Improving Safety Through Education and Training

Report by the Commission on Education and Training for Patient Safety

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Foreword

Safety in healthcare is everyone's responsibility and has been a mantra for many years. Despite the rhetoric however, critical incidents that destroy people's lives sadly continue and their prevalence remains by and large static. Near misses occur regularly and lessons are rarely learnt or disseminated through the system. This is a universal problem but one that we believe the NHS is well placed to tackle and if we get it right the NHS could be a world leader.

Getting it right involves instilling the right culture from the very beginning of a healthcare worker's career. Education and training from undergraduate and apprentice level throughout one's career can not only embed the right approach to preventing and learning from errors but also keeps the mind receptive to new ideas that could improve safety.

Health Education England (HEE) - responsible for the training of all healthcare workers - established the independent Commission on Education and Training for Patient Safety, to review the current status of safety education and training for all learners, including in curricula and workplace learning.

We commissioned Imperial College as our academic partner. We sought views from patient groups and both national and international safety experts. We travelled the country to observe many new initiatives, took soundings from focus groups and debated long and hard as to what we felt would make significant and sustained changes to practice, be it in the community, hospital or primary care setting.

It was clear to us that major changes are needed in multi-specialty and team working, greater emphasis on human factors is required, simulation should become commonplace in all sorts of scenarios and a much more transparent and open reporting system needs to be established where we move from a blame culture to a learning one.

These are just some of our observations and are by no means an exhaustive list. The Commission has made 12 recommendations to HEE and the wider system that we believe if fully enacted should make a marked difference to improving healthcare in this country and indeed beyond. It is now up to HEE to decide how best to implement the recommendations but we would advise strongly that they do so at pace. Improving safety must be our priority and the time to act is now.

We are enormously grateful for the hard work of all Commission members who gave their time freely and abundantly. We were fortunate to have patient representatives on the Commission and we tried at all times to see things through their perspective. We also thank all members of HEE staff, both past and present who have worked diligently to assimilate the multiple diverse views and make this a coherent document.

Professor Sir Norman Williams,
Chair Commission on Education and Training for Patient Safety

Sir Keith Pearson,
Vice-Chair Commission on Education and Training for Patient Safety

Executive summary

This report is different from the many reports on patient safety published both for the NHS and internationally over the last decade. Here, for the first time, the focus is on how education and training interventions can actively improve patient safety. There is a real need for a systematic approach that uses learning tools effectively, both for short term reduction in risk to patients and also to build a long-term, sustainable learning environment within healthcare that is centred on patients and on the need for the safest care possible.

This report, produced by the Commission on Education and Training for Patient Safety sets out its ambition to improve patient safety through education and training and makes a number of recommendations to Health Education England (HEE) and the wider system.

Background

The energy and pace of change in the NHS is greater than ever before. There is a real and palpable commitment to improving patient safety and widespread recognition that education and training is vital in reducing patient harm. Organisations are pioneering initiatives and healthcare staff at every level recognise how they contribute to keeping patients safe. Patients and staff are demanding improvement, pushing for deeper, broader, faster change and the government have made patient safety a priority area.

Despite this, an estimated one in 10[1] patients admitted to NHS hospitals will still experience some kind of patient safety incident and around half of all incidents are thought to be avoidable.[2]

Patient safety should be a golden thread of learning that connects all staff working in the NHS, across all disciplines, from apprentice and undergraduate right through to retirement. The NHS cannot expect to achieve improvements in patient safety if it is not embedded within education and training and if we cannot safely allow staff the time away from the workplace to undergo training. Changing behaviours and outcomes will be impossible if there continues to be a blame culture where individuals are vilified when things go wrong rather than supported to learn from errors and to look at the system as a whole. The NHS has to change.

The Commission

The Commission, supported by Imperial College London, gathered evidence through focus groups, interviews, regional visits and online surveys; from patients and their families, carers, students and trainees, frontline staff at every level across all settings, healthcare managers, executives, as well as international experts and national organisations. We were told what works, and what does not work when it comes to improving patient safety through education and training. We saw evidence of good educational practice, heard what supports people to make improvements and what gets in the way. We asked people for their ideas on how to improve patient safety through education and training. This report is the culmination of these months of work.

This report aims to shape the future of education and training for patient safety in the NHS over the next 10 years. Strategic leadership and collaboration across the NHS is vital to ensure all staff have the right skills, knowledge, values and behaviours to ensure patient safety. This underpins all of our recommendations.

"The NHS should continually and forever reduce patient harm by embracing wholeheartedly an ethic of learning."

Professor Don Berwick

Our recommendations

Education and training can break down barriers to providing safe care, creating an environment where all staff learn from error, patients are at the centre of care, treated with openness and honesty and where staff are trained to focus on patient needs. However, the right workplace conditions, motivation and opportunity must also exist in order to ensure sustained behaviour change.

Set out under four broad themes, this report makes a series of recommendations that we believe will make the greatest difference to patient safety both now and in the future.

Creating a culture of shared learning

Recommendation 1

Ensure learning from patient safety data and good practice

Patient safety data, including learning from incidents and good practice case studies, must be made more readily available to those responsible for developing education and training. The Commission recommends:

- HEE engages with national partner organisations, employers and those responsible for curricula to ensure patient safety data is being shared beyond traditional professional and institutional boundaries and is being used as an educational resource
- HEE works with partner organisations to scale up and replicate good practice training and education for patient safety. We suggest sharing good practice examples through the forthcoming Technology Enhanced Learning (TEL) platform
- HEE works with NHS Improvement and local partners to overcome existing barriers and facilitate access to locally relevant incident reports for use in development of education and training
- clinical commissioning groups, NHS England, HEE and other system partners particularly NHS Improvement, to work together to explore the potential for development of 'lessons learned' alerts following a patient safety incident or near miss.

Recommendation 2

Develop and use a common language to describe all elements of quality improvement science and human factors with respect to patient safety

The Commission recommends the development of a common language, to increase understanding about the relationship between human factors and quality improvement science and the importance of integrating these approaches.

Recommendation 3

Ensure robust evaluation of education and training for patient safety

The Commission recommends HEE works with partner organisations to facilitate the development of an evaluation framework to ensure that all education and training for patient safety commissioned in future, is effectively evaluated using robust models. HEE should facilitate a discussion with major research funders and those academically active in health education about this vital and neglected area.

The patient at the centre of education and training

Recommendation 4

Engage patients, family members, carers and the public in the design and delivery of education and training for patient safety

HEE and the relevant regulators of education to ensure that future education and training emphasises the important role of patients, family members and carers in preventing patient safety incidents and improving patient safety. Specifically, the Commission recommends:

- HEE uses its levers to ensure that patients and service users are involved in the co-design and co-delivery of education and training for patient safety
- HEE works with provider organisations to ensure that work-based clinical placements encourage learning to facilitate meaningful patient involvement and to enable shared-decision making
- HEE explores the need for education and training for patients and carers through its work on self-care with the Patient Advisory Forum.

Recommendation 5

Supporting the duty of candour is vital and there must be high quality educational training packages available

The Commission recommends that HEE helps create a culture of openness and transparency by reviewing existing training packages to ensure they support the duty of candour regulations. They should commission relevant educational tools where needed and work with professional regulators to reflect the inclusion of a duty of candour in professional codes, extending beyond the legal duty for organisations and building on existing work in this area.

Lifelong learning – focussing on safety from start to finish

Recommendation 6

The learning environment must support all learners and staff to raise and respond to concerns about patient safety

The Commission recommends that HEE works with national partner organisations and employers to ensure that the learning environment encourages and supports staff, including those learning and those teaching, to raise and respond to patient safety concerns.

Recommendation 7

The content of mandatory training for patient safety needs to be coherent across the NHS

The Commission recommends HEE reviews both mandatory training requirements and the delivery of Continuing Professional Development (CPD) related to patient safety. It should work with stakeholders to ensure that employer-led appraisals assess understanding of human factors and patient safety. HEE should use its contracts with providers to ensure protected time for training on patient safety is part of the mandatory training programme in each organisation.

Recommendation 8

All NHS leaders need patient safety training so they have the knowledge and tools to drive change and improvement

The Commission recommends HEE works with partner organisations to ensure that leadership on patient safety is a key component of the leadership education agenda. This will foster greater understanding of patient safety among leaders and therefore greater commitment on their part.

Delivering education and training for patient safety

Recommendation 9

Education and training must support the delivery of more integrated 'joined up' care

There are particular patient safety challenges during transition between health and social care, primary and secondary care. The Commission recommends HEE works with partner organisations to ensure education and training supports delivery of safer joined up care. It should spread learning from the early adopters of integrated care such as Academic Health Science Networks' (AHSNs), Patient Safety Collaboratives, and the Q Initiative, to all those designing and delivering education and training.

Recommendation 10

Ensure increased opportunities for inter-professional learning

There is enthusiasm and a real need for more inter-professional, practical and team-based learning at every level, from first year undergraduates and apprentices through to the existing workforce. The Commission recommends HEE uses its levers to facilitate increased opportunities for inter-professional learning.

Recommendation 11

Principles of human factors and professionalism must be embedded across education and training

The Commission recommends HEE works with national partner organisations to ensure the basic principles of human factors and professionalism are embedded across all education and training. Multi-professional human factors training should form part of the induction process for every new employee. It also needs to be offered as part of regular refresher training for all staff so they understand the importance of human factors and professionalism and how this can influence patient outcomes.

Recommendation 12

Ensure staff have the skills to identify and manage potential risks

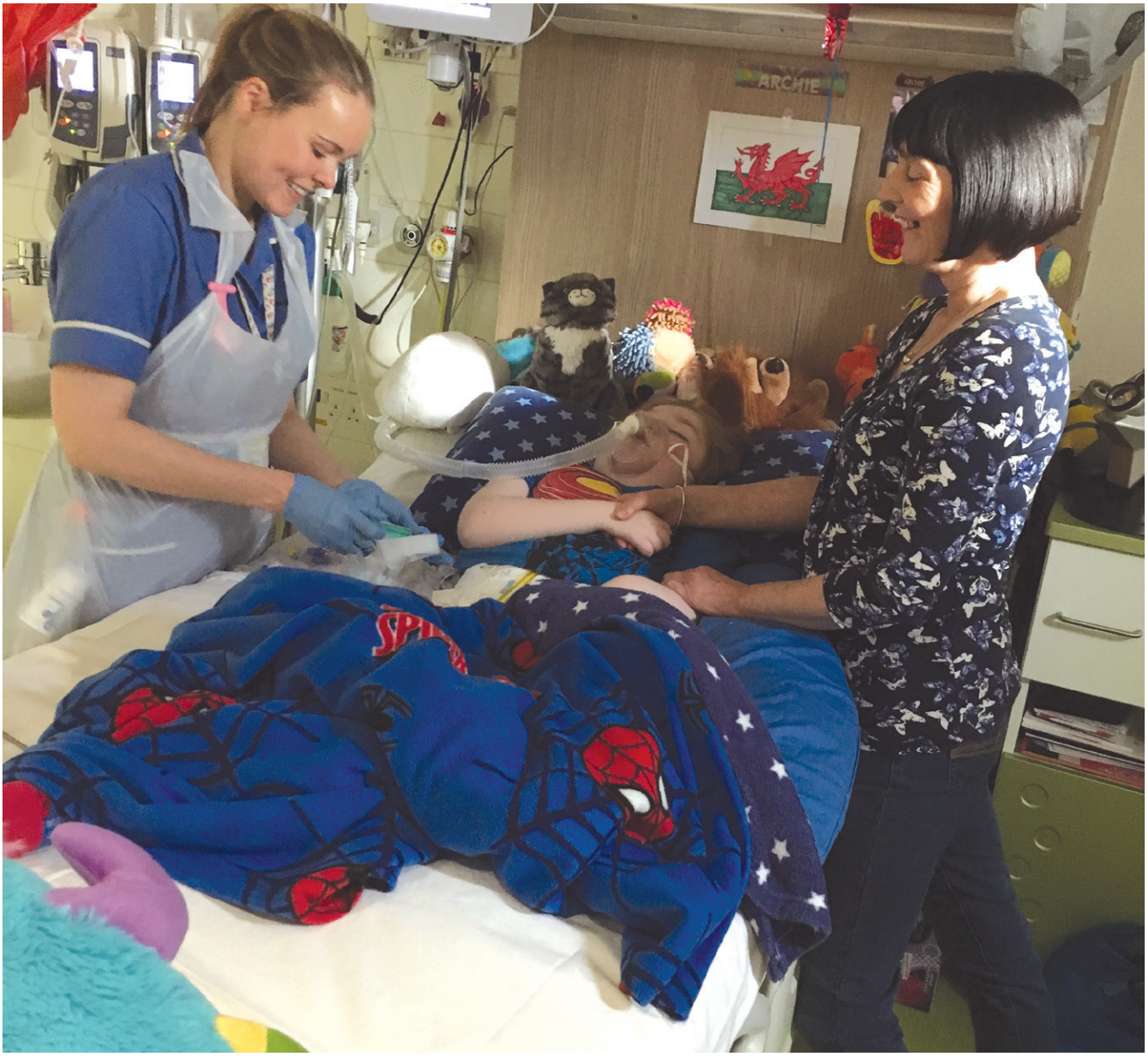
The Commission recommends HEE works with national partner organisations to ensure staff have the skills to be able to identify and manage potential risks, to come up with possible solutions and to be able to implement these solutions. All staff should also have an understanding of how the system and human behaviour impacts their own practice and how this relates to patient safety.

