Experimental Cancer Medicine Centres
A dedicated network for supporting the early-stage development of new cancer treatments
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Driving research
The ECMC initiative has committed £70 million towards building the infrastructure needed to both deliver world-leading early phase clinical trials and to enable a network of experts to translate scientific discoveries into new cancer treatments for patients.

Working with industry
The UK-wide Network of 18 ECMCs is uniquely placed to help industry develop the cancer drugs of the future, bringing together an unrivalled team of world-leading clinical experts, working collaboratively to deliver early phase clinical trials.

Innovating for patients
ECMCs provide UK-wide access to pioneering, early-phase cancer trials that will lead to more effective treatments for patients.
Since 2007, the Experimental Cancer Medicine Centre (ECMC) initiative has played a pivotal role in driving the development of experimental agents that will become the cancer treatments of tomorrow. The initiative is funded by Cancer Research UK and the four UK health departments. From research nurses to data managers; trial coordinators to pharmacists, we invest in the expertise and infrastructure needed to deliver early phase cancer trials and biomarker development in the UK.

Early phase trials are the first step in testing new treatments that have been developed by scientists in the laboratory, enabling us to ensure that those discoveries can become effective and safe new treatments for patients with cancer. We owe huge gratitude to the people who take part in early phase trials as they are often the first patients to be given a new treatment.

Over the last seven years, the ECMC Network has supported over 1,000 early phase trials, delivering real promise for patients and an exciting environment for world-leading research. Our investment also supports biomarker development and a UK-wide programme for processing clinical samples – biobanking – an increasingly important resource in cancer research to enable more personalised and effective treatments.

By working collaboratively as a Network of 18 ECMCs, we have significantly enhanced the capacity, diversity and quality of experimental medicine in the UK. Collectively, this has helped to make the Network an ideal choice for the international pharmaceutical industry to conduct early phase trials as we work together to find better treatments for cancer.

JO REYNOLDS
CANCER RESEARCH UK
DIRECTOR FOR ECMCS

We owe huge gratitude to the people who take part in early phase trials as they are often the first patients to be given a new treatment.
About Experimental Cancer Medicine Centres

The Experimental Cancer Medicine Centre (ECMC) Network is a unique UK-wide initiative jointly funded by Cancer Research UK and the health departments of England, Wales, Scotland and Northern Ireland. It brings together world-leading scientists and clinicians to drive the discovery, development and testing of new anti-cancer treatments and biomarkers to deliver real benefits for patients.

What do ECMCs do?
The ECMC initiative provides funding for the expertise and infrastructure needed to conduct world-leading, early phase clinical trials to help develop the cancer treatments of tomorrow. Each ECMC is a centre of excellence, with both laboratory and clinical facilities, focusing on translational cancer research – transforming scientific discoveries into medical applications. ECMC resource assists our scientists in working with clinical experts to deliver the safe and rapid evaluation of new cancer treatments alongside the identification and evaluation of new biomarkers. Together, these enable the evolution of more precise and effective treatments for cancer.

Consisting of 18 ECMCs across the UK, since 2007 the initiative has committed £70 million of research infrastructure. This funding supports over 200 staff members involved in early phase trials and translational research, including Research Nurses, Operational Staff, Pharmacists, Physicists, Radiographers, Pathologists, Trial Coordinators and Quality Assurance staff. These experts play a key role across the cancer research pathway to ensure that research is delivered to the highest standard.
Our ECMC team

14% Data Managers
26% Research Nurses
33% Laboratory Technicians
6% Quality Assurance Managers
9% Administrators
6% Tissue Banking Pathology Staff
1% Bioinformaticians
3% Pharmacists
2% Imaging Radiology Staff

ECMCs help fund the expertise and infrastructure needed to conduct world-leading, early phase clinical trials.
OUR VISION
Through collaboration and teamwork, the ECMC Network aims to:

• Enhance the delivery of early phase trials by providing capacity, increasing speed and efficiency and ensuring safety
• Ensure that the UK remains at the forefront of international efforts to develop and test new treatments for cancer, built upon outstanding science
• Increase the attractiveness of the UK as a location for industry-sponsored early phase trials
• Maximise therapeutic opportunities for patients by developing biomarkers that will lead to more targeted treatments
• Promote patient and public engagement in experimental cancer medicine.

