UKCGG, CanGene-CanVar and NHSE GLH Haematological Oncology Malignancies Working Group Virtual Consensus workshop on Germline Predisposition to Haematological Malignancy, 28-29th April 2022: Summary

Background

- Our knowledge about the contribution of monogenic risk factors to haematological malignancy is increasing at pace. Pathogenic constitutional variants in six genes – *DDX41, ETV6, CEBPA, RUNX1, ANKRD26* and *GATA2* are known to significantly increase the risk of haematological malignancy, and variants in some of these genes are also associated with non-malignant phenotypes (e.g. Lymphoedema (*GATA2*), autoimmune disease (*DDX41*)). Although literature regarding the risk and phenotype associated with such variants is increasing, there are no national or international best practice guidelines with respect to management of carriers of such variants or of their at-risk relatives.
- There is a significant probability that large gene panels applied for the purpose of identifying somatic drivers of haematological disease in bone marrow or peripheral blood in an affected individual may identify likely pathogenic or pathogenic variants of likely germline origin. We recognised variability in terms of how patients were counselled with respect to potential identification of such variants, and in the process by which germline origin of these variants was confirmed.
- To address these issues, the UK Cancer Genetics Group (UKCGG), in collaboration with CanGene-CanVar and NHS England Haematological Oncology Malignancies working group, organised a national workshop, held via Zoom over two mornings on 28th and 29th April 2022. UK Cancer Genetics Leads and Principal/Lead Genetic Counsellors, Somatic and Germline Clinical Scientists, Adult and Paediatric Haematologists, Patient Representatives and Translational Research Scientists were invited to attend. Some colleagues from Republic of Ireland and the Netherlands were also invited as observers and to give an international perspective where appropriate. Please see **appendix 1** for list of registered delegates.

- This document is designed to be a reflective summary of the understanding and discussions from the meeting on 28-29 April 2022. Further background information, slides from presentations, and a recording of the discussions are available at https://www.ukcgg.org/information-education/ukcgg-consensus-meetings/ .

Organising Committee

Katie Snape
Terri McVeigh
Angela Hamblin
Polly Talley
Beverley Speight
Sarah Hamilton
Beth Torr

Aims of the workshop

As there are a wide variety of unanswered questions in the area of Hereditary Predisposition to Haematological Malignancy, in the interest of time and to maximise utility of the meeting, the remit of the workshop was limited to the following aims:

1. To review current evidence regarding penetrance of and phenotype associated with pathogenic constitutional variants in *DDX41, ETV6, CEBPA, RUNX1, ANKRD26* and *GATA2.*
2. To establish current practice and agree future best practice regarding site-specific confirmatory constitutional testing where a variant of likely germline origin in one of these genes is identified during "somatic" testing, including sample selection and the pre-test counselling process.
3. To outline indications and pathways for urgent and non-urgent predictive genetic testing where a variant of germline origin in one of these genes is confirmed in an affected individual.
4. To discuss novel clinical referral pathways that need to be developed and implemented, including where and how consent for urgent constitutional testing (confirmatory/predictive) should be undertaken.
5. To discuss best practice regarding screening of unaffected carriers of pathogenic variants in these genes, including type, frequency, and age of commencement of screening, if indicated.
6. To consider the potential impact on resources and existing clinical pathways of the application of urgent pathways and carrier screening within the NHS.
7. To identify knowledge gaps and the potential for national, collaborative, interdisciplinary research projects and service/registry development.

Over the course of the meeting, we recognised unique challenges related to donor selection for those patients requiring allogenic transplant when potential related donors carry/are at risk of inheriting a constitutional variant predisposing to haematological malignancy. Mindful of this, we deliberately decided to defer all discussions related to this theme to a dedicated workshop, which we plan to arrange in the not-too-distant future, in collaboration with British Society of Blood and Marrow Transplantation and other key stakeholders.

