

# News story: UK Space Agency launches multi-million pound drive to improve patient care with NHS England

A search for hi-tech solutions to the major health and care challenges facing the NHS in its 70th anniversary year is underway with up to £4 million from the UK Space Agency.

In the joint initiative with NHS England, Innovators will bid for money to turn technology originally designed for space, from exploration to satellite communications, into medical applications that improve NHS treatment and care.

NHS England's chief executive Simon Stevens outlined four challenges in his speech to the NHS Confederation conference earlier this month:

- Managing long term conditions including joining up health and care services
- Earlier diagnosis of cancer
- Transforming GP services and other primary care
- Meeting mental health needs.

Up to four applications will receive UK Space Agency funding to develop their ideas along with support and advice from NHS England and the European Space Agency.

Emily Gravestock, UK Space Agency head of applications, said:

Britain's world-leading space sector continues to grow and support vital public services like the NHS with innovative applications.

We encourage all businesses and public bodies to consider the role that satellite data can play in tackling some of the biggest challenges we face, as part of the government's Industrial Strategy.

Previous examples of space tech being adapted for NHS use include a pill camera that can be swallowed by patients, dementia tracking slippers, breast screening vans that beam images back to assessment centres, wearable monitors to help prevent falls among the elderly, and apps that help prevent skin cancer.

Professor Tony Young, NHS England's national clinical director for innovation, said:

Throughout its 70 year history the NHS has been at the forefront of healthcare innovation.

Through this competition we are seeking the latest greatest, ideas and technical solutions to help address the modern challenges facing our health and care services.

The UK's space industry builds 40% of the world's small satellites and 25% of the world's telecommunications satellites. It supports 40,000 jobs and generates £14 billion in revenue across the country.

Space technology that has already been adapted for NHS use include:

- Dementia tracking slippers: GPS soles are being trialled in Dorset for people who are affected by dementia in order to help reduce hospital admissions. They are a discreet, non-invasive tracking tool that sits inside everyday footwear and can alert the carer if the person using them wanders outside given parameters or 'geo-fence'. Alerts are received over an app which runs on any internet enabled device and give the location of the wearer so they can be found quickly – reducing the chance for them to come to any harm. The benefits to the wearer are increased independence, while carers receive additional peace of mind.
- A pill cam to diagnose gut problems: A video capsule endoscopy or pill cam is a device approximately 2cm long used to examine the lining of the small intestine. It helps investigate iron deficiency anaemia; unexplained bleeding; suspected coeliac disease, and abnormalities such as polyps. The capsule is equipped with a miniature video camera and light source. It travels painlessly capturing images and sends them to a recording device for analysis by a clinician.
- NHS breast cancer screening vans: Mobile breast screening vans typically store digital scan images on hard drives, which are then taken by courier, taxi or mammography staff themselves to a hospital. Technology funded by the UK Space Agency's Space for Smarter Government Programme is behind 16 NHS breast screening vans across the country beaming scans of patients directly back to assessment centres to be double reviewed by radiologists. This reduces the time it takes to diagnose cancer or given the all-clear.
- NASA inspired tech helping to prevent falls: A wearable monitor is being used to help elderly and vulnerable people avoid falls by using microelectromechanical (MEMS) gyroscope equipment, partly based on technological breakthroughs made as part of America's space programme to monitor how people walk. Following a short 10-minute assessment, physiotherapists can prescribe a personalised exercise programme to reduce the risk of a fall.

- Skin cancer app: One in 54 people will be diagnosed with malignant melanoma during their lifetime. Apps which use satellite technology to give personalised risk assessment of sun exposure, like the Happy Sun App, could form part of a patients package of care in the near future.

For more details of how to get involved in this initiative, please contact [emily.gravestock@ukspaceagency.gov.uk](mailto:emily.gravestock@ukspaceagency.gov.uk)