

IDC FutureScape: Worldwide Healthcare Industry 2024 Predictions

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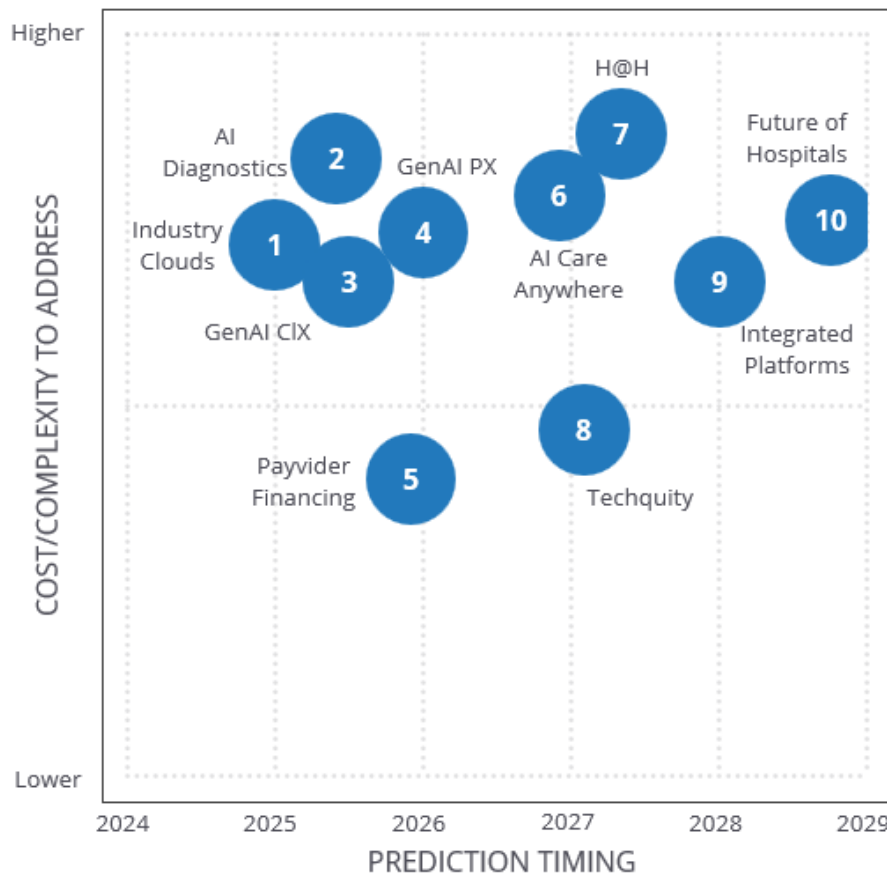
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IDC FUTURESCAPE FIGURE

FIGURE 1

IDC FutureScape: Worldwide Healthcare Industry 2024 Top 10 Predictions



Note: Marker number refers only to the order in which the prediction appears in the document and does not indicate rank or importance unless otherwise noted in the Executive Summary.

Source: IDC, 2023

EXECUTIVE SUMMARY

This IDC FutureScape provides executives across the globe with actionable insights and analysis for future healthcare industry scenarios. The intended readers include but are not limited to members of the business, clinical, and IT leadership of healthcare provider (HCP) and payer organizations worldwide. The IDC FutureScape 2024 predictions suggest that healthcare organizations will prioritize mastering AI everywhere in the next five years. With a focus on more capabilities and services transitioning from digital experimentation to digital value realization, these organizations are poised to navigate dramatic increases in IT scale and complexity. Emphasis will be placed on optimizing technology investments, particularly in generative AI (GenAI), to deliver efficient operations and improve patient outcomes.

IDC's worldwide healthcare industry 2024 predictions are:

- **Prediction 1:** Driven by perceived value of purpose-built functionality for healthcare, 70% of healthcare organizations will adopt industry clouds by 2025.
- **Prediction 2:** Driven by the need for improved diagnostic accuracy, speed, and workflow efficiency, care providers will see a 60% increase in AI solution adoption by 2025.
- **Prediction 3:** By 2025, GenAI will free up to 15% of clinicians' time, translating into an estimated \$350 billion in annual global healthcare savings to realize more workflow automation and efficiency.
- **Prediction 4:** By 2026, driven by the demand to scale hyper-personalized patient experiences, improve collaboration, and foster equity, 60% of global healthcare organizations will double GenAI investments.
- **Prediction 5:** By 2026, 55% of worldwide private health insurance companies and 75% of U.S. health systems will be "payviders" to improve risk management and address the rising cost of care.
- **Prediction 6:** By 2027, 70% of the healthcare industry will leverage GenAI to address data and workflow fragmentation across care settings to improve diagnosis and patient safety to scale care anywhere.
- **Prediction 7:** By 2027, a doubling of hospital-at-home patients will propel a 55% growth in investments in tech-enabled integrated care initiatives to address patient safety, workforce, and care access concerns.
- **Prediction 8:** By 2027, 60% of the healthcare industry will prioritize tech partnerships that champion "techquity," reducing the digital divide and recognizing social determinants of health as vital influencers.
- **Prediction 9:** Personalized health data platforms will support 75% of covered patients in advanced economies by 2028 while building more accurate patient journey simulations for providers and life science companies.
- **Prediction 10:** By 2029, hospital investments in sustainability and modernization will increase by 60%, driven by the need to reduce costs, improve quality of care, and enhance organizational resiliency.

This IDC study provides executives across the globe with actionable insights and analysis for future healthcare industry scenarios.

"The 2024 worldwide healthcare industry predictions show that the industry is at an inflection point, being driven largely by the need to master AI everywhere and the drive to automate, while there

continues to be a growing emphasis on sustainability and governance to build resilient systems that can adapt to evolving challenges," says Mutaz Shegawi, research director, IDC Health Insights. "The healthcare industry is not just navigating challenges but seizing opportunities for sustained growth. As the healthcare industry finds itself at the nexus of enduring, interconnected challenges and opportunities, traditional models are giving way to innovative paradigms demanding not just reactive measures but proactive strategic investments in technology and human capital. The imperatives for rapid action and strategic foresight have never been more pronounced as the industry landscape continues to evolve in complex, interlinked dimensions."

