Simple yet Effective in Realising Evidence-Based Practice? The Revival of Flowcharts in Swedish Guidelines for Prescribing Physical Activity

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Abstract Sweden has taken an initiative to incorporate flowcharts into its guidelines for prescribing physical exercise. The expectations of this effort lie in achieving a smooth transition from published guidelines to clinical decision support through a technology-independent methodology that every computer scientist or informatician can relate to.

Keywords. practice guideline, computer-assisted decision making, exercise

Introduction

Clinical practice guidelines (from now on referred to as guidelines) are ‘systematically developed statements to assist physician and patient decisions about appropriate health care for specific circumstances’ and aim to reduce undesirable variations in health care, with expected positive effects on outcomes [1]. One of the problems in achieving wide use of guidelines is that clinicians lack the time to read them and look up their recommendations, while one solution to that challenge is implementing guidelines in computerised decision support systems [2].

However, guidelines are typically published as narrative text, making the job of fully understanding them tedious for medical informaticians, knowledge engineers and health information system developers. More specifically, such narrative content often poses challenges in 1) identifying the correct chronology of activities involved, 2) extracting exact temporal relationships, e.g. words like ‘recent’ are vague, or 3) interpreting the medical connotation of words, e.g. ‘major’ in ‘major stroke’. Such clarifications usually require time-intensive collaborations with clinicians.

Regarding the technical dimension of computerising guidelines, many efforts in medical informatics research have focused on developing and testing guideline representation models, which are languages specialised at creating ‘computer-interpretable guidelines’ [2].
1. Methods

In Sweden there are guidelines for the prescription of physical activity based on various diseases a patient may present with, both for prevention and treatment purposes. A chapter of the guidelines’ book describes a disease and how physical activity can play a role in it, and provides recommendations on prescribing physical activity for patients with that disease according to literature evidence.

The providers of these guidelines have initiated a user-friendliness group (UFG), who have the task of making the next release of the guidelines in 2015 more usable. The UFG are clinically experienced and collaborate tightly with the guideline authors.

To overcome the problems with publishing guidelines merely as narrative text, the UFG has now decided to use flowcharts in the 2015 version. The UFG will add a flowchart in every chapter of the guidelines, along with the narrative text, to make the criteria and actions for prevention and treatment easier to computerise.

2. Results

The UFG expects that, using this basic and rather cheap (since it does not require high competences in learning specialised guideline representation languages) method for algorithm representation, it can help in reaching a high deployment rate of its guidelines as computerised decision support. These flowcharts, being medically valid, simple and technology-independent, could easily be converted to a computer program by any electronic health record vendor or health information system developer, and are thus expected to reduce barriers to guideline deployment.

3. Discussion

Some guideline authoring organisations have already incorporated flowcharts into their guidelines, but it seems as if they are rather the exception than the norm. Will the Swedish exercise guideline flowcharts prove successful in increasing efficient guideline permeation in clinical practice? Or do flowcharts lack too many of the features of specialised guideline representation models?

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References


2 http://www.fyss.se/fyss-in-english/