Introduction

The Commission on Education and Training for Patient Safety was established to review and make recommendations to HEE and the wider system, on education and training for patient safety. Chaired by Professor Sir Norman Williams and vice-chaired by Sir Keith Pearson, the Commission includes patients, experts and partner organisations.

It is recognised that patient safety education and training for apprentices and undergraduates alone is insufficient to ensure improvements in patient safety. It must be accompanied by a learning culture within provider organisations, and a supportive system enabling healthcare workers to keep patients safe and to continue learning throughout their careers.

The only way we will achieve the breadth and depth of change we need is for everyone who works in the NHS to have an understanding of, and a commitment to, safety.



The case for change

How safe are patients in the NHS?

The NHS has been at the forefront of many improvements in quality and safety in recent years and is seen as an example to countries around the world. We recognise the dedication and commitment of the 1.3 million staff who make the vision of a healthcare service free at the point of need a reality for the country's growing and changing population; often in the face of challenging circumstances.

However patient safety is still an ongoing and critical challenge for the NHS. In 2013/14, 1.4 million patient safety incidents were reported to the NHS. Around 1.3 million of these were categorised as 'low harm' or 'no harm'; 49,000 incidents resulted in 'moderate harm'; 4,500 in 'severe harm'; and there were 338 'never events'.[3] Half of all patient safety incidents are thought to be avoidable.[4] However these numbers are likely to be an underestimate[5] due to the well-recognised issue of underreporting.

This is the picture in acute care. The full extent of patient safety incidents in the primary and community care sectors is much less clear. Underreporting is a problem across all sectors of care. Recognising that the reported cases reflect significant harm is as important as learning from 'near-misses' and 'just-in-time' interventions.

Avoidable harm in the NHS can be potentially devastating, both to the patients who suffer harm and to the healthcare staff involved. Patient safety incidents are rarely caused by a distinct error by one individual however and are mostly a result of a complex interaction of human factors or behaviours and system or organisational problems. When something goes wrong, there is a tendency to want to apportion individual blame, which inhibits the development of a candid, open culture where patient safety incidents are openly discussed and are a source of learning, with changes to both behaviours and systems resulting from this openness.[6]

Behind the statistics on patient harm are individuals whose lives are changed, often irrevocably, by such incidents. During the Commission we heard about patients who live each day with the consequences of avoidable harm and we heard from staff who were deeply affected by patient safety incidents.

When something goes wrong in the NHS, patients and families often say they don't feel they are communicated with or involved. Around half of all people harmed by poor healthcare say they wanted an apology, an explanation, and, crucially, to understand how the system will learn from its mistakes so that it will not happen again.[7] And yet, all too often, this does not happen.

It is not just patients whose lives can be devastated when things go wrong. Healthcare staff involved in a patient safety incident can often become a 'second victim'[8] if not supported emotionally by their organisation in the aftermath. Healthcare workers choose their profession because they want to improve the wellbeing of others. When their care results in patient harm, it typically leads to guilt and emotional distress.[9] A lack of feedback following investigations can also make it more difficult for staff to process what has happened.[10]

In addition to the potentially devastating human impact of avoidable harm, there is also a huge financial cost to the system. The NHS spends a staggering amount on dealing with clinical negligence claims - £1.1bn in 2014 alone.[11] At a time of diminishing resources, this is a heavy burden for the organisation to carry and one that has very little actual benefit for patients unless lessons are being fed back to the system.

We have a real opportunity to create the safest healthcare system in the world, with a culture of learning and continuous improvement. We need to change the way we learn from patient safety incidents and to share that learning across the system, ensuring change and improvements are implemented. The All Party Parliamentary Group for Global Health recently urged the UK to "strengthen its position as a global leader in health working in partnership with others to improve health globally. This will require new strategies for creating mutually beneficial partnerships globally".[12]

It is important that we take the opportunity to collaborate internationally and learn with and from other countries about patient safety.

Recent patient safety improvements

Over the last 25 years, often in response to high profile failures, there have been many reports, interventions and academic studies with various recommendations aimed at improving patient safety. The importance of organisational engagement and reform is recognised in the literature and many reports state the importance of education and training of staff.

The Francis Report[13], published in February 2013 following major failings at the Mid Staffordshire NHS Foundation Trust, made 209 recommendations designed to change the culture of corporate self-interest and cost control that was fundamental to the failings at Mid Staffs. To date, the report has led to a number of changes across the NHS, including; the creation of Patient Safety Collaboratives working through Academic Health Science Networks to support individuals and organisations to build safety improvement skills; the Friends and Family Test to gather real time patient experience feedback and the Compassion in Practice strategy which is being implemented across all areas of care, training and practice.

Following the Francis report, the 2013 Berwick report[14], *A promise to learn – a commitment to act* proposed four main principles for the NHS; the need to place quality and safety of patient care above everything else, to engage and empower patients and carers, to foster the growth and development of all staff, and to insist upon unequivocal transparency.

Leaders within the NHS have often been blamed for discouraging staff from speaking out if they have a concern about patient safety. In February 2015, *The Freedom to Speak Up Review*[15] recommended a package of measures to address this. These include a Freedom to Speak Up Guardian in every Trust, who will be on hand to provide independent support and advice to staff that want to raise concerns, and who will hold the Board to account to follow up these concerns. A national whistleblowing helpline has also been introduced for staff.

Most recently the Care Quality Commission's 14/15 *State of Care*[16] report rated 13% of hospitals as "inadequate" in terms of patient safety and a further 61% as "requiring improvement". The report cited a number of reasons for this, including a failure to investigate and learn from patient safety incidents, and issues with staffing levels, training and support. It stated that "many services do not yet have the leadership and culture required to deliver safe, high-quality care that is resilient to the inevitable changes ahead" and called for all health and social care services to continue to strive for excellence, to collaborate and share learning with others, and to ensure there is no lowering of expectations of quality in the challenging times ahead.

Throughout these reports there are clear principles emerging in support of patient safety across the NHS. There have also been significant improvements in specific areas of clinical risk resulting from national and international best practice implementation:

- the National VTE (venous thromboembolism) prevention programme is recognised as the most comprehensive national initiative of its kind, bringing about whole-system change by ensuring patients admitted to hospital are assessed for their risk of developing VTE so that appropriate preventative treatment can be given to improve health outcomes.[17] Risk assessment rates carried out on hospitalised patients have risen from less than 50% in 2010 to 96% today. This has led to reductions in mortality nationally, with one study estimating that around 940 deaths in England were avoided between 2011 and 2012[18]
- the World Health Organization (WHO) has been instrumental in introducing a number of initiatives to improve patient safety, such as the Surgical Safety Checklist[19] which has gone on to show reduction in both mortality and morbidity rates in a number of countries[20]
- Patient Safety First[21] campaign to reduce patient harm in five high risk areas – 2008-2010 – helped to build the momentum and engagement required to make patient safety a top priority
- the former National Patient Safety Agency's (NPSA) cleanyourhands campaign[22] to improve hand hygiene and reduce healthcare acquired infections was effective in changing many aspects of hand hygiene behaviour[23]
- the former NPSA Matching Michigan[24] programme resulted in a reduction of central line infections in intensive care units.[25]

More recent interventions to improve patient safety include:

- National Safety Standards for Invasive Procedures[26], which build on the WHO's surgical safety checklist, setting out broad principles to help staff implement safe practice through a series of safety checks and through education and training. These are the first national safety standards to be developed in collaboration with, and with the endorsement from the relevant professional bodies
- Sign up to Safety - a national campaign, launched in 2014, that aims to reduce avoidable harm by 50% in the NHS and save 6,000 lives. As part of the campaign, more than 330 NHS organisations have committed to put patient safety first, to continually learn from incident reporting and patient and staff feedback, to be open and honest when things go wrong and to create a supportive environment for staff
- the establishment of Patient Safety Collaboratives across the 15 Academic Health Science Networks, to empower local patients and healthcare staff to work together to identify safety priorities and develop solutions.

The NHS has to achieve the system-wide, effective and sustained improvements that are needed for patient safety.

Implementation science research has demonstrated key factors that hinder and factors that help implementation of safer practices[27]:

Factors that hinder change:

- training and education in isolation of support and feedback
- complex interventions which make it difficult to adapt to the local context
- lack of time and resources
- changes that are not understood by those expected to use them.

Factors that help change:

- use of peer to peer influence and role models to champion change
- clear, accessible and simple guidance
- easy to implement steps
- demonstrable benefits from the change – the change is better than the status quo
- change designed by those who will be expected to deliver it.

This was reflected in the Commission's conversations with frontline staff and students, where there was a real appetite for change. Staff at every level expressed a desire to improve patient safety.

The Commission heard about positive change being introduced and also about changes that had been less successful and there is a need to learn from all these interventions, in order to drive towards more sustainable and rapid change in the future.

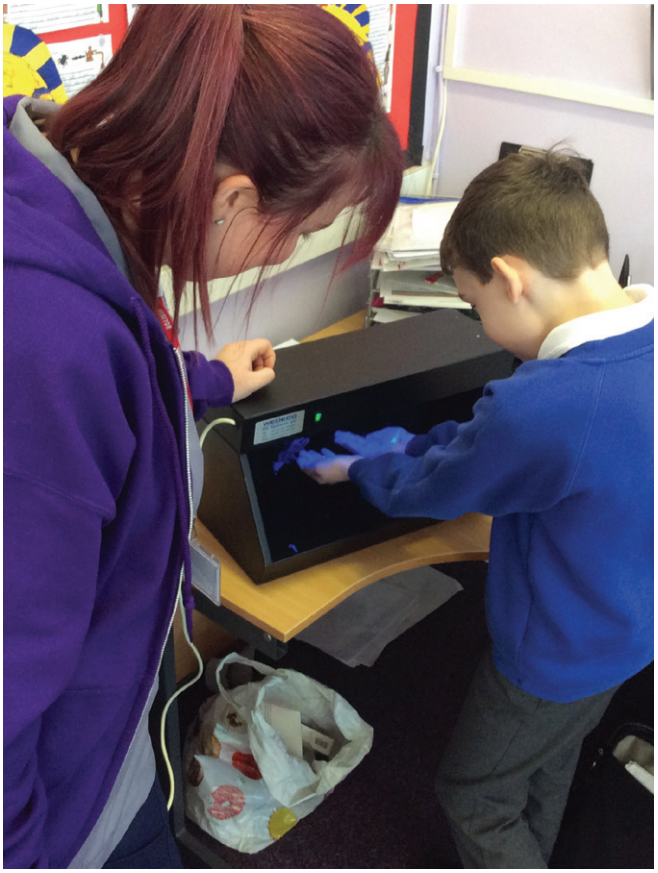
Human factors

Human factors is a science-based discipline that brings together knowledge from other subjects such as anatomy, physiology, engineering and statistics to ensure that designs of systems, equipment and workspaces, complement the strengths and abilities of people and minimise the effects of their limitations.[28]

As a signatory to the National Quality Board (NQB) 'Human Factors in Healthcare Concordat'[29], HEE is committed to embedding human factors principles and practice into education and training.

"*We need to work with NHS organisations, clinicians and NHS staff to understand their current capabilities, establish their requirements and develop a work programme of tailored support that enables NHS organisations to maximise the potential that human factors principles and practices can offer in relation to patient safety, efficiency and effectiveness.*"[30]

Published in response to the Mid Staffordshire NHS Foundation Trust Public Inquiry, the Human Factors in Healthcare Concordat demonstrates a commitment and recognition by the healthcare system of the importance of human factors in improving the quality and safety of healthcare services to patients.



The importance of integrating human factors into healthcare and patient safety is now well recognised and although there has been significant progress in some areas, more needs to be done[31] to take forward the actions from the Concordat to embed human factors principles and practices across the NHS and in efforts to improve quality and safety[32]. We need to ensure staff are equipped with the underlying principles that enable them to be flexible and resilient enough to deliver high quality care, for the safety of patients. Human factors education and training has an important role to play.

Making change in partnership with others

HEE is not the only body concerned with educating and training healthcare staff. Universities, royal colleges, faculties and other higher education institutions set curricula. Providers are, ultimately, responsible for employing, maintaining and developing their workforce. Regulators, too, have an important part to play in setting and monitoring standards. Sustained change can only be made by working in partnership with the rest of the system. HEE has various levers it can use to influence change and make improvements. These include workforce planning; identifying the numbers, skills, values and behaviours needed for the future; working in partnership to attract and recruit the right people to education and training programmes it funds; and ensuring the existing workforce develops, continuing to provide high quality care in a changing health and care structure.

By commissioning excellent education and training programmes for students and learners HEE helps to create a future workforce that can provide high quality care for patients in a safe environment. Focussing HEE's commissioning strategy on quality, particularly within training environments, will allow HEE to influence both future healthcare workers and those already within the system.

