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How to turn the tide on fragmented healthcare experience

Healthcare is facing workforce shortages, patients wrestling with access hurdles, and a fragmented healthcare system resembling a jigsaw puzzle, and sometimes, it's questionable if the pieces even belong on the same table.

Patients often find themselves caught in fragmented care models, and the consequences can be severe. At-risk populations may be impacted the most since they're already burdened with chronic conditions and unmet needs. [A 2015 study published in the American Journal of Managed Care](#) ⁹ revealed that patients caught in primary care models exhibiting fragmented care were more likely to suffer from chronic diseases, including high blood pressure and diabetes, than those who enjoyed better-coordinated models. Especially chronically ill persons whose primary care providers offer highly fragmented care are prone to experience lapses in care quality and incur greater healthcare costs.

Unfortunately, the consequences also lead to a greater number of acute episodes and financial burdens on institutions and corporations. [The same study found](#) ⁹ that these patients experienced more hospitalisations, more doctor visits, and higher expenses. Patients dealing with the most fragmented services experienced

an average total cost of \$10,396, nearly double the cost of patients with the least fragmentation in care.

[A later study in 2020 by KLAS research](#) ⁹ found that 83% of patients report poor communication as the worst part of their experience, demonstrating a strong need for clearer communication between patients and healthcare service providers.

Physician communication with the patient and the family is an indispensable tool both in the disease diagnosis and prognosis and throughout the follow-ups, improving patients' quality of life. This is particularly critical in case of terminal disease and when the patient needs palliative care.

KLAS research concluded that patients who describe their relationship with their healthcare provider as 'collaborative' are twice as likely as those with a 'detached' relationship to find technology to be very helpful. They are also three times as likely to find value in technology-assisted patient/provider communication, which enables them to feel connected without face-to-face visits. And connected patients also tend to see increased benefits from their patient portal. Patients with a 'detached' provider relationship

typically want to be autonomous in their care, seeking additional transactional points of contact with their provider. The technologies these patients find most impactful are, for example, online bill pay, automatic prescription refill requests, provider search/matching, and self-scheduling. These patients are also twice as likely to want future development of price-transparency tools to help them find the best provider to meet their immediate needs.

So, how do we turn the tide on fragmented healthcare experiences by leveraging emerging technologies to improve the patient-clinician relationship in order to improve outcomes and foster seamless and patient-centred care approaches? With a growing presence in cardiology, oncology, and women's health, Philips combines its clinical expertise and human insights to create innovative solutions across the continuum of care, in partnership with clinicians and customers, to provide better value and expand access to care for millions, now and in the years ahead.

Join Philips and step into the future of healthcare where the fusion of connectivity, convenience, and sustainability aligns with the transformative capabilities of AI-enabled

services. Such a comprehensive approach would aim to create a more cohesive and interconnected healthcare model that not only mitigates individual health issues but also ensures the sustainability and efficiency of the broader health systems.

We ask you to envision a healthcare service that ethically leverages servant technology. It's time to take on the challenge to sculpt a future where healthcare is no longer a fragmented landscape. Let's make waves in the everyday (patient and staff) experience surrounding healthcare!

Background

Healthcare systems face an unsustainable burden

As stated before, to drive innovation in healthcare, it is critical to design for connectivity, convenience and sustainability. [A study in 2023 by Ipsos](#) ⁹ showed that 42% of the more than 23,000 respondents surveyed named a shortage of staff as one of the biggest problems facing the health system in their country. Shortage of medical staff means overloaded staff at risk of burn-out, shortage of knowledge available for diagnostics, fragmented communication among



1 in 3

adults worldwide suffer from one or more chronic diseases

World Health Organization



42%

of healthcare professionals report feeling burned out

Medscape survey 2021



18 million

the expected global deficit of skilled healthcare professionals by 2030

World Health Organization



2x

global healthcare spending is projected to double between 2020 and 2040

World Health Organization

providers and between providers and patients. This results in slower processes in general, limited access to treatment, longer waiting times, etc.

There are many obvious solutions. For example, automated patient communication and information collection can considerably free up time and energy spent on tedious, time-consuming tasks such as appointment booking, reminders, dealing with no-shows and payment remittances.

Improving administrative tasks and recording data may easily improve the time doctors have with patients and establish better doctor-patient relationships. According to [a study by the Annals of American Medicine](#) ⁹, doctors spend only 27% of their time with patients and the remaining 49.2% dealing with paperwork. This time allocation considerably interferes with physicians' ability to create a trusting, collaborative relationship with their patients — one where a patient's needs, goals and lifestyle are valued.

When this type of relationship is established, patients tend to become more involved and proactive in their healthcare journey. They are more likely to value the credibility of their practitioner and adhere to their treatment regime.

We invite you to step into the future of healthcare, where the fusion of connectivity, convenience, and sustainability aligns with the transformative capabilities of AI-enabled services. This future cannot be achieved simply by including technology, but by diving deep into the complex and systemic challenges in healthcare.

The complexity of healthcare reflects the nature of the systems it serves. The medical model divides the body into many parts. As a result, 80% of doctors are specialists. Patients end up

visiting multiple doctors for different problems, and each focuses on their area of expertise.

The specialist model leads to confusion over who's directing a patient's overall care. Patients find themselves in the dark, and providers aren't clear about their colleagues' findings and treatment protocols. When patients travel between organisations, the health record doesn't always follow them.

The above is just one of the examples showing the systemic challenges healthcare faces. Many of them have a negative impact on the patients, their family members, and other caregivers.

