Creating a Culture of Evidence Based Clinical Practice

transcribed plenary speech of
Professor Stephen Chapman
School of Pharmacy / Medicines Optimisation & Enterprise, University of Keele, Staffordshire, UK
s.r.chapman@keele@ac.uk

I. INTRODUCTION

The profession of pharmacy is changing rapidly, with new career opportunities arising from team working with doctors and nurses, both in the community and in hospitals.

This paper will show how, undergraduate and postgraduate education can link with continuous professional development (lifelong learning) to create an evidence based culture within the profession, and how modern technology, such as computerised decision support tools and 'Clinical Avatars' can aid implementation of best evidence and benefit the patient.

A. Evidence based practice in pharmacy

The process of evidence-based practice can be outlined by a 5-step model:

1. Form a specific clinical question
2. Search for the best evidence
3. Critically appraise evidence for validity, clinical relevance and applicability
4. Integrate the evidence with the patients clinical situation
5. Evaluate the results

In terms of national policy, this means a central body can take responsibility for critically appraising evidence and issuing health technology assessments and clinical guidance. One such body is the National Institute of Healthcare and Clinical Excellence (NICE) in the UK. This is only the first step –to be effective the evidence for best practice needs to be implemented, which requires an implementation strategy that cascades from national to regional to local level, so ultimately individual patient care is improved.

This is not to say that individual pharmacists should not be trained in and thoroughly understand how to appraise evidence –that should be a "given" in their undergraduate training and refined in postgraduate clinical courses. However, in clinical practice thereis rarely sufficient timefor individualclinicians to appraise all the evidence themselves –hence the need for that credible central body to be the "trusted source" they can call on for evidence summaries.

It is important to note that evidence based practice is not a "recipe book" of best practice –the evidence must always be considered in the context of the individual patient –to quote Dr David Haslam of NICE –it should be "guidelines not tramlines". Apart from biological variation, we must also take account of patient's preferences and use the evidence as a basis for a concordant consultation, more likely to lead to the patient adhering to their treatment, should they choose to accept it.

This applies equally to practitioners themselves –both pharmacists and doctors must be careful not to slip into whatDaniel Kahneman called Type 1, or intuitive decision making, rather have the self-discipline to base their decision on objective and structured evidence –Type 2 decision making. Thus training in decision making is as important as the evidence itself.

This where technology can help –computerised prescribing decision support tools can help guide prescribers to evidence based decisions –and clinical avatars give both students and qualified health care professionals chance to practice.

B. Clinical simulation and 3D technology to train pharmacists –"clinical avatars/ virtual patients"

Globally, the role of the pharmacist is evolving. Pharmacist are moving away from the traditional supply and dispensing function, now increasingly done by technicians or robots and towards a more clinical, patient facing role and working in healthcare teams as the expert on medicines. In some countries, for example, the UK, pharmacists have prescribing rights, in both hospitals and primary care. In primary care, pharmacists are starting to run, and prescribe for, long term condition clinics.

These new roles require extra clinical training, for both undergraduates and for qualified pharmacists wanting to keep up to date and improve their communication and clinical skills and their medical decision making. This presents two key challenges; standardisation and access. In order to be equitable, a simulation needs to be the same for all those who are being assessed, and actors or lecturers playing the role of patients, or even patients

themselves get tired when working with several students –so the first student is unlikely to get the same experience as the last. Similarly, it is not always possible to guarantee a patient with a certain condition will be available for students to work with. To overcome these issues Keele University's School of Pharmacy developed three dimensional interactive computer generated characters known as avatars.

The clinical content is generated by clinical academics, and then worked into scenarios by a team of computer programmers and graphic animators. The resulting avatars can be accessed on a PC, tablet or smartphone or in a bespoke room such as the KAVE (Keele Active Virtual Environment) animated patients on the computer.

The avatars are based on Markov models, so are not linear.They respond to students' questions verballythus mimicking a real life conversation. The avatar doesn't guide the student and it doesn't tell the student if he/she get things wrong so there are multiple possible outcomes from the conversation –including making the patient ill!

At the end of the dialogue between the student and the virtual patient, the student gets constructivefeedback from the avatar saying what they got right and what could be improved on, then the student can have another go. Our evaluation of the technology has shown that students engage readily with the avatars and prefer the avatar to paper based learning.

II. CONCLUSION

Pharmacists are moving from the supply and dispensing of medicines to becoming clinical experts on medicines within a healthcare team. This requires extra training on medicines management, communicating with clients, patient care and education. To help develop these necessary skills as a pharmacist, new technology has been developed for both trainees and qualified health care professionals. In this way, an era where clinical evidence is growing exponentially, we can help ensure the pharmacist's emerging role as a clinical expert on medicinesis grounded in solid evidence-based practice.