

Urologists in cyberspace: A review of the quality of health information from American urologists' websites using three validated tools

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Abstract

Objectives: In this paper, we evaluate a sample of urologists' websites, based in the United States, using three validated instruments: the Health on the Net Foundation code of conduct (HONcode), DISCERN and LIDA tools. We also discuss how medical websites can be improved.

Methods: We used the 10 most populous cities in America, identified from the US Census Bureau, and searched using www.google.com to find the first 10 websites using the terms "urologist + city." Each website was scored using the HONcode, DISCERN and LIDA instruments. The median score for each tool was used to dichotomize the cohort and multivariable logistic regression was used to identify independent predictors of higher scores.

Results: Of the 100 websites found, 78 were analyzed. There were 18 academic institutions, 43 group and 17 solo practices. A medical website design service had been used by 18 websites. The HONcode badge was seen on 3 websites (4%). Social media was used by 16 websites. Multivariable logistic regression showed predictors of higher scores for each tool. For HONcode, academic centres (OR 6.8, CI 1.2-37.3, $p = 0.028$) and the use of a medical website design service (OR 17.2, CI 3.8-78.1, $p = 0.001$) predicted a higher score. With DISCERN, academic centres (OR 23.13, $p = 0.002$, CI 3.15-169.9 and group practices (OR 7.19, $p = 0.022$, CI 1.33-38.93) were predictors of higher scores. Finally, with the LIDA tool, there were no predictors of higher scores. Pearson correlation did not show any correlation between the three scores.

Conclusions: Using 3 validated tools for appraising online health information, we found a wide variation in the quality of urologists' websites in the United States. Increased awareness of standards and available resources, coupled with guidance from health professional regulatory bodies, would improve the quality urological health information on medical websites.

Introduction

Face-to-face consultation with a doctor is traditionally the way health information has been conveyed. However, the Internet, with its quick and easy access to information, is changing the society we live in and how we get information.

Online searches for health information are commonplace. A 2010 survey found that of the 74% of adults who use the Internet in the United States, 80% look for health information,¹ which translates to 59% of all adults. Older surveys reported figures ranging from 32% to 71%.^{2,3} As society becomes Internet savvy, perceptive clinicians, researchers and hospitals have developed websites to engage users.

How do potential patients determine the legitimacy of information and credentials of the provider? Also, what guidance do doctors, such as urologists, have to follow to provide an ethical, educational and legal website for users? The Health on the Net Foundation (HON) code,⁴ DISCERN Plus instrument⁵ and LIDA tool⁶ are all freely available online and are designed to help consumers assess the quality of medical information. These sites also provide a checklist for doctors to follow when creating a website.

There is little doubt that the health care system in the U.S. is one of the most commercialized in the world. In 2007, health care was a \$2 trillion industry, supported by private insurance companies, where the needs of patients are balanced against investors' requirements for profit.⁷ Many U.S. physicians manage their medical practices as businesses and having a website is a way to compete in a commercialized environment. In this study, we have used the HONcode, DISCERN Plus and LIDA tools to review the quality of health information on urologists' websites across the U.S. This assessment can provide valuable information and guidance for others who want to create or improve the quality of their own websites.

Methods

After looking at ecological data of urologist density in the U.S., we found that urologists (and their websites) are most likely in metropolitan counties.⁸ To identify a range urologists' websites, we sourced the 10 most populous cities from the U.S. Census Bureau (Table 1).⁹ Using www.google.com,¹⁰ we searched "urologist + city" and identified the first 10 hits in each location.

