

NHS Innovations Case Study

Needle-Free Arterial Non-Injectable Connector (NIC)

A patient safety innovation which prevents wrong route drug administration

Unmet Need

Arterial lines are frequently used in intensive care units and operating theatres to facilitate beat-to-beat monitoring of blood pressure and to allow blood sampling.

The potential problems associated with conventional arterial lines were the subject of a Rapid Response Report from the NHS National Patient Safety Agency in July 2008. Current arterial line systems do not prevent intra-arterial injection of drugs and this has been a reported complication which can result in dramatic consequences such as: skin loss, tissue necrosis, loss of a limb or potentially loss of life.

The Technology

The Needle-Free Arterial Non-Injectable Connector (NIC) is a novel device which increases the safety of patients undergoing blood sampling. Invented by Dr Joseph Carter and Dr Peter Young, consultants from The Queen Elizabeth Hospital King's Lynn

NHS Foundation Trust (QEH), it is the only arterial connector in clinical use which prevents wrong route drug administration into the arterial line.



The needle-free non-injectable connector is a device that contains a unique one-way valve mechanism which allows blood sampling but prevents anything else being injected into the arterial line. The design prevents blood from leaking out of the system should the three-way tap be left open.

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The NIC may also prevent the possibility of bacterial infection which can occur with arterial line devices and may be passed to the patient.

Commercialisation

Health Tech Enterprise (HTE) helped by protecting the idea with a patent, funded the proof of concept development and supported clinical evaluation at QEH. HTE also identified a suitable commercial partner – AmDel Medical Limited – from whom the NIC can be purchased.

The NIC was part of the National Innovation Accelerator and has been funded through the NHS England Innovation and Technology Tariff since 2017. For more information please contact [AmDel Medical](#) via their website.

"For the safety and best practice for our patients, I heartily recommend this device should be used on all arterial lines in the NHS" Professor Sir Bruce Keogh, Cardiothoracic Surgeon, former Medical Director, NHS England

About Health Tech Enterprise

Our business and innovation management services support healthcare innovators throughout the product development journey, from concept to commercialisation and final roll-out.

We offer healthcare market and health economics insights and evaluation, as well as regulatory, business and IP advice and management. We also advise on strategic market access, support with securing funding and deliver training and entrepreneurship services.

Our work ensures medical technology innovations are developed to realise their potential and benefit patients. We work with 20 NHS Trusts across England providing a range of innovation management services delivered by our expert team.