

**PHILIPS**

Services and  
solutions delivery

Operational Intelligence



# Operational Intelligence

Why effective transformation starts  
at the heart of healthcare

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# 01. Introduction: Healthcare transformation, healthcare complexity and the impact of the COVID-19 pandemic





# Introduction: Healthcare transformation, healthcare complexity and the impact of the COVID-19 pandemic

**Even before the global pandemic, in healthcare the days of business as usual were over.**

**Around the world, every health system had been struggling with rising costs, aging populations, chronic health challenges, legacy technology and overloaded staff. And, while addressing many challenges, has also brought many of its own; from data and interoperability disconnects to knowledge shortages.**

Healthcare leaders had worked hard to redefine healthcare by moving to the value-based care model, implementing the six components of the high-value health care delivery system, often referred to as the “value agenda”, and healthcare transformation was well underway. So much so that the health sector was up until 2019 expanding faster than the economy – growing by 3.9% / year vs. the economy at 3.0%<sup>1</sup>.

And then the COVID-19 pandemic hit. Cited as ‘the major disruptive event of the decade’<sup>2</sup> and purported by some to be a ‘Black Swan Event’<sup>3</sup> – the term popularized by former Wall Street trader, Nassim Nicholas Taleb in his book Fooled by Randomness – COVID-19 has revealed vulnerabilities in global healthcare as well as stalled the profit growth. As well as the ongoing immediate health impacts of the pandemic, and the delays and disruption to other healthcare services – the economic toll is also being felt across the world.

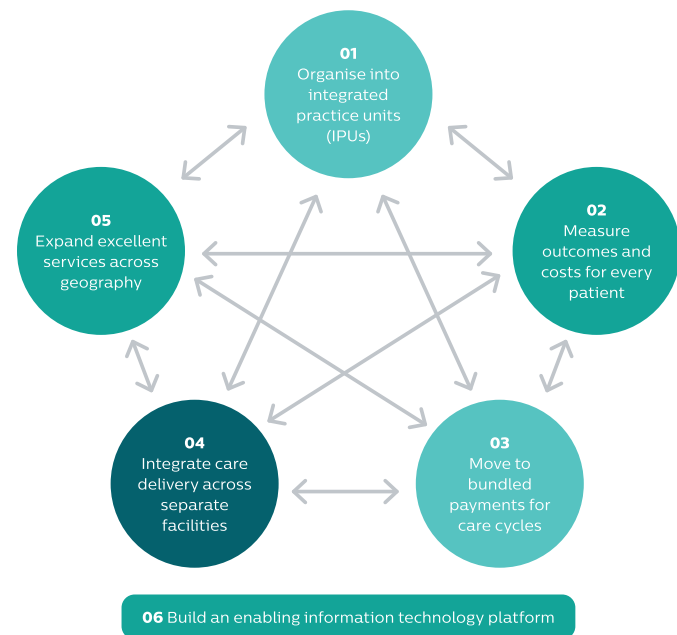
According to NHS figures, hospital waiting list numbers in England have doubled since last 2020 and are expected to continue to rise, due to aged equipment, workflow complexity, workforce shortages and COVID-19 pressures.

Fast forward to today and hospitals are currently delivering care with limited resources available despite the need to treat increasing numbers of patients with chronic diseases. In addition to these structural issues though, the global pandemic also revealed gaps in the transformational change process that was underway, such as the tendency to expect technology and AI to act as a panacea rather than an enabler, and the assumption that healthcare complexity necessitates complex solutions.

### The Value Agenda

The strategic agenda for moving to a high value health care delivery system has six components. They are interdependent and mutually reinforcing. Progress will be greatest if multiple components are advanced together.

1. Global spending on health: a world in transition, 2019, World Health Organization  
2. <https://www2.deloitte.com/us/en/insights/topics/digital-transformation/digital-transformation-COVID-19.html>  
3. <https://corporatefinanceinstitute.com/resources/knowledge/finance/black-swan-event/>



## 2019

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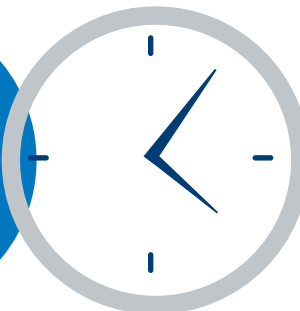
3.0%  
Total economic growth

3.9%  
Health sector growth

## 2020

According to NHS figures, hospital waiting list numbers in England have doubled since last 2020 and are expected to continue to rise, due to aged equipment, workflow complexity, workforce shortages and COVID-19 pressures.

Hospital wait times in UK have **doubled**



# Healthcare transformation, healthcare complexity and the impact of the COVID-19 pandemic

**Healthcare is a large, complex and expensive to operate industry, highly fragmented with a lack of coordination. However organizations such as the Boston Consulting Group agree that the unpredictable and complex reveals the need to simplify and innovate to succeed.**

The current degree of uncertainty in healthcare is unprecedented and while the consumption of healthcare services will likely continue to grow, it is unclear that the industry profit pools will expand over the next 3-5 years given the impact of the COVID-19 pandemic<sup>4</sup>.

“Necessity is the mother of invention.”

Plato, Greek philosopher  
428 BC

According to reports, very few organizations – **and certainly not healthcare industry** – would say that their operations model worked optimally in response to the COVID-19 crisis.

Underlying this cloudy outlook, there are chances – and a clear need – to innovate. According to temperature checks by McKinsey & Co, developing new and innovative business models will become important to achieve the level of EBITDA growth observed in recent years and deliver better care for individuals. Healthcare players who develop new and innovative business models will create disproportionate value in this environment even as they face long term challenges.

The good news is that there is a significant opportunity for the innovation in healthcare that has been struggling to take hold, will really happen. If we look to the lessons of history, crises have often acted as the forcing mechanism to compel expeditious innovation, leading to rapid advances in technology, policy and/ or procedures.

After all, as Plato is credited for saying, “Necessity is the mother of invention.” As systems around the world are being forced to transform at an exponential rate with anecdotal accounts indicating a rate of 10 years in 5 months, we believe that there is an opportunity for innovation at the heart of healthcare – its very control center, Operations.

Dawn Bruce, Philips Services & Solutions Delivery Leader, Canada explains: “The crisis has been a final wake-up call. It’s time for Operations leaders to think beyond the immediate challenges of the pandemic and prepare strategically and structurally for the new reality that will follow.

