

Content of Weblogs Written by Health Professionals

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BACKGROUND: Medical weblogs (“blogs”) have emerged as a new connection between health professionals and the public.

OBJECTIVE: To examine the scope and content of medical blogs and approximate how often blog authors commented about patients, violated patient privacy, or displayed a lack of professionalism.

DESIGN: We defined medical blogs as those that contain some medical content and were apparently written by physicians or nurses. We used the Google search term “medical blog” to begin a modified snowball sampling method to identify sites posting entries from 1/1/06 through 12/14/06. We reviewed five entries per blog, categorizing content and characteristics.

RESULTS: We identified 271 medical blogs. Over half (56.8%) of blog authors provided sufficient information in text or image to reveal their identities. Individual patients were described in 114 (42.1%) blogs. Patients were portrayed positively in 43 blogs (15.9%) and negatively in 48 blogs (17.7%). Of blogs that described interactions with individual patients, 45 (16.6%) included sufficient information for patients to identify their doctors or themselves. Three blogs showed recognizable photographic images of patients. Healthcare products were promoted, either by images or descriptions, in 31 (11.4%) blogs.

CONCLUSIONS: Blogs are a growing part of the public face of the health professions. They offer physicians and nurses the opportunity to share their narratives. They also risk revealing confidential information or, in their tone or content, risk reflecting poorly on the blog authors and their professions. The health professions should assume some responsibility for helping authors and readers negotiate these challenges.

KEY WORDS: weblog; professionalism; Internet.

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INTRODUCTION

Weblogs, or blogs, are journal-style websites whose authors post entries over time. In the last few years, blogs have contributed to a large increase in publicly available information and dialogue on topics from authors’ personal lives to global politics. Technorati, a Web-tracking service, recently estimated that there are more than 70 million blogs, with an average of 120,000 new blogs being created each day.¹ Although it is impossible to ascertain the number of these blogs generated by health care providers, a substantial medical blogging community exists.²⁻⁸

Scholarly articles on medical blogs have focused solely on the potential benefits of health information blogs.^{2,3,9-14} Many physician and nurse blog authors, however, report personal experiences and clinical interactions. These blogs allow physicians and nurses to share their narratives, knowledge and experience with the healthcare world. Blogs can accurately portray the challenges facing our professions. They are also part of the public face of healthcare—health professionals who share private thoughts in public settings risk revealing confidential patient information or otherwise reflecting poorly on the profession.^{4,7,8,15-19} The goal of this study was to evaluate the scope and content of blogs written by health professionals. Specifically, we aimed to 1) approximate the number and content of blogs that described interactions with patients; 2) determine how often blog content violated patient privacy or confidentiality; 3) evaluate whether blogs conformed to professional norms such as the obligation to reveal conflicts of interest.

METHODS

We defined a medical blog as a web-based narrative containing some medical content and written in first-person journal style. We wanted to include the breadth of the medical blogging community but needed to limit the selection process to blog authors most likely to appear as medical professionals to the public. Physicians and nurses represent the vast majority of the professional medical blogging community, so we sampled only blogs whose authors who could be identified as physicians or nurses. We included all nurses, both those in a traditional nursing role and those functioning as advanced practitioners. We sampled blogs written by post-graduate trainees (residents and fellows) but did not include blogs written by students. Many blogs include simple biographical author profiles, and the majority of authors identify their profession in these sections. We also included eight blogs with titles (but not profiles) indicating that the author was appar-

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ently a physician or nurse (e.g., *Angry Doctor* and *Geek Nurse*) and ten blogs whose authors were identified as a physician or nurse only in the text of blog entries.

We conducted a Google search using the term “medical blog,” and found that among the first results were several medical blog aggregators. Blog aggregators are websites that display many blogs in a consolidated view on a single webpage. Blogs are connected to the aggregator by links, website addresses imbedded within the pages. Readers click on the links and are directed to the listed blog. It is likely that lay readers searching for medical blogs would find and use these aggregators. Therefore, we examined all blogs listed on the first three aggregators (*Medlogs*, *Yahoo Health and Medicine Blogs* and *The Medical Blog Network*). From the blogs identified initially, we expanded our search using a modified snowball sampling method.