Over the last seven years, the ECMC Network has supported over 1,000 early phase trials and over 700 biomarker studies across the UK, delivering real promise for patients and an exciting environment for world-leading research.
During 2013/14, over 2,200 patients were recruited onto trials supported by the Network.

- OUR EXPERTISE

Each ECMC was selected through a competitive process by a panel of international scientific experts, based on the capability and track record of the people at those locations. The expertise supported by the ECMC initiative ensures a broad range of capabilities for conducting cutting edge early phase clinical trials and translational research.

Our investigators are experienced in:

- all cancer types, including breast, melanoma, prostate, lung and haematological cancers
- designing and delivering early phase trials in new agents, including drugs, biologics and radiotherapy
- designing and delivering trials involving combinations of therapies
- the stratification of patients
- developing and evaluating biomarkers and companion diagnostics
- conducting studies to the highest regulatory requirements.
Each ECMC offers unique and world-leading expertise within early phase clinical cancer research and shares those capabilities with the entire ECMC Network. This enables our investigators to access a broad range of skills and experience to help generate new treatments for cancer.

**UK-wide**

The 18 ECMCs that comprise the ECMC Network have a UK-wide geographical reach and are generally located with other Cancer Research UK and/or health department funded clinical and research hubs, creating a strong network of centres of excellence for early phase oncology research. The Network has strong working links with those UK-wide research facilities that focus on the later stages of clinical trials in cancer, enabling a seamless transition between early and late phase trials.
The ECMC Network has been instrumental in organising a cadre of high calibre early phase clinical research centres. I have noted a significant improvement in study setup, recruitment and reporting timelines which has reinstated the competitive position of the UK in clearly a global competitive market for early clinical trials.

Professor Andrew Hughes
Head of Early Phase Cancer Clinical Development
AstraZeneca
ECMCs within the UK
The foundation of each ECMC is a partnership between the local NHS Trust and the University, bringing together university based health researchers with hospital based clinical staff and researchers. ECMC funding provides the support to allow these different disciplines to work together to develop new treatments for cancer.

The ECMC Network is an important part of the overall UK research environment and works closely with other research infrastructure such as the later phase research networks across all four countries of the UK, Clinical Research Facilities (CRFs), Biomedical Research Units (BRUs) and Biomedical Research Centres (BRCs) to ensure that the UK is a leader in the development of new cancer treatments.

How ECMCs contribute to the cancer research pathway
ECMC funding supports staff involved mainly in the earlier preclinical and clinical phases of cancer treatment discovery and development. ECMC staff also support the translational elements of later phase studies, for example, biomarker validation and qualification studies.

Over 20 major cancer types are studied across the ECMC Network
Leveraging investment
The infrastructure investment that we provide supports our Centres in leveraging significant additional funding from trusts and universities, as well as other commercial and non-commercial funders. Locally, this enables our ECMCs to expand the range of treatments offered to patients. Nationally, this has strengthened the translational research infrastructure of the UK, ensuring that it remains a competitive place for conducting clinical trials.

A few examples:

ICR ECMC has entered into an extensive partnership with GSK leading to at least three first-in-man clinical trials

Barts-Brighton ECMC has entered into a £4.6m partnership with AstraZeneca to deliver a randomised phase II study in breast cancer investigating TORC1 & 2 inhibition

Manchester ECMC has teamed up with Silicon Biosystems in a £700k venture to explore circulating tumour cell genomic heterogeneity and drug resistance signatures.
Nurturing collaboration
Collaboration is an essential element in driving scientific progress. On a practical level collaboration allows investigators to access skills, experience and technology that may not be found in their own location. More importantly, collaboration exposes investigators to novel ideas and approaches, allowing them to enhance and develop their research ideas. Through regular meetings and workshops the ECMC initiative actively promotes and supports collaboration across the Network and beyond, driving forward innovation.

