Appraising evidence — a core skill at all levels of practice

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Managing patient care in the NHS is an increasingly complex challenge. Health care professionals are faced with making decisions about a patient's care based on evidence from studies that may not directly relate to the individual situation, while simultaneously accounting for cost and safety. Such decision making is further complicated when the patient has an uncommon pathology for which little therapeutic evidence exists, or when the patient has comorbidities which require intensive risk management.

The fundamental aim is to ensure patient care is maximized and that the therapy is current and suited to individual requirements, yet is also safe and cost-effective. It is no longer sufficient to manage one patient in isolation; the NHS has to manage the entire patient population within a restricted budget, therefore tough decisions must be made.

Decision making in medicines management is further challenged with the continuous discovery and development of new drugs and emerging technologies, for example, the use of stem cells and gene therapy.

To live up to the title of drug expert, pharmacists have to be able to interpret clinical data that is presented in peer-reviewed papers and publications, whether the evidence is equivocal or not.

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To appraise evidence critically requires a professional to evaluate and interpret the study in addition to being able to contextualise the data within their own situation — not simply to follow a set of rules on what constitutes a good paper. Understanding data and its implications for practice means more than understanding statistical significance; a pharmacist has to consider importance, relevance, feasibility and utility of the findings in practice together with the complex issues of clinical impact and cost-effectiveness.

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This is made even more difficult in the case of rare diseases where there are often not enough patients to test the effectiveness of a treatment in a highly-powered, double blinded, randomised placebo controlled trial. However, patients still require access to therapy and a decision has to be made that is clear and transparent. Again, a professional requires advanced skills to inform such decision making and not simply disregard a study if its design is not a randomised controlled trial or does not provide a definitive answer.

One example requiring advanced appraisal skills is the infamous "MMR and autism" study.[1] This study was widely publicised in the media and suggested an association between measles-containing vaccines and inflammatory bowel disease (that was not confirmed in subsequent studies). Yet, probably because the paper was published in a highly esteemed journal and despite the fact the authors called for more work to verify the proposed association, the media attention the paper received had an adverse effect on immunisation uptake. Many children are now at risk of measles, mumps and rubella and the immediate possibility of measles eradication has been delayed. Because of the media attention, many of us have a perspective on the paper, yet few pharmacists (in my experience) have actually read the original study, appraised the evidence or can usefully discuss the limitations of extrapolating from regression lines or defend an association as cause and effect.

Other examples of "not quite" evidence-based practice are on the increase; where patient populations are small, disease states are severe and non-treatment would almost certainly result in mortality. One example is the use of antifungal agents following bone marrow transplantation. In such situations, patient data has to be collated on a case-by-case basis in order to underpin best practice, to inform the evidence base and to reassure health care commissioners that such drugs are cost-effective. Pharmacists are the key personnel for the evaluation of such data; appraising the existing evidence and contributing to the evidence base with real life examples. This it is neither easy nor clear cut.

Already, advanced level pharmacist practitioners have established themselves in the health care team as the drug expert. They routinely find themselves in key decision-making positions and are key figures on drugs and therapeutics committees and the National Institute for Health and Clinical Excellence. These roles require advanced critical appraisal skills. The demand for these appraisal skills, and the resulting informed advisory roles, will increase as we see consolidation of commissioning and tendering, with resultant higher expectations of primary care trust pharmacists and community pharmacists.

The ability to appraise evidence is a core skill required from undergraduate level to consultant pharmacist. Using this skill to inform difficult decisions underpins excellent and mastery levels of practice and establishes the consultant pharmacist as a leader in the evaluation and development of drugs for the benefit of patients.

Reference

1. Wakefield AJ, Murch SH, Anthony A, Linnell J, Casson DM, Malik M. Ileal-lymphoid-nodular hyperplasia, non-specific colitis and pervasive developmental disorder in children. The Lancet 1998;351:637–41.

Analysing and interpreting data is the subject of this month's *Hospital Pharmacist* special feature (p39–51).