Workshop format

A series of talks from invited expert speakers were delivered on the day to provide context-specific information to delegates. Slides from all talks, and recordings of the sessions are available here (https://www.ukcgg.org/information-education/ukcgg-consensus-meetings/).

Thereafter, a number of related polls were conducted, with proposed statements for best practice in different scenarios. Each poll was closed when at least half of delegates had submitted a response. In practice we considered this a cut-off of 60 votes, mindful that not all registered participants could attend in full on both days (participants on day 1=106, day 2=93), and taking into consideration patient representatives in attendance that would likely abstain from voting. Consensus was deemed to be reached when ≥80% respondents selected "Agree/Strongly Agree" or "Yes" in response to the statement posed; unless an argument was prosposed requiring revision to the wording of the statement, after which the poll was repeated with the revised wording to generate final decision.

Day 1 Presentations and Polling

1. Pre-workshop survey results – *Dr Katie Snape, King's College Hospital and St George's Hospital*
2. Progress in variant interpretation for cancer susceptibility genes (relating to solid tumours) – CanVIG-UK network – *Prof Clare Turnbull, Institute of Cancer Research*
3. National Infrastructure for collection and linkage of genomic data – *Dr Steven Hardy, National Disease Registration Service, NHS Digital*
4. Developing a sustainable national infrastructure for assessment and management of genomic variation predisposing to haematological malignancies – *Dr James Drummond, Cambridge University Hospital, East GLH*
5. Germline variants in Myeloid Malignancies – *Dr Jamshid Khorashad, Royal Marsden NHS Foundation Trust*
6. Somatic Variant Interpretation Guidelines – *Dr Chris Wragg, North Bristol NHS Trust, UK S_VIG Working Group*
7. Undertaking germline confirmation of somatic findings – *Dr Paula Page, West Midlands Regional Genetics Laboratory and Dr Nick Parkin, Viapath Molecular Pathology at King's College Hospital*
8. Polling session 1 - Themes: germline confirmation of somatic findings, variant interpretation, onward referrals, need for national database and framework for management of variants of uncertain significance - *Dr Katie Snape, King's College Hospital and St George's Hospital*
9. Lay person summary and overview – *Dr Terri McVeigh, Royal Marsden NHS Foundation Trust*

Day 2 Presentations and Polling

1. Pre-workshop survey results – *Dr Terri McVeigh, Royal Marsden NHS Foundation Trust*
2. Genetic predisposition to myeloid malignancies: *CEBPA, RUNX1, ANKRD26, ETV6, GATA2* and *DDX41* – *Prof Jude Fitzgibbon and Dr Ana Rio-Machin, Barts Cancer Institute, Queen Mary University of London, and Dr Austin Kulasekararaj, King's College Hospital*
3. Considerations for consent and cascade screening – *Ms Bev Speight, East Anglican Medical Genetics Service*
4. Polling session 2 - Themes: pre-test counselling and consent pathways, management and screening of confirmed carriers - *Dr Terri McVeigh, Royal Marsden NHS Foundation Trust*
5. Overview – *Dr Katie Snape, King's College Hospital and St George's Hospital*

Agreed Consensus and Recommendations from workshop

Somatic Reporting

1. A statement on the report suggesting possible germline origin of a variant should be considered for any variant where a confirmed germline finding would have potential clinical significance, especially if the Variant Allele Frequency is more than 30% (**Agree/Strongly agree: 99%**)
2. Likely pathogenic/pathogenic variants which are clearly clinically actionable in both the somatic and germline context can be reported at time of somatic analysis without further discussion (**Agree/Strongly agree: 98%**)
3. Scientists writing somatic reports should ideally have pre-reporting access (via MDT/email) to germline scientific/clinical expertise when deciding if variants of uncertain significance of potential germline origin (classified as per germline variant interpretation guidelines) should be reported (**Agree/Strongly agree: 92%**)
4. There should be different template phrases for actionability in different contexts, in order to differentiate between variants which are clearly clinically actionable in the germline (likely pathogenic/pathogenic) and those which may be considered a variant of uncertain significance based on germline variant interpretation guidelines (**Agree/Strongly agree: 99%**)
5. If a variant of potential germline origin is identified during somatic testing, it would be best practice to perform variant classification according to ACMG/CanVIG-UK/ClinGen guidelines in advance of offering the patient site-specific confirmatory germline testing (**Agree/Strongly agree: 96%**)

