Evolution of Health Web certification, through the HONcode experience

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Abstract: **Today, the Web is a media with increasing pervasiveness around the world. Its use is constantly growing and the medical field is no exception. With this large amount of information, the problem is no longer about finding information but assessing the credibility of the publishers as well as the relevance and accuracy of the documents retrieved from the web. This problem is particularly relevant in the medical area which has a direct impact on the well-being of citizens and in the Web 2.0 context where information publishing is easier than ever. To address the quality of the medical Internet, the HONcode certification proposed by the Health On the Net Foundation (HON) is certainly the most successful initiative. The aims of this paper are to present certification activity through the HONcode experience and to show that certification is more complex than a simple code of conduct. Therefore, we first present the HONcode, its application and its current evolutions. Following that, we give some quantitative results and describe how the final user can access the certified information.**

Introduction

In recent years the ease of publishing on the Internet has been further increased with the advent of the Web 2.0 phenomenon. Thus, despite the wealth of content available, the question is not just about finding information but also whether the information provided is credible. The problem is particularly acute in the medical information domain which has a direct impact on the health of public [1]. In response to the lack of transparency of the health information, many theoretical and practical initiatives have marked the short history of the Web. The most significant trends that have been applied to the Web on the quality of information (medical or not) are: the selection of webpages (e.g. Yahoo), self-regulation (e.g. Discern[2]), the popularity of webpages (e.g. Page Rank[3]), the

certification of websites (e.g. URAC[4], HONcode[5]), education of the user (e.g. OMNI[6]) and the collaboration of users.

Material and Methods

Initiated in 1995, the implementation of the HONcode [7] (third party certification) began in 1996, Discern (self-evaluation) in 1998, WebMedica in 1998 (certification only for Spanish), Hi-Ethics (third party certification) in 2000, eHealth Code of Ethics (self-evaluation) in 2001, URAC in 2001 (very detailed but expensive), European Guidelines in 2002 (Eq. HONcode principles of the HON which participated in the development) and AFGIS in 2003 (dedicated to German sites). While some initiatives have disappeared or others do not have many candidates, the HONcode has been translated into 35 languages, had over 7400 sites certified by the end of 2010 in 102 countries and had been selected in 2007 by France to be the official certification body of French health websites. HONcode certification [7] is a voluntary act on the part of the site applicant; the first step is submitting the application form on the HON website. A pre-assessment is proposed to the webmaster to identify the missing principles. Once the certification request is submitted, HON experts evaluate the website. Each ethical principle which is not being complied by and should be added to the content of the webpages is indicated. Once the changes have been made, a unique seal of certification is issued. All HONcode sites are certified for 1 year and are reviewed annually. If a website no longer respects the HONcode, the webmaster receives a warning and if required changes are not made, the site may lose its certification. As you can see, the certification process is interactive and provides a constructive contact between HON and the webmaster. Indeed, the aim is to bring up sites to a certain level of transparency. In keeping with this aim, some additions have been made to address the peculiarities of Web 2.0 [7]. The collaborative platform in addition to the current guidelines should respect as well the ones added specific to the Web 2.0. In view of the dynamics of the Web, the certification is in continuous expansion. Initiatives based on algorithms of criteria recognition, based on rules or by automatic learning were presented to give an indication of ethics to the health Web pages. While the model of supervised learning Aphinyanaphongs [8] is based on static examples of good and bad pages and therefore dependent on fields, the HON approach is more generic since it is based on the model of the HONcode [9]. This last approach offer good results with 78% of accuracy over all principles, and its integration in HON daily activity is in progress.

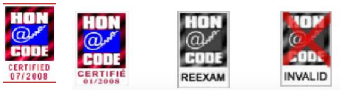

Figure 1: Dynamic HONcode logo following the current status of the HONcode certification process

Results of the certification and access to the final user

Currently the database represents more than 10 million pages indexed in Google. 52% of the certified sites are in English and about 11% in French, followed by sites in Spanish, Italian, German and Portuguese. For each evaluated site, the following information are collected: 1/ the HONcode principles respected, 2/ text extracted corresponding to the 8 principles, 3/ URLs of the principles on the site, 4/ MeSH terms keyword [10] selected from the site and 5 / more general site label. In early 1996, a simple seal was introduced, allowing users to identify a certified site from a non-certified. However, the HONcode seal quickly became an additional safeguard for the Internet by requiring the sites to link the seal to the unique HONcode certificate on the HON site. The idea is to limit misuse of the HONcode seal, as the final verification is done on the HON site. The new basic principle is that custody by HON ultimately enables control of the display of the HONcode seal (the single image generated for a given site and is also hosted at HON, Figure 1). Google is the search engine most used by the Internet; it could become the perfect tool for the promotion and awareness of the quality of medical information on the Internet. HON Toolbar [11] is the most integrated way to access HONcode certified sites. It is composed of 3 features that are 1/ identification of the HONcode membership in real time while browsing the Web. 2/ The search tool, HONcodeHunt, exclusively dedicated to certified HONcode sites is accessible from the search bar of the browser. 3/ The emphasis of certified sites in popular search tools such as Google, Yahoo, MedlinePlus and Wikipedia.

Conclusion and perspectives

We aim to show the many facets of the HONcode through its history, its evolution, implementation and use. During the past 15 years, HON has

sought to promote the trustworthy of medical information on the Web on a global scale. To meet the quantitative requirements of the Web, human expertise is assisted by many automated systems for a systematic, reliable and faster evaluation of websites. It is very important to expand distribution channels to reach as many potential users. Thus the realization of collaborations, to share our information, our philosophy and our vision, with major players such as the National Library of Medicine (USA) or Google is essential. The approach led by the HON is comprehensive and covers more than 35 languages around the world. However, HON must respond to local needs, the variety of languages, cultural differences and different regulations. The creation of local branches in different parts of the world, such as those initiated in Africa, Italy or Spain, should enable us to think locally and act globally to improve the quality of medical information on the Internet. France is the pioneer in quality eHealth by legislating on the issue of quality of health sites. A similar approach in other European countries would be welcomed to continue to promote the quality of medical information on the Internet for the benefit of Internet users.

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