



PHILIPS

Resilient healthcare



**Reimagining
healthcare**

Five Priorities to deliver
resilient health systems

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**Health system
resilience starts
before the crisis.”**

Frans van Houten,
Chief Executive Officer,
Philips



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Resilience /rɪˈzɪliəns/

The ability and capacity to be stretched from its current form and recover quickly back in shape, sometimes stronger.

Learning from the COVID-19 pandemic, a more distributed healthcare model will support future health system resilience. But various vital components need to be in place to enable this vision. This paper sets out Philips contribution and ideas as a member of the WEF Partnership for Health System Sustainability and Resilience (PHSSR).

The COVID-19 pandemic exposed significant weaknesses and inequalities across all health systems. While the crisis is not yet over, its lessons are already clear: we need to build more resilient health systems better prepared for future emergencies – shocks brought on by climate change, conflict or a pandemic – while still balancing the needs of a growing and ageing population.

However the world emerges from the COVID-19 pandemic, it's clear we have to solve complex new – and emerging – health threats. As health systems navigate their paths out of this pandemic, we must evaluate and examine the structural and systemic challenges it presented.





“Resilience encompasses health systems’ ability to prevent, respond to, and recover from acute and chronic crises (including, but not limited to, pandemic threats, natural disasters, climate change, and economic and technological shock), minimizing their impacts on health, social and economic wellbeing.”

— The Partnership for Health System Sustainability and Resilience (PHSSR)¹

¹WEF, Partnership for Health System Sustainability and Resilience

Technology & Service Delivery

1.

Reimagining healthcare around the patient

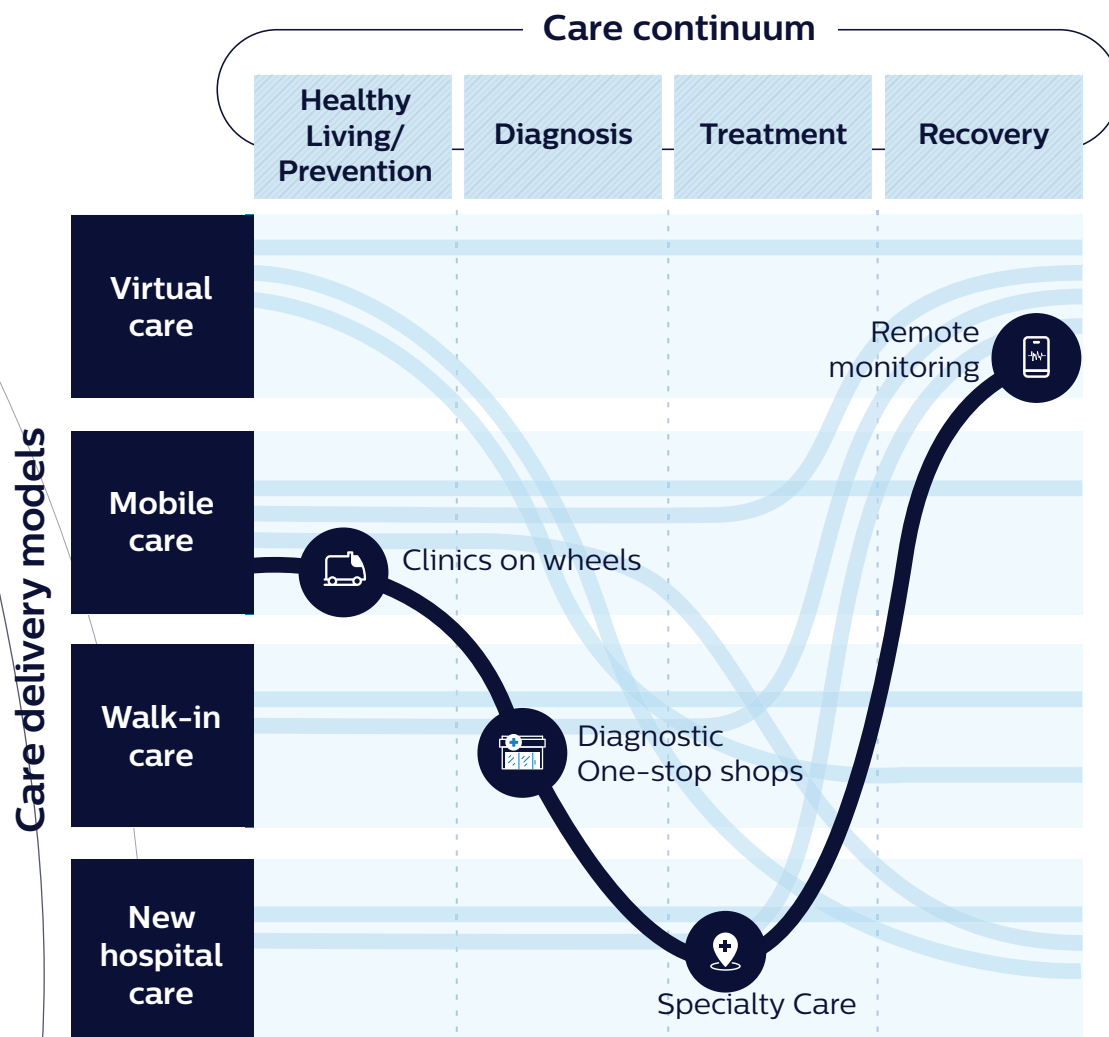


The first challenge is to re-examine the role of the hospital. In our view, a resilient healthcare system must be able to deliver the same level of services to patients whether or not it is grappling with a crisis. While a hospital is vital in providing many forms of care, it offers services that could just as effectively be delivered remotely or within the communities it serves.

