Health Education England

Topol Review

Preparing the healthcare workforce to deliver the digital future

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Health Education England

#TopolReview

- The Secretary of State for Health and Social Care commissioned an independent review
- To ensure the NHS is at the forefront of care
- Led by Dr Eric Topol with views of experts in relevant fields

#TopolReview

Digital technologies are transforming our ability to empower patients to ***participate*** actively in their own care, with a greater focus on well-being, to ***prevent*** diseases such as cancer and hypertension, to ***predict*** the most appropriate treatments and to ***personalise*** the management of long-term conditions.

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The panels

Genomics	Digital medicine	Artificial intelligence and robotics

The questions…

The Review will consider three key questions:

1. How are technological developments likely to change the roles and functions of clinical staff in all professions over the next two decades?
2. What are the implications of these changes for the skills required?
3. What does this mean for the selection, curricula, education, training and development of current and future NHS staff?

The principles…

The interim report proposes three key principles:

1. Patients: if willing and able to do so, will be empowered by new tools to become more actively involved and engaged in their care.
2. Evidence: the introduction of any technology must be grounded in robust research evidence
3. Gift of time: Whenever possible, the adoption of technology should be used to give more time for care, creating an environment in which the patient-clinician relationship is enhanced.

Genomics

Of the three technologies considered, genomics is the most advanced, in terms of research evidence, implementation, and workforce development, with a new MSc programme and newly-created NHS roles for example, the Genetic Diabetes Nurse.

Genetics Diabetes Nurse

- An initiative using experienced diabetes specialist nurses to help integrate genetic findings into diabetes care.
- The GDNs increase knowledge about Maturity Onset Diabetes of the Young, a disease caused by a change in a single gene.
- A national training programme, co-ordinated through a National Centre of Excellence on Diabetes based in Exeter University, has developed the GDN workforce.
- GDNs liaise with local healthcare teams and help co-ordinate genetic testing for family members.

Digital Medicine

Digital medicine is rapidly advancing with the spread of smartphones and computer tablets, although uptake remains uneven. New roles, like Clinical Bioinformatician, are emerging to support the use of digital tools, such as myCOPD app.

AskNHS app

- Avatar-based (pilot phase) virtual nurse app aims to address urgent care and primary care demand.
- The project uses digital mobile technology to relieve pressure on NHS resources by enabling more effective self-care, and more appropriate and timely use of primary and urgent care services.
- Features a virtual nurse that works using voice recognition software and button presses. Patients can assess their symptoms, look up self-care information and book or cancel GP appointments.

Robotics and Artificial Intelligence

At the other end of the innovation pipeline, we are only just beginning to discover the potential for AI, and machine learning, to personalise care, improve patient outcomes and reduce the workload of healthcare professionals, for example the AI-enabled future ophthalmologist.

Future Ophthalmologist

- Deep learning algorithms are used to identify pathology automatically from optical scans, allowing early detection and triage of sight-threatening diabetic retinopathy & age-related macular degeneration.
- This technology in clinical practice would greatly enable both ophthalmologists and optometrists to be able treat the most at-risk patients, and allowing them to enhance their own diagnostic skills through learning from the technology.

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What next?

We are only just at the beginning. This major, independent review will elicit further evidence throughout the summer, and submit the final report to the Secretary of State by the end of 2018.

Can you help?

Your views and evidence can help to shape the future of the NHS.

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We need you!

The interim report published today

www.hee.nhs.uk/our-work/topol-review

Join in the conversation…

topol.hee.nhs.uk

Share your experiences and understanding of these new technologies in practice and how it will change the way we educate and train our current, and future, staff.

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Questions…?