Collaboration also delivers benefits to patients. As the Network is UK wide, investigators can choose to open studies well beyond their host location, increasing the accessibility of trials for patients. This also allows investigators to recruit sufficient patients with specific genetic signatures or with rare cancers, making a broader range of trials more feasible.

The ECMC Network is an exciting initiative, set up with support from the UK health departments and CRUK with the aim of harnessing the clinical expertise and infrastructure in the UK to deliver early phase cancer studies. The direction of travel has been positive, and the Network has demonstrated the ability to create the right platform for early phase cancer research in the UK.

DR ROD MURPHY
CHAIR OF THE ABPI CANCER WORKING GROUP
For me, the ECMC Network is the mechanism for scientists, trialists and clinician scientists, such as me, to help move science from lab to clinical trials and ultimately improve patient care.

I am a clinician scientist by training with experience in both basic laboratory and trials-based research, particularly in early phase clinical studies, and have a track record in bringing basic scientific, clinical and industrial expertise together to advance patient care.

A large part of my role is working with scientists to find clinical applications for their findings and then helping to design appropriate trials along with my clinical colleagues in the Northern Ireland Clinical Trials Centre. As well as preparing the ECMC report each year, which sets out our work in early stage cancer research, on a monthly basis I meet with the early clinical trials team to review the progress of ECMC studies, identifying why some studies may not be recruiting properly and working with the Principal Investigators to improve enrolment. We also consider new trial opportunities and how these might fit with our interest in personalised medicine and our existing trial portfolio.

One of the most exciting studies in Belfast in 2014 was a first in man trial of a novel anti-angiogenic peptide, ALM201, discovered in Queen’s University Belfast. This was developed into a drug in collaboration with Almac Discovery, a local biotechnology company and will be run across the ECMC Network.

We have established a collaborative pipeline from basic research to patient which involves collaboration with industrial partners and the ECMC Network, from the initial research to the validation of a final product in clinical trials. This begins with basic science in the university laboratory supported by data, reagents and expertise from industrial partners. This collaborative pipeline has led to three successful biomarker assays and two new drugs entering ECMC-supported clinical trials.
Of the early phase trials supported by the ECMC initiative, over 70% are funded and/or sponsored by the pharmaceutical industry. ECMC industry partnerships are vital in driving the development of the experimental agents that will become the cancer drugs of tomorrow. Last year alone, over 120 different companies conducted trials through the ECMC Network.

ECMC investigators work with industrial partners in a number of ways. They can get involved in the very early stages of development of a drug and work alongside commercial partners to help them develop the most informative trials for a particular agent or agents. Alternatively, if a company already has a well developed protocol, then investigators in the Network can work with them to help secure access to the necessary resources and patients to undertake a trial.

Our investigators also have extensive partnerships with medical technology companies, helping to bring new and innovative technologies to the Network. For example, a number of ECMCs are working with companies to help develop and standardise the technologies that can deliver liquid biopsies.
The Network offers industry a platform for:

- Rapidly conducting early phase trials (with novel agents, imaging trials, First-Time-In-Human (FTIH), innovative trial designs)
- Undertaking preclinical evaluation of new agents
- Exploring the development of biomarkers
- Developing pharmacodynamic and immunological endpoints
- Undertaking sub-studies with translational endpoints
- Accessing molecularly pre-screened patient populations for targeted therapies
- High-quality laboratory/clinical facilities and practice
- Recruiting patients from across the UK.
An alliance for combination therapies

When two or more drugs are combined in a trial setting, this poses substantial challenges for investigators, such as the selection of agents that when combined may lead to improved efficacy while maintaining acceptable toxicity; trial design; dosing and scheduling complications; and logistic and regulatory challenges.

Investigators in the ECMC Network have extensive experience in successfully tackling these challenges, this is a strength that the Combinations Alliance has taken advantage of.