We believe the ongoing digital transformation of healthcare, which accelerated during the pandemic¹, is the foundation for a more equitable and resilient healthcare model that prioritizes care to the patient and alleviates hospital pressure. This model reimagines the hospital: from being the central provider of care to a network, harnessing mobile, community and local facilities, and enabled by telemedicine and digital technologies. This reduces the distance between care provider and patient and places elective care and diagnostic facilities within easy reach of those who need them. We call this Distributed Care.

Keywords:
digital health innovation, data interoperability, digital healthcare transformation, open health data, health data privacy

¹Philips, 'Seven ways COVID-19 is accelerating digital transformation' <https://www.philips.com/a-w/about/news/archive/blogs/innovation-matters/2020/20200608-seven-ways-covid-19-is-accelerating-digital-transformation-in-healthcare.html>



Virtual consultations, remote care

The front door of a distributed care system is virtual. And COVID-19 has shown us the way. Where telehealth was a “nice to have” before the pandemic, it is now regarded as a necessity. Virtual consultations, underused prior to COVID-19, have become the norm², for health screenings, monitoring, and e-visits. Before the pandemic, virtual consultations made up only 10%³ of care provision. Now approximately 70% of providers in specific therapy areas report taking telemedicine visits. Both provider and patient have been convinced of the utility and comparative ease of use of telehealth. Additionally, our ability to provide similar or higher levels of care for less acute patients – those with long-term chronic conditions – away from the hospital is crucial to a resilient future.

Online portals to track patient outcomes and remote monitoring technologies can help care providers intervene much earlier through more proactive care in the community. This saves patients from expensive and distressing hospital admissions and reduces costs for care providers.

Through this approach, telehealth becomes the patient’s first point of access for urgent care, through consultations with a specialist, education about self-care, and how to manage chronic illnesses. This way, a doctor, supported by data analytics and AI technologies, can notice deteriorating conditions early and initiate corrective action, change medication routines or advise the patient to visit a nearby clinic for specialist help⁴.

²McKinsey, ‘Telehealth: A quarter-trillion-dollar post-COVID-19 reality?’, <https://www.mckinsey.com/industries/healthcare-systems-and-services/our-insights/telehealth-a-quarter-trillion-dollar-post-covid-19-reality>

³McKinsey, ‘Telehealth: A quarter-trillion-dollar post-COVID-19 reality?’, <https://www.mckinsey.com/industries/healthcare-systems-and-services/our-insights/telehealth-a-quarter-trillion-dollar-post-covid-19-reality>

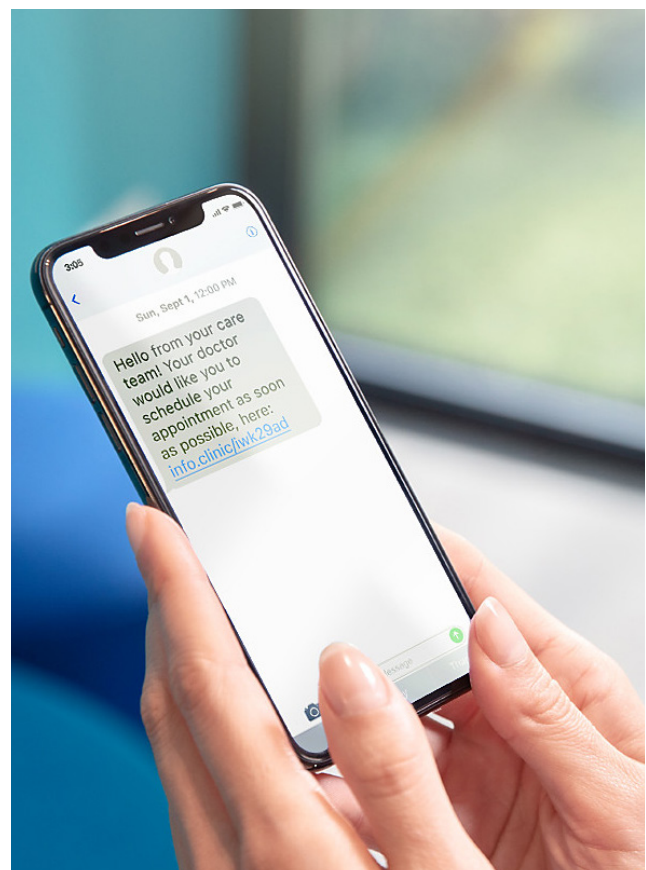
⁴HBR, ‘The Strategy that will Fix Healthcare’ <https://hbr.org/2013/10/the-strategy-that-will-fix-health-carepost-covid-19-reality>



New hospital services, specialist care

By reducing the burden of admissions, hospitals can specialize in acute care only. Inside hospitals, the sharp increase in demand for critical care during COVID-19 stretched capacity, causing severe bed and ICU intensivist staff shortages⁵. But some health systems had already developed the capability to meet surges in patient demand, through eICU command centers, and were able to scale up critical care during COVID-19.

