The survey focused on the testing of such systems rather than their routine utility. £33 saw the testing of the technology in the setting of prostate cancer as a positive advance, with only 15% not in favour. There was a divide as to whether the patients wanted to learn more about the use of AI in this setting, with 41% not wishing to learn more, and 59% in favour of additional learning, preferably in a website format. Although most men surveyed were supportive of AI assisted diagnosis, some had concerns. ‘What kind of concerns were raised?’

The main themes were in relation to the technical, performance and ethical implications of AI and potential massgagery, and about the need for a ‘human review’ by a trained professional. Interestingly, this reflects the results of a survey of public perceptions of AI in health and social care presented in the NHS AI Lab and Health Education England report [1], which suggests that trustworthiness in AI is positively impacted by having a ‘human in the loop’, ‘open and honest information’, and ‘proof of the impact’ of the technology.

What are the next steps?

Our survey has indicated that whilst acceptance of AI amongst patients of AI tools in a diagnostic setting is likely to be high, there are concerns that should be addressed at this early stage to improve understanding of their utility. Patient and clinician education and communication will be key in this respect. The next steps will be to consider these issues further as part of the Artificical Proco study investigating the deployment of AI in the prostate cancer pathway [2].

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• Although most men surveyed were supportive of AI assisted diagnosis, some had concerns.

What prompted the survey with Prostate Cancer UK?

There have been significant advances in the practice of histopathology in the last few years which have the potential to impact hugely on how we work and on the diagnostic process itself with lessen-on effects on patient care. Such advances include the roll-out of digital pathology (DP) for diagnostics, and the consequent facilitation of the development and future deployment of artificial intelligence (AI) in the workplace.

The TIA Centre Seminar Series welcomes external speakers to give presentations on Computational Pathology and aims to stimulate thought provoking discussions among participants. So far, we have had 17 speakers from various countries, who have discussed their recent work in the field.

Recorded sessions are available on YouTube and further upcoming seminars can be found on our webpage.

Follow the links below:

• Dr Lisa Browning about a recent survey of Prostate Cancer UK supporters.
• Dave Finlay about the impact of digital pathology on her practice.
• Kim Packer about the integration of digital pathology into routine practice.

These are exciting times for Digital and Computational Pathology.

The Future of Digital and Computational Pathology in Prostate Cancer.

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These are exciting times for Digital and Computational Pathology.
Meet the next generation of pathologists and data scientists

Mahmoud Ali, University Hospitals Coventry and Warwickshire NHS Trust

Joining PathLAKE at UHCW, the first centre in the UK to use digital pathology, has been more than a job; it is a turning point in my career as this put me many steps closer to achieving my dream of becoming a well-trained pathologist.

I consider myself fortunate to have had the opportunity to work alongside top-tier professionals on an exciting project involving the use of artificial intelligence to improve patient care. Furthermore, this opportunity has given me a solid foundation for experiencing the benefits of digital pathology which is on the verge of becoming a mainstream option for routine diagnostics.

Joining PathLAKE has not only greatly helped me in obtaining a training number in histopathology but the experience gained in cellular pathology, digital pathology, and artificial intelligence has made me eagerly and confidently look forward to starting my ST5 training in Cambridge this August.

Emily Hero, University Hospitals Coventry and Warwickshire NHS Trust

As a ST2 Histopathology trainee I am passionate about early cancer diagnosis. Involvement with the PathLAKE team during the development of the Large Bowel Biopsy Screening Tool (CoBi) has been an exciting experience.

Working as a large team including pathologists and computer scientists has developed my knowledge of gastrointestinal pathology and highlighted the future of digital and computational pathology.

Annotating digital images of large bowel biopsy slides has enhanced my ability to recognize normal biopsies along with the different and sometimes subtle microscopic appearances of cancer and inflammatory conditions.

This continues to help me as a Histopathology trainee at both University Hospitals Coventry & Warwickshire and in the East Midlands’s south deanery at the University Hospitals of Leicester.

Ismail Abdelaziz, University of Nottingham

My name is Ismail Abdelaziz, a qualified medical doctor, and a pathologist. I started my career in the UK as a PhD student under the supervision of Professor Emad Rakha, who has had a magnificent role in reshaping my career.

Throughout my PhD, I have had the opportunity to develop myself as an academic pathologist working in the field of cancer research. I gained experience in a variety of aspects including student supervision, teaching, research methodology, data analytics, grant writing and translating scientific research into mock-up concepts for high impact factor journals.

I gained more confidence and my teamwork skills started to flourish. This enabled me to further pursue my career following the successful completion of my PhD. I was successful in my application to work as a Research Fellow at the University of Nottingham where my ambition began to grow. I was inspired by digital pathology and how machines can help pathologists in their day-to-day practice.

I joined the digital pathology team funded by PathLAKE, with the main aim to develop a robust algorithm to help identify which ER+/HER2- breast cancer patients would most benefit from new treatments. Furthermore, I started to develop chemotherapy. My experience as a pathologist, and the skills I have developed, have created a rich recipe for a successful team leader. I now lead a team of pathologists and PhD team funded by PathLAKE and PhD trainees.

The team has been very successful in providing the data required for machine learning. We have worked alongside top-tier professionals on an exciting project involving the identification of thousands of digitised images. These annotations, through supervised machine learning, enabled us to identify hundreds of thousands of regions of interest. Overall, the past few years have been very successful in providing the data required for machine learning.

Modesta Jahantabai, University of Warwick

To do research in computational pathology (CPath), two important aims should exist. These are an abundance of well-curated data and an engaged high-performance computing (HPC) workflow. Coming from a developing country with a background of working in the CPath industry, I deeply understand the importance of these two principles.

When I first joined PathLAKE, I could not believe the great wealth of the resources that I had been offered. Furthermore, the privilege of working with a smart group of researchers and pathologists to develop the initiatives that they bring to make PathLAKE the best working place that any researcher in computational pathology could wish for.

We were delighted to have Professor Joe Martin open the conference. Following an excellent presentation on AI and digital pathology by Professor Nasir Rajpoot, the morning sessions provided an insight into the delivery and results of the consortium’s exemplar projects. These projects reflect the demand for AI-driven diagnostics to deliver improved patient outcomes, through advanced diagnostics and personalized medicine.

The afternoon kicked off with a fantastic keynote talk by Dr Claire Bloomfield, followed by Professor Andy Hardie (CEO of UCHW NHS Trust) who spoke on a Digital and Data driven NHS. The challenges and opportunities in developing from prototype systems, the ethics around data sharing and a panel discussion on the future of the Digital and Data driven NHS.

PathLAKE Showcase Conference

In June, the PathLAKE team were delighted to host a free face-to-face showcase conference at the Royal College of Pathologists in London to demonstrate the achievements and impact of the project – and look ahead to what’s next.

Professor David Snedal: “This was an important event for PathLAKE and allowed us to showcase some of the work we’ve been engaged in over the project. We reached a wide range of key stakeholders in the audience that attended on the day. We’ve had overwhelmingly positive feedback which has generated follow up meetings. The Royal College of Pathologists was a good venue and lent itself very well to this style of workshop.”

Professor Jason Swindell: “The whole team enjoyed the meeting and the chance to interact with the PathLAKE community. Beyond putting names to faces, seeing examples of digital pathology data challenges and solutions was very valuable, especially for some of our newer team members. We really appreciate the opportunity our sponsors – AstraZeneca, India Labs, GlaxoSmithKline, Laughon, Dından, Eqhealth and Barts - for supporting the conference.”

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