IDC FUTUREScape PREDICTIONS

Summary of External Drivers

- **AI everywhere** – Generative AI takes the spotlight
- **The drive to automate** – Maximizing efficiency and new opportunities
- **Cybersecurity and risk** – Building resilience against multiplying threats
- **The digital business imperative** – Competitiveness and outcomes
- **Dynamic work and skills requirements** – New work mode era
- **Shifting tech regulatory landscape** – Navigating risk and opportunity
- **Operationalization of ESG** – Measuring and implementing sustainability

Predictions: Impact on Technology Buyers

Prediction 1: Driven by Perceived Value of Purpose-Built Functionality for Healthcare, 70% of Healthcare Organizations Will Adopt Industry Clouds by 2025

IDC defines industry clouds (ICs) as cloud-based platforms, applications, or services providing industry-specific information, technology, or operational capabilities. ICs are distinct from traditional clouds due to their vertical integration and modularity, collaboration options, and ability to generate network effects. Representative examples of ICs for healthcare include AWS for Health, Microsoft Cloud for Healthcare, and Salesforce Health Cloud.

ICs are most popular in the healthcare industry; 59% of providers and 66% of payers use ICs today – more than any other industry¹. Telecom and financial services companies each reported 54% adoption of ICs. Providers and payers will continue exploring ICs designed for healthcare; 40% and 28% of providers and payers plan to do so in the next 12 months. Overwhelmingly, hyperscaler cloud service providers are the primary source for ICs. However, healthcare EHR vendors like Epic, care delivery organizations like Optum, and service providers like Cognizant and Deloitte are partnering with cloud service providers to develop ICs. IDC anticipates that by 2025, ICs will become nearly ubiquitous in the healthcare industry because of the tangible benefits they provide, such as accelerated deployment of clinical workloads to the cloud and regulatory compliance.

Associated Drivers

- **The drive to automate** – Maximizing efficiency and new opportunities
- **Cybersecurity and risk** – Building resilience against multiplying threats
- **The digital business imperative** – Competitiveness and outcomes

IT Impact

- Interoperability and integration with clinical and operational applications are critical to success.
- It includes enabling the migration from legacy on-premises industry specialty applications to the cloud.
- Internal resources will be freed up to focus on offering capabilities designed for the industry.

Patient Impact

- Fast and secure access to patient health information across the continuum of care, including the patient's home, accelerates and improves the accuracy of clinical decision making, leading to positive patient outcomes.
- ICs are incorporating GenAI use cases designed to improve patient engagement and experiences by reducing workflow friction.

Guidance

- Evaluate the depth and breadth of industry partnerships as they will support end-to-end healthcare-specific processes.
- Confirm that the IC service provider has staff on hand with domain expertise and offers healthcare-focused professional services to support rapid deployment of its cloud services.
- Prioritize interoperability when selecting an IC to ensure seamless integration with existing systems, facilitate communication among diverse platforms, and provide a foundation for future scalability and adaptability to evolving healthcare needs.
- Select an IC service provider that is a true partner with solutions that can evolve to meet new business, clinical, and technology requirements.

Prediction 2: Driven by the Need for Improved Diagnostic Accuracy, Speed, and Workflow Efficiency, Care Providers Will See a 60% Increase in AI Solution Adoption by 2025

AI technology has emerged as a powerful tool to improve accuracy, speed, and efficiency throughout the diagnostic process. The World Health Organization (WHO) has recognized the importance of diagnostics in promoting better care, passing a resolution this year to strengthen diagnostic capabilities. At the same time, the World Heart Federation has sounded the alarm that cardiovascular disease is the leading cause of death worldwide, with four in five deaths occurring in low and middle income countries². One notable example of AI's impact on diagnosis is at Apollo Hospitals, the largest hospital chain in India, where AI is used to diagnose cardiovascular risk with greater accuracy than established benchmarks and at a large scale. Similar AI-driven diagnostic tools have been adopted for other noncommunicable diseases like diabetes, asthma, and liver fibrosis and are now being used in at least eight countries. In the United Kingdom, for example, the NHS is deploying AI to diagnose and treat patients more quickly and effectively for cancers, strokes, and cardiovascular conditions.

As the healthcare industry continues to search for ways to reduce costs, improve the quality of patient care, and reduce wait times, it is increasingly turning to AI and automation. IDC survey data revealed that healthcare providers worldwide consider investing in AI and automation (30%) as the second-most immune area against budget reductions after security³, and many are already using AI in medical imaging⁴. Furthermore, the FDA reports that there are over 500 market-cleared AI medical algorithms in the United States as of January 2023, which further highlights the importance of AI in diagnostics.

Associated Drivers

- **AI everywhere** – Generative AI takes the spotlight

- **The drive to automate** – Maximizing efficiency and new opportunities
- **Dynamic work and skills requirements** – New work mode era

IT Impact

- Increased investments in centralized data pools and improved governance systems ensure secure and authenticated data sharing.
- IT consultation for LOB to build internal capabilities, upskill clinical staff, and recruit data scientists to support AI-driven diagnostics must be a priority.
- Investing in monitoring patient outcomes post diagnosis can improve accuracy and speed.

Patient Impact

- Enhanced diagnostic accuracy improves patient outcomes and confidence and trust in the treatment process.
- Access to faster diagnosis and treatment reduces wait times and increases total addressable patient volume, especially in radiology and medical imaging.

Guidance

- Develop a framework for the ethical and explainable use of AI in clinical settings to ensure patient safety and support the clinical efficacy of AI diagnostic solutions.
- Take measures to link patient outcomes with the solution model to evaluate the diagnostic process. Close collaboration with tech vendors is crucial in achieving this convergence.