Supported by high-definition cameras, telemetry, predictive analytics, data visualization and advanced reporting capabilities, care teams were able to prevent crises rather than merely respond to them. For example, nurses could intervene quickly when patient conditions deteriorated, or, where they improved, could transfer them out of ICU to free up bed space for new patients. This gives hospitals the ability to orchestrate care inside their own walls, but also at the regional and national level, and, even across borders.



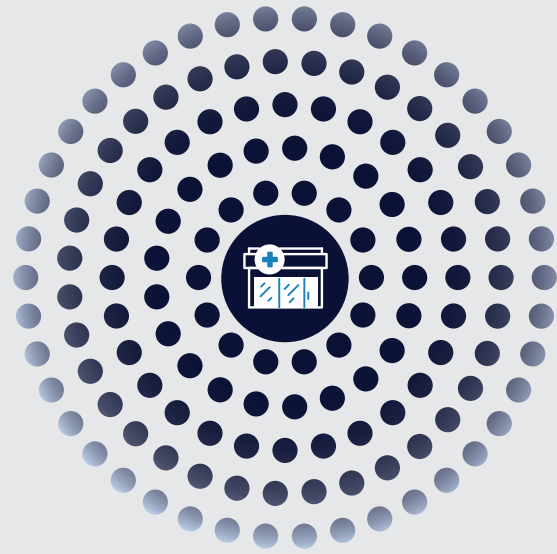
⁵ CNN, '19 states have fewer than 15% of ICU beds left as health care staffing shortages complicate care' <https://edition.cnn.com/2022/01/13/health/us-coronavirus-thursday/index.html>

Outside the hospital, elective care and diagnostic centers can alleviate patient volumes. By separating elective and non-elective care at the community level, through 'hot' and 'cold' clinical sites, the hospital system can accommodate patient surges during crises without compromising the provision of care⁶, while at the same time managing capacity. These specialist centers can absorb specific low-acuity procedures — such as orthopaedics, cardiothoracic and integrated cardiology procedures, ophthalmology and endoscopies — freeing up capacity for hospitals to focus on acute and complex care.

“In 2015 cardiologist Eric Topol said ‘the hospital of the future will be the bedroom,’ foretelling the shift of vital signs monitoring from the hospital to the home. This prediction seems ever more prescient, in ways we couldn’t have imagined previously.”

Henk van Houten, Chief Technology Officer, Philips

NHS England is planning to build **one out-of-hospital diagnostic centre for every 300,000 people** - amounting to up to 150 diagnostic hub



Governance

Prioritizing crisis preparedness and demand planning

2.



The countries that were not overwhelmed by the COVID-19 pandemic offer us clear lessons in resilience around governance and crisis planning. Our perspective is that each health system's structure of governance — and its leadership — should support and facilitate the financing, resourcing, organization and delivery of a fairly distributed, patient-centric health system during a crisis and in normal times.

A key lesson from the pandemic is that where data infrastructures were open and accessible, health systems could use their digital capability to respond faster. Digital solutions such as digital identity and notification systems, early warning systems, and monitoring and contact tracing apps¹ helped governments plan, prepare and respond to the COVID-19 pandemic.

For example, in the Netherlands, an online portal² was set up between Dutch hospitals to share COVID-19 patient information seamlessly. It enabled relevant patient records, including radiology reports, to be seamlessly available to a receiving hospital — provided the originating hospital and patient had given their consent — reducing manual tasks and saving critical time for the care team.

Keywords:

Health crisis preparedness, medical equipment stockpiling, healthcare governance, healthcare supply chains

¹ European Commission, 'Digital solutions during the pandemic' https://ec.europa.eu/info/live-work-travel-eu/coronavirus-response/digital-solutions-during-pandemic_en

² Philips, 'Philips launches national portal for digital exchange of COVID-19 patient data in the Netherlands' <https://www.philips.com/a-w/about/news/archive/standard/news/articles/2020/20200415-philips-launches-national-portal-for-digital-exchange-of-covid-19-patient-data-in-the-netherlands.html>



Equipment demand planning and stockpiling

Equipment shortages, protectionism and hoarding, especially of personal protective equipment (PPE) and ventilators, were severe impediments to containing the pandemic. Addressing this will be vital to coping with future patient surges.³

For example, medical technology providers like Philips were heavily oversubscribed as national lockdowns disrupted supply chains. There was also a damaging 'echo effect' whereby orders for the same equipment were placed through multiple procurement channels in a rush to secure urgent goods⁴. The outcome was both a wasteful oversupply of hardware on one hand, and severe shortages of accessories and consumables on the other.

Many governments have already acted to address these systemic problems. The European Commission, for example, has created strategic, pan-regional stockpiles of medical equipment such as ventilators and protective masks, one of which Philips stocks, maintains and operates for the Dutch Ministry of Health on behalf of EU Member States and affiliate countries.

Collaborative governance mechanisms

An important lesson for us has been recognizing the value of building permanent platforms for public-private collaboration. Convened as standing forums across major trade regions, these platforms would provide a focal point for government bodies to share up-to-date information, develop best practices and identify unmet needs for future innovation and investment.

Additionally, as COVID-19 has reminded us, few health crises respect national borders. A robust response requires a mix of local, national and global solutions. A review of COVID-19 responses in 28 countries using a new health systems resilience framework found that high-performing countries responded comprehensively "to ensure adequate translation of evidence into policy and practises that preserve health system capacity while protecting public health and livelihoods".

