QUALITY IN RETREAT

A REPORT BY THE BEAMTREE GLOBAL IMPACT COMMITTEE



Beamtree works with health organisations around the world using data and technology to better capture, manage and leverage human expertise. Beamtree makes it simple for healthcare providers to access quality information, automate wherever possible and make informed decisions.

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INTRODUCTION – REIGNITING THE DEBATE ON QUALITY

Beamtree's Global Impact Committee (GIC) provides advice on strategies and policies, promotes best practice and innovation in health data, and advances the Beamtree mission to mobilise the power of data for a healthier, happier world. It leads thought leadership programmes to promote the priority of quality in healthcare and oversees schemes to empower global comparison of health outcomes.

This first report reflects the discussions of the GIC in its first nine months of operation. During conversations chaired by Dr Mark Britnell, one key theme emerged: there has been a decline in the focus on quality by the leadership of health systems all over the world. This was not just during COVID-19 – although the pandemic clearly accelerated the quality retreat – but can be traced as far back as the global financial crisis of 2008. Other key barriers to placing quality at the heart of health systems include the need for regulatory environments that enable data-driven healthcare and implementing learning health systems which measure what matters and do not just focus on 'easy wins' such as targets driven by political imperatives.

So what is quality? Simply stated, it is the standard of care as defined by patient outcomes, safety and experience. All these domains are measurable. This definition leans heavily on the work completed by Lord Ara Darzi and adopted by the NHS National Quality Boardⁱ and is translatable to almost all health systems globally. The **US** *Institute for Healthcare Improvement* also talks about the quadruple aim: improving the health of populations, enhancing the experience of care for individuals, reducing the per capita cost of healthcare and having a happy and fulfilled workforce.ⁱⁱ

This report is aimed at senior leaders of healthcare systems, politicians and policy makers and intends to provide practical advice and interventions. It does not attempt to provide all the answers but instead draws from the experience of GIC members to offer a new contribution to a vital debate. What more can healthcare leaders do? What new ideas and technologies can we learn from and develop? How can the focus be on what matters – patient care, safety and experience in an environment in which staff morale and well-being can also flourish?

FOREWORD

Nearly 15 million deaths have been attributed to COVID-19ⁱⁱⁱ and the impact on healthcare systems across the world has been unforgiving. Globally, it is estimated that up to 180,000 health workers lost their lives during the pandemic.^{iv} These startling numbers are grim statistical support for the argument that healthcare quality has not only stalled but is in worrying retreat.

All countries have seen waiting times increase and deaths from cardiac conditions and cancer rise. Mental health problems have been exacerbated, while the frailty of some elderly care services has left families unsupported. The global workforce crisis has been exposed, health inequalities amplified, and life expectancy arrested. Government debt has soared, and livelihoods have been lost. The retreat from quality can, arguably, be traced back to cost reduction programmes in some developed countries following the Global Financial Crisis in 2008. Sadly, these efficiency measures reinforced the idea that healthcare is a cost rather than a value. It is a myth that healthcare leaders around the world must work hard to dispel to ensure populations in all countries can make healthy contributions to their economies and their societies. The International Monetary Fund in October 2021 projected that the cost to the global economy of the COVID-19 pandemic, until 2024, would be around \$12.5 trillion.^v Politicians and others have begun to see that health system strengthening is a value and yields economic benefits, not a cost.

The Global Impact Committee, drawn from health systems leaders across the world, has first-hand experience of these challenges. Our brief report makes a simple argument: the only way to reverse the retreat from quality is to march steadfastly towards it. We must measure and manage it transparently so that providers, purchasers, and governments can be collectively held to account. We do not underestimate the effort required. But we hope that – as we all learn to live with this pernicious pandemic – clinicians will find their voice once again and quality will reappear, top of the agenda.

Digital capabilities have advanced at enormous speed – momentum which must not be lost. Workforce agility, skills development and some education reforms are encouraging. New technology and big data are driving innovative approaches to health protection and promotion, while most nations are exploring integrated models of care to enhance population health. In some countries, like **India**, governments have begun to invest more in public healthcare.

Clearly, governments and healthcare payers need to invest in workforce, infrastructure and capacity, but solely following traditional investment routes represents a missed opportunity. A powerful combination of people and technology can forge new advances in quality. The latent power of data can be accelerated, and automation can aid and improve clinical decision making, while patients can become partners and communities can become carers like never before.

