EffectivenessMatters

Patient safety
10 things NHS Trusts should already be doing

- The Francis Report detailed some of the worst failings in care and unnecessary harm to have occurred in the NHS.

- The government announced a series of measures they hope will deliver a culture of zero-harm and patient centred care in the NHS.

- There is a large evidence base that the NHS can draw upon to inform their efforts to improve patient safety.

- The ten key practices highlighted in this bulletin range from establishing a culture for patient safety through to interventions aimed at reducing specific events.

- Clear and visible leadership, engagement of front-line clinical staff and interventions that target prevailing attitudes are key.

- Delivering harm free care should involve routine monitoring of meaningful outcomes. Areas of concern can be identified and targeted so that improvements can be sustained.

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Background

The Francis Report of the public inquiry into Mid-Staffordshire NHS Foundation Trust provided detailed analysis of some of the worst failings in care and unnecessary harm to have occurred in the NHS.[1]

The government responded by announcing an overhaul of the regulatory system and a series of measures they hope will deliver a culture of harm free and patient centred care across the NHS.[2]

The Berwick Report stated that the single most important change the NHS can make is to become a system devoted to continual learning and improvement.[3]

There is a large evidence base that NHS Hospital Trusts can draw upon to inform the development, implementation and routine monitoring of patient safety practices locally.

The American Association for Healthcare Research and Quality (AHRQ) report *Making Health Care Safer II*[4,5] summarises the evidence for a range of practices, from establishing a culture for patient safety through to interventions aimed at reducing specific events.

This issue of *Effectiveness Matters* summarises this report and other recent systematic review evidence to highlight ten practices that NHS Trusts should be doing.

Promoting a safety culture

The Francis Report highlighted that culture is central to efforts to improve patient safety.[1]

The evidence on promoting a patient safety culture is of limited quality but suggests that multifaceted strategies may be beneficial.[6] Successful strategies commonly incorporate team training, mechanisms to support team communication and routine senior executive engagement in front-line safety walkrounds. Walkrounds fit with calls for Trust boards to be doing much more to exercise clear and visible leadership to improve the quality of care their organisations provide.[1,7]

Trusts should consider incorporating these elements into their own efforts to promote a safety culture and should routinely evaluate their impact on relevant outcomes such as reductions in avoidable errors and patient harm.

The Francis Report re-emphasised the need for Trusts to put patient experience at the heart of health services – actively seeking and acting on patient feedback and reviewing and learning from complaints. A recent systematic review provides some, albeit limited, evidence of a consistent positive association between patient experience and clinical outcomes – including patient safety.[8]

Hand hygiene compliance

Hand hygiene is crucial in reducing hospital acquired infections, but historically compliance has been low. Evidence suggests that multi-component compliance interventions can be effective.[9]

Statutory criteria for NHS infection control were introduced in 2006. Around the same time, the Department of Health rolled out the national *Cleanyourhands* campaign to all hospitals in England and Wales. The main components of the campaign were provision of alcohol hand rub at the bedside, display of 'clean your hands' posters, regular audit and feedback of compliance, and provision of materials asking patients to remind healthcare workers to clean their hands. Analysis of the impact of *Cleanyourhands* across 187 Trusts has shown that the campaign was associated with reduced rates of the hospital acquired infections *S. aureus bacteraemia* and *C. difficile* infection.[10]

Sustaining compliance over the longer term can be difficult.[9] A well conducted trial involving 16 NHS Trusts already implementing the *Cleanyourhands* campaign found that personalised feedback coupled with personalised action planning produced moderate but significant sustained improvements in hand hygiene compliance. Effects were more marked on intensive care units (ICUs), where it was easier to implement.[11]

Preventing venous thromboembolism

Venous thromboembolism (VTE) is a major cause of death and morbidity in hospitalised patients. NHS Trusts are now mandated to risk assess 95% of patients for VTE on admission in order to receive their CQUIN payment.[12]

Venous thromboembolism prophylaxis for specific populations is well established.[13] Risk stratification is essential to ensure that prophylaxis is targeted appropriately.

NICE recommends that all patients are assessed for risk of bleeding before pharmacological venous thromboembolism prophylaxis is offered.[14] Where patients are at increased risk of VTE, NICE recommend mobilisation of the patient as soon as possible, pharmacological and mechanical prophylaxis, and patient information and discharge planning that includes VTE-relevant information.

Reducing inpatient falls

There is consistent good quality evidence that multi-component interventions are effective in reducing inpatient falls.[15]

Components most commonly included in interventions of this type are staff and patient education, tailored bedside signage, alert wristbands, advice on footwear, toileting schedules, medication reviews, and post fall reviews to identify causes. There is no clear evidence to show which of these, singly or in combination, are most important for success.

Factors consistently associated with implementation success are senior and ward level leadership support, engagement of front-line clinical staff in the design of the intervention, guidance by a multidisciplinary committee, use of information systems on falls data, attitude change away from the inevitability of falls, and education or training to promote adherence.