Indeed, the global shock of the pandemic has spawned initiatives and investments built around national, regional and pan-national governance mechanisms. A good example is the European Commission's Health Emergency Response Authority (HERA)⁵, an emergency planning agency set up to coordinate emergency responses across the EU Member States. In addition, more public-private sector collaboration will unlock investment and capacity to address system-wide problems that neither public nor private could tackle alone.



³ WEF, 'How should we future-proof our supply chains?' <https://www.weforum.org/agenda/2020/09/how-to-build-supply-chains-fit-for-the-future/>

⁴ MedTech Europe Lessons Learnt from the COVID-19 pandemic and recommendations on purchasing models

⁵ European Commission, 'HERA: Getting ready for future health emergencies' https://ec.europa.eu/commission/presscorner/detail/en/IP_21_4672

Healthcare workforce

Supporting the future of health workers

3.



A resilient health system is only as resilient as the resources, tools and protection provided to its healthcare workers. Healthcare workers are the beating heart of all health systems and as the front-line heroes in the battle against COVID-19 they carried the burden of the pandemic on their shoulders.

However, it's important to acknowledge that healthcare workers were already facing daunting challenges long before the pandemic. Issues such as burnouts have contributed to a global shortage of health workers: a global deficit of 18 million¹ skilled healthcare professionals is expected by 2030. The UK had 50,000 nursing vacancies before COVID-19², while most radiology departments struggled to meet demand because of staffing issues³.

Creating an adaptive workforce

This is a challenge that technology alone won't solve. Central to any resolution is rethinking the roles and responsibilities of healthcare workers in a distributed care model. As the

Keywords:

health workforce, adaptable workforce, digital health skills, health workforce shortages

¹ European Commission, 'HERA: Getting ready for future health emergencies' https://ec.europa.eu/commission/presscorner/detail/en/IP_21_4672

² WEF, https://www.who.int/health-topics/health-workforce#tab=tab_1

³ Nursing Times, 'The UK nursing crisis – 2021 and beyond' <https://www.nursingtimes.net/clinical-archive/healthcare-it/the-uk-nursing-crisis-2021-and-beyond-28-04-2021/>

NHS Interim People Plan⁴ puts it: “We need different people in different professions working in different ways. We also need to address the cultural changes that are necessary to build a workforce that befits a world-class 21st century healthcare system.”

Health system resilience hinges on how effectively healthcare workers can perform under the extreme pressure of a crisis. That means health systems ensuring their staff are not constrained by a limited set of skills, preventing them from being deployed flexibly depending on the need.

A sustainable and resilient health system requires “the right mix of health workers, with the right skills, and providing services in the right places, to better respond to changing patient need,” according to the OECD⁵. This

marks a shift away from disease-centered care delivery systems towards value-based and patient-centric care models, placing the healthcare worker in a more dynamic culture of flexibility and continuous learning.