Our research shows that global health leaders share two common commitments: we must measure what matters to patients and we must ensure clinicians are connected to the best possible data. We hope this report adds weight to the argument that, in healthcare, better has no limit.



Dr Mark Britnell Chair, Global Impact Committee

PART 1 – QUALITY IN RETREAT

While priorities, problems and perspectives vary from nation to nation, a global focus on healthcare quality and excellence, rather than mere adequacy is vital. However, this report argues that in recent years the pursuit of quality has in fact become a retreat.

The reasons for this worrying reversal are manifold, but chief among them are serious workforce challenges. Nearly one in five **US** healthcare workers quit their job globally during the pandemic^{vi} and this is coupled with a misplaced obsession, in many health systems, with politically attractive performance targets and structural issues such as building new hospitals and not organising care (and funding) around the patient. Moreover, there is widespread concern among many health and care leaders that safety has become a proxy for quality. The danger is that healthcare is effectively becoming reduced to a reactive service, rather than a public good which prolongs lives, provides effective, efficient and modern treatments (or palliative care), gives patients excellent experiences, enhances economic productivity and promotes social cohesion.

Patients' experience of their care is also suffering. For example, in the **US**, since the start of the pandemic, there was a 4.5% decrease in patients' likelihood to recommend a hospital.^{vii} Finally persistent issues, which had perhaps been (partly) addressed before the pandemic are re-surfacing. For example, high variations in the use of antibiotics continue globally and the World Health Organisation issued warnings during COVID-19 that the trend will further be fuelled by the inappropriate use of antibiotics during and after the pandemic.^{viii}

There are other examples of how economic developments in recent years coupled with the pandemic have led to quality being in retreat. In the *Medicare Payment Advisory Commission (MedPAC)* 2022 report to the **US** Congress on the *Medicare* payment policy, MedPAC remark: *"The current state of quality reporting is such that the Commission's yearly updates can no longer provide an accurate description of the quality of care in [Medicare Advantage]*.^{|x|}

However, it must be noted the pandemic also created fertile grounds for innovation. Many healthcare systems pivoted to meet pressing and previously unexperienced demands. Adoption of technology grew significantly – not least digital adoption by doctors. In **India** the government increased public spend on healthcare by 1.25%. This was initially spent on vaccines but now continues on wider public health initiatives. There was also investment in infrastructure such as oxygen manufacturing points.

The retreat from quality is illustrated by a number of worrying patterns:

- Delays in elective surgery and surges in waiting lists
- Reduced access to primary care, leading to a diagnosis deficit for life limiting conditions such as cancer and cardio-vascular disease as well as mental health problems
- Deviation or less attention paid to established policies such anti-microbial resistance
- Relaxing of staffing ratios
- Reduced frequency of multi-disciplinary team meetings
- Capacity issues
- Restriction of visiting hours and contact with family, especially in end-of-life care
- Patients being asked to eschew face to face consultations in favour of virtual ones without being given a choice
- Widening of health inequalities

There has been a sharp decline in quality across a number of these areas over the last few years and this section highlights some examples of these from the countries represented by the GIC. However, as our data shows, many spheres have been in decline in several countries for many years longer. These vignettes help evidence the points made later in the report. They are not a comprehensive review of the problems but illustrate the issues the GIC has identified. They are used as a catalyst to frame the solutions outlined below.

1. Waiting times

The Emergency Medical Journal in the UK highlighted the problem of increased waiting times in emergency departments estimating that there is one additional death for every 72 emergency department patients who had to wait for between eight and 12 hours for a hospital bed.^x Also, in the UK, ambulance waiting times hit such a high that patients were asked to make their own way to hospital,^{xi} and data for England from April 2022 showed that 6.2 million people are waiting to start treatment, the highest number since records began in August 2007.^{xii} In Australia 7.6% of public patients – about 57,300 – waited more than 365 days for their operation in 2020–21, up from 2.8% per cent the previous year.^{xiii} Finally, in Canada, almost 560,000 fewer surgeries were performed over the first 16 months of the pandemic compared with 2019.^{xiv}



"Health boards need accurate, timely data to hold their executives to account. They should pick a limited number of pertinent indicators and measure these in real-time and link performance to executive careers."

