PHILIPS

Position paper

Healthcare without bounds: the future of health

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Healthcare is a study in contrasts. On the one hand, it is rich with innovation, brilliant clinicians, world-class research, cutting-edge technology, and sophisticated health systems that provide care for some of the most challenging conditions and procedures. On the other hand, complexity in the financing, regulation, and delivery of care counteracts these considerable strengths to some degree. At every turn, there seems to be barriers to providing patients with personalized, effective care, creating burdens for both patients and care providers and adding costs without adding value.

In the face of these challenges, it's encouraging to look at the great progress being made to break down these barriers. Like a hospital system that is providing daily care to patients with chronic conditions in the comfort of their own homes, while reducing costs and utilization. Or a leading healthcare system using predictive care management tools for ICU patients to reduce hospital stays and readmissions, while addressing the critical care shortage and saving millions in costs. And a cardiovascular center treating high-risk cases with less invasive, image-guided technologies that can reduce the length of stay and improve their overall quality of life. Or a research hospital on a mission to create an entirely digital database of tissue samples that will allow pathologists to gain greater insight, facilitating individualized care and, optimized treatments. Philips knows these stories because we've been there, working collaboratively with these health systems to break down the boundaries, remove complexity and deliver on a more seamless approach to healthcare when, where and how people need it the most.

Innovation. Transformation. Collaboration. That's what inspires these health systems to partner with us. Industry-leading technologies coupled with an approach that forges new paths in care delivery. A relentless pursuit to make life better. A vision of more seamless care that breaks down boundaries and reduces complexity. This is what drives us. This is Philips.

Removing barriers with enduring partnerships

While we have a deep understanding of the challenges that affect the overall performance of our healthcare system, we see numerous opportunities to make it better. This, however, is not a road traveled alone. It requires deep and trusted partnerships grounded in collaboration, sharing both rewards and risks. Our customers have made it clear that, as the complexity of healthcare gets more intense, working with the overwhelming web of disparate vendors and solutions is no longer a viable option. We couldn't agree more.

At Philips, partnership is far more than a word or a signature on a purchase order. To us, true partnership means rolling up our sleeves and working side-by-side with our customers to identify and implement meaningful solutions customized to each organization's individual needs and challenges.

It requires moving from a transactional to a transformational relationship where we together tackle the toughest challenges specific to each customer. While each of our alliances is as individual as the needs of our customers, they all focus on implementing meaningful innovations, centered on patients and care providers, designed to break down barriers and complexity and to offer better value to patients, providers and the overall healthcare system. We start with a careful assessment of our customer's existing capabilities and needs, and then create a strategic roadmap that will prepare them for the future. We believe our approach truly sets up apart within our industry.

> "…the relationship we have with our customers is fundamentally changing… We want to partner with you in thinking about how to improve people's lives further. We want to share with you our expertise in health and well-being, technology, information systems and business processes – and, more and more we will be judged by the results that you achieve."
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> **Frans van Houten**
> **CEO, Royal Philips**

Partnering for a better patient experience

Our 15-year partnership with Augusta University Health (AUH) focuses on involving patients, staff and a broad array of Philips experts to create an optimal design of their radiology suite and monitoring services. Together, we transformed the pediatric imaging suite to give children a more supportive and engaging experience from the moment they walk in the door.

Throughout this process, we've reduced the complexity of working with numerous vendors, simplified the procurement process, and closely consulted with hospital leadership and their patients in every step of the process.

The results have been gratifying. According to AUH, we've helped them increase their capacity and serve more patients and in some cases without needing to purchase new equipment – increasing MR volumes, for example, by 33%. At the same time, we've taken significant costs out of their operations. In the first 18 months, AUH has reported it realized $7M in savings.