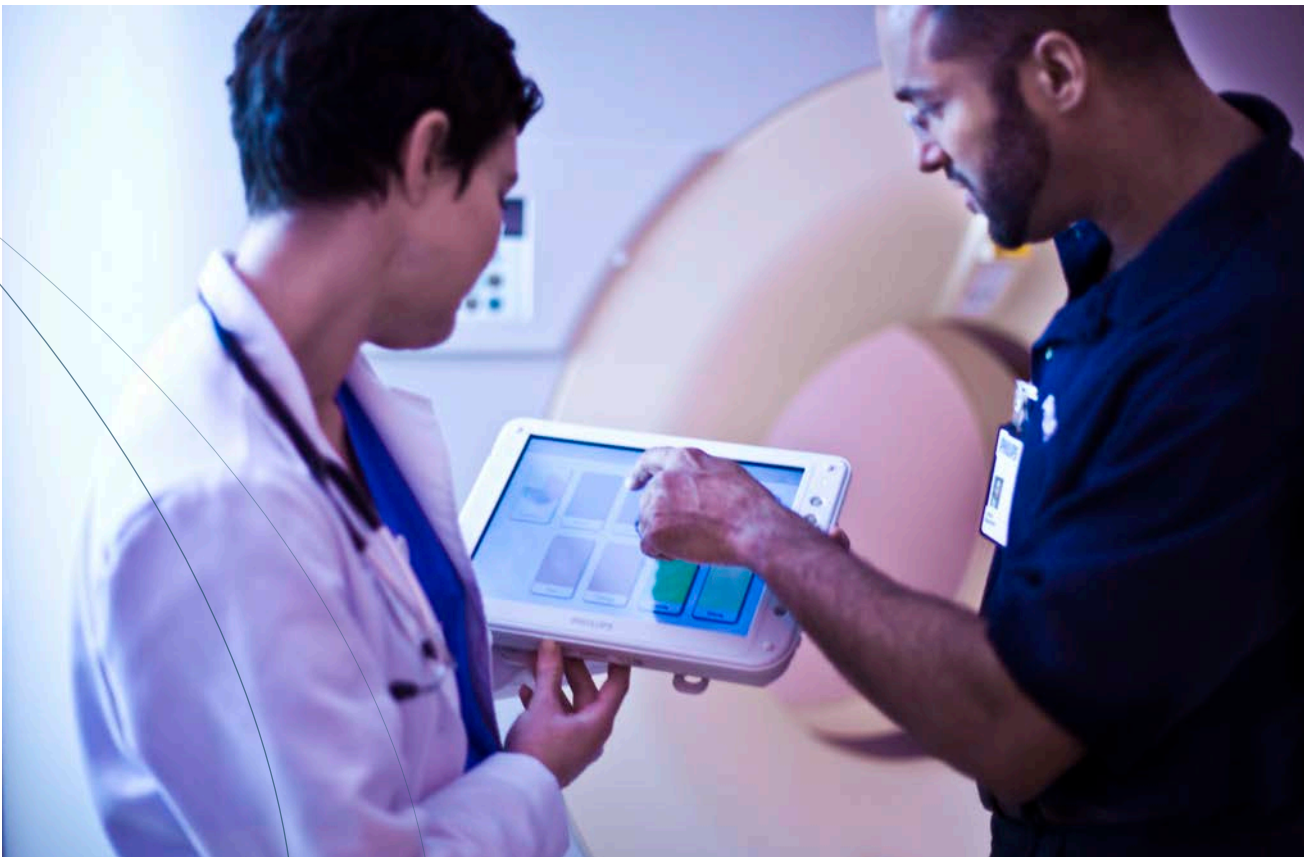
Preparing for future health

From our perspective, the shift to a distributed care model must also be accompanied by mechanisms to support staff in an appropriate working environment, helping to underpin morale and job satisfaction levels. Well-motivated, well-protected and well-supported staff are more likely to be willing and able to temporarily take on extra responsibilities during a crisis.



⁴ NHS, 'Interim NHS People Plan' <https://www.longtermplan.nhs.uk/publication/interim-nhs-people-plan/>

⁵ OECD, 'Health Workforce Policies in OECD Countries' <https://www.oecd.org/publications/health-workforce-policies-in-oecd-countries-9789264239517-en.htm>



Philips believes this transition to a resilient healthcare workforce requires providing them with a new blend of skills, matching digital and technical capability with problem-solving skills and interdisciplinary collaboration. These skills will change as tasks change and as technology becomes ever more woven into the fabric of healthcare systems. We believe training and education can better be organized as an ongoing process to prepare healthcare workers for more digital ways of working.

A change in mindset is also required. Technology should not be perceived as a means of replacing workers but of simplifying their work and extending their expertise in a distributed care model. Equipping workers with greater expertise and better tools will also help mitigate some of the staff shortage issues that are expected to continue to overshadow healthcare into the future. A more strategic approach is required to support their work, through continuous learning and upskilling to prepare for future challenges both large and small.

“We need to address the cultural changes that are necessary to build a workforce that befits a world-class 21st century healthcare system.”

NHS Interim People Plan

¹⁷ FT, 'Business schools focus on health as Covid highlights challenges' <https://www.ft.com/content/a33ad770-1bc4-4eee-9962-74b4b708fc56>

¹⁸ Human Resources for Health, 'Global Health Workforce Labor Market Projections for 2030' <https://human-resources-health.biomedcentral.com/articles/10.1186/s12960-017-0187-2>

Data innovation

Towards a digital architecture of care

4.

