



Patient Safety & Patient Monitoring

SBRI Healthcare NHS England competition for development contracts

September 2013



West of England
Academic Health
Science Network

South West Health Innovation



An Academic Health Science Network

Summary

A new national Small Business Research Initiative (SBRI) Healthcare competition is being launched by NHS England in partnership with the Academic Health Science Networks (AHSN's) to find innovative new products and services. The projects will be selected primarily on their potential value to the health service and on the improved outcomes delivered for patients.

The competition is open to single companies or organisations from the private, public and third sectors who will ultimately be capable of supplying the NHS with the resulting product or service on a commercial basis. The competition will run in two phases:

- Phase 1 is intended to show the technical feasibility of the proposed concept. The development contracts placed will be for a maximum of 6 months and up to £100,000 (inc. VAT) per project
- Phase 2 contracts are intended to develop and evaluate prototypes or demonstration units from the more promising technologies in Phase 1. Only those projects that have completed Phase 1 successfully will be eligible for Phase 2.

Developments will be 100% funded and suppliers for each project will be selected by an open competition process and retain the intellectual property rights (IPR) generated from the project, with certain rights of use retained by the NHS.

This competition theme, led by South West Peninsula AHSN and West of England AHSN, focuses on tools for assisting in rapidly assessing and detecting patient deterioration and encompasses monitoring deterioration of a patient's condition in a number of settings which include the community (e.g. mental health, long term conditions, social care), pre-hospital (e.g. paramedic services) and hospital settings. The types of technologies required include:

- Detection systems/technologies
- Bio-monitoring systems
- Mobile communication technology (secure)
- Remote monitoring systems
- Decision assisting software
- Patient flow systems
- Patient record systems

The competition opens on 16th September 2013. The deadline for applications is 1200hrs on 31st October 2013.

Background and challenge

Patient safety is an emotive and currently high profile subject, encompassing a wide range of points on the care pathway. A need has been identified for tools for assisting in rapidly assessing and detecting deterioration, monitoring conditions in real time and improving action on the deteriorating patient in acute and chronic conditions.

Within the hospital, acutely ill patients in critical areas (for example the Intensive Care Unit, the Emergency Department or the Coronary Care Unit) have their vital signs (heart rate, breathing rate, blood pressure, oxygen saturation and temperature) continuously recorded by multi-parameter patient monitors. In less critical areas (for example, the general ward), patients are not continuously monitored.

Instead, nursing staff record patient's vital signs on paper at regular intervals (typically every four hours)¹. However, despite this level of monitoring, serious incidents reported to the National Patient Safety Agency (2007) identified that 11% of deaths were due to patient deterioration not being recognised or acted on appropriately.

Key areas for improvement were regular observations, early recognition of deterioration, improved communication and effective response to concerns².

There is a need for tools to facilitate continuous patient monitoring, whichever department the patient is in, allowing quick response to deterioration in the health status of all patients, thereby improving care and patient safety. Linked to the ability to more closely monitor a patient is the requirement for tools to assist decision making in response to the complexity and volume of information regarding patient condition and status in terms of diagnosis, treatment response and any management of medication and long term conditions.

Key unmet needs in this area – and on which this competition focuses – are:

1. **Monitoring of patients vital functions and condition (ideally in real time) and patient self-rating systems:**

Tools should focus on:

- Monitoring the effectiveness of interventions in real time in an hyper acute episodes of care, e.g. advanced life support and resuscitation
- Monitoring of acute conditions and of rapidly deteriorating chronic or acute-on-chronic conditions
- Patient participation, e.g. self-rating and alerts

2. **Monitoring the effectiveness of interventions in real time in acute and rapidly deteriorating chronic conditions:**

- Detecting vital functions (as above) and linking to the assessment of risk and prompting and/or activation the correct responses

3. **Tools to assist decision making (software):**

- Detecting risk and activating the correct responses
 - Clinical examples include: resuscitation, detection of sepsis, differential diagnosis of delirium and dementia, linkage to patient history (e.g. known mental health issues and/or substance abuse)
 - Tools to reduce human error: implementation of developed methodology and algorithms, monitoring and recording interventions and sample collection
- Alerts and notices to staff using mobile communication systems, timely delivery of information and linkage to response algorithms
 - Pathway monitoring and signalling early warning of deterioration
- Providing the means for people or carers to report a deterioration in their mental health or related problems where an earlier intervention or specific support would be beneficial in preventing a more serious crisis developing
 - Detecting risk and activation of the correct responses whether this is clinical or social care related
 - Ways of aiding inpatient detection of deterioration in acute mental health wards
 - Carers' support and care for people with learning disabilities may also be beneficial

¹ <http://www.ibme.ox.ac.uk/research/biomedical-signal-processing-instrumentation/prof-l-tarassenko>

² How to measure and record vital signs to ensure detection of deteriorating patients: Nursing Times, November 2009

4. Linkage to existing patient data

- Medicines management systems
 - Drug reconciliation systems linking data from GP, dispensary or pharmacy and hospital systems
- Long term conditions
 - Recording or monitoring compliance with medication (e.g. failure to take medication) or taking the wrong medication (if possible to record)
 - Particularly elderly/dementia/mental health conditions
 - Mental health records
 - Substance abuse history

Application process

This competition is part of the Small Business Research Initiative (SBRI) programme which aims to bring novel solutions to Government departments' issues by engaging with innovative companies that would not be reached in other ways:

- It enables Government departments and public sector agencies to procure new technologies faster and with managed risk;
- It provides vital funding for a critical stage of technology development through demonstration and trial – especially for early-stage companies.

The SBRI scheme is particularly suited to small and medium-sized businesses, as the contracts are of relatively small value and operate on short timescales for Government departments.

It is an opportunity for new companies to engage a public sector customer pre-procurement. The intellectual property rights are retained by the company, with certain rights of use retained by the NHS and Department of Health.

The competition is designed to show the technical feasibility of the proposed concept, and the Phase 1 feasibility contracts placed will be for a maximum of 6 months and up to £100,000 (incl. VAT) per project. It is envisaged that a competition for Phase 2 Development contracts will be run during 2014.

The application process is managed on behalf of NHS England by the Eastern Academic Health Science Network through its delivery agent Health Enterprise East. All applications should be made using the application forms which can be accessed through the website www.sbrihealthcare.co.uk.

Briefing events for businesses interested in finding out more about the competition will be held on the 24th September (Nottingham), the 30th of September (London) and the 2nd of October (North West). Please check the website for confirmation of venues and to register attendance.

Please complete your forms using the online application process and submit them by 1200hrs on the 31st October 2013.

Key dates

Competition launch	16 th September 2013
Briefing events	24 th & 30 th Sept, 2 nd Oct 2013
Deadline for applications	1200hrs 31 st October 2013
Assessment	November 2013
Contracts awarded	February 2014

More information

For more information on this competition, visit:

www.sbrihealthcare.co.uk

For any enquiries e-mail:

sbrienquiries@hee.org.uk

For more information about the SBRI programme, visit:

www.innovateuk.org/SBRI



www.sbrihealthcare.co.uk



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The SBRI Healthcare programme is directed by the Eastern Academic Health Science Network on behalf of NHS England and managed by Health Enterprise East.