Confirmatory/predictive germline testing processes

6. It would be best practice to undertake diagnostic germline confirmatory testing in the proband prior to offering cascade germline testing to relatives, although this may not be feasible all in all situations (e.g., clinical urgency, unexpected death) (**Agree/Strongly agree: 99%**)
7. If a variant of potential germline origin not directly causative for the phenotype under investigation, but relevant for other disease risks, is incidentally identified during somatic testing, it would be best practice to discuss the case with clinical genetics prior to referring patients for confirmatory germline testing (**Agree/Strongly agree: 85%**)
8. It would be best practice that, if a variant of potential germline origin is identified during somatic testing that is classified as Class 3 (variant of uncertain significance) based on germline variant interpretation guidelines, although confirmatory germline is not usually indicated, it may be justified in certain circumstances after discussion and documentation of purpose and utility of such testing at specialist MDT, including input from Clinical Genetics. (**Agree/Strongly agree: 97%**). This is particularly relevant in absence of formal gene-specific variant interpretation guidance.
9. If a germline variant of uncertain significance in a gene associated with haematological malignancy is identified in an affected individual, it would be best practice to offer site-specific testing to blood relatives only after discussion and documentation regarding rationale for same at specialist MDT, including input from Clinical Genetics. (**Agree/Strongly agree: 96%**)

Sample selection

10. Best practice is to arrange confirmatory germline testing using best available sample type as dictated in the hierarchy listed here below. It is reasonable to move down the list if the first option is deemed clinically inappropriate, impractical or impossible (**Agree/Strongly agree: 87%**)
    i. Skin biopsy with cultured fibroblasts
    ii. Skin biopsy with direct culture
    iii. Remission sample
    iv. Hair Root/Nail clipping
    v. Predictive genetic testing in an at-risk relative where testing of proband impossible and variant is at least class 4 and VAF at least 40%

Future collaborative prospective work

11. I would support the development of an accessible forum consisting of both somatic and germline, scientific and clinical expertise for discussion of uncertain/complex/difficult somatic variants which could indicate germline predisposition (**Agree/Strongly agree: 100%**)
12. I would support the development of an accessible forum consisting of germline scientific and clinical expertise for discussion regarding the management and further work to classify germline variants of uncertain significance (**Agree/Strongly agree: 100%**)
13. I would support providing data on somatic and germline variants to national bodies to enable further research and classification (**Agree/Strongly agree: 99%**)
14. Further work is needed to develop screening/monitoring recommendations for *CEBPA, ANKRD26, ETV6, GATA2, DDX41* & *RUNX1*. This should be undertaken through a collaborative national infrastructure to ensure robust data collection to inform future management (**Agree/Strongly agree: 100%**)

Patient information

15. It is appropriate to inform patients of the possibility of finding a germline genetic variant when arranging genetic profiling of bone marrow or blood in patients with a known haematological disorder (**Yes – 96%**). *The difficulties of doing so in the context of a new diagnosis of leukaemia were acknowledged and discussed. There was a consensus that standardised patient information sheets may be helpful in addressing some of these challenges.*
16. I would support the development of standardised patient information around the possibility of identifying a germline predisposition from somatic testing (**Agree/Strongly agree: 97%**)
17. It is appropriate for patients with a known haematological disorder to be made aware of the possibility and how to access further information regarding potential of finding germline genetic variant when arranging genetic profiling of bone marrow or blood (**Yes – 99%**)

