

# Delivering Safer Care: Endless Quest or Jewel within Reach?

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### INTRODUCTION

The first challenge in preparing for an address such as this is a title. Something that generates curiosity yet gives a sense of the nature of the subject. The key word in my title is DELIVERING, a concept which should be more central to our thinking as healthcare professionals. The time and effort we spend designing, discussing and refining the system of care for our population, or planning the care for individual patients, is a demonstration of our intention. However, patients can only judge us on the reality of what they experience, on the care that we DELIVER. Too often there is a significant gap between what was intended and what was delivered and therefore experienced. Improving Quality in healthcare and patient safety will be progressed when we find ways of reducing that gap.

### 'THE BEST THE WORLD HAS EVER SEEN'

My 35 years as a doctor have seen amazing changes. New knowledge and new technology has improved our ability to care for our patients and successfully manage their illnesses. Today we have expensive and complex therapies that successfully treat acute myocardial infarction, stroke, and many cancers where before we merely treated symptoms with little ability to reverse the condition itself. We can also make great advances in ways that are not expensive or dramatic.

In 2007, the then Royal Hospitals Trust was one of 20 UK Trusts participating in the Safer Patient Initiative, a national programme supported by the Boston-based Institute of Healthcare Improvement and funded by the Health Foundation, a UK-based charity. As part of that work, the Regional Intensive Care Unit (RICU) was tasked with reducing the rate of ventilator associated pneumonia (VAP). At the time our VAP rate was not high, relative to national norms and we viewed those cases we did see as unavoidable. Nevertheless, over 18 months, we reduced our VAP rate by about 75%. This occurred without new equipment, more powerful antibiotics or cleaning agents. It cost nothing - yet saved a number of lives, reduced morbidity and also saved resources by reducing (i) the extra days of ICU care required to treat pneumonia and (ii) the cost of antimicrobial agents.

The doctors, nurses and support staff achieved this by delivering patient care as they intended, by delivering a group

of interventions known to reduce VAP (the ventilator care bundle) to every patient - and not to only 60-70% of patients some of the time which had previously been the case. This came about as a result of examining, and then improving, how we interacted as a team and narrowing the gap between our intentions and the reality of what we were delivering.

This huge effect on outcome, using what I came to know as Quality Improvement (QI) methodology, made me realise that focusing on how we deliver care and removing the obstacles to improvement would dramatically improve outcomes for our patients. In 2011, I became the Clinical Director of the Health and Social Care Safety Forum, a small unit within the Public Health Agency with a regional remit to provide support and leadership in patient safety and quality improvement.

Last year I completed a 4 month Advanced Training Programme at Intermountain Healthcare in Salt Lake City. Intermountain provides healthcare for more than 2 million people. It's a highly regarded, not-for-profit system which has a world-wide reputation for safe, reliable care. I went to Intermountain in large part to work with Dr Brent James, a surgical oncologist and world leader in Quality Improvement (QI). Dr James leads the Institute of Healthcare Delivery Research at Intermountain. Note the focus of the Institute is researching how we DELIVER healthcare. QI does not generate new knowledge but explores ways of optimising how we use existing knowledge to benefit patients.

Before I continue, it is important to acknowledge and celebrate the standard of care we CAN and DO deliver most of the time. Dr James describes healthcare today, when delivered as intended, as "the best the world has ever seen". Furthermore, data from the USA-based Commonwealth Fund show the United Kingdom's National Health Service ranks number 1 in the world on quality of care when compared to healthcare systems across the globe. It is also less expensive than all its rivals with the exception of New Zealand.

In N. Ireland, and within our own organisation, we have

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evidence of high standards of care across many disciplines producing excellent outcomes. The RVH fracture unit admits more fractured femur cases than any other UK unit and has the joint lowest 30-day mortality. Data for RICU, compiled by the national audit body show we admit more patients than all but 1 of our UK peers and have a standardised mortality ratio consistently lower than the UK-average. Some patients in our care who survive critical illness would not have survived in an “average” ICU in the UK. Patients receiving renal dialysis across the 4 countries of the UK have high survival rates, with figures for Northern Ireland at least as good as those in England and better than Scotland or Wales. In maternity care, excessively high C/section rates are often a marker of poor quality care. Figures from Royal Jubilee Maternity Hospital show an impressive reduction in C/section rates over the last 5 years (Fig 1).

