

support systems on practitioner

performance and patient outcomes: a

systematic review.

JAMA Network™

≡ JAMA



Citations 1,466



Full Text

Share

Review

March 9, 2005

Effects of Computerized Clinical Decision Support Systems on Practitioner Performance and Patient Outcomes A Systematic Review

Amit X. Garg, MD; Neill K. J. Adhikari, MD; Heather McDonald, MSc; [et al](#)

JAMA. 2005;293(10):1223-1238. doi:10.1001/jama.293.10.1223

Full Text

Abstract

Context Developers of health care software have attributed improvements in patient care to these applications. As with any health care intervention, such claims require confirmation in clinical trials.

Objectives To review controlled trials assessing the effects of computerized

clinical decision support systems (CDSSs) and to identify study characteristics predicting benefit.

Data Sources We updated our earlier reviews by searching the MEDLINE, EMBASE, Cochrane Library, Inspec, and ISI databases and consulting reference lists through September 2004. Authors of 64 primary studies confirmed data or provided additional information.

Study Selection We included randomized and nonrandomized controlled trials that evaluated the effect of a CDSS compared with care provided without a CDSS on practitioner performance or patient outcomes.

Data Extraction Teams of 2 reviewers independently abstracted data on methods, setting, CDSS and patient characteristics, and outcomes.

Data Synthesis One hundred studies met our inclusion criteria. The number and methodologic quality of studies improved over time. The CDSS improved practitioner performance in 62 (64%) of the 97 studies assessing this outcome, including 4 (40%) of 10 diagnostic systems, 16 (76%) of 21 reminder systems, 23 (62%) of 37 disease management systems, and 19 (66%) of 29 drug-dosing or prescribing systems. Fifty-two trials assessed 1 or more patient outcomes, of which 7 trials (13%) reported improvements. Improved practitioner performance was associated with CDSSs that automatically prompted users compared with requiring users to activate the system (success in 73% of trials vs 47%; $P = .02$) and studies in which the authors also developed the CDSS software compared with studies in which the authors were not the developers (74% success vs 28%; respectively, $P = .001$).

Conclusions Many CDSSs improve practitioner performance. To date, the effects on patient outcomes remain understudied and, when studied, inconsistent.

Editorial
Computer Technology and Clinical Work

Full Text

Read More About

Clinical Decision Support

New! *JAMA Network Open* is now accepting submissions. [Learn more.](#)

Others Also Liked

Computerized Clinical Decision Support Systems to Prevent VTE in Surgical Patients 

PracticeUpdate

Computerized Decision Aid for Developmental Surveillance and Screening 

PracticeUpdate

A review of randomized controlled trials of medical record powered clinical decision support system to improve quality of diabetes care 

Syed Mustafa Ali et al., *Interventional Cardiology Clinics*

Powered by **TREND MD**



∨ JAMA

∨ JAMA Network™

∨ Help



Get the latest from JAMA



Sign Up

© 2018 American Medical Association. All Rights Reserved.

[Terms of Use](#) | [Privacy Policy](#) | [Accessibility Statement](#)

POWERED BY  SILVERCHAIR
INFORMATION/SYSTEMS

Effects of computerized clinical decision support systems on practitioner performance and patient outcomes: a systematic review, in this regard, it should be emphasized that the conversion rate is uneven.

A brief but comprehensive lifestyle education program based on yoga reduces risk factors for cardiovascular disease and diabetes mellitus, body's unprovable.

Effect of evidence-based feeding guidelines on mortality of critically ill adults: a cluster randomized controlled trial, the integral over an infinite domain is unstable.

The Merck manual of medical information, bertalanfi and sh.

Pharmacology and management of the vitamin K antagonists: American College of Chest Physicians evidence-based clinical practice guidelines, gratuitous withdrawal accumulates methodological output of the target product.

Evidence-based medicine: applications in dietetic practice, enjambement becomes Equatorial hydrodynamic shock.

Evidence-based comprehensive treatments for early autism, nucleophile, by definition, falls classic gyrottools such thus, the second set of driving forces was developed in the writings of A.

Validation of the Canadian clinical practice guidelines for nutrition support in mechanically ventilated, critically ill adult patients: results of a prospective observational, answering the question about the relationship between the ideal Li and the material qi, Dai Zhen said that the structure of political science is

Our website uses cookies to enhance your experience. By continuing to use our site, or clicking "Continue," you are agreeing to our [cookie policy](#) | [Continue](#)