

Third Quarter Fiscal Year 2024 DHA Foresight Scanning Report: The Empowered Patient

Points of Contact

Dr. John R. Kirk, Chief of Foresight

Ms. Antoinette M. Rivera, Foresight Specialist

Volume 2, August 2024

Strategic Integration Group, Foresight

DEFENSE HEALTH AGENCY



Table of Contents

<u>Critical Question</u>	3
<u>Analysis of Findings: Impact on the DHA Strategy</u>	3
<u>Industry Findings</u>	4
<u>References</u>	7
<u>Disclaimer</u>	8

Critical Question

The DHA Foresight Scanning Report is built by open-source research that was conducted in the third quarter of fiscal year (FY) 2024. The quarterly report highlights trends impacting the health care industry and DHA within the next decade.

Please think of these questions when reading the highlights below that, according to research gathered from signals and trends, will likely impact the future of health care:

- What will the patient of 2035 expect from health care and how will health care be delivered?
- What strategic approach is DHA adopting to anticipate future patient needs, using a personalized, patient-centric model that promotes trust and active health care participation?
- How does DHA intend to bolster technology for patient empowerment without overburdening providers?
- How does DHA plan to navigate challenges in implementing a personalized/patient-centric model of care (e.g., data fragmentation, compliance, and efficient and security in health care mobile app development)?

Analysis of Findings: Impact on the DHA Strategy

The quarterly DHA Foresight Scanning Report highlights trends impacting the health care industry and DHA within the next decade. Aligning with DHA strategy, the Agency is executing projects influenced by these trends. These trends will affect today's strategic choices, including Agency efforts to stabilize and modernize the system for future success.

Evolving Patient Health Care Needs: Within DHA, numerous strategic initiatives are underway to address the dynamic health care needs of patients. These initiatives are future-oriented, foreseeing potential public health crises and patient needs. A forward-thinking technology that offers a dual advantage is 3D printing. In the long run, this method may not only be a cost-effective solution for DHA, but it also has the potential to expedite the manufacturing process, thereby enhancing military care efficiency. Organizations also need to recognize generational and segment-specific needs are crucial in health care delivery. By tailoring care to these groups, patient-centric care is enhanced, and trust is fostered. Consequently, this motivates patients to actively seek health care, transitioning from a one-size-fits-all to a personalized, patient-centered model.

Tech-Oriented Patient: The DHA Strategy fosters initiatives dedicated to accelerating technological advancements in patient care. These initiatives strive to amplify the patient experience by seamlessly incorporating health care delivery-oriented technology within DHA. The technology being adopted by DHA is playing a crucial role in empowering patients, facilitating easier access to their health records, enabling telehealth consultations, and offering tools for better management of their health and wellness. It has become essential for organizations to devise health care mobile applications that emphasize simplicity without compromising on security, and effectively streamline processes without raising compliance. Health care organizations serving a tech-oriented patient base must not only enhance provider digital skills but also implement strategic guidelines for digital tool usage to prevent task overload.

Personalized/Person-Centric System: The DHA strategy emphasizes a shift toward a patient-centered model of care, necessitating a personalized system that recognizes and caters to each patient's health journey. DHA is adopting patient interface tools and promoting seamless data sharing to tackle challenges like fragmented health data. By integrating data sources and empowering patients with control of their data, health care organizations can deliver personalized care, improving efficacy and accessibility. This fosters patient satisfaction and trust, which can enhance retention of the patient within the system. A technology that can aid the transformation to a person-centric system is comprehensive full-body scans. Despite the upfront costs associated, the deployment of comprehensive full-body scans in military health care can offer significant benefits. These scans yield extensive, individualized health data, enabling a proactive approach to treatment. They hold the potential to preemptively identify diseases and conditions, such as cancer, thereby facilitating early intervention and improving overall health outcomes. Investing in these scans can result in savings at the outset through prevention and improvement in health outcomes, justifying the initial expenditure.

Industry Findings

Evolving Patient Health Care Needs: Tailored Strategies and Cutting-Edge Technologies for an Evolving Population

Emerging technologies and improved data control are reshaping health care towards personalization, despite privacy concerns.



