ORACLE

Reimagine the Future of Health: 5 Top Priorities for 2024 and Beyond

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Large tech companies, fast-growing startups, and even retail pharmacy chains are starting to compete with established health services companies and hospital systems, which are grappling with higher costs, intense regulatory pressures, mergers and acquisitions, workforce shortages, and evolving care models. But the established players have an array of not-so-hidden advantages, including strong patient relationships, experienced practitioners and support staff, prime real estate, extensive partner networks, and a trusted place in their communities.

The most successful health organizations are extending those advantages by implementing the latest technologies and unifying their data platforms to improve patient engagement, hone diagnostic accuracy, boost patient satisfaction, and increase access to health services (both geographically and socially). They're providing clinicians with access to critical patient data and optimizing workflows so caregivers spend less time on administrative tasks. They're also shoring up their finances and supply chains, as well as improving how they attract and retain the best staff, with the latest enterprise applications.

US$9 trillion

Global spending on healthcare in 2020, 11% of GDP worldwide

Among the challenges health enterprises face, cost is a particularly acute problem. In the US, healthcare spending represents close to 20% of GDP and is expected to rise an average of 5.4% between 2022 and 2031, according to the Centers for Medicare & Medicaid Services' National Healthcare Expenditure Report. In a 2022 survey by KFF, an independent health policy research foundation, about half of US adults said they had difficulty affording needed care; a quarter said they or a family member had cut pills in half, skipped doses, or not filled a prescription due to high medication costs; and 40% said they had healthcare-related debt.
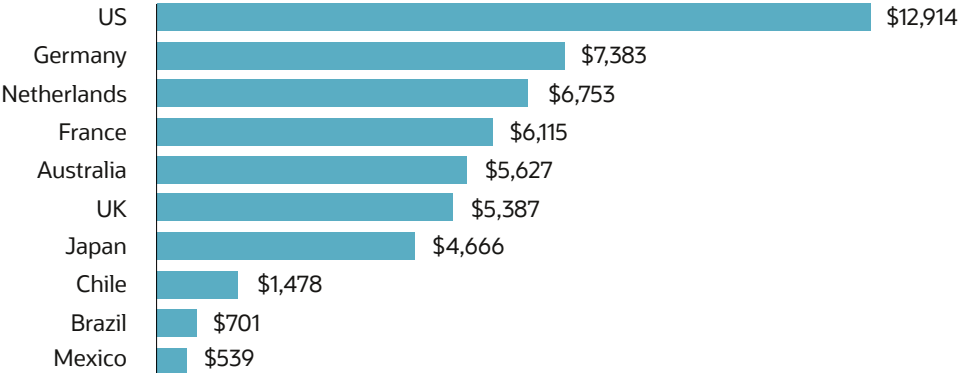
"People think it makes sense to spend on healthcare, because what's more important than your health?" says David Feinberg, chairman of Oracle Health. "But as this spending grows, it's like a downward spiral because that means there's less money to spend on early education, the environment, or climate change. We know that skimping on education and the physical environment has huge health implications."

US and European governments are taking steps to bring down costs. For example, the European Union is reviving investment in pharmaceutical manufacturing and delaying the enforcement of a new law regulating medical devices to ensure the continuing supply of affordable lifesaving equipment. In the US, the Inflation Reduction Act of 2022 allows

Medicare to negotiate the price of prescription drugs for seniors, potentially saving the federal government US$288 billion over 10 years. Starting in 2025, the act also caps Medicare patients' out-of-pocket costs at US$2,000 annually, and, as of 2022, it levies financial penalties on drug companies that raise prices faster than the US inflation rate.

But government regulations will lower the cost of care only so much. In an effort to decrease costs and improve access to services, healthcare organizations are implementing new care delivery models, such as telehealth and expanded clinical trials. New technologies are expected to aid in these efforts. According to a 2023 report from Harvard University and McKinsey & Co., researchers estimate that AI-powered software has the potential to save the United States up to US$360 billion annually if it's adopted more broadly.

