Aseptic non-touch technique (ANTT) was developed in the 1990s in response to a need to standardise the practice of aseptic technique. Stephen Rowley and Susan Sinclair describe the ongoing development of ANTT, and explain how and why it has been found to improve clinical practice. They also outline the key to its effective implementation.

**Roll-out of ANTT** The roll-out design for ANTT was initially based on a method that only taught staff the principles that they ‘could’ apply to practice in their own way. This method can work well on an individual basis with experienced staff, but was problematic when we tried to establish a standard across teams.

Quality was improved but a standard technique was not achieved because the principles can be applied in different ways.

The most effective method was found to be in a combined approach of teaching the principles and prescribing the method of aseptic technique in detail using a clinical guideline displaying step-by-step pictures with written action commands.

This approach is the easiest, and most efficient and effective way of establishing a standard technique across a large team.

Through a cascade method of one-to-one training, and high-quality ward-based teaching resources (including a self-running PowerPoint presentation and a training video), the new ANTT guideline is currently being individually taught to 2,300 nurses at University College London Hospitals NHS Trust over a two-month period. This process is owned and led by the ward sister/charge nurse and overseen by the author and the nursing directorate.

To be successful, such a wide-scale roll-out is dependent on broad-ranging and top-level organisational support, and the commitment of senior staff including the chief executive and ward clinical managers.

**Monitoring and enforcement** The observational research conducted locally and at other hospitals demonstrates that even under observation conditions, staff who know they should wash their hands do not always do so.

This has been a common finding in the literature on handwashing (Roberts, 1998). It illustrates the challenge of establishing compliance to ANTT. The reasons for non-compliance are numerous and operate at an individual, team and organisational level, including individuals’ personal beliefs and habits, and ambiguities in terminology.

A range of methodologies was utilised, including action research, observational research, and audit. It was clear that a problem such as standardising the practice of aseptic technique has multiple causes and requires a wide-ranging enquiry.

As a result of this work, the ANTT framework that was developed supported a standard aseptic technique presented in a clinical guideline. A standard is essential if practice is to be audited, evaluated and further developed. The ANTT framework acknowledges that no technique is going to work well if it fails to address issues surrounding human and organisational compliance, for example the effects of poor nursing skill-mix.

**How does ANTT improve clinical behaviour?** Local audit and observational-based evaluative studies have identified a positive effect when ANTT is introduced into clinical teams. This effect is due to, and dependent on, the guideline’s:

- Design;
- Implementation;
- Enforcement;
- Monitoring.

**Design** The ANTT guideline is designed around the research of human, clinical and organisational behaviours. In practice this means trying to gain a better understanding and to learn from the factors that most often result in poor practice. There are many principles that underpin the ANTT guideline design (Box 2).

**Understanding the basic principles of asepsis** Before staff are introduced to an ANTT clinical guideline they must first understand the basic principles of achieving asepsis. Some of the principles or ‘key messages’ to help staff achieve asepsis in IV therapy are outlined in Box 3.

**Introduction of the guideline into wards and hospitals** The Infection Control Nurses Association (2002) notes that: ‘The issue is no longer whether hand hygiene [and other components of aseptic technique] is effective, but how to produce a sustained improvement in health care workers’ compliance.’

In the context of ANTT, the question is how can clinical behaviour be improved by gaining compliance to a clinical guideline? Without actual and sustained input into achieving compliance, any guideline will fail.

To this end, many lessons learnt the hard way underpin the strategy for rolling out ANTT across teams and hospitals.

---

**Box 1. Components of ANTT**

- A technique that is non-touch and maintains asepsis
- A clinical guideline for safe aseptic technique based on the best available evidence
- ANTT can be applied to any aseptic procedure such as intravenous therapy, wound care and urinary catheterisation
- An audit cycle is the key to successful implementation

---

**References**


Despite increased NHS funding, health care-associated infection (HCAI) remains a major problem. Polarising the issue is the media’s favourite ‘superbug’ – methicillin-resistant Staphylococcus aureus (MRSA). Incidence of MRSA in the UK continues to rise at a higher rate than in other European countries. The National Audit Office estimates the cost of hospital-acquired infection to be £1bn a year, and it causes 5,000–15,000 deaths annually (NAO, 2000).

