Parliamentary and Scientific Committee

‘How can Precision Prevention Reduce the Demand on Health Systems?’

A meeting held in partnership with the Physiological Society

Health systems across the UK are experiencing increasing demands for their services; innovative strategies will be needed to alleviate the pressure, with an emphasis on prevention. The Physiological Society brought together experts to explore what physiology research can contribute to personalised prevention, and officially launched their report ‘Physiology Passport: Putting personalised prevention at the heart of resilient health systems’ at the meeting.

Chair of the P&SC, George Freeman MP, highlighted the opportunities and risks of health data and where government should be investing resources; earlier prevention of ill health was very important. Four experts then gave us their views on personalised prevention.

Professor Dame Melanie Welham, Former Executive Chair, BBSRC UKRI, described the new report, and how its recommendations on funding could be effectively implemented. Recent advances in physiology research mean real opportunities to move towards personalised prevention. An individual’s existing electronic health record can be used to establish what is good health for that individual, an integrated and holistic approach enabling early intervention when required. Funding for new collaborative research and pilot studies could support eventual clinical translation, and development of predictive models. It is hoped it may also address health disparities amongst underrepresented groups in the population.

Professor Catherine Ross, Chief Scientific Officer, Scottish Government, spoke on ‘Personalised Prevention - Opportunities and Challenges for Governments’
Scotland has an ageing population of 5.5m, with deprived neighbourhoods experiencing poorer life expectancy, and increasing rates of often preventable diseases such as cancers and cardio-vascular conditions. It may be possible to use new and emerging technologies, like AI, to improve this situation. A recent study better identified stroke medication that was ineffective for some patients enabling them to be given an alternative. Many gadgets and tests are now available to the public to encourage health awareness, and the Scottish Government’s recent minimum alcohol pricing is an example of an initiative designed to support the population in making better lifestyle choices.

Professor Heidi de Wet, Physiological Society and University of Oxford, gave us her thoughts on ‘How is research advancing precision medicine and personalised prevention?’
A physiology-led approach combines information from many sources, ultimately enabling early diagnosis, and treatment. Everyone is different, but identifying variations from their own ‘normal’ health baseline can indicate problems earlier. Physiology research can be a means to an inter-disciplinary, cross-cutting approach to health. She described how it supports the 4Ps of medicine, giving case studies of Predictive, Preventive, Personalised, and Participatory work in weight management. Researchers must foster collaboration, expand biomarker research, develop better data sets, and involve patients and public (PPIE).

Dr Alistair Connell, Director of Digital Health, Our Future Health introduced ‘How will the 10 Year Plan look to harness the opportunities of personalised prevention now and in the future?’
‘Our Future Health’ is a world leading UK programme and resource for early detection and prevention research, collecting and interlinking multiple sources of data across a truly representative population cohort of 5m volunteers. Though challenges exist it is valuable for both researchers and participants. He summarised the many benefits of Physiology Passports, including early detection, supporting healthcare providers, enabling proactive care, reducing healthcare disparities, and empowering individuals.

Q&A points for discussion included concern about resources needed to produce Physiology Passports. Much data is however already available, due to the UK’s excellence in long term research, and AI could be used although not much research on applications is yet available. Passports may identify abnormalities, but who then who follows this up without further pressure on GPs? Would the most unhealthy and deprived communities be properly represented, with fears voiced about skewed data? And indeed who owns our data?

Sue Wharton
P&SC Discussion Meeting ‘How can Precision Prevention Reduce the Demand on the NHS?’
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