Transforming healthcare through clinical research and innovation

Research and Innovation
Creating the care of tomorrow
The exciting piece of artwork in the atrium was commissioned by The Medway Hospital Charity in 2021. The artwork symbolises Medway NHS Foundation Trust’s commitment to providing the best care to our patients and our desire to offer the newest techniques and treatments to them.

The double helix is the term used to describe the Deoxyribonucleic acid (DNA) held within the cells of our bodies. DNA carries the genetic instructions for the development, functioning, growth and reproduction of all known organisms. The double helix is a very recognisable symbol and since its discovery in the 1950’s by Rosalind Franklin, Francis Crick and James Watson it has come to be associated with research and medicine.

Due to this long association with medicine and research we have chosen the double helix to draw people to the work carried out within Medway Maritime Hospital by the Research and Innovation Department and our colleagues.
WHAT IS RESEARCH?

Research is the detailed study of a subject with the aim of discovering new information or reaching a new understanding. Scientific research follows a structured process known as the scientific method. The scientific method aims to ensure the accuracy of the findings while removing an individual’s personal point of view.

Medical research applies the scientific method to the study of medicine, disease and health. This is often conducted in hospitals with patients acting as participants. Medical research helps us to find better ways of looking after people, by improving procedures, drugs and medical equipment. People who join medical research may try new medications, new procedures, new ways of being cared for, or they may be asked questions about their condition, treatment and/or care.

All of these different types of research can provide information which enables us to improve treatment options. Staff within health care may also be asked to participate in research, especially when researchers are investigating methods of improving staff members working lives.

Medical research is vital in ensuring that medical treatments and healthcare techniques are constantly improving. Medical research has changed the ways we care for and treat people with medical conditions, illnesses and injuries. Indeed, medical research has resulted in the development and improvement of drugs, vaccines, equipment and techniques for many years.

During the COVID-19 pandemic, multiple vaccines were developed, tested and rolled out within a year. Not only is medical research important for helping those who have an illness or injury, but it can also help those with other conditions. An example is In Vitro Fertilisation (IVF) treatment which has had a significant impact on fertility and helped many people have children that otherwise would not have been able to.

WHY IS RESEARCH IMPORTANT?
Did you know?

Over the years there have been major changes in treatment as a result of research. Some of the big changes to treatment are listed:

**FIRST CLINICAL TRIAL**

The first reported clinical trial occurred in 1747, conducted by James Lind. Lind demonstrated that scurvy could be treated by supplementing the diet with citrus fruit, in one of the first controlled clinical experiments reported in the history of medicine. As a naval surgeon on HMS Salisbury, Lind had compared several suggested scurvy cures: hard cider, vitriol, vinegar, seawater, oranges, lemons, and a mixture of balsam of Peru, garlic, myrrh, mustard seed and radish root. In “A Treatise on the Scurvy” (1753) Lind explained the details of his clinical trial and concluded “the results of all my experiments was, that oranges and lemons were the most effectual remedies for this distemper at sea.”

**GERM THEORY**

Prior to germ theory it was believed that diseases simply appeared out of thin air known as ‘spontaneous generation’.

In 1861 Louis Pasteur demonstrated that microscopic organisms known as pathogens were responsible for the spread of disease. This new understanding resulted in significant changes to treat, control and prevent disease. These changes included doctors washing their hands and equipment being sterilized.

These findings helped prevent many epidemics from disease that were common at the time including plague, dysentery and typhoid fever. These techniques continue to help us fight current diseases such as MRSA and COVID-19.

**VACCINES**

Although the use of vaccination stretches far back in human history, it is generally accepted that Edward Jenner’s 1796 smallpox inoculations were the first to start the modern study of the technique and its wide acceptance. Since Jenner, vaccines have been used to combat some of the deadliest diseases such as rabies, tuberculosis, and cholera; with smallpox being eradicated completely.

Vaccination continues to be at the forefront of medical care for viral infections.
The Research and Innovation Department is Medway Maritime Hospital’s dedicated research department. The department assists staff to undertake medical research, devise new equipment, techniques or systems of care that improve patient care and their experience within the hospital.

The department is comprised of different teams who actively support research and innovation projects in different ways.

The Governance team are responsible for ensuring that the research is safe, scientifically and ethically sound, and follows the strict guidelines that apply to research being conducted in a hospital setting. If a member of staff has an idea, members of the Governance team, help turn that idea into a research project.

The Delivery team is responsible for supporting and undertaking the research within the hospital. The team consists of nurses and practitioners who are experts in conducting medical research. The Delivery team are focused on implementing national and international research projects at Medway Maritime Hospital.

By fully integrating research and innovation into our organisation we outperform organisations that do not, leading to better quality care and improved use of resources.

Research and innovation is at the heart of everything we do. The hospital’s executive team supports and encourages learning which fosters a culture that seeks out research evidence and applies this evidence in decision-making.
The Research and Innovation Department works in collaboration with stakeholders at national and international level. We continually seek partners who share our passion for improving healthcare through evidence and innovation.

We are members of the Kent, Surrey and Sussex Clinical Research Network (KSS CRN). We collaborate with local Universities, Public Health, the Councils, other NHS providers and local entrepreneurs to develop and investigate new treatments and methods of care.

The hospital engages with local community, expanding education opportunities, contributing to the economic growth and elevating healthcare status. One of the examples is the active engagement in the establishment and management of the Kent and Medway Medical School (KMMS).

The hospital is actively involved in a number of national and international initiatives. We participate in medical research, knowledge and expertise exchanges, influencing the future of the medical research and innovation.