Since the Combinations Alliance began in 2010, a growing number of industry partners have joined, such as: AstraZenca, Lilly, Astex and MedImmune, and new partners are actively sought. From these partnerships, the Alliance has been able to offer over 20 novel cancer agents for investigation. Over 130 early phase research ideas have been generated via expression of interest calls. The study portfolio includes novel-novel, novel-radiotherapy and novel-standard of care chemotherapy combinations and covers a range of tumour types.

Whether the research idea is preclinical or clinic ready, the Combinations Alliance team works with researchers from the ECMC Network to help translate early phase research ideas into early phase combination clinical trials – even if the required compound(s) or company(s) is not on the current portfolio. Timelines are driven by the Cancer Research UK New Agents Committee (NAC) submission deadlines and as such there are three expressions of interest calls per year.
The sustainability of the Combinations Alliance is dependent on the timely delivery of these early phase studies through the ECMC Network, and on having access to the best agents for combination through the Cancer Research UK Centre for Drug Development (CDD). The aim is to double the number of studies in the portfolio in the next two years.

The ECMC Network has been a great asset when forming partnerships with major pharmaceutical companies. The ability to readily access patients and expertise beyond the ICR through the Network is a real benefit.

PROFESSOR JOHANN DE BONO
ECMC LEAD
INSTITUTE OF CANCER RESEARCH
LONDON
Over 70% of studies supported by the ECMC Network are sponsored and/or funded by industry.

Over 120 different companies used the ECMC Network to conduct their early phase trials.
I liaise with patients about the study. I'm a point of contact for the patient throughout their time on the trial and I co-ordinate their care in line with the protocol and their individual needs. On a practical level, I schedule appointments and screen potential patients. I collect blood samples and communicate with the doctors or lab staff regarding the timing and collection of these, and I also collate study data and document this appropriately.

I work on a number of studies involving patients with different types of cancer, for example, gastric, colorectal and pancreatic cancers. Days are varied: meeting patients who are given PIS (Patient Information Sheets) and helping them understand the trial and their choices, and what their participation might involve; organising scans and other procedures; ensuring chemotherapy and trial treatments are ordered; and administering the treatments themselves. I manage site files and sort out queries, detail SAEs (Serious Adverse Events) and communicate with the study centres. I work on commercial, non-commercial and university studies and last year I was involved in an MHRA inspection.

For me, I enjoy working closely with patients and being able to spend time with them, building a relationship; something that is often difficult in some nursing roles.

We work with cancer patients at an extremely difficult time in their lives as they may have run out of options with their cancer treatment. Managing our patients’ expectations is never easy to anticipate. It’s important to be honest. You can never assume anything; each patient is individual and no two patients react in the same way to a treatment regimen. And this is what I say to patients. I think it’s important that you can give the patient some reassurance and that you are a point of contact for them throughout their time on the trial, so they always have someone to talk to regarding their thoughts or concerns.
Pioneering precision medicine

The ECMC Network is playing a pivotal role in Cancer Research UK’s Stratified Medicine Programme (SMP). This initiative demonstrates just what can be achieved through working collaboratively.

With the potential to revolutionise, stratified (or precision) medicine groups patients according to common characteristics in their disease type or by how they respond to different therapies. In cancer, patients can be grouped according to the genes involved in the development of their cancer and so receive therapies tailored to their specific genetic faults.

Taking advantage of the expertise, infrastructure and collaborative nature of the ECMC Network, SMP1 set out in 2011 to explore how large-scale molecular testing in cancer could be delivered in the NHS setting. The initiative has been a great success thanks to the ECMC Network’s clinical team (surgeons, nurses, oncologists, pathologists) and informatics teams, and the laboratories that carried out the genetic testing. SMP1 delivered on its objectives on time, on budget and to target:

• eight ECMCs took part
• 10,754 patients were consented
• 9,010 samples from six tumour types were tested.

The second part of the programme, SMP2, which launched in January 2014, aims to give lung cancer patients access to drugs targeted to their specific genetic faults. Through the SMP2 pre-screening project, non-small cell lung cancer (NSCLC) patients will undergo molecular screening to identify those that are eligible for targeted therapies via the National Lung Matrix Trial.
Our experts: enabling world-class research

Data Manager, Matthew Richardson, at Manchester ECMC explains how data is key to ensuring ECMC trials can be evaluated effectively.