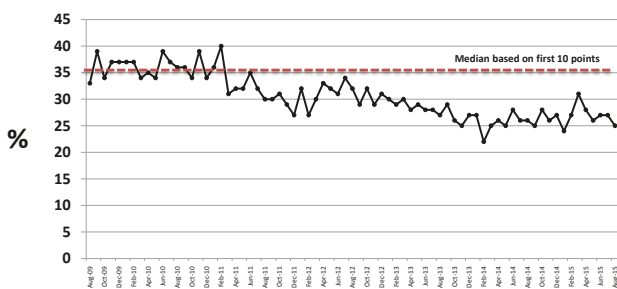


Fig 1. C/section rate by month

In 2007, during the Safer Patient Initiative, the rates of MRSA bacteraemia in critical care were reduced, but still occurred at least once every 2 months. We have improved further since then, our last MRSA bacteraemia was in October 2012, almost 2 years ago.

### WHY WE NEED TO CHANGE?

If outcomes are so good, why do we need to change? We need to change not because of our best but because of our average or worst performances. There is a large variation in the standard of our care. Delivering acceptable or better care most of the time, lets say 90% of the time, is not good enough. When there are millions of patient interactions every year, this means tens of thousands of patients receive less than acceptable care.

The reports by Francis, Berwick and Keogh documented failures in providing care that is safe and person-centred in NHS England. We know that similar events happen within our own system and that the care of the frail and elderly, in particular, is sometimes less than we would wish. We also need to plan for a future in which there is increased demand for healthcare - but reduced funding.

During my medical career, life expectancy in NI has increased by 6-8 yrs, a cause for celebration. Our challenge is to ensure those extra years of life are predominately healthy life years. We have rapidly increasing rates of obesity, diabetes, alcohol-related illness and dementia. These will all increase demand

for healthcare at a rate that will outstrip any increase in resource. So we have to learn to use our time and resources better, reduce duplication and wasted effort. To do this will require a change in how we deliver care to individual patients and across the system. Sometimes this will involve being more honest and transparent. Thirty years ago, many patients were judged too old or too chronically ill to be admitted to ICU. In some cases this judgement was wrong. However, today the expectations of what we can achieve have grown exponentially and sometimes surpass what we can realistically achieve. We are still making many poor decisions - but for different reasons. Today we are more likely to over-treat at the end-of-life than under-treat.

Despite the new buildings, advancing technology and specialisation, changed workforce, reduced working hours and multiple handovers of care, our approach to delivering care has not changed sufficiently. Many of our current ways of working belong to an age when care was delivered under the leadership of a senior doctor and a ward sister/manager with a stable (and relatively large) team of medical and nursing staff. In that system it was very clear who was in charge.

As we care for increasingly complex patients with multiple co-morbidities, requiring the input of many services, there has been a fragmentation of care. Many patients do not know who is in charge of their care and sometimes that care seems short on compassion. We assume our patients are treated seamlessly, getting the best care available from all the services we provide. However, each service tends to focus on how it works internally – rather than how it links with other services. So many patients, whose needs cross several services, sometimes have a journey subject to obstruction and delay. The elderly are most prone to this problem and will be compromised most by it.

Cyril Chantler, a former chair of the Academy of Royal Colleges summed this up when he said “medicine used to be simple, ineffective and relatively safe, now it is complex, effective and potentially dangerous.”

Sometimes our system of care reminds me of the recent football World Cup Final. We, unfortunately, often work like the Brazilian team, individually very skilled but with no cohesion, no overall plan and no sense of the bigger picture. We should model our approach on that of the Germans who, on that day, harnessed their individual skills to progress an overall plan and reach their full potential.

