

Breathing life into accident treatment

A medical company is developing a new device, which could save the lives of people injured in accidents.

At present, paramedics have to count chest movements over a period of time to assess the condition of patients treated in ambulances. It is a difficult and error-prone process because often, shallow breathing cannot be detected through heavy clothing such as a thick coat or padded anorak.

Respiratory Rate Counter

The Respiratory Rate Counter, codenamed respiR8 by its creators Anaxsys Technology, automatically and continuously monitors a patient's respiratory rate, which is the best indicator of a worsening medical condition. A sensor is inserted inside a face mask that delivers the enriched oxygen supply to the patient. The mask is placed over the patient's mouth and nose and is fitted in the traditional way with an elastic band around the head.

After producing a hospital version of the device, Anaxsys was given another £100,000 under the Government's SBRI (Small Business Research Initiative) scheme to develop a device for use



in ambulances. respiR8 is based on the traditional check to see if someone is still breathing after an accident by holding a mirror in front of the patient's mouth. If a patient is breathing, condensation is produced. respiR8 works in a similar way. The moisture from the patient's breath condenses on the sensor to produce a signal. The mask is connected via a cable to an electronic monitor, which displays the current respiratory rate as well as a graph of its movement in the previous hour.



Technology Strategy Board

Driving Innovation

'SBRI has been invaluable in helping us to develop our technology. The fostering of innovation will allow the NHS to do more for less and will result in a huge step forward for patient care.'

BARBARA LEAD, COMMERCIAL AND DEVELOPMENT DIRECTOR,
ANAXSYS TECHNOLOGY, WWW.ANAXSYS.CO.UK

respiR8 is accurate to within one breath per minute compared with a nurse with a stopwatch's accuracy rate of plus or minus four breaths per minute. The original idea came from an anaesthetist who suggested fitting a sensor into an oxygen mask.

As part of a feasibility study for the ambulance respiR8, the hospital device was shown to paramedics then modified. The initial ambulance respiR8 prototype works on batteries rather than mains electricity and is more robust so it will bounce when dropped. It is also smaller so it can be attached to a patient or an ambulance cart.

The hospital device should come to market in October 2010 with Anaxsys aiming to develop the ambulance version into a production model by 2013.

SBRI is a pan-government process, supported by the Technology Strategy Board, to drive innovation. SBRI competitions use the power of government procurement to:

- provide innovative solutions to public sector challenges
- and business opportunities for technology companies.

COMPETITION

Putting patient safety first

The Strategic Health Authority in the East of England, together with the East of England Development Authority and the Technology Strategy Board, ran a competition to find ways of improving patient care and to eradicate errors. The particular focus was on patient safety.

According to NHS statistics, ambulances attended 6.15 million emergency calls in England in 2008-09, an increase of 4.4% over the previous year. The volume of emergency and urgent calls to ambulances has been increasing at around 5% per year over recent

years. Effective respiratory rate monitoring means that healthcare professionals can intervene early and according to Robert Winter, clinical director for the East of England NHS, it will: 'save lives and save the NHS money.'

Under this SBRI programme, Anaxsys Technology, was one of 11 companies working on devices, products and services to meet healthcare priorities, to be awarded development grants of up to £100,000.

KEY FEATURES

- Competition is demand-driven by a defined challenge
- Stimulates the creation of innovative new products or services
- Operates under EU pre-commercial procurement guidelines
- Fully-funded development contract – not a grant
- Fast-track, simplified process
- Particularly suitable for small and medium-sized businesses
- Government department acts as the lead customer
- Intellectual property is retained by the company

The Technology Strategy Board is a business-led executive non-departmental public body, established by the Government. Its role is to promote and support research into, and development and exploitation of, technology and innovation for the benefit of UK business, in order to increase economic growth and improve the quality of life. It is sponsored by the Department for Business, Innovation and Skills (BIS). T: 01793 442700 www.innovateuk.org