Summary

HEE has a role in developing the capabilities of healthcare staff. Providers and national partner organisations will need to create the conditions, motivations and opportunities to enable learning to be sustained so behaviour can change.

Education and training can break down some of the barriers to providing safe care, creating an environment where staff learn from error, patients are at the centre of care and treated with openness and honesty, and where healthcare staff, including those in training, work with patients collaboratively to understand how to raise patient safety standards.

About this report

This report is for everyone in the NHS, whether working in primary, acute or community care, in mental health services, general practice or within a national body. We need the support and commitment of senior leaders in the NHS and HEE's national partner organisations to drive this work forward; we need to provide services that are integrated within, and co-operate throughout local communities; and we need staff and students across the NHS to feel a sense of ownership for improving patient safety if we are to deliver high-quality care for all, now and for future generations. This report helps to set the strategic priorities of education and training for patient safety in the NHS over the next 10 years. The Commission believes the recommendations have the potential to deliver effective and sustained improvements to patient safety through education and training. In order for this report to have validity and to contribute something of real value to the NHS' objective of reducing patient harm, we have taken a robust and highly collaborative approach, which is outlined below. This has given us a clear picture of what is important to students, staff and patients on patient safety. Our recommendations are made on this basis.

We have consulted with people in primary, secondary, community care and mental health, and made recommendations that encompass all sectors that we hope will be applicable widely.

To ensure rigour in our approach, Imperial College was appointed as our academic partner.

Imperial began by reviewing the available patient safety evidence, including a 'review of reviews' of the academic literature on patient safety training and education, a review of the grey literature (information, research or reports not subject to peer review) on these topics from leading sources in the UK and internationally, and a 'review of reviews' of the academic literature from other industries.

The literature review found that training and education interventions can improve skills and knowledge, but that there is a lack of sound scientific evidence about which types of education and training improve patient outcomes and safety.

A copy of the final academic study by Imperial College London is available at www.hee.nhs.uk/the-commission-on-education-and-training-for-patient-safety. The academic report explores the most effective education and training interventions, the challenges to accessing education and training, as well as the challenges to embedding training outcomes and implementing change.

Conversations with students, staff and patients around the country

Focus groups

Together with Imperial College London, we held focus groups with patients and carers, students, learners and staff at all levels from across the NHS, inviting individuals to share their experiences of education and training, and their thoughts about improving patient safety. An online survey also gathered more than 600 responses.

Expert interviews

Imperial conducted interviews with some of the UK's leading authorities on patient safety and human factors, as well as international experts and experts from other safety-critical industries. Representatives from the Commission and Imperial visited each of the four HEE geographical areas[33] to hear about good practice in patient safety improvement, as well as challenges and barriers to change.

Individuals and organisations from across healthcare took part in this consultation exercise, including: patients, frontline staff, support staff, representatives from primary care, secondary care, community trusts, managers, executives and experts in patient safety and quality improvement.

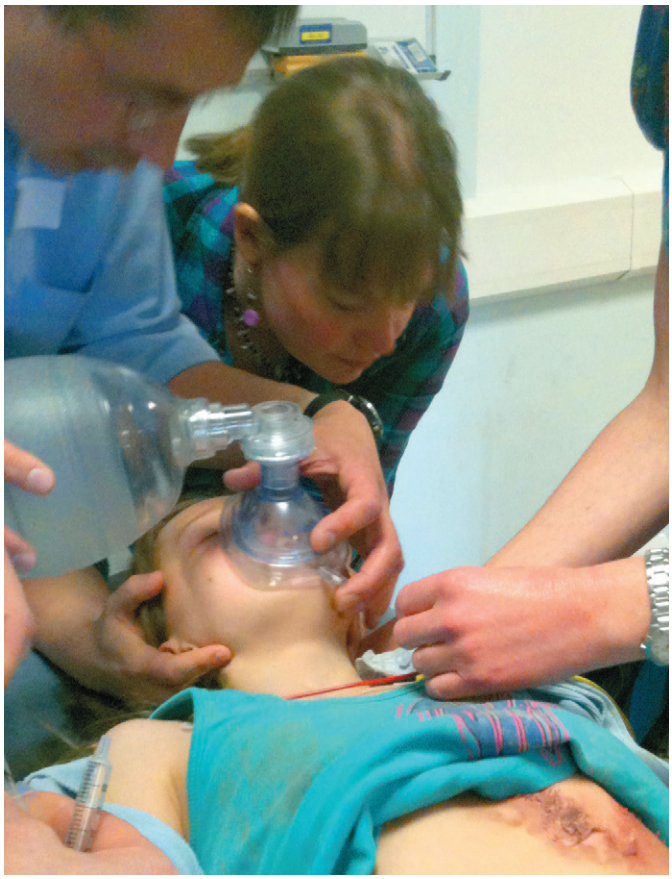
The Learning to be Safer Expert and Advisory Group

The Learning to be Safer Expert and Advisory Group was set up by HEE, to review human factors education and training and to make strategic recommendations to support delivery of HEE's commitment to the Human Factors in Healthcare Concordat.

Run in parallel to the Commission on Education and Training for Patient Safety, the group included experts in human factors, academics, regulators and representatives from partner organisations. A paper was developed by the group with recommendations on embedding human factors principles. Many of the recommendations have been incorporated in this report and the full paper can be found at www.hee.nhs.uk/the-commission-on-education-and-training-for-patient-safety.

The audience for this report

The audience for this report is an inclusive one. It is important for everyone to feel part of this work so it is written to be accessible to all staff in the NHS as well as patients, their families and policymakers. We have deliberately kept terminology clear and accessible and have included a glossary.



Creating a culture of shared learning

It has been widely acknowledged that culture change must be at the centre of efforts to improve patient safety. We know that creating the right learning environment[34] is crucial for improving the quality of patient care. A patient safety culture requires everyone in the organisation to take responsibility for patient safety and to take action when necessary.[35] It is about individual, group and organisational values, attitudes, perceptions, competencies and patterns of behaviour. Education and training must start to address the cultural barriers that contribute to unsafe care.

Good practice and learning from incidents is rarely shared across the NHS

Shaping safer organisations and teams is as important to patient safety as shaping safer practitioners.

Patient safety training needs to instil the right attitude in staff and organisations needs to engender shared beliefs and values about minimising patient harm. All staff need personal and organisational ownership of patient safety. This is everyone's responsibility and the NHS needs candour about patient safety incidents and openness to change.

Healthcare organisations should also analyse patient complaints, distil and disseminate the learning and use complaints as one of their measures of patient safety.

The Commission heard about a multi-disciplinary group of healthcare staff in the East Midlands who are already applying these principles in their work.

The PreMieRE project: extending mortality and morbidity meetings

A multi-disciplinary team of health workers in the East Midlands review patient safety incidents in a no-blame environment. Mortality and morbidity meetings have been extended to include reflection of patient safety incidents. At these meetings patient safety incidents are discussed to ascertain; what happened, why it happened, whether it could have been prevented or managed better, and what the key learning points are. Trainees are encouraged to reflect on what they learn in their portfolios.

This is to encourage a culture of candour and learning from mistakes without attributing blame, while linking to specific actions for improvement. The project has focussed the whole team on patient safety.

The NHS needs to learn when things go wrong and act to prevent them happening again, to help to foster a culture of shared learning from bad practice as well as good.

The National Reporting and Learning System (NRLS), the central database of patient safety incident reports, includes a wealth of data. Other important sources of intelligence include; additional incident reporting systems (such as the Medicines and Healthcare Regulatory

Agency's yellow card system); complaints data reported by professional regulators; administrative data such as hospital episode statistics and readmission rates; point of care surveys such as the Friends and Family Test; local audits; the safety thermometer; structured case note reviews; as well as rich qualitative intelligence such as patient stories. The Commission also recognises the importance of local reporting systems, where issues of underreporting can be better addressed and of the need to ensure learning and dissemination from NHS England patient safety alerts.

There is a need to consider how data from NRLS and from other sources such as local incident reports, case note review and observations of practice can be used to develop education and training interventions.

The Commission welcomes the creation of a new Independent Patient Safety Investigation Service which is being set up in response to recommendations from the Public Administration Select Committee report[36] into clinical incidents in the NHS. The service is due to begin operating from April 2016 and will offer support and guidance to NHS organisations on investigations as well as carrying out its own investigations, ensuring lessons are learned for the future.

Although formal reports and data analysis are vital tools, case note review is a low tech, rigorous method now recognised to be an accurate way of detecting patient safety incidents[37] that engages healthcare workers directly with the care delivered.

It is essential to use patient safety incident reports in training and education, yet we heard that trainers find it difficult to get access to fresh and locally-relevant case studies to use in developing training for staff.

The learning from prevented patient safety incidents is at least as important as that from 'never events' and a mechanism is needed to share these reports rapidly across the country as a way of improving clinical practice. There is a tremendous amount of energy and innovation in the system.

During the Commission visits we heard many innovative and outstanding examples of initiatives to improve safety through education and training and throughout this report we share these examples. However, while the enthusiasm was clear, many initiatives had been implemented by individuals in their spare time and with limited resources. Good practice is rarely shared beyond traditional boundaries and there are challenges in replicating and scaling up interventions.

The reasons given for initiatives struggling to grow beyond the initial start-up phase include a lack of funding, clarity of which organisation should 'own' the initiative and individual enthusiastic staff changing employers. We hope that sharing case studies throughout this report will foster a spirit of sharing and collaboration and will inspire others to take action.

Through our visits around the country, we heard how some trusts are taking a different approach – embracing the opportunity to learn from catastrophic patient safety incidents. We heard from Doncaster and Bassetlaw Hospitals how being candid in relation to patient safety failures provided an opportunity for learning and for preventing such incidents from happening again. The hospital also believes that being open has enabled a constructive discourse to continue with the patient in question, which both parties value enormously.

"I attend meetings where incidents are discussed; gaining this oversight is helpful as I can then refer to current issues in my training sessions, making it more meaningful to the learners. So I think that communication between managers and educators is vital." [38]

Sharing Gina's story

A catastrophic string of failures at Doncaster Royal Infirmary in 2013 led to a patient, called Gina, losing her leg after being accidentally injected with a clinical disinfectant. The hospital was determined to learn from the incident and to do whatever it could to prevent such an event from happening again.

Dr Lee Cutler, Consultant Nurse in Critical Care explained: "As part of our investigation into what went wrong, we recreated the incident using simulation and role play. We also decided to create a video of the incident, with the full permission of Gina... We spent many hours together and tears were shed on both sides."

The video proved an invaluable learning tool that has enabled the lessons from Gina's story to be shared both within and outside the hospital. The doctor who injected Gina has met with her and her husband, Tom, and the nurse who was involved in the incident has been able to return to work after coming to terms with the events.

The hospital admitted that it was challenging to release the video onto YouTube. Lee said: "We wanted to be open and honest about what had happened and for the learning to be disseminated as widely as possible but we were fearful of the media's reaction to what we were sharing. We didn't pull our punches, the film told the whole story in every detail."

Despite its misgivings about sharing its failures so honestly, the hospital believes it was the right thing to do. Lee added: "Your relationship with the patient and family is key to what happens after a serious untoward incident and this is determined by the culture of your organisation. I believe an adversarial culture would not have shared Gina's story and probably would not have benefited from the positive relationship that we now have with Gina and Tom, or the opportunities for learning that have arisen through this experience. Gina's story has changed our culture and leadership. People now have a better understanding of how human factors, unsafe systems and culture can impact on patient safety."

"Please learn from this, it must not happen again"

Gina

Since releasing the video of Gina's story into the public domain it has been shown to directors of nursing at regional and Trust level and is now built into Doncaster and Bassetlaw Hospital's human factors training. Gina's story has been viewed on YouTube more than 15,000 times.

We heard, too, that staff would like a platform to share their own experiences for learning purposes. One of the experts interviewed by the Commission suggested that a lack of protected space for staff to discuss incidents, express concerns and ask questions, hinders progress on patient safety. We heard that the hierarchy within organisations, for example where the doctors voice was listened to but other members of the team were not, was an important risk to open and honest discussions about patient safety.

HEE has an important role to play in ensuring that any learning about education and training is shared so that it can act as a catalyst for change and improvement in patient safety.

Recommendation 1

Ensure learning from patient safety data and good practice

Patient safety data, including learning from incidents and good practice case studies, must be made more readily available to those responsible for developing education and training. The Commission recommends:

- HEE engages with national partner organisations, employers and those responsible for curricula to ensure patient safety data is being shared beyond traditional professional and institutional boundaries and is being used as an educational resource
- HEE works with partner organisations to scale up and replicate good practice training and education for patient safety. We suggest sharing good practice examples through the forthcoming Technology Enhanced Learning (TEL) platform
- HEE works with NHS Improvement and local partners to overcome existing barriers and facilitate access to locally relevant incident reports for use in development of education and training
- Clinical Commissioning Groups, NHS England, HEE and other system partners particularly NHS Improvement, work together to explore the potential for development of 'lessons learned' alerts following a patient safety incident or 'near miss'.

