ackling healthcare-associated infections (HCAsIs) is top of the priority list for acute trusts. Healthcare professionals are constantly seeking ways to reduce the risk to patients.

Now South Central is piloting an innovative way of tackling bacteria – one of the sources of HCAsIs – using a standardised training programme for cannulation and maintenance of peripheral lines.

The initiative stemmed from work by Portsmouth Hospitals NHS Trust, which looked at the number of MRSA (methicillin-resistant staphylococcus aureus) and MSSA (methicillin-sensitive staphylococcus aureus) infections caused by cannulation. Its review found significant variation in the training and competencies of healthcare professionals in inserting and caring for peripheral cannulae. In 2006 it began a programme to standardise training across the trust, including providing induction training for junior doctors. The results, in terms of a reduction of MRSA infections and patient complications, were encouraging.

Katherine Fenton, Director of Clinical Standards at South Central SHA, asked NESC to examine Portsmouth trust’s work and to develop a project to share practice and Fleur Kitell, Head of Innovation, Development and Wider Workforce at NESC, took up the challenge.

‘There were variations in practice and it made sense to standardise as much as possible to help transferability of the staff throughout the region,’ Ms Kitell explains. NESC asked the eight other acute trusts in the region to volunteer to become pilots and seven of them came forward. A steering group was formed, funds allocated, and the Peripheral Line Training Project was born.

Funds from the Department of Health for SHAs to tackle HCAIs were allocated to the project. This enabled each pilot trust to appoint the equivalent of a Band 6 nurse for 12 months to help with implementation. NESC also appointed a paediatric nurse to provide additional support for staff working in paediatrics. There are also monthly group meetings for expert trainers from each of the seven pilot trusts, with the aim of sharing good practice regarding training about peripheral cannulation.

The Royal Berkshire NHS Foundation Trust is one of the pilots. Its clinical skills team had already developed its own structured learning programme for nurses and allied health professionals in collaboration with trainers from three major London teaching hospitals. It is this programme that has been built upon by the project steering group.

Joan Potterton, Head of Education and Practice Development at Royal Berkshire, explains that the trust has now extended its training to junior doctors and adopted the Portsmouth model, which uses a full sterile pack including sterile gloves. Previously, unsterile gloves were used along with a non-touch aseptic technique. She used the NESC money to appoint an additional trainer and took on the strategic lead for implementation herself. Senior Clinical Skills Trainer Annie DeVerteuil took on the operational lead for delivering the training. NESC also provided high-quality arm mannequins on which all staff could learn. ‘They are more lifelike than the old ones, the wrist bends and the skin is softer. They also provide access to veins in the hand,’ Ms Potterton says. The support of her trust board has been essential, she adds, because the sterile packs come at an additional cost. But the training programme has surged ahead – between August and October, her team has trained 129 doctors, retained 300 nurses and 13 radiographers, and newly trained nine nurses, five theatre practitioners and two radiographers. All appropriate staff are targeted for the training – novice staff receive the full training and experienced staff get access to the refresher training. Everyone is assessed using the objective structured clinical examination system.

Novice staff attend a two-day IV drug administration programme where they learn to care for lines and recognise complications. Before undertaking cannulation training they have to be competent at venepuncture, explains Ms Potterton. Clinical skills trainers demonstrate how to insert peripheral lines via a video and on the mannequin. Trainees simulate insertion on the mannequin before undergoing a period of supervised practice in their clinical areas. It is the follow-up supervision that makes the programme such a success. Ms Potterton’s team check the staff roster each day to see if there are newly-trained staff on duty who need supervision and then turn up to observe them.

The results have been very encouraging: from June to September there were no MRSA infections in the trust and although one patient has had an infection since the latest reported figures, that patient did not acquire it at the hospital. However, Ms Potterton emphasises that the reduction in the MRSA infection rate is not solely down to the standardised training programme. There has also been a huge drive to improve hand-washing frequency among staff and visitors; there has been the national deep clean programme; ‘bare below the elbow’ is now the norm across the trust, and all patients are being screened on admission.

Ms Potterton also emphasises that the training programme is not just about inserting cannulae – it is also about assessing hand-washing technique and looking at how to care for lines once inserted. ‘It’s about making sure the dressing is clean and that the patient has not got phlebitis,’”

Dr Eleanor Guegan, Research Fellow in Healthcare Associated Infection in conjunction with the University of Winchester, and Dr Olga Zolle, Research Development Manager in NESC’s Innovation, Development and Wider Workforce team, are leading the project. They are keen to point out that, although training and competencies must be standardised, there is some

On the line

Seven South Central trusts have undertaken to reduce infection rates from cannulation. Rachel Downey reports on results from the Royal Berkshire NHS Foundation Trust and how the outcomes have been evaluated.

