PHILIPS

Position paper

Value-based care

Turning healthcare theory into better outcomes for patients

January 2020

Better care quality at lower costs

One thing all healthcare stakeholders agree on is that our global health systems are near breaking point. The aging population and increasing incidence of chronic disease, in combination with innovative technologies and new powerful drugs, have led to an unsustainable cost explosion in healthcare, and it is not surprising that the pressure is mounting.

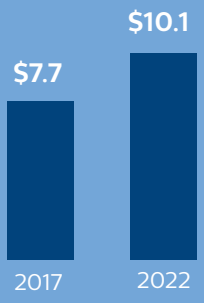
Today's healthcare delivery is suffering from fragmentation, high levels of clinical waste and unexplained variance in treatment rates, costs and outcomes. Adding to the challenge are worryingly high staff burnout rates, administrative complexity and overburdened as well as under-resourced hospitals.

Global healthcare spending is projected to increase at an

annual rate of 5.4%

in 2017–2022, from USD $7.7 trillion to

USD $10.1 trillion[1]



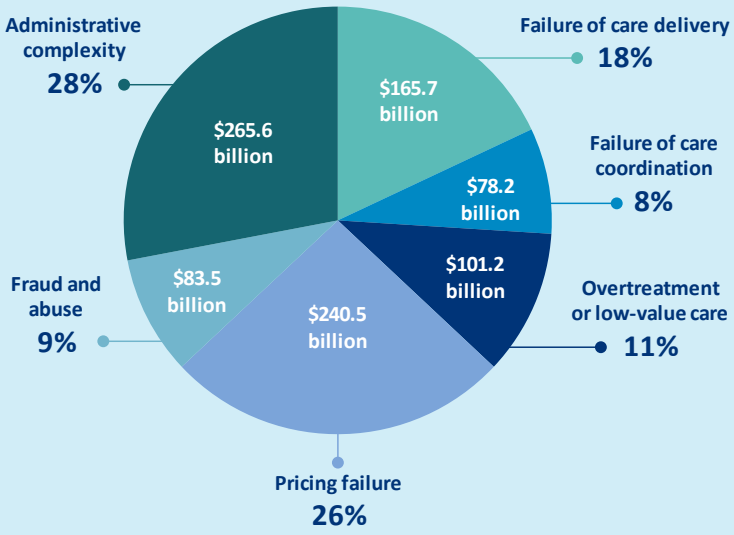
In the US healthcare system, the estimated total annual costs of waste are

$760 billion to **$935 billion**,

accounting for approximately 25% of total healthcare spending.

The largest source of waste is administrative complexity, adding up to estimated total annual costs of $265.6 billion[2].

Sources of waste in the US healthcare system[2]



Healthcare spending as % of GDP – top 10 countries of 2018[3]

The US spends more on healthcare than any other country, with annual costs approaching

17% of GDP

and **>$10,000** per capita

Another complicating factor: our healthcare systems tend to place their focus on acute and emergency episodes. Although studies have shown that prevention is more effective and least costly than treatment, there are limited financial incentives for longitudinal chronic disease management and population health.

Add access constraints and unhealthy lifestyles in developing and industrialized countries to this mix, and it is clear that healthcare delivery and financing need to change.

Transforming healthcare delivery and financing has gone **from important to essential**

Across the globe, healthcare professionals are urgently seeking strategies and solutions to tackle these increasingly pressing problems. Healthcare delivery needs to be transformed from fragmented silos towards integrated, patient-centric and efficient care delivery models that eliminate waste.

Value-based care – paying for value rather than volume

At Philips, we believe that **value-based care models** are the answer. In contrast to traditional fee-for-service (FFS) systems, value-based care aims to pay for value rather than volume, by incentivizing providers and other stakeholders to improve access to care and health outcomes, while reducing the cost of care.

$$\text{value} = \frac{\text{healthcare outcomes}}{\text{cost}}$$

We see value-based care as a delivery framework to improve health outcomes at lower cost. It focuses on what patients value, and allocates resources according to the health outcomes delivered by the system. When put into practice, care quality will improve and cost contained. This is achieved by attaching payment to patient and population outcomes instead of paying per delivered care quantity, such as the number of procedures, outpatient visits and hospital admissions, regardless of the quality of these services.

At the same time, value-based care will enhance the patient experience and patient empowerment. Moreover, it will reduce waste by avoiding unnecessary diagnostic and therapeutic interventions, which currently in the US represent approximately $100 billion in waste[2].