NICE recommends that multifactorial risk assessment is undertaken to identify and manage a patient's individual risk of falling during their stay.[15]

Reducing pressure ulcers

There is moderate quality evidence that multi-component interventions can reduce pressure ulcers in acute settings.[17]

Components most commonly included in interventions of this type are simplification and standardisation of pressure ulcer specific interventions, involvement of multidisciplinary teams and leadership, designated skin champions, updates on ulcer rates and product changes and use of practice guidelines. Sustained audit and feedback is important for promoting accountability and recognising success.

Interventions which were not dependent on maintaining a particular staffing level appeared to be easier to sustain once implemented.

Reducing urinary catheter use

Catheter associated urinary tract infections are the most common healthcare associated infection; the vast majority of these are avoidable.

There is moderate quality evidence for interventions that remind clinicians of the presence of urinary catheters and prompt their timely removal.[18]

Use of either reminders or stop orders reduced the duration of catheterisation; stop orders reduced the rate of catheter associated urinary tract infections.[18]

10 things NHS Trusts should be doing

Promoting a safety culture

Ensuring hand hygiene compliance

Preventing venous thromboembolism

Reducing inpatient falls

Reducing pressure ulcers

Reducing urinary catheter use

Optimal use of pre-operative checklists

Using real-time ultrasound for central line placement

Using central line bundles to prevent associated infections

Using ventilator bundles to prevent associated pneumonia

Reminders and stop orders appear to be low cost and low risk. However, successful implementation may be dependent on attitude change. Routine audit and feedback may be required to sustain compliance over the longer term.[19]

Antibiotic prophylaxis at the time of catheter removal could have a role in preventing associated urinary tract infections[20] but there is currently no clear evidence to support routine use.

Pre-operative checklists

Several pre-operative and anaesthesia checklists have been developed in an attempt to prevent mistakes related to surgery.

Since 2010, all NHS Trusts in England and Wales have been mandated to ensure that an executive and a clinical lead are responsible for the implementation and recorded use of the WHO surgical safety checklist for every patient undergoing an operation.

Analysis of the implementation of the WHO checklist in eight countries and nearly 4,000 procedures found reductions in the rates of death and complications among patients undergoing (non-cardiac) surgery.[21] Improvements in post operative outcomes were associated with a small but significant change in clinician attitudes and perceptions of improved teamwork and safety climate.[22]

A recent systematic review found that safety checklists can improve inter-professional teamwork and communication in the operating theatre. When used sub-optimally, or when not all team members are engaged in the process, checklists may adversely affect team performance.[23]

An evaluation of the implementation and use of the WHO Checklist in NHS Trusts is ongoing.

Ultrasound for central line placement

Central venous cannulation can be unsafe. There is good quality evidence to support the use of real time ultrasound-guided techniques to facilitate central venous cannulation to reduce the risk of misplacement and associated complications.[24,25]

NICE recommends that 2-D imaging ultrasound guidance should be the preferred method in adults and children in elective situations.[26] NICE states that anyone using 2-D imaging ultrasound guidance to insert central venous catheters should have appropriate training. Simulator based training can improve implementation and use.[24]

There is evidence that real time ultrasound guidance may also be beneficial for other kinds of catheter insertions.[24,25,27,28]

Central line bundles

Central venous catheters are used to provide long-term venous access. Central line related bloodstream infections can lead to severe problems such as sepsis but are largely preventable.

Care bundles are groupings of practices that when applied together can improve the quality and safety of care delivered. There is reasonable evidence to support the use of a central line bundle of five practices.[29]

The five practices are hand hygiene before insertion, use of sterile maximal barrier precautions such as masks and gloves, use of chlorhexidine for skin antisepsis, selection of subclavian vein as the preferred site for insertion and prompt removal of unnecessary lines.

This bundle appears to be successful in reducing central line related bloodstream infections within ICUs but its effectiveness outside this setting has not been established.

Ventilator bundles

Ventilator associated pneumonia (VAP) is the most common ICU acquired infection. Ventilator bundles are widely recommended for VAP prevention and commonly involve four key practices. These are head of bed elevation, sedation vacations, use of chlorhexidine and use of subglottic suctioning endotracheal tubes.

There is good quality evidence to support the use of subglottic suctioning endotracheal tubes and chlorhexidine.[30] There is moderate quality evidence that sedation vacations reduce patients' risk of VAP as well as other mechanical ventilation associated complications. Evidence to support the use of head of bed elevation by at least 30 degrees is lacking.

Other safety practices

The evidence base for patient safety intervention extends beyond the ten practices highlighted in this bulletin.

Working with the Yorkshire and Humber AHSN we are planning further translation and dissemination of what is already known about effective patient safety practices to enhance awareness and uptake in the NHS.