Janet Davidson (Canada)

2. Cancer

Breast cancer screening fell by an average of five percentage points in 2020 compared with 2019, across countries of the *Organisation for Economic Cooperation and Development (OECD)*.^{xvi} In Italy, the total volume of malignant cancers surgeries declined by 25% by the end of March 2020 and remained at these levels even in the post-lockdown period.^{xvii} In Australia, while cancer survival rates have improved overall, people diagnosed with cancers such as pancreatic cancer, lung cancer, and mesothelioma have a less than one in five chance, on average, of surviving at least five years after being diagnosed. Aboriginal and Torres Strait Islander people, as well as people in lower socio-economic groups, have lower survival rates compared with other Australians.^{xviii} The mortality to incidence ratio for cancer in India is much higher than in high-income countries, with cancer contributing to 8% of adult deaths. A study published in

Nature Cancer, examining Indian data, showed a substantial decline in the number of new registrations, follow-up visits, cancer surgeries, radiotherapy and chemotherapy sessions during the peak of the lockdown in 2020. The authors assert that diagnostic delays and treatment interruptions are likely to contribute to stage migration and higher cancer-related mortality in the next few years and impose an added burden on healthcare systems.^{xix}



"Hospital boards need to go beyond safety and really push quality as the key headline. This would then get them into the realm of appropriateness of services, unnecessary admissions and patient/consumer experiences. They must be across all of this (and more) to deliver a high quality learning health system."

Jim Birch (Australia)

3. Cardiac care

In Italy, in-hospital mortality for cardiology significantly increased by 26% on average during lockdown and by 15% in the subsequent period.^{xx} An analysis of healthcare data in Ontario, Canada, found a significant decline in referrals and procedures performed for common cardiac interventions after the onset of the COVID-19 pandemic. Patients awaiting coronary bypass surgery or stenting were at higher risk of dying while waiting for their procedure compared to before the pandemic (although wait times were no longer).^{xxi} The *Global Burden of Disease Study* shows the age-standardised mortality rate for cardiovascular disease (CVD) in India is much higher than the global average. CVDs strike Indians a decade earlier than the western population. Mortality associated with coronary artery disease in Indians is 20–50% higher than any other population.^{xxi}

"Healthcare should not be viewed as an expense, it's an economic benefit."

Martin Bowles (Australia)



Example data: Cardiovascular disease mortality trends for US males and females (1968–2016) – after great improvement since 2000, deaths have started to rise since 2010^{xxiii}

4. Mental health

In the UK, a 2021 study by the mental health charity Mind, found that around a third of adults and young people said their mental health had got much worse since March 2020 and 58% of people receiving benefits said their mental health was currently poor.xviv A study in India found a multitude of adverse social, health and psychosocial effects on vulnerable children and young people as a result of the pandemic.xvv About a third of Aboriginal and Torres Strait Islander peoples in Australia experience high to very high levels of psychological distress, indicative of a probable mental health condition, compared to one in eight non-indigenous Australians. This means they are 2.6 times more likely to experience high to very high levels of psychological distress than non-indigenous Australians.xxvi In September 2021, findings released in Canada from the Survey on COVID-19 and Mental Health indicated that 25% of Canadians aged 18 and older screened positive for symptoms of depression, anxiety or posttraumatic stress disorder, up from 21% in 2020.xxvii The strain on mental health has also been evident globally on healthcare staff. A rapid review published in January 2021 confirmed that the psychological impact of COVID-19 on healthcare workers is considerable, with significant levels of anxiety, depression, insomnia and distress.xxviii Technology can offer one part of the solution, with tele-medicine/therapy and helplines providing access to care from home. However, data from The World Health Organisation (WHO) sourced from a survey of 130 member states found that technology as a mitigation strategy for disrupted or reduced mental health services which are more available in higher income countries, so increasing the disparity in access to services based on income.



Example data: Use of technology as a mitigation strategy in 2020 suggests that low income countries risk getting left behind – data collected by the WHO categorised by World Bank income group^{xxix}

"With the pandemic, we're just focused on staying above water, despite the high vaccination rate. But **Singapore** has not given up on quality – for us it cannot ever be in retreat."

