Perfect Patient Pathway
pioneers new ways of supporting patients

In 2016 South Yorkshire & Bassetlaw was announced as one of seven national 'Test Bed' innovation sites to take part in a major drive to modernise how the NHS delivers care through creating new collaborations between the NHS and industry.

The South Yorkshire & Bassetlaw region aim is to create the 'perfect patient pathway' to bring substantial benefits for patients living with long term health conditions, such as diabetes, mental health problems, respiratory disease, hypertension and other chronic conditions.

By using new technology, coupled with new ways of delivering care, the intention is to keep patients with these conditions well, independent and avoiding crisis points which often result in hospital admission, intensive rehabilitation and a high level of social care support.

A range of home-based monitoring devices and smart phone apps mean patients can be supported to understand their condition and how they can manage it at home. The technology being explored includes monitoring falls risk, tracking locations for people with dementia as well as sensors in the home, for example, on televisions, kettles and fridges to monitor mobility, nutrition and general wellbeing.

A central part of the programme is the creation of an Intelligence Centre which will act as a central hub for all data collected from the home-based monitoring devices that patients use. The Intelligence Centre will also collate data from existing health and care records from across different NHS systems to provide a complete picture of a patients health, better informing both people and their clinicians on how to best manage their health and well being. The Intelligence Centre will use the latest predictive analytics technology that can anticipate when early interventions may be required from healthcare professionals to prevent a period of crisis from occurring or to provide alerts to carers or family members.

The 'Perfect Patient Pathway' Test Bed involves more than 30 partners including the region's NHS, Social Care, Industry, Academic and Voluntary organisations.

Sir Andrew Cash, Chief Executive of Sheffield Teaching Hospitals NHS Foundation Trust said: "The Perfect Patient Pathway test bed is a fantastic way of bringing together the region's health and social care providers with a number of technology and research organisations. By utilising this expertise we are able to share data and plan, in partnership with patients, the best way to deliver care to people with long term conditions based on their needs using the latest technology to support this."

Simon Stevens, NHS England Chief Executive described the test beds as a key strand of the NHS Five Year Forward View, which will help realise the ambition of reforming the NHS so that it is fit to face the challenges of the 21st Century - particularly an ageing population and an increase in patients with long-term health conditions. More details on all aspects of the programme can be read overleaf.

NHS England Chief Executive Simon Stevens hears about the Perfect Patient Pathway

Here is an example of how the new approach could support patients to better manage their long term health conditions and stay independent at home where possible

Ethel has a long-term condition. She has a machine that allows her to monitor her own condition in the comfort of her own home

Data Exchange Point

The machine also records the information that it captures whilst Ethel is monitoring herself, and it sends it to the intelligence centre

Primary Care
Secondary Care
Social Care
Mental Health
Community Care
Council and Voluntary Sector
Education

The information is then collated with information from other health and social care settings, such as Ethel's GP or from any hospital visits she's had or contacts with social care

This allows health professionals to understand the full picture of Ethel's health, how well she is managing her own condition and whether she would benefit from any changes to the health and social care services she is receiving, or if she needs additional services.

Intelligence Centre

New Trial to support Asthma patients

Hundreds of Sheffield asthma patients are being invited to take part in evaluating a new health technology (CareTRxTM) that aims to support people to manage their asthma. Test Bed health technology partner Teva UK Ltd are inviting patients from some GP practices in Sheffield to join a patient support programme called the CareTRxTM Programme.

As part of the programme patients will be invited to come in to see a specialist nurse to talk about their asthma and be given a Sensor that can be attached to an inhaler (Metered Dose Inhalers only). The Sensor records when the inhaler is being used. Information about their usage is then sent via blue tooth to an app on the patients smart phone and later, to their GP. This helps the patient keep track of their own usage and also prompts reminders from the CareTRxTM platform (Sensor & App). Each patient/person enrolled onto the programme will have access to support services including a dedicated website and call centre to support their involvement in the project and the management of their asthma condition.

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How will the intelligence centre work?

A key ambition for the programme is to develop an Intelligence Centre that can use all the data that is securely captured about patients in the region to enable healthcare professionals to provide better proactive patient care.

The Intelligence Centre will aggregate data from all health and social care partners, and from the Test Bed technology devices, to create one set of data. Using predictive analytics it will then be possible to create a profile of the patients who are most at-risk of becoming unwell, or of becoming admitted or re-admitted to hospital, and therefore it will be possible to take steps to reduce their risk.
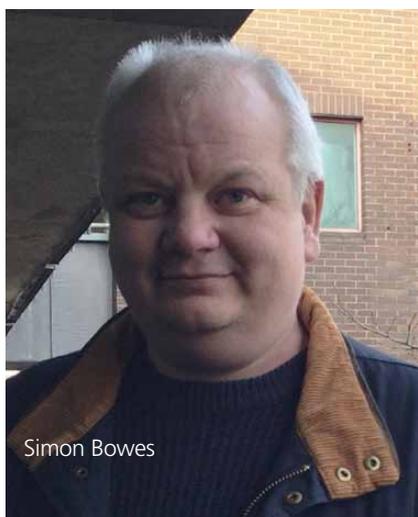
The ambition is getting close to becoming a reality, after a trial involving ten fictional patients showed that all the required IT systems can work together. The next step is to input safely encrypted data from over 7000 patients into the Intelligence Centre and re-test the initial elements to help refine the systems. At the same time, the predictive analytics tool will use the data from those 7000+ anonymised patients to help identify patterns of risk. If successful, it is anticipated that in Spring 2017 the two elements will be combined and a 6 month pilot will be able to take place.

