

Genomic Medicine and Healthcare

Postgraduate Diploma





Postgraduate Diploma

Delivered over 1 year, the online, part-time, distance learning, Postgraduate Diploma course is specially developed for busy health professionals. Formatted in 6 modules, each 6 weeks in duration; the course is designed to be practical and clinically focused.

Why study Genomic Medicine and Healthcare with us?

Taught completely online, our Genomic Medicine and Healthcare course has been developed for healthcare professionals including Specialist Medical Practitioners, General Medical Practitioners, Allied Health Professionals, Nurses and Midwives, Genetic Counsellors and those with related undergraduate degrees or equivalent professional qualifications and background experience.

It will be of interest to health professionals in the UK and internationally and will provide a solid foundation in the core concepts of genetics and genomics applied to modern medicine and healthcare.

Our course is well timed given increasing public and professional interests in genetic and genome-level diagnostic and predictive testing for clinical management, disease risk evaluation, prevention of major complications and offering the prospect of improved prognosis.

Personalised benefits include the option for reproductive choices and reducing lifetime medical or health risks by judicious use of new emerging preventive medicines and devices combined with lifestyle/behaviour modifications.

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Course Modules

The online Postgraduate Diploma in Genomic Medicine and Healthcare provides an integrated approach to genomics and applies scientific principles to patient care.

Module 1 - Principles of Medical Genetics and Genomics

Aim of the module:

- Develop a critical understanding and knowledge of core concepts in medical genetics and genomics.

Synopsis of module content:

- Core concepts - cell structure, molecular and cell biology
- DNA, RNA, Structure and Function
- Traditional and non-traditional inheritance patterns
- Epigenetics and Epigenomics
- Diagnostic lab methods/Clinical Bioinformatics/Interpretation of results
- The future of Genetics and genomics - New advances (gene therapy/genome editing)

On completion of this module, students will be able to:

1. Demonstrate an in depth knowledge of the core concepts of genomics from cellular to population level genomic variation.
2. Critically appraise methods of laboratory analysis, interpretation and clinical utility of genomic data.

Module 2 - Genetic Counselling

Aim of the module:

- Develop a critical understanding and knowledge of core concepts in medical genetics and genomics.

Synopsis of module content:

- Principles of genetic counselling
- Family History
- Genetic Risk Assessment
- Clinical Preparation & (genetic) service organisation
- Delivery of the counselling
- Consent, Confidentiality, Ethics

On completion of this module, students will be able to:

1. Critically apply the principles of genetic counselling to complex clinical situations.
2. Selectively apply relevant ethical, moral and legal issues to the diagnosis, testing and counselling of patients.

Module 3 - Genomics and Society

Aim of the module:

- Develop a critical understanding and knowledge of core social, cultural, and economic perspectives of genomic medicine and healthcare.

Synopsis of module content:

- Population diversity and genomic variation
- Social culture and practices, beliefs including Consanguinity
- Psychological issues in genomic medicine/ healthcare
- Public and media expectations and understanding
- Population and public health aspects of genomics
- ELSI – Ethical, Legal, Social Implications of genomics and associated technologies

On completion of this module, students will be able to:

1. Demonstrate in-depth knowledge of the social, cultural and economic implications of genomics.
2. Critically appraise a variety of broader peripheral issues surrounding genomic applications.



Little did I know that the MSc was going to be a significant stepping stone in my medical career! Both the diploma and MSc were invaluable in terms of expanding my knowledge and management of Diabetes Medicine, but also enhanced my critical thinking and writing skills.

- Dr Kevin Fernando

Module 4 - Practice of Clinical Genomics

Aim of the module:

- Develop a critical understanding of core principles and practice of clinical genetics and genomics.

Synopsis of module content:

- Epidemiology of genetic diseases/disorders
- Diagnostic tools/Interpretation of laboratory reports
- Genetic Clinic
- Multi-disciplinary Team – including primary care and mainstreaming
- Specialist services including liaison with common conditions practitioners
- Audit in clinical genetic and genomics

On completion of this module, students will be able to:

1. Demonstrate the ability to incorporate in-depth knowledge of genetics to a variety of clinical practice situations.
2. Critically evaluate and apply emerging genomic/ molecular pathology in targeted therapy for rare genetic diseases.
3. Demonstrate expertise in the planning and delivery of a genomics led multi-disciplinary patient care plan.

Module 5 - Reproductive Genomics

Aim of the module:

- Develop a critical understanding and knowledge of genetics and genomics of reproduction including multi-disciplinary care of the high-risk pregnancy.