Snowball sampling follows a referral chain, meaning that subjects who fit the selection criteria of a study provide referrals to other people who also may fit the selection criteria. This method has been shown to be effective in reaching hidden populations.²⁰ In our modified method, we identified blogs linked to our original sample of aggregated blogs. This revealed another group of previously unlisted blogs which were also included in our sample if other criteria were met. Duplicates were eliminated from the sample; the mean number of eliminations due to duplication was 3.2. Our final sample was comprised of all medical blogs within one link of the three blog aggregators. To determine the effectiveness of our sampling method, we searched for individual medical blogs using the Google search terms “medical blog,” “physician blog,” “doctor blog,” and “nurse blog” and did not uncover any new blogs. Additionally, we conducted a search of recent items in the lay press that featured individual medical blogs⁴⁻⁷ and again found no new blogs. To assess whether we reached blogs with significant readership, we reviewed “hit counters” for some included blogs and found that these blogs received very frequent visits. *Fat Doctor*, for example, received over 200,000 visits in the previous year.

We used the blog as the unit of analysis. Each blog has multiple narrative entries, usually on different dates, similar to a journal. A single entry may not adequately represent a blog’s content. However, frequency of updating varies greatly between blogs. Some authors post items daily while others post less than once per month. To extract enough entries to obtain a rough approximation of a given blog’s content, while avoiding over-sampling any individual blog, we fixed the number of entries we read at five per blog. Blogs, by their nature, address current topics, so we limited our inquiry to entries dated between January 1, 2006 and our index date of December 14, 2006. For the seven blogs that did not have five entries in this time period, we included all entries in 2006 before the index date.

We aimed to approximate the frequency of patient comments, privacy violations, and other unprofessional content. Instead of content analysis software, we used a previously described method of qualitative analysis.²¹ Two reviewers, a physician and a trained research assistant, read half of sampled blogs in small batches of 10–20. With each batch, the reviewers discussed characteristics of each blog and their common themes. Any disagreements were resolved by consensus. The reviewers discussed difficult decisions with a third, independent physician reviewer until consensus was achieved. This process produced a list of themes common to many blogs.

From these themes, we defined 16 potential characteristics of blogs and a method for coding these characteristics. The two primary reviewers then independently reviewed and coded all remaining blogs. All disagreements were resolved by consensus to achieve the final ratings. We measured reviewer agreement on all characteristics with the kappa statistic. All variables were also examined with the use of descriptive statistics.

RESULTS

We identified 1,434 blogs within one link of the blog aggregators. Of these, 279 were written by a doctor or a nurse in a journal style and had at least one entry in 2006. Eight of these blogs had no health-related content and were therefore excluded from the sample. Our analysis includes the remaining 271 blogs.

We identified 16 descriptive characteristics of these blogs. Reviewer coding for four of these characteristics showed very little variation (with five or fewer differing responses). For 11 of the 16 characteristics, kappa statistic was ≥ 0.6 . Blog content was similar for physicians and nurses. Table 1 provides a systematic overview of our results, and in this section we have excerpted representative examples of each characteristic. All referenced weblog addresses (URLs) are included in Table 2, unless otherwise indicated.

BLOGGER AUTHOR IDENTIFICATION

Over half of the 271 blogs had identifiable authors; 89 (32.8%) authors provided both first and last name and 43 (15.9%) gave enough information about their name, subspecialty, or loca-