Diabetes patients first to benefit from new technologies

An innovative device to help people who use insulin to better manage their insulin injection is being tested and evaluated by the Sheffield Test Bed Programme.
The Insulcheck Digital Device clips on the end of most insulin pens and automatically records the last time the patient injected insulin. This helps avoid double and missed injections adding safety and certainty to injection schedules.

Simon Bowes

Simon Bowes, 42, of Doncaster, who has diabetes and has been one of the patients using the new device, said: "Sometimes you can forget when you have last injected, so you can miss a dose or take a double dose, which can potentially be dangerous.

"I have other medical problems, and if you have lots of medication to keep track of and you are not feeling very well, it is possible to forget. I have had the device one month now, and I have found it very useful as a way to be sure when I last injected. It also helps my wife to keep track, when I am not feeling well.

"I definitely think technological innovations like this are a good idea for patients like me to help me manage my diabetes and stay safe and well."

Jayne Stocks Clinical Lead for Assistive Technology for Perfect Patient Pathway, as the local Test Bed programme is known, said: "This is an amazing aid for patients. It not only takes away anxiety but it also keeps them safe and gives them a feeling of control and independence in managing their long term condition."

"We are pleased that this device has been well received by Health Professionals as well as patients. We have already learned that even people who need support from family members are able to use the device. One patient told us they are using the device every morning and "it works and it's great!". We have also had some great ideas for how to make the device even better for the next part of the project.

Sir Malcolm Grant CBE visits Sheffield Test Bed Innovation Centre

NHS England Chair Professor Sir Malcolm Grant CBE has visited the Perfect Patient Pathway Test Bed innovation centre based at Sheffield Teaching Hospital NHS Foundation Trust.

Professor Sir Malcolm Grant CBE, said: "I was very interested to see the rapid progress being made with Sheffield's Perfect Patient Pathway. The NHS needs to make use of all the technologies that are now available to help patients manage their long-term health conditions. The Sheffield approach creates an environment in which exciting new technologies can be developed and trialled in real-world conditions, with a view to being rolled out to patients across England. We need to ensure the NHS is a world-leader in supporting patients in this way."

New Health Emergency App test underway

One of the technologies which is being evaluated by the Perfect Patient Testbed is a SOS phone app which can help provide help and reassurance for people with health conditions.

The SOS UK app has one touch SOS and OK buttons to alert a person's emergency contacts of their GPS location and let them know if they are either in need of help or OK.

The app also allows the patient to easily create their own emergency health record using pick lists to enter medical information such as potentially life threatening allergies, medications, immunisations, or medical conditions, as well as emergency contact information. Once an emergency health record is created, the app generates a QR code unique to the individual. The QR code can be saved on the patient's phone front lock screen to make it visible and ready for access by emergency responders.

In an emergency situation, health professionals can scan the QR code and quickly see the vital health information which the patient has inputted into the phone. In addition, when the QR code is scanned, the company who provide the SOS app automatically generates Email Auto-Alerts to the patient's next of kin, relative, friend or other nominated emergency contact, with a map showing the location of the patient.

Patients who are involved in other relevant Perfect Patient Pathway projects will be offered the opportunity to use the app and provide feedback.

Who is involved?

Sheffield Teaching Hospitals NHS Foundation Trust is the host organisation, working with:
- NHS Sheffield Clinical Commissioning Group
- Sheffield Health and Care NHS Foundation Trust
- Healthwatch Sheffield
- Sheffield City Council
- Sheffield Children's Hospital NHS Foundation Trust
- Working Together Vanguard
- Commissioners Working Together
- Primary Care Sheffield
- Sheffield City Region Local Enterprise Partnership (LEP)
- The University of Sheffield
- Sheffield Hallam University (SHU)
- Academic Health Science Network – Yorkshire and Humber
- NIHR CLAHRC Yorkshire and Humber
- General Electric, IBM and Apple
- Kinesis Health Technologies
- St Bernard Location Service and TSSM
- Insulcheck
- Inhealthcare
- WellKom International
- Medtronic
- Humetrix
- Aseptika Ltd
- Oviva
- TEVA
- IXICO
- The Good Things Foundation
- Big White Wall
- Caradigm
- Health Harmony
- Care Innovations
- 3rings

Affiliated partner organisations include:
- Centre for Integration of Medicine and Innovative Technology
- National Centre for Sport and Exercise Medicine
- Medilink
- Medipex
- NIHR Devices for Dignity Healthcare Technology Cooperative
- NIHR MindTech Healthcare Technology Cooperative
- Sheffield Cubed
- South Yorkshire Housing Association
- The Northern Health Science Alliance
- Voluntary Action Sheffield
- Yorkshire Ambulance Service

For more information on the Perfect Patient Pathway Test Bed visit our website: www.ppptestbed.nhs.uk or contact: Testbed@sth.nhs.uk

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