Indications and pathways for referral to Clinical Genetics

18. It is preferable for confirmatory testing of a likely pathogenic/pathogenic variant of potential germline origin to be arranged by the Haematology team when the patient requires a bone marrow transplant (time sensitive) (**Agree/Strongly agree: 83%**)

19. There may be scenarios where a repeat somatic NGS panel on a remission blood or bone marrow sample is an appropriate next step to indicate whether germline testing is required. (**Agree/Strongly agree: 95%**)
20. There should be a pathway for clinical genetics referral prior to diagnostic confirmatory germline testing in complex situations or where early clinical genetics input may be helpful (**Agree/Strongly agree: 88%**)
21. It is preferable that healthy relatives are ideally offered genetic counselling via a clinical genetics referral prior to consenting and predictive testing for a likely pathogenic/pathogenic familial variant if not being considered as a potential bone marrow donor (**Agree/Strongly agree: 95%**)
22. It is preferable that healthy relatives being considered as a potential bone marrow donor are ideally offered genetic counselling via clinical genetics prior to consenting and predictive testing for a likely pathogenic/pathogenic familial variant (with rapid timescale flagged) (**Agree/Strongly agree: 96%**)
23. Counselling for predictive testing of children for likely pathogenic/pathogenic familial variants in *CEBPA, ANKRD26, ETV6, GATA2*, and *RUNX1* should be undertaken by the Clinical Genetics team (**Agree/Strongly agree: 93%**)
24. All patients identified as carriers of a likely pathogenic/pathogenic germline variant should be referred to clinical genetics for further counselling and cascade screening (if not seen in genetics previously) (**Agree/Strongly Agree: 96%**)

Age at which Predictive testing should be offered

25. The age at which predictive testing is offered to unaffected children at risk of inheriting likely pathogenic/pathogenic variants in *CEBPA, ANKRD26, ETV6, GATA2,* and *RUNX1* should be individualised taking into account the genotype and family history, in liaison with the family (**Agree/Strongly agree: 81%**)
26. Predictive testing of likely pathogenic/pathogenic variants in *DDX41* would not typically be offered before adulthood (in line with BSGM guidance on testing in childhood for adult-onset disorders) (**Agree/Strongly agree: 96%**)

Management of carriers

27. All patients identified as carriers of a likely pathogenic/pathogenic germline variant germline variant who develop a blood phenotype (pre-malignant/malignant) should be referred to haematology for monitoring and follow up (if not already under care of haematology) (**Agree/Strongly agree: 88%**)
28. Carriers of LP/P variants in *CEBPA, ANKRD26, ETV6, GATA2, DDX41* and *RUNX1* should be provided with advice about symptom awareness. (**Agree/Strongly agree: 94%**)
29. Screening should not be offered until the at-risk individual has been confirmed to have inherited the familial variant (but it is reasonable to arrange baseline FBC at time of bleeding for genetic testing) (**Agree/Strongly agree: 86%**)

Resources

30. In order to provide these consensus best practice guidelines, our service would require additional resources (**Agree/Strongly agree: 98%**)

Consensus not reached

Despite consideration, discussion and reframing of proposed best practice statements, we could not reach consensus regarding the type and frequency of screening, or if screening should be offered at all to carriers of pathogenic/likely pathogenic variants in *DDX41, CEBPA, ANKRD26, ETV6,* GATA2, and RUNX1. Over the course of the discussion, it became increasingly evident that gene-specific guidance is required.

