GeNotes: a new online 'just in time' genomics resource for healthcare professionals

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Introduction

Advances in DNA sequencing technologies have transformed the care of many patients with cancer. Systemic anti-cancer therapies are increasingly targeted against aberrant proteins associated with key driver mutations within the tumour (somatic) genome, requiring testing for, and identification of, such alterations in tumour-derived DNA to confer eligibility for treatment.[1] Falling sequencing costs have also driven expansion in testing for constitutional (germline) variants in cancer susceptibility genes (CSGs), which may inform surgical, systemic and radio-therapeutic options, as well as future cancer risks for patients and their relatives.[2]

NHS England's publication of genomic test directories for cancer and rare and inherited disease, (including heritable cancer syndromes), aims to improve patients' access to genomic tests while streamlining testing processes.[3,4] However, studies have indicated that integration of genomic data into 'mainstream' care is currently limited by clinicians' genomic literacy.[5–8]

GeNotes is a new online 'just in time' educational resource for clinicians, it is being developed across specialties in collaboration with Health Education England's Genomic Education Programme. It aims to improve use of genomic testing by providing clinical information about specific tests, underpinned by opportunities to access broader genomics education. In order to provide education at the point of oncology care, an oncogenomics working group was established.

Methods

Specialist trainees in clinical genetics and oncology were recruited to produce tiered resources on genomic topics relevant to cancer patients' clinical care. 'In the clinic' documents are written to a strict template around a specific clinical scenario, providing concise advice on when, what, how, and by whom genetic testing should be undertaken, as well as management of results. Each 'In the clinic' resource links to underpinning 'Knowledge hub' documents, which include detailed information about genetic and oncological conditions, and genomic principles and technologies. All genomic test information is linked to appropriate pages of the NHS genomic test directories.[3,4] Sections on resources for clinicians and patients signpost key references and additional educational resources.

Resources are reviewed by oncogenomics experts prior to uploading onto a purpose-built platform. Private beta phase testing (moderated usability testing, feedback questionnaire, follow-up interviews and website analytics review) of the first wave of resources was completed in November 2021 by Lagom Strategy.

Results

Nineteen 'In the clinic' and 20 'Knowledge hub' resources have so far been produced. Private beta phase testing (n=21) indicated high user satisfaction, with 95.2% reporting that they would be likely / very likely to use GeNotes in the future and 95.2% also stating that they would be likely / very likely to recommend GeNotes to other practitioners. GeNotes scored highly (90%) on system usability score. Current resources are being refined according to beta testing feedback. Additional resources are in development.

Conclusion

Appropriate and effective use of genomic information in the care of cancer patients requires that clinicians are sufficiently versed and confident in using genomic tests.[9] GeNotes is one of Health Education England Genomic Education Programme's flagship initiatives. The GeNotes oncogenomics working group is spearheading integration of the resource into mainstream care. Initial evaluation indicates that GeNotes will provide a valuable and practical educational resource for clinicians. ■

Funding statement

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