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Pioneering 'Science to Survive' pipeline gives cancer patients hope for a brighter future

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Potentially life-saving therapies for cancer will be accelerated into clinical trials more quickly due to a pioneering project launched by scientists and clinicians at the University of Sheffield.

The Translational Oncology Initiative is one of the first projects of its kind in the UK and will create a pipeline between world-leading researchers across the University and the state-of-the-art Clinical Trials Unit at Sheffield's dedicated cancer hospital, Weston Park Hospital.

This new initiative has been launched with the generous support of two local charities, the Weston Park Hospital Cancer Charity and Sheffield Hospitals Charity, who have funded a number of junior cancer doctors to progress exciting scientific discoveries at the University into clinical trials.

The University is now raising further funds for a number of non-clinical staff to make this innovative programme possible.

Connecting scientists who develop revolutionary therapies in their laboratories and the doctors who treat cancer patients will ensure that patients benefit from such advances as soon as possible.

Professor Claire Lewis, a Senior Cancer Researcher at the University of Sheffield is leading the initiative with cancer doctors, Professor Penella Woll and Dr Sarah Danson.

"There are an estimated 2.5 million people currently living with cancer in the UK," said Professor Lewis.

"Over 150,000 of these die every year so new, effective therapies for cancer are needed urgently."

She added: "Innovative research has the potential to completely transform the treatment of cancer but for this to get from the lab to the bedside it must be translated into new clinical trials with cancer patients. In order to do this we need to make it easier and quicker for scientists and clinicians to work together and conduct these clinical studies".

Scientists at the University of Sheffield are at the forefront of a number of cancer research areas and are continually developing potential new therapies. One example is the 'Trojan Horse' therapy for prostate cancer, developed in Professor Lewis's lab, which is due to be tested in a new clinical trial in Sheffield and Manchester. The first in-man trial has been peer reviewed by Cancer Research UK's New Agents Committee and will be funded and managed by Cancer Research UK's Centre for Drug Development.

Professor Lewis said: "We are grateful to Cancer Research UK for agreeing to fund and manage this exciting new trial. We hope it will be a much-needed breakthrough in the treatment of prostate cancer."

"Our therapy uses a patient's own white blood cells as 'Trojan horses' to deliver a cancer-busting virus into the centre of all tumours present in the body. It eliminates prostate cancer in our experiments in the lab and we are very excited that it is now being considered for testing in patients."

Dr Nigel Blackburn, Cancer Research UK's director of drug development, said: "We're proud to lead this ground-breaking clinical

trial testing a new 'Trojan horse' approach that kills prostate cancer cells using a virus. This innovative treatment showed promise in mice, and we're finding out if it could benefit men with prostate cancer too.

"We're delighted to be working alongside the University of Sheffield and Weston Park Hospital, bringing doctors and scientists together to turn scientific discoveries into new treatments like the 'Trojan horse' therapy more quickly. Thanks to this bench-to-bedside approach, we're carrying out pioneering clinical trials that are making new treatments available to cancer patients."

Clinical scientist, James Catto, Professor of Urological Surgery at the University of Sheffield has also identified a new way to treat aggressive bladder cancer - and this lab-based research is now being translated into a new clinical trial.

His team analysed how the expression of genes can be altered by a process called 'DNA methylation' in bladder cancer cells, and how this controls their response to treatment.

This has led to a new clinical trial, run by the Universities of Sheffield and Southampton, again funded by Cancer Research UK, in which a drug which inhibits DNA methylation is being given to patients with advanced bladder cancer to increase the effectiveness of chemotherapy.

Sheffield scientists are also developing ways to improve the effectiveness of cancer treatments. It is known that no two cancers are identical in their genetic make-up, and that this influences the way they will respond to therapy.

Increasingly, cancer treatments are being 'personalised' - in other words, tailored to the genetic profile of a patient's tumour.

Researchers at the University of Sheffield are developing ways to predict how a patient might respond to a given treatment, so they can be given one most likely to be effective against their own cancer.

Samantha Kennedy, Weston Park Hospital Cancer Charity Director said: "Each year Weston Park Hospital Cancer Charity invests heavily in locally-based, high-quality cancer research, taking place on our doorstep for the benefit of local cancer patients now and in the future.

"Only by working in partnership with fellow charities and healthcare organisations can we hope to improve cancer survival rates and treatment options for patients. We are delighted to have been asked to invest in the 'researchers of tomorrow' to ensure we retain and develop Sheffield's research talent."

David Reynolds, Director at Sheffield Hospitals Charity said: "We are proud to be supporting this pioneering research. Sadly, so many people are battling cancer on a daily basis and we want to contribute to paving the way for new treatments to be introduced that will give these people more chance of survival and a better quality of life."

Provided by University of Sheffield

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