As Information and Systems Development Manager at The Christie NHS Foundation Trust I am also the ECMC Data Manager, responsible for the collection and compilation of the data reported annually to the ECMC secretariat.

My main role in the organisation involves the development of innovative solutions to enable us to collect, analyse and report on data related to research activity. The data we collect comes in various guises, from setup metrics (e.g. how long from initial submission of study for approval to first patient recruited), to patient recruitment and activity data, and comes from various sources such as the Trust’s Electronic Patient Record and a number of in-house developed management information systems.

I am currently developing a tool that will improve the capture of all trial activity to enable us to quickly respond to requests for information on our performance, and to provide us with a flexible platform with which we can best support our important work, and that also will allow us to be responsive to any changes in data sources or required internal/external datasets. The data collected will come from various existing sources but will be collated in one place to ease analysis and reporting.

Working in this role can be extremely challenging, but it is in equal part extremely satisfying. I take great pleasure in helping the organisation make more sense of the various data we collect, and I find something new every day to keep me excited about the projects I am working on.
The ECMC network groups bring together staff in ECMC locations and beyond to discuss current research topics or skills requirements in early phase and translational medicine. The network groups provide the research community with a forum for:

- peer-to-peer support
- networking within their community and with other groups
- training and development
- improving quality and standards (e.g. guidelines, SOPs)
- tackling particular challenges for these groups in experimental medicine.

Each of the eight ECMC network groups has a Steering Committee to drive the work plan of the group and a wider membership that guides and participates in activities such as training events, workshops, guideline development and surveys.

The Junior Investigator Network Group (JING) – a case study

The continued success of translational and early phase clinical trial research within the ECMC Network relies upon the continued development of a strong cadre of research leaders of the future. The training of both clinical and non-clinical junior investigators in this area has, however, been segmented. The Junior Investigator Network Group (JING) was founded to support the development of young researchers across all fields of translational research within the ECMCs, including oncology, haematology, paediatrics, radiology and surgery.

The group has developed an annual residential training course entitled ‘Training the Next Generation’ bringing together junior investigators from different disciplines to develop their skills and knowledge in early phase and translational study design through formal lectures, study design activities, networking and feedback on their own study ideas. Training is facilitated by senior investigators from different fields of oncology, who share personal experiences and expertise.
Our network groups

CELLULAR AND MOLECULAR PATHOLOGY (CMP) NETWORK GROUP
focuses on improving access to pathology resources and expertise critical in new biomarker-led studies, helping to personalise and improve treatments

QUALITY ASSURANCE AND TRANSLATIONAL SCIENCE (QATS) NETWORK GROUP
supports and enables ECMCs to conduct translational research to the highest achievable levels of quality and regulatory compliance

IMAGING NETWORK GROUP
disseminates best imaging practice to increase the number and quality of trials at ECMCs that use advanced imaging approaches

JUNIOR INVESTIGATOR NETWORK GROUP
provides expert support for tomorrow’s researchers

CRUK ECMC RADIOPHARMACY TASKFORCE (CERT)
acts as an interface between the radiopharmacy community and regulators, creating a common understanding of the regulatory requirements for clinical trials involving radiopharmaceuticals

TEENAGERS AND YOUNG ADULTS (TYA) NETWORK GROUP
improves access to early phase trials and biological research for TYA cancers

RESEARCH NURSES NETWORK GROUP
promotes quality care for patients through peer support, training and guidance for research nurses working in early phase and translational research

UK THERAPEUTIC CANCER PREVENTION NETWORK GROUP (UKTCPN)
brings together expertise to develop therapies, chemopreventative agents or dietary interventions

ECMCs support over 200 full-time equivalent posts across the Network
The Experimental Cancer Medicine Centre Initiative is jointly funded by Cancer Research UK, the National Institute for Health Research in England and the Health Departments for Scotland, Wales and Northern Ireland.