Per capita healthcare spending worldwide

Country	Spending
US	$12,914
Germany	$7,383
Netherlands	$6,753
France	$6,115
Australia	$5,627
UK	$5,387
Japan	$4,666
Chile	$1,478
Brazil	$701
Mexico	$539

Sources: *Peterson Center on Healthcare/KFF analysis of data from the US-based National Health Expenditure Accounts; Organisation for Economic Co-operation and Development; World Health Organization. Health consumption expenditures are in US dollars for 2021 or the nearest year for which data is available.*

In addition to lowering costs, the health industry is focused on reimagining the ways individuals experience the healthcare system, attracting and retaining essential workers, improving diagnoses, and managing public health threats. Making the vast amount of existing health data accessible and relevant, whenever and wherever it's needed, is essential to these efforts. Health industry leaders are already laying the groundwork by consolidating data and applying advanced analytics to identify patterns, detect outbreaks earlier, better understand patient and population needs, and design targeted services to engage all groups equitably.

Keep reading for the five key priorities for health organizations.

The healthcare sector produces about 30% of the world's data, according to research by RBC Capital Markets. By 2025, the firm estimates, the compound annual growth rate of data for healthcare will reach 36%—that's 6% faster than for manufacturing, 10% faster than for financial services, and 11% faster than for media and entertainment.

Electronic health record (EHR) systems contain much of that health data, while much more is being generated by real-time Internet of Things devices, such as glucose monitors, fitness trackers, smart watches, blood pressure monitors, and other wearable devices. Unfortunately, much of that data lives in separate, often outdated systems and is unavailable when needed.
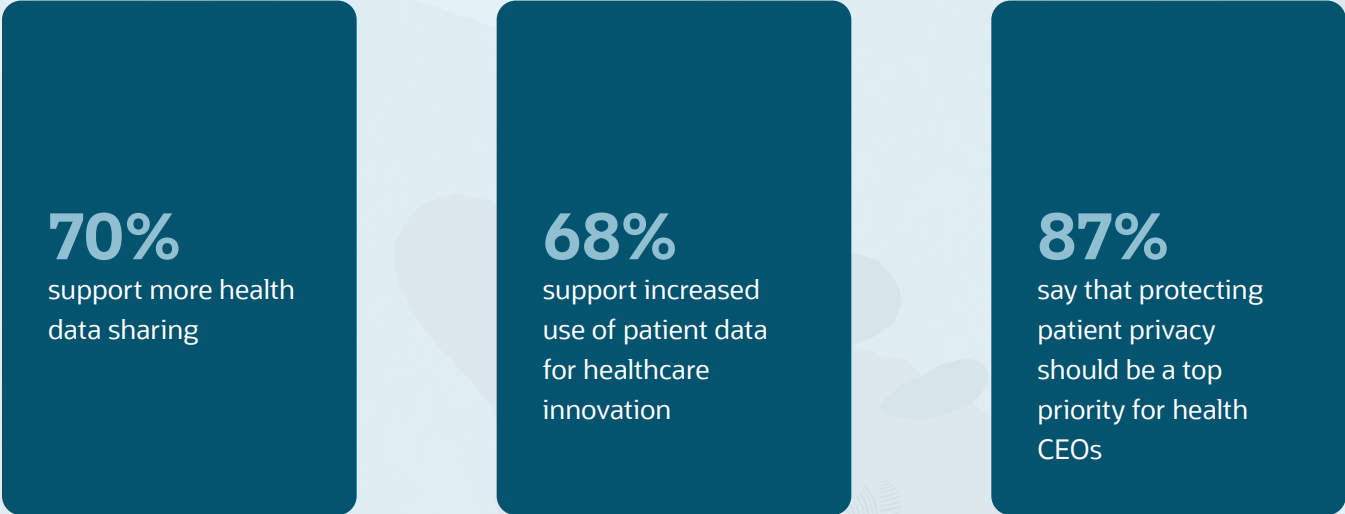
When used correctly, health data can help health researchers, policymakers, and care providers promote the overall health of society. It can provide clinicians and patients with a holistic view of patient health—regardless of where the patient is being seen. But safeguarding patient privacy must remain a top priority.