Table 1. Blog Characteristics

	Blogs n (%)	Reviewer agreement kappa
Blog author identification		
First name	139 (51.3)	0.8
Last name	95 (35.1)	0.9
Location	117 (43.2)	0.7
Identifiable photo	60 (22.1)	0.6
Sub-specialty	197 (72.7)	0.6
Patient privacy		
Patient images	3 (1.1)	0.6
Patient radiographs	8 (3.0)	0.7
Patient laboratory studies	0 (0.0)	*
Other privacy information	1 (0.4)	*
Patient depictions		
Any comments about patients	114 (42.1)	0.8
Negative comments about patients	48 (17.7)	0.7
Positive comments about patients	43 (15.9)	0.5
Commentary on health profession/health care system		
Comments about the health care system	137 (50.6)	0.5
Positive comments about health care profession	108 (39.9)	0.4
Negative comments about health care profession	86 (31.7)	0.6
Product endorsement		
Blog posts promote health care products	31 (11.4)	0.6

Table 2. Blog URLs*

Blog title	Web address
Medlogs	http://www.medlogs.com
Yahoo Health and Medicine Blogs	http://dir.yahoo.com/health/news_and_media/blogs
The Medical Blog Network	http://www.trusted.md
Angry Doctor	http://angrydr.blogspot.com/
Geek Nurse	http://geeknurse.blogspot.com/
Fat Doctor	http://fatdoctor.blogspot.com/
Abortionclinicdays	http://abortionclinicdays.blogspot.com/
About a Nurse talking RN	http://www.aboutanurse.com http://talkingrn.blogspot.com/
Adrenalin Rush	http://howling-adrenalin-rush.blogspot.com/
Panda Bear MD	http://www.pandabearmd.com
ER RN	http://errn.blogspot.com/
M.D.O.D	http://docsontheweb.blogspot.com/
DB's Medical Rants	http://www.medrants.com/
Coffee & Conversation in a smoky room	http://jodaya.blogspot.com/
Medicine and Man	http://medicineandman.com/

*Accessible as of May 21, 2008

tion to be identifiable. A recognizable photo was displayed by 22% of authors. Of sampled blogs, 206 (76.0%) were written by physicians, including 23 interns and residents, and 59 had nurse authors (21.8%). The remaining six blogs (1.8%) were written by groups of health professionals including both doctors and nurses.

PATIENT PRIVACY

Forty-five blogs (16.6%) that described interactions with individual patients also included significant identifying information about the blog author. Three blogs showed recognizable photographic images of patients, and one provided an extensive description and links to pictures of a patient. Eight blogs showed patient radiographs without further identifiable information.

PATIENT DEPICTIONS

Eighteen (6.6%) blogs contained both positive and negative patient content. Forty-three blogs (15.9%) described patients in a positive light, often praising patients' good spirits, manners, or stoicism. All quotes are taken directly from the blog sites.

"Anyway, we both enjoyed exploring this issue together. I know she never really talked about it with someone who got it so quickly and easily. It was one of those sessions that I felt was really authentic on both our parts and made me happy all day." *abortionclinicdays*

"One of my patients last night was a pastor, who was such a trooper. i mean the guy didn't even complain when we had to transfer him to a different unit at 4 A.M." *About a Nurse*

"In particular, caring for visible wounds on the feet can have meaning, I think. In this case, it was about acknowledging the losses and suffering inherent in his

journey, and readying him to travel again. Over and over, I am honored to wash my patients' feet." *Talking RN*
"She nearly died a few times, from sepsis, from organ failure, from that bleeding episode. But somehow she made it. Somewhere I have a beautiful hand-embroidered silk tablecloth she sent me when she returned home." *blog name withheld to maintain patient privacy*

Forty-eight blogs (17.7%) described patients in a negative light, including several comments that were more insulting than the ones quoted below.

"The unwritten definition of proper patient: attached to a breathing machine, a lot of wires and completely sedated or even paralyzed." *Adrenalin Rush*

"She was a stupid, lazy, selfish woman all of which characteristics are personal problems, not medical issues or barriers to care" *Panda Bear MD*

"When you come into the ER yelling, moaning, and twisting in agony because you have a sprained ankle - I will hate you. Why will I hate you? I will hate you because the man in the next stretcher is dying of an excruciatingly painful form of cancer, yet he is silent." *ER RN*