> "We tried to build these types of complex relationships with vendors in the past, but were unsuccessful. When we began discussions with Philips, we saw a potential partner that was committed to making a new model of care. We found an alignment of values and strategic goals that includes working with our patients to improve their care."
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> **James V. Rawson, MD, FACR, Professor of Radiology at the Medical College of Georgia at Augusta University**

Partnering to create meaningful innovation

For over 30 years, Miami Cardiac & Vascular Institute has collaborated with Philips on innovations in cardiovascular care. Working closely with their world-class clinicians has produced a host of innovative solutions that includes Azurion, a new image-guided therapy (IGT) platform, 3D abdominal imaging, and a state-of-the-art endovascular suite to advance integration and improve workflow and patient care. The Azurion platform gives interventional cardiologists easy-to-use interfaces and allows them to navigate with confidence during a complex cardiac case.

Partnering to deliver value

The treatment of critically ill patients is estimated to account for 30% of acute care hospital costs[1] – and shortages of critical care nurses and intensivists make it challenging for health systems to provide consistently high quality care around the clock. Using Philips eICU technology to expand access to these services, Emory Healthcare reduced variations in care and responded more quickly to subtle changes in vital signs – saving an estimated $4.6M in just 15 months, while discharging more patients to home health rather than post-acute facilities.

Emory is not alone. Other hospitals using similar programs have seen a reduction in mortality of 20% and reduction of length of stay by 30%.[2,3,4]

Partnering for today and tomorrow

We understand that achieving more seamless care is hindered by the friction and barriers that interoperability can pose in care delivery. As such, we take a vendor-agnostic approach with our open-source platforms and our willingness to work with technology from other vendors. While our commitment to product innovation and R&D investment is greater than ever, we're also partnering to drive process innovation. Our Healthcare Transformation Services consulting team works closely with customers to achieve meaningful and sustainable operational and clinical improvements as well as to design patient-focused environments, which has led to numerous enhancements, from emergency departments to cath labs to entirely new patient care centers.

For example, we worked with Marin General Hospital to design a visionary center that now houses a comprehensive breast health program, with patient-centered environments from public spaces all the way into imaging and procedure areas.

A critical underpinning of our partnerships is our commitment to responsive service. In many cases, we embed clinical, service and technical resources into our client's organization for success. We jointly develop Key Performance Indicators to measure our progress on meeting their most critical challenges. That approach has helped our imaging, cardiovascular and monitoring systems rank #1 in numerous service performance measures in recent years.[5]

"Many of our vendors are only interested in transactional relationships, which means 'let me sell you a product, let me get you to use it, and then I walk away until you need another one.' Philips is different. They help us understand what we need to have now and what we may need in the future. We also help Phillips understand how their technology can provide appropriate treatment and outcomes for our patients."

Carol Melvin, COO, Miami Cardiac & Vascular Institute

"These independent findings [from the Abt Associates report] verify that our innovative approach…improves patient outcomes, allowing them to leave the ICU healthier…"

Timothy Buchman, MD, Director, Critical Care Center, Emory Healthcare

"The partnership allows us early and continual access to advanced medical technologies such as imaging systems, patient monitoring, telehealth and clinical informatics, and will help us better manage the cost and complexity of acquiring them. It also will help provide the technology, design and informatics for our new, patient-centric hospital and ambulatory facilities."

Lee Domanico, CEO, Marin General Hospital

The transformation has begun

We are driven to cut through complexity to improve productivity and organize care seamlessly around people – both patients and care providers. While there are many challenges to address, we prioritize four areas of opportunity: simplifying data and insight gathering, driving improved treatment and outcomes, removing excess costs from the system wherever possible, and giving patients and staff a better experience. It's a tall order, for sure, but one we are both capable and committed to addressing.

Our integrated portfolio of products and solutions, coupled with our hands-on, consultative approach and award-winning service, are helping our clients make strides in all of these areas today.

For example, in high-demand areas for nursing care, we've developed automated tools that provide a comprehensive view of the patient's condition while simplifying medical documentation and better utilizing staff resources. The IntelliVue Guardian with Early Warning Scoring (EWS) solution encompasses innovative technology and our optional clinical services can help guide adoption with change management planning, execution, staff education, and post-implementation support.

Banner Health reduced hospital admissions by nearly 50 percent managing high-cost patients; reduced overall costs of care by 34.5 percent; reduced the number of days in hospital by 50 percent and reduced the 30-day readmission rate by 75 percent. They employed Philips Wellcentive and our ambulatory telehealth program to identify needs and improve health with virtual home monitoring, early intervention and education.

