# Clinical Decision Support Improves Decision-Making and Leads to Better Outcomes

# Apoio à Decisão Clínica Melhora a Tomada de Decisão e Leva a Melhores Resultados

**Keywords:** Decision Making; Decision Support Systems, Clinical; Outcome Assessment (Health Care)

Palavras-chave: Avaliação de Resultados (Assistência Médica); Sistemas de Apoio a Decisões Clínicas; Tomada de Decisão

The quality of the decisions made between healthcare providers and patients has a critical influence on healthcare outcomes. Poor decisions can lead to ineffective care and potential harm. Decisions that are within the boundaries of accepted clinical practice but not optimized around the available evidence can contribute substantially to unwanted care variability.

Clinical decisions can be improved when providers (and patients) have easy access to contemporary, evidence-based knowledge to help guide them. One such resource, UpToDate®, is used by more than 1.7 million healthcare professionals globally. UpToDate® is a knowledge database accessible on the web, within electronic medical record systems or on mobile devices. It is comprised of original, synoptic topic reviews including evidence-based

recommendations in adult internal medicine and its subspecialties, pediatrics, obstetrics and gynecology, neurology, anesthesia, hospital medicine, psychiatry, emergency medicine, and general surgery.

The content is written by more than 6500 clinicians who are recruited for their expertise in patient care and knowledge of specific clinical areas. It is curated by more than 50 deputy editor physicians (also specialists in their respective areas), who are trained in medical writing and evidence-based medicine. All content is extensively peer reviewed and is updated continuously through extensive literature surveillance including hand-searching of journals.

Many studies have evaluated the impact of UpToDate® on medical education, decision-making and healthcare outcomes. These have shown that UpToDate® has significant benefits on knowledge acquisition,¹ leads to changes in clinical decisions (from 18% to 37% of the times in which it is consulted),²,³ has been associated with reduced diagnostic errors,⁴ and improved hospital outcomes including patient safety, quality, efficiency and mortality.⁵ UpToDate users from Portugal reported several benefits in a 2018 survey conducted by Wolters Kluwer, the owner of UpToDate® (Fig. 1).

Effective decision making requires that clinicians have access to contemporary, evidence-based knowledge when they need it. Such tools can improve decision making and thereby healthcare outcomes.



Figure 1 – 2018 UpToDate Subscriber Survey (n = 89 respondents from Portugal, response rate 14.3%). Percent agreeing or strongly agreeing with each statement.

### **CONFLICT OF INTERESTS**

Peter A. Bonis is an employee of Wolters Kluwer Health, the owners of UpToDate.

### **REFERENCES**

- McDonald FS, Zeger SL, Kolars JC. Factors associated with medical knowledge acquisition during internal medicine residency. J Gen Intern Med. 2007;22:962–8.
- 2. Lucas BP, Evans AT, Reilly BM, Khodakov YV, Perumal K, Rohr LG, et al.
- The impact of evidence on physicians' inpatient treatment decisions. J Gen Intern Med. 2004:19:402–9.
- Phua J, See KC, Khalizah HJ, Low SP, Lim TK. Utility of the electronic information resource UpToDate for clinical decision-making at bedside rounds. Singapore Med J. 2012;53:116–20.
- Shimizu T, Nemoto T, Tokuda Y. Effectiveness of a clinical knowledge support system for reducing diagnostic errors in outpatient care in Japan: a retrospective study. Int J Med Inform. 2018;109:1–4.
- Isaac T, Zheng J, Jha A. Use of UpToDate and outcomes in US hospitals. J Hosp Med. 2012;7:85–90.

#### Peter A. BONIS⊠1,2

- 1. Chief Medical Officer. Division of Clinical Effectiveness. Wolters Kluwer. Aldeia de Juzo. Portugal.
- 2. Adjunct Professor of Medicine. School of Medicine. Tufts University. Boston. United States of America.
- ☑ Autor correspondente: Peter Bonis. peter.bonis@wolterskluwer.com

