

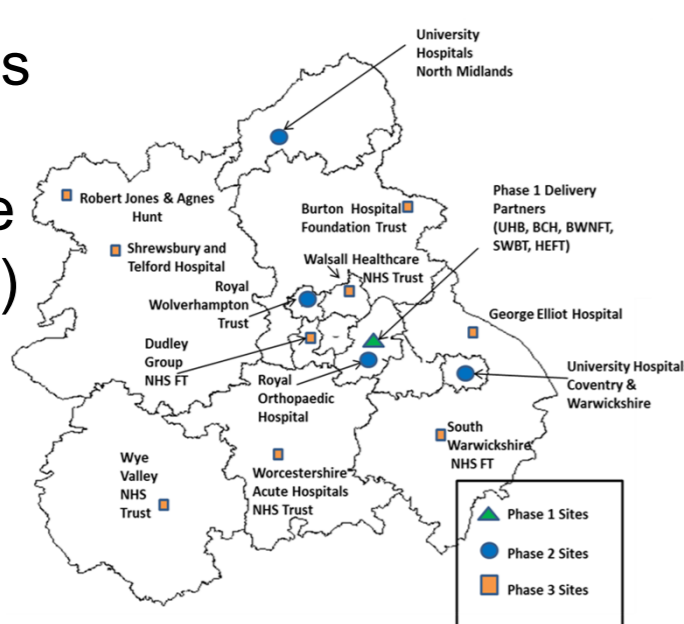
# West Midlands Genomics Education

A transformative approach to embed genomics in healthcare

Education Team, West Midlands Genomic Medicine Centre

## ABOUT US

The West Midlands is the largest NHS Genomic Medicine Centre (WM GMC) comprising a consortium of 18 Local Delivery Partner (LDP) Trusts.



We have taken a different approach to most GMCs by focusing on **transformation**, including recruitment across the entire region and outside of clinical genetics.

In collaboration with the West Midlands Academic Health Science Network, the WM GMC has appointed three geographically based **Genomics Ambassadors** to support this transformative process, and the spread and adoption of genomics and genomics education across the LDPs.



A suite of educational programmes has been developed to underpin the delivery of the project and to ensure

the current and future workforce is equipped to understand how genomics medicine might impact on their role.

## KEY CHALLENGES

We have identified the following challenges:

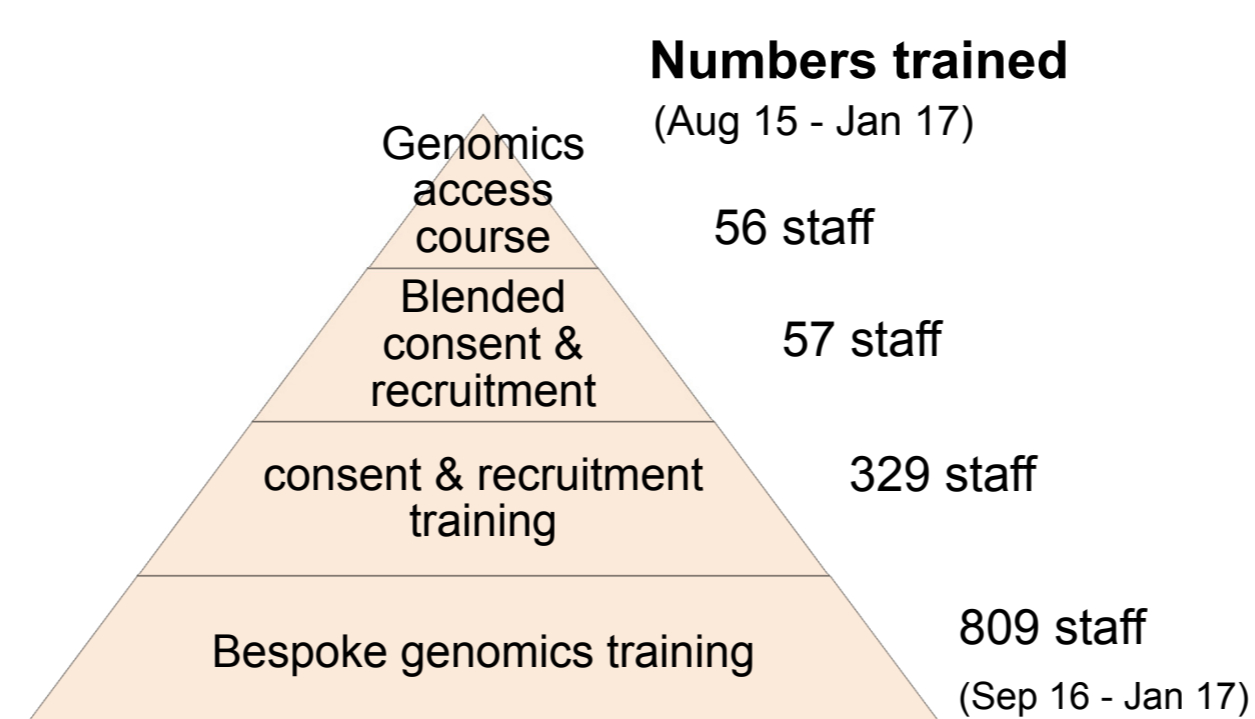
- Reaching out to so **many clinical staff** across the health sector: getting the messages right so that they understand the impact of genomics for their role and for their patients
- Mainstreaming genomics education** across current and new education programmes to ensure a sustainable model in future.

## SPOTLIGHT ON BEST PRACTICE

**Personalising medicine and mainstreaming genomics:** this masterclass hosted by the WM GMC, and attended by 84 people, looked at the impact of genomics on patient care and a patient who presented her story. This will be rolled out as a regional roadshow.

A flexible 4<sup>th</sup> Year **medical student elective in genomics** has been piloted with the University of Birmingham (UoB) giving 40 students the opportunity to shadow clinical staff and assist with project duties.

## MEASURING SUCCESS



- Regional consent training** predominantly attended by nurses, in addition to medical and genetic counselling staff.
- National consent and recruitment 'Train the trainer' days** for GMC staff, using a blend of face-to-face and online training
- Genomics access course:** intermediate-level training and preparation for the UoB MSc in Genomic Medicine. *"I don't want it to end, I don't want to stop learning" ~ Genomics access course participant*

## PARTNERSHIP WORKING

Partnership working with the regional healthcare science workforce has led to the completion of a **training needs analysis**.



It has also enabled the promotion of genomics at **public engagement and schools events**.

**New work experience opportunities in genetic counselling and genomics** at KS4 and A-level have been designed in partnership with HealthTec.

A **Central Region Genomics Education and Training Network** has been established, enabling collaborative working, including a workshop for General Practice Nurses in March 2017.



**University of Birmingham Master's uptake** exceeds original target at 75 places.

## TOP PRIORITIES

We have identified the following training and education priority areas:

The **validation of results and delivery of results** to patients and their families



**Ensuring that genomics is made accessible for clinical staff**, by linking to case studies and the impact of personalised medicine on the management of patient conditions and pathways.



# Education at North Thames GMC

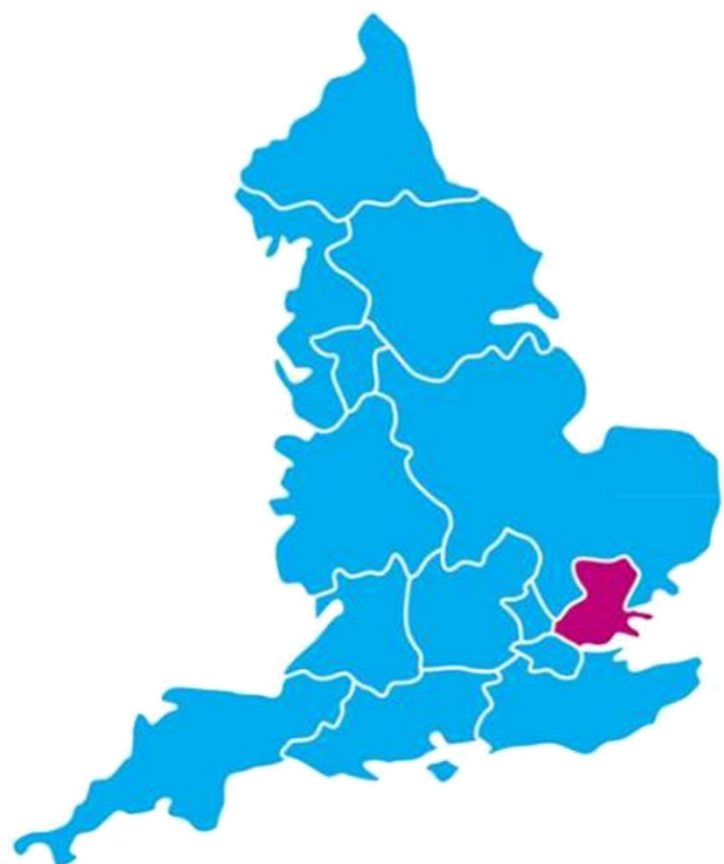
## 100k Genomes Project & workforce transformation