The three tools used to assess the websites are freely available online. HON is a non-governmental organization that developed the HONcode of conduct to encourage the dissemination of quality health information for patients, professionals and the general public.⁴ The HONcode consists of 15 principles (Table 2) to guide users in assessing and creating a reliable and credible website. Websites can freely apply for evaluation by HON and attain a HONcode certification seal. The DISCERN tool,⁵ an online project funded by the National Health Service (NHS) Executive Research and Development Programme, helps users to judge the quality of written information, but also aims to increase involvement in treatment decisions by raising issues to discuss with health professionals (Table 3). It consists of 16 questions scored 1 to 5 for a total of 80 points. Questions 1 to 8 address the reliability of the publication, questions 9 to 15 assess information provided on treatment choices and question 16 is an overall rating. The LIDA tool, designed by a health-care consultancy (Minervation), measures the accessibility, usability and reliability of health care websites. The online version of the LIDA tool,⁶ upon entering a website's URL, will automatically assess the accessibility, usability and reliability of the site (Table 4). The overall score is given as a percentage. Although LIDA is a tool provided by a private consultancy firm and there are potential conflicts of interest, the tool itself is freely available and is currently the only tool that checks HTML and metadata for errors.

Websites were categorized as academic, group or solo practices. Use of medical design website services and use of interactive audiovisual media and social media market-

ing tools (such as Facebook and Twitter) were also noted.

Each website was scored using HONcode, DISCERN and LIDA by a single researcher. The median score was used to dichotomize the cohort for each instrument; multivariable logistic regression was used to identify independent predictors of higher scores. Analysis for correlation between scores of the three systems was performed. Statistical analysis was performed with SPSS (Statistical Package for the Social Sciences, Cary, NC).

Results

A total of 100 websites were considered. After eliminating links to duplicate sites, web-directory sites and a cybersquatter (a site using a domain name with bad faith intent to profit from the goodwill of a trademark), we analyzed 78 websites in total. There were 18 academic institutions, 43 group and 17 solo practices. A medical website design service was by 18 websites. The HONcode seal and American Urological Association (AUA) logo were posted on 3 websites (3/78, 4%). Social media tools were used by 16 websites. We tallied the various interactive online tools used (Table 5).

The HONcode principles

For each principle, a score of 1 was given if it was present (total 15). The median HONcode score was 5.5 (interquartile range [IQR] 5-7, range: 1-10). We tallied the websites based the the HONcode principles (Table 2). Websites were good at giving author(s) credentials (94.9%), providing a mission statement (97.4%) and identifying the intended audience (89.7%). Attribution (bibiliographic references 30.4%, last modification date 33.3%) and justification (8.6%) of information was poor, as was financial disclosure (2.6%). Advertising was present on 26 sites (7 sites directly and 19 via links to external websites marketing medical products), but none of these 26 sites had an advertising policy. A medical legal disclaimer was present in 56% of websites and a privacy policy in 68%.

DISCERN Tool

The median total DISCERN score was 36/80 (IQR 30-45) (Table 3). The questions from DISCERN that scored high were: "Is it relevant;" "Does it provide details of additional sources of support and information;" "Does it describe how each treatment works;" and "Does it describe the benefits of each treatment." Websites were poor at declaring sources of information (other than the author), dating when information used was produced, and describing risks of treatment or what would happen if no treatment is used. There were no websites that addressed the following two DISCERN questions: "Does it describe how the treatment choices affect

Table 1. Ten most populous cities in the United States used to search for urologists' websites*

New York
Los Angeles
Chicago
Houston
Philadelphia
Phoenix
San Antonio
San Diego
Dallas
San Jose

*US Census Bureau. American Fact Finder; 2011.⁹

Table 2. HONcode principles[#]