Prediction 3: By 2025, GenAI Will Free up to 15% of Clinicians' Time, Translating into an Estimated \$350 Billion in Annual Global Healthcare Savings to Realize More Workflow Automation and Efficiency

The global healthcare industry spends \$9 trillion annually¹¹ and is under immense pressure to reduce costs while providing high-quality patient care. Approximately 25% of this amount is spent on clinicians. GenAI offers a way forward to address this issue since it can automate clinical documentation, saving 30-35% of healthcare professionals' time on average. According to IDC, 30% of healthcare organizations are investing significantly in GenAI technologies this year, accounting for 17.9% of all automation investments³. AI assistants, such as Bard, ChatGPT, and Copilot, have emerged as popular choices, with 42.4% of investments lined up in the next 18 months to boost employee productivity within healthcare organizations using them³.

As a result, clinicians will have more time to focus on patients, leading to an estimated 15% increase in productivity and savings of \$350 billion by 2025. As healthcare systems in developed countries struggle with staffing costs – for example, the NHS spends around £62 billion on staff¹², accounting for 45.2% of its budget – the automation and efficiencies generated by GenAI will prove invaluable, and healthcare professionals eagerly watch its evolution. Combined with the benefits of GenAI driving more personalized patient engagement and education, the resulting impact is transformational. GenAI can produce patient-specific materials and translate them, improving compliance, understanding, safety, and satisfaction, leading to increased patient retention and decreased mortality rates.

Associated Drivers

- **AI everywhere** – Generative AI takes the spotlight
- **The drive to automate** – Maximizing efficiency and new opportunities
- **Dynamic work and skills requirements** – New work mode era

IT Impact

- Evolving healthcare IT infrastructure must prioritize robust data integration, enhanced cybersecurity measures, EHRs integrated with AI tools, and advanced encryption techniques.
- The surge in upcoming investments in AI assistants like Bard, ChatGPT, and Co-pilot demands that IT teams be trained in AI tool integration, maintenance, and optimization.
- There is seamless integration of AI-generated outputs into EHRs for tailored patient education, multilingual translations, and diverse content formats.

Patient Impact

- Clinicians can provide more personalized care with increased quality time spent with patients.
- Updating patient records accurately and promptly will enhance trust in the healthcare provider.

Guidance

- Update (or switch) EHRs to integrate with GenAI tools for improved usability and functionality.
- Strengthen cybersecurity with advanced encryption to safeguard patient data in AI processes.
- Train staff in AI skills and regularly review AI tools to maximize benefits of AI-enhanced care.
- Focus on the "explainability" aspect of GenAI systems to increase clinician confidence in them.

Prediction 4: By 2026, Driven by the Demand to Scale Hyper-Personalized Patient Experiences, Improve Collaboration, and Foster Equity, 60% of Global Healthcare Organizations Will Double GenAI Investments

Healthcare consumers are faced with a myriad of challenges in today's environment. Cost concerns, access to timely care, aftershocks of the COVID-19 pandemic, and feelings of disenfranchisement and disconnection from the healthcare system influence where, why, and how consumers seek care. 39% of U.S. consumers identified convenience as a leading factor in choosing a healthcare provider³. Almost three-fourths of respondents (73%) reported at least one pain point related to a recent healthcare experience. To address this evolution in expectations and needs, organizations continue to invest in digital transformation strategies – like GenAI – that improve automation, reduce friction related to care access, and ultimately offer an experience that will keep patients engaged and loyal.

Patient experience and improved access to care are among the top 5 strategic business goals for healthcare providers. Furthermore, in the United States, 53% of organizations expecting an increase in IT-related spending plan to allocate funds toward enhancing digital patient engagement and experience⁴. Nearly one-third (30%) of healthcare respondents reported plan to invest in GenAI in 2023, while a roughly equal percentage reported being in the initial exploration phase⁶. Customer engagement (32%) was reported as the second strongest area of impact expected from GenAI deployment within the next 18 months. Given the sensitive nature of health data and the high-stakes world of healthcare, most organizations are leaning on GenAI initially for low-risk, high-reward use cases.

Associated Drivers

- **AI everywhere** – Generative AI takes the spotlight
- **The drive to automate** – Maximizing efficiency and new opportunities
- **The digital business imperative** – Competitiveness and outcomes

IT Impact

- As GenAI matures and proof of concept is achieved, investment will increase. However, the success of its impact will rely heavily on the ability to integrate GenAI with existing workflows and establish trust with users.
- IT will be tasked with skill set evolution to ensure that personnel remain up to date on security and privacy guidelines as regulations and best practices evolve and solidify.

Patient Impact

- Healthcare digital resources supporting a deeper understanding of patients' unique care goals and needs will become more accessible.
- Hyper-personalized experiences will promote trust and strengthen partnerships between patients, providers, and payers, ultimately leading to improved quality of care for all.

Guidance

- Invest in GenAI technologies, infrastructure, and governance frameworks to optimize the scalability of hyper-personalized patient experiences and engagement.
- Prioritize adherence to ethical use of data and technology standards, ensure that privacy and security regulations are met, and foster trust through transparent models and AI explainability.

Prediction 5: By 2026, 55% of Worldwide Private Health Insurance Companies and 75% of U.S. Health Systems Will Be "Payviders" to Improve Risk Management and Address the Rising Cost of Care

Industry disruption has created new opportunities for health systems to rethink the structure of their payer and provider partnerships, reassess their markets for new entrants with a willingness to innovate together, and readjust their network strategy to align with where their market is going. Payer/provider convergence (or "payviders") refers to the evolving trend of healthcare providers taking a financial risk in their contracts with private health insurance companies. Concurrently, health insurers are becoming more involved in care delivery; some are providing care directly, while others are acquiring professional practices. It is a logical model for providers to pursue, given the ongoing emphasis on value-based care and the associated financial risks they already bear. If they launch their own insurance plan, they can control the premium revenue without sharing any savings with an insurance company. Of course, this comes with added risk, which is why some providers partner with payers to form payvider plans.