Next steps

- We plan to write up the consensus statements from this meeting for publication.
- Progress towards standardised somatic reporting templates will progress through the work of S-VIG (Somatic Variant Interpretation Group)
- The CanVIG-UK group are organising a variant interpretation meeting on 10th June 2022 that will lead on the work to develop gene specific variant interpretation guidance and the development of an infrastructure for variant discussion/review
- Further work is needed to establish how we can capture data related to carriers robustly on a prospective basis, and we hope the findings from this meeting can be leveraged to support applications for additional resources related to this. We will work with NHS England and the GMSAs to support funding applications pertaining to this.
- Gene specific guidelines are required with respect to management of gene carriers. We will liaise with relevant stakeholders to progress this.
- The development of standardised patient information will be progressed in conjunction with patient charities and UKCGG.
- The development of educational materials will be progressed with the Genomics Education Programme of Health Education England.
- We will contribute to the BMT/donor focused consensus workshop in the coming months.

Appendix 1 - List of registered delegates and their affiliations

First name	Surname	Trust/Institution	Role
Katie	Snape	St George's University Hospitals NHS Foundation Trust	Consultant Clinical Geneticist
Terri	McVeigh	Royal Marsden NHS Foundation Trust	Consultant Clinical Geneticist
Bev	Speight	Cambridge University Hospitals NHS Foundation Trust	Genetic Counsellor
Angela	Hamblin	Oxford University Hospitals NHS Foundation Trust	Consultant Adult Haematologist
Polly	Talley	Leeds Teaching Hospitals Trust / NHSE	Clinical Scientist (somatic)
James	Drummond	Cambridge University Hospitals NHS Foundation Trust	Clinical Scientist
Paula	Page	Birmingham Regional Genetics Laboratory	Clinical Scientist (somatic)
Nick	Parkin	King's College Hospital NHS Trust	Clinical scientist (germline)
Jamshid	Khorashad	Royal Marsden NHS Foundation Trust	Clinical Scientist (somatic)
Chris	Wragg	North Bristol NHS Trust	Clinical scientists (somatic and germline)
Clare	Turnbull	Royal Marsden NHS Foundation Trust/Institute of Cancer Research	Consultant Clinical Geneticist
Steven	Hardy	NHS Digital	Other
Ana Rio	Machin	Bart's Cancer Institute, Queen Mary University of London	Researcher
Jude	Fitzgibbon	Bart's Cancer Institute, Queen Mary University of London	Researcher
Austin	Kulasekararaj	Kings College Hospital	Consultant Adult Haematologist
Julie	Young	Patient Representative	Patient representative
Andrea	Mills	Patient Representative	Patient representative
Richard	Stephens	Patient representative	Patient representative
Beth	Torr	CanGene-CanVar, Institute of Cancer Research	Scientific Programme Manager
Munaza	Ahmed	Great Ormond Street Hospital for Children NHS Foundation Trust	Consultant Clinical Geneticist
Salah	Ali	Leeds Teaching Hospital	Consultant Paediatric Haematologist
Shubha	Anand	Cambridge University Hospitals NHS Foundation	Clinical Scientist (somatic)