HEE should also explore the idea of forming regional exchange networks to work closely with existing networks and Patient Safety Collaboratives. The aim of the networks would be to share good practice and support the integration of human factors and quality improvement.

We need a shared language to talk about patient safety

The language we use can be a barrier when it comes to patient safety education and training. People told us they do not always understand terminology that is routinely used in relation to patient safety – such as "human factors" and "quality improvement." While it is good that these terms are widely used by healthcare workers, the Commission was aware that, for example, the term human factors was sometimes used to describe human behaviour alone.

As we defined earlier, human factors can be considered as anything that affects an individual's performance.[39] A human factors approach concerns an understanding of the things that support or hinder the way people work, such as workplace equipment, working processes, individual and team abilities, policies and procedures, and focuses on identifying how best to organise these elements effectively to optimise productivity, effectiveness, efficiency and safety.

Human factors approaches should underpin current patient safety and quality improvement science, offering an integrated, evidenced and coherent approach to patient safety, quality improvement and clinical excellence.

Recommendation 2

Working with partners to develop a shared language to describe all elements of quality improvement and human factors with respect to patient safety

The Commission recommends the development of a common language, to increase understanding about the relationship between human factors and quality improvement science and the importance of integrating these approaches.

HEE should work with partner organisations to develop this common language, incorporating the work of the Clinical Human Factors Group, to ensure it is integral to the way staff are educated and trained across all levels and professions.

Measuring impact is often neglected

The academic study showed us how little robust evidence there is about the impact of patient safety education and training interventions, with very few studies demonstrating a tangible improvement in patient safety outcomes. This makes it difficult to develop effective training and education as we do not actually know what works.

Existing evidence focusses heavily on a small number of specific areas and interventions, particularly acute care and simulation. Widely differing approaches to evaluation and often unreliable data or methods are used. Evaluations rarely include comparative analysis and do not robustly assess impact on patient outcomes.

A review of the grey literature reinforced our finding that whilst training and education interventions can improve skills and knowledge, there is no conclusive evidence to show which types improve health outcomes or safety. It also underscored our discovery that little has been researched on whether one type of training or education is better than another. We need robust evaluation and measurement, using proven methodologies, so the focus can be on effective education and training.

Recommendation 3

Ensure robust evaluation of all education and training for patient safety

The Commission recommends HEE works with partner organisations to facilitate the development of an evaluation framework to ensure all education and training for patient safety commissioned in future is effectively evaluated using robust models. HEE should facilitate a discussion with major research funders and those academically active in health education about this vital and neglected area.

Current practice focuses on providing short-term funding and a need for projects to show rapid results. We recognise however, that in order to show real impact using robust evaluation models such as the Kirkpatrick model[40], it is imperative to take a more long-term perspective. Many of the patient safety impacts that we seek cannot be achieved within a short timescale.

The Mouth Care Matters project on the next page is one example of a promising project that may benefit from a longer period of funding.

Mouth Care Matters

"Oral health is a really important aspect of general health. Research evidence shows clear links between poor oral health and heart disease, as well as diabetes, and pneumonia. Oral health needs to be a priority in the community, in hospitals and for all institutionalised adults. Through improving oral health we will improve people's dignity, the ability to eat and drink and overall health."

Stephen Lambert-Humble, Dean of Postgraduate Dentistry

Mouth Care Matters is an initiative that is working to improve the oral health of hospitalised patients. It is a part of a wider initiative working to improve the oral health of older people in Kent, Surrey and Sussex. It trains staff to carry out oral health assessments, develop care plans and chart progress, to ensure teeth and dentures are cleaned daily and to refer when necessary. The local HEE team believed from the outset that oral health is such an important issue that this approach needed to be spread across the NHS and sustained. Earl Howe, the then Minister, officially launched the initiative at the House of Commons in March 2015.

To date, Mouth Care Matters has held numerous interactive teaching sessions, training more than 100 hospital staff, 80% of whom had received no previous mouth care training. A dedicated Mouth Care Matters team of specialist dental nurses has been recruited at East Surrey Hospital to provide ward-based training and support to Hospital staff. A mouth care recording pack has been developed for all patients admitted to hospital for more than 24 hours. Training has also been offered to over 1,000 of the 1,500 care homes across Kent Surrey and Sussex, and to date provided training to over 500 staff from over 200 homes.

The team aim to roll this project out across London and get oral health care into the Care Certificate for the national care home workforce.

A lack of published evidence does not mean that we can be complacent and we cannot be paralysed into inactivity until the evidence becomes available. Building on all the activities designed to improve patient safety must be a core responsibility of everyone in healthcare. In that way, audit and analysis will build the evidence base. There is a need to balance the requirement to act now against the requirement to know what action will be most effective in improving patient safety. The pragmatism of healthcare staff in recognising the need to change and do things differently was clear throughout the Commission's conversations.

The patient at the centre of education and training

Patients have an important role to play in improving patient safety and preventing harm. Health workers must take the time to engage with patients - not just because this is the right thing to do, but because it is an essential component of improving patient safety. Active involvement of patients, carers and family members is a central principle of creating a safe culture in organisations and patients should play a much greater role in the design, development and delivery of training.

We need to do more to involve patients

Healthcare staff and students need to be aware of the valuable role of patients in preventing and learning from patient safety incidents. They also need the skills to engage patients in a meaningful way. This is crucial to creating a patient-centred NHS. Having the time to involve and engage patients is a challenge, however the main barriers are attitudes and behaviours - seeing engagement as a tick box approach rather than an important aspect of safety.

We heard that carers also need to be involved at different points along the care pathway, particularly at key touch points; diagnosis, admission to hospital, discharge from hospital and the development of care plans. They hold a wealth of knowledge about the person in their care that can inform treatment plans ensuring the safest course of treatment for patients.[42] Through evidence submitted to the Commission by the Carers Trust, we heard about Alison who explained how the NHS had failed to involve her in her father's discharge meeting and the impact this had.

Alison's story

Alison (age 14) cares for Jim (her father) who has schizophrenia. Jim had been in hospital for a short period after a relapse in his illness. Alison was not invited to his discharge meeting or informed of his medication even though she is his primary carer.

Jim takes prescribed specific anti-psychotic medication with a dosage of 600mg. Alison noted her father's relapse symptoms began to present themselves, which is often linked to a too-low dosage of his medication. Alison contacted Jim's Care Coordinator after she ascertained Jim had in fact been prescribed anti-psychotics with a dosage of just 300mg.[43]

Alison's actions and monitoring of Jim's symptoms meant that her father's prescription could be corrected before it lead to any serious adverse effects to his health, however if she had been involved at the time of discharge this situation could potentially have been avoided.

Health professionals must be trained to have a better understanding of what patient safety means, to be able to provide patients with the best information and advice, and to recognise the important role patients, families and carers have in improving patient safety.

If patients are to be involved in their own care, they need to be able to access information they can trust. The Commission welcomes the work of HEE and NHS Libraries in developing guidance and training to support healthcare staff advising their patients, providing appropriate information, contributing to health literacy and improving patient safety.[44] Training has been provided to healthcare staff on how to appraise health websites and a quality standards tool has been introduced. A leaflet has also been developed to highlight how to look out for reliable healthcare information on the internet.

The Commission heard about the importance of patient stories in education and training for patient safety. Staff told us that they prefer training that is informed by real-life content and relevant to their day-to-day job. We heard that some NHS trusts are already inviting patients to share their stories[45] during staff training and induction days and we welcome this as a positive start.

"A patient's voice should be at the heart of all that we do in the NHS and this must start with education." [41]

"Ex-patients giving personal accounts of [their] care experience. It can be quite moving and has a lasting impression." [46]

Patients who have experienced adverse events told us it is important to them to tell their stories and for the NHS to learn from what happened to help prevent the same mistake happening again. We heard, too, from staff how powerful it is to hear these patient stories and that this was often the aspect that left a lasting impact.

Little work has been done to assess the long-term impact of patient stories on changing attitudes and behaviour and more research is needed in this area. One control study, conducted in 2014 found that, while the sharing of personal stories may have had an impact on emotional engagement and communication, it did not obviously translate into improved patient outcomes in a clinical context.[47] More research and evaluation is needed to increase understanding in this important area.

Having said this, anecdotal evidence and the feedback we heard revealed overwhelmingly that staff, students and patients themselves want to see much more storytelling in education and training. The stories of 'harmed' patients have a unique importance in education and training for patient safety, but these patients can often be hard to reach. HEE should work with those responsible for curricula and providers to seek out and share learning from innovative approaches to storytelling in education and training. Providers should make the effort to train staff to collect stories from patients.

The patient voice can be heard in many ways. Through our online 'call for evidence' we heard about the Simulated Patient Programme in Wessex, where service users are directly involved in simulating traumas and resuscitations.

The Simulated Patient Programme

The Simulated Patient Programme at University Hospital Southampton NHS Foundation Trust, has more than 130 'simulators' - real service users – including children, adults with learning disabilities and people with English as their second language. They play the role of patients, relatives and healthcare professionals within simulation training sessions.

In each simulation exercise, the simulated patients and relatives are selected and then trained to play the role, with learning outcomes of the exercise discussed beforehand. The team uses real patient stories and issues with the simulated patients co-designing the scenarios. Examples of roles are; being the recipient of unwelcome news, discussing end of life care, responding to advice about lifestyle (obesity or alcohol), presenting as an ill or injured patient (or relative), raising concerns about care and compassion, and receiving news of errors that have occurred. The sessions are run for all professional groups within health care and always have safety as an underlying theme.

In addition, the simulated patients are often coupled with technology, where they may play the role of a trauma victim. The simulation team manipulates their vital and other physical signs so that the experience for the health care team is as realistic as possible. Here, the participants must engage with a real person who is very unwell and potentially deteriorating, engage with the relatives and work with the team. These methods of simulation are known as hybrid and multi modal simulation.

Carrie Hamilton, who leads the Simulated Patient Programme, and is an executive member of the Association of Simulated Practice in Healthcare (ASPiH) said: "The programme benefits from this unique marriage of technology and real people. It means that health care teams hear the voice of patients and relatives, at the same time as being able to practice specialist clinical skills. Engagement with the simulated patients and relatives during the debrief means that participants hear their unique perspective, this co-delivery is critical in really understanding what it is like for patients and their carers".

One of the simulated patients said: "As a patient I would really want to know that the health care team I was being treated by had had at least some experience in how to handle sensitive, intimate and challenging situations, and that they had practised these skills before treating me."

A clinician who recently participated in the programme added: "A patient's voice (be it simulated or not) should be at the heart of all that we do in the NHS and this must start with education."

This case study is an excellent example of bringing the patient voice into training through simulation. Co-design and co-delivery has been recognised as an important way of changing patient's and healthcare professional's perceptions of their role in healthcare.[48]

To make patient co-design and delivery a reality, educators need to learn from innovators already engaging patients and service users in this activity. The additional support needed for both those training and the patients involved needs to be articulated if this is to be successful. The NHS should also take opportunities to work with and learn from systems engineering and human factors experts from other safety critical industries with experience of integrating co-design and co-delivery.

Recommendation 4

Engage patients, family members, carers and the public in the design and delivery of education and training for patient safety

HEE and the relevant regulators of education should ensure that future education and training emphasises the important role of patients, family members and carers in preventing patient safety incidents and improving patient safety. Specifically, the Commission recommends:

- HEE use its levers to ensure that patients and service users are involved in the co-design and co-delivery of education and training for patient safety
- HEE works with provider organisations to ensure that work-based clinical placements encourage learning to facilitate meaningful patient involvement and to enable shared-decision making
- HEE explores the need for education and training for patients and carers through its work on self-care with the Patient Advisory Forum.

During a visit to the North of England, the Commission heard about an innovative programme to train the carers of children with long-term conditions. The programme ensures that parents and carers have the skills to provide safe, effective care for these vulnerable young people.

The Carer Skills Passport

Children with complex long-term conditions need considerable support to stay well and lead active lives. They are often dependent on enabling technologies, such as gastrostomies and tracheostomies, and may be taking 10 or more different medicines a day.

Parents and paid carers are responsible for ensuring the necessary care for these children. Parents and carers are trained to provide the necessary care for their child but there is no standard certificate to demonstrate competency and no standardised guidance as to how often training should be updated. There is not usually any formal training for medicines administration for parents or carers. Carers employed via Direct Payments or Personalised Health Budgets do not have any access to accredited training. This places children at unnecessary risk.

Alder Hey Children's NHS Foundation Trust is developing a Carers Skills Passport for parents and professionals caring for children with these conditions. It shows that the holder has undergone training and possesses the right skills and knowledge to keep children safe. Competencies covered include suction, oxygen, training in administering buccal medication, maintaining confidentiality, resuscitation and raising concerns.

Lynda Brook, from Alder Hey Children's Hospital explained: "We carried out a comprehensive training needs analysis for the parents and carers of young people with complex long-term conditions and developed a portfolio of standard care competencies. The Carer Skills Passport is transferable across all care settings. It demonstrates that parents and carers have received the appropriate training and have been assessed as competent to provide safe, effective care."

