

# Genomic Medicine Service alliances and role of pharmacy within the new structure

Update for hospital chief pharmacist and CCG lead pharmacists

July 2020

## Summary of actions

### **All hospital chief pharmacists and CCG lead pharmacists should:**

- be aware of the NHS Genomic Medicine Service (GMS), implications for pharmacy and development of NHS GMS alliances
- Identify members of their team with specialist expertise in genomics (eg via taught courses in genomics) and encourage them to be actively involved in GMS alliance pharmacy plans
- support the development and delivery of GMS alliance pharmacy transformation programmes via regional and integrated care system (ICS) level pharmacy and medicines optimisation networks
- encourage members of their pharmacy teams to learn about genomics and personalised medicine via: <https://www.genomicseducation.hee.nhs.uk/>.

### **In addition, hospital chief pharmacists should:**

- liaise with their NHS England and NHS Improvement regional chief pharmacist and regional genomic laboratory hub for further information on the GMS alliance bid and work collaboratively across the region to provide pharmacy input to the GMS alliance plans.

## NHS Genomic Medicine Service

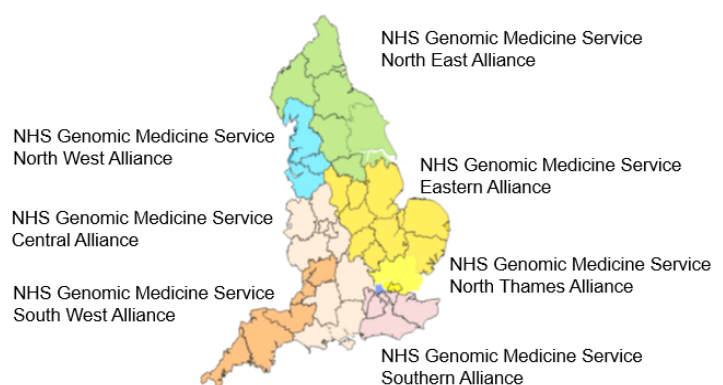
The landmark 100,000 Genomes Project highlighted the transformative potential of genomics and provided the evidence for systematically implementing whole genome sequencing (WGS) in NHS clinical care.

In October 2018 NHS England and NHS Improvement launched the [NHS Genomic Medicine Service](#) (GMS) to embed genomics in NHS care and provide consistent and equitable care. It now has six key elements:

1. A national genomic testing service delivered through a network of genomic laboratory hubs (GLHs).
2. A [National Genomic Test Directory](#) defining the testing available in the NHS in England and the technology to deliver it.
3. National WGS provision and a supporting informatics infrastructure developed in partnership with Genomics England.
4. An integrated clinical genetics service that includes genomic counselling for rare and inherited diseases and cancer.
5. **Regional infrastructure (GMS alliances)** built on the 100,000 Genomes Project infrastructure, to support the systematic embedding of genomic medicine.
6. A national implementation, co-ordination and oversight function in NHS England and NHS Improvement (Genomics Unit).

### GMS alliances

The GMS alliances are new infrastructures currently being put in place by NHS England and NHS Improvement. They will oversee the systematic embedding of genomic medicine within each of the seven regions. Each GMS alliance will be a provider partnership and will establish a network with NHS providers and organisations across the geography. This will involve engagement with primary care networks, Cancer Alliances, ICSs, Academic Health Science Networks and academia.



The GMS alliances will be accountable for achieving demonstrable improvements across the whole geography in the following areas:

- equitable patient access to standardised, end-to-end care pathways including genomic testing, clinical genetics and genomic counselling services
- equitable patient access to personalised treatments and medicines optimisation driven by genomic and diagnostic characterisation
- systematic consideration of eligibility to clinical trials for patients who would potentially benefit
- active participation in the nationally co-ordinated approach to genomic research and discovery across the country.

Provider partnerships within the regions are leading the formation of the GMS alliance infrastructures; these will submit plans to NHS England and NHS Improvement. COVID-19 has delayed this process and the GMS alliances infrastructures are now expected to be established in Autumn 2020.

## Role of pharmacy in the GMS

### Delivering personalised medicine

Personalised medicine will provide opportunities to improve how we treat disease. Based on comprehensive genomic and diagnostic characterisation, different subtypes of patients with a given condition can be identified, and treatment can be tailored to the underlying cause. The involvement of pharmacists and the broader pharmacy workforce will be critical to establishing the integral link between the use and optimisation of medicines and the expression of genomic variants.

