Development of a Novel, Multilayered Presentation Format for Clinical Practice Guidelines

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VIDEO

BACKGROUND: Bridging the gap between clinical research and everyday health-care practice requires effective communication strategies. To address current shortcomings in conveying practice recommendations and supporting evidence, we are creating and testing presentation formats for clinical practice guidelines (CPGs).

METHODS: We carried out multiple cycles of brainstorming and sketching, developing a prototype. Physicians participating in the user testing viewed CPG formats linked to clinical scenarios and engaged in semistructured interviews applying a think-aloud method for exploring important aspects of user experience.

RESULTS: We developed a multilayered presentation format that allows clinicians to successively view more in-depth information. Starting with the recommendations, clinicians can, on demand, access a rationale and a key information section containing statements on quality of the evidence, balance between desirable and undesirable consequences, values and preferences, and resource considerations. We collected feedback from 27 stakeholders and performed user testing with 47 practicing physicians from six countries. Advisory group feedback and user testing of the first version revealed problems with conceptual understanding of underlying CPG methodology, as well as difficulties with the complexity of the layout and content. Extensive revisions made before the second round of user testing resulted in most participants expressing overall satisfaction with the final presentation format.

CONCLUSIONS: We have developed an electronic, multilayered, CPG format that enhances the usability of CPGs for frontline clinicians. We have implemented the format in electronic guideline tools that guideline organizations can now use when authoring and publishing their guidelines.

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ABBREVIATIONS: CPG = clinical practice guideline; DECIDE = Developing and Evaluating Communication Strategies to Support Informed Decisions and Practice Based on Evidence; GRADE = Grading of Recommendations Assessment, Development, and Evaluation; MAGIC = Making Grade the Irresistible Choice

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Portions of this study have been presented in a poster at the 9th Guideline International Network Conference, August 22-25, 2012, Berlin, Germany; the 10th Guideline International Network Conference, August 18-21, 2013, San Francisco, CA; and at the 11th Guideline International Network Conference, August 20-23, 2014, Melbourne, Australia.

Health-care professionals' complex informational needs face constraints of time, multitasking, interruptions, and uncertainty.[1] To ensure successful dissemination and implementation, clinical practice guidelines (CPGs) must be easy to find, understand, and apply at the point of care[2-6]—attributes frequently absent in current CPGs.[7-10] Investigators have begun to address the issue of presentation[2,3,11-14] in particular strategies for improved risk communication.[2,15-20] Nevertheless, evidence to guide effective ways of communicating recommendations remains limited.

The Grading of Recommendations Assessment, Development, and Evaluation (GRADE) working group has developed a widely adopted framework for the development of evidence-based CPGs.[21,22] In 2011, the GRADE working group, realizing the limited evidence addressing optimal presentation formats, launched the Developing and Evaluating Communication Strategies to Support Informed Decisions and Practice Based on Evidence (DECIDE) project, a multinational research endeavor funded by the European Union.[23] The Making Grade the Irresistible Choice (MAGIC) research and innovation program was established in 2010 to facilitate the authoring, dissemination, and updating of trustworthy CPGs.[24,25] This article describes a collaborative effort of the DECIDE project and MAGIC program to develop a transparent, understandable, easy-to-use presentation format for CPGs.

Materials and Methods

The previously published[23] DECIDE methodology includes three phases: (1) strategy development and user testing, (2) evaluation, and (3) testing with real CPGs (Fig 1). This report focuses on the first phase in which we have developed a CPG presentation format through an iterative process of brainstorming and sketching, advisory group feedback, and user testing. We performed user testing with practicing physicians as representatives of health-care professionals that frequently use CPGs.

Selection of CPG Content to Develop the Presentation Formats

We selected recommendations from published CPGs developed using the GRADE framework[26] that were relevant both for primary and secondary care physicians and restructured the content into multilayered presentation formats (Figs 2, 3). For the first round of user testing, we used recommendations addressing aspirin use for the primary prevention of cardiovascular disease and use of anticoagulant therapy in atrial fibrillation.[27,28] For the second round, we revised the scenario on atrial fibrillation and added a recommendation for metformin treatment in type 2 diabetes.[29] For each recommendation, we developed a clinical scenario introducing a decision about therapy (eg, "Should a 68-year-old man with atrial fibrillation and $CHADS_2$ score of 1 use anticoagulation?").

Brainstorming and Sketching of a Prototype Presentation Format

Investigators: The research group included frontline clinicians, CPG developers, clinical epidemiologists, and interface designers with a broad international representation.

Process: A workshop at the start-up meeting of the DECIDE project in 2011 generated a range of new ideas for CPG formats. An iterative process of brainstorming and sketching continued through face-to-face meetings, teleconferences, and e-mail exchanges within the research group.

We used sketching as a way of exploring promising ideas emerging from brainstorming, with the sketches functioning as a prototype. We followed a "mobile first" design approach[30] and tailored the first prototype (Fig 2) to a smartphone screen, as this screen is the smallest platform for guideline viewing and represents the most challenging presentation format. We used Blueprint[31] (Groosoft.com) to create a mock-up of a functioning CPG on a tablet computer.

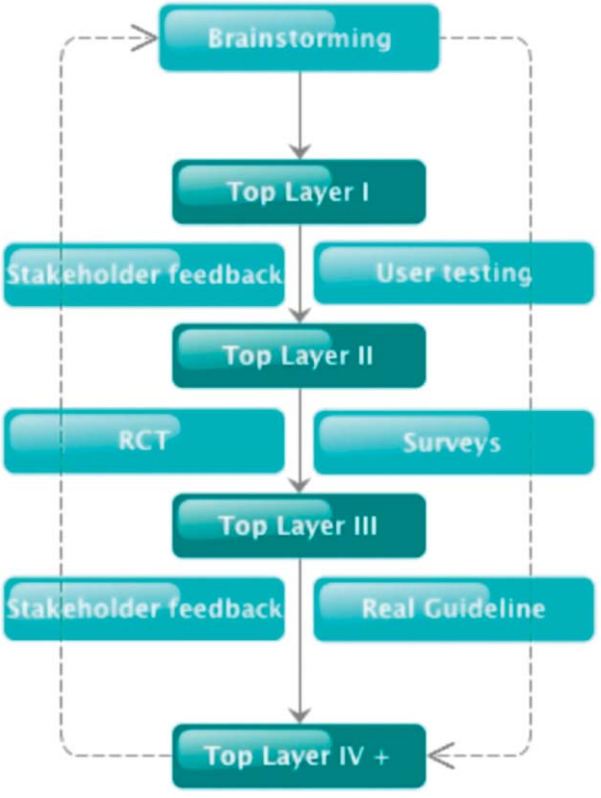

Figure 1 – *Development method of the multilayered presentation format. RCT = randomized controlled trial.*

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