Associate Prof Cheng Ooi Low (Singapore)

5. Workforce

Nearly one in five healthcare workers in the **US** quit their jobs during the pandemic.^{xxxi} In the NHS in **England**, the number of staff resigning voluntarily hit almost 70,000 in the nine months to January 2022. This was up from around 49,000 in the same period in 2020, and 57,000 in the same period during 2019.^{xxxii} An 'unprecedented strain being placed on general practice' has been highlighted by clinical leaders in **Australia**^{xxxii} with calls (among other demands) for a public health communication strategy on self-care pathways to alleviate the load on hospitals, GPs and their staff. See page 13 for more commentary on this topic.



Example data: The Global Healthcare Workforce Crisis^{xxxiv}

"Changing the teaching and training of healthcare workers is essential. We need to change the way we do it – adapting and adopting to an approach where patients are partners, and the newest technology and innovations are part of the syllabus."

Prof Walter Ricciardi (Italy)

6. Care of elderly people

In the UK, a 2022 ruling by the High Court found that discharging untested hospital patients into care homes in spring 2020 was *"necessary to preserve the capacity of the NHS"*, but the government acted illegally by failing to recommend they were isolated on admission.^{xxxv} The *Journal of Long-Term Care* shows that in Italy, COVID-19 had a significant impact on an already fragile long-term care system. The main weaknesses – fragmentation, challenges regarding coordination with the healthcare sector, questioning the vocation of the services, and inadequate allocation of resources were exacerbated during the first phases of COVID-19 and extreme fragmentation had occurred.^{xxxvi} The *Lien Foundation* and *Oliver Wyman* reported in 2020 that (at that time) residents of care homes made up 80% of all pandemic related deaths in **Canada**, 63% in Spain, 40% in the **US**, and 36% in the **UK**. They noted that Japan fared much better. Despite a larger proportion of citizens living in care homes only around 14% of Japan's COVID-19 deaths occurred in long-term care facilities. **Singapore**, similarly, only had 14% of deaths in care homes.^{xxxvii}

"To measure quality successfully, health systems need to look beyond the hospital. Shifts towards excellent ambulatory care and people being kept healthy at home with conditions managed so they age well now need to be the focus of healthcare leaders."

Tony O'Brien (Ireland)



7. Life expectancy

In November 2021, the *OECD* published preliminary data that showed that life expectancy in 2020 fell in 24 of 30 countries. The drops were 'particularly large' in the **US**, which lost 1.6 years of life per capita, and **Spain**, which lost around 1.5 years. Reductions were also seen over one year in Lithuania and Poland (1.3 years) and in Belgium and **Italy** (1.2). The **UK's** decline of one year of life expectancy places it alongside Slovenia and the Czech Republic and in the bottom nine countries on this measure. In **Italy**, Poland, Spain, and the **UK**, life expectancy is now around 2010 levels.

The OECD said that the exceptionally high number of deaths in 2020 had affected life expectancy. The report listed only six countries where life expectancy had not declined: Norway, Japan, Denmark, Finland, Latvia, and Costa Rica.^{xxxix} Potential years of life lost (a summary measure of premature mortality) provides an explicit way of weighting deaths occurring at younger ages, which may be preventable. It is another way of measuring the effect on life expectancy and the part healthcare interventions can play in reversing this trend.



Example data: In the UK, life expectancy has been falling since 2010^{x1}

Example data:

Confirmed and probable or suspected COVID-19 deaths accounted for by deaths within care homes and by care home residents overall^{xxxviii}

"Using our data, we can show how interconnected things are and how redundant silos are inside an organisation. Giving people access to data helps organic networks grow and helps people see things differently. You wouldn't go into an operating theatre without a sharp scalpel – and you shouldn't go in without the right data, too."

Prof Keith McNeil (Australia)



Example data:

Cumulative years of life lost (YLLs) to COVID-19 per 1000 people against cumulative population up to age 50 years^{xii} in many countries the potential life years lost is rising

What is clear is that, while mitigating circumstances such as COVID-19 can be found, the central point is that focus has been lost, especially at leadership level. Quality is no longer a focus, but a buzz word. Healthcare has become skewed to money and corporate targets, with the hospital CEO now becoming a COO to pursue political and corporate targets – *"saving a penny and wasting a pound."* Alongside budgetary considerations, there must be a relentless focus on the experiences of patients and patients as partners. In many countries patient satisfaction is falling so quickly that benchmarks are being recalibrated.^{xlii}

PART 2 - HOW TO REVERSE THE RETREAT OF QUALITY

The post-COVID-19 era presents a genuine opportunity to transform healthcare around the world. However, it is an opportunity at risk of being missed unless healthcare systems and their political leaders commit themselves to the pursuit of quality.

