

NHS GENETICS EDUCATION CENTRE

UPDATE

MARCH 2009



Welcome

Welcome to the March edition of the *NHS Genetics Education Centre Update*. In parallel with our practical involvement in providing resources and support to educators and learners we are continuing to develop a theoretical base for genetics education using sound educational principles. For instance we have recently published two papers - the development of a curriculum statement on genetics in primary care in the *British Journal of General Practice*, whilst a paper in *Clinical Medicine* outlines the development of core learning outcomes for non-genetics specialist registrars. Please do [contact us](#) for further information.

Using case scenarios in teaching genetics

Relevant examples from clinical practice and patient stories can be powerful tools in genetics education. Carefully chosen, their use can help health professionals and students recognise the relevance of genetics to their own practice, motivate them to learn and assist with retention and application of genetic concepts.

The Centre is developing a range of resources to support the use of case scenarios.

- Patients' experiences of living with genetic conditions are available from 'Telling Stories'. Each story has a 'toolbox' of suggested activities. Stories can be used for individual study, as a focus for group work or within a presentation, perhaps to introduce a topic in a 'real life' setting before drilling down to cover scientific concepts. www.geneticseducation.nhs.uk/tellingstories
- A series of cases for taking and drawing a family history are available, including family histories of developmental delay and a renal condition, a son with a muscle disorder and two children with a respiratory disorder. www.geneticseducation.nhs.uk/family_history/drawing_pedigrees.pdf
- Resources on interpreting family histories, including clinical photographs and worksheets that consider the questions, 'What is the cause of the kidney problems in my family?' and 'Why do people in my family fracture their bones so easily?', are available from the Teaching Genetics pages. www.geneticseducation.nhs.uk/about_us/index.asp?id=119



Incorporating genetics into 'mainstream' services

New services and new roles that include genetics are being developed across the NHS. New ways of working include family history clinics, multidisciplinary clinics integrating genetics and new patient pathways.

To maximise the benefit of pilot projects to the NHS and minimise the need to reinvent the wheel, the experiences from previous service development initiatives have been collated and presented as a 'Toolkit' for those who are designing or developing NHS services for patients with or at risk of genetic conditions.

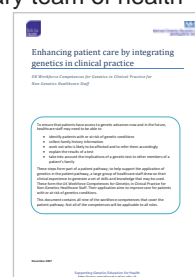


It presents ten key areas for consideration when developing services involving genetics and highlights important issues and questions that may need to be addressed, including: staffing issues, stakeholder involvement, communication, implications for genetic departments, working with different specialties and organisations, working with IT systems, working with communities, and providing genetics education. If you have been involved in a genetics service development initiative and would like to contribute information or resources, please [contact us](#).

Genetics in Practice

What are the genetic activities that non-genetics health care professionals may need to carry out in their practice?

To answer this, the Centre has worked with a multi-disciplinary team of health professionals and Skills for Health to identify the genetic activities carried out by non-genetics specialists, and the genetics knowledge and skills underpinning them. These activities, based on a patient pathway, form the *UK Workforce Competences for Genetics in Clinical Practice* and have been made National Occupational Standards.



How can these genetic activities be supported in practice?

In collaboration with a variety of stakeholders, the Centre has been working to identify how these may be supported in practice.

Educators had told us that they worry about how to fit genetics into an overcrowded curriculum. Working with higher education providers to identify how genetic activities may be taught in synergy with curricula the Centre has recently worked with physiology lecturers at Birmingham City University. Using the genetic activities to guide the content, we were able to put on a workshop to connect the physiology of diseases and genetics in clinical practice, allowing the students to see the practical application of genetics in nursing clinical practice.

The Centre has also been working with groups such as the British Heart Foundation, the Haemophilia Nurses Association and the National Cancer Network Nursing Directors, to understand further how these genetic activities may be supported in clinical practice.

How can genetics influence the outcome of drug therapy? Why pharmacogenetics education is relevant to all health professionals?