Masuma Harrison and Danielle Stevenson

### ABOUT US

- Great Ormond Street Hospital
- Bart's Health
- London North West Healthcare
- Moorfields Eye Hospital
- Royal Free London
- University College London Hospitals

As well as all other hospitals in the geography of the UCLPartners AHSN



#### 2016/2017

Clinical geneticist: 2 PAs  
Genetic counsellor: 0.8wte  
Co-ordinator: 0.8wte

#### 2017/2018

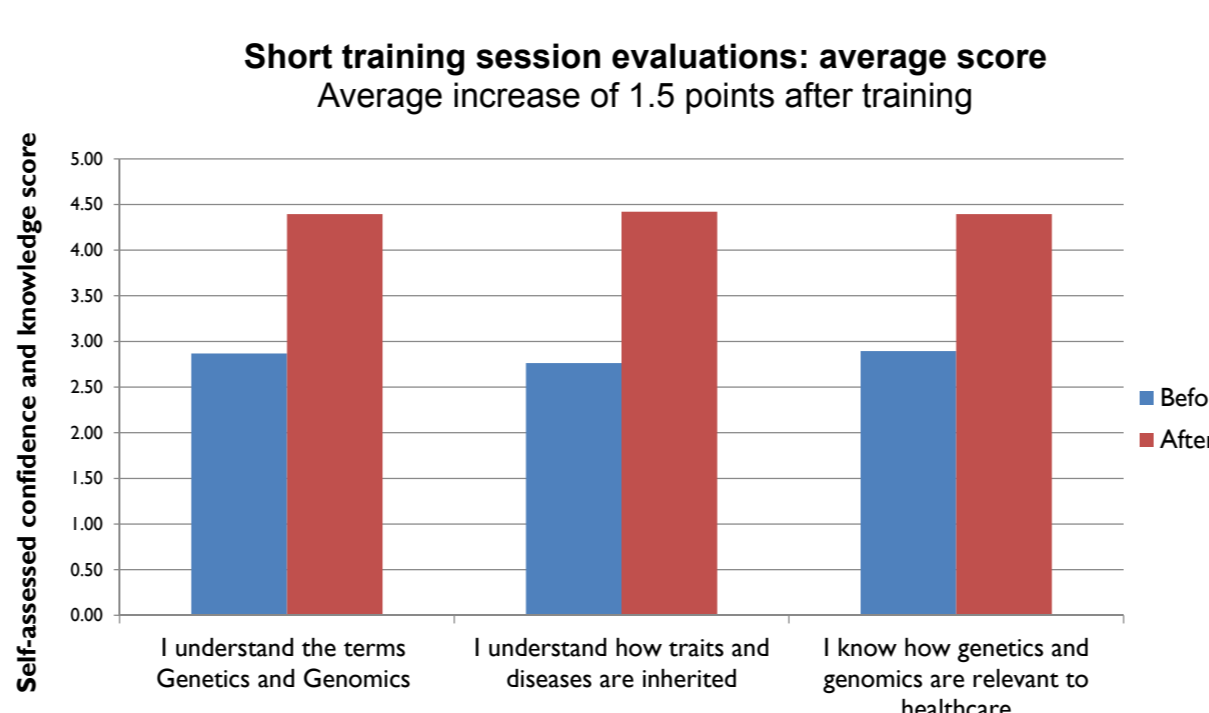
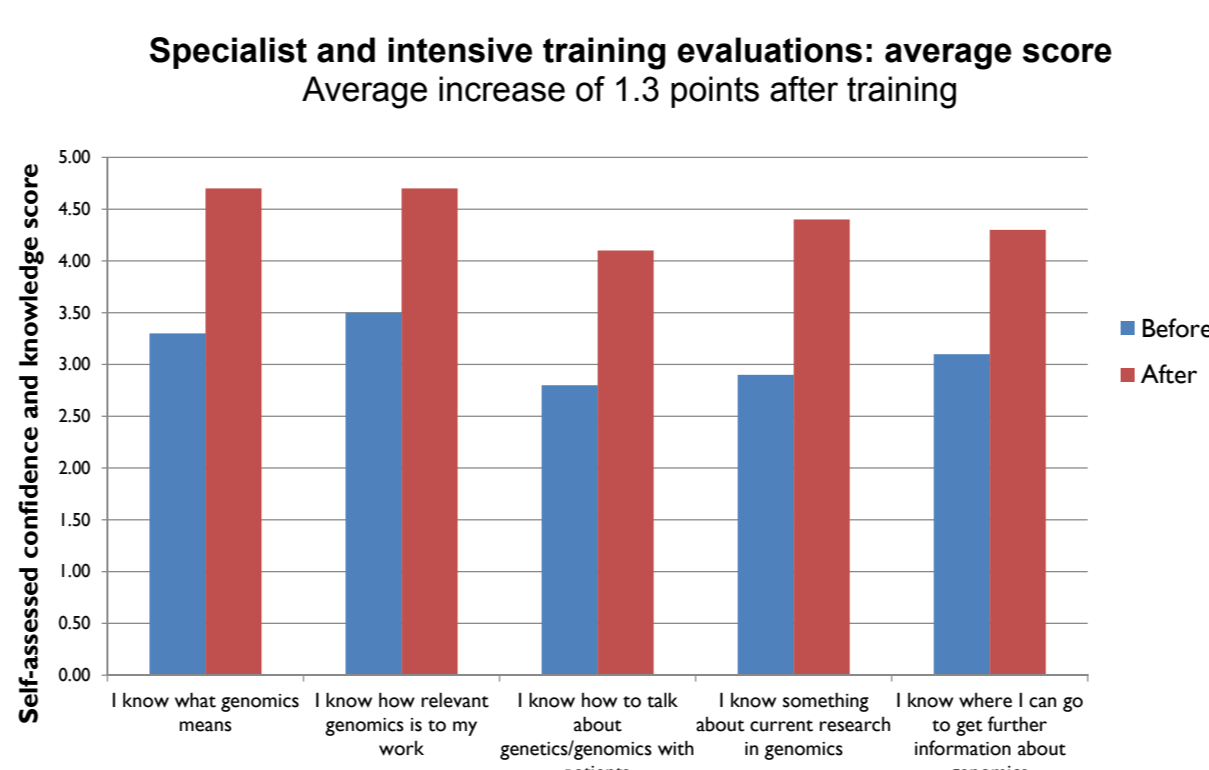
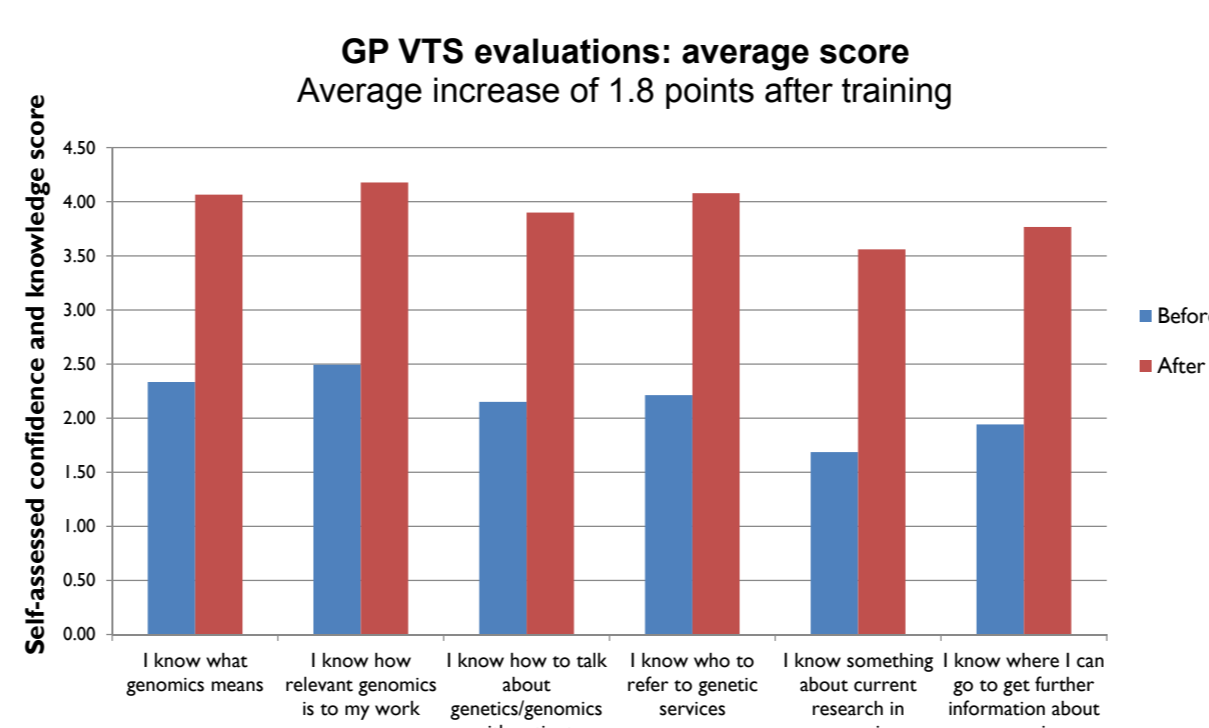
Clinical geneticists: 2 x 1PA  
Geneticist: 0.5wte  
Co-ordinator (also programme manager / communication lead / PPI lead): 0.8wte – (6 months only)