We’ll be lucky if healthcare returns to something close to the pre-crisis market in the short to medium term. Employing a change management process in Operations and developing a new operating model will quickly build the specific capabilities modern healthcare needs and put in place roadmap for effective transformation.”

4. <https://www.mckinsey.com/industries/healthcare-systems-and-services/our-insights/the-future-of-healthcare-value-creation-through-next-generation-business-models>

# Operations-centric: The shift of focus on to Hospital Operations for innovation



**As the healthcare sector undergoes rapid change, intensified and accelerated by the COVID-19 pandemic, it is increasingly turning to Operations to increase its overall efficiencies. In fact, it is possible to assert that operations management is probably the most critical function today.**

Eugene Litvak, PhD, President and CEO, Institute for Healthcare Optimization, co-founder and Director of the Program for the Management of Variability in Health Care Delivery at the Boston University (BU) Health Policy Institute, and Professor at the BU School of Management, has been quoted as saying:

“Operating systems have a huge impact on work climate, staffing, financial results, etc., and yet we are trying to change our health care delivery system without changing its core operations. We are trying to achieve the results we want just by changing the reimbursement system, by asking different parties to collaborate, etc.

Imagine, for example, that the Ford Motor Company found that their cars could not compete in the market. They probably would do something about the battery, transmission, product lines, shift to alternative fuels etc. — whatever they could do with their cars in order to compete with other manufacturers. In contrast, when our health care ‘car’ does not work, we try to throw more money at the system and demand additional resources.

The cost of health care delivery is inflated because we do not appropriately apply operations management methodologies. And yet we limit the price, so the quality of care is being negatively impacted. Somehow we manage to have both — waste and unsatisfactory quality of care. As long as our total cost, which is clinical cost plus delivery cost, is being limited, and as long as we do not actively employ operations management methods, we will experience this unfortunate scenario.”

It’s a stark yet compelling observation. Reports indicate that a fifth of healthcare spending gets wasted (with administrative complexity accounting for the most – up to \$265.5 billion annually – in the US’s figures<sup>5</sup>) with recoverable health waste costing the US alone over \$1 trillion annually. The same reports highlight that this waste could be eliminated without undermining performance<sup>6</sup>.



Fortunately quality improvement theory, as devised by W Edwards Deming<sup>6</sup>, intrinsically links high quality care with financial performance and waste reduction. The opportunity, therefore, as we see it, is to employ operational management principles and develop a methodology that speaks directly to the nature of healthcare operations. A model, methodology and mindset that prioritizes people, processes and technology, but more of that later.

First, let’s explore why Operations is due its time in the transformational spotlight.

5. 2019 JAMA study on Healthcare waste, Modern Healthcare, September 2019  
6. Source: <https://deming.org/> W Edwards Deming, The New Economics for Industry, Government, Education - 2nd Edition: For Industry, Government, Education (The MIT Press)



# 02. Hospital Operations transformation



## Why hospital operations represent a significant opportunity and challenge for transformation

**Hospital operations is central to operational efficiency. Hospital operations was transforming pre COVID-19 but now it is in the hot seat as innovation in this area can clearly be seen as offering a new way to deliver value-based care since perceived customer value = total benefits / total costs.**

Perceived customer value

=

Total benefits/total cost

Building operational performance capabilities – through long term strategic services partnerships – offers both a change package and a measurement strategy.

The importance of operations wasn't always recognized in business, let alone in healthcare, and yet operations management is key. Hospitals are large and complex organisations, yet they function largely – even despite shifts and investments – the focus has been on technology but not on the whole with operational change management – without the sophistication and technology inherent in other businesses.

The time has come for Operations to innovatively balance the clinical with the commercial to deliver better care.





“The opportunity for operations is to **combine the best of business with the culture of care**”

**Dawn Bruce, Philips Services & Solutions**

**“Healing is an art. Medicine is a calling. Healthcare is a business.”**

**Not according to many, it seems and it is this tension that has stifled innovation in hospitals operations to date.**

Dawn Bruce, Philips Services & Solutions Delivery Leader, Canada explains: “Business and healthcare have long had an uneasy relationship but a modern, innovative approach to healthcare transformation doesn’t have to be the ruthless commercialization of care. Instead, the adoption of effective business models and business practices can realize the best of organizational and operational strategy and fuse it with the high practice standards of those passionate about the Hippocratic Oath. Clinical professionals should absolutely be focusing their time on the medicine part but hospital operations has to be run like a business.”

And yet how should hospital operations run like a business and what practices (behaviors, process and technology) should it employ and how can this change take hold?

According to Dawn Bruce, there is an opportunity for healthcare to operate as a ‘responsible business’ which combines the best of both worlds: clinical expertise and operational excellence. The challenge, of course, is how to bring together two worlds in order to create modern healthcare systems that are both fit for purpose and purpose-full.



## 03: Hospital Operations innovation



# Hospital Operations innovation: Towards the need for a more integrated operating model

**In a time when well over half of all hospitals report negative operating margins, driving down costs by achieving operational excellence is one of the most important yet overlooked areas.**

**Healthcare operations management integrates quantitative and qualitative aspects of management to determine the most efficient and optimal methods of supporting patient care delivery.**

Operations management helps hospitals and health systems understand and improve labour productivity, reduce waiting lines, shorten cycle times and generally improve the patient's overall experience – all of which helps improve the organization's financial health by impacting both the top and bottom line.

And yet applying operational principles to healthcare has its specific challenges. Hospital operations management covers a fairly large range of functions in a hospital in comparison to the well-known boundaries of operations management in business.

Harnessing full potential of the hospital's operations is desirable in order for the hospital to stay cost-competitive, profitable and of immense service to society at large. In any systems improvement exercise, it is important for the hospital to map out its own flows and inter-relationships as only then some specific initiatives for efficiency enhancement, productivity improvement, quality, control etc. can be initiated which all come within the realm of hospital operations management.

# A new operating model but also a mindset and roadmap for change management in action

**When working with healthcare partners on complex challenges Dawn Bruce and her team realised that at framework that captured the changing dynamics and emerging opportunities of strategic healthcare partnerships between healthcare systems and health technology businesses needed to be developed.**

To hone and develop the approach, the team took a step back and returned to the essence of healthcare: its people. Informed by the belief: “at the end of the day, care is a human activity. Technology is not there to replace caregivers, it is there to support them”, the team sought to prioritise people in their model and also to incorporate disruptive thinking, including game theory but also smart simplicity as first identified by Yves Morieux<sup>7</sup>.

