

The importance of research in healthcare

Emma Young

Ashford and St. Peters Foundation Hospitals NHS Trust. Research and Development Department. Chertsey, Surrey KT13 0SY. UK

Correspondence: emma.young@asph.nhs.uk

Abstract

In June 1913 the Medical Research Committee held its first meeting. The objective was to implement a national scheme for health insurance which would provide hospital treatment for tuberculosis (TB) and to initiate research comparing TB in animals and humans. The committee is now known as the Medical Research Council (MRC). Research has been supported ever since so acknowledging its vital role within our society. During the last century there have been many discoveries and amazing innovations changing the way healthcare professionals treat patients.

Introduction to healthcare research

International Clinical Trials Day is celebrated on the 20th May each year to commemorate the day that James Lind started his important trial on scurvy. The day aims to highlight research in healthcare and how vital it is in the delivery of high-quality medical practice.

James Lind (1716 – 1794) was a Scottish physician. In 1747 he was a surgeon in the Navy and noticed that the men on board ship for long voyages suffered from symptoms such as bleeding gums and loose teeth; these symptoms became known as the disease called scurvy. The disease is caused by lack of vitamin C but in 1747 the relationship between vitamins and health was unknown. James Lind decided to investigate. He divided 12 men into 6 pairs. Each pair had something added to their diet:

Pair 1 had cider,

Pair 2 had 25 drops of sulfuric acid,

Pair 3 had seawater,

Pair 4 had vinegar,

Pair 5 had a spicy paste mixed with barley water and

Pair 6 had oranges and lemons.

Pair 6 regained their strength and well-being within 5 days and were passed fit to return to work on the ship. It was the astonishing reaction by pair 6 to the oranges and lemons (which contain vitamin C) that made this piece of research, the first known of its kind, become well-known, and which led to the cure for scurvy.

Now most treatments in healthcare come from research: radiotherapy for cancer, bed nets to stop mosquito bites and hence malaria, antiplatelet drugs such as aspirin and anticoagulants (e.g. warfarin) to reduce stroke and heart

disease, folic acid to improve foetal development. Health screening services such as screening for deafness in babies, cervical cancer, breast cancer, prostate cancer, abdominal aortic aneurysm, and more recent research such as stem cell transplants have all come from research.

History of healthcare research

Research techniques and their findings have evolved continually throughout the last century. In the early 1900's there was much investigation of the role of vitamins on the human body. The British Physician, Sir Edward Mellanby (1884 – 1955), in 1916 discovered how increasing Vitamin D in the diet could cure rickets, a common disease at the time. Sir Frederick Gowland Hopkins (1861 – 1947) was awarded the Nobel Prize (1929) for his pioneering work on the importance of vitamins. Thence forward was a new era of enthusiastic research. There followed breakthroughs in finding new treatments for numerous infections that previously had resulted in many deaths in the early 1900's: meningitis, pneumonia, septicaemia. In 1929 Sir Alexander Fleming (1881 – 1955) discovered penicillin which remains one of the most widely used drugs today. There were advances in metabolic medicine such as the discovery of two types of diabetes mellitus.

The study of life styles and their effects on the human body were studied. It became clear that tobacco smoking was a major cause of lung cancer and contributes heart disease and stroke. Research into cell function and molecular biology are areas of focus today (e.g. the discovery of interferon and its role in cancer treatment and that of multiple sclerosis). The discovery of double helix of Desoxyribo Nucleic Acid (DNA) (accredited to James Watson and Francis Crick in 1953) was a huge advance leading to the understanding of many diseases. The amazing work of Audrey Smith in the 1960's led to Cryobiology research which has enabled the storage of frozen sperm, eggs and embryos for In Vitro Fertilisation (IVF)

Healthcare research in the UK

The British National Health Service (NHS) Constitution paper (2013) states what the patients, the public and the staff working within the NHS can expect from the NHS. Patients should be offered the latest effective treatments and should have the right to

be offered the opportunity to take part in research. The National Institute for Health Research (NIHR) clinical research network provides the infrastructure for high-quality clinical research. This support ensures that clinical research carried out within the NHS is of a high standard. This aims at ensuring patients benefit from that research.

Ensuring research is an integral part of the NHS also encourages all professionals to question and rationalise clinical management and creates a culture of continual learning and development. It also assists professionals to learn more about their chosen area, to have confidence in the treatments they are offering and to learn from their patients.

Why carry out research within healthcare

Does taking part in clinical research help patients? Evidence suggests that patients who receive care in research-active hospitals have better health outcomes. This is due to the research-active hospital being able to offer wider treatment options and more opportunities to be included in clinical trials. Research-active institutions have an ethos of advanced learning and so benefits the patients. Patients taking part in clinical trials also have tend to have increased time with the clinical team members. Therefore problems are likely to be identified sooner. Taking part in research can help patients gain a better understanding of their condition and management. A poll carried out by the National Institute of Health Research in 2012 showed that 82% of the public think that it is important for the National Health Service to offer opportunities to take part in healthcare research - only 7% said they would never take part in a clinical research.

Carrying out high quality research by healthcare institutions leads to financial support for this work from health charities (e.g. Cancer UK), the pharmaceutical companies and the universities. Finance is a major issue: typically it costs £1.15 billion to do all the research and development necessary before a new medicine can be licensed for use

Many health professionals find that clinical research provides an alternative and rewarding career path. This can be exceptionally rewarding when research leads to real benefits for patients.

Is health research applicable in South Sudan

A resounding “Yes”. Research can be carried out anywhere no matter what the clinical facilities. Just ask

a question within clinical practice, work with colleagues to refine that question and analyze the various elements. Then design a proforma to record your findings e.g. how many cases of malaria do we see each week? How quickly do we confirm a diagnosis and start treatment? Is there a relationship between these factors and clinical outcome? Some will say this is “clinical audit”: that is true but it is from such enquiry that other questions arise and “research progresses.

The following are points for healthcare professionals and policy makers to consider:

1. Research is needed particularly into health infrastructure its optimal design within the constraints of available resources, prevalence of tropical diseases and viral illnesses and variation between regions (“geographical pathology”), attitudes towards transmissible diseases and non-communicable diseases.
2. Training in research methodology and biostatistics and computing.
3. As a new nation South Sudan needs the establishment of a sound research base now so that universities adopt and cultivate the culture of research
4. This is the time in the life of a nation to allocate research funding as part of healthcare development.

Summary

Research relies on scientific and academic innovation. By posing new ideas and suggesting alternative answers to medical and social questions we aim to have evidence based care and practice at the forefront of health delivery. Put simply; research needs to be an integral part of any healthcare environment.

Further reading

- National Institute of Health Research Clinical Research Network. <http://www.nihr.ac.uk>
- Medical Research Council. <http://www.mrc.ac.uk>
- The NHS Constitution Paper for England. <http://www.england.nhs.uk/2013/03/26/nhs-constitution>

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