

The Improved Flowmeter

The flow rate of medical gas administered to a patient in a hospital can be difficult for the clinician to measure. Quality Hospital Solutions Limited worked with City Hospitals Sunderland NHS Foundation Trust to develop a suite of improved flowmeters which allow the clinician to quickly and accurately monitor the flow rate. NHS Innovations North, in conjunction with the Academic Health Science Network for the North East and North Cumbria, provided support and advice in the areas of patenting, licencing and market research associated with the Flowmeter.



Background Summary

Medical gas is administered to a patient in hospital in situations where it is required as part of their treatment process. However, there is typically a safe range of flow rates at which the medical gas should be delivered to the patient, and the utilisation of a suitable flowmeter is required so that the clinician is able to observe and control the flow rate of the medical gas being supplied to the patient.

The delivery mechanism sometimes requires the use of a Venturi valve, which helps draw background air into the medical gas stream being delivered to the patient.

Venturi valves come in different colour coded types depending upon the flow rate of medical gas that should be used. In order to check the flow rate, the clinician must first ascertain what the safe range actually is for the Venturi valve in operation and then look closely at the flowmeter to check whether the measured flow rate lies within the ascertained safe range.

Problems arise because it can be difficult for the clinician to confidently and accurately determine that the flow rate is in the safe range according to the particular Venturi valve being used.

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 the following interventions: -

- ▶ supported the protection of the idea by the filing of a new UK patent application, with a view to filing subsequent corresponding patent applications overseas; and
- ▶ assisted with the sourcing of potential licensees in a position to manufacture and disseminate the devices.

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Key Project Impacts

- ▶ This unmet need was identified by City Hospitals Sunderland NHS Foundation Trust. When presented with this, Quality Hospitals Solutions Limited (a company spun out from City Hospitals Sunderland NHS Foundation Trust), in conjunction with Dr David Bramley (a Consultant in Emergency Medicine at the Trust), developed a solution.
- ▶ The suite of Improved Flowmeters solves the problem by providing a simple and yet effective solution, which allows the clinician to quickly yet accurately check to see that the medical gas is being supplied to the patient at the correct flow rate.

Benefits to Stakeholders

The Improved Flowmeter makes the checking of medical gas flow rates much easier and less time consuming for staff, and can help to reduce errors, thereby reducing the risk of adverse events associated with incorrectly administered medical gas.

Next Steps and Plans for the Future

The next steps are the drafting and negotiation of Agreements with suitable licensees, to drive the device onto the market with the aim of benefitting patient care and improving processes within the hospital environment.

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