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# Defining moment for digital transformation of healthcare

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**This period in time is becoming a defining moment for digital transformation in healthcare, bringing healthcare professionals, scientists, and IT experts together to reimagine healthcare the way it should be.**

The healthcare industry continues to grapple with rising cases of COVID-19 globally. It has been inspiring by how the healthcare community has come together to combat the pandemic with unwavering commitment, quickly adapting and taking full advantage of the technologies at hand to care for their patients. COVID-19 has been a catalyst for change, accelerating digital transformation in many areas healthcare. This starts at the very beginning of the patient pathway, with precision diagnosis, the compass for effective treatment.

Before the pandemic, diagnostic services were already burdened with high demand, short staffing, and inefficient workflows. According to the World Medical Association, nearly half of the world's physicians experience symptoms of physical, mental, and emotional exhaustion. A survey that Philips conducted among radiology staff last year confirms that they are experiencing significantly high levels of stress and burnout. In the face of COVID-19, the need for greater efficiency and responsiveness has become even more urgent.

As healthcare facilities in some countries begin to resume elective exams and procedures for patients with cancer, heart disease, and other conditions, while continuing to support critical care for COVID-19 patients, there will inevitably be more strain placed on radiology departments.

Effectively juggling these responsibilities will require healthcare professionals to embrace new models of care delivery, founded on precise diagnostics and robust telehealth networks, and with workflows that adapt dynamically to rapidly changing circumstances.

## Getting diagnostic examinations first-time right

Getting diagnosis right has always been the cornerstone of healthcare: it informs every decision along the patient's journey, often marking the difference between successful and unsuccessful treatments.

An important consideration during this global crisis is for medical equipment to be quick and easy to use, even for less experienced users, to get consistent results under highly stressful circumstances. Having standardized presets and protocols will promote consistent image quality for early diagnosis or reliable disease tracking over a set time.

Even under the best circumstances, unwarranted variation can still get in the way of first-time-right imaging. Smart diagnostic systems can assist in providing diagnostic imaging support to avoid unnecessary repeat scans that consume time and budget, resulting in delayed diagnosis and treatment. In the Philips survey, respondents indicated that almost a quarter of their work could be automated, empowering them to do their job with less stress, more efficiency, and leaving more time to interact with the patient.

For example, in magnetic resonance, one of the most complex imaging modalities, exam planning, scanning, and processing can be automated to reduce operators' workloads. This allows even new operators to proceed with confidence. Similarly, in diagnostic X-ray, technology can support patient positioning to speed up image acquisition and prevent unnecessary retakes, allowing one clinic to go from scanning 680 patients per month to nearly 1,200 per month. And in ultrasound, arguably the most operator-dependent imaging modality, intelligent new transducers are providing additional support at the point of care to avoid missed findings and enable more precise detection.

**Optimizing workflows to drive safety and operational efficiency**

COVID-19 has also heightened the need for streamlined workflows, particularly in the emergency department where patients are being triaged for both COVID and non-COVID related care. CT and diagnostic X-ray imaging currently play an important role in assessing the pulmonary damage caused by COVID-19, and in some parts of the world are also being used to triage suspected COVID-19 cases. In the Philippines, the Philips team is offering converted shipping containers that have been turned into off-site radiology suites to offer a solution to manage patient volumes and enhance patient and staff safety during the pandemic.

Throughout the diagnostic journey, artificial intelligence (AI) has the potential to empower the radiologist, the technologist, and the physician in translating information into actionable insights to support clinical decision making. AI's predictive insights can be particularly valuable in the ICU, where a patient's life may depend on timely interventions when their condition is about to deteriorate. We see its potential to improve the identification and isolation of COVID-19 positive patients and accelerating diagnosis for all patients. Such AI-driven workflows would also help to optimize both patient care and resource management, and improve already-strained workflows.

**Digital engagement helps keep patients safe and personalizes care**

With severe disruptions of care delivery and increased anxiety among patients, effective monitoring and communications between care providers and patients are challenging, yet critical.

As distributed ways of working are quickly becoming the new norm in the wake of COVID-19, this creates an unprecedented need for home PACS (picture archiving and communication system) workstations and secure clinical informatics solutions that allow specialists to read images remotely. Interestingly, one recent survey among radiologists indicated that more than half of them saw enough benefit in their current workflows to consider continuing them post-COVID-19, with 65 per cent reporting decreased stress levels. It's a clear sign that remote reading could be a lasting change.

Some hospitals have also turned to virtual care in the form of tele-ICUs or eICUs to help care teams proactively intervene at an earlier stage, or to decide which patients have stabilized, allowing scarce ICU beds to be allocated to more acute patients. This enables physicians to prioritize patients on acuity and optimizes the patient flow and logistics.

Remote patient monitoring, which can reduce exposure of both patients and healthcare professionals to a high-risk environment, has become a new strategy in supporting at-risk populations during the COVID-19 pandemic. For example, as it has been estimated that up to half a million women may deliver their babies while infected with COVID-19 in 2020, pregnant women who have not been diagnosed with COVID-19 are interested in ways to minimize time in a hospital to limit their exposure to the disease. While clinicians can treat patients in isolation rooms and accommodate home visits and births when possible, there are tools and solutions available that enable the remote and continuous monitoring of fetal and maternal vitals which manage patient care while reducing the risk of exposure for care providers. This type of technology has since been

implemented in Singapore, Australia, New Zealand, the US and Europe.

At the same time, as imaging services start rescheduling elective procedures, timely patient engagement will remain essential, with studies showing that automated reminders can lead to a 42 per cent reduction in patient no-shows and a 67 per cent reduction in poor patient preparation.

During the pandemic outbreak, Boston Medical Center (BMC) in the US used personalized, automated text messages, emails, and voice calls in four languages to deliver targeted and precisely timed educational and instructional messages to over 400,000 patients via a patient engagement platform. These messages include tips to avoid the spread of COVID-19, and instructions on how to receive prescription refills. BMC also adapted its existing pre-visit education program to transition patients from in-person visits to telehealth consults, sending out reminders to help patients show up on time and prepared for virtual appointments.

For patients, this brings the convenience they have come to expect in today's digital world. Spurred by COVID-19 and the need for physical distancing, a "waitless" waiting room for radiology exams is likely to become the new norm, providing up-to-the-minute text or voice scheduling updates to minimize wait times, limit the chance of virus transmission, and allow patients to proceed with their busy schedules right until their scan.

Of course, achieving the best diagnostic outcomes is but one milestone in a patient's journey through a value-based healthcare system. COVID-19 is also accelerating innovation in other areas in healthcare, such as image-guided therapy and connected care. This period in time is becoming a defining moment for digital transformation in healthcare, bringing healthcare professionals, scientists, and IT experts together to reimagine healthcare the way it *should* be.

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