### KEY CHALLENGES

Embedding programme beyond current funding cycles

### MEASURING SUCCESS

KPI	Type of training	Trained to date (April 2016 – March 2017)
GP VTS trainees	½ day sessions	460
Individuals attending a talk / session	2 hours or less	716
Individuals attending speciality-based training or other intensive training	1, 2 or 3 day courses	89
<b>Total number of people trained through local training initiatives</b>		<b>1,265</b>



### SPOTLIGHT ON BEST PRACTICE

Embedding programme into yearly training cycles to maximise trainees over time and to ensure sustainability: GP VTS trainees / SpRs / nurses / medical students

### PARTNERSHIP WORKING

- Close links with local HEE office – funded 17/18 posts
- GMC embedded with Academic Health Science Network
- Training programme directors
- For 17/18: education co-ordinator post also PPI lead / comms lead / and part programme manager, resulting in better joined-up workstreams across the GMC
- Recent pan-London group established

### TOP PRIORITIES

- Improving cancer recruitment – further cancer education programme
- Training all SpRs
- Further work with GPs

# Personalised medicine in the NHS

## Translating and embedding genomics in Y&H

Julie Atkey, The Yorkshire and Humber NHS GMC

### ABOUT US

The Yorkshire & Humber GMC (YHGMC) is a joint collaboration between Sheffield Teaching, Sheffield Children's and Leeds Teaching Hospital's Trusts, together with 11 local delivery partners, comprising 20 other regional hospitals. It serves a population of 5.3 million. Our aim in Y&H is to:

- collect samples from 4,700 participants
- create a lasting legacy to bring personalised medicine to NHS patients in our region.



The team picked up the top prize in the 'Best Example of Adoption and Diffusion' award at the Yorkshire and Humber Academic Health Science Network's Innovation, Improvement & Impact Awards.

*"Genomics is key to the future of medicine and the formation of the Y&H NHS Genomic Medicine Centre will be a catalyst for the transformation of care."*

Andrew Jack, Clinical Director for YHGMC

### SPOTLIGHT ON BEST PRACTICE

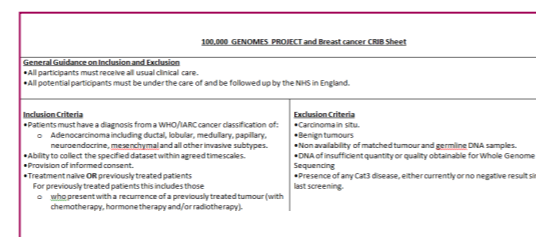
YHGMC has a very active PPI group, with members involved in every aspect of the project.



*"The Y&H GMC serves a large and diverse population with whom many PPI activities fail to attract. I wanted to explore opportunities to work collaboratively with third-sector organisations engaged in cancer awareness, thus reaching groups we have so far failed to interact with, nor recruited representation to our GMC panel"*  
Debbie Beirne, PPI lead



Sharing information about the varied roles of HCS and our work in the 100,000 Genomes Project for HCS week



Cancer MDT 'crib'sheets'



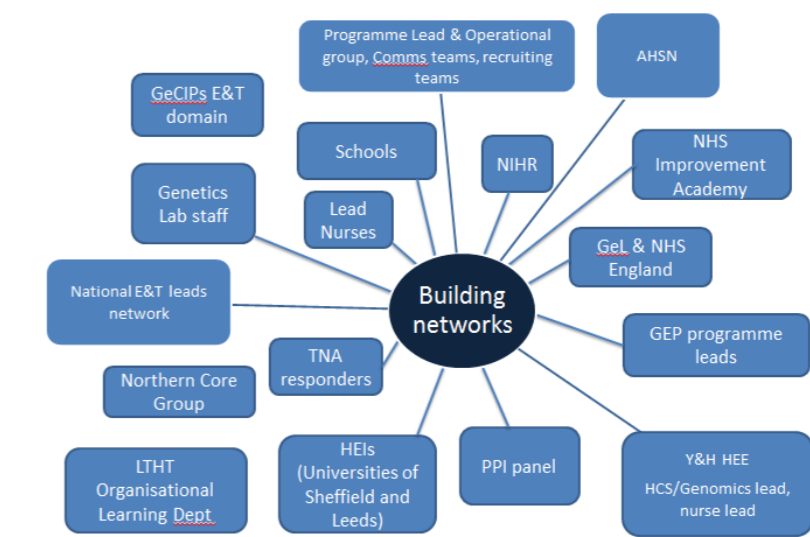
HSC Week: Learning what 23 pairs of socks can teach you about genomics!



Sheffield TH research day 'making a difference to patients'

### PARTNERSHIP WORKING

Working in partnership with HEE and HEIs to ensure workforce transformation in line with the broader agenda.



Identify areas to share delivery of key output

Collaboration with Prof Anne Kerr, Head of School, Sociology, University of Leeds. Wellcome Trust award in Society and Ethics (2015-2020), researching how patienthood is changing in the post-genomics era, focusing in particular on cancer.



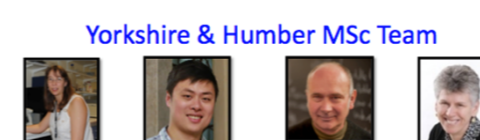
### KEY CHALLENGES



### MEASURING SUCCESS

#### Master's programme

*"Very knowledgeable, almost without exception engaging speakers"*  
*"Accessible approach to an enormous topic that was completely new to me"*  
*"A really interesting module, I enjoyed the clinical input from the oncologists"*



HSC Week profile: Say hello to Cathryn Leng! An Expert Practitioner in Dissection & Research Lead



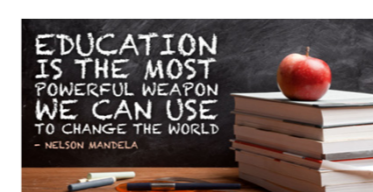
The most visited space on our website: education!

Develop and utilise effective evaluation and feedback approaches  
How can we measure impact and monitor via improvement cycles?