		Trust /University of Cambridge	
Sangeeta	Atwal	Kingston Hospital NHS Trust	Consultant Adult Haematologist
Linda	Barton	University Hospitals of Leicester NHS Trust	Consultant Adult Haematologist
Jack	Bartram	Great Ormond Street Hospital for Children	Consultant Paediatric Haematologist
Anthony	Bench	NHS Lothian	Clinical Scientist (somatic)
Steven	Best	King's College Hospital	Clinical scientists (somatic and germline)
Angela	Brady	North West Thames Regional Genetics Service	Consultant Clinical Geneticist
Vic	Campbell	Western General Hospital, Edinburgh	Consultant Adult Haematologist
Julian	Cano-Flanagan	Imperial Healthcare NHS Trust/ North West London Pathology	Clinical scientists (somatic and germline)
Catherine	Cargo	St James's University Hospital, Leeds Teaching Hospitals NHS Trust	Consultant Adult Haematologist
Subarna	Chakravorty	King's College Hospital NHS Trust	Consultant Paediatric Haematologist
Jane	Chalker	Great Ormond Street Hospital for Children NHS Foundation Trust	Clinical scientists (somatic and germline)
Richard	Chasty	The Christie NHS Foundation Trust	Consultant Adult Haematologist
Laura	Chiecchio	Wessex Regional Genetics Laboratory -Salisbury NHS Trust	Clinical Scientist (somatic)
Nektaria	Chrysochoidi	King's College Hospital NHS Trust	Clinical scientists (somatic and germline)
Barnaby	Clark	Viapath, King's College Hospital	Clinical Scientist (somatic)
Ruth	Cleaver	Royal Devon and Exeter NHS Foundation Trust/Peninsula Clinical Genetics Service	Consultant Clinical Geneticist
Tom	Coats	Royal Devon and Exeter NHS Foundation Trust/Peninsula Clinical Genetics Service	HaemOnc GLH Speciality Lead
Anna	Considine	West Midlands Regional Genetics Service	Clinical Nurse Specialist
Jackie	Cook	Sheffield Children's Hospital	Consultant Clinical Geneticist
Nick	Cross	Salisbury NHS Foundation Trust	Clinical Scientist (somatic)
Rosemarie	Davidson	Greater Glasgow and Clyde Health Board	Consultant Clinical Geneticist

Corinne	De Lord	Epsom and St Helier NHS Trust	Consultant Adult Haematologist
Philip	Dean	Haematological Malignancy Diagnostic Service, Leeds	Clinical Scientist (somatic)
Sandi	Deans	NHS England	Clinical scientists (somatic and germline)
Bianca	DeSouza	Imperial College Healthcare Trust and Northwick Park Hospital	Consultant Clinical Geneticist
Alan	Donaldson	University Hospitals Bristol and Weston NHS Foundation Trust	Consultant Clinical Geneticist
Robert	Dunn	Viapath, Guy's Hospital	Clinical Scientist (somatic)
Malee	Fernando	Sheffield Teaching Hospitals NHS Foundation Trust	Other
Damian	Finnegan	Belfast Health and Social Care Trust / Belfast City Hospital	Consultant Adult Haematologist
Andrea	Forman	South East GMSA/ St George's University Hospitals NHS Foundation Trust	Genetic Counsellor
Jessica	Gabriel	Oxford University Hospitals, Genetics Lab	Clinical scientists (somatic and germline)
Amna	Gameil	King's College Hospital NHS Trust	Other
Shreyans	Gandhi	King's College Hospital NHS Foundation Trust	Consultant Adult Haematologist
Alice	Garrett	The Institute of Cancer Research	Researcher (clinical academic)
Louise	Gilroy	NHS Lothian	Clinical Scientist (somatic)
Vicky	Gkreka	King's College Hospital NHS Trust, Princess Royal University Hospital	Consultant Adult Haematologist
Anna	Godfrey	Cambridge University Hospitals NHS Foundation Trust	Consultant Adult Haematologist
Joana	Gomes	NHS Grampian	Genetic Counsellor
Jacob	Grinfeld	Leeds Teaching Hospital Trust	Consultant Paediatric Haematologist
Emma	Gudgin	Cambridge University Hospitals NHS Foundation Trust	Consultant Adult Haematologist
Dorothy	Halliday	Oxford University Hospitals NHS Trust	Consultant Clinical Geneticist
Guy	Hannah	King's College Hospital	Consultant Adult Haematologist
Helen	Hanson	St George's University Hospitals NHS Foundation Trust	Consultant Clinical Geneticist