In December 2003, the Department of Health published its latest plan to tackle HCAI, Winning Ways: Working Together to Reduce Healthcare Associated Infection in England (DoH, 2003). Key to the chief medical officer’s plan is an improvement in clinical behaviour aimed at preventing infection, ranging from basic hygiene to aseptic technique.

**What is aseptic non-touch technique?** ANTT is a clinical guideline for aseptic technique based on a theoretical evidence-based framework (Rowley, 2001) (Box 1). The framework was designed to standardise practice and raise clinical standards. Much of the research has focused on the safe administration of intravenous therapy, but as long as each process is carefully mapped according to ANTT principles, ANTT can be used for other aseptic procedures such as urinary catheterisation or wound care.

In hospitals where ANTT has been implemented, it has improved compliance with the core components of aseptic technique, such as handwashing and choice of aseptic field.

Also the guideline, with its logical and user-friendly terminology and theory, is useful in teaching the principles of asepsis to newly qualified staff and students, enabling them to apply safe aseptic technique to a range of clinical procedures.

**History of ANTT** The technique was primarily developed to address a significant gap between theory and practice. Surprisingly, there was no evidence-based framework for aseptic technique and there had never been any ‘gold standard’ randomised controlled trials of the many types of aseptic or sterile techniques used in practice.

In most hospitals it is possible to find a number of very different approaches and terminology used for asepsis. Although these different techniques may all be safe, evaluation of their effectiveness is often neglected. The existence of so many different techniques can be confusing for practitioners, and bewildering and frightening for patients.

**Identifying the evidence for ANTT** Evidence-based nursing demands proof that any one aseptic technique is safe and effective before it can be used in practice. However, large randomised controlled studies can be difficult to perform for a number of reasons.

For example, there have been dramatic changes in intravenous (IV) therapy in recent years, so it is virtually impossible to control the number of variables that can have an effect on asepsis-related outcomes.

These variables include patient and disease characteristics, the skill-mix of staff and developments in intravenous catheters (Fulton, 1997).

When researching the literature for ANTT, it was necessary to break aseptic technique into its component parts, for example handwashing, use of an aseptic field, and choice of glove. The evidence base for ANTT was developed from existing research literature on these areas of practice.

Subsequently, the theoretical framework was then broadened to address asepsis and compliance issues.

**REFERENCES**


Conclusion Achieving compliance is the key to the success of any practice guideline. As a result, the implementation of ANTT is built on the lessons learnt from human and organisational behaviour.

It ensures that a cycle of good practice is created through a process of training, audit and assessment. The third element of the process is that the organisation has to commit to training its nurses properly and investing in the resources that are necessary to implement ANTT.

Successful implementation of ANTT is therefore dependent on implementing all of the audit cycle process, not just the easy parts such as displaying the guideline.

It has taken nearly a decade to reach the current development stage of ANTT. The technique has been successfully introduced and standards have been maintained for more than five years on many wards, units and hospitals.

Audit As well as informing practice, audit of ANTT seems to send the message to staff that aseptic standards are a hospital’s priority and are under regular scrutiny. Most importantly the cycle of audit of ANTT is continuous (Fig 1).

The audit cycle begins at the implementation stage of ANTT and is ongoing. Each cycle usually takes 12 months. It is evident from our experience that the more frequent the cycle, the greater the compliance with the technique.

We have found that improved clinical behaviour as a result of ANTT equates to improved infection rates.

Peer review As with any change in practice, the more staff are involved and feel some level of ownership, the more likely it is to meet its aims.

The ANTT top-down ‘inclusive’ approach allows peer mentoring and this ownership of the technique further helps to increase compliance.

One of the most useful aspects of the technique is self-monitoring ‘peer pressure’ that has been observed in clinical teams. This has been the result of two specific factors.

First, the staff have part-ownership of the ANTT guideline. Second, because the technique is simple, unambiguous and highly prescriptive, any staff behaviour which strays from the guideline is easily and instantly identifiable.

In all ANTT evaluations, team members have been willing and quick to critique colleagues, whether they are junior, senior or visiting clinical staff.

Patient information In order to be compliant with ANTT, all clinical areas must display ANTT posters prominently to patients. These display the steps of the guideline that they should see when staff perform clinical procedures, for example handwashing, glove use and a non-touch technique.

If concerned, the poster advises the patient to speak to the nurse in charge or telephone a given number. Telephone hits are monitored. If clinical areas stand out, training resources will be directed accordingly and support provided to the ward.