According to Yves Morieux: “Many organisations thrive amid complexity. They sort the signals from the noise and focus on the opportunities that matter most. Others stumble and struggle. They create an overabundance of committees, layers, key performance indicators and other internal mechanisms. This organizational mishmash fails to address the complexity they face in the outside world.

Just because the world is becoming more complex, organizational structures and processes do not need to follow – and many organisations unnecessarily create internal complicatedness – procedures, vertical layers, interface structures, coordination bodies and decision approvals – in response to external complexity.

The end result is that managers spend most of their time shuffling papers and attending meetings and very little time working with their teams. Rather than creating formal guidelines and processes, organizations should embrace an environment in which employees can work with one another to develop creative solutions to complex challenges.”

“Many organisations thrive amid complexity... they sort the signals from the noise”

Yves Morieux on “smart simplicity”

“Organizations should embrace an environment in which employees can work with one another to develop creative solutions to complex challenges.”

Yves Morieux

“Care is a human activity. Technology is not there to replace caregivers, it is there to support them.”

Dawn Bruce, Philips Services & Solutions Delivery Leader, Canada.

<sup>7</sup> Y. Morieux (2011), “To Boost Productivity, Try Smart Simplicity”, BCG Perspectives, July, Available at: [https://www.bcgperspectives.com/content/podcasts/strategic\\_planning\\_people\\_management\\_human\\_resources\\_morieux\\_yves\\_key\\_to\\_boosting\\_productivity/](https://www.bcgperspectives.com/content/podcasts/strategic_planning_people_management_human_resources_morieux_yves_key_to_boosting_productivity/)







As Yves Morieux's paired down steps had noted, healthcare is a complex industry and is becoming ever more so. Highly fragmented and largely viewed as the type of service you don't want to need, the industry has long suffered from a lack of coordination, high variability and a failure to tie costs to quality. In our attempts to fix this, healthcare organisations have become even more complicated.

Powered by a desire to solve complexity without complicatedness, they devised an operating model – Operational Intelligence – that would facilitate the change management required to make transformation stick.

After all, there is little doubt that integration, interoperability and population health will eventually lead to better outcomes and better health but the journey to get there is a struggle.

Leaders who were once tasked with overseeing a single acute care hospital or group of hospitals now oversee a portfolio of hospitals, employed physician groups, outpatient centres, contracts with health providers, community hospital affiliates, professional service groups and more.

One impact of this complexity seems to be less effective leadership and organizational performance with leaders citing that they're 'struggling'.

The ambition also reflected the findings of Stan Davis and Chris Meyer in their book, *Blur*<sup>8</sup>, which identified three factors that are significantly affecting the way in which business is being conducted: Connectivity, Speed, Intangibility. They suggest that, "the combination of all three is causing changes to occur in business at such a rate that managers can only view business today as a blur."

All three factors are directly related to advances in technology. The combination of connectivity and speed is enabling companies to focus on intangible assets of their business to gain a competitive advantage, which translates into providing better and more innovative services.

Technology has dramatically affected one of the basic concepts of operations strategy: making trade-offs between priorities. With advances in technology, managers no longer have to make pure trade-offs between competitive priorities in the way they once did".

<sup>8</sup>. Stan Davis and Christopher Meyer, *Blur: The Speed of Change in Connected Economy*

## 04. What is Operational Intelligence?





# Introducing Operational Intelligence

**It is said that the measure of intelligence is the ability to change.**

Operational intelligence is an integrated, service-based healthcare growth model with a focus on behavioral change to connect silos and build relationships to optimize planning, alignment and outcomes

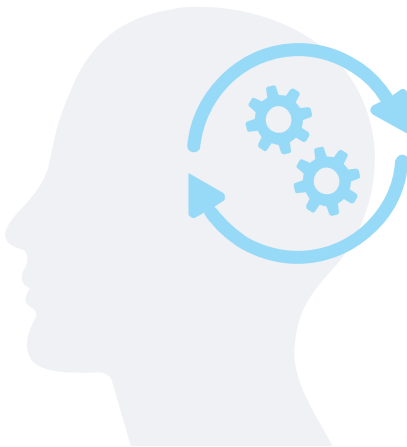
**Operational intelligence is a holistic approach to integrating (and growing the capabilities of) people, process and technology.**

Dawn Bruce and her Philips Service and Solutions Delivery teams help healthcare systems to apply and embed innovative operational management and improvement strategies by using the Philips Operational Intelligence approach of the partnership of continually synchronized people, processes and technology.

What began as an idea about how a hospital system and a health technology provider could better work together has become a powerful new operating model and way of working for hundreds of Philips and healthcare professionals, with its value all the more evidenced by the global COVID-19 pandemic.

# People + Process + Technology = Operational Intelligence

Operational Intelligence hinges on the ability for healthcare and partners to merge skills and capabilities. This approach to working together offers cumulative gains, unlocking hard value but also the softer, more people-powered value that is harder to achieve and quantify but delivers such significant benefits.



## Operational Intelligence model

- 1. Identify KPIs & key drivers
- 2. Set KPI-driven quarterly goals
- 3. Create empowered teams
- 4. Implement operating & tracking cadence





People

**Working as one: Partner skills merge with operations team's skills for continual, cumulative improvement.**

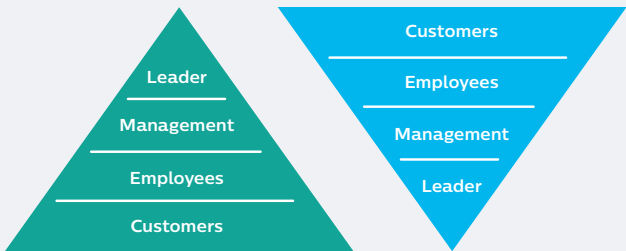
- **Servant leadership:** Servant leadership inverts the norm. Instead of the people working to serve the leader, the leader exists to serve the people. This is very much different to traditional leadership styles, focusing on 'command and control'.
- **Partnership behaviors:** Governance is put in place to determine all aspects of the partnership, including complementary behaviors
- **Collaborative recruitment:** Recruitment to staff and run the partnership must be a shared Philips and healthcare provider endeavour, where the prioritization is on identifying the behaviours and capabilities required on a contract-by-contract basis, but with passion as an absolute requirement. Individuals are recruited internally from Philips to ensure that they have an understanding of the company's best practices and processes but also a full understanding of the portfolio and network of contacts in order to access everything the customer may need.
- **Continuous check ins:** Continuously liaising and engaging with all stakeholders to ensure alignment, maintain positive momentum and manage blocks.
- **Service thinking:** A servitization growth mindset that raises the bar on value and trust-based relationships.