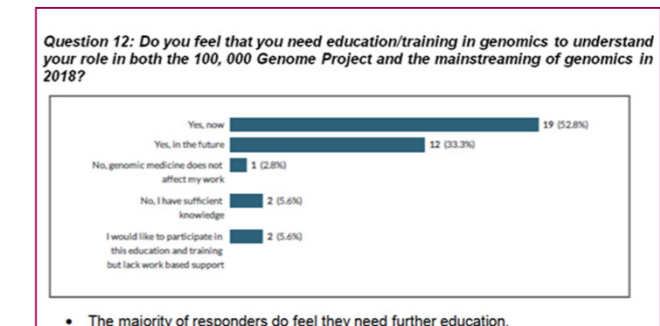


Engage with Faculty of Genomic Medicine; develop a regional network to address gaps

Second training needs analysis (TNA) planned to evaluate uptake and engagement

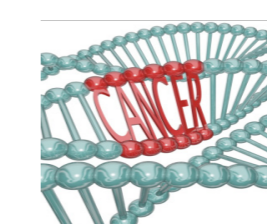


### TOP PRIORITIES



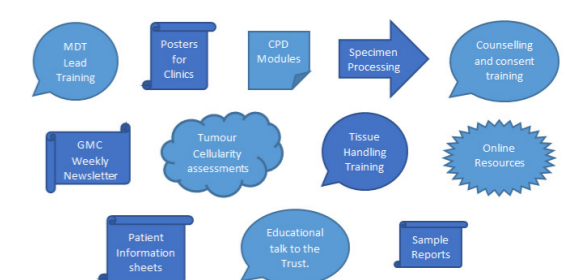
Begin to address outcomes from TNA, eg histopathologists focus day

Increase wider awareness across region



Help increase cancer recruitment

Address the needs of new recruiting teams and LDPs



Identify local genomics improvement / innovation champions

Engage nursing staff, junior doctors and primary care



# Dawn of precision medicine in Wessex

## Educating and preparing our workforce

Dr Catherine Mercer, Wessex GMC

### ABOUT US

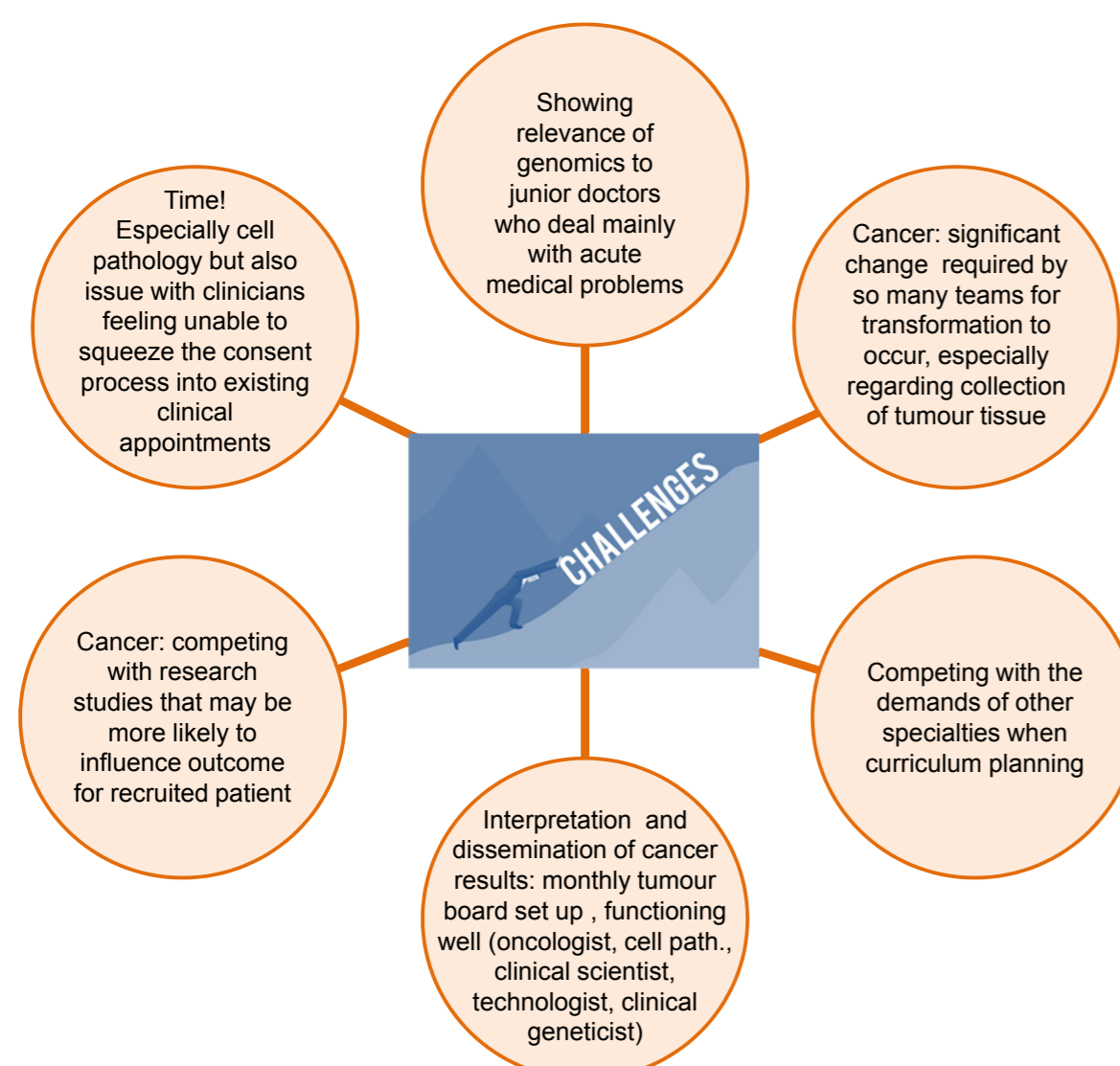
Working in partnership with trusts from across the south, UHS is the lead organisation of the Wessex NHS Genomic Medicine Centre (GMC). The Wessex NHS GMC is one of 13 centres involved in the delivery of the 100,000 Genomes Project and serves 3.5 million people from Dorset, Wiltshire, Hampshire, Isle of Wight and parts of Somerset, Surrey and Sussex.

The education team has been working in three main areas. First, to promote the uptake of the Genomic Medicine MSc by NHS staff. Interest in the course and recruitment figures have remained strong; student feedback has been excellent. Secondly, we work with all specialists in the hospital and active patient groups, to identify patients who could benefit from participating in the 100,000 Genomes Project. We also run workshops and awareness-raising sessions to train individuals in the consent process. In addition, we are running a comprehensive, pan-regional education programme designed to reach as many healthcare professionals as possible.

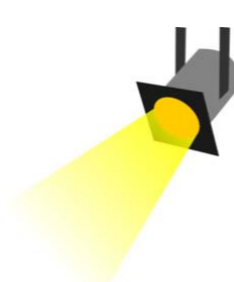
To celebrate the successes of the 100,000 Genomes Project so far and to engage with those who will be involved in the further transformation process, we have organised an event aimed at NHS staff across Wessex.



### KEY CHALLENGES



### SPOTLIGHT ON BEST PRACTICE



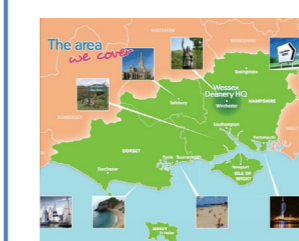
1. Taking advantage of existing forums such as Grand Round, MDTs, research meetings, educational rolling half days.
2. Using every educational session to advertise resources, eg Master's.
3. Appointment of a Genomic Nurse Specialist (former ward sister)
4. Weekly meetings for those involved in delivering the project: rare disease, cancer, IT, education, laboratory
5. IT support for phenotyping
6. Involvement of medical students; informing clinicians in clinical setting, consenting patients
7. Public engagement events across Wessex, from school age children to U3A.

### PARTNERSHIP WORKING

**Undergraduate:** Curriculum planning, ensuring adequate provision of time in courses and devising content.  
**Postgraduate:** delivery of the Genomics Primer, a one-day course covering basic genomics assuming very little prior knowledge.



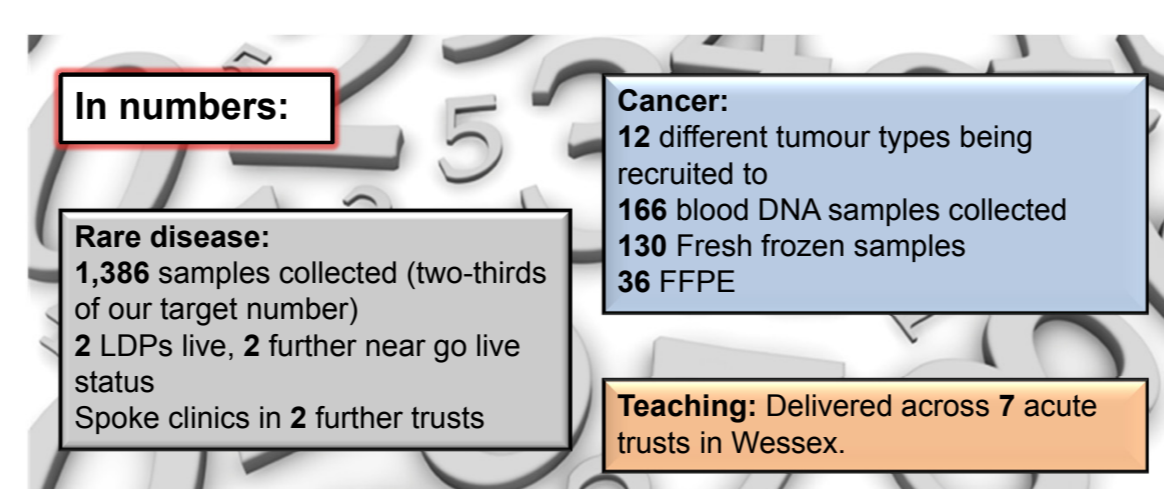

**Financial support** for LDPs. Sharing of **networks** and organising of events to attract and inform local scientific enterprises.  
**Joint working:** delivering PPI events.