Healthcare and AI

AI technologies like natural language processing (NLP), predictive analytics and speech recognition may help healthcare providers communicate more effectively with patients. AI could, for instance, deliver more specific information about a patient's treatment options, allowing the healthcare provider to have meaningful conversations with the patient for shared decision-making.

In fact, AI is already being used in healthcare for everything from answering patient questions to assisting with surgeries and developing new pharmaceuticals, expressly by helping diagnose patients, aiding drug discovery and development, improving physician-patient communication, and transcribing medical documents.

According to IBM, we will likely continue to see considerable changes in how medical providers, hospitals, pharmaceutical and biotechnology companies, and others in the healthcare industry operate. Better machine learning (ML) algorithms, greater access to data, cheaper hardware and the availability of 5G have contributed to the increasing application of AI in the healthcare industry, accelerating the pace of change. AI and ML technologies can sift through

enormous volumes of health data—from health records and clinical studies to genetic information—and analyse it much faster than humans.

Harvard’s School of Public Health suggests that although the use of AI for diagnoses is still in its early stages, it has the potential to reduce treatment costs by up to 50% and improve health outcomes by 40%.

One use case example is out of the University of Hawaii, where a research team found that deploying deep learning AI technology can improve breast cancer risk prediction. Further research is needed, but the lead researcher noted that an AI algorithm can be trained on a much larger set of images than a radiologist—as many as a million or more radiology images. Also, that algorithm can be replicated at no cost except for hardware.

At MIT, a group developed an ML algorithm to determine when a human expert is needed. In some instances, such as identifying cardiomegaly in chest X-rays, they found that a hybrid human-AI model produced the best results.

[Another published study found that AI recognised skin cancer better than experienced doctors](#) ♪. US, German and French researchers used deep learning on over 100,000 images to identify skin cancer. Comparing the results of AI to those of 58 international dermatologists, they found AI did better. Here are [a few other inspiring ideas that leverage the power of AI](#) ♪. Does that mean that emerging technologies such as AI are the holy grail to solving healthcare challenges? Beyond viewing technology as an enabler and not a solution, and addressing the effectiveness of AI, there are also concerns regarding the potential for bias in the underlying algorithms. Some studies have found race-based discrepancies in the algorithms and

limitations due to the lack of healthcare data for women and minority populations.

In recent years, AI has burst onto the scene in healthcare, propelling innovations that promise to improve patient care and outcomes while reducing costs. But unlike some of the hype suggests, AI is not a solution in and of itself. Philips believes the value of AI in healthcare is only as strong as the human experience it supports – calling for a people-centric approach that puts healthcare professionals and patients front and centre.

Dr Tina Manoharan, Global Lead of Data Science & AI Center of Excellence at Philips, states: “To reap the full benefits of AI and data science, we have to enable secure exchange of and access to properly curated data while safeguarding patient privacy. And to make sure that AI is fair and bias free, it is vital that the algorithms we develop reflect the full diversity of the world we live in. That’s why we developed the Philips Data and AI Principles – to ensure that everyone gets to benefit from AI and data driven innovation in healthcare.”

Additional references:

- [How can leaders make recent digital health gains last?](#) ♪
- [The benefits of AI in healthcare](#) ♪
- [How AI can enhance the human experience in healthcare](#) ♪

The assignment: Design a service that turns the tide for good

With the examples shared with you, we hope to inspire you to reimagine and (re)design a service that transforms healthcare. We invite you to research and find strategies to improve both the healthcare staff’s and the care receivers’ experiences, resulting in happier, better-served

healthcare clients and improved backstage healthcare processes. With such service, you can contribute to better healthcare for all.

Your new service or service innovation will leverage AI as a partner to address staffing gaps, enhance patient access, and foster collaboration across the healthcare ecosystem. It's about realigning the pieces of the puzzle without adding more confusion. This is beyond just a challenge; it's a potential opportunity to set a new standard. Picture a future where healthcare access isn't a struggle for patients, where AI seamlessly empowers the workflows of healthcare professionals, and where sustainability is not an afterthought but a fundamental principle.

So, here's your chance to envision healthcare that leverages servant technology ethically. It's time to embrace the challenge to shape a future where healthcare transforms from a fragmented landscape into a connected, convenient, and sustainable reality. Let's revolutionise the everyday experiences of both patients and staff in healthcare! According to IBM and many others, AI offers opportunities to reduce human error, assist medical professionals and staff, and provide uninterrupted patient services. As AI tools evolve, the potential expands to use AI in reading medical images, X-rays and scans, diagnosing medical problems and creating treatment plans. AI applications will continue to help streamline various tasks, from answering phones to analysing population health trends (and, likely, applications yet to be considered). For instance, future AI tools may automate or augment more of the work of clinicians and staff members, allowing humans to spend more time in effective and compassionate face-to-face professional care and support patients and their family in having healthier lives.

About Philips

This is a challenge offered to you by [Philips](#). Philips is a health technology company with a heritage of people-focused innovation that stretches back over 130 years. At Philips, our purpose is to improve people's health and wellbeing through meaningful innovation. We aim to improve 2.5 billion lives per year by 2030, including 400 million in underserved communities. As a technology company, we – and our brand licensees – innovate for people with one consistent belief: there's always a way to make life better. Consumers' and customers' needs are at the heart of our innovation drive. We are committed to doing business responsibly and sustainably. Helping people to live healthily and prevent disease. Giving clinicians the tools they need to make a precision diagnosis and deliver personalised treatment. Aiding the patient's recovery at home in the community. All supported by a seamless flow of data.