We must acknowledge that some of our staff feel increasingly pressurised, undervalued and in some cases disengaged. In January 2014 NHS Trust finance directors, rated staff morale their greatest concern - ahead of A&E targets, cancer waiting times, performance issues, HCAs and others.

### HOW CAN WE IMPROVE CARE? WHAT SHOULD WE AIM FOR?

Patient Safety is defined as avoiding harm from care that is supposed to help – hardly a lofty ideal. Safety is one of 6

domains of quality. To aim for safety alone is akin to aiming for the minimum pass mark in an examination – unambitious and often destined to end in disappointment. We would all want care that is not just safe but care that was also effective and person-centred.

Quality2020, our regional strategy to improve care, marks a change from the usual NHS methodology based on regulation, policies and targets. Such approaches don't engage staff and without engagement, culture, behaviour, and patient care, usually remain unchanged. The importance of culture was highlighted by Robert Francis in his report of the Mid-Staffordshire NHS Trust and by Don Berwick. In his report *A promise to learn – a commitment to act*, Berwick stated "Culture will trump rules, standards and control strategies. A safer NHS will depend far more on major cultural change than on a new regulatory regime."

Figure 2 summarises factors that many believe support safe, high-quality healthcare. A workplace culture that truly puts the patient at the centre; uses information to learn; values staff, engages them and uses their knowledge and talents; a culture that identifies and develops leaders early.

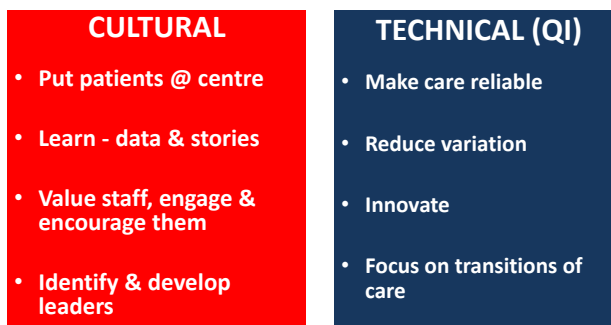


Fig 2. Factors supporting high quality healthcare.

Changing culture is a slow process and even after several years, evidence of progress may be less than convincing. So alongside changing culture, we need to focus on changing the processes we use to deliver care using a structured approach. We need to make care more reliable. We need to reduce the variations in care. We need to give staff the opportunity to innovate and we should focus our efforts on the transitions of care where we know many failures occur. Improvement science gives us a structure within which we can achieve these goals.

To demonstrate what is meant by the term "reliable care" let us consider the early management of severe sepsis. There are 6 elements of care to be delivered, ideally within one hour of making the diagnosis. Imagine a ward where staff, relying on their professionalism but with no agreed approach to managing sepsis, deliver each of the six elements on time to 9 out of every 10 patients. While this seems quite good at first glance, it means only 53% of patients would receive care as intended. In practice, many clinical areas would not manage to perform to the level of "9 out of 10". Reliability will require us to develop ways of working which make it easy to do the

correct thing; which ensure that care is delivered as intended 99.9% of the time, at least.

Variation in care occurs when there is no agreed plan between (or within) teams on what care to deliver or how to deliver it. Today we often have different clinical teams or wards using a different series of processes (pathway) for patients with the same condition. Each stage of the patient journey takes variable amounts of time and resource and each step is micro-managed, requiring more work. It is difficult to recognise if anything is missed, if we strayed from our clinical pathway, because there is no recognisable pathway. The end product (the therapy/treatment delivered to the patient) is dependent on arbitrary factors such as the make-up of the team, unstructured interactions, personal preference/habit and perceived wishes/beliefs of the clinical leaders.

In a system with little variation, patients with the same diagnoses/symptomatology receive care that follows the same pre-planned, semi-automated steps which have been pre-designed by clinical teams. The time (and mental capacity) liberated by reducing the need to micro-manage every step of the patients' journey is then available to (i) make specific modifications to the pathway due to individual patient factors (co-morbidities) or patient preference (ii) have meaningful communication with patient/family (iii) train or mentor junior members of the team. This approach leads to hospital stays that are shorter, more beneficial and consume less resource.