**Wessex deanery:** access to databases such as those recording training doctors/nurses in region. Agreement at senior level regarding the importance of genomic education.

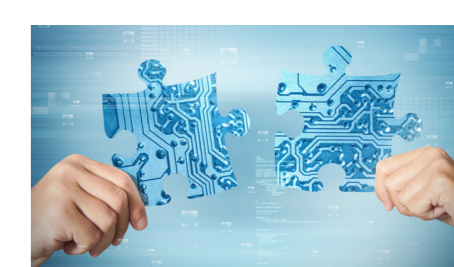


### MEASURING SUCCESS



### TOP PRIORITIES

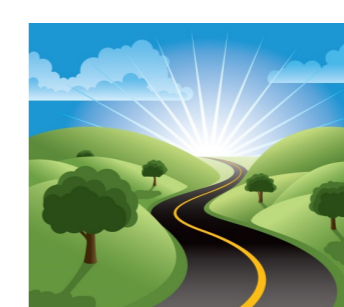
Integration of genomic testing / reporting systems into mainstream electronic clinical systems.



Ensuring support for clinicians requesting genomic tests where this is a new component of routine practice. Creating guidelines for testing with clinicians where appropriate.

Embedding genomic education into the VLE systems of all trusts across Wessex.

Virtual Learning Environment



Establishing a strategic plan at CEO level for educating and empowering healthcare professionals to consider and request genomic testing at every NHS trust in Wessex.

Work at UHS Trust level to ensure continued provision of resources for personnel to deliver and lead genomic education post-March 2018.

Continue

# Training and Education

## Greater Manchester NHS Genomic Medicine Centre

Dr Glenda Beaman, Education and Training Lead

### ABOUT US



- Greater Manchester is one of the 13 NHS **Genomic Medicine Centres** (GMCs) across England.
- It is a **large multidisciplinary genomic medicine unit** providing integrated clinical and laboratory genetics services to a population of more than 4 million and an international programme in discovery genomics and health services research.
- The genomic medicine service provides **diagnostic, counselling and support services** to individuals and their families with a genetic disorder affecting any body system at any age.
- We provide **comprehensive services** for prenatal genetics, developmental disorders, neurological genetics, metabolic genetics, ophthalmic and hearing loss genetics, cardiac genetics and cancer genetics. Outreach clinics are provided throughout the North West of England.
- The unit is a **major training centre** for specialist registrars, scientists, overseas fellows and for professionals from other disciplines. The Scientist Training Program (STP) for laboratory scientists and genetic scientists is led by the Centre with the University of Manchester. We have a number of major international partnerships, notably with Peking University Health Sciences Center, Beijing.

### KEY CHALLENGES

- **Sustainability of education and training** within North Manchester.
- Establish a **training and educational legacy** in genomics.
- **Maintain the momentum** ensuring awareness and education in Genomics continues after the 100,000 Genome Project is completed.

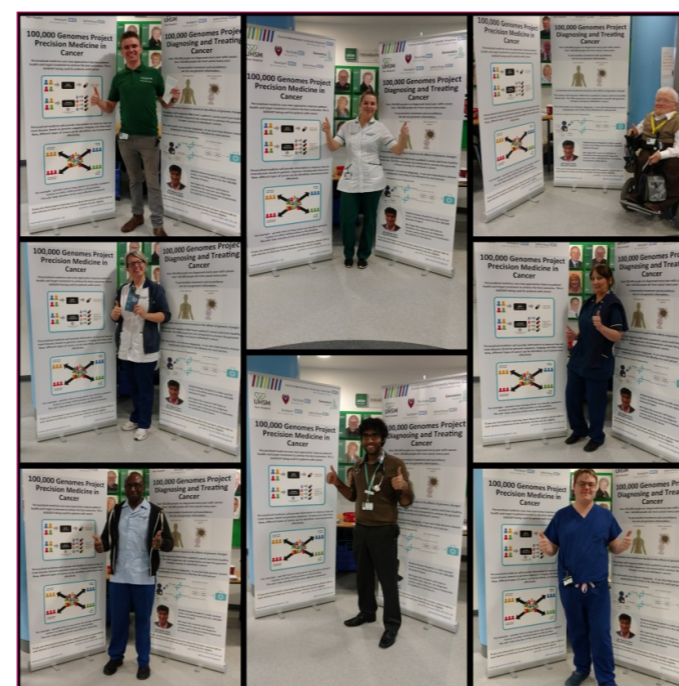
### SPOTLIGHT ON BEST PRACTICE

Embedded genomics into the FY1 dedicated teaching programme within all north and east Manchester Trusts.

Holding **regular patient participant days** to keep them informed about the 100,000 Genomes Project and when results will be available.



**Patient ambassador** telling their story at Granada Studios to young underprivileged adults.



**Genomic café events** at all North Manchester Trusts – engaging with all healthcare professionals.

Engaging with patients in the RMCH on **Rare Disease Day**.



### MEASURING SUCCESS

- “Very interesting session. Enlightening to see the care that we can provide – and I think it is important to be made aware of such services so that we can consider all options when we treat patients with such rare diseases. Instead of mere symptomatic control that we usually do, **the session showed that a diagnosis \*is\* important**, because even though it won't cure the patient, it can change the management plan very radically depending on the specific gene deletion/alteration.”
- “Discovering mutations in a patient's gene sequence can **identify the cause of a disease**. This can then be used to help other family relatives by providing specific treatment or bringing in treatment earlier.”
- “Understanding about improved genomic medicine. The 100,000 Genomes Project that is being undertaken. Understanding the **global scale of advancing technology** and wider application of science.”

### PARTNERSHIP WORKING

- February 2015 established a **North Region Education and Training Core Group Meeting** – Greater Manchester, North West Coast, Yorks and Humber, Newcastle.
- Partnership with the Royal College of General Practitioners.
- Part of the Advanced Clinical Practitioners Working Group.

### TOP PRIORITIES

- **Cancer**: increase awareness of the 100,000 Genomes Project to all cancer specialists and increase recruitment of cancer patients.
- To establish **engagement** with all nursing professionals.
- To **embed genomics** into undergraduate medical education.

# Genomic Education Activity

## North East & North Cumbria NHS GMC

Hayley Lucas, Genomic Training Co-ordinator

### ABOUT US

The North East and North Cumbria NHS GMC is based at the Northern Genetics Service, within the International Centre for Life in Newcastle upon Tyne.

NENC GMC Education Team	
Project Clinical Lead	Dr Paul Brennan
Project Manager	Jon Stacey
Genomic Education & Training Co-ordinator	Hayley Lucas
Healthcare Science Lead, Life and Physiological Sciences (HEE)	Gill Cresswell
Genomic Research Nurse	Miranda Middleton-Howard

### KEY CHALLENGES

We are a small team and have been through a lot of staff changes in the last few months. This has created challenges such as:

- **Cancer:** We have been working hard to increase cancer recruitment but have found that for many eligible cancers there are multiple pathways and one size does not fit all.
- **Geography:** Our GMC covers vast rural areas (Cumbria) and we have found working collaboratively with NWC GMC is the only way to tackle this.
- **Engagement with CCGs:** Due to a number of reasons this is a slow process. Our aims are to work closely with all CCGs in the region to disseminate information.

### SPOTLIGHT ON BEST PRACTICE

#### Collaboration and sharing of resources

- The NENC GMC education team has produced a number of resources and regularly share these on Genomics Connect.