To help providers work toward providing the right care at the right time in the right place, we've created a host of new solutions that reduce redundancies and allow them to diagnose faster and less invasively. Technology such as the IQon Spectral CT can help clinicians characterize a liver lesion through improved visualization, and the anatomically intelligent 3D modeling technology of HeartModel makes cardiac ultrasound exams easier to perform and reduces variability by delivering critical information in seconds.

Above all, we remain laser-focused on creating solutions that put patients first. Today's health consumers are more empowered and demanding than ever before – and rightfully so. They're paying a far greater percentage of their healthcare costs out of their own pockets. They deserve a more comfortable and satisfying experience, like that of our In-Bore Ambient Experience MRI Suite. With Ambient Experience In-Bore Connect solution, patients were significantly more satisfied with their MRI examinations. In fact, based on patient survey reported by Dr. Nemery of Herlev University Hospital in Denmark, 90 percent of patients reported having a better or much better level of comfort with the patient in-bore solution.[6]

The right care at the right time in the right place. **That's health with no bounds.**



In the hospital...
Allowing all care team members to view the patient's history from diagnosis through treatment, fostering collaboration, and avoiding unnecessary and repetitive tests is critical to providing seamless care. With the IntelliSpace Portal, one leading hospital was able to lower its analysis time by over 20%.



In the home...
Helping predict which people in a frail elderly population will need emergency transport in the next 30 days and connecting them with early, cost-effective interventions can help reduce readmissions and ED visits. Early results from a Partners Connected Health study about the predictive analytics of CareSage, paired with Philips Lifeline and other connected technology, indicate the potential to reduce 180-day readmissions by as much as 40%.



Across populations...
Mapping billions of data points each month allows our data scientists and service teams to deliver an integrated, comprehensive and longitudinal view of almost the entire patient journey. Our partners are using the Philips Wellcentive population health management platform –– not only to derive faster insights and drive better care, but to capture significant value-based revenue — more than $700 million to date.

Doing more, together

The vision of seamless care will become even more critical as the healthcare industry shifts more of its focus away from sick care to prevention and healthy living. Philips is using its unique position as a long-established innovator focused on serving customer needs with many 'first of its kind' solutions, to bring together people, technology and departments into a more seamless workflow across the care continuum.

Our aim with seamless care is to break down boundaries, deliver meaningful innovation, and realize our vision of improving the lives of 3 billion people a year by 2025. We're excited about contributing to a better future with groundbreaking innovations such as our first digital pathology solution, which will accelerate clinicians' ability to detect and treat diseases like cancer. We're also developing and applying artificial intelligence and machine learning technologies with the goal to enable earlier treatments customized for each patient – care that is predictive, integrated and precise.

To move toward seamless care, together we must continue to break down the barriers between departments and specialists, create breakthrough innovations, eliminate the obstacles separating patients and caregivers, and cross the boundaries that exist between healthcare settings and people's homes. Because today, health knows no bounds and neither should healthcare.

1. Coustasse A, Deslich S, Bailey D, Hairston A, Paul D. A Business Case for Tele-Intensive Care Units. Perm J. 2014;18(4):76-84.
2. Lilly C.M. et al., Hospital mortality, length of stay, and preventable complications among critically ill patients before and after Tele-ICU reengineering of critical care processes," Journal of the American Medical Association, vol. 305, no. 21, pp. 2175–2183, 2011.
3. Lilly C.M. et al. TeleICU: Experience to Date, Journal of Intensive Care Medicine, September 13, 2009; 1-7
4. New England Healthcare Institute, Critical Care: Critical Choices: The Case for Tele-ICUs in Intensive Care. December 2010.
5. For two years in a row, Philips cardiovascular systems have ranked #1 in 28 service performance measures. Our use of innovation to drive industry standards has also ranked #1 for six consecutive years.
6. Courtesy of Herlev Hospital, Denmark

Results from case studies mentioned in this paper are not predictive results in other cases. Results in other cases may vary.

There's always a way to **make life better**



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