Similarly, U.S. regional payers seek ways to differentiate themselves from the large national players. Collaborating with a regional health system to create a payvider plan can help do that. The payers bring deep expertise and resources to the table to operate an insurance company, which can be very appealing to health systems. In Europe and the Asia/Pacific, a key driver for the emergence of payviders is the current access to care challenges. Workforce shortages, budget constraints of public health systems, and rising patient demands are producing long waiting times, and people are turning to private health insurance. Also, healthcare providers in the health insurance networks are experiencing delays – many providers are in different networks and cannot always cope with the demand – so private health insurance is looking for more integrated approaches, which can include acquiring care facilities as well as providing care services directly leveraging virtual care solutions.

Associated Drivers

- **The drive to automate** – Maximizing efficiency and new opportunities
- **The digital business imperative** – Competitiveness and outcomes

- **Shifting tech regulatory landscape** – Navigating risk and opportunity

IT Impact

- Integrating disparate systems will require IT to consolidate systems never intended to work together, breaking down data silos and fostering more cross-departmental collaboration.
- Investing in adaptable workflows allows IT to support rapid changes, enhancing overall agility.
- Consolidating patient or member data into 360-degree profiles empowers IT to facilitate personalized care and informed decision making.

Patient Impact

- Coordination will result in improved access to more affordable care.
- Integrations will improve consumer and patient experience, with more efficiency and effectiveness through value-based care patterns.
- More seamless workflows drive efficient consumer and health transactions.

Guidance

- Maximize investments in digital health areas; functions not automated cannot be integrated.
- Develop frameworks that allow the expansion of a core flexible workflow and data architecture.
- Adopt innovative, collaborative models to reduce health and protection gaps.

Prediction 6: By 2027, 70% of the Healthcare Industry Will Leverage GenAI to Address Data and Workflow Fragmentation Across Care Settings to Improve Diagnosis and Patient Safety to Scale Care Anywhere

Globally, the healthcare industry continues to focus on "care anywhere," which combines in-person and virtual care and transcends traditional care settings and workflows for enhanced access and patient convenience. Such initiatives rely on patient-centric ecosystems that can aggregate data from different sources, extract insights, streamline workflows, and promote care team communication and patient engagement across the care continuum. Without these capabilities, there is a risk of treatment gaps and fragmented data, potentially leading to care delays and safety issues. For example, a recent Patient Safety Learning report⁷ calls for integrated care systems in England to increase the focus on patient safety through stronger cross-organizational thinking and data-driven coordination.

Healthcare providers recognize the potential of AI in driving coherent, evidence-based decisions and orchestrating care provision along patient journeys, allowing care anywhere to scale. IDC survey results indicate that AI initiatives are more resistant to budget cuts and are gaining traction across worldwide healthcare providers. The greatest positive impact of GenAI in healthcare is anticipated in data analysis and management⁵. Providers recognize opportunities for contextually relevant information analysis, supporting documentation, and knowledge management across ecosystems. This is expected to expedite workflows and enhance safety. IDC, therefore, predicts that by 2027, 70% of the industry will use GenAI to address data and workflow fragmentation, improving diagnosis and patient safety and scaling care anywhere.

Associated Drivers

- **AI everywhere** – Generative AI takes the spotlight
- **The drive to automate** – Maximizing efficiency and new opportunities
- **Shifting tech regulatory landscape** – Navigating risk and opportunity

IT Impact

- An optimized technology stack (infrastructure, command centers, and connected health technology) is a precondition to scale the impact of AI in care anywhere initiatives.
- GenAI models require high-quality and diverse data to perform effectively. Coordinated strategies across ecosystem partners are a must, emphasizing security and privacy for trust.

Patient Impact

- By streamlining workflows and personalizing care journeys, AI can drive quicker and more accurate diagnoses for better patient outcomes and increased access to care.
- Continuous assessment of GenAI models for their intrinsic safety and ecosystem-enhancing safety capabilities are vital to increasing trust and scaling the adoption of care anywhere.

Guidance

- Collaborate with ecosystems for a coordinated data strategy, prioritizing interoperability and ethical, compliant AI governance.
- Establish a process for regularly assessing GenAI's impact on patient outcomes and safety. Fine-tune models with new data and evolving technologies.
- Train your healthcare workforce to effectively interpret and use AI-generated insights and prioritize models with explanatory capabilities for increased trust.

Prediction 7: By 2027, a Doubling of Hospital-at-Home Patients Will Propel a 55% Growth in Investments in Tech-Enabled Integrated Care Initiatives to Address Patient Safety, Workforce, and Care Access Concerns

Hospital-at-home (H@H) care models, led by the United States, are increasing worldwide. The U.S. Centers for Medicare & Medicaid Services announced the Acute Hospital Care at Home program in November 2022, an expansion of its Hospitals Without Walls program, to address hospital capacity and labor shortages and facilitate access to care. The program details the requirements hospitals must meet and provides the mechanism for reimbursement, which limited prior H@H initiatives in the United States.

Across the globe, tech-enabled H@H is driven by consumerization and the need to address challenges associated with access to care. Virtual wards are now integral to NHS England's care strategy, which aims for 40-50 virtual wards per 100,000 people and plans to exceed 10,000 "at home" beds by this fall to bolster winter preparedness. In Singapore, the Mobile Inpatient Care-at-Home program expanded to four more hospitals with additional medical conditions covered, benefiting around 1,000 patients. These initiatives indicate a potential for H@H models to provide convenient alternatives to traditional hospital care.

H@H programs require an extensive ecosystem of partnerships with technology and service providers and effective sharing of data, insights, and capabilities to deliver acute-level care in a patient's home successfully. Many early pilots cannot scale due to poor coordination of care and services, undermining patient safety and magnifying clinician concerns. Significant investments in tech-enabled integrated care and logistics will be required to accommodate the expected doubling of H@H patients by 2027.

Associated Drivers

- **The digital business imperative** – Competitiveness and outcomes
- **Dynamic work and skills requirements** – New work mode era

- **Shifting tech regulatory landscape** – Navigating risk and opportunity

IT Impact

- Integration and interoperability with all clinical and operational applications, including those offered by technology and service partners, is critical to success.
- There will be an increased need for a technology platform for managing clinical and ancillary services, updating care plans, assigning resources, monitoring tasks, and streamlining communication.