#### Patient and public involvement

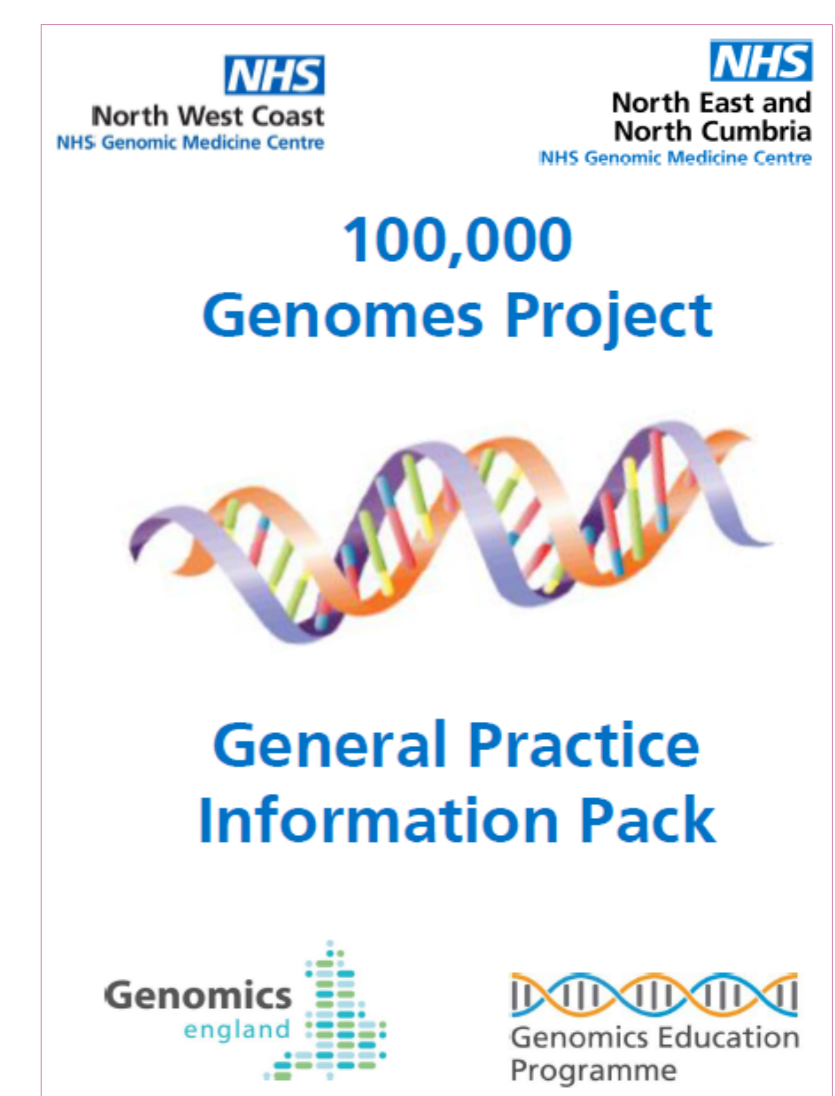
- We are part of the Genomic Medicine Advisory Working Group, which consists of rare disease patients and carers, NENC NHS GMC and Newcastle University.
- Working with RTC North and their valuable resource of STEM ambassadors to develop lesson plans for each key stage of compulsory education.

#### Primary care

- We have produced a general practice information pack, which is being distributed to every practice in our region.

### PARTNERSHIP WORKING

- Partnership working with the **North Region Core Group**



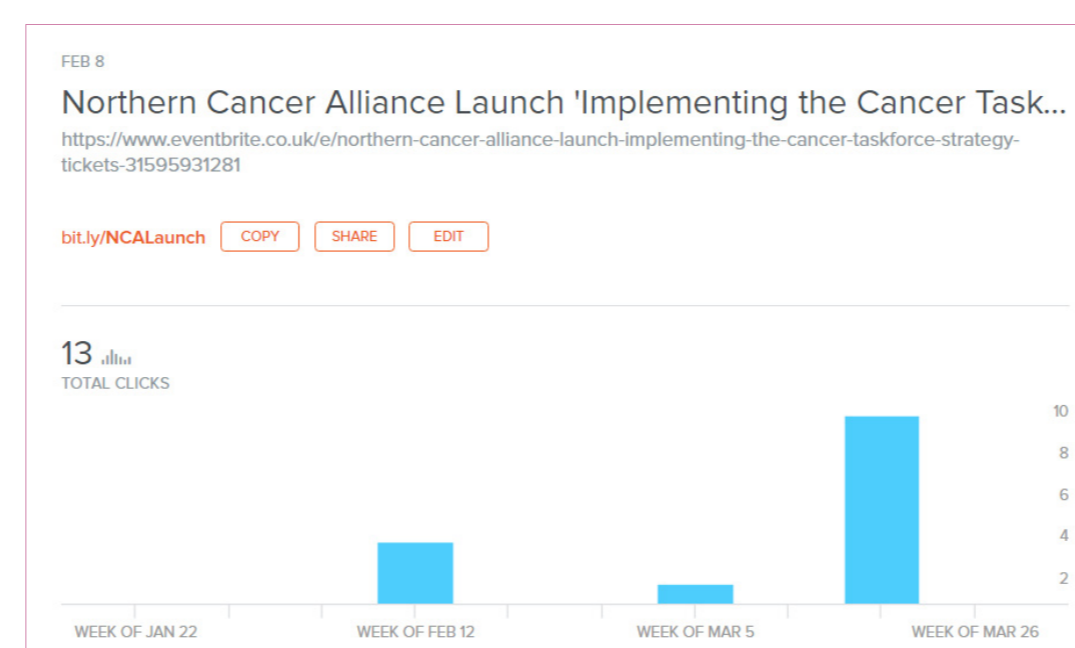
- We have formed the **NENC Genomic Education Steering Group**; we work closely with local universities, other trusts in the region, AHSN and many more.

### MEASURING SUCCESS

- **Evaluation of appropriate education events** using Survey Monkey questionnaires.
- **Developed our own Twitter page** – engagement activity is monitored.



- **Use of bit.ly links** – we can monitor visits to our webpages and interest in events.



### TOP PRIORITIES

To focus on:

1. **Hospital engagement and staff education** – increasing recruitment to the cancer strand of the project.
2. **Increased engagement in primary care** especially in more rural areas.
3. **Patient and public engagement** in the 100,000 Genomes Project throughout the region.
4. **Supporting and informing the school curriculum** and educating the future workforce.

# 100,000 Genomes Project: Education and Training for North West Coast

## ABOUT US

- ❖ North West Coast NHS Genomic Medicine Centre covers **Merseyside, Cheshire, Lancashire & South Cumbria**.
- ❖ We are based in **Liverpool Women's Hospital**.
- ❖ Currently we have recruited **over 1,000 samples** into the project.
- ❖ We recruited an **Education & Training Project Manager** in August 2016.

## SPOTLIGHT ON BEST PRACTICE

- ❖ Taking **100,000 Genomes Project** to Cumbria.
- ❖ Delivering **Pharmacogenetic module** for MSc Programme.
- ❖ Structure of NWC Genomic Alliance with **educational subgroup for all stakeholders** in our patch.
- ❖ **Comprehensive programme of workshops** being run with UoL & NWCGMC.
- ❖ Local **marketing tools** being produced and used widely.
- ❖ Social media used regularly inc. WhatsApp / Twitter / Instagram to **raise our public profile**.

## PARTNERSHIP WORKING

- ❖ Taking the 100,000 Genomes Project to Cumbria with **Newcastle GMC**.
- ❖ Providing training with **University of Liverpool (UoL)**.
- ❖ Running modules with UoL and **University of Manchester**.
- ❖ Running joint workshops with **Liverpool Health Partners** in 'Infection Education' and 'Genomics & Oncology'.
- ❖ Part of the **Northern Genomics Alliance** with other Northern GMCs – regular sharing of materials and ideas.

## KEY CHALLENGES

- ❖ **Logistics:** South Cumbria is over 90 miles away from our base.
- ❖ **Accessing GP practices** and engaging with them to assess their needs.
- ❖ Engaging across the UK for attendees to our **Prenatal Micro-array Workshop** at Alder Hey Children's Hospital in June.
- ❖ Turning our successful training needs analysis into **manageable useful data** to improve education and training for all NHS staff.

## MEASURING SUCCESS

- ❖ Since the E&T Project Manager has been appointed (Aug 2016) there has been an **increase of 35% in recruitment**.
- ❖ **Interest from outside private companies**, e.g. Astra Zeneca, wanting to work with us.
- ❖ Increase in public approaching our hospital stands due to **increased awareness of the 100,000 Genomes Project**, especially after our Community Roadshow in Liverpool City Centre.

## TOP PRIORITIES

- ❖ Improve **primary care** and GP involvement.
- ❖ Improve **Cumbria's** involvement.
- ❖ Improve training and **regularity of training** to all clinical staff.
- ❖ Improve **local knowledge** of the study by involving community groups and charities.
- ❖ Transfer successful workshops to **online programmes** for other GMCs and their staff.
- ❖ Create a **mainstream workshop model** to distribute information.