In a survey conducted by The Pew Charitable Trusts, most Americans said they want their data to be more accessible—89% want access to lab results while 87% want access to lists of medications, vital signs, and immunization records. But they also want their data to be well

protected. Although most people want to use apps on their devices to access their health information, those who expressed concerns about privacy rose from 35% to 62% when they were told that federal privacy protections don't cover data within apps.

Consumers weigh in on use of their health data

70%
support more health data sharing

68%
support increased use of patient data for healthcare innovation

87%
say that protecting patient privacy should be a top priority for health CEOs

Source: *Brunswick Insight survey of 1,100 global individuals, 2022*

Unified health data, intelligently connected, securely stored and accessed, and available when and where it's needed, is fundamental to transforming not only how the world engages with healthcare but also our lifelong health journeys.

Health organizations, with their multiple locations and large workforces, must simultaneously be able to respond quickly to public health emergencies and maintain visibility into community health issues, some of which can take years to uncover. They also need a comprehensive view of their vast businesses, spanning finance, strategic planning, HR, supply chain, and other operations. This view allows them to optimize the return on their investments in technology, capital, facilities, research, and people, which supports their overall goal of providing affordable, high-quality care.

Better planning and operational visibility can lead to better organization-wide coordination, improved resource efficiencies, and more actionable and timely management insights. Analysts can use scenario planning that draws on clinical operations data to predict patient demand, such as the number of beds needed, and the number and types of staff that need to be available. Clinicians can use unit-level dashboards that provide near real-time information on admissions, transfers, and discharges. Revenue managers can use profitability and revenue management applications to generate operational insights at a granular level so the
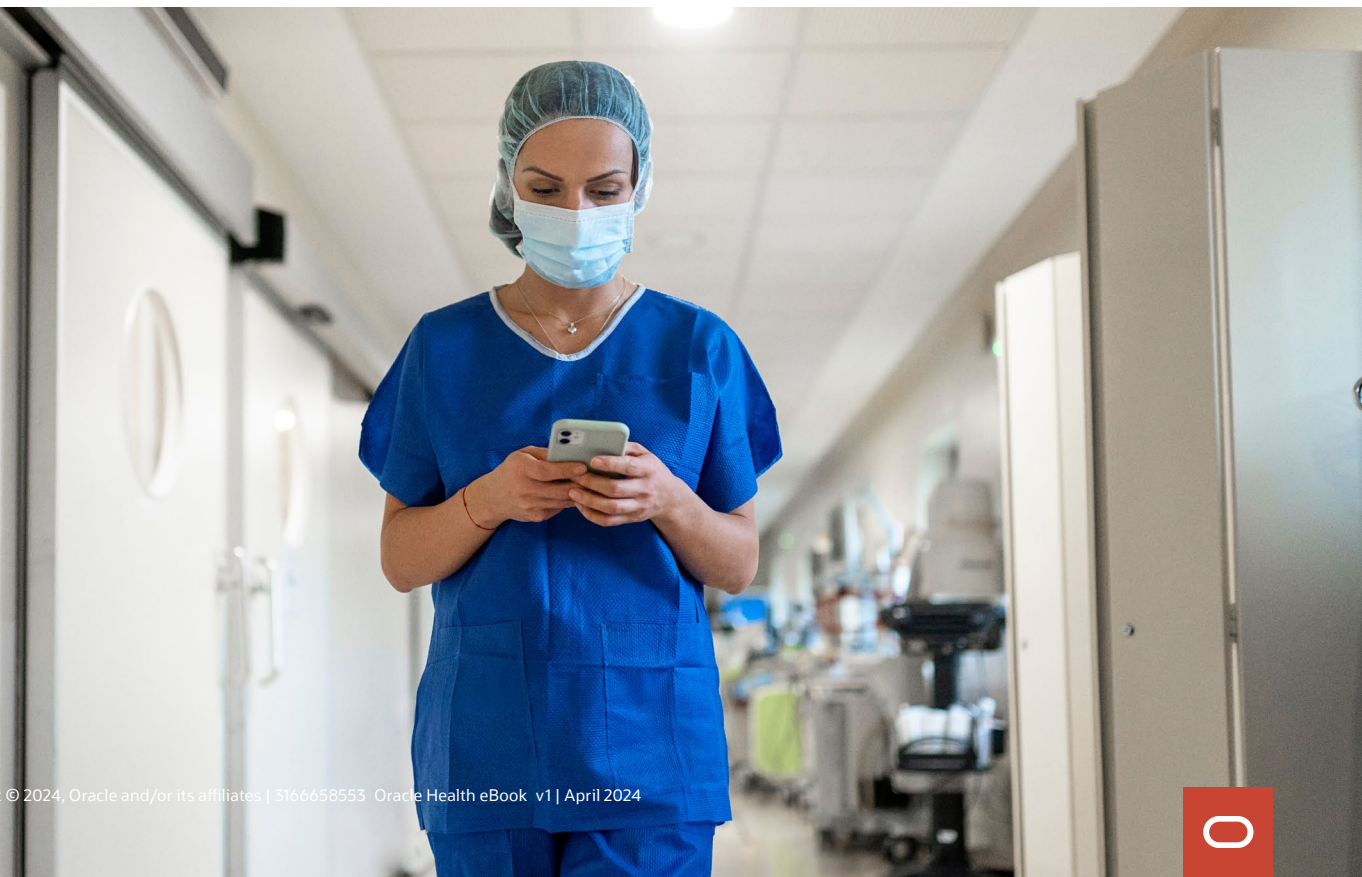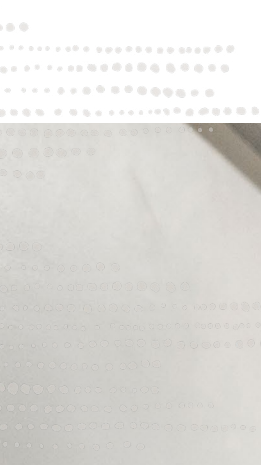
+18.5% Increase in US hospital supply expenses per patient, 2019-2022