Some may believe that I am advocating a reduction in clinical autonomy. I would reply that automating the basic steps in good patient care frees clinicians to exercise real autonomy; to do what Brent James calls mass-customisation – let the system follow basic steps in care and (having looked at the patient as an individual) personalise their care if required – something we don't do well at present as we rush around micromanaging the mundane and re-inventing the wheel.

The concept of clinical autonomy assumes we accurately convert all forms of evidence (research, audit, observations and experience) into conclusions, which in turn determine our actions. As doctors we say "just give us the evidence and leave us to figure out what to do". We then give ourselves lots of latitude citing "clinical judgment". However, there are now many confounding factors preventing us reaching the appropriate conclusions and therefore actions. The greatest is that we can no longer memorize, analyze and apply all the relevant information due to the explosion in published research and its complexity. Centres admired for their clinical effectiveness such as Intermountain Healthcare and Virginia Mason focus on reducing variation - "It is more important that you do it the same than that you do it right (you will always choose something reasonable)". Such an approach reduces rates of error and teams use the scientific approach to gradually and systematically improve.

You may believe that such standardisation stifles innovation. I would suggest the opposite. At present, to treat the same condition, we have teams using different processes of care

and sometimes not delivering the care they intended. This unnecessary variation and lack of reliability might be viewed as care which is chaotic. The “noise” in such a system makes identifying a beneficial innovation very difficult. Even if a beneficial innovation were identified, such a system would be unlikely to be good at adoption and spread of the innovation. Alternatively, in a world of standardisation, there is a strong baseline against which new ideas can, and should, be tested in a planned way.

**HOW DO WE LEARN FROM ERROR?**

In Dr James Reason’s “Swiss Cheese” model, adverse events are rarely the result of a single factor or error but the outworking of a combination of factors. Luckily all of these rarely occur together and so there is no adverse event but instead (with a subset of the factors present) there is a near miss. Near misses could give us an insight into the defects and dangers that lurk in the system.

Major harm events must be reported though we could debate whether we recognise all major harm. Minor harm events sometimes go unreported and near misses are rarely reported – or even noticed. Thus, often we do not give ourselves the opportunity to learn unless, and until, a patient is harmed - often significantly harmed. This is the failure to learn that Sir Liam Donaldson called inexcusable.

The “Fair and Just Culture” model espoused by The Mayo Clinic system is an important part of their approach to patient safety. Following an adverse event or near miss, they pose a number of questions - Was it a system problem (as most are) or was it a problem of behaviour? In reviewing behaviour, the key issue is the actions of individuals, and not the outcome of the action, since the result of an action might be catastrophic or nil depending on luck/chance. In situations where behaviour is the cause of a adverse event, Mayo also distinguish between *genuine error*, where the response is console and learn; *risky behaviour* which requires coaching and possible redesign to prevent repetition; and *reckless behaviour* which requires a disciplinary response.

**STRUCTURES AND SKILLS FOR IMPROVEMENT**

What should a QI team look like? As we might expect, the team needs managers and/or senior clinicians who have content knowledge, can influence others to change and help remove some barriers. A significant portion of the team should be drawn from front-line staff who know “why things work or don’t work”. As well as contributing their own knowledge, front-line staff bring information and ideas from colleagues to the QI team and bring potential changes/solutions back to the front line to test and to gain buy-in. Thus, before a new approach gets to the point of implementation, it can become collectively owned by all who will use it. The QI team should be led by one or more individuals with quality improvement skills, high credibility with the group and skills in facilitation. At Intermountain, to help unblock the bigger obstacles across the organisation, senior organisational leaders interact with QI teams on a weekly basis.