In other words, with the right execution, value-based care also leads to cost-effective care that is compliant with evidence-based guidelines. Finally, delivering the right care for the right patient at the right time, supported by enabling digital tools, will increase the work satisfaction of healthcare professionals.

Compare this with the traditional fee-for-service model where every time you see a doctor or undergo a medical test or procedure, you – or your insurance provider – pay for every step in the process. This payment (or reward) happens regardless of the outcome, and regardless if it is according to the guidelines. To put it boldly, the current incentives in healthcare do not work in the best interest of the patient, and in the long run not for healthcare professionals either.

Our approach to value-based care

There are many stakeholders in the process of transforming our healthcare systems, including patients, medical staff, healthcare institutions, insurers, governments, and the healthcare industry. We believe that they all will need to work together and share risk in order to build a successful and sustainable future for healthcare.

At Philips, we make value-based care principles actionable by implementing the Quadruple Aim in everything we do. This Quadruple Aim consists of better health outcomes, improved patient experience, improved staff experience, and lower cost of care.

In our view, a person's health journey should be seamless, integrated and highly personalized. A journey in which every single bit of information adds to a greater body of knowledge that patients, their care professionals, and science and society can benefit from.

We believe that strong informatics and population health platforms, integrated data management and artificial intelligence enable breaking the silos between the different parts of the system, empowering patients to take ownership of their own health. This can only be achieved by constantly emphasizing interoperability standards.

On our mission to achieve the Quadruple Aim in a value-based healthcare system, we will focus on collaboration, partnerships and co-creation.

This ecosystem thinking requires information technology that is interoperable, standardized, open, safe and secure, and at the same time guarantees privacy for the individual.

As a trusted partner, Philips has the opportunity to support its customers and participate in the value-based care environment by engaging in new types of agreements, such as outcome-based contracts. We can set up these contracts in different ways, including evidence-based care discounts, product or service guarantee, risk-share by product and upside/downside-shared risk. Aligning with our customers to improve measurable outcomes ultimately contributes to improving the patient experience of care, the health of individuals and populations, and the work-life of health professionals. It will also reduce the per capita cost of healthcare.

Through careful investments in continuous learning, innovation and collaboration, we can build a healthier and more sustainable future for healthcare across the globe.

Quadruple Aim

Better health outcomes

Improving the health of individuals and populations

Improved patient experience

Improving the patient experience of care (including quality and satisfaction)

Improved staff experience

Improving the work life of health professionals

Lower cost of care

Reducing the per capita cost of healthcare

What are the essential building blocks of value-based care?

Standard, internationally-accepted health outcome measures

To align processes and incentives, one of the initial steps towards value-based care is the standardized measurement of clinical and patient-reported outcomes related to costs.

Care providers and stakeholders need to start by measuring outcomes that matter to a particular population segment, compare outcomes, learn from the subsequent insights and then apply those insights to improve care for future populations. At Philips, we promote the use of outcomes as defined by the International Consortium for Health Outcomes Measurement (ICHOM) and collection of a standard set of baseline characteristics in order to facilitate comparability.

The all-important final piece of the puzzle comes in allocating an objective payment that is weighted according to the performance of a healthcare system, as measured by the outcomes and costs related to the population it serves. Due to fragmentation and limited interoperability between IT systems, this approach has been difficult to implement in an automated way.

Health informatics and digital innovation – interoperability standards

As health systems and medical processes first went digital with electronic health records (EHRs), clinicians soon found themselves overwhelmed by data that was not presented in a friendly way and therefore difficult to interpret.

With the steady integration of sophisticated health informatics, however, a golden opportunity arises to standardize and scale value-based care, while at the same time eliminating administrative waste – in the US alone, administrative complexity in the healthcare system amounts to an estimated annual cost of $265 billion[2].

Connecting disparate medical systems and wrangling patient record data from siloed hospital departments is crucial. The ability for devices and systems to connect with each other and share data has the potential to enable a 360-degree view of a patient's health, allowing clinicians to make faster, more responsive decisions – this is behind the drive to prioritize interoperability in hospital IT systems. Interoperability means that data can travel across vendors and health systems to facilitate access to high-quality care, regardless of the patient's physical geography.

Best characterized as powerful data analytics networks, health informatics connects clinical processes and workflows end-to-end. With the right configuration and data visualization capabilities, informatics can enable clinicians to interpret information from multiple sources and inform decision-making in real time.