entire organization is working with complete and accurate information across clinical, patient engagement, and financial processes. These solutions not only help automate the accurate capture and processing of clinical and patient data, but they also provide insights into each line of business, or even individual operating units. Health organizations can use these insights to get real-time visibility into resource management and make informed decisions on how to best allocate resources, such as staff, equipment, space, and money.

Looking at another process—supply chain management (SCM)—consider that US hospital supply expenses per patient increased 18.5% between 2019 and 2022, far outpacing inflation, according to the American Hospital Association. Modern SCM applications can help healthcare organizations reduce those costs and improve supply chain processes by identifying the lowest-cost and alternative suppliers, speeding deliveries, and collecting data on recalled products and identifying the affected goods' locations within a facility's inventory.
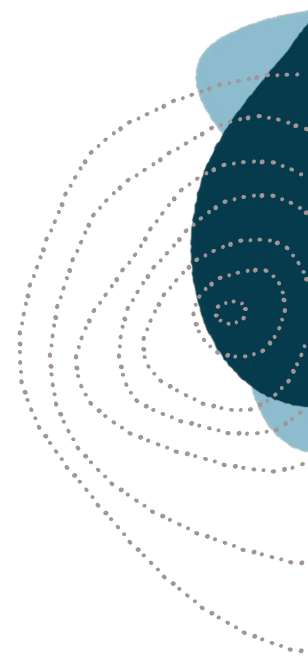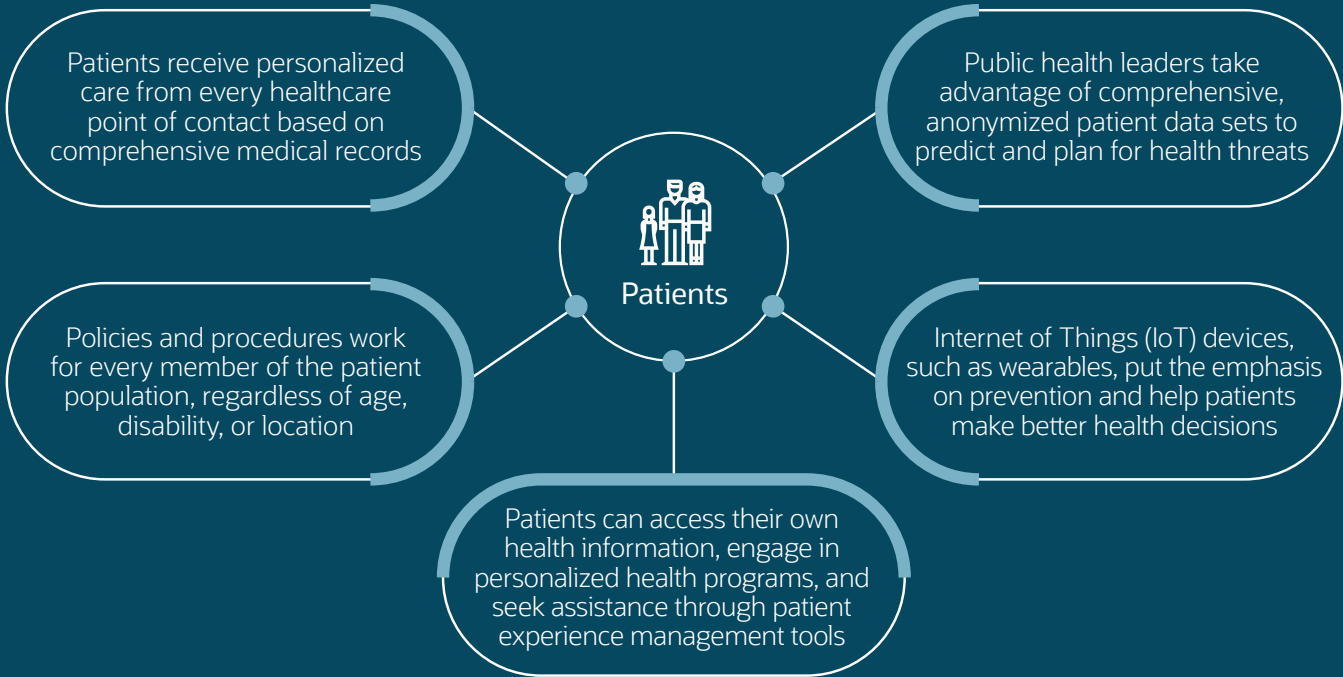
Patient-centric care "honors and responds to individual patient preferences, needs, values, and goals," according to the US National Institutes of Health's National Library of Medicine. These priorities may seem obvious, but historically most healthcare processes and the technologies that support them "have been built around the hospital, the health system, and the clinician, and the patient has been an afterthought," says Mike Sicilia, executive vice president of Oracle Global Industries. Patients today expect a seamless experience, one that allows them to, for example, book appointments, complete registration, pay bills, and engage with their clinicians on their preferred device. In short, patients seek an experience that enables them to manage their health journeys holistically, regardless of when or where they receive treatment.

