

# Good-quality medical advice on the Internet

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**Pandolfini C, Impicciatore P, Bonati M. Parents on the Web: risks for quality management of cough in children. *Pediatrics* 2000;105:1-8.**

## Research question

What is the quality of information on the Internet regarding home management of children's cough? How useful is a checklist strategy for selecting trustworthy websites?

## Type of article and design

Systematic appraisal of Internet searches for medical advice assessed the quality of this advice using three checklists for technical appraisal, completeness of information, and quality of information.

## Relevance to family physicians

We and our patients are becoming increasingly overwhelmed with medical information. Almost all of us have faced patients with Internet downloads in hand. Patients are increasingly turning to the Internet for medical advice as we struggle to meet all their information needs.<sup>1</sup> This presents an interesting conundrum: on the one hand information from the Internet might increase self-efficacy, reduce patient anxiety and unnecessary medical visits, and possibly allow physicians to focus on more complex issues with patients. On the other hand, it could provide patients with misinformation. Unfortunately, Internet advice is of highly variable quality and is often inaccurate.<sup>2</sup> A checklist for assessing technical aspects of websites has been proposed as a guide to quality of information, but it has not been validated.<sup>3</sup>

Children's respiratory tract infections are a common problem. Because parents can be easily confused about appropriate home treatment,<sup>4,5</sup> many of them likely turn to the Internet as a source of information. Our questions are: what will they find and how good will it be?

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## Overview of study and outcomes

The authors used six search engines from June 1997 to January 1998 with a variety of key words. They screened sites for pertinence and chose those focusing on cough in children.

They developed three checklists for assessing sites. The technical checklist, based on checklists recommended by other researchers, contained six items: author, author credentials, references, relevant links, date modified, and the statement "not a substitute for professional care."<sup>2</sup> Completeness of information was assessed with a checklist derived from a MEDLINE search consisting of four items: background information, causes, pharmacologic treatment, and nonpharmacologic treatment. Quality of information was measured against criteria extracted from World Health Organization (WHO)<sup>5</sup> and American Academy of Pediatrics (AAP)<sup>6</sup> policy statements. This last checklist gave 1 point for correct advice, 1 negative point for incorrect advice, and zero when the topic was not addressed.

## Results

The authors identified 19 webpages containing information about treatment for children's cough. Only three of the 19 sites met four of the six criteria in the technical appraisal checklist. The four categories in the completeness checklist were addressed by three of 19 sites; two sites did not address any of the categories. When the sites were scored for information quality (range -5 to 5), only one site scored above 3, while 10 sites had negative scores. Of the three sites that met four of the technical criteria, only two supplied complete information, and only one had complete, high-quality information, thus meeting all criteria.

## Analysis of methodology

The authors screened their search results for relevant websites and chose appropriate sites at random. Whether parents' searches would yield comparable results is unknown. The authors stated that there was no correlation between sites' technical

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appraisal and the quality or completeness of their information because, of the three sites with high technical scores, only two had complete information, and only one had complete, high-quality information. This statement is not necessarily true, however, because two of the three sites with high technical scores provided complete information while only one of 16 sites of lower technical quality did. Also, the only site scoring 5/5 for quality also had a high technical score.

One limitation stated by the authors is that there are no complete guidelines for treatment of children's cough. In particular, the WHO<sup>5</sup> and AAP<sup>6</sup> differ in their opinions on use of codeine. This makes it difficult to choose a criterion standard for comparison.

### Application to clinical practice

This study confirms that technical quality of medical websites varies and that the information they provide varies in quality and completeness. The lack of a criterion standard for treating children's coughs might make it difficult to measure sites. This, however, is often the reality of medical information, especially in primary care,<sup>2</sup> and the sheer variability of Internet advice argues strongly for some sort of systematic approach to assessing it.

Family physicians cannot realistically meet all the information needs of their patients. The Internet could be a valuable source of information, freeing patients and physicians to discuss more sophisticated treatment issues or reducing patients' need to see physicians for minor problems. As physicians, we need to examine sites with healthy skepticism and become familiar with sites we decide to endorse for our patients.

If physicians are to recommend the Internet to their patients, a simple checklist of things to look for in a reliable website would be extremely helpful. We are not aware of any such checklist that has been appropriately validated.

Pandolfini et al state that "an evaluation of the structure of a web page cannot be used as an indicator of the quality of the content." They later claim that "without comparing content to the best available evidence directly, ... it seems unlikely that any strategy for filtering sites could work." Having evidence-based information on the Internet is an extremely ambitious objective, and considering the small number of sites reviewed in this study, it is probably premature to abandon technical appraisal as a rough indicator of the quality of Internet medical advice.

Other strategies being considered are organizing a worldwide collaborative group to review sites and provide ratings and having medically competent volunteers assess webpages and add information on type and quality of data to websites as "metadata." Sites

### Bottom line

- Internet medical advice on treatment of children's cough varies in quality and completeness; this is likely the case for many other clinical conditions.
- A technical checklist has been proposed, but not validated, as a guide to higher-quality health information.
- Family physicians need to take a more active role in guiding their patients to good-quality medical information on the Internet. This medium is clearly going to be a large part of future information management for us and our patients.

### Points saillants

- La qualité et la nature complète des conseils médicaux sur Internet concernant le traitement de la toux chez les enfants varient; c'est probablement pareil dans le cas de plusieurs autres états cliniques.
- On a proposé une liste de contrôle technique, quoiqu'elle n'ait pas été validée, en guise de guide dans la prestation de renseignements de meilleure qualité en matière de santé.
- Les médecins de famille doivent jouer un rôle plus actif dans l'orientation de leurs patients vers de l'information médicale de bonne qualité sur Internet. Ce moyen deviendra clairement une large composante de la gestion future de l'information pour nous et nos patients.

providing links to reliable websites (<http://www.ama-assn.org>) do currently exist. There is also a site that provides a "code of conduct" and requires display of their logo.<sup>7</sup> ❖

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