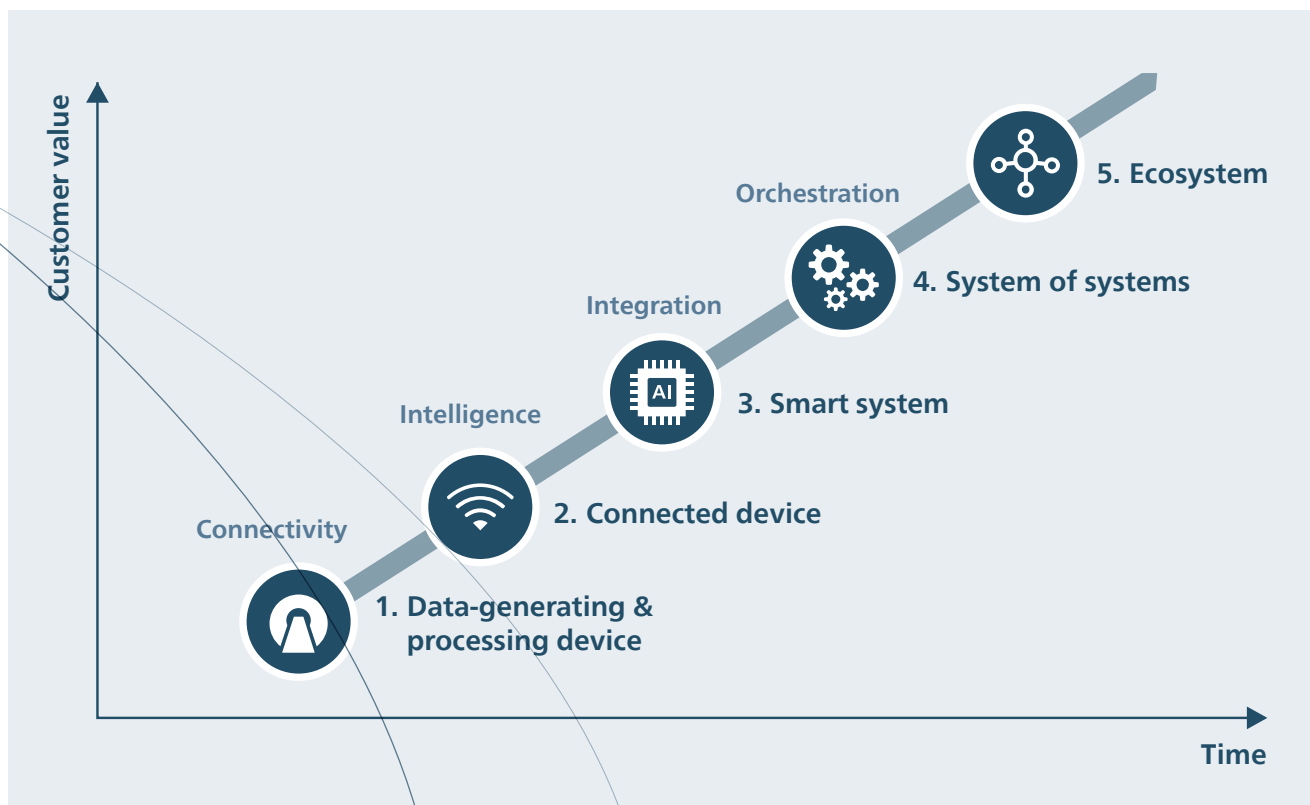


The COVID-19 pandemic may have showcased the potential of digitalization but it also highlighted how much work still needs to be done to make the data underpinning that potential available across health systems. Through the acute stages of the pandemic such systems found themselves limited in the ability to build a real-time view of their populations and all available medical resources, because data was not stored in a way that made it accessible and easy to share¹.

The countries which mounted a fast, targeted – and data-driven – response to COVID-19 had built data systems that were interoperable. In Taiwan, for example, the country's electronic health records system enabled doctors, hospitals and the Ministry of Health to access near real-time information about patients². While the system had not been designed specifically with a pandemic in mind, it was “nimble enough to be reoriented toward one”.

Keywords:
digital health innovation, health data interoperability, digital healthcare transformation, open health data, health data privacy

¹Nature, 'Why many countries failed at COVID contact-tracing — but some got it right', <https://www.nature.com/articles/d41586-020-03518-4>



Open data standards

As a health technology provider, we believe innovative digital solutions are the lifeblood of healthcare's operating model. But we also recognize the dangers of fragmented innovation — where data is managed separately, or standards are adopted in a piecemeal fashion — leading to inefficiencies and waste.

It's not just about sharing data, but ensuring the data is in a format that can be shared effortlessly, transparently, and securely. Open data standards such as FHIR (Fast Healthcare Interoperability Resources) play an essential role here. Efforts are already underway: the GAIA-X initiative, for example, is designed to create a secure and scalable infrastructure for data sharing across Europe. Potential use cases could include chronic heart failure patient management³, which relies on combining electronic health record data with device measurements and feedback from the patient at home. GAIA-X can provide the secure

infrastructure to enable such data exchange at a national and even European scale, opening up all sorts of scenario's for easier and better local treatment for patients while travelling or living in a foreign country.

Assessing digital maturity

National health services, hospitals and clinics are all advancing through the process of building a data-driven health service at different speeds, with varying degrees of IT legacy to overcome. What is crucial is to develop a long-term, structured approach so the process of transformation can be sustained. We recommend using digital maturity standards as a basis for measurement and benchmarking and to help guide investments in Health IT and technology. For example, the Healthcare Information and Management Systems Society (HIMSS) offers a range of digital maturity models⁴ which benchmark digital progress across eight defined stages.

² Stat News, 'Learning from Taiwan about responding to Covid-19' <https://www.statnews.com/2020/06/30/taiwan-lessons-fighting-covid-19-using-electronic-health-records/>

³ Gaia-X, 'Improve Chronic Heart Failure Patient Management' <https://www.data-infrastructure.eu/GAIA-X/Redaktion/EN/Artikel/UseCases/improve-chronic-heart-failure-patient-management.html>

⁴ HIMSS 'Digital Health Transformation: Maturity Models' <https://www.himss.org/what-we-do-solutions/digital-health-transformation/maturity-models3> Gaia-X, 'Improve Chronic Heart Failure Patient Management' <https://www.data-infrastructure.eu/GAIA-X/Redaktion/EN/Artikel/UseCases/improve-chronic-heart-failure-patient-management.html>

Our belief is that, whatever the tools adopted, there are significant advantages to be gained when governments, providers, physicians and patient groups align around a common benchmarking and measurement framework. No one company or provider can 'do it all'. We believe that the future resilience of our health systems depends on effective collaboration between the private and public sector, exchanging best practices for open standards and enabling privacy and security protocols.

“A resilient health system must fully harness the power of digital technology to reimagine how healthcare is delivered.”

Shez Partovi, Chief Innovation and Strategy Officer, Philips

Privacy and security standards

These efforts must be accompanied by ensuring there is public trust in the provision of digital healthcare. A lack of trust in such practices has not been removed by the necessities wrought by COVID-19, whatever the change in digital habits. This remains a key concern for health systems and an obstacle to resilience. Also, a lack of trust hampers the enormous potential of using patient data for scientific research to further improve healthcare, which is particularly unfortunate because a majority of patients are, in EU countries for example, actually in favor of providing their personal health data for research purposes⁵ but only under trustworthy conditions.

It is clear that robust standards and policies that govern data usage are needed, both for the existing management of data but also data-intensive technologies like AI. Patients must feel confident that their information is secure and can only be accessed with their consent or authorization. That can only be achieved with a collective response by all parties involved to gain patients' trust.