People

By 2030, projections suggest a marked increase in chronic disease prevalence among Americans, particularly older adults and millennials, with estimates suggesting that between 170 to 230 million individuals could be affected. This could pose significant challenges for the military in terms of recruiting healthy individuals and managing long-term health care costs for service members and retirees. This trend, expected to intensify by 2060 and is further amplified by the potential for public health emergencies and infectious diseases associated with climate change, underscoring the pressing need for robust health preparedness. It's imperative, however, to consider the distinct health care needs and influences across generations. The impact of media and usage of health care applications differ significantly between generations and health populations, shaping their unique approaches to health care management and influencing the nature of care they receive. This highlights the need for health care strategies to be tailored, ensuring they effectively address the unique needs of each generation and health segment.^{1, 2, 3}



Technology

Blockchain, 3D printing, and CRISPR gene editing are poised to transform dimensions of health care delivery. Blockchain can secure health data, enhancing privacy and integrity. 3D printing could revolutionize military operations and pandemic responses with quick drug development and custom medical devices. CRISPR gene editing, a pioneering bioengineering technology, has potential in disease management, in trials for treating cancer. When combined, these technologies could improve care, boost public health system efficiency, and lead to an adaptive health care future for different generations.^{4, 5, 6}



The advent of high-cost technologies like CRISPR gene editing can exacerbate health care inequities, as they are primarily accessible to the affluent, excluding many disadvantaged groups. Conversely, cost-effective technologies like 3D printing offer the potential for financial relief to hospitals and patients as these capabilities become more prevalent. Significant public health events, exacerbated by climate change's impact on disease spread, add complexity to health care management.^{5,7}

Tech-Oriented Patient: Organizations Must Adapt to Tech-Savvy Individuals' Needs

Tech-savvy individuals' demand for advanced health technologies like AI and apps requires strategic implementation for enhanced patient communication, personalized care, optimized health outcomes, and assured simplicity, security, and compliance.



As the tech-savvy population grows, so does their demand for health technologies that enable proactive health management. Health care organizations must keep up with technology and invest in digital literacy to meet these demands and maintain efficiency and quality of care. The shift to digital health improves patient-provider communication and health outcomes, even with fewer in-person interactions. It facilitates timely information sharing and collaboration. Patients' access to records via digital platforms fosters personalized health care, increased engagement, and ultimately, enhanced satisfaction and efficiency.^{8,9,10}



Advanced technologies like AI and health apps are revolutionizing health care by enabling patients' active health management and offering real-time data. Amidst rising staff shortages, it is crucial to balance these tools' potential without overwhelming providers. The integration of home-based lab tests, health apps, and AI are transforming the patient-provider relationship into a personalized partnership, driving the future health care landscape towards proactive health management. This transformation necessitates strategic navigation to fully harness digital health tools' potential.^{11,12,13,14}



As organizations reassess their virtual health use, it's a reminder for organizations to focus on designing secure, user-friendly applications. This approach streamlines processes, upholds compliance, and promotes effective, regulation-abiding health care delivery. This need is underscored by the moderate reliability and quality of existing health applications, highlighting areas for improvement, particularly in governance and resource allocation. By leveraging advancements in phone application development from credible sources, trustworthiness can be enhanced, benefiting both health professionals and patients. Simultaneously, it remains essential to furnish patients with straightforward, transparent access to their health records in a user-friendly format. This calls for improved resources dedicated to data management and patient education.^{15,16,17}

Personalized/Person-Centric System: Patients Seek Personalized Care Experience

Emerging technologies and improved data control are reshaping health care towards personalization, despite privacy concerns.



People

In person-centered health care, a deep comprehension of a patient's health status, circumstances, and preferences is pivotal. However, such understanding can be obstructed by fragmented health data. Therefore, it is vital to establish a system that enables seamless data sharing among stakeholders while also providing patients with control over their data. This approach, while empowering patients and personalizing care, also presents challenges. As patients gain increased access to health care information, complexities surrounding information accuracy may arise. This necessitates health care providers to devise effective strategies to counter potential misinformation and meet the escalating demands of digitally literate patients.^{18, 19}



Technology

Companies are responding to the personalized health care demand with new technologies. Ongoing advancements are making comprehensive body scans more affordable and potentially standard in health care. Existing diagnostic imaging technologies like MRI, CT, and PET Scans are being combined with emerging capabilities such as digital twin technology and Large Language Models (LLMs). This integration is revolutionizing disease detection, treatment, and prevention. Additionally, health care apps are enhancing patient engagement and data security, and their integration with body scan data can improve patient management. These advancements are shaping a future health care model that is more accessible, personalized, and preventive.^{20, 21, 22, 23}



Resources & Politics

As government scrutiny intensifies over health care firms' data handling and tracking technology, adults are advocating for more comprehensive health data access. However, growing privacy concerns stem from the lack of federal protections for app-stored data. Consequently, calls for expanded protections are mounting. The government is reacting by funding wellness initiatives and promoting a proactive health care model. Furthermore, government focus is shifting towards personalized medicine, investing in tailored treatments to improve patient outcomes and satisfaction.^{23, 24}