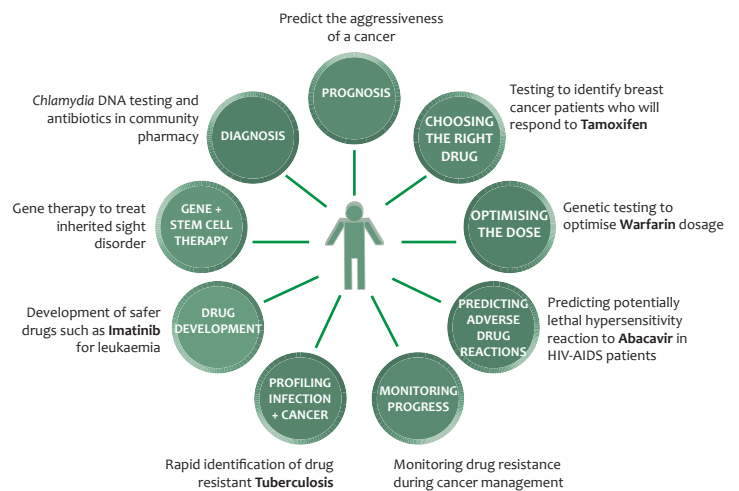
Pharmacogenetics is the study of how genetic variation between individuals affects our response to drugs, and is relevant to anyone interested in the prescription or use of drugs: including nurses, GPs, medical professionals, and pharmacists. In many areas of clinical practice, pharmacogenetics information is used to guide decision making (see illustration).

No drug is effective for everyone, and in a few patients, usually safe drugs can produce serious adverse effects. Pharmacogenetics is starting to provide the basis for predicting individual response to therapy. The Centre works with health professionals to identify the education they need to apply pharmacogenetics effectively in their practice, and we have developed a series of resources, with clinical examples, to raise awareness of the field. Further information, with links to important publications and useful e-learning modules, is available on the website at

www.geneticseducation.nhs.uk/pgx

We would be pleased to hear from anyone with questions, comments or ideas about pharmacogenetics in their clinical role; enquiries@geneticseducation.nhs.uk

Clinical applications of Pharmacogenetics



www.geneticseducation.nhs.uk/pgx

Developing education for dietitians about the effect of family history and genetics information on dietetic practice

- Dietitians in all specialities encounter conditions that are influenced by genes. For example, inherited metabolic disorders such as phenylketonuria (PKU) involve dietary intervention. But more common conditions such as coeliac disease or diabetes also involve the interplay of genetics with dietary factors.
- Genetics has an effect on why dietary regimes may or may not work. For example, the apoE gene is involved in lipid and cholesterol metabolism. People with a certain apoE variant have an increased risk of cardiovascular disease, but they may also respond better to a cholesterol-lowering diet. This is one example of a “diet-gene interaction” which is investigated in the developing science of nutrigenetics.
- Family history is a risk factor in many conditions and may affect dietetic intervention. Dietitians may also discuss genetics information with other health professionals as part of a multi-disciplinary team. An awareness of the impact of genetics in patient pathways can help to improve patient care.
- As patients and public are increasingly aware of new scientific developments, it is important that education and training should equip dietitians with an understanding of the genetics concepts involved.

In February 2009 the Centre met dietitians from British Dietetic Association specialist groups, educators, and nutrigenetics experts to begin to develop resources, based on clinical examples, to highlight how genetics and family history informs dietetic practice. We also recently started a discussion group with dietitians from Birmingham’s Selly Oak and Queen Elizabeth hospitals. Further information, including our factsheet on “Genetics and Obesity” (pictured) is available on the website at

www.geneticseducation.nhs.uk/diet

We would be pleased to hear from anyone with questions, comments or ideas about how genetics and dietetics may interact in their clinical role: enquiries@geneticseducation.nhs.uk



Courses for Regional Genetics Centres

Making the most of PowerPoint when Teaching Genetics

Tuesday 12th May 2009, 10.30 - 4.30pm, Birmingham

Understanding and delivering the RCGP Curriculum Statement ‘Genetics in Primary Care’

Wednesday 10th June 2009, 10.30 - 4.30pm, Birmingham

Teaching Genetics: An interactive three day course

28th April, 2nd June and 30th June 2009 - Scotland

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