⁵ Connected Health User Willingness to Share Personal Health Data: Questionnaire Study - PMC (nih.gov)

Finance

5.

Making healthcare financially resilient



Adding to the challenge for health systems is that costs keep rising while reimbursement is under pressure; a pattern that is expected to outlast COVID-19. Indeed, the requirements of building more resilient health systems will be a large contributor to that.

Between 2020 and 2024, global health spending is predicted to rise at a 3.9%¹ annual rate, considerably faster than the 2.8% recorded from 2015 to 2019. As crisis spending on COVID-19 subsides, larger investments are being planned to support the transformation of health systems. Drawing on our experience of partnering with health systems, we are conscious that funds must be spent wisely to ensure the health systems' resilience.

Prioritize population health

Managing the finances of healthcare well means building strategies to deliver care as close to the patient as is practical. The

Keywords:

value-based care, telehealth reimbursement, health digitization, health digital transformation, population health, health prevention, value-based procurement

COVID-19 pandemic hit hardest among the elderly and individuals with poorly managed chronic conditions, including COPD, cardiovascular disease, obesity and diabetes². Managing these vulnerable populations relies heavily on good primary care, but also on a combination of telehealth, remote patient monitoring and digital health education. Closer, continual contact fosters a stronger bond between patient and care teams. West Moreton Health in Queensland, Australia, for example, delivers 13 health services³ to more than 280,000 people. The program is delivered by a team including doctors, nurses and other health professionals and works closely with General Practitioners and other care providers to ensure that a wide range of health factors are continuously monitored.

Based on our partnerships with health systems across the world, we understand that health systems need to pivot away from healthcare models that still focus more on treating sickness than on healthy living and prevention. According to the OECD, only a small fraction of public health spending goes on prevention: less than 3%⁴ of health budget spending. Any pivot starts with drawing up priorities for investments in population health to reduce the future load of providing care, and to ensure business models align with that principle. This includes strategies to reduce the burden of care through pre-emptive efforts at improving health.



² Philips, 'Supporting the healthcare frontline' <https://www.philips.com/a-w/about/news/archive/standard/news/articles/2021/20210112-supporting-the-healthcare-frontline-in-himss-broadcasts.html>

³ Queensland Government, 'MeCare Program' <https://www.westmoreton.health.qld.gov.au/services-and-care/mecare-program>

⁴ OECD, 'How much do OECD countries spend on prevention?' https://read.oecd-ilibrary.org/social-issues-migration-health/how-much-do-oecd-countries-spend-on-prevention_f19e803c-en#page1

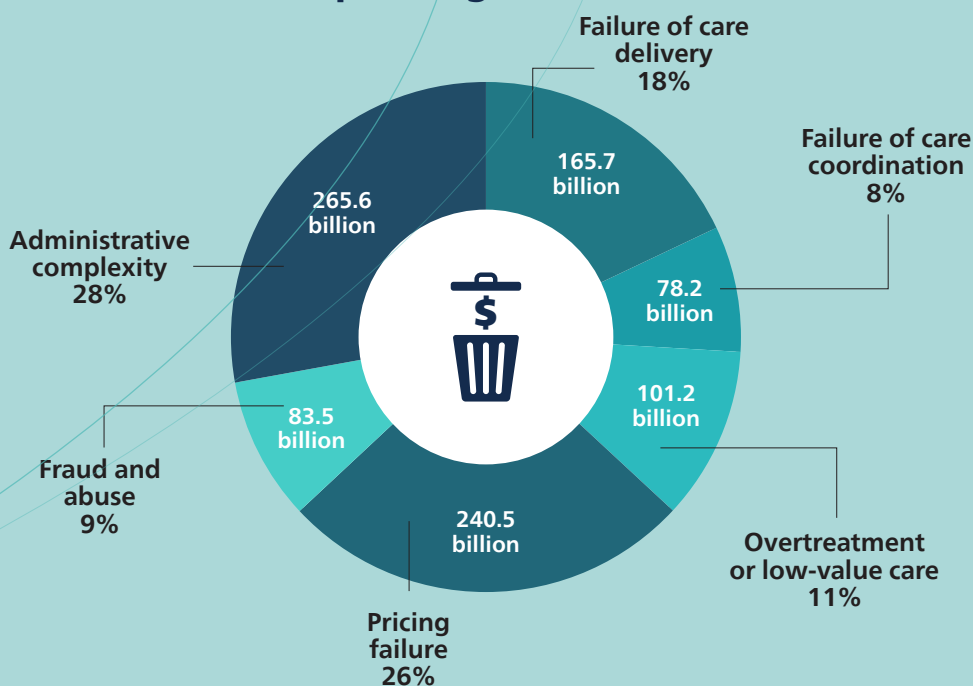
Incentivize outcomes-based care

To achieve financial resilience health systems can focus on reducing the practices which lead to waste. Even without a crisis, close to \$1 trillion⁵, or 25%, of total healthcare spending each year in the US alone is spent on goods and services which do not add value to the healthcare system and can be considered waste.