The Royal Berkshire team, left to right – Aoife Petrie, Clinical Skills Trainer, Annie DeVerteuil, Senior Clinical Skills Trainer, Avenger, James Demont, Senior Clinical Skills Trainer, Joanne Cotton, Assistant Chief Nurse, Mandip Rau, Clinical Skills Trainer; and Rachel Canlon, Clinical Skills Trainer.
Peripheral Line Training

A doctor during the training at the Royal Berkshire

Ten top tips for safer cannulation

1. Perform hand hygiene
2. Clean patient’s skin with two per cent chlorhexidine and 70 per cent isopropyl alcohol
3. Use an aseptic technique throughout
4. Select the smallest appropriate bore size of cannula
5. Do not use the cannula’s port – instead use a closed, needle-free system
6. Affix appropriate dressing ensuring that the puncture site can be observed
7. Complete documentation
8. Regularly assess the visual infusion phlebitis score
9. Remove cannula as soon as possible and within 72 hours
10. Resite if cannula has been inserted under suboptimal aseptic conditions

Source: Peripheral Line Training Project Steering Group

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flexibility in how individual trusts implement it.

The aim is ‘to improve the education of healthcare professionals about peripheral lines, insertion and continuing care’, Dr Guegan says. ‘And every trust will need to implement it slightly differently. It is about sharing best practice within South Central.’

‘We are all learning from each other and supporting one another in the process,’ adds Dr Zolle.

Each is using the project and the NESC funding in its own way. For example, Buckinghamshire Hospitals NHS Trust has employed an IV project nurse who has begun training medical staff, including consultants; Milton Keynes Hospital NHS Foundation Trust has used the money to boost its clinical skills education team; Oxford Radcliffe Hospitals NHS Trust is specifically targeting junior doctors; and Southampton University Hospitals NHS Trust has developed a training video that can be downloaded on to mobile phones.

To date, the pilots have demonstrated that the training can be tailored for different groups of staff depending on their involvement in cannulation and their experience, says Dr Guegan. Some trusts have general drop-in sessions for staff, some train a combination of staff together, but most have separate sessions with different disciplines.

The group of trainer representatives has discussed both the current and future training of different staff including nurses, healthcare assistants, medical assistants, radiographers, medical students, junior doctors and senior doctors. The aim is to have an agreed baseline and the same competencies. The plan is for one NHS South Central competency certificate so that trained healthcare professionals assessed as competent can move throughout the region, increasing transferability.

There is extensive online support for the project. Dr Guegan has designed an e-learning site with all the shared training resources developed by trusts and NESC for the project. It is a confidential site and for use only by the trainers involved in the project.

As part of the evaluation she is also collating information that will form the basis for future recommendations on the rolling out of similar projects. The pilot trusts are recording the number of staff trained, rates of MRSA and MSSA infection and other information about line-specific infections. Trainees are also being asked to evaluate the training they have received.

The evaluation of the pilot project at the acute trusts will be completed by this summer and will include focus groups with trainers as well as interviews with key staff such as infection control teams and medical directors. ‘We also want to know how the programme features in the wider infection control and patient safety agendas,’ says Dr Guegan.

The seven pilots are:
- Royal Berkshire NHS Foundation Trust
- Winchester and Eastleigh Healthcare NHS Trust
- Heatherwood and Wexham Park Hospitals NHS Foundation Trust
- Milton Keynes Hospital NHS Foundation Trust
- Oxford Radcliffe Hospitals NHS Trust
- Southampton University Hospitals NHS Trust
- Buckinghamshire Hospitals NHS Trust

Another benefit has been a reduction in the use of cannulae and the length of time they remain in situ. ‘The feeling is that there are less cannulae being used because we are raising awareness about their use,’ says Ms Potterton.

‘Only patients who have been prescribed medication should have a cannula or those who are haemodynamically unstable. We don’t need the “just in case” cannula.

‘Overall the project has really raised the profile of cannulation and improved care plans as well,’ she adds. ‘It’s been a really positive programme.’

If you want to find out more about the Peripheral Line Training Project, contact Dr Guegan at eleanor.guegan@nesc.nhs.uk

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