Principles	Items	% of websites satisfying principle, total=78*
Authority: Give qualifications of authors	1. Information about the organization or individual responsible website, and details about the editor or principal author are given with credentials	74 (94.9%)
	2. If health information given, is it clear it is given by medical professional and are credentials provided.	42 (60.9%)*
Complementarity: Information to support, not replace	3. Statement declaring information meant to complement not replace advice from a health professional.	n/a
	4. Mission statement of site is provided.	76 (97.4%)
	5. Intended audience of site is clearly mentioned.	70 (89.7%)
Confidentiality: Respect the privacy of site users	6. A privacy/confidentiality policy regarding personal information is displayed.	53 (68.0%)
	7. Does site respect legal requirements that apply in country and state of location?	44 (54.4%)
Attribution: Cite the sources and dates of medical information	8. Is last modification date provided?	23 (33.3%)*
	9. Does site contain information from external sources? If so, is bibliographical reference given or valid HTML link provided.	21 (30.4%)*
Justifiability: Justification of claims / balanced and objective claims	10. If site makes claims relating to performance of a treatment or product, are they supported by references or is it clear that claim is author's personal opinion.	6 (8.6%)*
Transparency: Accessibility, provide valid contact details	11. Is there a valid email address or contact form for webmaster throughout the site?	41 (52.6%)
Financial disclosure: Provide details of funding	12. Is the source of the funding of the site clearly described?	2 (2.6%)
Advertising: Clearly distinguish advertising from editorial content	13. If advertising providing a source of income is present, an advertising policy is displayed and separation between advertising content and editorial content is clear.	0
	14. If site is part of link/banner exchange, a clear statement of relationship between websites mentioning any economic benefit derived from exchanges.	0
	15. If site does not have advertising, a statement explaining website does not accept or host advertisement is present.	1 (1.3%)

HONcode: Health on the Net Foundation code.

[#]Each criterion is scored as 0 or 1. The total number of websites for each criterion is shown in the right hand column.

*Health information provided by 69 websites.

overall quality of life" or "Does it provide support for shared decision-making."

LIDA tool

The overall median LIDA score was 66/100 (range: 50-65) (Table 4). Accessibility (81/100) and usability (58/100) were reasonable; however, reliability (27/100) of most sites was poor.

Multivariate logistical regression

We tallied the multivariate logistical regression for predictors of high HON, DISCERN and LIDA scores (Table 6). These include predictors for HON, including academic centres (odds ratio [OR] 6.79, confidence interval [CI] 1.24-37.32, $p = 0.03$) and the use of medical website design services (OR 17.24, CI 3.80-78.11, $p \leq 0.01$); DISCERN, including

academic centres (OR 23.13, $p \leq 0.01$, CI 3.15-169.99 and group practices (OR 7.19, $p = 0.02$, CI 1.33-38.93). For the LIDA tool, there were no predictors of higher scores. Pearson correlation did not show any correlation between the three scores.

Discussion

With the emergence of the Internet, doctors need to stay abreast of shifts in how society communicates and searches for information. A website is more than the simple directory where you can look up a urologist. Websites enable patients to access their doctors more easily, and research their medical conditions and the doctors. For doctors, websites allow them to increase their exposure to the community, market their services and streamline the administrative burden of running a practice. Despite the pressures of an increasingly competitive, commercial environment, doctors need to pres-

Table 3. DISCERN criteria[#]

DISCERN criteria	Median score (maximum 5)
1. Are the aims clear?	3
2. Does it achieve its aims?	2
3. Is it relevant?	4
4. Is it clear what sources of information were used to compile the publication (other than the author or producer)?	1
5. Is it clear when the information used or reported in the publication was produced?	1
6. Is it balanced and unbiased?	3
7. Does it provide details of additional sources of support and information?	3.5
8. Does it refer to areas of uncertainty?	2
9. Does it describe how each treatment works?	3
10. Does it describe the benefits of each treatment?	3
11. Does it describe the risks of each treatment?	1
12. Does it describe what would happen if no treatment is used?	1
13. Does it describe how the treatment choices affect overall quality of life?	1
14. Is it clear that there may be more than one possible treatment choice?	3
15. Does it provide support for shared decision-making?	1
16. Based on the answers to all the above questions, rate the overall quality of the publication as a source of information about treatment choices	3
TOTAL	36 (IQR 30-45)

IQR: interquartile range.

ent information ethically, balanced, unbiased and medico-legally safe.

