvo’s website, consumers are called to “put their health in their own hands,” so they can catch conditions before they are a crisis.159 Prenuvo offers AI-assisted scans, including a Whole-Body MRI scan, that screen for 500 conditions.160 Actress and television host Maria Menounos is now one of the rare pancreatic cancer survivors after her cancer was detected early—at stage 2—with a Prenuvo scan.161 With US Food and Drug Administration (FDA)-approved scans and other screenings, most pancreatic cancer is not typically discovered until stage 4, and diseases discovered at this stage commonly have a prognosis of a 1% survival rate at five years after discovery.162 However, at USD$2500 and up, the access to such scans are extremely limited and there’s some debate about the risks of these scans, including false positives which may lead to unnecessary procedures and costs.

• DTC lab testing: Direct access testing (DAT) or DTC lab testing enables individuals to order their own medical tests directly from a clinical laboratory, which assigns their own HCP to the order.163 DAT is subject to a fragmented regulatory landscape and may not be available in some jurisdictions.164 The DTC lab testing market is projected to reach a hefty US$1.59 billion by 2030, signifying a paradigm shift in health care dynamics due to personalized diagnostics.165 Forecasts for the period, 2023 to 2030 show a Compound Annual Growth Rate (CAGR) of 10.8%.166 Some drivers include the rising incidence of chronic as well as sexually transmitted diseases and the increasing penetration of pharmacogenomic testing within the DTC laboratory testing realm.167 Challenges include genetic data privacy, the potential for misinterpretation of test results, and the need for professional medical counseling.168 Other issues—like sample integrity, regulatory concerns, limited test portfolios compared to conventional laboratory testing, and the lack of reimbursement schemes—are likely to be headwinds to growth.169
Managing the chronic disease journey in Type 2 diabetes

Diabetes is a worldwide epidemic and an expensive chronic condition that continues to increase faster than many HCPs can manage. Healthy eating and physical activity are critical to diabetes management, and while some interventions have proven effective at changing certain behaviors, there are still challenges in achieving sustainable long-term results.

The patient journey in diabetes has changed over the last decade and is now part of digitally powered personalized health care. Many digital solutions include combinations of remote patient monitoring, behavior and lifestyle modification, coaching support, and nutritional ketosis.

The growth of the GLP-1 class of medications for the treatment of obesity and pre-diabetes will also play a disruptive role in the management of Type 2 diabetes. For further insights on the growth of GLP-1 diabetes drugs, see the Value Creation section of the Outlook.

More evidence-based research needed for diabetes digital management tools

Recent research is calling into question the effectiveness of digital management tools used to track and manage patients’ Type 2 diabetes. Peterson Health Technology Institute (PHTI) conducted research that asserts that the leading tools evaluated do not deliver meaningful clinical benefits and increase health care spending relative to usual care. PHTI says users of these tools achieve only small reductions in hemoglobin A1c (HbA1c) compared to those who do not use the tools.

PHTI hopes to raise the bar on expectations and evidence, and some agree that there needs to be a more rigorous assessment of solutions. But many, including the Digital Therapeutics Alliance, pushed back on conclusions drawn or the methodology used for the study.

Initial data in the research showed that one “promising solution,” Virta Health, might be more likely to deliver clinically meaningful benefits. The digital health care company aims to reverse Type 2 diabetes through personalized nutrition therapy and remote medical care, including telehealth, while also controlling prescription costs for patients. PHTI affirmed that glycemic control and remission are more likely with Virta Health if patients can maintain the rigorous dietary requirements of the intervention.

In addition, Virta Health recently published its own research on its nutritional therapy in Diabetes Therapy showing it to be a potential off-ramp to GLP-1 drugs. Many face the prospect of regaining weight after stopping GLP-1 medications, and Virta Health’s results potentially have major implications for employers and plans looking to improve members’ health outcomes.

Supporting patient autonomy in chronic disease

An important part of managing a chronic disease is patient autonomy. Diabetes self-management often requires personal autonomy and a supportive social environment to influence outcomes. Researchers in China found that supporting patient autonomy in Type 2 diabetes could help patients achieve glycemic control—not only at the end of intervention but up to six months after.

Patients’ personal experiences concerning everyday life with disease or disability shape their knowledge and understanding. Respecting and supporting patient autonomy may not mean providers agree with or confirm a patient’s different beliefs and perceptions, but it may be necessary to inform or develop that patient’s understanding. Being respectful and seeing the patient view as an expression of their autonomy helps to build trust.
Regulators heightened interest in measuring what matters most to patients

Because patients often live with their disease or condition for long periods of time, and clearly understand the intricacies of their symptoms, the US FDA is increasingly looking to understand how patients describe their health status and assess their outcomes without interpretation from others.\(^{188}\) Input from patient-reported outcome measures (PROs) and clinical outcome assessments (COAs) can then be used to help select or develop tools to measure what matters most to patients as well as shape future policy.\(^{189}\)

