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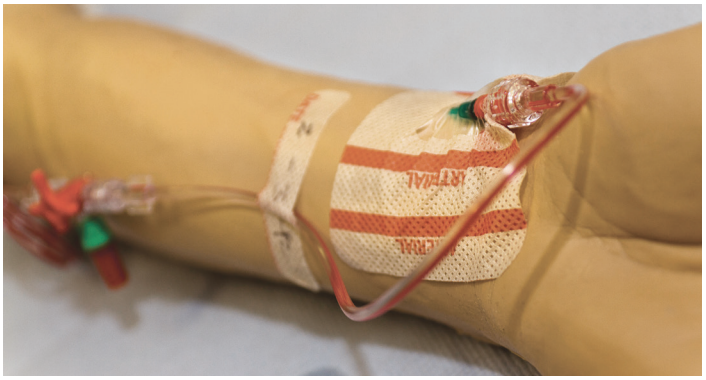
Arterial Fixation Device

Current methods of managing arterial cannulae in Intensive Care Units have the potential to cause many serious complications such as haemorrhage, necrosis and infection. It has therefore been recognised that careful management of these devices is a crucial part of the care of critically ill patients. Indeed, arterial cannulae (AC) pose such high risks that patients are often delayed from returning to normal wards, as the cannulae are considered too complex and hazardous to monitor on this type of ward. In 2009, the National Patient Safety Agency (NPSA) issued a Rapid Response Report which outlined strict guidelines regarding the management of arterial infusion lines.



Background Summary

An unmet need was identified demonstrating that the current process used for securing arterial lines in the Trusts Intensive care unit had the potential to cause some serious complications.

A new dressing was designed and manufactured to improve this process and reduce the risk of these complications.

Support Provided by NHS Innovations North

NHS Innovations North, in conjunction with the Academic Health Science Network for the North East and North Cumbria, provided support with the following:

- Market research
- Concept and product development
- Intellectual property protection
- Identification of a commercial partner
- Licence negotiation

Outcomes

An arterial cannula dressing allowing clinical risks to be easily managed to a similarly high standard as a venous cannula, and which addresses the following problems in one product:

Arterial line identification. Accidental injection of medications into the AC can be disastrous and may result in necrosis. Complications with the AC are more likely to occur when inexperienced practitioners are involved. To reduce these risks, more intuitive dressings are required which clearly identify the line as arterial.

Accidental removal. Profuse bleeding can occur if the arterial line is accidentally removed by a non-conformant patient or simply knocked out of place by accident. Currently, adhesive tape is used to improve the security of the dressing, but this is time consuming and awkward to apply.

Infection control. It is essential that the insertion site is fully visible to allow the wound to be monitored daily for early signs of infection. This is not possible with existing dressings as extra tape and bandages are used to secure the dressing, thereby masking the insertion site.

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Key Project Impacts

The Arterial Fixation Device (AFD), designed by County Durham & Darlington Foundation Trust, ITU nurses Barbara Jameson and Pat Hogg and licensed to AMDEL Medical, addresses these unmet needs in a single product. As a result:

- monitoring arterial lines is more intuitive and the insertion site can be easily monitored, reducing the clinical risk
- adhesion is improved, reducing the likelihood of the line being accidentally removed
- more intuitive management of the AC is enabled
- a line is clearly identified as arterial, to indicate the potential risks

Benefits to Stakeholders

The new dressings are much easier to secure and are more visually identifiable, they also feature a transparent window so staff can closely observe the wound site.

This makes the management of the arterial line much easier for staff. Patients benefit from a reduction in the risks of mismanagement of arterial lines and less frequent changes of dressing.

Next Steps and Plans for the Future

The intellectual property is for the idea is currently licensed by the Trust to Amdel Medical. The dressing is now widely used within the Trusts Intensive Care Unit. It is available for purchase by other organisations directly from Amdel Medical: http://www.amdelmedical.com/index.php/products/item/3-medical-device-creations/6-arterial-fixation-device

NHS Innovations North Contact

Anna Taylor

E: anna.taylor@nhsinnovationsnorth.org.uk

T: 0191 5164400

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