There are many ways to assess the quality of online health information.¹¹⁻¹³ These include codes of conduct, third-party certification/quality assurance marking, logos, quality seals, specially designed health search engines, evaluation instruments, user guides and filters.¹⁴ In our review of 78 websites using three different instruments, we outline several areas that were consistently poor and could be improved.

Clear aim for the website

A good website not only has a mission statement (77/78), but should clearly state the purpose of the site (3/78). The author(s) of the website and the site's target audience (i.e., patients, medical professionals) should be clearly identified. The function of the website should also be stated. These functions could include to provide information on urologic diseases, to introduce the attending urologists in the practice or to take bookings.

Table 4. LIDA tool

	LIDA score (%), Median (IQR)
Accessibility[#]	
Web page setup	81 (63-87)
Access restriction	
Outdated code	
Usability	
Is the site design clear and transparent?	58 (58-67)
Is the site design consistent from one page to another?	
Can users find what they need on the site?	
Is the format of information clear and appropriate for the audience?	
Reliability	
Is it clear who has developed the web site and what their objectives are?	27 (27-31.5)
Does the site report a robust quality control procedure?	
Is the page updated regularly?	
Does the page cite relevant sources where appropriate?	
Overall	66 (50-65)

[#]Accessibility calculated automatically by online LIDA tool by entering URL of site.

IQR: interquartile range.

Medico-legal

The HONcode system includes a medical legal disclaimer (principle 7) and a privacy policy (principle 6). A medical legal disclaimer, present in 56% of websites reviewed, generally states that the medical information provided is not medical advice, which should be obtained from a medical consultation. It may also provide that no warranties are given in relation to the medical information supplied on the website, and that no liability will accrue to the website owner in the event that a user suffers loss as a result of reliance upon the information.¹⁵ Templates for medical legal disclaimers are available, and often used by medical website designers, however formal legal advice is always advisable. A sufficiently misleading statement, though unintentional, can potentially nullify a disclaimer. A privacy policy, present in 68% of websites reviewed, may be as simple as stating that personal information is not tracked when visiting the website. For websites that collect personal information, The Health Insurance Portability and Accountability Act of 1996 Privacy and Security Rules available on the U.S. Department of Health and Human Services website, protects the privacy of individually identifiable health information and is the national standard for security of electronic protected health information.¹⁶

Referencing of information

Many websites (69/78) had health information on urological diseases and treatment. All three tools used include adequate

Table 5. Interactive Internet tools

	N
Patient reviews and testimonials	16
Radio interview	5
Webcast	31
Publications by authors	11
Links to external sources of information	45
Social networking: Facebook, Twitter	16

referencing of health information in their scoring systems. Only 28% (21/69) of websites acknowledged the use of external references in compiling their health information and 33.3% (23/69) of sites included the date of most recent update, or when the information was written.

Presence of advertising

In the websites we examined, 33% (26/78) had advertising; 7 sites had direct ads, while the other 19 had links to external websites marketing medical products and devices. It is crucial that sites make a clear distinction between health information and advertising. An advertising policy should be present and it should be clear whether payment is received from advertisements. It should also be clear that the doctor does not endorse or recommend any products advertised and that the doctor is not responsible for the effectiveness of the product. If no advertising is present, a statement affirming that the website does not accept or host any advertising is suggested by the HONcode.⁴

Being balanced and unbiased

The DISCERN instrument rewards websites that provide fair and impartial information. A range of treatment options should be discussed, including “no treatment,” such as active surveillance for prostate cancer. We found that some statements (“The best cure rate for localized prostate cancer is with the use of radical prostatectomy” or “Radiation is generally not thought of as a curative procedure” [for prostate cancer]) are clearly misleading. These statements are personal opinions without scientific base and, in the end, harm the profession as a whole.