Patient Impact

- H@H increases patient satisfaction and experience. Research shows that patients appreciate receiving care in the comfort of their own homes and are satisfied with their care.
- H@H helps improve outcomes and prevent complications, including iatrogenic events.
- Strong data and analytics are required to define, track, and predict patient eligibility and safety.

Guidance

- Do not underestimate investing in a logistics solution that provides a "single pane of glass" view of H@H patients and simplifies coordinating the wide range of H@H services.
- Invest in AI to analyze the massive volumes of data generated by sensors placed in patients' homes and streamline clinical documentation.
- Prioritize patient eligibility, balancing benefits and risks for H@H programs.
- Invest in an ecosystem of partnerships to effectively implement H@H initiatives.

Prediction 8: By 2027, 60% of the Healthcare Industry Will Prioritize Tech Partnerships That Champion "Techquity," Reducing the Digital Divide and Recognizing Social Determinants of Health as Vital Influencers

"Techquity" highlights the pivotal role of technology in achieving equitable access to healthcare services and addressing the social determinants of health (SDOH). It reflects the growing awareness among healthcare providers and tech vendors that technology can deepen disparities or bridge gaps in healthcare access and outcomes due to the SDOH. It also embraces digital inclusion, gaining recognition for its influence on health outcomes. Indeed, Ipsos-HLTH's 2022 white paper underscored the pressing need within the healthcare ecosystem to counterbalance potential disparities in digital technology access and utilization. The WHO further validated this concern, revealing a tendency for certain groups of individuals to engage more with digital health technologies. This highlights the need for comprehensive health policies and strategies that address all health determinants.

Encouragingly, there is a growing adoption of technological solutions and initiatives that advance techquity. Notably, analytics for SDOH offer invaluable insights, enabling healthcare providers to pinpoint health risks, enhance care access for disadvantaged individuals, and effectively manage population health. In the United States, ONC revealed that 83% of nonfederal acute care hospitals gathered data on patients' health-related social needs. Also, London's Lewisham borough collaborated with Oracle Cerner, employing SDOH analytics to pinpoint at-risk groups, and achieved an 80% screening acceptance rate, effectively tackling health inequalities. Promoting techquity involves addressing the digital divide, including the challenges of broadband access and device affordability. The pandemic highlighted the importance of inclusive solutions catering to all individuals. Achieving techquity depends on ecosystem collaboration and thoughtful service design that prioritizes inclusivity and considers patients' preferences and needs. By embracing these principles, technological partnerships that champion techquity will drive efforts to create more equitable healthcare models.

Associated Drivers

- **AI everywhere** – Generative AI takes the spotlight
- **The digital business imperative** – Competitiveness and outcomes
- **Operationalization of ESG** – Measuring and implementing sustainability

IT Impact

- Efficient management, integration, and analysis of data can unlock the potential of SDOH and promote techquity.
- Enabling 5G connectivity will result in more equitable access, reducing the reliance on Wi-Fi networks and devices.

Patient Impact

- Fueled by population risk segmentation, techquity ensures inclusivity and accessibility to population-tailored healthcare services.
- With its focus on reducing inequalities and ensuring equitable access to technology and care services, techquity can potentially boost care access for underserved populations.

Guidance

- Guide organizations in tech selection beyond "best case" functionality, and preserve in-person care for older and less tech-savvy adults to meet diverse needs and preferences.
- Empower patients and healthcare professionals through digital enablement. Overcoming digital literacy challenges requires user-centered and user-friendly technology solutions.

Prediction 9: Personalized Health Data Platforms Will Support 75% of Covered Patients in Advanced Economies by 2028 While Building More Accurate Patient Journey Simulations for Providers and Life Science Companies

Personalized health data platforms in payer, provider, and life science organizations aggregate individual customer data into a trusted, single view of customers and their interactions. For payers and providers, customers may refer to covered (insured) patients or members, and life science companies may refer to either patients or, more commonly, HCPs. In a highly regulated environment, personalized health data platforms help eliminate data silos, structuring data from disparate sources and streamlining workflows around ingestion, mapping, cleansing, codifying, and verifying customer identification and data quality. Once staged, service layers or applications can point to the data in its various forms of aggregation and content. Services are enabled for analytic workbenches, models, reports, dashboards, and AI and machine learning opportunities.

By aggregating information in a single accessible platform, patients can be served more efficiently and comprehensively, resulting in faster and more accurate processing. In healthcare provider and life science organizations, de-identified patient data can be combined or categorized by disease or therapy state to construct more accurate patient journey simulations to help improve treatment options. For HCPs, customer data may point to preferred messages and in-person or digital interaction channels from life science companies and others.

Over the next several years, IDC predicts that a large majority of covered patients in advanced economies will be covered by these personalized health data platforms by private and government payers, helping improve overall healthcare and knowledge of patient experience.

Associated Drivers

- **AI everywhere** – Generative AI takes the spotlight
- **Shifting tech regulatory landscape** – Navigating risk and opportunity
- **The drive to automate** – Maximizing efficiency and new opportunities

IT Impact

- Data platform vendors and payer, provider, and life science organizations must provide tools to ensure data quality.
- Platforms and feeder data should be cloud enabled and able to scale rapidly with implementation.
- Data sources must be interoperable and data cleansed for successful aggregation.

Patient Impact

- Patients experience faster and more accurate claims processing and assistance from payers.
- More accurate patient journey simulation leads to better overall care.
- Successful identification of HCP patient populations and specialties indicates more successful dissemination of up-to-date treatment information, leading to innovative and effective treatment.

Guidance

- Complete efforts on data source interoperability.
- Vet vendors and partners for technical and industry expertise, including client references.
- Consider future data requirements for remote monitoring (digital biomarkers) and RWD.

