Health On the Net Foundation: assessing the quality of health Web page all over the world

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Health On the Net Foundation

MEDINFO 2007
Outline

- Health website accreditation
- The HONcode database
- Search engine technologies of HON
- Further developments
Control the quality of health websites?

The New Yorker, 1993

1,2 billion Internet users in the world in 2007

Internet usage has grown by 225% since 2000

Cartoon by Peter Steiner has been reproduced from page 61 of July 5, 1993 issue of The New Yorker, (Vol.69 (LXIX))
The mission of Heath On the Net Foundation

To guide Internet users by highlighting reliable, comprehensible, relevant and trustworthy sources of online health and medical information

Since 1995, HON has been tackling the major obstacles of Internet usage: the overwhelming quantity of information and the uneven quality of health information available online
Various initiatives for controlling the quality

... specific for health websites

... applicable for all sites
<table>
<thead>
<tr>
<th>Year</th>
<th>Country</th>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995</td>
<td>UK</td>
<td>OMNI*</td>
<td>19 themes -&gt; 80 questions. A directory of unaudited sites.</td>
</tr>
<tr>
<td>1996</td>
<td>CH</td>
<td>HONcode</td>
<td>8 principles - free online application with a simple questionnaire -&gt; manual review and annual audit.</td>
</tr>
<tr>
<td>1998</td>
<td>UK</td>
<td>Discern*</td>
<td>16 questions (unaudited self-evaluation)</td>
</tr>
<tr>
<td>1997/99</td>
<td>F</td>
<td>Netscoring*</td>
<td>49 criteria, 312 points (French only)</td>
</tr>
<tr>
<td>1998/99</td>
<td>Es</td>
<td>WebMedica</td>
<td>Based on existing codes (Spanish only)</td>
</tr>
<tr>
<td>2000</td>
<td>D</td>
<td>MedCertain*</td>
<td>Level 1 -&gt; 72 questions</td>
</tr>
<tr>
<td>2001</td>
<td>F</td>
<td>Toucanomètre*</td>
<td>French webmasters MD -&gt; 17 items; 40 points</td>
</tr>
<tr>
<td>2002</td>
<td>EU</td>
<td>Guidelines*</td>
<td>European Commission 6 directives. Created with participation of HON</td>
</tr>
<tr>
<td>2003</td>
<td>D</td>
<td>AFGIS Code</td>
<td>Membership fee (German only)</td>
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*little or no implementation
<table>
<thead>
<tr>
<th></th>
<th>HONcode principles</th>
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</thead>
<tbody>
<tr>
<td><strong>1. Authoritative</strong></td>
<td>Indicate the qualifications of the authors</td>
</tr>
<tr>
<td><strong>2. Complementarity</strong></td>
<td>Information should support, not replace, the doctor–patient relationship</td>
</tr>
<tr>
<td><strong>3. Privacy</strong></td>
<td>Respect the privacy and confidentiality of personal data submitted to the site by the visitor</td>
</tr>
<tr>
<td><strong>4. Attribution</strong></td>
<td>Cite the source(s) of published information and dating of medical and health pages</td>
</tr>
<tr>
<td><strong>5. Justifiability</strong></td>
<td>Site must back up claims relating to benefits and performance</td>
</tr>
<tr>
<td><strong>6. Transparency</strong></td>
<td>Accessible presentation, identities of editor and Webmaster, accurate email contact</td>
</tr>
<tr>
<td><strong>7. Financial disclosure</strong></td>
<td>Identify funding sources</td>
</tr>
<tr>
<td><strong>8. Sponsorship</strong></td>
<td>Clearly distinguish advertising from editorial content</td>
</tr>
</tbody>
</table>
HONcode accreditation protocol

- The Web publisher submits a request to be accredited and to obtain the right to display the HONcode seal
- The Web publisher fills in an online questionnaire
- The HONcode review team conducts a thorough evaluation of the website
  According to findings, website is:
  - accredited
  - accredited under condition to modify/add some statement on the website
  - not accredited
- If accredited, a unique HONcode seal is granted
- Each website is re-evaluated each year
- The accredited website is integrated into the database of HONcode accredited websites, HONcodeHunt
The HONcode database: HONcodeHunt

+ 5,700 sites
72 countries
32 languages
- English: 52%
- French: 11%
1,400,000 web pages accredited in Google.com

Web pages characterised by:
- compliance with the HONcode principles
- corresponding excerpts
- indexed with MeSH terms and HON labels
- content labels (women’s health, information for patients, ...)

Examples:
- ClinicalTrials.gov
- HealthInsite.gov.au
- 10000steps.org.au
- betterhealth.vic.gov.au
- The National Urban League
- MEDLINEplus.gov
- PubMed
- Stop-tabac.ch
- Hospital 12 de Octubre
- Sociedad Argentina de Pediatría
- Diabetes Netzwerk Deutschland
- e-sante.fr
- chu-rouen.fr
- eurordis.org
International recognition

- In 2002, HON Foundation was recognized as a non-governmental organization and granted special consultative status with the United Nations Economic and Social Council.