At Philips, we believe that the positive impact of health informatics for a value-based approach is three-fold:

- Firstly, health informatics can support the systematic, standardized measurement of clinical, financial and patient-reported outcomes, along with relevant baseline patient characteristics to adjust for case-mix. This data collection is critical to drive performance-based payments and to incentivize better care.
- Secondly, integrated health informatics can support medical staff in their decision-making, teamwork and communication – driving clinical excellence to new heights.
- Thirdly, health informatics helps connect operational processes – system administrators can analyze and optimize almost every operational aspect of the health system.

Only together we can overcome the many and difficult platform and systems integration challenges. It is complex work that requires all stakeholders in the system (clinicians, administrators, technicians, technology partners and supply-chain partners, as well as policymakers and governments) to commit to the "measure, optimize, repeat" methodology. Importantly, all of this should be executed without increasing the already worrisome administrative burden.

Artificial intelligence – making sense of overwhelming data in healthcare

Aside from accelerating value-based care, health informatics and digital innovation are enabling vital data aggregation and analytics that are changing both the patient and staff experience.

In this context, artificial intelligence (AI) is undeniably an exciting trend. AI applications are already helping clinicians and health systems to quantify and make sense of more data than ever before, making healthcare more personal, preventive, predictive, precise, and productive.

At the same time, we need to be sensitive to the fact that there is a relentless demand on people – professionals, patients, and consumers alike – to keep adapting to new technology. AI-enabled solutions should make things easier for them, not more complicated.

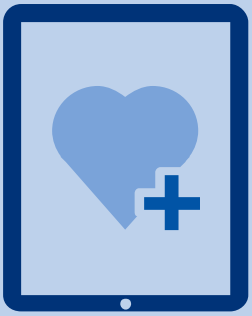
Some examples of our informatics- and AI-enabled health technology solutions:

- **Personal health coaching** – thanks to increasingly sophisticated medical devices and sensors linked to health apps, patients can better understand and proactively manage their own health and wellness. There have been impressive advances since the first generation of pedometers and heart-rate monitors that generated so much buzz when they first came to market. Providers can now utilize behavioral and clinical-grade insights across a number of challenging health spaces, including diabetes, heart health and elderly care. For example, connected personal health solutions can help providers to manage patient compliance and therapy, spot usage patterns, and take action if and when needed.

  Across its global user base, Philips has collected over 2.7 billion nights of sleep data over the past 10 years for analysis in the cloud[4]. As valuable population health data, this helps stratify and continuously improve Philips innovation in sleep and respiratory care.

- **Precision diagnosis and treatments** – access to affordable genome profiling is another trend bringing positive disruption as health systems challenge themselves to deliver first-time right precision diagnosis and treatments. Take cancer diagnosis as an example: clinicians can build a 'complete view' of the patient by integrating a patient's genetic information alongside the patient's history and data from multiple modalities and specialisms like imaging, digital pathology and immunology. While supporting more accurate diagnosis and increased collaboration between clinical departments and care teams, this kind of oncology informatics also aids research in personalized treatment selection by honing algorithms on specific disease states. It is a promising field, but to help make this kind of healthcare more inclusive, we must ensure that research teams have access to large volumes of high-quality and secure patient data.

- **Predictive monitoring** – data aggregation and analytics is another key innovation theme in high-acuity patient monitoring. For example, in high-dependency wards, nursing staff can find themselves as overburdened as they track patient progress against a number of vital metrics – blood pressure, heart rate, temperature and so on. With algorithmic analysis, solutions like our Philips IntelliVue Guardian early warning system can help to combine, identify and predict deviations in a patient's vital signs. Verifying the accuracy of the trend, the solution then translates this information to an early warning score that notifies caregivers at the right time and only in the event of real deterioration.



- **Telehealth** – as the underlying technology supporting 'hospital to home' and care delivery in lower-cost settings, telehealth is a fast-growing field helping to expand access to high-quality and specialized healthcare. Relying on powerful digital communications networks and remote monitoring capabilities, telehealth is also transforming care inside the hospital. Take the eICU where centralized patient monitoring and care coordination can raise quality and efficiency for the most vulnerable patients. A five-year study that examined the impact of an eICU program on 118,990 critical care patients across 56 ICUs, 32 hospitals and 19 health systems, found that response times to alarms, length of stay, and mortality were reduced. Hospital length of stay, for example, was reduced – on average – by 0.5, 1.0 and 3.6 days among those who stayed in the ICU for more than 7, 14 and 30 days, respectively[5].

  Meantime, in ambulatory settings, secondary prevention is another promising telehealth innovation area. For example, monitoring and treating chronic patients at home. Typically, this patient subset accounts for disproportionate costs and drain system resources, but remote monitoring and telehealth consultations can help patients better manage their condition. This can reduce emergency visits and re-hospitalizations in a more proactive and sustainable approach.