**In action example: Co-creation of teams**

All Operational Intelligence partnerships have dedicated full time teams based on the learning that the traditional base minimum doesn't work. Partnerships have to be resourced to win by investing ahead to build the space in the system to make a consistent, long-lasting impression on the customer.

**Bradley Lan Kam, Client Delivery Manager, APAC:**

**"Every individual recruited to service the customer will be different with different core strengths. They come from different backgrounds across Philips but we find the right people by recruiting jointly and prioritizing passion."**



Traditional leader

Servant leader



Process

**Operational Intelligence doesn't subscribe to process for process sake; instead, it unlocks intelligent, tailored processes. The opposite to the common one size fits all, Operational Intelligence demands that processes are finetuned and cocreated together to solve root causes, such as waste.**

The partner works with the healthcare provider to operate a flexible and innovative business model and a joint pursuit of innovation and excellence over the long term by devising and optimizing processes specifically for the customer's needs.

- **Lean business processes**, such as Lean Six Sigma<sup>9</sup> is used to reduce defects that can result in medical errors, manage costs and operational improvement and quality.
- **Complement KPIs with OKR**: Utilize the two offers for macro and micro operational visibility. OKRs are tied to business goals and objectives, rather than employees' work. KPIs on the other hand can be tied directly to an employee's day-to-day work — they're designed for achieving success in the workplace."
- **Harness disruptive innovation practices:** Much of the frustration linked with the scale and pace of change within healthcare is not linked to effort, talent or resources. Instead, it stems from attempts to make the current healthcare model fit the demands now expected of it. Healthcare operations learn from partner's own transformational journeys and fails as well as incorporate disruptive practices such as design thinking, systems thinking and multi-disciplinary teams.

**In action example: Co-process development and adaption**

By having the right caliber of resources, process refinement is possible. Process adaption examples can include processes to manage the contract within Q&R requirements, processes for vendor neutral selection, governance cadence, business management and escalation, business case creation, together with the creation of a dedicated KPI engine.

**Andre Smith, Philips Customer Delivery Manager Asia explains:**

**"The creation of a robust Confidentiality wall was vital to a vendor agnostic model. To keep all data sacred and ensure a hole-free audit trail, the Philips NSW team traced every transaction from end to end with the avoidance of SAP to ensure no divulgence of sensitive information and checks at every stage gate to prevent any unauthorized eyes. All transactions were strictly controlled with the flow of every transaction scrutinized at every stage gate to ensure no unauthorized access to information."**



Lean Six Sigma model

<sup>9</sup>. Purdue University, Lean Six Sigma Online  
<https://www.purdue.edu/leansixsigmaonline/blog/healthcare-advancement-with-lean-six-sigma/#:~:text=Using%20Six%20Sigma%20to%20improve,turnaround%20time%20for%20lab%20results>



# Operational Intelligence principles



Technology

**Technology is an enabler; Operational Intelligence makes it both connected and interoperable by breaking down silos to provide a comprehensive, ongoing overview of how technology is required and be utilized (by humans and systems) now and in the future.**

With Operational Intelligence, we believe that the right competencies in resources allows process refinement which in turn creates a demand to enable the behavioral requirements of appropriate technology. Operational Intelligence embraces technology and drive for interoperability but learn from business that achieving this is a cultural, rather than a technical shift.

• **Strategically manage technology:** Employ the strategic management of technology to break down some of the misconceptions of technology and equipment purchase, and establishes the foundation of a different type of problem-solving dialogue-based relationship that unpicks the true challenges and opportunities amid the complexity. Strategic technology management prevents purely transactional relationships, removes 'catalogue-based thinking' and drives true vendor agnostic solutions thinking."

• **Lateral technology approach.** From planning to optimization, maintenance, upgrading and enabling technologies, Operational Intelligence combines digitization with services, support and training, to enable operations transformation efficiently, effectively and empathetically.

• **Solutions based technology** Interoperable solutions that combine hardware, software and services.

**In action example: Real-time digital solution creation**

In addition to providing access to all the emerging technology and interoperability solutions Philips has available, Operational Intelligence is rooted in necessity as the mother of invention. Philips teams and their partners can leverage the might of Philips while also being able to develop bespoke solutions and act locally. This makes possible the retention and continuous development of the teams but also has technical and regulatory benefits such as keeping data on shore.

Scott Andrew Bradley, Head of Solutions ANZ explains: **"Our local team devised a real time, performance metric sampling and asset management tool, created bespoke for our client's needs, that could tap into data and deliver real time sampling of leading indicators in the data that affected performance KPI's or business metrics. This tailored solution enabled our customer to monitor and visualize all real-time activity related to their technology and generate pro-active reporting ahead of time. By flagging deviation from norms in real-time of the event happening this enables immediate action to be taken to ensure appropriate (pro-active) resolution."**



Business isn't a dirty word

Clinical is vital but a hospital – with operations as its control center – should also run like the best businesses of today



Partner with purpose

Healthcare partners need to share a common purpose and have their values aligned. Partners each bring valuable knowledge, expertise and assets to the table that should be acknowledged and utilised to elevate the common purpose. The sum is always greater than the parts.



Pre-defined plans don't work

Strategic partners need to work collaboratively and collegiately with healthcare to solve and plan from the realities of what's existing.



One partnership team

No sales mindset, just a service thinking, growth mindset.



## Service thinking is the growth mindset that supports Operational Intelligence

At Philips #servicethinking is our mind-set and model for great 'servitization' (end-to-end services, focusing on excellent delivery on customers expectations) and it is driven by five guiding principles:

### Be the customer's champion

#servicethinking raises the bar on our customer relationships to achieve new levels of closeness and responsiveness with our target customers.

### Act over the lifecycle

#servicethinking means we don't see customer relationships as a transactional one off investment or expense. Instead, we manage the lifecycle of our solutions to keep them available and relevant to our customers, prioritizing their needs and sharing the risks and rewards

### Execute flawlessly

#servicethinking is tied to delivering standardization and constant improvement and optimization

### Give success a new meaning

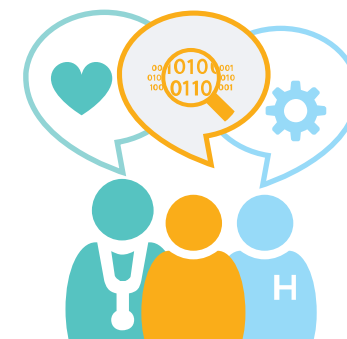
with #servicethinking we believe that purpose and profit go hand in hand.