The hospital is developing a directory of accredited trainers to support rollout of the Carer Skills Passport. Evaluation will assess the impact of the Carer Skills Passport on a range of outcomes, including the number of emergency admissions and readmissions for the children in question. One parent described the passport as "a brilliant idea." She said: "It would most definitely cut out a lot of confusion between community staff, parents and carers."

The NHS needs to do more to ensure openness when things go wrong

It is vital for the NHS to learn from errors and for there to be a culture where people feel able to raise concerns and to be open and honest with patients and families when something does go wrong. We must all do more to encourage a spirit of openness and candour.

Healthcare staff need to be professionally accountable and understand how that accountability informs their day to day care. Regulators emphasise individual accountability but organisations need to ensure that all staff understand their own accountability within the system.

Being accountable is different to blame. Accountability is being responsible and answerable for an activity. If something goes wrong, those accountable are expected to answer for their part in the incident, to share their knowledge and to ask themselves "how can I help figure out what went wrong?"[49]

There can be a reluctance among NHS staff to admit mistakes to avoid jeopardising their careers or their organisation. Yet we know that learning from mistakes contributes to building a strong culture of safety. Conversely, a lack of transparency around mistakes and a culture of victimisation undermine patient and staff wellbeing. Eradicating the current blame culture is key to improving transparency.

A study conducted in 2009 illustrated the impact of patient safety incidents on healthcare workers. It conducted a series of interviews with staff years after an incident occurred. One healthcare professional who relived her story explained:

"*No matter how much you fool yourself you are over something…I had that woman's name seared into my memory and as soon as I saw that name, my chest was up in my throat. I still think about it. Just randomly you forget and then something will happen and it just pops into your head. You go over it again, what could I have done differently, what could I have said, what should I have done?*"[50]

The Care Quality Commission's regulation 20; the duty of candour[51] outlines the requirement on providers to be open and transparent with service users in relation to care and treatment. When something goes wrong in healthcare, the patient and family want answers - what happened, why did it happen and what steps have been taken to learn from this and ensure it doesn't happen again? Litigation is growing but we heard about the dangerous assumptions being made that patients routinely want to sue. The majority of patients and families only take this route when they have nowhere else to turn.

The Commission welcomes the work done by professional regulators to provide more information and advice for healthcare staff on the need for candour. A joint statement[52] released in 2015 by UK regulators recognises that all healthcare professionals have a common responsibility to be open and honest with patients when something goes wrong. Guidance produced jointly by the General Medical Council (GMC) and the Nursing and Midwifery Council (NMC) advises doctors, nurses and midwives on their requirements under the professional duty of candour[53] and the Healthcare Professions Council's updated standards of conduct, performance and ethics, includes new requirements to be open when things go wrong and to report concerns about safety.[54] However we also heard that there is a need for more awareness-raising and training about how to meet the requirements of the duty of candour as well as good practice in doing so.[55]

Recommendation 5

Supporting the duty of candour is vital and there must be high quality educational training packages available

The Commission recommends that HEE helps create a culture of openness and transparency by reviewing existing training packages to ensure they support the duty of candour regulations. They should commission relevant educational tools where needed and work with professional regulators to reflect the inclusion of a duty of candour in professional codes, extending beyond the legal duty for organisations and building on existing work in this area.

The complexity of modern healthcare means that staff can become too engaged with processes and do not do enough to maintain communication channels with patients and their families. Many complaints could be avoided if these imbalances were addressed. Evidence shows that complaints are often due to poor communication and lack of openness with patients.[56, 57, 58] When errors happen engaging with patients is the most effective way to prevent complaints, learn from mistakes, improve patient safety and achieve a culture of openness.

There is a need for awareness-raising training amongst all staff about the complaints process, to dispel some of the myths and assumptions being made and to increase understanding amongst staff about why patients and family members end up making complaints and in some cases seeking legal action.

Lifelong learning – ensuring that patient safety is a priority from start to finish

Healthcare changes rapidly, the people at the top change and quality improvement staff change. The only way for improvements to be sustained is for there to be a combination of top down and bottom up approaches so that sustainability, independent of any particular individual or individuals, can become the systemic strategy for commissioning for patient safety.

There is a need to promote lifelong learning on patient safety for both existing and future staff. Education and training for patient safety should start early, and continue throughout a healthcare workers career. It is needed at all levels, targeting leaders, boards, managers, and executives, those leadings in patient safety, clinical and non-clinical staff as well as all support staff within organisations.

It is important not to assume knowledge about patient safety, quality improvement science or human factors. All organisations training future healthcare staff must ensure their academic faculty is up to date and fully aware of the importance of the science behind this topic. Ensuring resources are allocated to patient safety within the curricula is vital as there is a risk these topics can be neglected as more traditional elements remain priorities for academics.

Framework 15, HEE's 15-year strategic framework, outlines the need for a shift in focus from investing primarily in the future workforce to investing in lifelong learning for both existing and future staff and the urgent need for more multi-professional working. There is expected to be a rise in the number of people living with long-term conditions. Cancer rates are set to increase, but more people are forecast to live with their health condition over longer periods. Patients are increasingly being cared for in the community and there will no longer be a clear dividing line between health and social care.

"*We are moving away from a 20th century model with its outdated divisions of hospital-based practice and 'health' and 'social' care… towards a 21st century system of integrated care, where clinicians work closely together in flexible teams, formed around the needs of patients and not driven by professional convenience or historic location.*"[60]

We recognise that patient safety is a problem of systems and of organisational culture, not simply of individuals. It requires training at all levels, starting from the top. All staff, both those in direct contact with patients and those working behind the scenes, need to learn about the importance of patient safety and to understand their individual accountability within organisations.

The importance of empowering learners and staff to be the 'eyes and ears' of the NHS

Fear of speaking out and rigid hierarchies that discourage people from raising concerns have been implicated in some of the most serious patient safety failures and the NHS needs to address this issue as a matter of priority. Through our research we heard repeatedly that entrenched hierarchies, a fear of blame and the belief that nothing will be done, are preventing staff across the system from speaking up about practices that could compromise patient safety.

"Students are the eyes and ears of the NHS," said Ann Butler, who along with Mike Brownsell from the University of Chester, is the Lead for Student Quality Ambassadors at Health Education England in the North West. During a presentation to our Commission in the North of England, Ann further stated "They go from placement to placement, witnessing examples of best practice and also areas where practice can be improved. We believe that they should be given a voice to speak up and capitalise on this opportunity."

"Training at the moment on patient safety is not sufficient…there is no awareness of safety at the systems level." [59]

The Student Quality Ambassadors Programme

The Student Quality Ambassador Programme was introduced to empower students to do just that. It began with just five student quality ambassadors (SQAs) from Cheshire in 2011. By November 2015, the number had increased to 300 across the entire region.

Ann explained: "The intention was to capitalise on the benefits that healthcare students can bring to ensuring compassionate care in the wake of the Francis Inquiry. Any healthcare student from across the North West can become a SQA, with students so far including; nurses from all four fields, midwives, allied health professionals, healthcare scientists, medical students and healthcare cadets."

The initiative allows student's voices to be heard, in line with the recommendations of the Keogh Report which recognised that by including students in open discussions, the NHS could gain frank and honest opinions on the quality of care. The report strongly encouraged directors of nursing to think about how they can harness the loyalty and innovation of student nurses (Keogh, 2013).

SQAs work alongside practice education facilitators, higher education institutes, fellow students, and service users, patients and their carer's. They act as champions of care both within NHS and non-NHS placements, promote good practice in the workplace by auditing standards of care and suggesting areas for continual improvement, and they showcasing student innovation projects.

The SQAs are supported through group workshops, seminars, and individual coaching on topics such as leadership, change management, negotiation skills, communication, team-working and documentation.

They follow patients through their journey of care, hearing about their experiences and telling their stories. All student nurses complete an innovation project as part of their studies, and SQAs feed these projects back into the Trusts involved, to encourage implementation and sustained improvements. A dedicated SQA website is now used to celebrate and share innovation. [61]

Implementing the programme was not without its challenges. Initial hurdles included reassuring service providers of robust governance structures, and education institutions of adequate support mechanisms for students. Clear communication strategies and employing a dedicated SQA support lead helped overcome the challenges.

The initiative has been broadened from its initial focus on nursing students to include all healthcare students, and now encompasses all 11 universities within the North West region. The SQAs complete six-monthly reviews to share their experiences and highlight quality initiatives they have been involved in. During the last review 95% also wrote they had learnt new skills. An empirical evaluation of the programme has yet to report, however, many new initiatives and ideas have been implemented by the SQAs suggesting that the skills learned are being transferred to the workplace, and innovations developed are improving outcomes for patients, clients, and staff. Practice assessment reports by mentors support this anecdotal evidence and highlight patient outcomes have also been positively affected by the compassion role modelling and leadership demonstrated by SQAs to other students and colleagues.

It is important for everyone in the NHS to put patient safety ahead of their pride. We need to foster a culture that enables everyone, including experienced clinicians, to recognise when their skills need updating. We want staff to feel able to speak out not just about serious issues but about any potential areas of concern. The Commission fully supports the recommendation made in Freedom to Speak Up that there should be a freedom to speak up guardian in every Trust.

The Commission is aware that HEE has already done a great deal of work to enable NHS staff to speak out and raise concerns. Awareness raising films[62] have been developed on raising and responding to concerns, which a number of trusts are using as part of the induction training for staff. HEE is working in partnership with the new National Guardian, who will be responsible for leading local ambassadors across the country to help staff feel safe to raise concerns and to be confident that those concerns will be heard.

HEE is developing e-learning packages, train the trainer initiatives and training for the new freedom to speak up guardians. We heard about the importance of all students being included in this, not just medical or nursing. Students and trainees in the NHS often have close contact with patients through different teams and may be aware of the risk that has not been detected by others.

But they should not stop there. We heard through our conversations with experts and staff about the importance of informal learning through mentors and feedback mechanisms while on placements. We heard that mentors do not have the time to support their mentees adequately and that often trainees do not have an opportunity to give feedback to their senior colleagues at all while on placement, and they themselves sometimes only receive feedback on their work right at the end of a placement. This was true for student nurses and midwives, allied health professionals, healthcare scientists and postgraduate doctors. More needs to be done to understand the reasons behind this and to develop solutions to address this problem.

Healthcare students, trainees and junior doctors often report that there is a gap between what is supposed to happen and what actually happens - the so-called 'illegal-normal'[63], which is often not acknowledged or discussed. This can send mixed messages about the importance of evidence-based practice and high standards to ensure safe patient care. The vocational nature of healthcare training means that mentorship is a significant contributor to a learner's development and future practice. By training senior colleagues in order to align their knowledge with the more up to date content being delivered to today's trainees, we can prevent the concept of a hidden curriculum, whereby real-life practice undermines the theoretical best practice they have been taught. HEE should explore with partners how to strengthen informal learning for all staff to tackle these entrenched problems.

The term millennials is used to refer to people who reached adulthood around the year 2000, they have grown up with, smartphones, laptops and social media being the norm and there is a marked gap between the learning styles of millennials compared to much of the established workforce, including leaders. We need to take account of the particular characteristics of millennials - especially their ambition and desire for flexible working - in our training programmes and give our leaders the right knowledge and the tools to attract and retain such staff.

Recommendation 6

The learning environment must support all learners and staff to raise and respond to concerns about patient safety

The Commission recommends that HEE works with national partner organisations and employers to ensure that the learning environment encourages and supports staff, including those learning and those teaching, to raise and respond to patient safety concerns.

The important role of students and trainees in preventing patient safety incidents is too often overlooked. Students and postgraduate trainees should be empowered to be the inquisitive and questioning eyes and ears of patient safety, confident in raising concerns and always learning. Many observations of risk to patients come from those new to the NHS and organisations should ensure their voices are heard.

Staff must have protected time for training on patient safety and continuing professional development should be standardised

Currently, patient safety education and training is piecemeal and determined by individual higher education institutions, Trusts, professionals and personal development needs. We need a consistent patient safety strategy that underpins all education and training for all healthcare workers. There also needs to be a standardised approach to measuring the quality of the training courses delivered.

Many staff members expressed concerns about the lack of support by their organisations for professional development, training and education. We heard that "organisations seem to expect to improve safety without investing any time or resource in the activity".

One of the biggest challenges facing education and training initiatives is a lack of protected time for training and heavy staff workloads. Staff need protected time to attend training and cover when they are away from the workplace.

"After 20 years in the NHS (as support worker, then nurse) the general morale is at an all-time low, in part, due to not being able to attend days for training. The training days are an important part of patient safety and maintaining staff education but, more than that, they show staff that the senior management believes we (the staff) are worth training and investing in. Such small details are often lost in big organisations, however we are all people who need a little encouragement every now and then."[64]

We acknowledge that staff already have to undergo considerable mandatory training. Currently, there is a perception that mandatory training tends to focus on operational issues, such as fire safety, and it is often delivered in an online format which staff often describe as "a tick-box exercise".

"Patient safety training unfortunately is looked upon as something imposed by 'them' on 'us', where 'they' are sat behind desks with too much time on their hands."[65]

However, staff also told us that a lack of protected time for training is one of the biggest barriers to patient safety. Staff shortages combined with high expectations mean they feel a tremendous amount of pressure not to take time away from the frontline in order to attend training opportunities. If the NHS is serious about patient safety being the number one priority, then the approach to training and education should reflect this.

