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Reflections from MIE 2025: AI, Data, and the Future of Healthcare

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Attending Medical Informatics Europe (MIE) 2025 in Glasgow was an incredible opportunity to build on the foundation I gained during my Health Informatics programme at Newcastle University back in 2020. For three days, I immersed myself in cutting-edge discussions and connected with fellow enthusiasts, all while artificial intelligence (AI) dominated the conversation. A few key themes stood out, which I will explore below!

As a self-proclaimed tech geek, I'm always excited about emerging innovations. But my day job in the NHS quickly grounds me in reality. Before we leap into AI-driven utopias, we need to get the basics right: electronic patient records (EPRs) that don't crash daily, or—my personal nemesis—printing from the right tray on the right paper at the right time. Over a decade in the NHS, and I still resort to a low-tech fix: manually opening the tray every time I print. (Yes, IT support knows 😅)

This struggle mirrors a bigger issue in AI: garbage in, garbage out. To harness AI's potential, we need high-quality data. But how do we train clinicians to capture, record, and code data accurately? And how do we address biases in datasets? Take retinal imaging: models trained on ethnically diverse datasets improve diagnostic accuracy for conditions like diabetic retinopathy. Similarly, a US study of mammograms found that an FDA-approved AI algorithm had higher false-positive rates based on race and age. These examples highlight why collecting ethnicity data matters, not just for research, but for personalised patient care.

Day 1: Public Perceptions of AI in Healthcare

Sarah Negash's survey of the German population revealed that people are generally open to AI in medicine, but only if they're tech-savvy. A major limitation? The survey was conducted online, excluding those without digital access. This skews results, as participants were tech users and may have already had some exposure to AI. The takeaway? Patient perspectives are crucial for successful AI implementation.

Later, I had a fascinating chat with Professor Lesley Anderson about incomplete health data, such as missing ethnicity fields in NHS records. This isn't just an AI problem; it affects treatment decisions. Imagine a phone consultation with "John Smith," whose ethnicity isn't recorded. If he's Afro-Caribbean, he might be prescribed a less effective blood pressure medication.

This underscores the need for better training. Medical students must learn to code data accurately at the point of care. In systems like the US, where billing depends on coding, clinicians are more meticulous. But in the NHS, coding often feels like an afterthought—hence, hospitals employ teams to retrospectively correct records.

Day 2: Training Tomorrow's Doctors for an AI-Driven World

A workshop led by Professor Kaija Saranto asked: *What should we teach med students about AI and data science?* Some argued the curriculum is already overstuffed, but I countered: students are already using AI in their daily lives.

Tomorrow's doctors will decide which AI tools to adopt. They need skills to critically appraise these tools, just like they evaluate research papers. Key questions:

- How does it work?
- What biases exist?
- What harm could arise from errors?
- Does it fit clinical workflows?

We also discussed Explainable AI (XAI)—the push for transparency in AI decisions. Clinicians are (rightly) wary of "black-box" tools. Another concern? Deskilling. For instance, relying on an AI scribe might erode a clinician's ability to summarise cases. The solution? Master the skill first, then delegate to AI for efficiency.

And what about the human touch? Take radiologists: their work already involves minimal patient contact. If AI becomes the "second radiologist," will job satisfaction plummet further?

The Bigger Picture: Can Medical Training Keep Up?

Medical knowledge is exploding—some say it doubles every 73 days. Yet curricula remain static. My father dissected cadavers in med school; I learned from prosections; some schools have abandoned anatomy labs altogether. Change is inevitable, but how do we integrate AI training without sacrificing fundamentals?

The UK is slowly adapting. This year's GMC survey included questions on AI use and training. Less-than-full-time (LTFT) training is more accessible. But we need flexible pathways to nurture tech-savvy clinicians. Is it time for Modernising Medical Careers (MMC) 2.0? The original 2005 reforms aimed to streamline training but inadvertently made it rigid. A revamp could foster a dynamic, tech-enabled workforce. This principle extends to the workforce at large, including non-clinical staff.

Key Takeaways & Future Thoughts

1. **Data quality is non-negotiable.** AI is only as good as the data it's fed—diverse, accurate datasets are essential to prevent bias.
2. **Patients must be part of the conversation.** Excluding digitally disadvantaged groups risks widening health inequalities.
3. **Medical education needs an overhaul.** Tomorrow's doctors must be critical appraisers of AI, not passive users.
4. **Balance innovation with human skills.** AI should augment—not replace—clinical judgment and empathy.
5. **Flexibility in training is key.** Rigid systems will fail to prepare doctors for a rapidly evolving digital landscape.

MIE 2025 left me buzzing with ideas and questions. How do *you* think AI should reshape healthcare? Let's keep the discussion going!