### Use your talents to make the difference

#servicethinking encourages Philips teams to bring their talents and whole selves to impact change.

### #servicethinking

encourages Philips teams to bring their talents and whole selves to impact change.





# 05. Why Operational Intelligence works



## Why Operational Intelligence works

Operational Intelligence harnesses quantifiable change and performance but also focuses on the intangibles that make a big difference, such as soft skills and cultivating collaboration and enabling positive behaviors and innovative ways of working. Four examples from around the world of how Operational Intelligence can transform ways of working within a strategic partnership for significant healthcare gains include:



### Innovating the Procurement mindset – Literally, thinking ‘out of the box’

As health technology companies continue to partner with healthcare systems to develop solutions, a blocker to integration can be procurement as often existing procurement processes and models are designed to purchase single items of equipment – a CT scanner for example – rather than tender for wider, more integrated, vendor neutral solutions.

Dawn Bruce explains: “An Operationally Intelligent approach to procurement could, instead, help procurement experts to explore ways of unlocking more value by disrupting their approach. Procurement could instead focus not only on the price of a particular product or service but also on the overall value the solution could create, to encourage more collaborative tender approaches.”

According to reports, the Dutch Healthcare Authority is advancing this type of value-based contracting as a central concept throughout the Dutch health care supply chain, in tandem with the shift toward outcome-based health care. Denmark is also considering how to standardize health technology procurement while other countries, such as Ireland, are reported to be moving away from lowest price procurement.

The challenge here is to help procurement teams harness this new mindset and build the appropriate expertise and infrastructure to measure patient-relevant outcomes and total cost of care in order to demonstrate the real-world quantitative and qualitative benefits over traditional procurement methods. Similarly, procurement incentives should align with long-term value, rather than with just the upfront purchase price or financial rewards for hitting short-term budget targets.



### Reappraising Governance – From closing down to opening up innovation

Instead of being a start point for risk, worry and closed thinking, however, Dawn Bruce believes – from experience – that a modern, innovated governance model is central to the formation of any good relationship and is integral to realizing change management.

When embarking on a new external relationship, framing the governance process and adopting an innovative model from the start can make or break relationships, priming for success rather than failure.

Dawn Bruce explains:

“Many external partners will come to a healthcare organization and say, ‘we will do this for you and the process is this. The card is marked, the field is set before the match has even started.’

And yet operational challenges can’t be solved off the shelf. This is where a different approach to partnership comes into play which starts with a new approach to governance.

An operationally intelligent governance model and process opens conversations within the context of a confidentiality wall, provisional guidelines and the like, but also enables both partners to be less transactional and more solutions focused and coaching. An innovated governance approach becomes a virtuous circle of continuing learning and optimization.”



### Integrating Clinical, IT and Operations – “Great teams think unlike”

While Operational teams may have more exposure to responsible business and disruptive innovation practices, clinical and IT teams can tend to be siloed.

IT professionals can feel disconnected from the delivery of care while studies highlight that clinical hierarchies can isolate clinicians from communication. In fact, in the opening address of the 2018 BMJ/IHI International Forum on Quality and Safety in Healthcare in Amsterdam, Wim Helbing, highlighted this problem stating, “I’ve been a professor in a university hospital, leading one of the largest departments in the university children’s hospital. I never get any feedback.”

Dawn Bruce explains: “Clinical and IT teams within hospitals come from different worlds, talking different languages and with completely different objectives and goals. Interoperability isn’t just about getting technology, from PACs systems to telemetry and patient monitoring, talking, it’s about breaking down siloes within the hospital.

Bringing together multi-disciplinary teams lets specialists and generalists learn from each other and solve from a 360 degree perspective.

Multidisciplinary teams is a way of working that is so successful that many papers, including NICE guidelines, have been written on the subject, outlining how working this way limits adverse events, improves outcomes and contributes to patient and employee satisfaction<sup>10</sup>. And yet, it’s often under-utilized in healthcare. If brought together effectively, people who think differently have a lot to contribute to one another.”

In his book Rebel Ideas, the innovation expert Matthew Syed highlights that times of unprecedented change demand a need to think differently. He argues that solving of complex problem can sometimes only be achieved by assembling a group consisting of different-minded people and then getting the group to work on the difficulty using each individual’s particular talents to provide some part of the solution. By combining different perspectives, insights and thought processes, sometimes even the most challenging of obstacles can be overcome.

What the author refers to as ‘cognitive diversity’, i.e. diversity in the way a problem is looked at, the usefulness of any pre-existing knowledge of the problem and the thought processes that could be used to solve the problem, highlights the importance of bringing together people who think differently, such as clinicians and IT technicians to break down the invisible and visible barriers within healthcare systems.

It’s a belief backed up by Sara Canaday writing in Psychology Today who observed that, “a culture that encourages (explicitly or implicitly) conformity of thought breeds stagnation and imperils a company [or organization]”<sup>11</sup>

Adopting an operationally intelligent way of working helps to make sure all perspectives and voices are allowed into the discussion and given equal consideration, including those whose voices are usually absent. Groupthink creates pseudo-harmony and leads to serious errors. To counter this, forge multidisciplinary teams and invite challenge from the ‘unusual suspects’.



### Building resilience within long term teams, facing unprecedented challenges

Embracing an Operational Intelligence approach that prioritizes people and encourages growth mindset behavioral change is key to healthcare transformation not least in terms of enabling its disparate workforce to believe that change is possible but also to have the resilience to realise it.

This is especially vital since research indicates that resilience, originally studied in young children suffering major traumatic events, is an essential quality in healthcare and that for an environment to facilitate resilience it needs to be both high in challenge and support.

