Checking for update…living systematic reviews and clinical practice guidelines in the BJD

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Since the widespread adoption of mobile computing devices and smartphones, most of us are familiar with and expect software updates in technology every few months. The pace of knowledge transfer into clinical practice in medicine is, however, comparatively slow. It is estimated that it takes 17 years on average for research evidence to reach clinical practice[1], preventing clinicians and patients from accessing improvements in medical care in 'real time'.

Evidence based medicine is defined as the conscientious, explicit and judicious use of current best evidence in making decisions about care of individuals patients [2]. It integrates clinical expertise with best available evidence from systematic searches and represents the bedrock method on which clinicians now update their practice. However, both systematic reviews (SRs) and clinical practice guidelines take considerable time and resource to produce and therefore literature searches may be out of date even at the point of publication, with the currency of SRs and guidelines increasingly challenged by the greater volume and speed at which evidence is now generated. An out-of-date SR or guideline risks being inaccurate and undermines its relevance for clinical practice[3].

A solution is to borrow a leaf out of the technology sector's book and use a continual approach to review updating, a method termed "living systematic review (LSR)"[3]. The Living Systematic Review Network, brought together to support the Cochrane Collaboration's move towards LSRs, published a 4-part series of papers to introduce this method[3-6], and we encourage all potential authors to use this reference resource. LSRs are continually updated to incorporate relevant new evidence, with the LSR Network suggesting that new information should be incorporated within 6 months of it becoming available[3]. In practice, this means that most LSRs run searches monthly[3].

LSRs differ from regular updates of published reviews by having an *a priori* protocol and commitment to the frequency of searches and review updating process. The LSR Network outline three reasons that an author group would choose to pursue a LSR instead of a regular SR: 1. The topic is a priority for decision-making; 2. Current certainty in the existing evidence is low; 3. The topic is in a rapidly changing field. The LSR Network highlights several innovations that may help teams conduct LSRs, e.g. crowdsourcing for team formation for manual searches[4]. They also draw attention to methodological considerations to account for multiple testing and inflated type I error in repeated meta-analyses[5].

Living guidelines take the final step towards rapid knowledge transfer into practice. Living practice guidelines, in contrast to regular updates of guidelines, allow for updating of individual recommendations as soon as relevant new evidence is available[6]. Akin to a version update for a specific security breach in software, this is more efficient and targeted

than traditional guideline updating methods. No effort is wasted in updating recommendations where there is no relevant new evidence and timely updates of recommendations in response to new evidence preserves the currency and validity of the overall guideline. The LSR Network identified four main elements to produce living guideline recommendations: 1. An LSR to update recommendations with new evidence; 2. Living summary tables providing the link from evidence to recommendations to inform guideline panels; 3. Living guideline panels, which recruit members ahead of time and who commit to forming a panel at short notice; and 4. Living peer review process, which is similar to the living guideline panel where peer reviewers are recruited ahead of time. These elements do introduce challenges of continuity of personnel and establishing an ideal threshold of evidence needed for changing recommendations[6].

The emergence of COVID-19 presented the quintessential medical conundrum which LSR methods were designed to answer, and these innovations have been invaluable since the start of the pandemic. Examples include World Health Organisation living guidelines on drugs to treat[7,8] COVID-19 and Cochrane collaboration LSRs on COVID-19 treatments e.g. convalescent plasma[9,10]. In dermatology, there are current LSRs in the rapidly changing fields of treatments for atopic eczema[11] and psoriasis[12,13], with a living psoriasis guideline[14,15] based partly on this LSR.

The BJD welcomes LSR and living guideline submissions and we encourage authorship groups to contact the BJD prior to submission. We will arrange peer review of both the protocol and the SR to assess the proposed search timeframes, the decision framework for inclusion of evidence, and the statistical methods used for updating of meta-analyses. The method of updating LSR and living guideline publication will depend on whether new evidence changes the certainty of recommendations.

Living SRs and guidelines capitalise on digital access to information by collating and appraising the most up-to-date evidence and treatment recommendations for availability at our fingertips. By embracing these innovations, the BJD will enhance its provision of cutting-edge SR evidence and guideline recommendations to ensure that rapid improvements in medical care are highlighted for the benefit of clinicians and their patients.

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