# Training and Education

## Oxford NHS Genomic Medicine Centre

Jen Whitfield, Training and Education Lead

### ABOUT US



#### Lead organisation:

Oxford University Hospitals Foundation Trust

#### 5 local delivery partners (LDPs):

Great Western (live for rare disease), Milton Keynes, Frimley Health, Royal Berkshire, Berkshire Healthcare (and 4 other smaller local Trusts as spokes)

**Population size:** ~3 million

### KEY CHALLENGES

#### Engagement with primary care

- Routes to effective communication unclear.
- GPs in practice especially hard to reach (geographically dispersed and time-poor).
- Established collaboration with HEE-TV GP Dean to improve signposting of information and training opportunities.
- Training afternoon planned for early April.

#### No local HEI for HEE Master's

- 33 people with funding approved following extensive and persistent advertising.
- Practical support with study leave/travel expenses available and culture of continuous professional development in laboratories.

#### Reaching nurses

- Training needs analysis: 46% of nurses feel they have insufficient knowledge of genomics
- Time-poor and unlikely to take up non-mandatory training.
- Training approach and delivery must be aligned with their limited time and focus on specific needs.

#### LDP engagement

- Peer-to-peer contact effective, and clinics running at all LDPs for rare disease, but further engagement at chief executive level needed to provide mandate to roll out training across partner Trusts.

### SPOTLIGHT ON BEST PRACTICE

#### School and careers events

- Exhibits and activities developed for older school children to educate, inspire and highlight career opportunities in genomics (prize winners at Bucks Skills Show 2016).
- Collaboration with HEE-TV has expanded our network of contacts and led to new events.

#### Patient and public engagement

- Attending **patient days** allowed us to highlight the 100,000 GP and the progress being made toward personalised medicine.

- **Café Scientifique** stretched our creativity with technology-free presenting and a diverse audience (yes, you can explain genomics with ribbons and fuzzy-felt!), but also created a lively debate and led to further invitations to give talks.



#### Clinical engagement

- Extensive engagement across clinical specialties by rare disease and cancer clinical leads.
- **Genomics cafés** run to provide an informal forum for any HCP to gather information.

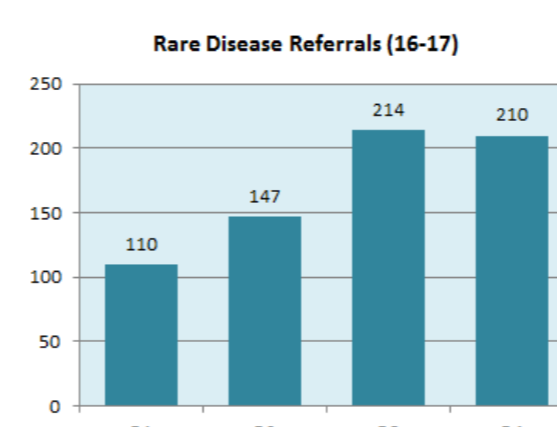
### MEASURING SUCCESS

**Training uptake:** Despite not having a local HEI for the Master's, **33** healthcare professionals have confirmed funding to undertake the course.

**Funding:** An RCPATH award was granted for outreach work that is providing equipment for genomic activities in schools.

**Engagement:** Month-on-month increase in people attending training sessions (**600** in February 2017 across all GMC activities).

**Referrals:** Effective clinical engagement has led to increasing RD referral rates over successive quarters, largely from non-genetics departments



### PARTNERSHIP WORKING

#### HEE-Thames Valley

- Working with **local schools** to demonstrate genomics in practice and potential career routes to the next generation.
- Engagement with health dean, interim GP dean, and genomic champion, who have agreed to help raise the profile of genomics.

#### Other GMCs

- Oxford GMC, WMGMC and EEGMC jointly ran a workshop on genomics at the General Practice Nursing Conference (March 2017), and also ran a stand with information on genomic education opportunities.

#### Oxford Academic Health Science Network

- Slow to engage, but key relationships recently established with potential to exploit existing networks.

#### Centre for Personalised Medicine

- The Oxford CPM has expressed interest in collaborating and has experience of running events for GPs, one of our hard-to-reach groups.

### TOP PRIORITIES

#### Training delivery

- Follow up requirements identified through **training needs analysis**, especially the development and implementation of training for nurses.
- Exploit links through AHSN, Oxford CPM and HEE-TV to extend training to hard-to-reach groups such as primary care.
- Develop a **variant interpretation package** to support healthcare scientists and genetic counsellors.

#### Local delivery partners

- Extend **training needs analysis** to LDPs and begin engagement through local training and communications officers, including genomics café events at each site.
- Hold an **LDP onboarding event** to bring LDP and LO clinicians together to encourage engagement and celebrate progress to date.



# South London Genomics Education

## Delivering high-quality education and training

South London NHS Genomic Medicine Centre



**“Delivering high-quality and accessible education and training to healthcare workers throughout South London, Kent, Surrey and Sussex”**

Our genomics education programme is embedded in the South London NHS Genomic Medicine Centre and is responsible for delivering education across:

- 6 NHS Trusts in South London
- 12 NHS Trusts in Kent, Surrey and Sussex (KSS)
- 3 higher education institutions (HEIs)

### KEY CHALLENGES

**“There are known knowns. These are things we know that we know. There are known unknowns. That is to say, there are things that we know we don't know. But there are also unknown unknowns. There are things we don't know we don't know.” Donald Rumsfeld**

- **Large numbers** of healthcare workers, Trusts and HEIs in our sector.
- **Manpower:** We have limited numbers of specialists capable of delivering high-quality genomics education and training.
- **Awareness:** Many healthcare workers are not aware of the importance of genomics for future diagnosis and management.
- **Pacing\*:** Many healthcare workers are busy with conflicting demands on their time.
- **Motivation and meaningfulness\*:** Many healthcare workers have not yet used genomics in their practice and so do not understand the relevance of the training and education.

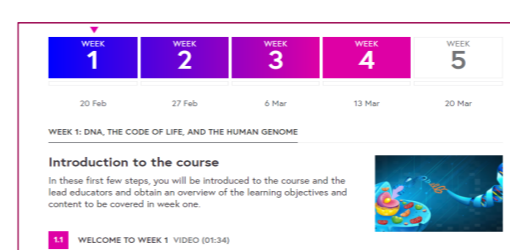
\* Merriam SB et al 2007: Learning in Adulthood: A comprehensive Guide (3e). Jossey-Bass, San Francisco, CA

### SPOTLIGHT ON BEST PRACTICE

#### 1. Website development



#### 2. Online resources



#### 3. Face-to-face teaching



#### 4. MSc Genomic Medicine

- Jointly taught by St George's and King's College London,
- Awarded by St George's

#### 5. Raising awareness

- Roadshows held in hospital foyers
- Stands at educational events
- Newsletters

#### 6. Building a legacy



### PARTNERSHIP WORKING

- We work collaboratively across the South London and KSS regions. Representatives from the South London Trusts and KSS are members of the South London Genomics Education and Training Working Group.
- We are actively engaged with the South London LETB (HESL) and have regular meetings with the postgraduate dean and his team.
- We have presented at the Confederation of South London Lead Providers (COSL) to garner wider support of genomics.
- We are members of a recently established pan-London / Southampton genomics education and training network.

### TOP PRIORITIES

#### Building a legacy

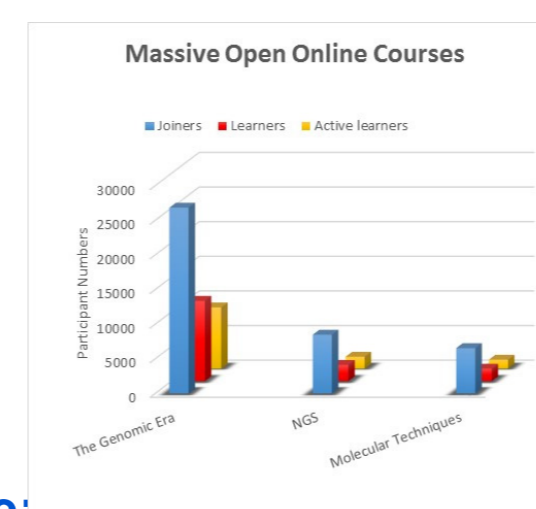
The top priority of the South London GMC genomics education programme is to build an infrastructure of education and training resources that will be available once active funding of the programme has stopped. We are achieving this legacy through the following:

- Building a **genomics education faculty** locally. This is achieved through:
  - A postgraduate teaching skills course which is offered as part of the MSc Genomic Medicine.
  - We are applying for funding support for a genomics teaching fellow.
- Building a **repository of educational resources** through the website, signposting to HEE resources, the MSc programme and online courses.
- Establishing an **ongoing training needs analysis** (through the website) so new resource can be developed and targeted.