It’s a quality that has never been more in demand, as Dr Helen McGill, Medical Director and Responsible Officers, NHS Professionals, has recognized stating:

“Resilience is needed in the NHS now more than ever – at an individual, organizational and systemic level. We all need to work together to prepare for, respond to and adapt to both ongoing change and major unexpected disruptions. This is not just about surviving, it’s about minimizing crises and identifying improvements, both personally and professionally”<sup>12</sup>

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<sup>10</sup> Multidisciplinary in-hospital teams improve patient outcomes: A review, Nancy Epstein, 2014 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4173201/>

<sup>11</sup> Cognitive Diversity: What’s often missing from conversations about diversity and inclusion, Sara Canaday, Psychology Today, 2017, <https://www.psychologytoday.com/us/blog/you-according-them/201706/cognitive-diversity>

<sup>12</sup> The importance of resilience in the NHS right now, Dr Helen McGill, Medical Director and Responsible Officers, NHS Profession, <https://www.nhsprofessionals.nhs.uk/en/joining-nhsp/latest-news/detail?id=the-importance-of-resilience-in-the-nhs-right-nowEconomy>



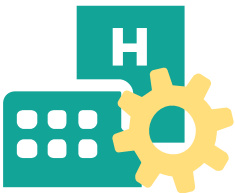
# 07. Operational Intelligence in action



## How to get started with Operational Intelligence

### 1 Step Start in operations, the control center of any hospital

Operations is probably the most critical function within a hospital today, as it has a huge impact on work climate, staffing, financial results and clinical outcomes. The control center of the hospital, a focus on operations is at the heart of cultural change.



### 2 Step Adopt a holistic, integrated approach fusing people, process and technology

Philips long-term strategic partnerships help healthcare systems to apply and embed innovative operational management and improvement strategies by using the Philips Operational Intelligence approach of the partnership of continually synchronized people, processes and technology, with an appreciation always of the human element to ensure change.



### 3 Step A focus on people should start by innovating the customer experience and embracing collaborative leadership and management styles

Priority: The customer experience

Customer satisfaction is a metric by which healthcare can measure itself and thrive and should be woven into the fabric of the organization. A standout example of zoning in on the customer experience is the application of Disney principles to healthcare. Many other examples of the transference of skills and learnings from the hospitality experiences abound, particularly from the luxury hotel industry. So much that increasing numbers of healthcare organizations are recruiting from the hospitality industry and luxury hotel operator chains such as the Marriot and Ritz Carlton.

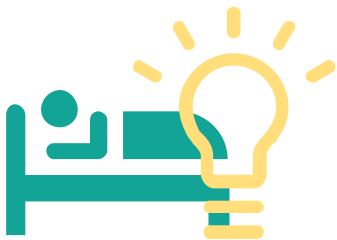
Priority: Leadership as a cross-functional art and the rise of the servant leader

In healthcare, it can be difficult to step back from the immediate 'point-of-care' role and think operationally.

Good management and leadership, which is critical for clinical departments to be operationally intelligent, is often an overlooked skill. And yet it is vital for operational, clinical and technical staff to appreciate and be taught the principles of effective modern leadership that focuses on collaboration and empowerment.

Operationally Intelligent partnerships harness the concept of heterarchy and servant leadership to straddle care and commerce. Servant leadership inverts the norm. Instead of the people working to serve the leader, the leader exists to serve the people. This is very much different to traditional leadership styles, focusing on 'command and control'.

Servant leaders possess a serve-first mindset, and are focused on empowering and uplifting those who work for them. They are serving instead of commanding, showing humility instead of brandishing authority, and always looking to enhance the development of their staff members in ways that unlock potential, creativity and sense of purpose.



## 4 Step Process: Adopting highly effective business processes including Lean, Agile as well as systems thinking and design thinking

Priority: Lean business processes.

Waste is a recurring problem in the existing healthcare system and Operational Intelligence helps enable partnerships to adopt lean business principles such as Lean Six Sigma to focus on their customers<sup>13</sup> through targeting eight key wastes<sup>14</sup>. For example, Lean Six Sigma is used to reduce defects that can result in medical errors, manage costs and operational improvement and quality.

Priority: Complement KPIs with OKR

Operationally intelligent long-term strategic partnerships use both KPIs and OKRs as performance indicators, but in healthcare, we find it particularly useful to track OKRs as they are more specific with quantifiable results. Utilizing the two offers the opportunity for macro and micro operational visibility.

Priority: Adopt disruptive innovation

One of the most positive contributions Philips can offer as part of its Operationally Intelligent long term strategic partnership is to share businesses-own learning from transformation and the innovations processes that have facilitated it.

**Dawn Bruce explains:**

**“In addition to being a responsible business propelled by our purpose to make life better, one of the most compelling reasons to partner with a company like Philips is the benefit of shared learnings in addition to shared values. From being a siloed organization, we’ve spent the past 7 years transforming to be a future forward health technology organization, working to address many of the operational challenges that our hospital partners are also facing. They can learn from our mistakes and employ the fast fail principle. In addition to this, we can also help them adopt the disruptive innovation tools that have made change stick.”**

Setting up multidisciplinary teams is key to the Operationally Intelligent way of working and is recognized for its value. In fact, the Centre for Workforce Intelligence<sup>15</sup> has cited the value of teams ‘working across a range of different professional groups, deliver[ing] higher quality patient care and implement[ing] more innovations in patient care<sup>16</sup>’.

Design thinking capabilities are also vital. The transformation of healthcare demands new models and new competencies more akin to the broad based competencies and capacities offered through design thinking. In addition with product, solutions and clinical excellence, operational professionals can benefit from being educated about systematic innovation processes that prioritize empathy and customer-centricity.

New skills development will focus on the development of empathy, radical collaboration and rapid prototyping. These soft skills should be coupled with systems thinking capabilities. This is the tech-originated practice of understanding the interconnectedness of how health systems operate, their complexity and how they interact. The rapid digitization of healthcare will necessitate systems thinking skills across many strata of the global healthcare workforce, far beyond those working in IT.



<sup>13</sup>. Purdue University, Lean Six Sigma Online <https://www.purdue.edu/leansixsigmaonline/blog/healthcare-advancement-with-lean-six-sigma/#:-:text=Using%20Six%20Sigma%20to%20improve,turnaround%20time%20for%20lab%20results>  
<sup>14</sup>. NEJM Catalyst, <https://catalyst.nejm.org/doi/full/10.1056/CAT.18.0193>  
<sup>15</sup>. Future skills and competencies of the health workforce in Europe, WP6, Centre for Workforce Intelligence UK, 2016. Funded by the EU.  
<sup>16</sup>. Team and working effectiveness in healthcare: Findings from the healthcare team effectiveness project, Borrill et al, 2013

## 5 Step Humanized technology: Embrace technology and drive for interoperability but learn from business that achieving this is a cultural, rather than a technical shift

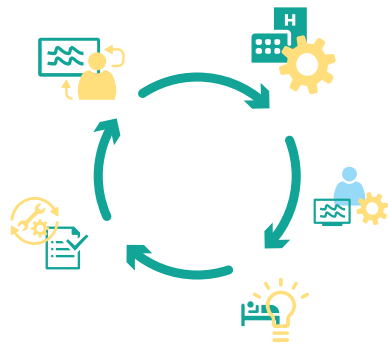
Priority: Strategically manage technology

Taking a strategic approach to managing technology establishes the foundation of a different type of problem solving, dialogue-based relationship that unpicks the true challenges and opportunities amid the complexity, preventing purely transactional relationships and removes ‘catalogue-based’ thinking to, instead, drive vendor agnostic thinking.