"Everybody knows research is really important for finding new medications, but I want to give you a slightly different perspective on why research is so important. Firstly, as clinicians it forces us to be very well read, to review the literature and be as up-to-date as possible in the subject area, and that leads in my view to really immediate and significant improvements in patient care well before the research outcomes are available, and so I’m all for research and I encourage my teams and our nurses and junior doctors to participate as much as possible."

Dr Gihan Hettiarachchi
The Trust’s successes in medical research

Over the years, the Trust has taken part in hundreds of research studies. Some of those studies have changed the way people are treated. When the Trust takes part in research which changes practice, it is very exciting and rewarding. Here are some examples of the studies we have been involved in:

The Recovery Trial (Randomised Evaluation of COVID-19 Therapy)

In early 2020, when this study was being developed, there were no approved treatments for COVID-19. The UK New and Emerging Respiratory Virus Threats Advisory Group (NERVTAG) advised that several possible treatments should be evaluated, including Lopinavir-Ritonavir, low dose corticosteroids and Hydroxychloroquine (which has now been completed). Eligible patients were randomly allocated between several treatment arms, each to be given in addition to the usual standard of care in the participating hospital.

“I started a voluntary study for one year which was Colustimethate Sodium in patients with non-cystic fibrosis bronchiectasis. I found I was very easily informed with everything during the whole trial, and I cannot fault Laura who leads the team. She was there for me during everything and nothing was too much for her...all I can say is, if I was asked to take part in any more trials, I would not hesitate to do it. So please, if you are asked to do it, please do it as it helps you and can maybe some day save other people.

Mrs Devlin
AZTEC (AZITHROMYCIN THERAPY FOR CHRONIC LUNG DISEASE OF PREMATURENESS)

A randomized, placebo controlled trial of azithromycin for the prevention of chronic lung disease of prematurity in preterm infants.

Premature births account for a tenth of all world-wide births. Many premature babies, especially those who are born extremely premature, sadly do not survive. Out of those that survive, many develop the disease called Chronic Lung Disease of Prematurity (CLD). The condition happens when breathing machines or oxygen, essential for baby’s underdeveloped lungs, injures its lungs. Previous studies found an association between Ureaplasma urealyticum colonization and development of CLD. As the Ureaplasma is typically treated by an antibiotic, azithromycin, the purpose of the study was to evaluate effectiveness of the antibiotic in reducing the prevalence of the CLD. If the study is successful, the treatment will allow babies to be discharged without further need for oxygen, relieving the burden on parents, and reducing the number of hospital admission and chest infections in childhood.

MK6482-005

An Open-Label, Randomised Phase 3 Study of MK6482 Versus Everolimus in Participants with Advanced Renal Cell Carcinoma That has progressed after PD-1/L1 and VEGF-Targeted Therapies

This research study is designed to test a drug called MK-6482. This is an alternative to currently used Everolimus which has been approved by certain health authorities for the treatment of various cancers and other conditions.

The aim of the study is to test the safety of the study drug, MK-6482 compared to Everolimus, to see if:

- MK-6482 controls advanced renal cell carcinoma better and helps participants live longer.
- Evaluate how well participants tolerate MK-6482, compared to Everolimus.
- See if MK-6482 helps participants have a better quality of life, compared to Everolimus.
- Test how the body processed MK-6482.

I feel like I’ve been really lucky. The staff at Medway have been brilliant – both after my accident and during the study. And I couldn’t have got through any of it without my family’s support. They have been amazing. I would say to anyone who has the opportunity to take part in a trial, just do it. If we don’t support research then medicine can never move on.

Tracy

Tracy was the first patient recruited to take part in the OPTALYSE PE study. Patients with blood clots in a major artery within the lung are typically treated with a blood thinning drug over the course of 12 hours. The OPTALYSE PE study tests whether drugs can be administered over a shorter period of time – along with an ultrasound device which is directed straight onto the clot to help the drugs dissolve it – and achieve the same benefits with fewer risks.
What to expect if you are asked to join a research study

Every research study is different, but some things are similar for all. Every research study is different, but some things are similar for all. Some research studies want to collect information about you and your health. This can be from a variety of methods including questionnaires, blood samples, health measurements such as blood pressure, etc. Other research studies require you to trial different medications, treatments or procedures. These may be in addition to your standard care or instead of. These studies usually require the collection of similar information such as the questionnaires and blood samples. Some studies will require one visit, whereas others may require multiple visits over a few years. Each study is different and it is important to consider the requirements of the study before you consent to take part. The person explaining the study to you should go through all the patient requirements prior to you consenting.

What happens if you are approached about research?

You or your family member could be asked if you would like to apply to participate in a research study. You could be asked by a doctor, nurse or a research practitioner. If you are interested, they will briefly explain the study and give you written information about the study, in the form of a Patient Information Sheet. You will be given time to read the sheet, discuss the research with friends and family, and have the opportunity to ask questions about the research. If you agree to join the research study, you will be asked to sign a consent form. The doctor or nurse who explained the study will also sign the consent form, and give you a copy.

If a member of your family is too young or unable to consent for themselves, you may be asked on their behalf. You will be asked to read about the study, before being asked you if you think that the person you are representing would under normal circumstances, be willing to join the study. If you think that they would, you will be asked to confirm that in writing by means of an assent form.
How to engage with research at Medway Maritime Hospital

The hospital has lots of ways that you can get involved and help in research. From following us on social media to supporting us through fundraising.

Patients

When you next see your healthcare professional, be sure to ask them about any research that we may be offering.

Help raise money for research and innovation at Medway

Please get in touch if you would like to help us continue to fund and assist with local research projects.

Please contact us and find out how you can best help:

- **01634 976669**
- **met.tr.medwayresearch@nhs.net**
- **1st Floor, Education Centre, Medway Maritime Hospital**
- **@Medway_research**