In many countries, the pandemic has seen several quality initiatives 'backburnered'. However there have also been advancements which need harnessing and scaling – most notably in digital, data and life sciences. These can provide a pathway back. This can be achieved through a combined effort: resurrecting the positives from the pre-pandemic world, layering on the innovations of COVID-19 (e.g., rapid approval of vaccines, partnerships and investment from life sciences and digital solutions), and addressing head on the current challenges of demand versus capacity. By fusing approaches to best practice in this way, there is scope for new models of healthcare to emerge.

The practical challenges involved in a return to quality are, of course, deep and complex. However, there are several common themes which cross national boundaries and offer opportunities for positive action around the world. These are:

- 1. Workforce
- 2. Automation
- 3. Timely and visible data
- 4. Technology, staffing and training
- 5. Transparency
- 6. Partnerships between public services, industry and academia
- 7. Keep analysing and acting on quality

Data and technology are key transformative drivers for many of these – not least in their ability to improve patient outcomes, reduce pressure on acute services, tackle staff burnout and revolutionise staff education and training.

OPPORTUNITIES FOR ACTION

1. Workforce

Projections indicate that by 2030 demand for health workers around the world will rise to 80 million. However, the World Health Organisation estimates there will be a worldwide shortage of 18 million – more than 18% of the people needed. This represents a global health workforce crisis which must be addressed as a matter of urgency.^{xliii}

GIC chair Dr Britnell suggests 10 changes to tackle the challenge and increase capacity to care by roughly 20%:

- 1. Reframe and reposition the debate about workforce planning to one about productivity, health and wealth creation.
- 2. Encourage governments to become more entrepreneurial, stimulating health worker supply through a host of measures including the relaxation of training limits.
- 3. Encourage the rapid and large-scale adoption of models of care that already exist in some countries to increase productivity and capacity to care.
- 4. Provide human and technological support to enable patients to be active partners in their own care.
- 5. Provide greater recognition and support for communities, volunteers and families, who already provide most of the care in society.
- 6. Support health professionals to practise at the upper limits of their clinical licence, encouraged by regulators.

- 7. Create a new cadre of peripatetic care assistants who seamlessly straddle health and social care to deliver services in communities, hospitals and homes.
- 8. Stimulate the disruptive digital possibilities of Artificial Intelligence (AI) and other advances such as robotics and blockchain to increase productivity and time to care.
- 9. Embrace and shape the impact of digital technology so organisations become 'learning health systems' which educate, re-educate and support workers to gain competitive advantage while maximising staff well-being.
- 10. Overhaul approaches to the leadership, development and coaching of individuals and teams, using proven techniques which raise motivation and performance.

Not only do these approaches rightly place the workforce at the centre of the healthcare debate, but they reframe the solutions to seize opportunities afforded by technology advances such as automation.

"Clinical guidelines and decision support should be constantly and consistently developed and applied. This will drive a reduction in unwarranted variation in health care delivery."

Dr Shane Kelly (Australia)

2. Automation

Automation can improve patient safety and free up clinicians and vital non-clinical staff (such as hospital coders) to focus on more complex cases and more patient-facing time. However, healthcare lags behind other industries.

Software systems have been built which have, ultimately, become 'documentation systems with a little bit of auto entry and results retrieval'. The burden of labour-intensive tasks which could be automated lies at the heart of much staff burnout – with implications for patient safety. Much more can be done quickly to embed automation in health and care delivery. Adoption of closed loop medicines^{xliv} administration would be one example of this, as would an increased use of clinical decision support systems and automated discharge summaries.

Ordinarily, adverse events are investigated retrospectively by a team of people, often many months after the event. Real-time data and machine learning can support quicker, evidence-based investigation to create a learning healthcare system. This should become standard practice.

Automation can also help manage demand. Automated processes such as remote monitoring and predicting deterioration can keep people at home and out of hospital, improving their quality of life and reducing the burden on staff – however the time and cost of staff training and the change management required needs to be assessed and accounted for. Automation can build in better system resilience.