The methodologies most commonly used in healthcare for QI are the Model for Improvement and Lean. Both have their origins in industrial engineering and have similar principles. The model for improvement is simpler to teach and is founded on the work of Walter Shewhart and Edwards Deming. It is based on 3 fundamental questions (Figure 3) and builds from starting small - with 1 patient, or on 1 day, or 1 ward using Plan-Do-Study-Act cycles, testing and measuring new approaches or processes. If these new ways of working are advantageous then they are further tested at ever-increasing scale across the system. Front-line staff do this testing and contribute their detailed knowledge to help shape the changes. In this way, the changes become a new collective process owned by those who will use it – rather than one imposed from above. This helps build the will for change, get the best ideas and ensure implementation.

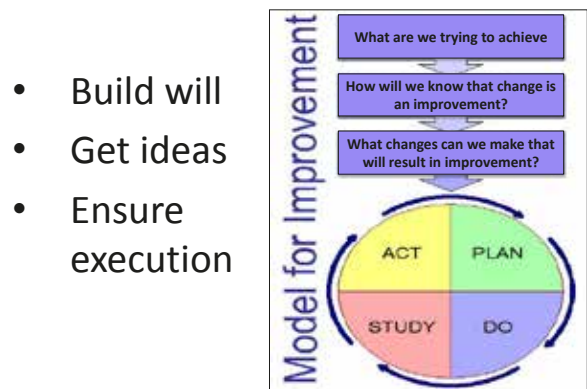


Fig 3. The model for improvement.

Using this approach we worked with our Emergency Departments (ED) across Northern Ireland to improve the early management of patients with severe sepsis. In 2011, data from a national audit suggested that the UK performance in applying the Sepsis6 approach in ED was poor with NI among the worst performing regions. Within one year, using a QI approach to change, our Sepsis6 compliance fulfilled most College of Emergency Medicine standards and by 2014 NI was one of the UK highest performing regions in terms of compliance with the Sepsis6 (figure 4).

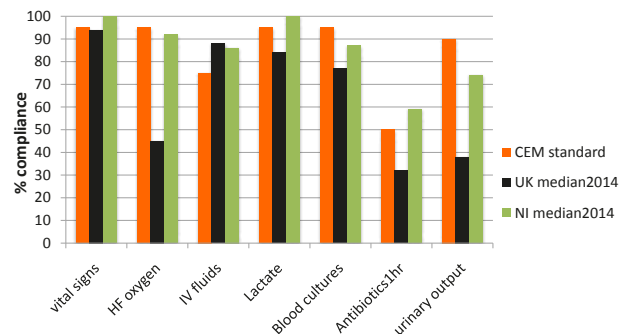


Fig 4. Severe sepsis in ED - 2014

Figure 5 shows data from a clinical team improving the out of hours process for CT scanning patients with stroke within

45 minutes of arrival - crucial to delivering thrombolysis, to those who need it, within 60 minutes. Using the model for improvement the team developed a new process that substantially reduced the variation and average time needed to CT scan these patients. The team realised that they had a major obstacle in that the CT radiographer was not resident after midnight. However, having improved their process dramatically, they were able to make a persuasive case for the small extra resource needed and were able to reach their goal. Often when we had the resources our answer to a problem was to buy more staff, more equipment or more capacity. Of course, as in this case, the real answer was to improve the process and then provide resource if it was still needed.

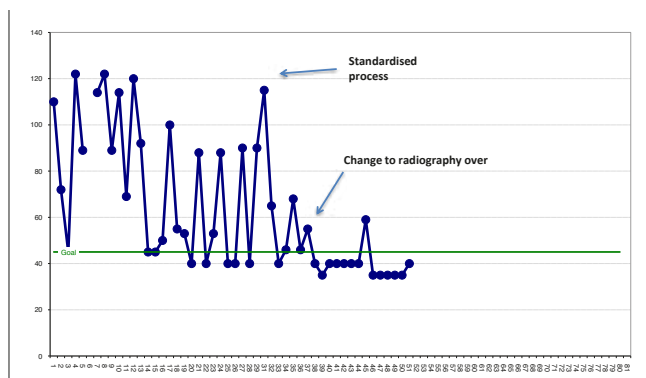


Fig 5. Time to complete CT scan for stroke thrombolysis (out of hours)

Another way to improve the reliability of a process is to map it out and re-design to remove steps that are unnecessary or unproductive. Every extra step is an additional opportunity for error and/or delay. When a team mapped the process of discharging a child from a paediatric ward with the correct medication they found 25 steps. With redesign, they reduced this to 10 steps.