Our analysis found academic centre websites were associated with higher HON and DISCERN scores. These larger centres have greater resources and access to expertise. Use of a medical website designer was associated with higher HON score. One of the medical website designers used by several websites was certified with the HONcode seal, and thus was familiar with HON principles. A good medical website designer will not only provide technical expertise in creating a customizable website, but have a checklist to ensure the HONcode and the other tools are being used (Table 2, Table 3, Table 4). While the HONcode, DISCERN

and LIDA are helpful guides, ultimately the reliability of the information depends on the clinician.

There have been other articles discussing the quality of urology websites. Lawrentschuk and colleagues evaluated multilingual uro-oncology websites for the HONcode accreditation in 2009. Of these websites, 11% to 29% of sites had the HONcode accreditation seal.¹⁷ Fast and colleagues used both the HONcode seal and DISCERN Plus instrument to assess 3 pediatric urology topics.¹⁸ They found the HONcode seal in 25% to 30% of websites; the average DISCERN score was 45-60 with no correlation between mean DISCERN score and presence of HONcode seal. In our sample, only 3 websites had the HONcode seal. It is important to note that absence of the HONcode seal does not necessarily imply a poor quality website. The HONcode seal is obtained by voluntary application for certification. A website may still rate highly when scored using the HON principles, but not have the seal because they were unaware of its existence. There is evidence recognizing that patients seek health information and that this information can improve medical outcomes and reduce anxiety.¹⁹ However, there is no data describing what patients actually want in a health care website.

What guidance is available to create a website that accomplishes the things above, but is also ethical, legal and contemporary? We would suggest that governance should come from the Medical Boards or licensing authorities of doctors from each state or nation (e.g., College of Physicians and Surgeons of Ontario). The Medical Board is usually responsible for guiding good practice, registering and regulating health professionals and protecting health care consumers. Furthermore, legal requirements often vary regionally. A policy, specifically for electronic media, would be ideal.

Our paper does have limitations. We are not formally trained in using the HONcode, DISCERN or LIDA tools. However, these tools are meant for general public use and there will be differences in interpretation of criteria, particularly with DISCERN, as there is a range of points (2,3 or 4) for a partial response. Each instrument has its own focus, with DISCERN dedicating half of its questions to treatment and LIDA calculating accessibility of HTML coding. In our experience, the HONcode provided the best overall guidance. Ease of readability is important for medical websites as many of them target the general population. This was not assessed directly by any of the three tools used. However in studies using LIDA and the Flesch Reading Ease score, an observed correlation between the two was seen.²⁰⁻²² Readability ease is calculated using a mathematical formula considering average sentence length and average number of syllables per word.²³ Inter-observer variation in scoring was minimized by having a single researcher perform all website assessments. We used a single Internet search engine

Table 6. Multivariate logistical regression for predictors of high HON, DISCERN and LIDA scores

	HONcode			DISCERN			LIDA		
	OR	95% CI	p	OR	95% CI	p	OR	95% CI	p
Solo practice centre (reference)									
Academic centre	6.79	1.24-37.32	0.03	23.13	3.15-169.99	<0.01	2.26	0.46-11.19	0.32
Group practice centre	1.17	0.28-4.87	0.83	7.19	1.33-38.86	0.02	0.57	0.16-1.97	0.37
Medical website design	17.24	3.80-78.12	<0.01	1.48	0.40-5.44	0.55	0.65	0.19-2.16	0.48
Social media	3.37	0.93-12.25	0.07	3.94	0.94-16.52	0.06	2.24	0.59-8.59	0.24

OR: odds ratio; HONcode: Health on the Net Foundation code; CI: confidence interval.