Organisations need to be committed to the personal development of their staff. This means giving them time away from the workplace to undergo training and providing cover while they are absent. We particularly need commitment from senior and middle management.

Making patient safety training mandatory may be one of the necessary steps to ensuring training happens at the right time and for all staff who need it. Other steps could include making the case to executives that patient safety training is worth prioritising, as well as wider system-level changes (in collaboration with other health policy-makers). Of all of these, mandatory training is something that can be leveraged in the short-term to protect patient safety.

"For staff training junior doctors and pharmacists, the volume of [patient safety] alerts and risks to be highlighted is daunting. We often direct staff to read the alerts and then to approach us to discuss if any issues. A better system would be to include this as mandatory training, with a formal assessment of the learning to ensure staff have engaged with the material and can put the learning into practice."[66]

HEE needs to review the investment in CPD with respect to patient safety and work with stakeholders to standardise staff training across the system for professional and non-professional staff.

Recommendation 7

Review mandatory training requirements and delivery of continuing professional development in relation to patient safety

The Commission recommends HEE reviews both mandatory training requirements and the delivery of CPD related to patient safety. It should work with stakeholders to ensure that appraisals assess understanding of human factors and patient safety. HEE should use its contracts with providers to ensure protected time for training on patient safety is part of the mandatory training programme in each organisation.

The Commission is aware of the work of Skills for Health to standardise mandatory training for Trusts and recognises the importance of standardisation and transferability of training for reasons of quality, efficiency and spread.[67]

The Commission welcomes the work already done by regulators to include patient safety in professional codes. These codes are central to the revalidation process. For example the GMC's core guidance, *Good Medical Practice*[68] has safety and quality as one of its four domains and expects doctors to demonstrate that they regularly take part in quality improvement activity as part of their revalidation. The Health and Care Professions Council's new standards[69] emphasise the importance of safety of patients and service users for the 16 health, psychological and social work professions it regulates, requiring all those on its register to meet mandatory standards on continued fitness to practise. 'Preserve safety' is one of four central themes in the Nursing and Midwifery Council's new Code; *Professional Standards of Practice and Behaviour*.[70] Nurses and midwives will be required to reflect on the Code and its role in their practice as part of revalidation. The first group of nurses and midwives will go through revalidation in April 2016.

Leaders also need safety training

Leaders also need patient safety training so they have the right knowledge and tools to act. The Commission recognises that everyone has the potential to be a leader in patient safety and our recommendations aim to give all staff the knowledge and tools to identify and implement improvements. It is very hard however for organisations to make an impact on patient safety without commitment from the top. Senior and middle management need to understand the principles of patient safety so they can encourage an open and honest culture and spearhead change in their organisation.

"We are not always listened to as to how training is delivered, frequency of training etc. We advise and ultimately, a decision is made at executive level – this is frustrating as we cannot deliver training to the standards set by ourselves because it has a cost implication."[71]

The Kings Fund report '*Exploring CQC's well-led domain. How boards can ensure a positive organisational culture?*' explores the role of leaders of organisations and how important their focus, values and behaviours are in terms of determining the culture of an organisation;

"The challenge for us is how can we ensure we have leadership, which ensures that there is a focus on the vision of providing high-quality, continually improving and compassionate care at every level of the organisation? Not just in the vision or mission statements but in the behaviours throughout the organisation".[72]

Through the online survey the Commission heard that the support or participation of leadership in patient safety training interventions was perceived to be a sign of institutional commitment and prioritisation of safety. Responses from the expert interviews specifically emphasised the importance of patient safety training for management and executives and suggested if this was not being made a priority within an organisation then it was likely patient safety training would not be prioritised for the rest of the staff.

Recommendation 8

All NHS leaders need patient safety training so they have the knowledge and tools to drive change and improvement

The Commission recommends HEE works with partner organisations to ensure that leadership on patient safety is a key component of the leadership education agenda. This will foster greater understanding of patient safety among leaders and, therefore, greater commitment on their part.

Delivering education and training for patient safety

Training for patient safety should be interactive, meaningful, and adaptable to local needs. To be most effective, training should be linked to everyday practice.

Patient safety experts interviewed through the Commission, perceived changes in individual healthcare workers knowledge, skills, attitudes and behaviour, to be important objectives of education and training for patient safety. Change must also take place at team and organisational levels across similar learning outcomes.[73]

Through our conversations with patients, frontline staff and students, we heard about the need for education and training to focus on the systemic issues that contribute to patient safety incidents. We heard about:

- the perception that some healthcare staff do not value patient and carer input and do not take efforts to actively involve patients and carers
- a lack of compassion and self-awareness by some healthcare staff, particularly towards vulnerable patients and service users. Hard to reach groups can be particularly at risk if not identified and staff made aware of their specific needs
- unacceptable diversity of different types of training received by healthcare workers means their capabilities and understanding about patient safety can vary widely
- lack of communication, collaboration and information-sharing between different health service providers and across health and social care services, leading to break down in care
- healthcare professionals are seen as having to limit the amount of time they spend with each patient, with some spending too much time on the computer and not caring for patients. Overall, there is a perception that staff are following protocol rather than giving patients the care they need
- a need to give patients more information about their conditions and treatment programmes and focus on removing health jargon to ensure better understanding.

"Training not only needs to tell them what is good practice and what is not, it needs to engage them to consider the impact of their actions, to help them recognise what is not right and to consider what action they would take if things were not right.." [74]

Staff and students need to be trained to work in a more integrated NHS and to consider safety in its broadest context

There are particular patient safety challenges when patients move between health and social care, primary and secondary care. The care pathway is changing and staff must be educated and trained to be patient-centred, following the patient rather than the system across boundaries between primary and secondary care, health and social care.

HEE's 15 year strategic framework sets out some of the changes that are affecting the way care is delivered, ranging from; demographic and technological factors; the new service models that will be introduced as part of the NHS Five Year Forward View; through to the way that patients themselves are changing. It depicts the patients of the future as; people with multiple and complex conditions, patients who are informed, active and engaged in their care and members of a 'community of health' which includes, but is not exclusively, the formal healthcare workforce.

The Bromley by Bow Centre

The Bromley by Bow Centre[75] aims to serve the local community by providing a wide range of services and activities, which are integrated and co-operative in nature. They host the local GP surgery, a variety of social enterprises, a children's centre, artists' studios, a healthy living centre, and provide adult education courses, care and health services for vulnerable adults, outreach programmes and a range of advice services.

This approach enables GPs to refer patients to services that help to tackle the social determinants of ill health, including welfare, employment, housing and debt advice services. The centre has received international recognition for its social entrepreneurial approach to community regeneration and effective delivery of integrated services. Their services are tailored to the needs of the whole community - families, young people, vulnerable adults and older people. They aim to support people across a range of projects and services in four main ways:

- supporting people to overcome chronic illness and unhealthy lifestyles
- enabling people to learn new skills
- supporting people to become less grant dependent and to find work
- providing people with the tools to create an enterprising community.

Education and training interventions on patient safety must anticipate the changing care pathway and be able to respond and adapt to new ways of delivering care

The risks of sepsis have been raised in the media recently which has highlighted the need for further awareness-raising and a joined-up approach across healthcare to address this important topic. Linked to the work of the cross-system Sepsis Board, HEE's Sepsis Working Group (which includes representation from system partners such as Public Health England, NHS England, Sepsis Trust, professional colleges and AHSNs) is undertaking a programme of work to look at the educational needs of general practice and primary care in order to develop sepsis learning resources. These will include an e-learning programme on the identification and early management of sepsis in primary care and an awareness video promoting current resources available to clinical trainers to support sepsis management in children in primary care.

HEE is also scoping system partners and NHS organisations to find out what training material they are currently using to support recognition and management of sepsis, with a view to identifying gaps in education and training and making recommendations to address these.

Developing new education and training packages and ensuring that staff have access and use them appropriately is positive, but should not only happen in a reaction to a disastrous outcome for an individual or their family.

The Commission heard that by addressing the needs of some of the most vulnerable sectors of society, we will make the greatest difference to patient safety. The following example from London shows how frail elderly people are able to avoid being admitted to A&E when there is no clinical need for them to be there. The initiative has been well received by patients and staff, is reducing costs of the acute trust and has won a prestigious award.[76]

The Frailty Academy

The Academy was developed through the University College London (UCL) Partners Innovation Unit; a learning collaborative of doctors, nurses and allied health professionals, community nurses, paramedics and care home staff who explore ways to improve care for the frail elderly population. The Academy covers the areas of Barking and Dagenham, Havering and Redbridge and was set up with funding from HEE's Central, East and North London team.

The Frailty Academy was set up in October 2014 to address the needs of frail adults in the area. Three working groups were established within the Academy one of which was the 'community alternatives to admission'. The group used quality improvement methodology to strengthen the existing relationship between the London Ambulance Service and North East London Foundation Trust's Community Treatment Team. The latter service had been set up to work with patients experiencing a physical health crisis to remain at home, rather than attend A&E if avoidable. The group worked to improve confidence and trust between the two services so that ambulance service staff increased referrals to community treatment team, rather than convey to hospital.

Using the positive experience of the community avoidance group the London Ambulance Service and North East London Foundation Trust's Community Treatment Team collaborated further to establish the K466 Falls Response car - a nurse and paramedic working together to respond to people over the age of 60 who have fallen and support them to stay in their homes.

Between October 2014 and July 2015, 601 patients were kept safely in their own homes and the local health economy saved £108,781 (net) as a result of using the quality improvement skills and methodology staff had learned in the Frailty Academy.

The new service has been greeted with overwhelmingly positive patient feedback, and was commissioned by the local CCG for 2015/16. It was a Patient Safety Congress award winner in July 2015 and a Doctors Advancing Patient Safety (DAPS) Global winner in November 2014. It is a great example of breaking down barriers between primary, secondary and community providers.

Quality Improvement Capability Lead, Elisabeth Ball from University College London Partners said: "The key challenge was getting groups together from a range of sectors who do not work together normally and then completing project work on top of highly challenging work roles. But, once people became engaged the level of commitment was amazing and now there are some very strong relationships established for this and other work. The academy has strengthened and enhanced the existing Community Treatment Team to support the London Ambulance Service after initial triage and treatment. It provides interim care for patients in their own home as an alternative to hospital care."

Not only is this a great example of joined-up working, but the team also thought about how the project could be sustained right from the outset, which was not always the case in some of the improvement projects we heard about. They did this by including staff in the London Ambulance Service and the Community Treatment Team to take on the role of trainers, so they could continue the programme beyond its first phase.

"As the workforce becomes increasingly integrated, agreement is required as to how to meet the training needs of [the] new evolving staff roles – some of whom will be social care staff undertaking health care duties (and vice versa)." [77]

There can be a tendency to adopt a silo mentality when it comes to education and training but taking a more integrated approach produces a range of benefits, both for patients and the NHS. This example from Yorkshire and Humber shows how delivering training in care homes has tackled avoidable admissions to the local hospital. Once again, this improves the safety of frail elderly people at the same time as reducing costs to the acute sector of the NHS.

Clinical skills training for care homes

HEE's Yorkshire and Humber team asked care homes what would make a difference to them. They said they wanted to be able to improve the competence and confidence of staff in developing a range of clinical skills, including skin care and preventing pressure ulcers, venepuncture and catheter care. In response to this feedback they created a clinical skills training programme that would develop clinical skills for care home staff using a mix of simulated practice and skills training. It would be delivered at individual nursing homes by a funded designated specialist trainer.

Kay Ford, Regional Clinical Skills Adviser for HEE's Yorkshire and Humber team said: "Previously, any training delivered to nursing homes had focused on a single topic. Providing a mix of clinical skills training was an innovative new development. To date, we have trained nearly 1000 care home staff across 50 homes over a two-year period. The training provided is not simply procedural but also focuses on helping staff to make confident clinical decisions."

The training programme had a significant impact on the safety and experience of vulnerable elderly people. "We discovered a number of instances of poor clinical practice – such as staff taking bloods with a needle and syringe instead of more appropriate techniques, or catheters being left in for longer than they should have been because staff didn't have the skills to change them," said Kay. "Problems like this have been addressed and staff are now more confident. We are working with an academic partner to evaluate how this work is impacting the safety of frail older people."

Initial feedback suggests that the training programme has made a difference. Four homes in the region had particular safeguarding issues due to the prevalence of pressure ulcers. 90% of staff in these homes took part in the training programme and now they know what to look for and how to prevent pressure ulcers. Staff feel more confident to speak to community teams if they have concerns and there has not been a recurrence of a pressure ulcer in these homes, with the exception of one that had developed while the resident was in hospital.

This was a pilot project and HEE's Yorkshire and Humber team is looking at the feasibility of scaling it up and addressing the challenges of moving their work forward. They told us:

"Some areas are developing similar models to this, others are reducing support for nursing homes. But nursing homes care for our patients. Their staff want and need support with training. We have shown that this programme changed practice and improved the care of frail older people. It is a great example of integrated care, in line with Five Year Forward View, so why would we not continue with this?"