## 6 Step Bring it all together, iteratively, with partnership and a continuous feedback loop.

Projects objectives and people, processes and technology requirements and opportunities are constantly changing throughout a partnership, but by strategically managing it along an iterative cycle of governance, co-creation, monitoring, assessment, transfer, acceptance, utilisation, maturity, decline, reassessment, reappraisal and innovation, healthcare systems can reduce costs and improve professional and patient satisfaction while finding new ways to create value and advance their field.



The key to arriving at a successful ongoing transformation partnership (and the principle at the very heart of Operational Intelligence), is the creation of an iterative partnership of shared vision and values that results in a continuous dialog and feedback loop of people, process and technology to translate data-driven and human insight into tangible impact.





# Operational Intelligence in action: Global case-studies

**Healthcare systems that effectively sync their people, process and technology are leading the transformation race and delivering on their Quadruple Aim goals. Read how we're partnering to put Operational Intelligence in action all around the world.**



**Adopting an Operational Intelligence approach to create a new model for optimized ultrasound usage in Munich, Germany**

In the case of München Klinik, Ultrasound Demand Analysis, led by Philips Managed Technology Services consultant, Aline Mittag, in partnership with the customer, mapped 24 devices with a savings potential of €851,000, with costs savings from Day 1.

Philips Healthcare Transformation Services Consultant, Aline Mittag from Hamburg, Germany is one example of the many passionate Philips people working on long-term Philips Managed Technology Services partnerships in Philips, merging her skills with staff at customer hospitals for continual, cumulative improvement.

Aline explains, “We help hospitals see that it is better to have the right devices for their unique needs. They like this approach – and so do we – because you can build trust on a different level. It’s never “us” and “them” anymore. We’re one team with a shared, focused goal.”

**Examining the strategic role of education and training**

Mackenzie Health Canada standardized and optimized education services to support staff training for diagnostic imaging. Lorrie Turpin, Manager Clinical Education Imaging Systems, and Mike Yrcha, Client Relationship Manager, both of Philips Healthcare, Canada were key members of the team who designed and rolled out the innovative, future focused educational programme for thousands of staff, and all without disrupting key health services.

Executing such a training programme across a large health system was a logistical and operational challenge, as education responsibilities cover not just Philips modalities but also equipment for multiple suppliers. At Mackenzie Health there were over 30 third party technology suppliers and this challenge was exacerbated by a change in hospital sites.

Mike Yrcha, Client Relationship Manager at Philips explains: “MacKenzie Health is a smart hospital so we had to consider all of the interdependencies and make sure they were aligned prior to starting. A 12-week recurring training cycle was created per department and filtered all of their staff through this unit based orientation every week. It was a bit of a challenge for vendors, but they appreciated the set schedule and knew what they needed to do and when.”

The same training strategy used for diagnostic imaging was then implemented for ultrasound and, in part, patient monitoring. The training also incorporated the recruitment of ‘super users’ who continue to train current and incoming staff on the equipment.

The integrated education programme at Mackenzie Health has standardized education, removing inconsistencies or variations between vendors and assimilating training content and delivery. A training document developed with Mackenzie is tailored to each diagnostic device and deployed throughout all suppliers. Although the programme is always being optimized to find better ways to deliver training to staff.



Recruited ‘super users’ using the ‘train the trainer’ model.

**Mastering complexity through connection in Munich, Germany**

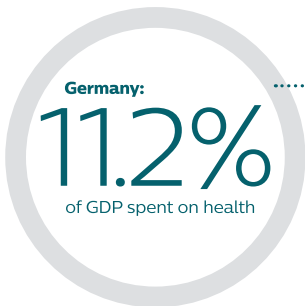
Stephan Bockers oversees one of the largest healthcare technology partnerships in Europe; that between Philips and München Klinik.

München Klinik sits at the center of a city with changing healthcare needs. As a municipal clinic it deals with a range of clinical challenges: ageing physical infrastructure, high personnel costs and technologies and processes that are out of date. Germany is among the top five spenders on health care, both as a proportion of GDP (11.2%) and per person (USD 5,986), according to the OECD.

The partnership between Philips and München Klinik focuses on a “needs-based” model of care, designed to address rising costs and reshape the clinic for its future health needs. The relationship between the two organizations stretches back many years, so when München Klinik approached Philips to discuss the concept of bigger solutions, there was already a shared understanding.

At one location, Stephan is project managing the building of a hybrid angio environment, which involves redesigning workflows to support patients and staff. On another, they are rebuilding the radiology department, a process which takes a year to complete. An installation of the Intellispace Portal 11 platform has streamlined radiology processes across the health system, allowing faster diagnoses.

And behind all of the changes: the negotiations, the teamwork, the planning, the restructuring, is a mindset of Operational intelligence, connecting people, processes and technology and ensuring the partnership stays on track. The delivery manager coordinates the long-term strategic partnerships team and, in this case, the initial governance structure needed modifications to be more flexible and agile.