"I once looked after a patient who has Googled every ache and pains she ever had, every pills or tablets taken and every diagnoses accumulated as if it is some form of a "fascinating morbid collection", literally and figuratively. Makes you wonder: What's wrong with collecting stamps? Or stuffed dead animals? How could anyone obsessively collect an alphabetically arranged mental card index of a random number of pathologies or allergies that they could just pull out from the back of their heads each time they see a slight rash or a spot of discoloration on their skin?" *MDOD*

COMMENTARY ON THE MEDICAL PROFESSION AND THE HEALTH CARE SYSTEM

About half of sampled blogs (50.6%) discussed some aspect of the health care system. Topics ranged from insurance and malpractice to end-of-life decision making and the doctor-patient relationship.

"I often rant on the importance of taking enough time during a patient interview, exam and visit. As long as our current payment system encourages physicians to increase volume, time spent per patient will suffer. We should avoid rushing in medicine. We need time to think, contemplate and observe...Perhaps speed kills, at least indirectly." *DB's Medical Rants*

Forty percent of blogs commented positively about health professions. These comments often reflect on the rewarding aspects of blog authors' own jobs or spoke highly of colleagues.

"Also, kudos to Dr W, who was the most direct that I've heard any doctor be with family on our unit. 'Your wife is going to die. If we allow things to continue as they are

now, she will die within the week...Her disease has already made that decision for her. But you have the decision to make about how she will die.' Sounds harsh, but he somehow conveyed the utmost compassion, empathy, and wisdom in that statement." *blog name withheld to maintain patient privacy*

Approximately 30% of blogs included negative comments about aspects of the health profession. These comments included complaints about particular colleagues, the medical hierarchy and rules:

"We have one unit in the hospital where we always float. Why? Because they have terrible management, they are extremely disorganized, there is no teamwork so it's every man for himself, the staff is rude and lazy, and because of all these things they can't keep staffed for very long so we have to go fill in.... on the hardest patients on the floor.....the ones nobody wants. That way the rest of the nurses can sit at the station and flip through magazines all day. If I asked for help I got attitude." *Coffee & Conversation in a smoky room*

PRODUCT ENDORSEMENT

Thirty-one blogs (11.4%) explicitly promoted a specific health-care product, providing product images, descriptions, or advocacy. None of these blogs provided information on conflict of interest.

"Up until now the treatment of this condition involved free water restriction and removal of inciting factors. Now a new drug — [name deleted] — promises to change it all." *Medicine and Man*

DISCUSSION

This study supports several observations. First, medical blogs are now part of the literature and media of medicine. These media include professional and scientific publication and presentation, medical stories and medical dramatizations in books, movies, theater, radio, and on television. Although medical blogs are a new addition to this list, the rapid increase in the use of the Internet suggests that their importance will grow. Medical blogs differ from traditional medical media because any person with Internet access can author a blog. This ease of use disconnects blog content from the editorial process common to books, journals, and conventional broadcasts. For the most part, blog authors have few incentives to maintain their credibility and integrity or, in contrast, to compromise it for the sake of ratings or sales.

Second, medical blogs are part of the public face of medicine. Whether or not blog authors are genuinely members of the health professions, they represent themselves as such and are likely to be seen as such. Most medical literature is subject to rigorous peer review and typically reaches only internal audiences. Other forms of medical communication,

such as presentations at medical conferences or articles in the lay press, adhere to specific standards of content and decorum. In contrast, medical blogs are public documents written in a diary style typically used for private thoughts. The authors of some medical blogs censor their thoughts and comments less than we expect they would in traditional public settings.

Third, medical blogs derive their credibility from their relationship to the health professions, and therefore reflect on these fields. According to the American Board of Internal Medicine,¹⁹ professionalism requires prime respect of the physician-patient relationship, strict adherence to patient confidentiality, and appropriate management of conflicts of interest. However, some blogs include unprofessional tone or content, such as negative comments about patients or the profession, violations of patient privacy, or promotion of special interests.