Strengthening patient trust around the collection and use of data is also critical. Patients have a right to know who's using their data and what it's used for, and they also feel more comfortable sharing data when they see the impact it's having. For example, giving clinical

Patient-centric health practices

Patients receive personalized care from every healthcare point of contact based on comprehensive medical records

Public health leaders take advantage of comprehensive, anonymized patient data sets to predict and plan for health threats

Policies and procedures work for every member of the patient population, regardless of age, disability, or location

Internet of Things (IoT) devices, such as wearables, put the emphasis on prevention and help patients make better health decisions

Patients

Patients can access their own health information, engage in personalized health programs, and seek assistance through patient experience management tools

trial participants access to trial results showing how their data contributed to a successful outcome can encourage future participation.

Patients don't have the access, expertise, or knowledge to aggregate data across fragmented systems. As healthcare consumers, they expect the system to bring that information to the point of care. In a 2020 survey conducted for The Pew Charitable Trusts, 81% of US adults supported increased access to health information for patients and providers, and 61% said they want the option of accessing their medical records through an online portal. Clinicians are losing out as well, as they sometimes spend more time entering and reentering data than caring for patients. Ultimately, the system fails or underperforms for the people it was designed to serve.

It doesn't have to be this way. Why does a credit agency have consumers' complete and up-to-the-minute financial history while healthcare organizations don't have similar health data? It's because most health data lives in fragmented systems and remains disconnected and therefore unusable, despite its collective relevance to personalizing and improving healthcare.

