

Clinical Decision Support Systems and Clinical Practice Guidelines: An emerging field of digital healthcare

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Abstract

Introduction: In 50 years, 39,305 articles have been published reflecting growth of healthcare information and technology. The result is over 14,000 new clinical practice guidelines since 2010 (PubMed). Clinical practice guidelines are by their nature dynamic and a challenge for physicians and providers. According to the Institute of Medicine, national guidelines set standards of care. Using clinical practice guidelines reduces mortality in numerous studies. Not employing clinical practice guidelines results in worse outcomes. Furthermore, difficulty in implementing clinical practice guidelines is well described across many fields. Sharif et al. reported the use of guideline adherence as very low. For instance, the use of numerical rating scores for pain management, as recommended in national clinical practice guidelines, among orthopedic physicians was less than 50%. Interestingly, over 76% of physicians in this one study expressed enthusiasm for guideline education and use.

Proposal: One approach to improving guideline adherence is to make it available at the point of care. This was investigated recently with the use of computer device support systems (CDSS) with excellent results. The authors reported that use of clinical practice guidelines improved when accessible at the point of care and clinical decision-making modules assisted clinicians with implementation of the guidelines. This CDSS integrated patient characteristics and guidelines at the point of care. And this support system aided clinicians in providing high-quality evidence-based patient care.

SmartDocsapp, a CDSS, is a new digital technology which provides point of care patient management for pain medicine physicians. The application creates management pathways by employing validated clinical practice guidelines (CPG) with a multimedia educational platform. The software incorporates evidenced based medicine into the daily practice of pain specialists. This is essential because implementation of CPGs is difficult in pain management and guideline adherence is often less than 50%, resulting in worse outcomes. CDSS SmartDocsapp technology can and should be part of holistic digital healthcare in pain medicine with evidenced based point of care management and physician education. SmartDocsapps have been constructed for pain management, palliative care, rural outreach programs, medically complex childcare, telemedicine encounters and tertiary critical care medicine. Future applications for pain specialists include adjuncts to EMRs, patient wearable devices for physiologic monitoring and real time remote care.

(Notes)

The references are available on reasonable request. Please contact the authors.

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Abstract

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