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Review

Dashboards for improving patient care: Review of the literature

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ABSTRACT

Aim: This review aimed to provide a comprehensive overview of the current state of evidence for the use of clinical and quality dashboards in health care environments.
Methods: A literature search was performed for the dates 1996–2012 on CINAHL, Medline, Embase, Cochrane Library, PsychInfo, Science Direct and ACM Digital Library. A citation search and a hand search of relevant papers were also conducted.
Results: One hundred and twenty two full text papers were retrieved of which 11 were included in the review. There was considerable heterogeneity in implementation setting, dashboard users and indicators used. There was evidence that in contexts where dashboards were easily accessible to clinicians (such as in the form of a screen saver) their use was associated with improved care processes and patient outcomes.
Conclusion: There is some evidence that implementing clinical and/or quality dashboards that provide immediate access to information for clinicians can improve adherence to

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quality guidelines and may help improve patient outcomes. However, further high quality detailed research studies need to be conducted to obtain evidence of their efficacy and establish guidelines for their design.

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Contents

1. Introduction

Dashboards are a tool developed in the business sector, where they were initially introduced to summarize and integrate key performance information across an organization into a visual display as a way of informing operational decision making [1]. Originally derived from the concept of balanced scorecards (which are internally focused and look at current organizational performance), quality dashboards provide information on standardized performance metrics at a unit or organizational level to leaders, to assist with operational decision making [1]. A clinical dashboard is designed to "provide clinicians with the relevant and timely information they need to inform daily decisions that improve the quality of patient care. It enables easy access to multiple sources of data being captured locally, in a visual, concise and usable format" [2]. The key characteristics of quality and clinical dashboards, which separate them from computerized decision support systems (CDSS) or data provided by an electronic medical record (EMR) system include (a) *the provision of summary data on performance measured against metrics (often related to quality of care or productivity*) and (b) *the use of data visualization techniques (such as graphs) to provide feedback to leaders or individual clinicians*. With the introduction of Health Information Technology (HIT) the feedback provided by quality and clinical dashboards can be as near to 'real time' as possible; this is in contrast to more traditional methods of feedback on performance which often give data back to a provider or group days or weeks after an event has taken place [3].

Increasingly, health care organizations are introducing dashboards as a way of measuring and improving the quality of care provided by their organizations. For example, in the UK a 'quality dashboard' is being developed by the Department of Health for England and Wales to provide a measure of National Health Service (NHS) Trust (provider)

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