"Quality has been reduced to an excel spreadsheet: The numbers become part of the daily grind instead of something meaningful. You get a spreadsheet of 500 indicators – which ones are you going to focus on?"

Janet Davidson (Canada)

CASE STUDY - Using machine learning to prevent deterioration on the general ward

Two public hospitals within the Central Adelaide Local Health Network (CALHN) have become the first in **Australia** to implement an artificial intelligence system providing advanced warning to medical staff of patients deteriorating. The Ainsoff^{xlv} system monitors a host of patient variables and pathology results and uses machine learning to anticipate deteriorations in patient status, automatically alerting medical staff and allowing them to intervene sooner. Early reports from staff show the system is already providing benefits. By supplying clear and immediate information on patient deterioration, it empowers nursing staff to lead the decision-making process with the clinical team. It successfully predicted 19 out of 23 patients who needed to move to the intensive care unit. It also predicted 73% of medical emergency team calls more than one day in advance. The alerts did not create a large addition to the workload of clinicians, with most alerts representing a deterioration of a patient that required action by the medical staff. This work is now being evaluated by two hospitals in the NHS in England with a view to a pilot implementation.

3. Timely and visible data

Leveraging 'latent data' could present a real opportunity to improve quality. These are the nuggets of information buried, overlooked or actively ignored within organisations which can be mined and refined to help drive quality. If the data is timely enough, the clinician can review and improve practice with the experience of the patient fresh in their mind.

Healthcare is the industry that has the most to gain by using data better. But winning this argument has proved challenging – not least at the political level. Data protection laws and the use of personal data for anonymised research often stymies this. The widespread uncertainty and confusion about how legal principles such as legitimate interest, consent and anonymisation interact to enable data to be used to measure quality is a major barrier to driving improvement. The data debate – the need for timely, authenticated high-quality information – is an argument which must now be won with policy makers around the world.

CASE STUDY - Tackling the opioid crisis in the USA

Opioid use increased during the pandemic, leading to upwards of a 30% increase in opioid overdose deaths from 2019 to 2020 in the United States. *UChicago Medicine (UCMC)* had addressed this through activities such as enhancements to electronic health records and educating physicians and patients about opioid risks and alternative medications and practices. UCMC has documented dramatic reductions in opioid use including through physician dashboards that are used to identify outlier prescribing behaviour, followed by assessment of an individual physician's patient population to see, for example, if an outlier clinician cares for a high number of chronic pain patients. In addition, the organisation identified in 2016 that there were only seven approved disposal stations for prescription medications within 20 miles of the medical centre. UCMC registered to become a United States Drug Enforcement Administration authorised collector, accepted over a ton of returned prescription medications in the first year alone and continues to direct the programme.

Dr Don Rucker (USA)

[&]quot;We need to understand a world where pandemics keep happening. How do we deliver world class healthcare in these circumstances?"

4. Technology, staffing and training

There is a growing consensus that data and technology must play a critical role in plugging the workforce gap – especially as older, experienced staff depart (or decide not to return, post- COVID-19), creating training problems for their successors. Better methods and tools are needed, and AI and machine learning can play a part here, such as by students completing virtual operations during medical school. Lessons from the rest of the digital world will shape the clinician of the future. AI and clinical decision support will be used more than ever before because it is not humanly possible to stay abreast of all clinical advancements globally. Staff must play a key role in making the technology work. They can be best placed to not only collect the data, but are also essential to validate it and ensure the data quality. In fact, excellent data quality must be an overreaching principle in all the information that underpins IT systems.

The mission must be to use data and AI to help the global healthcare workforce become more efficient, responsive with training and support personalised care – all of which will lead to better patient experiences. Burnout comes from labour intensive tasks which could possibly be automated. These problems have been solved in other industries. By adopting AI and machine learning in healthcare we can free time for staff to spend it at the point of care with patients. Technology is already driving a 'channel shift' in terms of patient interactions, not least via video and at-home diagnostics and testing. Technological enhancements can also be used to mitigate risks in processes where error is known to occur such as patient handovers.

Finally, harmonising internationally is key, so staff can move seamlessly across borders. Degrees and qualifications for health professionals should be respected across boundaries.

"In general the gap between innovation in data driven healthcare versus say, online media or robotic manufacturing is primarily down to the speed with which ideas can be developed, tested and implemented. System leaders need to consider whether the status quo is the right model. Is, say, the current pharmaceutical/medical devices model working or is something a bit different needed?"