(Google) to identify websites. Google has over 80% of the desktop search engine share²⁴ and it is unlikely that other search engines would identify websites with differing quality. The urologist websites were identified by most populous city, but other methods, such as highest urologist density, urologic subspecialty, condition or procedure, could potentially result in a different sample of websites. As our sample of websites was mostly from metropolitan urologists, with a high proportion of academic institutions, the results may not be generalizable to non-metropolitan urologists. However, in our sample several of the highest scores were achieved by solo and group practices; this demonstrates that good quality websites can be made without the resources and backing of an academic centre. Furthermore, the benefit of the Internet is that patients and physicians in rural communities, regardless of geographical location, will be able to access the same urological information. Finally, while urologists may not represent all types of doctors in cyberspace, a trend in the literature, across multiple specialties has called for an improvement in the quality of medical websites.^{20-22,25}

Conclusions

As society evolves in the way it communicates and shares information, doctors should be leaders in the provision of health information. Websites are the forefront. Urologists are out there in cyberspace, but as a profession we can improve. Using three validated tools for appraising online health information, we found a wide variation in quality of urologists' websites in the United States. Guidance for doctors and other health professionals should come from national or state health regulatory bodies. With added increased awareness of available resources, such as the HONcode, DISCERN and LIDA tools, the quality of health information on doctors' websites can be improved.

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References

1. Fox S. The Social Life of Health Information, 2011. Pew Research Center's Internet and American Life Project. http://pewinternet.org/~media/files/reports/2011/pip_social_life_of_health_info.pdf. Accessed March 18, 2013.
2. Harris Interactive. 160 million Americans have gone online for health info. August 13, 2007. <http://www.marketingcharts.com/interactive/160-million-americans-have-gone-online-for-health-info-1259/>. Accessed March 18, 2013.
3. The Center for Studying Health System Change. More Americans Seeking Health Information, Especially Online. August 21, 2008. <http://www.hschange.org/CONTENT/1007/>. Accessed March 18, 2013.
4. Health On the Net Foundation. HON Code of Conduct (HONcode) for medical and health Web sites. <http://www.hon.ch/HONcode/Conduct.html>. Accessed March 18, 2013.
5. Radcliffe Online. Discern online. www.discern.org.uk/index.php. Accessed March 18, 2013.
6. Tomlin A, Badenoch D. The Minervation validation instrument for healthcare websites (LIDA tool). 2007. www.minervation.com. Accessed March 18, 2013.
7. Relman AS. *A Second Opinion: Rescuing America's Health Care*. New York, Public Affairs; 2007.
8. Odisho AY, Fradet V, Cooperberg MR, et al. Geographic distribution of urologists throughout the United States using a county level approach. *J Urol* 2009;181:760-5. <http://dx.doi.org/10.1016/j.juro.2008.10.034>
9. US Census Bureau. American Fact Finder. 2011. <http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml>. Accessed March 18, 2013.
10. Google Incorporated. www.google.com. Accessed March 18, 2013.
11. Jadad A, Gagliardi A. Rating health information on the Internet: navigating to knowledge or to Babel? *JAMA* 1998;279:611-4.
12. Eysenbach G, Powell J, Kuss O, et al. Empirical Studies Assessing the Quality of Health Information for Consumers on the World Wide Web. *JAMA* 2002;287:2691-700. <http://dx.doi.org/10.1001/jama.287.20.2691>
13. Bomba D. Evaluating the Quality of Health Web Sites: Developing a Validation Method and Rating Instrument. 38th Hawaii International Conference on System Sciences; Hawaii: Institute of Electrical and Electronics Engineers; 2005:139-48. <http://dx.doi.org/10.1109/HICSS.2005.251>
14. Wilson P. How to find the good and avoid the bad or ugly: a short guide to tools for rating quality of health information on the Internet. *BMJ* 2002;324:598-602. <http://dx.doi.org/10.1136/bmj.324.7337.598>
15. SEQ Legal LLP. Website Law. 2011. <http://www.website-law.co.uk/medicaldisclaimer.html>. Accessed March 18, 2013.
16. United States Department of Health and Human Services. Health Information Privacy. 2011. <http://www.hhs.gov/ocr/privacy/index.html>. Accessed March 18, 2013.
17. Lawrentschuk N, Abouassaly R, Hackett N, et al. Health Information Quality on the Internet in Urological Oncology: A Multilingual Longitudinal Evaluation. *Urology* 2009;74:1058-63. <http://dx.doi.org/10.1016/j.urology.2009.05.091>
18. Fast AM, Deibert CM, Hruby GW, et al. Evaluating the quality of Internet health resources in pediatric urology. *J Pediatr Urol* Epub 2012 Jan 24.
19. NHS. Patient information. 2010. <http://www.nhs.uk/identity/nhs.uk/tools-and-resources/patient-information>. Accessed March 18, 2013.
20. Grewal P, Williams B, Alagaratham S, et al. Quality of vascular surgery Web sites on the Internet. *J Vasc Surg* 2012;56:1461-7. <http://dx.doi.org/10.1016/j.jvs.2012.04.058>
21. Soobrah R, Clark SK. Your patient information website: how good is it? *Colorectal Dis* 2012;14:e90-4. <http://dx.doi.org/10.1111/j.1463-1318.2011.02792.x>
22. Kirthi V MB. Coronary angioplasty and the internet: what can patients searching online expect to find? *J Interv Cardiol* 2012;25:476-81. <http://dx.doi.org/10.1111/j.1540-8183.2012.00748.x>