- In May 2004, HON won the «eEurope Award for eHealth» presented by the European Union and the EU Commission.
Government-level collaboration

Collaboration:

HAS (Haute Autorité de Santé) and HON

Outcome:

HONcode will be the official international standard for quality of health websites in France.
Recognizing diversity in a globalizing world

“Just because someone is easier to reach does not mean they are easier to understand. The opposite, in fact, is true.” – Dominique Wolton

Regional offices for the HON foundation:

Bamako, Mali: french-speaking Africa

Johannesburg, South Africa: english-speaking Africa

Valencia, Spain
Search engine technologies of HON
MARVIN the crawler

- Web crawler (Baujard et al, 1998)
  - Multi-Agent Retrieval Vagabond on Information Networks

- Use of MeSH* thesaurus and other medical dictionaries

- Detection of medical and health related Web pages

- Semi-automatic selection of most relevant health and medical Web pages

- Several languages processed
  - English, French, Spanish, Italian, German, Portuguese, Danish, Dutch

*MeSH: Medical Subject Headings
HON multilingual medical term extractor

- Use of MeSH terminology: indexing and information retrieval
  - multilingual
  - hierarchically structured
- Extraction of medical terms
  - synonyms
  - lexical normalisation
- Weighting of medical terms
  - co-occurrences with other concepts
  - weight of relations between concepts
- Evaluated as the best performing medical term categoriser amongst French systems (Névéol et al, 2005)
- Search system continually improved based on analysis of HONcode reviews and audits
Targeted search engine

Query: atkins diet  

Query details | Some medical terms in: En Fr De It Pt Sp

Atkins Diet: Overview | Causes & Risk Factors | Screening & Diagnosis | Complications | Treatment | Prevention

Results in English: 1-10 of 144 found documents

1. Rating the Atkins Diet: Advantages and Disadvantages
   ... Doctor ... Email this page. Rating the Atkins Diet: Advantages and Disadvantages (c) The Right Chef ... controversial fad diets around, the Atkins Diet is famous for its carbohydrate-restricting rules. ... your system - they may be foods on the Atkins diet! The diet works on the notion that weight gain is ... After the first couple of weeks, the Atkins Diet provides a maintenance program, which involves gr ...
   URL: http://www.betterhealthusa.com/public/250.cfm

2. Efficacy of the Atkins diet as therapy for intractable epilepsy.
   "... This provides preliminary evidence that the Atkins diet may have a role as therapy for patients with medically resistant epilepsy. ..."

3. Understanding the implications of adopting the Atkins' diet.
Specialized search engine

HON Code of Conduct (HONcode) for medical and health Web sites

Results 1 - 10 for restless leg syndrome. (0.58 seconds)

Restless Leg Syndrome Causes, Diagnosis, Symptoms, and Treatment ...

The leg pain of restless leg syndrome typically eases with motion of the legs and becomes more noticeable at rest. Restless leg syndrome also features ...

www.medicinenet.com/restless_leg_syndrome/article.htm

eMedicine - Restless Legs Syndrome - Article by Juan Latorre, MD

Restless Legs Syndrome - The term restless legs syndrome (RLS) was used initially in ... symptoms and motor disturbances of the limbs, mainly during rest.

www.emedicine.com/neuro/topic509.htm
Global search engine: working with Google
Identification of HONcode accredited sites

Through the HON toolbar available to everyone, one can easily find and search all sites accredited by HON.
HON’s multilingual automatic quality-criteria detector

- Facilitates access to automatically-detected trustworthy information
- Assists HON’s manual review

This research will be presented on Thursday 23rd of August at MEDINFO 2007

Machine learning approach for automatic quality criteria detection of health Web pages

Arnaud Gaudinat, Natalia Grabar & Celia Boyer
Conclusion

- Active for over 10 years
- Educate citizens to efficiently use the medical information
- Automatic tools developed in order to support human expertise and tackle the large number of existing Web pages
- 2001 eEurope Quality Criteria for Health Web sites is based on the HONcode principles
- Collaboration with Google–Coop for Health
- Collaboration with the French HAS to be the official accrediting body for all French health Web sites
- Adherence to the HONcode enhances a website’s overall quality

“More than just a mouse click: Research into work practices behind the assignment of medical trust marks on the World Wide Web”
Adams SA, de Bont AA. IJMI 2006
Future developments

- HONcode to be a participating body in the implementation of the WHO eHealth resolution action plan
- Collaboration with governing bodies worldwide to provide quality control to all national health websites
- EU Recommendation of Quality Criteria for Health Related Web sites carried out by HON
- Continued advancement in this area