Roger Taylor (UK)

CASE STUDY - Using technology and data to address workforce challenges

Technology also needs to work hand in hand with a human understanding of what workforce exhaustion means. Burnout is an occupational phenomenon caused by organisational, environmental or systemic issues in the workplace. Preventing burnout requires a common understanding of what it is – and is not. It relies on professionals being able to acknowledge the problem, measure its prevalence, assess its impact and implement collaborative solutions. Robust data – on burnout itself, not just on indicators like sick leave and staff turnover – are crucial to guide the development of solutions and create the case for long-term investment. The internationally validated Well-Being Index^{tivi} is an example of an interactive tool that organisations can use to measure well-being and burnout in their own staff over time, track the effects of interventions, and compare their results to those of similar organisations around the world. Through Beamtree's partner, Health Roundtable, the Well-Being Index in now in hospitals in **Australia** and New Zealand ensuring a validated way of measuring and monitoring this worsening issue.

"We won't have enough healthcare professionals globally to fill our staffing needs. Technology and automation are key to meeting the global workforce challenges."

Thomas Jackiewicz (USA)

5. Transparency

Transparency is critical in winning the confidence of patients. Public trust in once much-cherished institutions has been eroded in recent years – *"doctor knows best"* no longer really cuts it. Transparency is equally important in achieving actual as well as perceived quality. This needs to start with the data collection (as mentioned elsewhere in this report), which needs to be ubiquitous, timely and automated where possible.

Healthcare systems need to display and explain how costs, care and quality interact. Too often, price is used as a proxy for quality where transparency or patient education is absent. Big data and quantum computing means that information can quickly be accessible in high volumes, high velocity and high variety.

Simply put, every clinician should know their clinical outcomes. They should be able to describe what they do, how many times they have done it, and define how well they do it. Governments also need to increase public reporting and make information accessible and understandable to the public they serve. This should engage with as wider audience as possible even if this puts those that provide care outside their comfort zone. This data should also focus on narrowing inequalities.

"Don't normalise the deviance that it's ok to be mediocre."

Prof Keith McNeil (Australia)

6. Partnerships between public services, industry and academia

A definitive that emerged in managing the COVID-19 pandemic was that partnerships between government and industry can not only drive innovation, but they can also deliver much greater value for money, when incentives are properly aligned. The unprecedented medical crisis witnessed the private sector scale up brilliantly with regard to testing and also development for mass vaccination. Private healthcare, however, was as challenged as the public sector as the impact of the pandemic was pervasive and quite overwhelming. In many systems, the private sector eschewed income and their own stream of activity to act as an overflow for stretched state funded systems at cost or even less. The success and speed of the national vaccine programme in **India**, a first of its kind in terms of scale was a successful outcome of industry (pharma), academia, regulators and health services working cooperatively to create and license safe vaccines, informing and educating the community and also motivating citizens to be inoculated at a mass scale, as quickly as possible. This was replicated in the **UK** and many other parts of the world.

Stimulating a genuinely mixed economy of healthcare in all aspects of the industry – from clinicians to suppliers is pivotal to delivering quality and fostering learning health systems, that share resources and innovation. Furthermore, the opportunities in global best practice sharing need to be realized. Policy makers in individual countries must look at adoption of the best standards and methodologies developed by either the public or private sector in leading health economies. Failing systems should not be left to flounder on their own.

Also, better research governance and regulatory frameworks are key to making these partnerships successful. Many regulations that exist to protect patients create unintended barriers to innovation. Hence, there needs to be mechanisms, whereby such barriers can be safely removed, but without allowing unsafe practices, and also more rapid translation of research into action and practice. The underlying drivers of why health systems do not adopt at the speed of other industries must be investigated and a concerted focus must be made to overcome the barriers and challenges. practices and more rapid translation of research into action and practice. The underlying drivers of other industries must be made to not adopt at the speed of other soft why health systems do not adopt at the speed of other of why health systems do not adopt at the speed of other industries and more rapid translation of research into action and practice. The underlying drivers of why health systems do not adopt at the speed of other industries need investigating and overcoming.