Only about 20% of people's health outcomes depend on the quality of their medical care. The other 80% are affected by social factors, such as where people live and work, the availability of playgrounds or gyms, and access to transportation, according to the National Institutes of Health's National Library of Medicine.

Where people live can influence whether they use tobacco or drugs, are likely to be the victim of violence, and have ready access to healthy foods and safe water. "Imagine a doctor who advises a diabetic patient to eat healthier foods and exercise regularly, only to have this person keep coming back with consistently high blood sugar numbers," says Oracle Health's Feinberg. "The doctor continues prescribing medication to control the condition, not knowing the patient can't afford or access fresh produce. I'm convinced that technology can fulfill its promise only when we use data and insights to serve people."

The life expectancy gap between low- and high-income countries can be as high as 18 years, according to the World Health Organization (WHO). In the US, one of the world's wealthiest countries, inequities such as a lack of access to housing, nutritious food, and supportive communities account for more than US$320 billion in annual healthcare spending, according to 2022 research from Deloitte. That number is forecast to rise to US$1 trillion by 2040.

The WHO predicts that, without intervention, up to 5 billion people worldwide will be unable to access healthcare by 2030. "Just as technology has improved so many other parts of our lives, it could also advance health equity by eliminating barriers to the tools, resources,

knowledge, and opportunities we all need to be as healthy as possible," says Dr. Nasim Afsar, Oracle's chief health officer.

For example, advances in telehealth and remote patient monitoring can help improve access to quality care for people who live in remote areas and are unable—due to age, disability, or cost—to travel to a healthcare provider. Mobile applications enable people without computer access to connect with healthcare providers, and gamified health apps can educate and reinforce good habits. For clinicians, applications that gather and present data around more than just a patient's healthcare history, including social and environmental factors, can drive better care and outcomes.

At a broader level, cloud analytics tools give public health officials a more complete picture of their community's health and risk. With better information, officials can more effectively set policies and communicate with different population segments to make healthcare more equitable. For example, health systems and public health entities can work together to increase outreach to underserved communities, helping everyone—regardless of their background, circumstances, and financial means—understand their treatment options for serious illnesses.

In Africa, the Tony Blair Institute is working with Oracle to bring cloud technology to Ghana and Rwanda to help manage their public health programs. Initially, the countries will use the Oracle Health Management System to develop EHR systems for their vaccination programs for COVID-19, HPV, measles, polio, and yellow fever. Oracle is also working with many other health organizations to provide their clinicians with more accurate and complete patient health history records to help improve safety and inform treatment plans.

5 Nurture skilled workers and create an environment for growth

Staffing tops the list of health organizations' concerns as they compete with other organizations to attract workers for every role. Worker retention is another major challenge. Doctors, nurses, physician assistants, patient care techs, and others suffer from burnout, caused in part by burdensome administrative tasks and a lack of balance and predictability around work shifts.

For example, according to a study published in the Annals of Internal Medicine, physicians spend one to two hours performing administrative tasks for every hour they spend face-to-face with patients. "The work is harder, the patients are sicker, and it's emotionally and physically taxing on the nurses and other personnel," says Leslie Martin, chief nursing officer at Kingman Regional Medical Center, the largest healthcare provider in northwest Arizona.

80% of people's health status is determined by social factors such as access to fresh food, playgrounds, public transportation, and pharmacies.

Part of the problem is that most healthcare providers can't pay their people as much as contingent staffing agencies can, Martin says. "It's a lot easier to do a 13-week assignment and make as much as you can make in a whole year," she says. "A lot of hospitals are closing their doors because they can't afford to continue paying these high prices."

Health organizations will need multiple strategies to adjust to the new work world. For example, a healthcare enterprise in Texas has expanded its search radius globally, hiring

nurses from other countries where training programs are like those in the US and hiring people to work remotely for roles where that's possible. In the UK, the National Health Service is trying to decrease its reliance on overseas workers and temporary staff by bolstering training opportunities within the country. Japan's health ministry is recommending that healthcare organizations train nurses to handle more tasks.

