England's National Genomics Education Programme

About the programme

The Health Education England Genomics Education Programme (GEP) was established in 2014 to ensure that all healthcare professionals and staff working in the NHS have the knowledge, skills and experience to be effective in their roles, integrating genetic technologies within mainstream medicine and making the most of these technologies within their day-to-day work.

The Genomics Education programme is achieving this by:

1. Directly supporting professionals within the designated NHS Genomic Medicine Centres in the delivery of the 100,000 Genomes Project
2. Upskilling the workforce through increasing capacity and capability
3. Supporting wider transformation of services including the development of communities of practise

The GEP sits within Health Education England, the organisation with responsibility for the education and training of all healthcare staff within the NHS, and has a budget of £20M up until March 2018.

The training audience

Our programme aims to reach all of the 1.2 million NHS staff in England including those working Primary Care and in the community. To achieve this we have stratified our approach, enabling us to develop resources that are relevant for the different groups of healthcare professionals and their anticipated role in a genomic medicine service. Our resources range from awareness raising materials for all staff to very specific resources for specialised and highly specialised staff currently involved in the delivery of the 100,000 Genomes Project.

The resources

The GEP has embraced a range of approaches to delivery of our resources including face-to-face teaching, blended learning, and online courses. Most of our online resources have been designed to be undertaken in the learners own time and at their own pace but others such as the MOOC (Massive Open Online Course) will be delivered in a synchronous manner with the learner activity moderated. There is also a specially designed formal Master's programme in Genomic Medicine which is delivered through a nationwide network of 10 Higher Education Institutions. This can be undertaken part time of full time and are largely distance based. Some of our resources are being formally accredited through the Medical Royal Colleges to officially recognise their value and status within the UK professional regulation and validation system.

Resources to support the 100,000 Genomes project

We have developed, and continue to expand, a range of free online resources to support the various steps 100,000 Genomes Project pipeline. These bespoke resources include: The consent conversation, DNA extraction and sample preparation for whole genome sequencing, a tumour assessment tool, validation and feedback, and data security.

In addition our MOOC on Whole Genome Sequencing will be launched in September 2016. This course describes the technology used in the 100,000 Genomes Project, and illustrates its use through a case study of one of the first patients to receive results from the Project. This course already has >5000 people signed up to undertake this.

Increasing capacity and capability across the multiprofessional groups

We have developed the curriculum and programme for a multidisciplinary Master's in Genomic Medicine and procured 10 universities to deliver the course in a collaborative manner. We are funding 550 places for NHS staff on this blended learning programme. In addition the modules are available individually as CPD.

We have formalised training and developed appropriate professional regulation arrangements for two important staff groups Genomic Counsellors and Clinical Bioinformaticians, which have previously been underdeveloped within the NHS. This has been achieved through curricula for the Masters Level Clinical Scientist training programme, which will lead to professional registration with the statutory regulator, the Health and Care Professions Council. In addition we have developed doctoral-level curricula for Clinical Bioinformatics and Molecular Pathology of Acquired Disease.

Workforce Transformation

The GEP is very clear about the importance of workforce transformation across the staff groups currently within the service. Alongside the multiprofessional CPPD opportunities through the Master's in Genomic Medicine, there are tailored programmes for particular professional groups – such as general practice and nursing. We intend to bring everyone who completes GEP training together to form a Faculty of Genomic Medicine, which will act both as an important community of practice but also as a key set of champions to drive forward the mainstreaming of genomic technologies across the NHS

Evaluation plans

Underpinned by the Kirkpatrick model, each resource is evaluated considering the knowledge/skill acquisition (based on the resources learning objectives) as well as impact on practice.

Knowledge and skill acquisition is measured using pre- and post-test questionnaires and/or tests, with impact on practice explored using mixed methodology. We also plan to undertake longitudinal studies to assess the impact of our formal training interventions, such as the Master's in Genomic Medicine, on workforce transformation. The evaluation of all of our resources will ensure they are fit for purpose and inform future direction and strategy. Our eventual goal is to contribute to the pedagogical literature in this area.

Key Scientific and Education specialists:

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