Prediction 10: By 2029, Hospital Investments in Sustainability and Modernization Will Increase by 60%, Driven by the Need to Reduce Costs, Improve Quality of Care, and Enhance Organizational Resiliency

Hospitals worldwide increasingly incorporate sustainability and modernization efforts into their core strategies, seeking to harmonize ecological responsibility with quality healthcare delivery. From energy-efficient lighting to green building design, the impact of these initiatives transcends the immediate environmental benefits. Policymaking is a significant catalyst in this transformation. For example, the European Commission aims to convert approximately 15,000 European healthcare facilities into zero-carbon institutions, predominantly powered by renewable energy systems. This endeavor is closely aligned with the broader "Carbon-Neutral Europe 2050" strategy, stimulating an influx of capital into smart, eco-conscious healthcare infrastructures. Several hospitals in the United States are also committed to reducing their environmental impact. For example, the Cleveland Clinic is installing water-saving fixtures and appliances to reduce its water consumption by 20% by 2025.

However, the ramifications of these investments are far-reaching, extending beyond ecological sustainability to reshape the entire healthcare value chain from procurement protocols and operational workflows to workforce productivity and service delivery models. Healthcare organizations committed to sustainability programs are either reaping or projected to garner significant improvements in financial performance, patient satisfaction, and organizational resilience³. Hence the push toward hospital sustainability and modernization is a multifaceted strategy that reduces costs, elevates healthcare quality, and builds more resilient organizations.

Associated Drivers

- **The drive to automate** – Maximizing efficiency and new opportunities
- **Dynamic work and skills requirements** – New work mode era
- **Operationalization of ESG** – Measuring and implementing sustainability

IT Impact

- Generating a vast amount of data, sustainability requires analytics and intelligent automation applications to validate them for predictive analytics and to optimize patient care.
- Investments in edge computing, operational technology, IoT, and IT networking will be instrumental in achieving the dual objectives of real-time patient care and energy-efficient operations.

Patient Impact

- Hospitals can integrate socio-environmental factors into their patient care models, enhancing preventive measures and directly reducing long-term health risks for their patient population.
- By developing green and smart infrastructures, hospitals can offer more equitable and universally accessible modern care services, aligning with evolving healthcare standards and patient values.

Guidance

- Upgrade hospital IT infrastructure to directly facilitate sustainability initiatives, from energy-efficient datacenters to EHR systems that incorporate socio-environmental determinants of health.
- Foster partnerships with regional healthcare providers, NGOs, and governmental bodies to address systematic challenges collaboratively and thereby amplify the positive impact of sustainability initiatives on patient outcomes across multiple hospitals.

ADVICE FOR TECHNOLOGY BUYERS

As the healthcare industry undergoes transformative change, spurred by technological advancements and shifting consumer expectations, technology buyers find themselves at a critical juncture. Faced with a myriad of options, it is imperative to make strategic choices that not only meet current needs but also prepare for the challenges and opportunities of the future. From embracing industry cloud solutions to investing in GenAI, rethinking payment models, and focusing on equity and sustainability, a multifaceted investment approach is vital. What follows is a distillation of key strategic directions that technology buyers should consider to future proof their healthcare organizations and align with current and future industry trends and challenges:

- **Transform the way your organization approaches technology acquisition.** Consider not only checklists and selection processes but also having a dynamic plan that develops over time along with industry trends and your organization's requirements. Think in terms of a strategic framework that functions as your organization's technology compass, ensuring that each investment you make is adaptable, modular, and ready to tackle the most critical issues for your organization and the healthcare industry. The goal should be not just to purchase technology but to design the future of healthcare delivery.
- **Form a multidisciplinary health IT steering committee made up of key stakeholders from various departments within your organization.** The committee responsible for reviewing and updating technology priorities should play a central role in guiding all technology-related

decisions. Priorities should encompass a broad range of solutions, from cloud-based services to cybersecurity and benchmarking for other potential technology purchases. This approach should be standardized yet flexible enough to ensure the organization remains aligned with current needs and is positioned for future industry developments. By following the inputs of a multidisciplinary team of clinical and nonclinical leaders that spans IT and LOB functions and a cohesive technology road map, organizations can stay agile and ahead of the competition.

- **Pioneer more sustainable and resilient care through energy efficiency.** In modernizing healthcare facilities, emphasizing on reducing energy consumption and limiting carbon emissions serves a dual purpose. This approach not only aligns with new regulatory guidelines and brings sustainability benefits but also generates substantial cost savings and develops a stronger adaptive capacity to address the evolving landscape of market dynamics. Investments in technological innovations, such as cloud computing and modern network infrastructure, are enablers for a more sustainable, efficient, and resilient approach to care.
- **Continue to prioritize investments in data strategy.** The healthcare industry must carefully define its data strategies to keep up with evolving technology and meet growing expectations from patients and the workforce. Establishing clear metrics and key performance indicators is essential for evaluating the effectiveness and impact of these strategies on patient care, workforce satisfaction, operational efficiency, and overall health outcomes. With the increasing integration of AI, widespread adoption of ICs, and evolution of care delivery beyond traditional settings, it is imperative to monitor data quality benchmarks and adherence to interoperability standards and best practices as well as privacy and security protocols. Furthermore, the evaluation of data strategy performance should encompass considerations regarding the ethical use of data, safeguarding patient data rights and proactively addressing potential biases to ensure equity and build and maintain trust with patients and other stakeholders.
- **Leverage healthcare data to generate real-world evidence and accelerate innovation velocity.** Patient data is the fabric connecting the healthcare and life science industries. The FDA and regulators worldwide increasingly encourage the use of RWD to generate deep insights into patient journeys, better understand drug safety profiles, support regulatory submissions, and scale precision therapies. SDOH data plays a critical role in scaling diversity and equity in clinical trials. Yet guardrails should be implemented to ensure that techquity powers access to care and does not accelerate the digital divide.
- **Adopt a top-down, bottom-up framework for GenAI.** GenAI in healthcare requires a well-defined approach. It is advisable to start with a top-down approach by establishing a foundation model consisting of a governance system, intelligence architecture, responsible AI policy, and curated clinical data pool to extract greater value from GenAI use cases. The bottom-up approach should focus on use case rollout by listening to key stakeholders such as clinicians, patients, and other ecosystem partners. This will help link outcomes with the adopted AI solution model to enhance the accuracy, adaptability, and scalability of GenAI tools.
- **Develop frameworks that allow the expansion of a core flexible workflow and data architecture.** These frameworks can help healthcare providers and payers better manage and share patient data, allowing for more informed and efficient decision making. This approach can also lead to improved patient outcomes and reduced costs. As the industry evolves, organizations prioritizing integrating technology and data-driven strategies will be better positioned for success in the payvider model.
- **Take advantage of the unprecedented technological advances to reimagine care delivery.** The rapid uptake of AI technologies, including GenAI, is enabled by the widespread adoption of cloud services that provide secure and easy access to healthcare data – both structured and