References

- [1] Our Nation's Chronic Disease Epidemic Is Getting Worse So, Who's Responsible?: <https://www.forbes.com/sites/ritanumerof/2022/11/22/our-nations-chronic-disease-epidemic-is-getting-worse-so-whos-responsible/>
- [2] Climate Change and Human Health: <https://health2016.globalchange.gov/climate-change-and-human-health>
- [3] How Generational Factors Impact Patient Engagement: <https://www.hmpgloballearningnetwork.com/site/ihe/article/how-generational-factors-impact-patient-engagement>
- [4] The next pandemic catastrophe: can we avert the inevitable?: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9998279/>
- [5] 3D printing applications for health care research and development: <https://www.sciencedirect.com/science/article/pii/S2414644722000744>
- [6] 5 ways CRISPR gene editing is shaping the future of food and health: <https://www.weforum.org/agenda/2024/04/crispr-gene-editing-better-world/>
- [7] CRISPR in Public Health: The Health Equity Implications and Role of Community in Gene-Editing Research and Applications: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10323846/>
- [8] Do Health Apps Really Make Us Healthier?: <https://hbr.org/2021/05/do-health-apps-really-make-us-healthier>
- [9] Clinician of the Future: a 2022 report: <https://www.elsevier.com/connect/clinician-of-the-future>
- [10] Improving health literacy using the power of digital communications to achieve better health outcomes for patients and practitioners: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10693297/>
- [11] How Technology, Medicine And At-Home Devices Can Improve health care Access And Cost: <https://www.forbes.com/councils/forbestechcouncil/2020/02/14/how-technology-medicine-and-at-home-devices-can-improve-healthcare-access-and-cost/>
- [12] Empowering Patients and Transforming health care in the Post-COVID-19 Era: The Role of Digital and Wearable Technologies: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10219419/>
- [13] The History, Evolution And Future Of At-Home Test Kits: <https://www.forbes.com/councils/forbesbusinesscouncil/2023/08/01/the-history-evolution-and-future-of-at-home-test-kits/>
- [14] Here are 3 ways AI will change health care by 2030: <https://www.weforum.org/agenda/2020/01/future-of-artificial-intelligence-healthcare-delivery/>

[15] Digital Ecosystems Are the Future of Health Care:

<https://hbr.org/sponsored/2022/10/digital-ecosystems-are-the-future-of-health-care>

[16] Empowering Patients to Control Their Health Data:

<https://www.linkedin.com/pulse/empowering-patients-control-healthdata-datatera>

[17] How the virtual care market is shaking out in 2024 as Walmart, Optum exit the telehealth business: <https://www.fiercehealthcare.com/health-tech/how-walmart-and-optum-exiting-telehealth-signals-major-shift-virtual-care-market>

[18] Why integrated data is critical to personalizing health care:

<https://www.weforum.org/agenda/2024/02/personalized-healthcare-data/>

[19] Person-centred care: what is it and how do we get there?:

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6465833/>

[20] The Role Of LLMs For Improving Patient-Centered Care:

<https://www.forbes.com/councils/forbestechcouncil/2023/12/27/the-role-of-llms-for-improving-patient-centered-care/>

[21] Daniel Ek's Next Act: Full-Body Scans for the People:

<https://www.nytimes.com/2024/04/27/business/dealbook/daniel-ek-neko-health.html>

[22] Digital Twins And Digital Threads: The Future Of Customized Health:

<https://www.forbes.com/councils/forbesbusinessdevelopmentcouncil/2024/04/11/digital-twins-and-digital-threads-the-future-of-customized-health/>

[23] Patients are lining up for \$2,500 full-body MRI scans that can detect cancer early:

<https://www.cnbc.com/2023/11/10/prenuvo-offers-2500-full-body-mri-scans-that-can-detect-cancer-early.html>

[24] Health Information Privacy Laws in the Digital Age: HIPAA Doesn't Apply:

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7883355/>

Disclaimer

The views expressed in this Foresight Report are those of the authors and do not necessarily reflect the official policy or position of the Defense Health Agency, Department of Defense, nor the U.S. Government. As employees of the U.S. Government, this work was prepared and published in an official duty capacity. Title 17, U.S.C., Section 105 provides that copyright protection under this title is not available for any work of the U.S. Government. Title 17, U.S.C., Section 101 defines a U.S. Government work as a work prepared by a military service member or employee of the U.S. Government as part of a person's official duties. These references and links are provided as a convenience and for informational purposes only; they do not constitute an endorsement or an approval by DHA of any of the products, services or opinions of the corporation or organization or individual. DHA bears no responsibility for the accuracy, legality, or content of the external site or for that of subsequent links. Contact the external site for answers to questions regarding its content.