Rachel	Harrison	Nottingham University Hospitals	Consultant Clinical Geneticist
Rachel	Hart	Liverpool Women's Hospital	Consultant Clinical Geneticist
Catherine	Hockings	Imperial College London	Consultant Adult Haematologist
Wendy	Ingram	University Hospital of Wales, Cardiff	Consultant Adult Haematologist
Andrew	Innes	Imperial College Healthcare NHS Trust	Consultant Adult Haematologist
Edward	Jackson	Cambridge University Hospitals NHS Foundation Trust	Clinical scientists (somatic and germline)
Manish	Jain	Leeds Teaching hospital NHS Trust	Consultant Adult Haematologist
Rosalyn	Jewell	Yorkshire Regional Genetics Service	Consultant Clinical Geneticist
Gail	Jones	Newcastle upon Tyne hospitals NHS Foundation Trust	Consultant Adult Haematologist
Farah	Kanani	Birmingham Women's and Children's NHS Foundation Trust	Consultant Clinical Geneticist
Anjum	Khan	St James' Hospital Leeds	Consultant Adult Haematologist
Aytug	Kizilors	King's College Hospital	Clinical Scientist (somatic)
Kelly	Kohut	St George's University Hospitals NHS Foundation Trust	Genetic Counsellor
Joanna	Large	King's College Hospital	Clinical Nurse Specialist
Matt	Lawes	Norfolk and Norwich	Consultant Adult Haematologist
Nick	Lea	King's College Hospital London, Viapath	Clinical Scientist (somatic)
Amy	Logan	Belfast health and social care trust	Clinical scientists (somatic and germline)
Suzanne	MacMahon	Royal Marsden NHS Foundation Trust	Clinical Scientist
Sahar	Mansour	St George's University Hospitals NHS Foundation Trust	Consultant Clinical Geneticist
Pedro	Martin-Cabrera	Addenbrookes Hospital (Cambridge University Hospitals)	Consultant Adult Haematologist
Joanne	Mason	West Midlands Regional Genetics	Clinical scientists (somatic and germline)
Rachel	Mayhew	King's College Hospital NHS Trust	Clinical scientist (germline)
Andrew	McGregor	The Newcastle upon Tyne Hospitals NHS Foundation Trust	Consultant Adult Haematologist

Claire	McKeeve	NHS Greater Glasgow and Clyde	Clinical Scientist (somatic)
Emma	Miles	NW-GLH, St Marys Hospital, Manchester University NHS Foundation Trust	Clinical scientist (germline)
Azim	Mohamedali	King's College Hospital	Clinical Scientist (somatic)
Audrey	Morris	Cambridge University Hospitals Foundation Trust	Consultant Adult Haematologist
Hood	Mugalaasi	Royal Marsden NHS Foundation Trust	Clinical scientists (somatic and germline)
Andrew	Mumford	University of Bristol, Haematology GECIP, SW GMSA	Researcher (clinical academic)
Jennie	Murray	NHS Lothian	Consultant Clinical Geneticist
Alex	Murray	All Wales Medical Genomics Service	Consultant Clinical Geneticist
Hannah	Musgrave	Leeds Teaching Hospitals NHS Trust	Genetic Counsellor
Aaron	Niblock	Northern Trust	Consultant Adult Haematologist
Eirini	Oikonomidou	King's College Hospital NHS Trust	Other
Kai Ren	Ong	West Midlands Regional Genetics service, Birmingham Women's Hospital	Consultant Clinical Geneticist
Dawn	O'Sullivan	NHS Grampian	Clinical scientist (germline)
Vincenzo	Pacifico	Specialist Integrated Haematological Malignancy Diagnostic Service (SIHMDS), North West London Pathology	Other
Rachel	Pawson	NHS Blood and Transplant	Consultant Adult Haematologist
Kate	Pearce	Newcastle upon Tyne NHS Foundation Trust	Clinical Scientist (somatic)
Andy	Peniket	Oxford University Hospitals NHS Foundation Trust	Consultant Adult Haematologist
Fernando	Pinto	Royal Hospital for Children, Glasgow	Consultant Paediatric Haematologist
Rebecca	Pollitt	Sheffield Children's NHS Foundation Trust	Clinical Scientist (somatic)
Mahesh	Prahladan	East Suffolk and North Essex NHS Foundation Trust	Consultant Adult Haematologist
Sarah	Pugh	Centre for genomic medicine, Manchester	Genetic Counsellor
Gillian	Rea	Northern Ireland Regional Genetics Service/ Belfast Trust	Consultant Clinical Geneticist
Alistair	Reid	Central Manchester Foundation Trust	Clinical lab scientist