Next steps – bringing scale to value-based care

Value-based care programs are being introduced incrementally, but the overall pace of adoption is slower than previously expected. In a recent survey, held with 364 hospital executives across the US[6]—only a third of respondents said they were currently participating in some form of value-based payment model. This demonstrates that hospital executives are proceeding with caution.

Given the highly complex, fragmented and personal nature of healthcare, the risk is real that we spend too much time talking about the need for change, rather than taking action to develop and scale a future-fit approach.

The main obstacles in the transformation towards value-based care consist of the organization, financing and regulation of healthcare systems, as well as the alignment of incentives.

If we are to really accelerate and bring scale to value-based care, there are clear priorities to tackle:

To address these challenges, we need a more concrete discussion that

focuses on the 'how' rather than the 'why'

– how will we move towards value-based healthcare in our day-to-day systems, what are the key hurdles, and how can we overcome them?

Clearly defined outcomes and measurement standards – the industry needs to settle on clear definitions for clinical and patient-reported outcomes, and agree on common ways for measuring performance to then identify and eliminate variance. That's why at Philips, we promote the use of outcomes as defined by ICHOM. Pre-competitive agreements between all healthcare stakeholders will help to enable the automatic capture of outcome data from multiple sources. Importantly, also baseline characteristics need to be automatically captured to allow for case-mix adjustment. This will enable valid outcome comparisons between centers. Eventually, this data will provide valid insights into variance and allow for differentiated reimbursement according to quality to be administered with consistency and transparency.

Open and interoperable data standards – interoperable and secure data platforms are the basis for high-impact and scalable health informatics, also fueling further innovation and research. The transparent capture of data between systems, processes and stakeholders is vital for value-based care. The challenge and stakes are so significant that it requires a full ecosystem approach. To accelerate adoption, open and vendor-neutral digital networks must become the rule, not the exception.

Reimbursements reform – one of the most significant barriers to value-based care is the fee-for-service model that is still in place in many countries. Instead, we must seek out and experiment with innovative payments that share the risk and align incentives across care pathways and providers. Health insurance providers and government payers have a major role to play in expanding value-based care from pilot projects into an operational model that can scale.

Healthcare payment models with increasing financial incentive alignment*

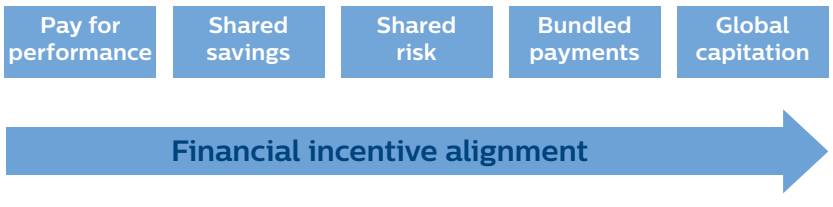


*Illustration based on US healthcare system

Turning healthcare theory into better outcomes for patients

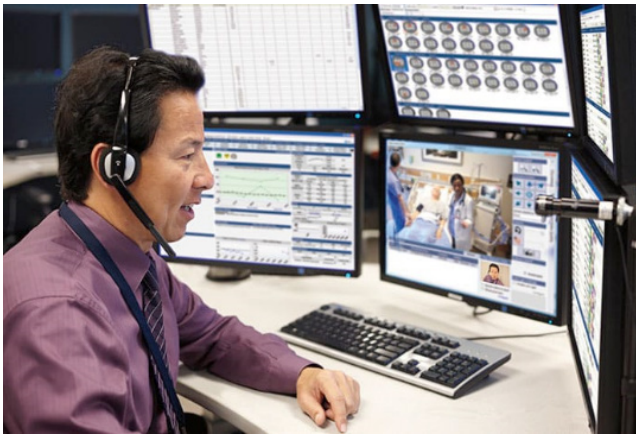
Ultimately, the widespread adoption of value-based care requires openness, trust and strong collaboration and partnerships between all healthcare stakeholders.

Technology and IT deployments, legal and regulatory frameworks, and payment reform must each be managed in comprehensive and progressive ways. This will be the only way to turn what was once just healthcare theory into better outcomes for patients.

It is a demanding and long road ahead, but it is vital that we seize the opportunity ahead of us, together – we have what it takes!

Value-based care – case studies

These examples demonstrate how we are already enabling our customers to implement value-based care strategies.

