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A pedagogy of uncertainty: opening up fissures in the competence paradigm

There is an uneasy relationship between certainty and uncertainty in medical education. Learning to embrace uncertainty is supposedly medicine’s ‘signature pedagogy’ (Shulman); yet contemporary medical education is often closer to a pedagogy of certainty. To improve patient safety, educators train and test standardised competences under carefully controlled conditions. They boil even uncertainty itself down to epistemic (cognitive), moral (ethical), and metaphysical issues (Tonelli) that can be taught and tested reliably out of context. This is self-defeating because clinical contexts create much of the uncertainty that causes harm. (EQUIP) Prescribing insulin for hospitalised patients is positioned at this fault line in the competence paradigm. It is: uncertain because insulin has a narrow therapeutic window; mostly delegated to Foundation Trainees (FTs); very susceptible to context effects; and it causes widespread, severe harm, and shows no signs of improving. (NADIA) My research questions were: what clinical uncertainties confront FTs, and how can we address these?

Setting: Northern Ireland (NI) since 2016 (ongoing)
Study design: Design-based research, guided by implementation science,(Damschroder) involving the Health Board, Deanery, all five Trusts, both Universities, and the training programmes for FTs and medical students
Intervention design: I designed a pedagogy of uncertainty by identifying best theory and evidence about: clinical uncertainty;(eg Tonelli) causes of errors;(Reason) ways of implementing change;(Damschroder) and improving prescribing behaviour.(Michie) We progressively developed and implemented: 1) A reflective tool to help FTs: identify the unique pathophysiological and social circumstances that confront them; reflect in action, recognise the limitations of their current capability; recruit help when needed; plan ahead; follow through the consequences of their actions; and learn by reflecting on action. 2) A case-based discussion (CBD) format in which a nurse, doctor, pharmacist, or person with diabetes empowers an FT to reflect on a prescribing experience; 3) Faculty development procedures. This programme of change is described at (MITS site)
Evaluation: Qualitative analysis of 113 trainees’ accounts of challenging experiences of prescribing insulin;(MITS report) and 255 FTs’ free text responses to an evaluation questionnaire. (Lee)

The dilemmas discussed in CBDs were much more often social than ethical ones or lack of knowledge as taught and tested by medical schools. The deficit that caused uncertainty was of a contextualised and social type of knowledge. Typically, multiple social factors interacted in complex ways to cause uncertainty. These factors included: how to resolve tensions with nurses; whether to call for help from busy peers and aloof seniors; how to involve patients; how to get practical information. These dilemmas engendered strong emotions by challenging FTs' professional identities.

As we have reported (Lee et al), free text responses showed a widespread lack of social support, which resulted in an unreflective type of experiential learning. Participants learned to respond to indeterminate situations by ‘getting by’ rather than responding thoughtfully to uncertainty.

Like the EQUIP study,(ref) it was social uncertainty that FTs found most challenging. Unlike the decontextualized problems that medical schools teach and test, indeterminate problems emerging from clinical contexts caused uncertainty and potential or actual harm. Uncertainty was unavoidable and there was rarely a ‘right’ answer. There has been avid uptake of this disruptive pedagogy by the programmes in NI that educate all insulin prescribers (including pharmacists, nurses, and dentists). It has been awarded several national prizes and endorsed by international audiences. People’s appetite for a social pedagogy that challenges the individualism of competence-based education is evidence of paradigmatic fissuring. My pedagogy prototypes an alternative paradigm.