Personalised medicine may include treatments that fall into the following categories:

- gene therapies and advanced therapeutic medicinal products (ATMPs), eg CAR-T therapy
- targeted treatment where access is based on a genomic test result, eg targeted chemotherapy
- histology-independent or tumour-agnostic products, a new class of cancer therapies for tumours that express a genomic alteration, regardless of where in the body the cancer originated, eg neurotrophic tropomyosin-related kinase (NTRK) inhibitors
- pharmacogenomic test guided therapy, eg abacavir and HLA-B\*5701 or fluoropyrimidines and DPYD.

## System leadership and transformation in the GMS

Pharmacy will play a key role in GMS alliances and across the wider GMS. Each GMS alliance will develop transformation projects for pharmacy, medicine and nursing and midwifery. A hospital chief pharmacist (or equivalent) from the region is expected to be a member of the GMS alliance senior governance team to provide system leadership, and lead pharmacists with genomics expertise among the membership of the clinical leadership team.

Chief pharmacists, particularly those in provider partnership organisations, are expected to be closely involved in the formation and progress of the GMS alliance, and to support any lead pharmacist appointments. As the GMS alliances form, chief pharmacists across primary and secondary care will need to collaborate to support the development and delivery of the pharmacy transformation projects. Close links between the GMS alliance and regional and ICS level pharmacy and medicines optimisation networks (eg the regional medicines optimisation committees; RMOCs) will ensure systematic implementation and equitable access to personalised medicine across the region.

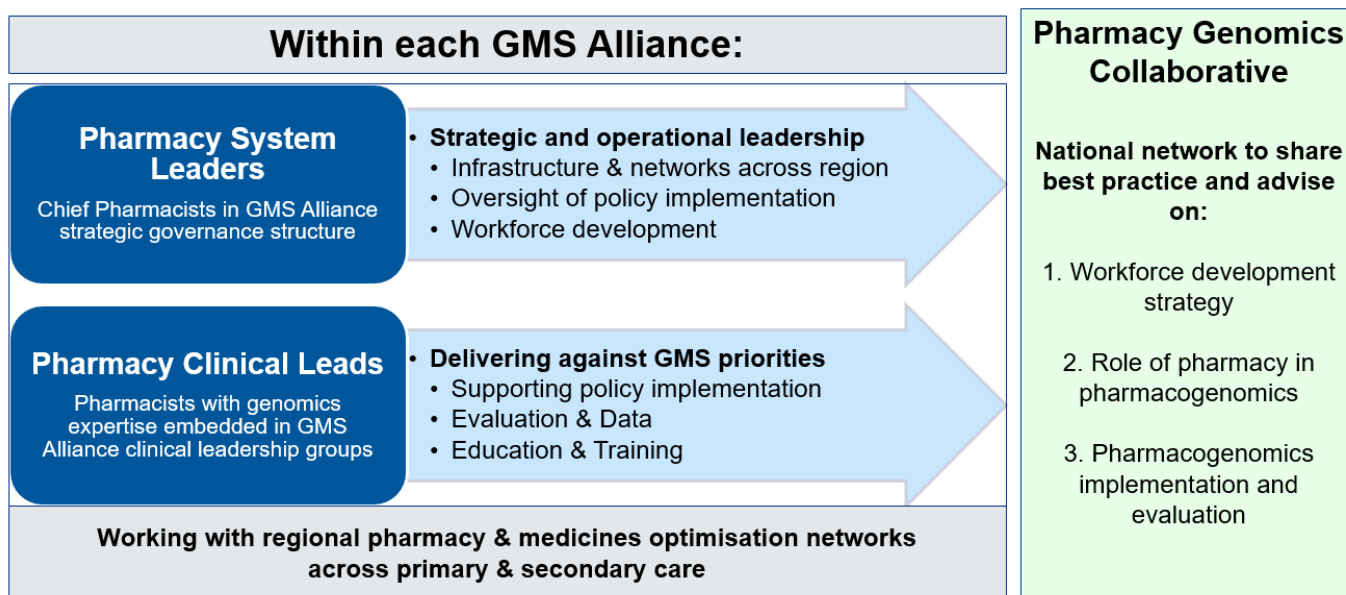
Hospital chief pharmacists should seek further information on the infrastructure plans from their NHS England and NHS Improvement regional chief pharmacist and GLHs in their region. Our genomics pharmacy advisor, Sonali Sanghvi (see contacts below) can support the development of the pharmacy plans and provide further information; see also [Appendix 1: Key considerations for GMS alliances and development of pharmacy transformation plans](#).