23. Flesch R. A new readability yardstick. *J Appl Psychol* 1948;32:221-33. <http://dx.doi.org/10.1037/h0057532>
24. Net Applications. Desktop Search Engine Share. 2011. <http://www.netmarketshare.com>. Accessed March 18, 2013.
25. Muthukumarasamy S, Osmani Z, Sharpe A, et al. Quality of information available on the World Wide Web for patients undergoing thyroidectomy: review. *J Laryngol Otol* 2012;126:116-9. <http://dx.doi.org/10.1017/S0022215111002246>

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COMMENTARY

Paging Dr. Google

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We all do it. With the click of a mouse, tap of a tablet screen or touch of a smart phone, we access information. We do it to shop, to learn of current events and to keep in contact with friends and colleagues. In the clinic and the operating room, teachers and learners access health information daily. Patients and families routinely arrive in clinic requesting a second opinion after they've already had a private consultation with Dr. Google.

How reliable is health information on the Internet? Six years ago we published on the veracity of online information available regarding cryptorchidism.¹ Of 124 websites, only 35% were endorsed by a non-profit accrediting body, 77% did not provide references for the information provided and 48% did not identify an author for the content. Multivariate analysis showed that only accreditation status was associated with high quality content.

At that time, a 35% accreditation rate was an improvement compared to previous assessments of the content validity of urological websites.^{2,3} We predicted that accreditation rates would continue to rise as the Internet and its users matured.

The accompanying manuscript by Wong and colleagues, now, 6 years later, would suggest that our prediction was wrong.⁴ Looking specifically at urological websites in the 10 largest cities in the United States, the authors found that although most sites provided health information, only 3 of 78 websites displayed the logo signifying endorsement by the Health on the Net Foundation code of conduct (HONcode). Although the sites consistently provided the qualifications of the urologists and their intended audience, on the other hand financial disclosures, a distinction between advertising and editorial content, and supporting references were rarely if ever provided. In general, these websites, hosted by urologists, scored poorly when two validated online tools for assessing site reliability were applied.

It is tempting to smugly dismiss these findings as evidence of crass commercialization of medicine south of the border – something irrelevant to our own health care system. However, it is our responsibility to educate our patients regardless of what type of system we work in. If we are to do so online, we should ensure that the website we host and the content we disseminate has been vetted by an accrediting body. In addition to HONcode, the Utilization Review Accreditation Commission (URAC) is an independent non-profit organization which can help with this process.⁵ Its stated mission is “To promote continuous improvement