unstructured – across the healthcare ecosystem. This, combined with the compute power to turn information into actionable intelligent insights, provides the foundation to rethink clinical workflows and care team collaboration. By doing so, organizations can enhance patient and clinician experiences and improve patient outcomes while achieving the Quintuple Aim.

- **Iterate and validate to minimize risks and maximize success, or fail fast and fail small.** The healthcare technology market is experiencing rapid and transformative changes. However, the complex and multifaceted nature of healthcare business and delivery models and care coordination processes means they cannot adapt and evolve as quickly. In this industry, the stakes are high, and failing big is not an option. Therefore, it is crucial to iterate and validate on a small scale first. Prioritize partnerships with healthcare organizations that allow for quick testing of new concepts. Learn from setbacks and continually refine your solutions, always keeping in mind patient safety and the critical need for reliability and accuracy. This approach can lead to more effective and efficient innovations throughout the industry.

EXTERNAL DRIVERS: DETAIL

AI Everywhere – Generative AI Takes the Spotlight

- **Description:** With intelligence becoming the primary source of value creation, we are on the verge of the "Intelligence Revolution," in which artificial intelligence (AI) and automation-oriented technology will be the main accelerators of business change. In the realm of "AI everywhere," generative AI (GenAI) emerges as a transformative force, potentially revolutionizing the future. This branch of artificial intelligence enables a machine-driven autonomous creation of new content, from images to music to even written text, with remarkable accuracy. Early applications of GenAI have showcased its potential in fields such as creative arts, content and code generation, and personalized recommendations. However, it also raises concerns regarding bias and privacy: AI algorithms can inadvertently perpetuate biases and pose threats to personal data. As a result, regulation becomes crucial to ensure responsible and ethical use of GenAI. Despite these challenges, the possibilities are vast, ranging from improved customer experiences to innovative problem solving. Harnessing the power of GenAI and navigating its associated complexities have the potential to shape the future of industries and drive advancements in the AI-driven world.
- **Context:** Businesses are already jumping to get a piece of the AI pie, afraid to miss out on the opportunities it presents. Although we are in the early days, monetization and scale of AI solutions are expected to evolve rapidly. However, this comes during a time of relative economic uncertainty and increasingly constrained IT budgets. Furthermore, AI is not without risks, especially when it comes to ethical AI and data privacy, and companies need to carefully consider the best use cases in order to implement AI effectively.

The Drive to Automate – Maximizing Efficiency and New Opportunities

- **Description:** Broader automation use cases – beyond just generative AI – are now ubiquitous. Now that data is embedded in the core of strategic capability for every organization, automation is critical to scaling a digital business and is evident in three domains: IT automation, process automation, and value stream automation – leading to autonomous operations, digital value engineering, and innovation velocity. Industrial organizations have spent the past few years evolving toward the Fourth Industrial Revolution (Industry 4.0) through the use of industrial automation and intelligence. Thoughtful implementation is more important than ever as data becomes embedded in the strategic core of every organization. Automation technologies such as robots and drones are being used increasingly in the military

and healthcare sectors. Given this boost in automation, data is increasingly precious, and privacy must be prioritized and security enhanced. In some cases, automation has also led to concerns over the future of work – whether it will enhance or take away.

- **Context:** Businesses are rethinking how to employ automation to maximize operational efficiency – from automating assembly in manufacturing to identifying opportunities for food waste reduction in hospitality to improving customer experience (CX) in digital banking. IT will need to continue to assess new technologies and approach automation investments strategically, both within the walls of the organization and in the field. Among industrial organizations, IT/OT convergence will necessitate shared responsibility across teams for automation priorities and implementations.

Cybersecurity and Risk – Building Resilience Against Multiplying Threats

- **Description:** The era of digital business has resulted in a significant increase in the interconnectedness of devices, people, applications, data, and networks alongside movement of workloads to the cloud. However, this progress has led to a broader vulnerability to cyberattacks. Ransomware attacks have multiplied exponentially, the dark web is teeming with low-cost, high-quality hacking services, and generative AI is threatening with more believable, humanlike phishing and pretexting attempts. A shortage of skilled cybersecurity professionals presents a continuous challenge for organizations to respond effectively. Cyberattacks have impacted all types of organizations, from governments to universities to businesses, and are oftentimes entangled in geopolitical motives. The increase in high-profile data breaches is furthermore leading to increased policy interventions regarding privacy and sovereignty.
- **Context:** An organization that is unprepared for cyberattacks may suffer various consequences, including data loss, financial implications, harm to the organization's brand reputation, decreased employee morale, and loss of customers. Cyber-resilience – the ability of an organization to anticipate, withstand, recover from, and adapt to any threats to its resources – is key for an organization to not only defend against cyberattacks but also prepare for swift response and recovery to attacks.