## Pharmacy genomics collaborative network

GMS alliance pharmacy system leaders and clinical pharmacy leads with specialist expertise in genomics will be brought together to form a national pharmacy genomics collaborative network. NHS England and NHS Improvement, Health Education England (HEE) and others will support this national network.

The network will share best practice and work to achieve the following:

- review workforce development needs and strategically deliver education and training opportunities to support the pharmacy workforce to realise the benefits of genomics for medicines optimisation and personalisation of treatment interventions
- establish the role of pharmacy in clinical pharmacogenomics and in ensuring the safe, effective and equitable use of personalised treatments, including by establishing metrics and linking the work of the GMS with the wider medicines optimisation structure in the NHS, eg RMOCs
- work with NHS England and NHS Improvement to support the strategy for implementation and evaluation of pharmacogenomic testing.



## Education and training

Educational resources and opportunities to learn more about genomics are available from the HEE Genomics Education Programme at <https://www.genomicseducation.hee.nhs.uk/>. These range from online courses, videos and podcasts through to fully taught courses. Please encourage members of your pharmacy teams to visit the website.

## Contacts

Sonali Sanghvi, Pharmacy Advisor, Genomics Unit, NHS England and NHS Improvement: [sonali.sanghvi@nhs.net](mailto:sonali.sanghvi@nhs.net).

For further information and updates on the NHS GMS, register as stakeholder in the Genomics Clinical Reference Group <https://www.england.nhs.uk/commissioning/spec-services/get-involved/crg-stake-reg/>.

You can also follow us on Twitter @NHSGMS

## Appendix 1: Key considerations for GMS alliances and development of pharmacy transformation plans

### Strategic leadership

Hospital chief pharmacist (or equivalent) input at GMS alliance strategic board level is recommended to provide professional system leadership across the region and support delivery of GMS priorities and the pharmacy transformation programme by:

- providing a link to senior pharmacy leaders and networks across the region
- liaising with RMOCs and ICS level medicines/pharmacy committees
- participating in the national Pharmacy Genomics Collaborative and sharing practice across GMS alliances.

### Operational leadership

A clinical lead pharmacy post is recommended as part of the clinical leadership team, with dedicated time to work on delivery of GMS priorities related to personalised medicine and the pharmacy transformation programme. Consider:

- the support the post-holder may require to develop their genomics expertise and/or system leadership skills
- developing the post towards a consultant pharmacist role.

Clinical lead pharmacists will also participate in the national Pharmacy Genomics Collaborative, sharing practice, supporting collaborations across the GMS alliances and providing expert advice.

### Suggestions to develop pharmacy transformation programmes

1. **Map relevant stakeholders and networks** for pharmacy and medicines optimisation across the region and plan an appropriate strategy to engage them with the GMS alliances and pharmacy programme.
2. **Undertake a baseline review** of current awareness and input from pharmacy on genomics and related pathways:
  - Are there gaps where pharmacy input on treatments/medicines would be beneficial?
  - Are there areas of best practice that could be shared across the region?
3. **Develop a strategy for workforce development** and delivering genomics education and training opportunities for pharmacy teams across the region.

**4. For transformation projects focusing on pharmacogenomics** consider:

- Which pharmacogenomic tests are currently offered in the region and is there any variation
- Are there existing projects or research activity on pharmacogenomics in the region and how would these link in?
- Are there opportunities to develop the role of the pharmacist in pharmacogenomic pathways?
- Implementation issues for pharmacogenomics in clinical practice:
  - clinical guidance and decision support
  - information for patients and the public
  - data to measure the uptake and clinical impact of pharmacogenomics
  - implementation across different sectors in primary and secondary care
- DPYD testing implementation as an example pathway.

**5. Consider personalised medicine beyond pharmacogenomics** – other targeted treatments, gene therapies, histology-independent drugs, etc:

- What pathways link testing and treatment for these therapies and where would pharmacy input be beneficial?
- NTRK testing for histology-independent drugs and ATMPs as example pathways.

**6. How will progress be evaluated?** As the priorities for the pharmacy transformation programmes are defined, consider what metrics and data could be used to measure progress from baseline towards final goals.

This information has also been shared with colleagues leading the GMS alliance plans in each region. To discuss local plans or share any comments and suggestions, please contact the NHS Genomic Unit via email [england.genomics@nhs.net](mailto:england.genomics@nhs.net)

This publication can be made available in a number of other formats on request.

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