To date, health-related quality of life (HRQoL) is assessed inconsistently and there is no validated method to integrate HRQoL data into the assessment of therapeutic agents.\(^{190}\) Including HRQoL as an endpoint may offer crucial information on functional abilities and treatment side effects from the patient’s perspective.\(^{191}\)

Utilizing PROs and HRQoL as standard practice in the clinical trial setting could provide a more comprehensive, patient-centered assessment of therapies under development and help guide patient-provider discussions around treatment options in clinical care.\(^{192}\) Leading pharma companies like Gilead, Sanofi, AstraZeneca, Biogen and Eisai are starting to include newer methods to assess HRQoL for clinical trials in HIV, COPD, diabetic neuropathy, and Alzheimer’s disease.\(^{193}\)

Advancing the future of health with quality of life in longevity

The importance of quality of life is expected to expand as more people live longer,\(^{204}\) and people’s preferences for quality of life versus longer life as they age may influence their longevity.\(^{195}\) Breakthroughs in the study of longevity—why humans age, how they age, and interventions to slow the aging process—suggest the possibility of some humans significantly surpassing current life expectancies.\(^{196}\)

Extending health span, not just life span

A paradigm shift is underway—from disease-focused treatments to those that address the underlying mechanisms of aging, biological systems, and wellness.\(^{197}\) The goal is to extend health span, not just life span.\(^{198}\)
**Analysis explained**

**Health and life span**
- Chart illustrates the difference of a patient with a disease in 2000 vs. 2015 and whether they experience a better health or life span in the latter.
- For example, the average cancer patient experienced a materially longer health and life span in 2015 (vs. 2000).

**Drug approvals**
- Number of drug approvals was used as an analogue for the life sciences industry’s concentration on a given therapy area.
- No statistical correlation exists between disease area concentration and improvement in health and life spans.

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**Figure 5. Longevity disease matrix**

- **Bubble size:** Relative number of drug approvals

**Figure 6. The longevity ecosystem**

**Nano tech**
- Use of nanotechnology to deliver targeted therapies and ensure efficacy of drug delivery
- Nanobots, nano-cosmeceuticals, targeted repair and nano-surgery

**AI based diagnostics**
- Use of omics data to identify preventive methods and provide diagnoses
- At-home monitoring devices, diagnostics

**Wearables and robotics**
- Use of robotics to improve emotional, mental, and physical wellness
- Social robots, caregiving robots

**Age-Tech**
- Solutions that support the multi-faceted needs of an aging population
- Insurtech, medication management

**Government policy & regulation**
- Review funding structure and policy
- Approval options beyond current disease focused regulation

**Hallmarks of aging research**
- Focused on addressing the underlying biological causes of aging
- Treatments targeting cellular senescence, mitochondrial dysfunction, etc

**Aging therapeutics**
- Therapies to slow or reverse changes arising from biological aging process
- Senolytic drugs, nutrient regulators, drugs for novel targets (e.g., IGF-1)

**Cell and gene therapy**
- Cell and gene therapies to treat aging and age-related diseases
- Gene editing, stem cell therapy, CAR-T-cell therapy

**Wellness and prevention**
- Mobility, smart home, and fall prevention to decrease disability and hospitalization
- Mobility solutions, fall prevention, smart home technologies

**Life sciences**

We expect the convergence between technology, life sciences, and health care to continue supporting a growing ecosystem in pursuit of extending human longevity. Longevity research is poised to revolutionize the therapeutics market, and life sciences companies that opt to embrace a forward-thinking longevity mindset recognize that the future of health is one where therapeutics enable prevention and well-being over treatment-based reactionary care.

**Health care**

Health care providers should prioritize patient wellness and create hyper-personalized preventative solutions. Because personalized medicine enables a patient-centric approach to well-being and care delivery that has the potential to improve outcomes and reduce cost, personalized medicine is highly likely to continue gaining traction as a prominent feature of the future of health care.

**Insurers**

Public and private insurance payers should reexamine their offerings and consider adding services and products that also support populations with longer, healthier life spans.

**Health Tech**

Health tech is rapidly advancing as companies leverage real-world evidence and data and capitalize on the shift to well-being and personalized medicine. Emerging technologies and data-driven decisions are starting to accelerate rapid diagnosis, treatment selection, and delivery. The many benefits of these technologies on the aging population, especially, should not be underestimated.

**Patient**

Healthy aging varies according to social systems, education, and knowledge about lifestyle behaviors and health care. Few studies have recognized the potential of self-care behaviors among older adults to prolong independence later in life, and the role of motivation has largely been ignored with regard to longevity. Research from Cardiff University in Wales finds that choiceful behavior, self-reflection, and supported autonomy helped to predict who would live longer. As companies invest in longevity research, they might also more deeply consider the role of patient autonomy in healthy aging.
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Interested in learning more about achieving better patient outcomes with personalized experiences and shared decision-making and its impact on global life sciences? Check out this Deloitte publication:

Community-based clinical trials
Endnotes

Achieving better patient outcomes with personalized experiences and shared decision-making

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