### MEASURING SUCCESS

Measuring the success of a programme can be difficult. Possibly the easiest **quantitative** measure of success is through the levels of engagement. These are shown below:

1. **Online** over our three courses:  
Joiners = **41,900**  
Learners = **15,737**  
Active learners = **11,920**



2. **MSc Genomic Medicine:**

Total number enrolled in MSc/PGDip/PGCert = **71**

3. **Face-to-face teaching**

We have now taught **2,950** people through face-to-face sessions.

We usually request pre- and post-course evaluation forms are completed to improve quality for future teaching sessions.

# Workforce transformation

## Building the legacy of the 100,000 Genomes Project

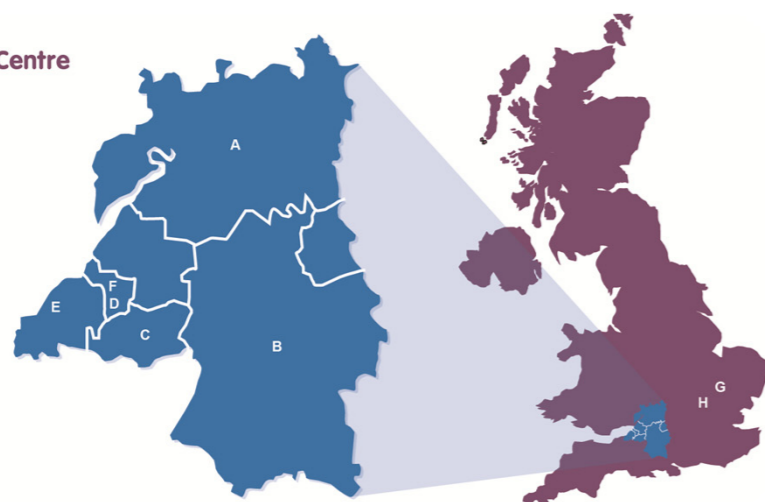
Melanie Watson, Eileen Roberts and Aniko Varadi, West of England NHS GMC

### ABOUT US

The West of England NHS GMC (WEGMC) was designated as a centre in December 2015 and serves a population of 2.8 million. The WEGMC consortium is composed of five Trust partners:

West of England Genomic Medicine Centre

- A Gloucestershire Hospitals (including Gloucester Royal & Cheltenham General) #
- B Carlsam Institute #
- C Royal United Hospital Bath #
- D University Hospitals Bristol #
- E Weston General Hospital #
- F North Bristol (Southmead) #
- G The Sanger Institute (Cambridge) #
- H NHR Bioscience Centre (Milton Keynes) #



- # Recruitment
- 🔬 Laboratory
- 🧬 Sequencing
- 📄 Samples
- 📊 Data

In collaboration with:

- ▶ Clinical Commissioning Groups
- ▶ Health Education England South (West)
- ▶ Avon and Wiltshire Mental Health Partnership NHS Trust,
- ▶ West of England Clinical Research Network
- ▶ West of England AHSN

### KEY CHALLENGES

- ▶ **Funding:** finding innovative approaches by partnering with other education stakeholders
- ▶ Fully understanding the **gaps in education** in existing workforce
- ▶ Ensuring **primary care links** across the whole WEGMC geography
- ▶ There is a risk that **appropriate mainstreaming** will not be delivered in the timescale

### SPOTLIGHT ON BEST PRACTICE

- ▶ Education strategy built on **vision of mainstreaming**
- ▶ Seven multidisciplinary **Genomic Champions** recruited: specialist and research nurses, a GP, a consultant surgeon, a junior doctor, a genetics clinical fellow and a pharmacist
- ▶ Outreach strategy: school and public engagement with **LEGO® Probots**
- ▶ Use of **public contributors** – at development and evaluation stages of educational activity
- ▶ **HEI advisory capacity** – UWE and Universities of Bristol, Gloucestershire & Bath

### MEASURING SUCCESS

- ▶ Locally developed objectives for workforce and education work stream scrutinised by WEGMC partnership board
- ▶ Media interest in outreach work and planned formal evaluation & publication



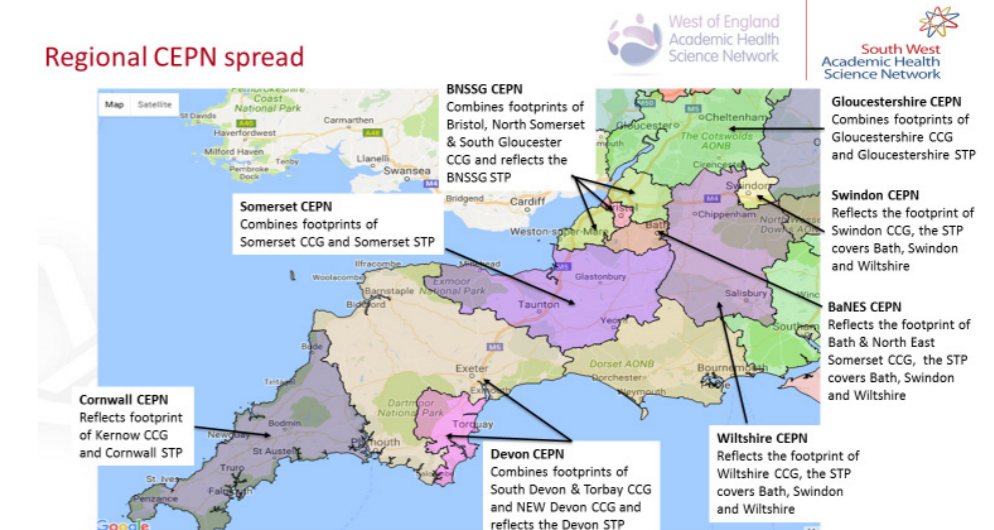
LEGO® Probots



### PARTNERSHIP WORKING

- ▶ Workforce Group members are multiprofessional and cross organisation, reflecting the key stakeholder voice in the West of England community
- ▶ HEE South West: member of stakeholder group with links to sustainability and transformation plan workforce advisory boards and community education provider networks

Regional CEPN spread



- ▶ Charitable organisation links through public contributors

### TOP PRIORITIES

- ▶ Achieving a **competent and resilient workforce** at all delivery partners for delivering project now and embedding for business as usual
- ▶ Applications for funding to **expand outreach project work**
- ▶ Aligning to other **workforce transformation networks: STPs and CePNs**
- ▶ **Collaboration and dissemination** of work with other NHS GMCs
- ▶ **Evaluation of interventions** linked to TNA recommendation

# Genomics in West London

## The Story So Far

Joselyn King - West London NHS Genomics Medicine Centre

### ABOUT US

The West London NHS Genomics Medicine Centre comprises Imperial College Healthcare NHS Trust as lead host, along with:

- Chelsea and Westminster NHS Foundation Trust
- The Royal Marsden NHS Foundation Trust
- The Royal Brompton and Harefield NHS Foundation Trust.

### SPOTLIGHT ON BEST PRACTICE

- Members of the GMC are invited to attend sessions for the Master's in Genomic Medicine
- GMC Cancer and RD MDTs are used as hubs to exchange knowledge
- Cross specialty, multidisciplinary genomics training, engaging a wide range of professions as below:



### PARTNERSHIP WORKING

- ICH Healthcare Scientists for Healthcare Science Week: 100K stalls across three of the LDP hospital sites to raise awareness of education and training opportunities
- NIHR Research Nurses: to provide consent training for cancer nurses
- Imperial Lead Provider: 'Genomics in Clinical Practice' training day
- Medical Education: working with clinical skills tutors to arrange consent training for medical students

### KEY CHALLENGES

- West London NHS Genomics Medicine Centre not having a regional clinical genetics centre
- The clinical pressures limiting the clinicians' capacity to engage in informal training or networking
- Similarly, engaging nursing staff to participate in the educational and training opportunities available
- Working to revise the curriculum for nurses and trainees to include genomic medicine

### MEASURING SUCCESS

- By using evaluation forms such as those for the 'Genomics in Clinical Practice' training day
- By the numbers enrolling into the Master's programme in Genomic Medicine
- By the number of staff members across the GMC who are providing contact information for education and training opportunities

### TOP PRIORITIES



Education needs analysis

Map and connect local specialist skills



Develop local resources

Facilitate specialist training



Engaging nurses, medical students, consultants and GPs across the GMC for greater participation in the 100K project

Embedding genomics as business as usual for transformation