The Digital Business Imperative – Competitiveness and Outcomes

- **Description:** A digital business sees value creation based on the use of digital technologies for both internal and external processes, including customer engagement, employee experience, and product and services development. Building and leading a digital business is imperative for organizations to be competitive. While certain operational aspects may always have a nondigital component, digital businesses prioritize a digital-first strategy that aligns all parts of the business and IT landscape with digital workflows to drive value and growth. The development strategies for both digital and nondigital assets now require leveraging multiple channels for the digital business to obtain support or funding. This places a strong emphasis on providing digital experiences for customers and citizens, employees, and partners and necessitates a shift toward fully digital operating models and resilient supply structures enabled by digital technology. The focus of a digital business is increasingly on delivering measurable outcomes. Businesses that have recognized the value of digital anticipate maintaining or even increasing their investment in technology, even in times of economic uncertainty.
- **Context:** As more and more enterprises embrace digital strategies and technology, they prioritize technology investments that drive innovation or allow for competitive differentiation. Technology is no longer viewed as a tool to keep the business running, but it is the foundation for building new revenue-generating experiences and products. Laggards will need to adapt quickly and develop their digital road maps and embrace a digital business platform.

Identifying top digital revenue opportunities that deliver value will be crucial for overall business success and implementation of organizational digital-first strategies.

Dynamic Work and Skills Requirements – New Work Mode Era

- **Description:** In the wake of COVID-19 pandemic-driven accelerated work transformation, enterprises continue to face dynamic work conditions. These range from lack of skilled employees to codifying more flexible ways of working that rely on a broad range of technologies and services. In some regions, most notably in Asia/Pacific, organizations are focused on building more secure and technically sophisticated office environments. In North America, remote and more flexible work models are driving investments in technologies that support collaboration across and within disparate work environments. Across this spectrum of work models, organizations are investing in infrastructure, hardware, software, and services to enable and manage increasingly automated ways of working. These include automated remote onboarding, learning in the flow of work, and use of AI and generative AI to facilitate basic tasks and workflows. While the pandemic drew much needed attention to the employee experience, enterprises have shifted to aligning employee requirements more plainly to strategic business goals. The key challenge around the globe has been to find or upskill/cross-skill employees to scale and meet the demands of complex, automated work processes. Flexible work models continue to change to become even more agile, with digital workspaces highlighting skills, workforce management, automation, changing demographics, and as-a-service talent resourcing.
- **Context:** New modes of working are now intrinsic to leadership and organizational resilience and go well beyond traditional staff planning methods. They are also having an impact on frontline workers who have historically been neglected in favor of higher-paid front- and back-office peers. New work models require agile cross-functional teams – including HR, IT, LOB, finance, facilities management, and operations – to engage top talent and meet client brand expectations. While headlines debate the fate of environmental, social, and corporate governance (ESG) initiatives, it is clear that environmental concerns will be an embedded element of workplace design and implementation of flexible work models. C-suite leaders and their teams must collaborate to recalibrate work culture, augmentation, and space/place planning to enable more secure, dynamic, and refined work models of the future.

Shifting Tech Regulatory Landscape – Navigating Risk and Opportunity

- **Description:** With frontier technologies like generative AI, geopolitical concerns, and cyber-risks, the tech legal landscape is rapidly changing. While the GDPR in the EU is perhaps the most well-known of privacy laws, other countries have enacted legislation to ensure that personal information is protected and ethically used, such as China's Personal Information Protection Law (PIPL) and Japan's Protection of Personal Information Act (APPI). Nations all over the world are considering frameworks to regulate AI, including the EU's AI Act and the United States' AI Bill of Rights. Cybersecurity is top of mind with the United States' CIRCIA Act, Japan's Basic Act on Cybersecurity, and the EU's Cybersecurity Act. And with ongoing chip wars, countries around the world have mandated domestic production for certain parts of semiconductor manufacturing and banned foreign-created semiconductors in some cases – often along geopolitical lines. Tech regulation, however, is not just a blockade but presents an equal amount of opportunity as well. The aforementioned chip laws also incentivize domestic production and innovative chip manufacturing through tax subsidies. Other strategies such as electric vehicle subsidies are accelerating the green transition across many nations. And larger industry verticals are receiving big boosts, such as Saudi Arabia's investments in healthcare technologies.

- **Context:** Businesses must navigate an increasing number of regulatory rules. Even if it is not always the primary focus, tech is often a crucial part of these regulations. Most of these rules are intended to hedge against risks, but some are entrenched in geopolitical divides, so those firms that stay ahead of the game and build upon resiliency will be best equipped to comply with these regulations. Moreover, regulations and policies are not just restraints – they are also often springboards for investment with many regulations proposing tax subsidies and other kinds of incentives.

Operationalization of ESG – Measuring and Implementing Sustainability

- **Description:** Environmental, social, and governance (ESG), a globally adopted framework supporting actions to achieve sustainability and a better future for all, is gaining more traction than ever. ESG laws are increasing: the EU launched the Corporate Sustainability Reporting Directive (CSRD) requiring companies to disclose and assure ESG metrics, the SEC's climate disclosure requirement is forthcoming, and Japan's GX Basic Policy implements an emissions trading scheme and carbon tax. There are also new International Financial Reporting Standards. Given this, many companies are actively operationalizing ESG with AI-informed carbon accounting software, carbon budgets, and sustainability requirements into requests for proposals (RFPs) they send to tech suppliers. Many companies now have positions such as chief sustainability officer or are integrating sustainability into the responsibilities of the C-suite. And many enterprises are replacing redundant faulty and energy-heavy tech with newer, more efficient energy-saving counterparts. Businesses recognize that diversity, equity, and inclusion are positively affecting profits and are therefore implementing DEI initiatives to include more women and minorities. In addition, ESG compliance is a form of long-term strategic business risk reduction. Given climate change and instable energy prices, among other risks, ESG helps curb costs and hedge against risks caused by natural disasters and other shocks.
- **Context:** ESG is more than just a measure; it is foundational to business purpose and value. Businesses are increasingly beholden to ESG. More and more customers care about whether the companies they deal with behave sustainably and deliver sustainable products and services. ESG can also be a cost-saving measure and hedge against risks. Yet, despite much progress, there is still work to be done, especially in complying with carbon footprint measuring and achieving high-quality data. As laws and regulations – as well as investment opportunities – amp up around ESG, the IT industry will increasingly require green talent and skills and better data modeling of ESG metrics to achieve maximum benefit.

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