The majority of staff within our system have knowledge or expertise which can help improve how we deliver care, if we can unlock it. Over the last 4 yrs we have invested in staff who wish to equip themselves with skills related to QI. One such group are those who have undertaken the Scottish Patient Safety Fellowship, a multiprofessional, 10 month training programme involving development of knowledge, skills and the completion of a QI project. Currently we have 18 of these individuals which we call our Safety Forum Scottish Fellows. This represents an investment of over £250,000 to date, but we need even more individuals with these skills.

Within Quality 2020 there is an intention to develop QI experts across HSC who will support a workforce who have knowledge of QI relevant for their roles – from top to bottom of the organisation. An Attributes Framework has been developed and tested with frontline-staff and undergraduates. In the future, we intend that all undergraduates develop the attributes in level 1 of the framework during their training and that developing/recognising level 1 skills will be part of the induction process for other staff. QI must become a more explicit component of the activities discussed at annual appraisal.

**MEASURING CHANGE AND CHANGING BEHAVIOUR**

Change is common in healthcare and the public sector. Improvement comes through change, though change is not always an improvement. If we want to know if change is an improvement, we need to measure. Measurement can also reassure us during change that we are making progress. However, measurement alone is not enough. If we wish to engage and motivate staff to change, we need to display relevant, recent, easily-understood measurement data openly and widely.

Histogram A in Figure 6 is typical of reports produced by many NHS trusts. It suggests no change in the annual frequency of reported adverse events in two successive years. Graph B in Figure 6 is a run chart of the raw monthly data from which histogram A was constructed. This tells a different story – of a change that was reversed. Drilling down to discover what caused the change and its reversal would yield useful information. Simplifying data by averaging it over time often results in lost information - the story behind the data is buried. Analysing data as collected, and not after aggregation is often very revealing.

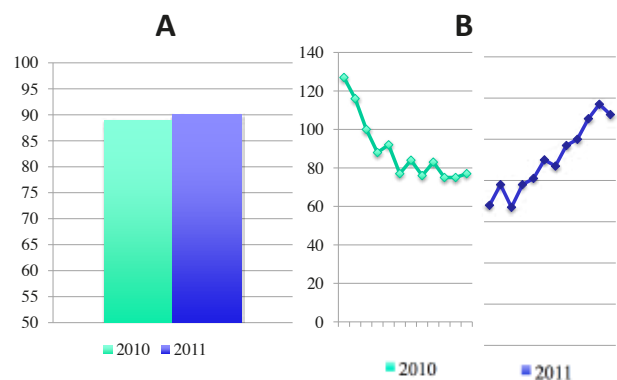


Fig 6. Aggregated v original data

The ultimate aim in measurement and the collection of data is to influence behaviour. This requires an emotional connection with those with whom the information is shared. A CEO of a world famous children’s hospital wanted to use their annual adverse event rate, which was comparatively low at 0.54/1000 admissions, to build the will to change. He chose to reframe the information by stating “Next year [without change] we will seriously harm 500 children”. His intention was to galvanise his team to change and improve. He chose a way of making the data more personal, painful and urgent. He appealed to the hearts of his staff. In the following 3 years there was a 70% reduction in serious adverse events in that hospital.