Some organizations are using AI-powered recruitment tools that analyze candidates' work histories and attributes, as well as the organization's culture, to prioritize candidates most likely to fit in and stay. They're improving employee retention by creating better onboarding and training programs, including assigning mentors on day one and educating new employees on organizational processes and technologies. They're also helping new employees make initial social connections through team lunches and other informal events.

With burnout at crisis levels—in a survey published in the Journal of General Internal Medicine, half of the healthcare workers polled reported symptoms of burnout—organizations that provide stress relief programs, opportunities for advancement, and multiple channels of communication can improve retention and promote higher levels of job satisfaction.

Irregular and unpredictable schedules are one of the top reasons healthcare workers experience burnout. Organizations can respond by offering flexible scheduling, particularly for staff balancing work and family demands, and self-scheduling, which gives workers some control over their schedules and how much overtime they take on. In India, Apollo Hospitals is letting specialists in radiology and other fields work remotely while creating a hybrid model for others, according to an article in The Economic Times. Some employers are creating more part-time roles for their people, while others are instituting seasonal policies, letting a parent,

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Dr. Nasim Afsar
Chief Health Officer,
Oracle Health

for instance, take the summer off while schools are closed. Sustained, consistent recognition efforts help workers feel appreciated and motivate them to do their best.

Health organizations must get better at measuring how hard skilled employees are working and where they're spending their time so they can modify their processes and care delivery models to alleviate burnout. Data shows that certain routines can be simplified, automated, or offloaded to other employees, says CJ Robison, a former practicing nurse and now a health innovation scientist at Oracle. "We are building out a way to quantify all that work so that we can see how much time the patient requires and from whom," she adds. "That will allow administrators to make data-driven decisions about what the care teams need to look like. That's not something that we've been able to do in the past."

The introduction of generative AI capabilities into a clinician's daily workflow has the potential to create a more patient-centric experience. Clinicians can use voice commands to automate note-taking, and review context-appropriate next actions. Patients can use voice commands to schedule appointments or check on their health information. Healthcare organizations will be able to train the AI on a data set related to a specific disease or condition so the suggested next actions become even more relevant.

Reimagine the future of health with Oracle Cloud

With decades of experience developing applications and infrastructure to advance medical research, support clinical trials, manage key healthcare processes, and empower patients to take ownership of their healthcare, Oracle is well positioned to help the health industry take on a wide range of challenges. Oracle is investing in solving these big problems by combining its **EHR and aligned cutting-edge clinical capabilities** with its **industry-leading enterprise applications,** managed in public cloud, multicloud, and hybrid cloud environments. "We can become more open, more connected as a healthcare platform that combines all the technology hospitals are using—EHR, supply chain, HCM, and ERP—to enable a less-expensive, intelligent system that empowers people," says Oracle Health's Feinberg.

Oracle Health: World-class clinical and other industry-specific applications

The stage is set for a transformation of how health organizations treat patients and how patients manage their own health. At the core of that transformation is access to data—complete, accurate, up-to-the minute data accessible from anywhere, at any time, through an open healthcare platform that eliminates data silos. By surfacing relevant information for the right people at the right time, Oracle's world-class health applications empower patients, providers, payers, and researchers to improve patient care with the goal of improving public health outcomes. Oracle Health applications include the following:

- **Oracle clinical applications** help healthcare organizations document and access critical patient data, refine workflows, and support patient safety initiatives. Oracle clinical solutions are built with a user-centric design that makes the right information available at the right time, providing a complete view of patients' healthcare and social care across an organization, region, or country. Clinicians can also help identify the right place for a patient to continue receiving care and ease the exchange of information during the transfer of care.

- **Oracle population health** solutions help health organizations coordinate and manage care beyond the hospital, across the entire network where a patient receives care, with functionality that takes into account the social determinants of health and focuses on preventing and managing chronic conditions with the goal to improve outcomes and promote healthier populations.

- **Oracle clinical and financial operations** solutions provide clinicians with the real-time data they need to optimize the flow of patients, coordinate care among multiple providers, forecast staffing levels based on patient needs, and use data captured at the point of care to create a patient-friendly payment experience. They also help revenue cycle managers measure, predict, and optimize the organization's financial performance.