"The world connects at speed in so many other industries – this needs to happen in healthcare too." Dr Sangita Reddy (India)

CASE STUDY - Technology to enhance care processes outside hospitals

In India, high-quality data and AI are being used to transform outcomes. In 2020, *Apollo Hospitals* deployed several unique strategies like AI based Risk Scores, an integrated app for teleconsultations and medication delivery, health monitoring services at home, and methods to rapidly update care protocols across its entire ecosystem of network hospitals. The organisation continues to use data to measure how COVID-19 impacts chronic diseases and apply AI models for improving outcomes both within and outside hospitals.

7. Keep analysing and acting on quality

It is imperative that health system leaders at board level have access to timely accurate data to keep analysing and acting on quality in the interests of patient care and safety; workforce retention, recruitment and resilience; and in the interests of wider economic and social goals.

Data and automation are central to monitoring quality, easing the burden on a battle-scarred workforce which will need both replenishing and re-energising via radical systemic change.

CASE STUDY - Collaborating globally

Healthcare organisations are constantly striving to improve quality and over the last decade this has included looking overseas to understand what they can learn from other health systems. Sharing 'global best practice' has accelerated further since the COVID pandemic first began sweeping across the globe in early March 2020.

One of the first networks to launch a series of COVID-19 webinars was the *Global Health Data @ Work* network (which joined Beamtree in 2021). It brought together healthcare leaders and clinicians from **Italy**, **Australia**, The Netherlands, Belgium, the **US**, Norway and the NHS in England. They facilitated webinars during the early days of the pandemic enabling hospitals to share real-time outcomes data and their experiences of dealing with patients as well as nervous staff and policy makers. For the team at *University Hospitals of Coventry and Warwickshire NHS Trust*, the key learnings from international colleagues included sense checking if they were on the right track and led to them adopting technology such as iPads for patients to speak to their friends and family when access was restricted, increased staff testing to ensure a resilient workforce and tailored PPE and educated staff in what PPE to wear, when to wear it and how to wear it.

"Working across borders is critical for healthcare leaders, having access to up to date, honest information means teams can quickly adapt care and systems to deliver the best possible outcomes."

Prof Andy Hardy (UK)

And finally...

Quality is in retreat – but those who run health systems should advance towards it in the interests of patients, healthcare staff and broader well-being.

"The first step is to acknowledge that we're not talking about it." Prof Sir Bruce Keogh (UK)

POSTSCRIPT

There is no more important issue in healthcare than the pursuit of high quality, sustainable health outcomes. As the Global Impact Committee report finds, health services have to recover their focus on this critical priority and energise local and international collaboration. Sir Bruce Keogh notes: "The first step is to acknowledge that we're not talking about it."

Key decisions need to be taken to support quality: policy makers need to cut through the obstacles to data sharing, for example, so that clinicians and their patients have access to better, more timely insights and can make more informed decisions. Healthcare is held accountable for its outcomes with data that is often unreliable and out of date. The persistent humming of the fax machine in the background noise of modern healthcare reminds us that the benefits of digital technology to support automation of routine process and reduce administrative burden have not yet been realised for many on the frontline of health and wellbeing.

Shared decision making, new models of care, the workforce challenge: harnessing the power of the modern information revolution to serve patients and communities across the world is critical to truly person-centred care.

I would like to pay tribute to the members of the Beamtree Global Impact Committee for their work in delivering this call to action – and to Dr Mark Britnell, chair, for his leadership.

They invite us all to make the case for quality as the first principle of modern healthcare – and to support the Learning Health System, one that is constantly reviewing and challenging itself on its transparency, values and outcomes. This is a case that all players in the health eco-system must make – Beamtree is shaping its contribution to empower care givers and those they serve with data tools and decision support technology to improve quality.

This is an economic, social - and above all - human imperative.



Tim Kelsey CEO, Beamtree

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Acknowledgments

With thanks to the Beamtree team who produced the report: Jennifer Nobbs, Alex Kafetz, Cheryl McCullagh, Sharon Roumanos, Lisa Schoemaker, James Thompson, Nidhi Bedre, Bruno Dampney, Rhidian Wynn Davies.

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xliv	The functionality that supports the cross checking of the correct patient, medicine and prescription using digital technologies
xlv	Developed by Beamtree see https://beamtree.com.au/beamtree-acquires-ai-pioneer/

xlvi https://www.mywellbeingindex.org/