**LEADERSHIP FOR IMPROVEMENT**

To improve across our system, we need QI experts with leadership skills and/or leaders with QI skills. A hundred years ago next month, the Imperial Trans-Antarctic expedition set off for the South Pole under the leadership of our fellow-

countryman, Ernest Shackleton. The expedition ended in failure but is celebrated as one of the greatest examples of leadership through adversity. In his book, Frank Worsley, the captain of the expedition's ship, *Endurance*, recounts Shackleton's many leadership skills. Significantly, he dwells on Shackleton's relationship with, and protective attitude towards, his men. Was this how he inspired their loyalty and kept them motivated? Was it the men's perception of Shackleton as a resourceful leader and protector that kept them alive and gave them the belief that they could reach safety?

Staff in healthcare also face adversity and need to be protected by leaders at all levels. They are often so busy and/or stressed that they feel unable to engage in anything outside core work activities. Sometimes they are unfairly dismissed by those promoting change and improvement as "people who just don't get it". We need to give staff space and opportunity to re-engineer how they do their jobs – making their roles more rewarding and better for patients.

We should grow and nurture a culture where staff feel safe to contribute their knowledge, ideas and expertise. We should protect them from wasted effort, from situations that are impossible to resolve, from expectations that can't be met, from a culture that may be potentially threatening. If the workplace has psychological safety, staff will ask questions, ask for feedback, express their doubts, offer ideas. In short, they will become workers who are committed, motivated and loyal.

As I near the end of this oration, I ask for your assistance. QI has a growing but still peripheral presence in our health and social care system. It is the province of a small number of doctors, nurses and allied health professionals – who are viewed by some of their colleagues as possibly a little deranged! QI needs to be main-streamed, it needs to be part of everyone's agenda. That requires all junior and senior members of medical teams to show interest and give support. It requires a number of doctors to become expert improvers and role models.

### **PATIENTS AS PARTNERS**

We must learn from, and with, our patients. Only they are present at every step of their journey through our healthcare system. The Public Health Agency's 10,000 voices initiative allows us to get both qualitative individualised feedback from patients and a quantitative assessment of our strength and weaknesses. The importance of person-centredness has been shown by the huge spread of the #hellomynameis campaign

led by Dr Kate Granger, a doctor with a terminal illness who realised how poor our culture is around introducing ourselves to our patients.

These are common elements in the "patients as partners" movement. I believe, however, that we need to go much further. We need to make it clear that healthcare can reduce the burden of illness and disease but it cannot make citizens healthy. The big determinants of health are factors such as housing, education, social isolation, public health, economics and the behavioural choices of the public. While many of these factors are outside the control of an individual, the latter is not. Choices on diet, exercise, smoking, alcohol and drugs will dwarf the efforts of healthcare to improve health. We need a partnership with patients in which patients should (i) expect the highest standard of care we can deliver and (ii) accept the responsibility of making appropriate decisions which effect their health. This new partnership should include honest discussion about what is appropriate in end-of-life care as I mentioned earlier.

### **CONCLUSION**

In my title, I asked a question about Delivering Safer Care. Was it "an *endless quest or jewel within reach*"?. I think I have shown we are on our way. We have unearthed our native gem. It has been cleaned and roughly cut. If we can mobilise the legions of undergraduates and trainees, frontline staff, managers and healthcare leaders to refine and polish our rough cut then a dazzling jewel is within reach.

I believe Delivering Safer Care is also an endless quest. As changes to our world and society result in new diseases and risks, we will respond with new knowledge, treatments and therapies - which will in turn bring new risks and dangers. We can make care safer but we cannot make it absolutely safe. Thus we will always be on the a quest for 'safer'.

I will end with the words of Dr Francis Peabody who, in 1926, delivered a series of lectures about clinical care to medical students at Harvard. "*Time, sympathy and understanding must be lavishly dispensed, but the reward is to be found in that personal bond which forms the greatest satisfaction of the practice of medicine. One of the essential qualities of the clinician is interest in humanity ...for the secret of the care of the patient is in caring for the patient*"

### **FURTHER READING**

The slide presentation complementing the Oration can be viewed at the HSC Knowledge Exchange <http://www.knowledge.hscni.net/Resources/ContentDetail/417>