- **Oracle consumer experience** solutions provide a digital front door experience to healthcare consumers, enabling them to book appointments, complete registration, and pay bills online. Virtual care capabilities extend the clinician's reach by enabling video visits, remote patient monitoring, and digital therapeutics such as patient education and access to third-party health applications.

Oracle tech: Helping solve the healthcare data problem

One of the biggest problems in healthcare is patient data that's fragmented across separate databases rather than in a single, nationally accessible system. But what if an individual's health records could live in one, highly secure data platform? And what if each individual had a unique, biometrically protected medical QR code? Regardless of hospital or provider, patients could allow everyone on their care team to access their unified EHR, including their medical history and current medications. This is possible only with a secure and open data platform that provides APIs to develop new applications that can scale to accommodate entire populations and massive data sets.

Oracle Cloud is designed so that only authorized medical professionals can access patient data. In addition, the system can be run in an Oracle sovereign data center for each nation requiring it, providing the highest level of security, privacy, and control.

Oracle's portfolio offers a comprehensive set of cloud technology products, including the following:

- **Oracle Cloud Infrastructure** lets healthcare enterprises run every type of workload, including legacy applications and modern AI-based services, to deliver more-informed care choices, predict patient risk factors, and deliver a more people-centric healthcare experience.

- The self-managing, self-patching **Oracle Autonomous Database** reduces the potential for human error to cause security vulnerabilities, with always-on security controls, including strict separation of duties, shielding patient data from IT managers running the system.

- With **Oracle Analytics**, healthcare organizations can analyze healthcare data to help lower costs and improve patient experiences and clinician satisfaction. Predictive analytics applied to hospital operations can optimize bed utilization, staffing, and inventory management. By anticipating patient needs and resource demands, hospitals can streamline their processes, supporting a smoother patient experience and limiting wait times.

- **Oracle Cloud Infrastructure Data Science** lets health organizations combine clinical, financial, and other data to understand the impact of treatments; store, manage, and use data easily with an integrated set of data ingestion, preparation, and AI-based analytics tools; and use their insights to develop evidence-based care and precision medicine models.

Oracle Applications: The foundation for healthcare's finance, HR, planning, and supply chain

Healthcare organizations have always needed to manage staff, acquire and distribute supplies, and handle complex financial systems. The demands aren't new—but expectations around ease of use and connectivity have grown. Running a successful health organization requires tools that support an increasingly demanding workforce, help manage a rapidly evolving supply chain, and provide a real-time view of financial data.

Oracle Fusion Cloud Applications work together to help health organizations manage their people, supply chains, finances, and patient experiences.

- **Oracle Fusion Cloud Human Capital Management** (HCM) provides valuable tools that help health organizations efficiently hire suitable candidates for challenging positions— and retain them. Its features include personalized career development roadmaps for employees and tools to facilitate a positive work culture through feedback loops with management. Additionally, the application suite's generative AI capabilities can help with career development advice and performance summaries, among other activities. Oracle Cloud HCM enables recruiters to process up to 40% more requisitions with no increase in staff.

- Industry-specific features built into **Oracle Fusion Cloud Supply Chain & Manufacturing** are tailored to the unique needs of health organizations. Its advanced features enhance the precision and accuracy of planning, demand forecasting, supplier identification,

and inventory management. In addition, it automates the processes for ordering and restocking, allocating supplies to priority areas, and streamlining contract management.

- **Oracle Fusion Cloud Enterprise Resource Planning** (ERP) applications help healthcare organizations reduce the cost of medical supplies and improve order efficiency. New healthcare-specific capabilities in Oracle Cloud ERP include contract and pricing integrations with group purchasing capabilities that help healthcare organizations reduce costs and lower risk. Additionally, AI-powered applications can enhance the performance of finance and procurement teams, optimize working capital, and automate tasks, including payables, receivables, procurement, and supplier management.

- **Oracle Fusion Cloud Enterprise Performance Management** has built-in industry-specific features that provide health organizations with increased visibility and control over financial performance, helping them improve operational efficiency and care management. Its advanced capabilities enable leaders to plan more efficiently, reduce costs, and implement new business models, such as value-based care.

Advancing healthcare globally

Oracle Health is dedicated to creating people-centric healthcare experiences powered by unified global data.

Learn more