Synopsis of module content:

- Fundamentals of reproduction in the context of genomic medicine
- Infertility
- Diagnostic tools – prenatal, foetal medicine including antenatal aneuploidy screening
- Treatment and Management including pre-implantation genetic diagnosis/ mitochondrial genetic disorders
- Specialised approaches - non-invasive prenatal testing and prenatal genomic arrays
- Ethical aspects of reproductive and foetal medicine

On completion of this module, students will be able to:

1. Critically evaluate genetic screening/ diagnosis, preventive and therapeutic methods before and during pregnancy.
2. Demonstrate expertise in carrying out risk assessment, counselling and assisting in managing the high-risk pregnancy.

Module 6 - Genomic Healthcare

Aim of the module:

- Develop a critical understanding and knowledge of genomic applications in public health, multidisciplinary patient care and preventive healthcare in the context of health services organisation and delivery.

Synopsis of module content:

- Introduction to omics research methods, new and emerging technologies and systems medicine including the 100,000 Genomes Project
- Pharmacogenetics and Pharmacogenomics
- Stratified Medicine including The 5 P's Medicine (precise/preventive/predictive/personalised medicine, participatory)

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"When I enrolled into the course I had no idea about the opportunities it would provide me with. Having my first paper published through this course helped me overcome my apprehensions of academic writing and made me more confident to pursue it further. "

- Rutu Dave



- Implications for healthcare – new and emerging roles and models of service delivery and manpower (medical, nursing and allied healthcare)
- Health economics including evidence-based genetic/genomic healthcare
- New therapeutic advances- gene therapy, targeted molecular therapy, genome editing

On completion of this module, students will be able to:

1. Critically debate the role of genomic applications in public health and preventive healthcare in the context of health services organisation and delivery.
2. Critically appraise the role and limitations of interventions aimed at genetic/genomic health risk management.

Graduates of this course will receive a Postgraduate Diploma award from the University of South Wales, Diploma MSc's collaborative partner.

Teaching Methods

Our courses are conducted entirely online through self-directed distance learning. However, you will receive guidance throughout with tutor-stimulated academic discussions, which are based on clinically-rich case scenarios. These usually occur within groups of 10-15 students, allowing you to clearly communicate with both your tutor and fellow students.

You will participate in a combination of group and individual activities, which are recorded in a reflective journal. This innovative teaching method enables you to envisage the translation of your studies into your every day work and practice.

Our dedicated Student Support Team are also available to help with any problems you may face. From navigating our online platform to advising you on deadlines, our team can assist with any questions or challenges you may have along the way.

Study Skills week

Once you have secured your place on the course, you will be invited to a Study Skills week webinar. This will give you the opportunity to participate in workshops on Harvard referencing, scientific and reflective writings, and levels of evidence in preparation for your studies. It is not compulsory for you to attend our Induction Day but it is recommended, as it'll provide you with a sturdy introduction to the course.

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Entry Requirements

Documents required:

- A copy of your updated CV including your address and date of birth.
- A copy of your undergraduate degree certificate.
- The name and email address of someone who is able to provide a reference, this can be a work colleague, employer or former tutor.
- A detailed personal statement explaining why you would like to undertake the course.

Health professionals working within a clinical setting, both UK and overseas, with a related Healthcare Science degree (including international qualifications) are eligible to apply for the Postgraduate Diploma in Genomic Medicine and Healthcare.

Applicants without the above academic criteria but relevant/ suitable experience can apply. Applications will be judged on the individual specifics of background and qualifications including ability to work at Postgraduate level (applicants may be asked to submit a piece of work for assessment to confirm that they are able to work comfortably at postgraduate level and demonstrate requisite clinical/ professional knowledge).

Applicants should submit copies of the following with their application:

Proficiency in the English language is also essential to completing our courses. If English is NOT your first language, we ask for proof of competency during the application process. We are able to accept an IELTS overall score of 6.0 (with a minimum of 5.5 for each band) or an equivalent qualification.





What do our students think?

Since 2010, over 1000 students have progressed their medical career by enrolling in one of our qualifications. We ourselves have learned a lot during this time and continually seek to improve the student learning experience. Here is what some of our previous students have said:

"I found the online learning very interesting. It enabled me to save money and time."

Dr Imad Eddin Rahamtalla, Doctor

"I strongly recommend Diploma MSc to all those busy physicians who are working in remote areas and wish to upgrade their knowledge."

Dr Junaid Zaffar, Diabetologist

"The learning was fun and enjoyable. The course was awesome and it increased my confidence."

Dr Sankar Nath Jha, Assistant Professor





"I found learning with Diploma MSc interesting, it helped to update my academic knowledge."

Dr Prasanth Kinattupurayil, Doctor

"I love that it was flexible and that I could log in at my convenience. I found this course to be very in-depth, informative, challenging and stimulating."

Kerri-Ann Best PGDip, RD



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