Sara	Ribeiro	Royal Marsden NHS Foundation Trust	Clinical Scientist
Ruth	Robertson	Oxford Centre for Genomic Medicine	Genetic Counsellor
Rachel	Robinson	North East and Yorkshire GLH - Leeds Teaching Hospitals NHS Trust	Clinical scientist (germline)
April	Sellors	University Hospitals of Leicester NHS Trust	Other
Saba	Sharif	Birmingham Womens' NHS trust	Consultant Clinical Geneticist
Adam	Shaw	Guy's & St Thomas' NHS Foundation Trust	Consultant Clinical Geneticist
Tarryn	Shaw	Royal Marsden NHS Foundation Trust	Genetic Counsellor
Geoff	Shenton	Newcastle University Teaching Hospitals	Consultant Paediatric Haematologist
Lucy	Side	University Hospitals Southampton	Consultant Clinical Geneticist
Ilenia	Simeoni	Cambridge University Hospitals NHS Foundation Trust	Clinical scientist (germline)
Frances	Smith	King's College Hospital / Viapath	Clinical scientist (germline)
John	Snowden	North East and Yorkshire GLH/ Sheffield Teaching Hospitals NHS Foundation Trust	Consultant Adult Haematologist
Sally	Spillane	All Wales Medical Genomics Institute, CAVUHB	Clinical Scientist (somatic)
Simone	Stokley	Nottingham University Hospitals	Consultant Paediatric Haematologist
David	Taussig	Royal Marsden NHS Foundation Trust	Consultant Adult Haematologist
Kiran	Tawana	Addenbrooke's Hospital, Cambridge	Consultant Adult Haematologist
Sally	Thomas	University of Sheffield/Sheffield Teaching Hospitals	Researcher (clinical academic)
Adele	Timbs	Oxford University NHS Foundation Trust	Clinical Scientist (somatic)
Marc	Tischkowitz	University of Cambridge and Cambridge University Hospitals Trust	Consultant Clinical Geneticist
Roochi	Trikha	Kings College London	Consultant Adult Haematologist
Olga	Tsoulaki	Sheffield Childrens Hosp	SpR Clinical Genetics

George	Vassiliou	Cambridge University Hospitals NHS Foundation Trust	Consultant Adult Haematologist
Sarah	Westbury	University of Bristol and University Hospitals Bristol NHS Foundation Trust	Researcher (clinical academic)
Jennifer	Wiggins	Royal Marsden NHS Foundation Trust	Genetic Counsellor
Emma	Woodward	Manchester University NHS Foundation Trust	Consultant Clinical Geneticist
Dörte	Wren	Manchester University NHS Foundation Trust	Clinical Scientist (somatic)
Deborah	Yallop	King's College Hospital	Consultant Adult Haematologist
Claire	Giffney	Children's Health Ireland	Genetic Counsellor
Andrew	Green	Children's Health Ireland	Consultant Clinical Geneticist
Brendan	Mullaney	St James's Hospital, Dublin, Ireland	Clinical scientist (germline)
Nina	Orfali	St. James's Hospital, Dublin, Ireland	Consultant Adult Haematologist
Rosie	O'Shea	St James's Hospital, Dublin, Ireland	Genetic Counsellor
Lesley Ann	Sutton	St James's Hospital, Dublin, Ireland	Clinical Scientist (somatic)
Encarnacion	Gomez Garcia	Maastricht University	Consultant Clinical Geneticist
Maartje	Nielsen	Leiden University Medical Centre	Consultant Clinical Geneticist