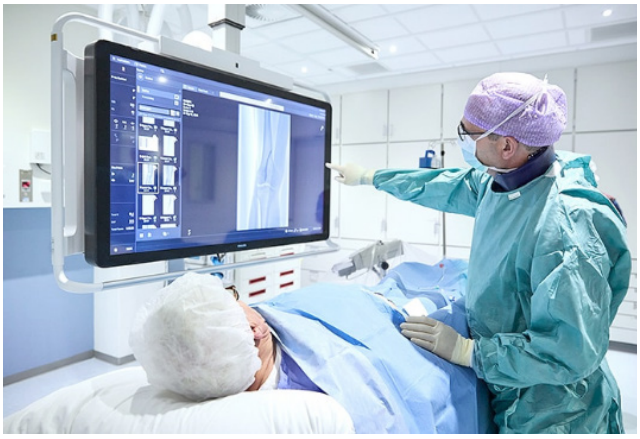


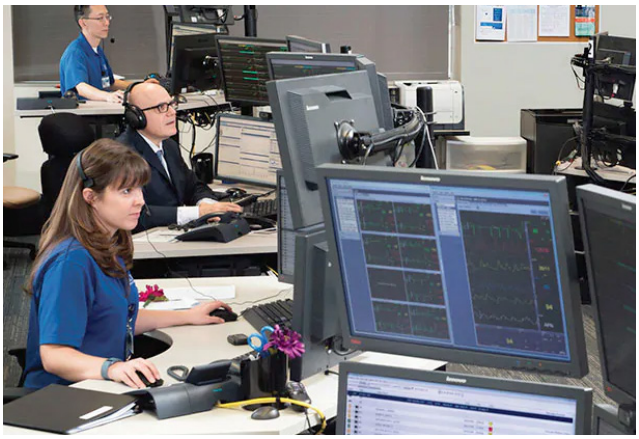
Cost savings and improved patient outcomes in rural areas with the Philips eICU program

Avera Health, a South-Dakota-based integrated health system in the US, recently achieved significant cost savings of $62 million and improved patient outcomes in rural areas with the **Philips eICU program** – it reduced nearly 11,000 bed days in the ICU, with more than 260 lives saved in one year, and saved $62 million in healthcare costs by reducing ICU and hospital length of stay[7].

Clinical workflow and staff experience benefits of Philips Azurion

The St. Antonius Hospital in Nieuwegein, the Netherlands, was one of the first hospitals worldwide to install **Philips Azurion**. Using this next-generation image-guided therapy platform, the average interventional procedure time was reduced by 17%, which made it possible to treat one extra patient per day in the same intervention room. In addition, a 12% reduction of in-lab patient preparation time, and a 28% reduction of post-procedure lab time was achieved[8].





Optimizing the ICU while expanding access to critical care services

Emory Healthcare (Georgia, US), a comprehensive, academic health system, enhanced its critical care to improve outcomes while saving money with **the Philips eICU program**. Across its 136 beds at five hospital sites, Emory saved $4.6 million over 15 months – or $1,486 in Medicare spending per patient; discharged more patients to home healthcare (+4.9%) rather than nursing homes or long-term care hospitals (-6.9%); and realized a 2.1% decrease in 60-day inpatient readmissions[9].

Delivering predictive care for at-risk patients in their homes

Philips CareSage is a predictive analytics technology that helps prevent avoidable hospital admissions and emergency room visits among the frail and elderly. A recent study by Partners Connected Health, a division of non-profit US healthcare group Partners Healthcare of Boston, MA, demonstrated projected savings in a retrospective evaluation of the Philips CareSage predictive analytics engine. In an analysis of five years of data from their population of 2,318 Philips Lifeline subscribers, Partners projected that 224 hospital admissions could potentially be avoided each year, equal to a 40% reduction or $2.2 million in potential net savings[10].

Overcoming three most common risk-sharing challenges

Philips IGT Devices in the USA pioneered a new outcomes-based risk-sharing model with a pilot site at Holston Valley Medical Center in Tennessee (US), which was based on collecting data on the appropriate use of intravascular ultrasound (IVUS) catheters and instant wave-free ratio (iFR) pressure wires. After 10 months, and several iterations of the dashboard, the team was able to show that the use of their technology was associated with fewer readmissions to the cath lab, a 16% lower acute kidney injury rate, $49,000 reduction in supply costs, and 11% higher rate of same-day discharges[11]. This would not have been possible without the ability to pull the necessary data accurately and on time.

For more case studies, please visit
https://www.philips.com/a-w/about/news/case-studies.html

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