Recommendation 9

Education and training must support the delivery of more integrated 'joined up' care

There are particular patient safety challenges during transitions between health and social care, primary and secondary care. The Commission recommends HEE works with partner organisations to ensure education and training supports delivery of safer joined up care. It should spread learning from the early adopters of integrated care such as Academic Health Science Networks, Patient Safety Collaboratives and the Q Initiative, to all those designing and delivering education and training.

The Commission welcomes the launch of the new Q Initiative which aims to bring together learning from quality improvement work to enable the scale of transformation required. The Q initiative, led by the Health Foundation and supported and co-funded by NHS England, will enable those leading improvement to share ideas, enhance their skills and make changes that bring tangible benefits to health and care.[78]

Safety conversations in the NHS can be very hospital-focussed and we must ensure this does not inhibit us from thinking about patient safety across every aspect of health and social care.

Education and training should consider safety in its broadest sense. We hear people talk about improving safety and improving quality as though they are two different things. Those that the Commission spoke to almost universally saw education and training in patient safety as part of the broader drive to improve quality and commented that artificially separating the two was not helpful. Safety needs to be thought of as an integral part of quality. In fact both approaches have similar aims – to improve performance and outcomes at all levels. One cannot achieve quality without safety.

Staff and students want inter-professional learning

We encountered almost universal enthusiasm for inter-professional learning (learning across multidisciplinary teams, rather than just with peers) and yet it is not currently being offered in a systematic or structured way.

Inter-professional training was repeatedly mentioned as a way of breaking down silos between professions and encouraging teams to work together more effectively as a unit. This theme came out of focus groups, geographical visits and survey responses.

Training needs to be delivered to inter-professional teams, from undergraduate level through to CPD, and across primary, secondary and community care. Training should reflect the patient pathway and should include all staff not just clinical staff, giving consideration to how services are delivered. In general practice, for example, we recognise that receptionists have a key role to play in improving patient safety. In the same way, pharmacists play a vital role within the community as well as in acute trusts.

We heard about a health care team challenge that brings inter-professional teams of undergraduates together in a competition to see how well they can plan for a complex patient case. The competition tests their teamwork and collaborative skills and gives them a good understanding of each other's roles, which stands them in good stead for the workplace.

Inter-professional training for undergraduates

The Health Care Team Challenge is an inter-professional educational event for undergraduates. Originating at the University of British Columbia in Canada more than 25 years ago, Sharon Buckley, Senior Lecturer in Medical Education, University of Birmingham explained: "The health care team challenge is an educational competition in which inter-professional teams of pre-registration health professional students prepare a management plan for a complex patient case. The aim is to encourage teamwork, collaboration and an understanding of each other's roles, as well as enhancing self-awareness and enthusiasm for collaborative working. The challenge is designed to educate the next generation of health professionals in patient-centred care, teamwork and patient safety using a mix of active, experiential and social learning."

The health care team challenge West Midlands 2015 set out to raise awareness of the issues relating to the care of patients with dementia. 55 senior pre-registration students took part from the Universities of Worcester, Birmingham and Birmingham City. There were eight mixed teams, including students of medicine, nursing, physiotherapy, pharmacy, physician associate and radiography.

At a preparatory event in May, students were given their challenge and met their inter-professional teams. Over the next two weeks, the teams shared documents via Dropbox and had access to their mentors for advice and support. The teams came back together on 5 June to present their keynote presentations. Each team was given a question and had three minutes to answer, testing their teamwork under pressure. All participants received feedback on their work and the judges chose the winning team, based on their teamwork and effectiveness of their management plan.

Sharon said: "The challenge has spread into Australia, as the Health Fusion Team Challenge, and is also now in the US, New Zealand and UK. In our experience, it increases the students' enthusiasm for and understanding of inter-professional team working, which we believe will translate into improved collaboration in the clinical setting."

NHS staff told us they prefer training methods that focus on sharing experiences/discussion between healthcare workers, simulation and interactive training. They particularly value training in inter-professional teams as this is seen as more closely mimicking the working environment, building more effective teamwork and helping to remove entrenched hierarchies.

Recommendation 10

Ensure increased opportunities for inter-professional learning

There is enthusiasm and a real need for more inter-professional, practical and team-based learning at every level, from first year undergraduates and apprentices through to the existing workforce. The Commission recommends HEE use its levers to facilitate increased opportunities for inter-professional learning.

The importance of human factors

Through our online survey and conversations around the country, we heard about the importance of human factors training. When asked what worked well in patient safety education and training, the largest proportion of respondents to our online survey cited human factors training.

"We, the undersigned, believe that a wider understanding of Human Factors principles and practices will contribute significantly to improving the quality (effectiveness, experience and safety) of care for patients."[79]

As a signatory to the Human Factors in Healthcare Concordat, HEE is committed to increasing understanding of human factors principles and practices. The Commission believe all staff should have an understanding of human factors so they can understand influences, both at work and in their personal lives, which can affect the way they behave in the workplace.

Human Factors in Healthcare is about 'enhancing clinical performance through an understanding of the effects of teamwork, tasks, equipment, workspace, culture and organisation on human behaviour and abilities and application of that knowledge in clinical settings.[80] Teams and individuals need both technical skills (clinical skills, quality improvement, implementation) and non-technical skills (communication, listening, team working, emotional intelligence, self-awareness) to improve patient safety effectively. We also need to build their underpinning knowledge – of patient safety, safety theory, improvement science and of the local system (for example, where to find help). Staff wellbeing is also recognised as an essential component of clinical human factors.[81]

To coincide with the Commission's work, HEE's *Learning to be Safer* programme delivered a series of human factors and ergonomics taster workshops, through the Chartered Institute of Human Factors and Ergonomics, at five locations around the country during July 2015, to introduce human factors and ergonomics principles as system and design concepts to a range of healthcare staff. The workshops were very well received by participants, found to be directly relevant to their work and the majority said they would seek further human factors training for themselves and their teams. Following the workshop over 97% of participants reported that human factors and ergonomics could help to improve safety, performance and wellbeing for patients, staff and organisations. Workshop participants listed their main patient safety challenges as staff workload and competencies, hierarchies, communication breakdown, lack of integrated systems and services and poor leadership. The Commission welcomes such efforts to raise awareness about human factors and ergonomics and the workshop report is available at www.hee.nhs.uk/the-commission-on-education-and-training-for-patient-safety.

Recommendation 11

Principles of human factors and professionalism must be embedded across education and training

The Commission recommends HEE works with national partner organisations to ensure the basic principles of human factors and professionalism are embedded across all education and training. Multi-professional human factors training should form part of the induction process for every new employee and also needs to be offered as part of regular refresher training for all staff so that all healthcare workers understand the importance of human factors and professionalism and how this can influence patient outcomes.

The Commission proposes that HEE should work with human factors experts to implement this recommendation.

The Commission heard that a gradual approach to implementing human factors training is most useful, which supports organisations and individuals to assess what is required so this can be tailored to support service delivery. The principles of professionalism in all behaviours and attitudes will also need to be endorsed.

We also heard about the importance of applying human factors procedures to high-risk areas. For example, a good starting point would be for all employers to take a human factors approach to medicines safety, incorporating the three stages of prescribing, dispensing and administration.

HEE teams working locally also highlighted to the Commission that it is important to identify and recognise the great deal of activity taking place around the country which includes human factors principles, but is not being labelled as such. This links to the need for a common language and understanding of patient safety as discussed earlier in the report.

Simulation is a particularly effective way of training staff in inter-professional teams for both technical and behavioural work. There is a tendency to think of simulation as being a high tech activity that takes place in specialist simulation suites. However low-fidelity simulating of every day practices and procedures in a workplace environment is ideal for training staff in more effective communication, handovers and team work.

During the Commission we heard about a project run at the Maudsley Simulation Centre, which is giving all health professionals the chance to develop their skills and understanding in caring for people with mental health conditions. The centre provides a mix of in-situ and centre-based training using both high-fidelity simulation mannequins and low-tech simulation involving actors portraying simulated patients and family members.

Inter-professional mental health simulation

One in four of us will experience a mental health issue and may present to services in a wide variety of settings. Given how common these issues are, the courses reflect the complexity of different ways that mental health patients access care. Training is delivered to inter-professional teams from primary care, acute trusts and mental health trusts. They include, among others; GPs, general medics, surgeons, paediatricians, psychiatrists, obstetricians, nursing staff of all levels and specialties, healthcare assistants, occupational therapists, psychologists, social workers, health visitors, midwives, and security officers.

Participants learn with, from and about each other, using a mix of experiential and reflective learning, and structured debriefs. They learn about the human factors and non-technical skills that influence how they work as teams, as well as developing improved clinical skills. The courses improve their confidence in assessing and managing the presentation of mental illness across all healthcare settings. They also enhance skills in inter-professional collaboration, communication, engagement, therapeutic interviewing and empathy, whilst also improving attitudes towards patients with mental health needs and towards mental health professionals in general.

The centre uses a range of measurement approaches including pre- and post-training questionnaires, video analysis and incident reporting. Evaluation showed a significant improvement in people's confidence and knowledge about mental health, greater clarity about individual roles, positive shifts in attitude towards mental health, improved skills in conflict resolution, and greater expertise in communication and team functioning. The courses demonstrate significant educational impact at Kirkpatrick levels 1 and 2, and work is underway to measure their impact at levels 3 and 4.

The centre has, thus far, developed courses around patient care at the mental—physical interface, perinatal mental health, dementia care, paediatric mental health, as well as in-situ simulation courses focusing on patients with acute behavioural disturbance in general hospital settings. The aim of this last course is to increase staff confidence and ability in anticipating challenging behaviours.

The Commission believes that greater use could be made of some of the high tech simulation suites that currently exist and that Trusts could be encouraged to share facilities. We also heard however that simulation does not always need to be high-tech and can cover non-technical skills, such as handover and communication.

The Commission welcomes the work of HEE, together with the Association for Simulated Practice in Healthcare to develop and implement clear standards that will underpin high quality simulation-based education and which will inform future commissioning practices. We also welcome the 2014 report[82] commissioned by HEE to scope existing simulation capacity in England and look forward to seeing the next steps to this work so that more effective use can be made of simulation as an educational technique.

Some organisations are doing simulation sessions in a just-in-time manner; going through a procedure following either a near miss or an incident. These episodes are conducted in the workplace (the ward, operating theatre, laboratory etc.) and can reassure staff that processes are in place and that their skills as a team and as individuals are satisfactory. Other organisations are beginning to use simulation to test out new patterns of care to ensure they are safe and that latent risk or hazard to patients it tested.

Students, staff and leaders should know how to manage risk

Training should support behaviour change and staff at every level, including leaders and board members, and should be equipped with the knowledge and skills to identify and manage risk.

We recognise that transitions between care providers (for example, between health and social care or handovers between teams), physical transitions (for example, between wards) and career transitions for staff (for example, from undergraduate to practising occupational therapist) are times of potential risk to patients.

The transition from medical student to doctor – referred to by sections of the media as Black Wednesday - can be a time of increased risk to patients and heightened stress for staff. During their first on-call shift, some doctors report feeling under-prepared, daunted and lacking support.

During a Commission visit to the North of England, we heard about a project that is successfully supporting staff to transition from medical student to newly-qualified doctor.

Asked to See Patient Training for newly-qualified doctors

Trainees at the North Western Foundation School have developed a peer-led medical education project called Asked To See Patient (ATSP), which is designed to support the transition from medical student to newly-qualified doctor. It has since been incorporated into HEE's foundation year 1 induction in the North West.

Professor Paul Baker, North Western Foundation School Director and ATSP Foundation School lead explained:

"Asked To See Patient aims to give every new foundation year 1 doctor the confidence and skills they need when working out of hours for the first time. There is strong emphasis on patient safety and the importance of seeking senior support. We encourage safe, organised clinical decision-making, prescribing and documentation, and trainees are taught the importance of prioritisation, good communication and team-working. Each one of them is given a booklet containing the key scenarios covered in the teaching, to carry with them at work."

Several half-day 'teach the teachers' sessions are run by the ATSP project leads to train current junior doctors to deliver the teaching programme. The trained teachers then deliver a three-hour teaching session to the newly qualified doctors during the induction period.

The teaching is scenario-based and focuses on the most common problems that are likely to affect hospitalised patients out of hours. PowerPoint presentations and role-play are used to impart advice and practice the ATSP teaching scenarios.

One of the project leaders, Dr Shazia Hafiz said: "We aim to teach foundation year 1 doctors everything we wish we had known a year earlier."

In evaluating the success of the project, feedback forms ask participants to give specific examples that demonstrate how the ATSP teaching had affected their approach to hospitalised patients out of hours. The results show that junior doctors behave in a more confident, organised and safe manner. They know how to prioritise tasks effectively, how to document properly and how to communicate clearly with their team members.

The Commission recommends that HEE pays particular attention to educating staff to manage transitions. This is both important for individual healthcare students and workers as they move between jobs as well as for patients as they move between different parts of the service. In particular, we want a focus on handovers and communication between teams. We need to ensure that community-based staff receive the same level of training as those in acute and primary care settings.