Overt violations of patient privacy are rare, but authors who provide information about their location or subspecialty may still be identifiable to their patients, colleagues, or the public. When these authors discuss their interactions with individual patients, they compromise their patients' privacy. Even when the author is anonymous, detailed descriptions of patient interactions and conversations have the potential to be recognizable by the parties involved. For example, the anonymous blog author "Flea" revealed details of a patient's death after a malpractice case was brought against him.²² The lawyer for the plaintiffs recognized the description of the case, and shortly thereafter, the case was settled out of court and the author removed his blog from the Internet.

Some authors may compromise their professionalism because they fail to reveal conflicts of interest. A recent survey reveals that 29% of blog authors have been approached by public relations professionals to endorse specific products, and 52% of them have written one post endorsing such products in their blog content.²³ These endorsements are not advertisements that appear on the website; they are written into the blog narrative, often without any acknowledgement that they are paid promotions. Although we did find blogs that promoted health care products within their entries, we were unable to determine whether these were paid endorsements, because we found no disclosures indicating authors' conflicts of interest.

While these observations might signal alarm, there is also reason for optimism. Public health communication has been associated with changes in populations' behavior, such as reduction in smoking prevalence or increased condom use.²⁴ Medical blogs provide a new route for communicating substantial, evidence-based health information to the public. Many blogs emphasize positive elements of the practice of health care. Most prominent blog authors maintain their own anonymity, their patients' privacy, and a respectful tone, thereby setting an example for new writers. A voluntary movement by medical blog authors toward self-regulation regarding patient privacy, transparency, anonymity, and patient respect is taking shape.²⁵⁻²⁸ These mechanisms of self-regulation are key to maintaining professionalism and trust.

Medical blogs also give voice to clinicians whose points of view might never otherwise reach an audience. Nurses and physicians facing challenges or isolation at work use blogs and online communities to connect to peers who can provide advice and support. This network may improve the retention of health professionals, particularly in rural or other settings where it may be difficult to find peer support. In addition to exchanging comments on one another's blogs, authors organize and

participate in forums such as weekly blog “Grand Rounds,” and annual, in-person conferences.

This study has several limitations. Our snowball-style sampling missed an unknown number of medical blogs that are not connected via a blog aggregator or blog link. However, our method aimed to find the blogs most accessible to the public, and blogs identified were the same blogs mentioned in the lay literature and revealed by Google search. We also sampled blogs during a single year and sampled only five entries from each blog. Over time, we expect the number and complexity of medical blogs to increase. We included only blogs in which the author represented himself or herself as a physician or nurse. We did not sample blogs written by other health professionals, and the authors’ self-representations could be inaccurate. Nevertheless, as we have discussed, the blog’s effect may be the same whether or not this representation is true. Because many blog authors remain anonymous, we are unable to further differentiate characteristics of authors such as location or practice setting. We did not use content-analysis software, although our alternative method showed good agreement between reviewers and differences were resolved by discussion and additional review. Of note, the two categories with less reviewer agreement, “positive comments about patients” (kappa 0.5) and “positive comments about the health care profession” (kappa 0.4) may indicate that interpretation of “positive” can be difficult. For example, many “positive comments” could also be viewed as patronizing in tone.

The prevalence and visibility of blogs provides a new route for health communication and contributes to public perceptions of the health care professions. These new channels can give voice to a wider range of professionals and allow these professionals to reach broader audiences. They also risk exposing the public to unprofessional content and tone, privacy violations, and hidden promotions that damage the integrity of the medical field. Although there has been some discussion in the lay press regarding the ethical questions posed by medical blogs, there has been no organized or official response from the medical profession. Further research should examine the potential positive and negative impacts of medical blogs and the evolution of medical blogs as they are scrutinized by the scientific community and the lay press. Through consultation with blog authors, professional organizations should provide standards for blog tone and content. There are existing models for such standards, which would encourage health professionals to respect their patients and their profession in their writing.^{25–28} Physician-leaders and medical educators should consider curricular development and educational forums that address the challenges, opportunities and responsibilities that medical blog authors face, and the place of this new medium within norms of medical professionalism.

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