A shift towards outcomes-based care can reduce the enormous variation in the way care is delivered, and the inefficiencies that ripple throughout the healthcare system. The European Alliance for Value in Health⁶ (EAVH) explains why this model makes our health systems resilient: by focusing on high-value interventions and innovations, and dis-investment in lower value or wasteful interventions, an outcomes-based approach

logically leans towards prevention. "Keeping people healthy could be the best protection against a future pandemic," the EAVH says. New care models and health prevention delivered in the community, on the other hand, rely on reimbursement mechanisms to support the value of the service delivered. However, challenges remain with varying telehealth reimbursement policies from country to country. This has proved a blocker to progress and innovation in the past. But the way health systems responded to COVID-19 is helping to even out such disparities, as many governments adopted new reimbursement mechanisms out of necessity to address rising demand for virtual care and remotely accessed services. We believe the opportunity is there to build on this momentum and demonstrate the value of telehealth to those governments that have yet to embrace and incentivize this technological change.

Estimated cost of waste in US healthcare system ranges from 760 billion to 935 billion which is 25% of total healthcare spending



⁵ Shrank WH, Rogstad TL, Parekh N. Waste in the US Health Care System: Estimated Costs and Potential for Savings. JAMA. 2019;322(15):1501–1509. doi:10.1001/jama.2019.13978

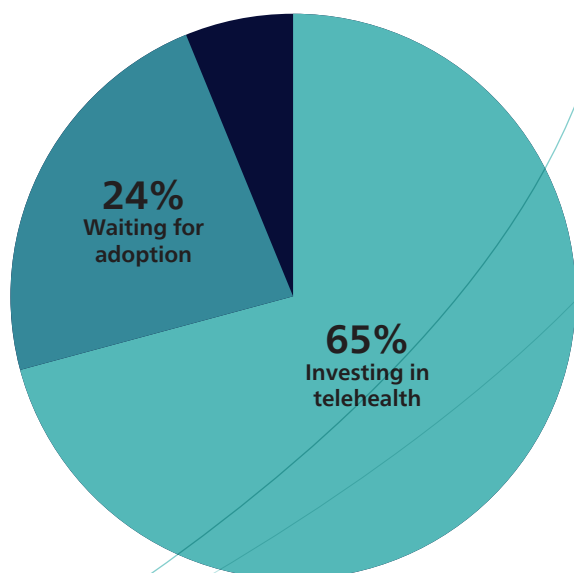
⁶ European Alliance for Value in Health <https://www.europeanallianceforvalueinhealth.eu/library/health-systems-after-covid-19-building-resilience-through-a-value-based-approach>

Innovate with procurement and partnerships

A key component in reshaping the financing of healthcare is exploring strategic partnerships between healthcare providers and technology vendors. Coupled with a shift from fee-for-service to outcomes-based care, the relationship between providers and technology vendors like Philips will increasingly be defined by new business models.

One approach is to develop collaborative partnerships where technology risk can be shared between the supplier of technology and health systems. Through our existing long-term partnerships with care providers, we have seen how this improves the predictability of costs over the long-term and creates appropriate incentives for reducing the overall costs of care delivery.

Telehealth investment with global healthcare leaders



Technology procurement is also gradually moving towards different risk-sharing models that serve the Quadruple Aim of improved patient and staff experiences, better health outcomes and lowers costs of care per capita. For example, the UK's National Health Service (NHS) is testing outcomes-based procurement through pilots⁷ that evaluate a range of key hospital services based on where value is being delivered. This strategy reduces product costs — which typically account for between 10-15% of medical procedures⁸ — and shifts the emphasis towards partnering with industry to explore digital technologies/products or solutions that can better address patient outcomes, increase efficiency and reduce the total cost of care.

“To achieve a more financially sustainable health system, we must ensure that new investments today become savings for the future.”

*Jan Kimpen,
Chief Medical Officer, Philips*

⁷Healthcare Financial Management Association (HFMA), 'NHS supply chain value-based procurement project' <https://www.hfma.org.uk/news/news-list/Article/nhs-supply-chain-value-based-procurement-project-report-and-findings>

⁸NHS, 'Value-based procurement report findings' <https://www.supplychain.nhs.uk/news-article/value-based-procurement-report-autumn-2020/>

Conclusion

A resilient future must be built on collaboration & partnerships

Where governments, healthcare providers and industry worked together during the COVID-19 crisis we witnessed resilience in response to a shared sense of purpose. The pandemic also prompted useful dialogue with industry on how best to address healthcare needs which helped us develop a close collaborative relationship to mitigate the impact of the pandemic as much as possible.

As the crisis subsides, collaborations and partnerships should be intensified to help build trust and support the goal of a patient-centric health system. Digitization and technological innovation will help us reshape health systems, but that in itself is not enough: we need to adopt a new approach to governance, international solidarity to ensure universal access to care, a fair allocation of resources, financial sustainability and preparation for future shocks to the system.

None of the challenges set out in this paper can be solved by one player alone. Under the new spotlight that healthcare finds itself, all stakeholders need to learn, anticipate

and collaborate. Ultimately, its patients and healthcare professionals that will demand that a more responsive, robust and coordinated health system emerges from the COVID-19 pandemic. Resilience will then be measured by the trust citizens place in our ability to navigate the end of this crisis and the beginning of the next one.

“By learning vital lessons our health systems will become more patient-centric, responsive and resilient as a result of this crisis.”

*Frans van Houten,
CEO, Philips*





**//
Resilience
encompasses health
systems' ability to
prevent, respond to,
and recover from
acute and chronic
crises."**

World Economic Forum and LSE
Partnership for Health System
Sustainability and Resilience (PHSSR)