# Operational Intelligence encompasses and has been used for:

Parts and backup equipment
<ul style="list-style-type: none"><li>Logistics, procurement, timing, shelf life, consignment, tracking, hot swaps, maintenance and configuration of hot swaps</li><li>In order to reduce downtime on equipment, hospitals need access to parts yet can't easily keep an inventory of these parts locally and so rely on multiple vendors to provide them with the parts with varied turnaround time. As part of an Operationally Intelligent partnership, Philips manages parts for hospitals through KPIs on rectification, and management of vendor relationships. Having back up devices ready for hot swap is also a key way to mitigate down time, but in a hospital setting the backup devices are often absorbed into daily use and/or not kept updated with PM, updates and loaded with the required configurations. Philips has the ability to manage this for them.</li></ul>
All year round, round the clock (24x7x365 day) helpdesk / CMMS operator (asset management)
<ul style="list-style-type: none"><li>Bilingual, shift work, volume of calls, duplication of entry, standard process</li><li>Across all modalities, MV and 3rd party non-addressable, compliance and paymech calculations, time stamps, interface with hospital/Philips platforms (SAP, SMAX)</li><li>Most hospitals have internal help desks and asset management software in place but they are limited in their skillset, capabilities and resources. A dedicated MTS helpdesk can help to manage the data tracking. The Asset management systems require constant data entry and most hospital do not have a dedicated CMMS operator, meaning that there is a GIGO scenario and the data in their systems cannot be trusted. At any given time, they are not able to pull any accurate information on the status of their equipment which is vital in determining budgetary capital and operational spend. We can do this for them and provide them with the data needed to make the right decisions.</li></ul>
Performance Reporting/Continuous improvement (piggy backs off of above)
<ul style="list-style-type: none"><li>Capture and monitor all KPIs with multi-level report out. Participation and innovation in governance committees, provide much needed data points to assist with decision making.</li><li>Continuous improvement metrics and use of Philips DM&amp;PS provide hospitals with a structured approach around planning around metrics and showing progress using the data points that we are able to provide</li></ul>

Room design support
<ul style="list-style-type: none"><li>Structural, workflow, interoperability, interface, 3rd party specs</li><li>Philips global experience can be accessed to help physically design new space (or room moves) around the requirements and specifications specific to the device. We can pull cables for them, offer turnkey construction, design guidance. We have access to subcontractors that specialize in this work. We can liaise with 3rd parties to own this across a MV platform. We have developed relationships and partnerships with 3rd party vendors that can allow for full interoperability and software interface, leading to smart hospital design and communication.</li></ul>
Procurement of 3rd party devices /3rd party service delivery
<ul style="list-style-type: none"><li>Many vendors do not have the operational capability to meet the KPIs that the hospitals need, or they are unwilling to accept KPIs and penalties. Philips can negotiate training, parts, backup equipment and manage this</li><li>confidentiality wall, pricing knowledge, partnerships, vendor qualification, service KPIs, pass through</li></ul>
Clinical Training throughout life of equipment, collaboration, 3rd party,
<ul style="list-style-type: none"><li>We can work in a confidential environment to procure all manner of devices for them using our skilled procurement team and eliminate the need for them to enter into arduous negotiations. We can organize the site visits, leverage our buying power, provide industry knowledge on specifications, flatten their investment/spend through lifecycle replacement models ensuring that their equipment is latest technology, keep track of their FCOs/update and upgrade paths for existing equipment, manage the vendors, ensure that the vendors are held to high service deliverables, manage the lifecycle for training (biomed/ clinical)...</li></ul>
Quality and Regulatory
<ul style="list-style-type: none"><li>Ownership of devices, latest technology</li><li>There is complexity in each market/country around meeting the demands of the governing bodies around product certification, mandatory testing and Field Change orders. Philips can take varying degrees of this burden off the shoulders of the hospital and can play a role in expediting submissions in order to provide latest technology. Our cluster leaders can also work very closely with the customer and BUs to influence and prioritize functionality requirements of the hospital. This helps Philips to advance our equipment and ultimately better serve our customers and patients.</li></ul>

Preventative and Reactive maintenance with guaranteed KPIs and flexible hours
Hospitals would require a complete restructure of org (highly unionized in Canada) and process in order to meet their desired KPIs, We have the infrastructure, experience and capability of creating a new standard of performance within the hospitals, less downtime and more patient throughput.
Broad Based Technology Management (systems integration and interoperability)
<ul style="list-style-type: none"><li>Understanding of the full picture rather than just our piece of it. We can take complimentary technologies and create the perfect room scenario rather than implementing individual widgets. We bring our partnerships, experience and solutions mindset to hospitals that typically run very much in silos. Rather than creating solutions that are not standardized across department, we can work holistically within the hospital to create a collaborative environment and leverage standard equipment and approach</li></ul>
Data-driven practice management
<ul style="list-style-type: none"><li>Compiling best practice from around the world in an unbiased approached and convincing people that there is a better way than what they are doing</li></ul>
Patient-centered care solutions
<ul style="list-style-type: none"><li>Working with unionized workforces to implement change, adapting to the demographics of the community, hospital capabilities, there isn't a canned approach.</li></ul>

Contract Compliance Reporting and management
<ul style="list-style-type: none"><li>Very complex financial models require detailed reporting and tracking, complete back end structure needs to be created to manage changes and monitor KPIs, adjustments to EIP are frequent and require massive rework. We take on much of this burden for the customer and work with them to live within their budgets and offer a flat unitary payment over a long term agreement. This allows the hospitals to manage their life cycle spend and focus on clinical outcomes vs operational and capital issues</li></ul>
Financial support
<ul style="list-style-type: none"><li>Multiple financial models are available and exceedingly complex. Work with the hospital to determine their needs and manage the model around this.</li></ul>
Change management
<ul style="list-style-type: none"><li>Often overlooked. Most organizations forget about this critical piece of management. We have experience in solutions transformation and can help our customers to understand the impact of this change on their teams and how to best lead them through the change curve</li></ul>
Resources
<ul style="list-style-type: none"><li>Philips can provide resources to help offset skillset gaps within the hospital, providing short term consulting (HTS), long term support (Biomed) etc. We have multiple offerings that can help them to manage their internal and external resource needs.</li></ul>







# Interested to learn more? Lets talk. Even better, lets collaborate

Philips Services & Solutions Delivery is your partner for enterprise-wide operational excellence, enabled by Operational intelligence. For more information, please visit <https://www.philips.com/operational-intelligence>



### Cybersecurity services

Cybersecurity in the age of connected health is vital. Philips Cybersecurity Services provide superior care to the security of the data and devices in your hospital; from enterprise cybersecurity and hardware and software upgrades, to staff training, incident response management and security by design.



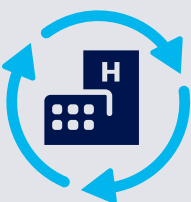
### Education and Training Services

Philips Healthcare Education and Training Services help unlock the full potential of your staff, technology, and organization through innovative, meaningful, and evidence-based healthcare education.



### Maintenance Services

Philips Maintenance Services helps you drive performance, usability and interoperability by keeping your technology sustainable and reliable.



### Managed Technology Services

Philips Managed Technology Services is a comprehensive, outcome based service and solutions programme designed to help you in managing and optimizing your healthcare technology.



### Healthcare Transformation Services

Philips Healthcare Transformation Services help you achieve clinical excellence and operational efficiency while improving financial performance and delivering quality patient care.



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