The Commission witnessed a superb example from HEE's Thames Valley team of the innovative use of simulation to help staff get a better understanding of how to manage the transition of patients between services during an emergency.

Simulation to support the transition of patients between services

The first of its kind in the UK, Simbulance is a converted ambulance that is used by South Central Ambulance Service NHS Foundation Trust (SCAS) to simulate what happens in an emergency, during transportation before a patient reaches hospital and at the point of transfer from ambulance service to other medical staff. Simbulance is used for end to end training from the first call to the clinical coordination centre to the treatment centre as well teaching pre hospital human factors, simulations for frail elderly patients and non-emergency patient transport service patients.

All simulations are filmed and staff are debriefed following the exercise. Darren Best, Clinical Simulation and Human Factors Education Manager for SCAS says "we recreate real-life scenarios for staff to practice in safe environment that improves patient safety and experience. When we playback the scenario footage afterwards, staff can see what went well, how they felt during the scenario, and how the scenario can impact on their future practice. The verbal debrief and footage provides a detailed feedback of events and this type of simulation also helps staff to answer vital questions such as "who is in charge when the patient is being transferred from the ambulance to the emergency department?"

Paramedics-in-training in the region undergo 200 hours of Simbulance and simulation centre trainings. Employed ambulance staff have regular access to Simbulance during team training and other courses. The region is planning to expand their simulated situations using an immersive classroom and simulation centre. They also plan to expand the use of Simbulance to other organisations and situations such as conflict resolution, elderly patients and people with dementia. Ian Teague, Assistant Director of Education for SCAS) added: "Simbulance increases the abilities of individuals but it's not just about skills, it's about human interaction."

HEE's Thames Valley team supplied £128,000 to equip the Simbulance. The ambulance service donated the vehicle and purchased some mannequins. The total investment was approximately £200,000.

Recommendation 12

Ensure staff have the skills to identify and manage potential risks

The Commission recommends HEE works with national partner organisations to ensure staff have the skills to be able to identify and manage potential risks, to come up with possible solutions and to be able to implement these solutions. All staff should also have an understanding of how the system and human behaviour impacts their own practice and how this relates to patient safety.

Simulation training is an ideal approach to training staff to identify and manage risk. Training in risk management needs to be assessed and supported through appraisals. Employers should support this.

We heard about an innovative project in the East Midlands that is using a combination of simulated clinical encounters with real patients; case-based discussions; feedback clinics with medical, nursing or pharmacy educators; and access to both clinical decision support and e-learning to ensure doctors feel confident and are competent throughout their rotations.

Effective prescribing insights for the future

A GMC funded investigation[83] in 2009 looking at the causes of prescribing errors, reported that foundation year doctors are responsible for the greatest proportion of prescribing but are more likely to make a prescribing error when compared to other prescribers such as more experienced junior doctors, consultants, nurses and pharmacists.

To reaffirm that this is the case, in a renal unit in the East Midlands an audit of prescribing was conducted continuously over a four-month period. A total of 10,394 prescribed items were captured with foundation year 1 doctors making twice the number of errors as foundation year 2 errors, and foundation year 2 doctors making twice the number of errors as all other prescribers.[84] Sometimes these errors were minor, such as a lack of a signature, but at other times they were potentially more serious, such as prescribing the wrong dose.

The Trust wanted to reduce the number and severity of these errors. Through the Effective Prescribing Insight for the Future project (ePIFFany) they simulated clinical encounters with real patients; case-based discussions; feedback clinics with medical, nursing or pharmacy educators; and access to both clinical decision support. E-learning was also introduced at the start of the foundation year doctor's four-month rotation to increase their confidence and competence. Participating doctors were given the opportunity to gain video-feedback from the simulations.

The programme led to a significant improvement in the performance of these novice prescribers. By the end of the programme, foundation year 1 doctors were prescribing at a similar level to foundation year 2 doctors and foundation Year 2 doctors at a similar level to their more experienced colleagues. There was also a reduction in the severity of any errors made. Junior doctors reported feeling more confident and able to ask for help when they needed it.

The programme is now being implemented in Lincolnshire with the aim of tackling general surgery prescribing errors. The Commission were impressed with the results and would like to see this project expanded to have wider engagement with other students and staff.

In conclusion

The Commission heard hundreds of examples of good practice; innovative education and training interventions making a difference to patients locally. Learning from patient safety data and sharing of good practice is central to improvement efforts and in the spirit of this a number of these examples from around the country have been highlighted as case studies in this report. The enthusiasm of so many must be harnessed and supported to drive further innovation and improvements in quality and safety.

However the Commission also heard unequivocally from learners and staff that current education and training is fragmented and needs to change in order to address the wide ranging patient safety issues that exist, as well as the increasingly complex challenges that lie ahead. The lack of robust evidence on which education and training interventions are most effective in improving patient safety, is a major drawback.

Principles of human factors and professionalism must be embedded throughout healthcare but there must also be further efforts to ensure clear and consistent language about patient safety that can be understood by everyone in order to inspire and enable individuals to learn about patient safety, quality improvement science and human factors.

The Commission envisions an NHS where patients are at the centre of education and training, all staff and learners are empowered to raise concerns and are actively supported by their leadership to learn about and improve patient safety. The Commission would like to see a system where staff and learners from all levels, sectors and disciplines have opportunities to be educated and trained together and where education and training is driving the move towards integrated care and an open culture.

The Commission's recommendations

1. Ensure learning from patient safety data and good practice.
2. Develop and use a common language to describe all elements of quality improvement science and human factors with respect to patient safety
3. Ensure robust evaluation of education and training for patient safety.
4. Engage patients, family members, carers and the public in the design and delivery of education and training for patient safety.
5. Supporting the duty of candour is vital and there must be high quality educational training packages available.
6. The learning environment must support all learners and staff to raise and respond to concerns about patient safety.
7. The content of mandatory training for patient safety needs to be coherent across the NHS.
8. All NHS leaders need patient safety training so they can have the knowledge and tools to drive change and improvement.
9. Education and training must support the delivery of more integrated 'joined up' care.
10. Ensure increased opportunities for inter-professional learning.
11. Principles of human factors and professionalism must be embedded across education and training.
12. Ensure staff have the skills to identify and manage potential risks.

The Commission recognises that HEE cannot do this alone. Embedding newly-acquired skills will require close working with other bodies to shape organisational and system-level changes.

Also education alone will not be enough to improve patient safety. We need to take into account current cultures, the demands of the system and the attitudes and behaviours of leadership. Collectively, health policy organisations, commissioners, trusts, educators and regulators need to work together to create the right environments for work and learning so that people can be enabled and supported to do the right thing for patients. HEE can set aspirations but it is also up to others to take responsibility to create the conditions so that change can be implemented.

What's next?

The Commission would like to thank the hundreds of patients, carers, students, trainees, staff, managers, executives, patient safety experts, educators and trainers that contributed their time, their views and ideas for change during our consultation process. It is their frank recognition of the challenges combined with such willingness and openness for change and improvement that has brought this work and the Commission to life.

We now expect the NHS – HEE and its national partner organisations – to respond to our recommendations.

Appendix

1. Glossary
2. Acknowledgements

Glossary

Acute care	Medical and surgical treatment usually provided by a hospital
Clinical Human Factors Group	A broad coalition of healthcare professionals, managers and service users who have partnered with experts in human factors to campaign for change in the NHS.
Community care	Health or social care treatment outside of hospital. It can take place in clinics, non-acute hospitals or in people's homes.
Clinical commissioning groups (CCG)	The local NHS led by GP's and healthcare professionals. They are responsible for commissioning healthcare services including most of the hospital and community NHS services in the areas for which they are responsible.
The statutory duty of candour	Introduced by the Health and Social Care Act 2008 (Regulated Activities) Regulations 2014, this relates to the statutory duty of candour placed on all health service bodies, and, from 1 April 2015, all other care providers registered with the CQC. This duty requires providers to be open and honest with patients, or their representatives, when unintended or unexpected harm has occurred during their treatment.
Fitness to practise	Requirements for a healthcare professional to have the skills, knowledge, good health and good character to do their job safely and effectively.
Francis Report	Sir Robert Francis QC was commissioned to head an extensive inquiry into failings at Mid-Staffordshire NHS Foundation Trust; his final report was published on 6 February 2013.
Freedom to Speak Up Guardian(s)	Sir Robert's report sets out the need for a 'Freedom to Speak Up Guardian' in every local NHS healthcare organisation appointed by the organisation's chief executive to act in a genuinely independent capacity. The National Guardian is a new role created to support whistle-blowers in the NHS and improve reporting culture. It has been created as a result of recommendations from Sir Robert Francis' Freedom to speak up review and will be based at the Care Quality Commission. The independent role will provide high profile national leadership to a network of Freedom to Speak Up Guardians across NHS Trusts. These guardians are another important way of creating a culture of openness across the NHS.
Friends and Family Test	The NHS friends and family test (FFT) was created to help service providers and commissioners understand whether their patients are happy with the service provided, or where improvements are needed. It is a quick and anonymous way to give your views after receiving care or treatment in the NHS.
Human factors	Human factors in healthcare is about enhancing clinical performance through an understanding of the effects of teamwork, tasks, equipment, workspace, culture and organisation on human behaviour and abilities and application of that knowledge in clinical settings.

Inter-professional	Involving a range of different professionals from across health and social care.
Kirkpatrick model	A methodology for evaluating training programs, developed by Donald Kirkpatrick in 1959. The four levels of this methodology include determination of how learners react to the learning process, the success of skill acquisition by learners, the extent to which workplace behaviour after the training indicates skill acquisition, and measurable results, including increased profits or decreased defects observed.
National Reporting and Learning System	The National Reporting and Learning System (NRLS) is a central database of patient safety incident reports. All information submitted is analysed to identify hazards, risks and opportunities to continuously improve the safety of patient care.
National Safety Standards For Invasive Procedures	NatSSIPs is a high-level framework of national standards of operating department practice. Developed in response to the recommendations of the Surgical Never Events Taskforce report, NatSSIPs has been created for local providers to use to develop and maintain their own more detailed standardised local operating procedures.
Near miss	Any unexpected or unintended incident that was prevented, resulting in no harm to one or more patients receiving NHS-funded healthcare
Never events	Serious, largely preventable patient safety incidents that should not occur if the available preventable measures have been implemented
Patient safety	The process by which an organisation makes patient care safer. This should involve risk assessment, the identification and management of patient related risks, the reporting and analysis of incidents, and the capacity to learn from and follow up on incidents and implement solutions to minimise the risk of them recurring.
Patient safety incident	Any unintended or unexpected incident that could have or did lead to harm for one or more patients. The terms 'patient safety incident' and 'prevented patient safety incident' is used in the report to describe 'adverse events' / 'clinical errors' and 'near misses' respectively
Patient safety collaboratives	Patient safety collaboratives have been established to ensure continual patient safety learning sits at the heart of healthcare in England. The programme was officially launched in autumn 2014, and work is already underway to develop the 15 local collaboratives and provide support through national resources and networks. The collaboratives have been established in response to Professor Don Berwick's report into the safety of patients in England published in August 2014. The report, A Promise to Learn – a commitment to act, made a series of recommendations to improve patient safety; and called for the NHS ''to become, more than ever before, a system devoted to continual learning and improvement of patient care, top to bottom and end to end."

Primary care	Primary care covers general practice, dentists, community pharmacies and high street opticians.
Q Initiative	The Q Initiative aims to bring together learning from quality improvement work to enable those leading improvement to share ideas, enhance their skills and make changes that bring tangible benefits to health and social care. Q Initiative is led by the Health Foundation and supported and co-funded by NHS England.
Quality improvement	Better patient experience and outcomes achieved through changing provider and organisation behaviour through using a systematic change method and strategies.
Revalidation	Revalidation is the process by which regulators confirm the continuation of a healthcare professional's ability to practise in the UK. Regulators revalidate on the basis of the healthcare professional demonstrating that they are up to date and fit to practise through participation in appraisal and governance processes.
Safeguarding	Protecting people's health, wellbeing and human rights and enabling them to live free from harm, abuse and neglect.
Secondary care	Secondary care is the health care service provided by clinical specialists and other health professionals, normally following referral from primary care.
Sign Up to Safety	A patient safety campaign, it is one of a set of national initiatives to help the NHS improve the safety of patient care. Collectively and cumulatively these initiatives aim to reduce avoidable harm by 50% and support the ambition to save 6,000 lives.
Simulation	A person, device or set of conditions that tries to present problems authentically. The student or trainee is required to respond to the problems as he or she would, under natural circumstances (McGaghie,1999)
Surgical safety checklist	A simple checklist developed by the World Health Organization which reduces surgical morbidity and mortality and sentinel events by such simple exercises as confirming the patient's identity, site, procedure and consent, allergies, airway and aspiration risk, risk of blood loss, sponge counts, etc.
Venous Thromboembolism	A condition where a blood clot forms in one or more of the deep veins in your body, usually in your legs. Deep vein thrombosis is a serious condition because blood clots in your veins can break loose, travel through your bloodstream and lodge in your lungs, blocking blood flow, causing pulmonary embolism.

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