

Online Posting of Unprofessional Content by Medical Students

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THE INCREASE IN POPULARITY OF Internet applications built around user-generated content, collectively termed *Web 2.0*, has led to the development of innovative tools for health care and education.¹⁻⁴ These applications include social networking sites (eg, Facebook, Twitter), media-sharing sites (eg, Flickr, YouTube), blogs, wikis, and podcasts, among others. Web 2.0 use, especially among younger generations, is prevalent and increasing rapidly.⁵ An estimated 75% of US adults aged 18 to 24 years who use the Internet and 57% aged 25 to 34 years use social networking sites.⁵

Web 2.0 also risks broadcasting unprofessional content online that can reflect poorly on individuals, affiliated institutions, and the medical profession.^{6,7} Other professions are struggling with similar issues.^{8,9} However, the social contract between medicine and society expects physicians to embody altruism, integrity, and trustworthiness.^{10,11} Furthermore, ethical and legal obligations to maintain patient confidentiality have unique repercussions. Yet, defining unprofessionalism online is challenging; there are no formal guidelines for physicians.^{6,7}

Medical schools are tasked with establishing the foundation of professional behavior in a generation of stu-

Context Web 2.0 applications, such as social networking sites, are creating new challenges for medical professionalism. The scope of this problem in undergraduate medical education is not well-defined.

Objective To assess the experience of US medical schools with online posting of unprofessional content by students and existing medical school policies to address online posting.

Design, Setting, and Participants An anonymous electronic survey was sent to deans of student affairs, their representatives, or counterparts from each institution in the Association of American Medical Colleges. Data were collected in March and April 2009.

Main Outcome Measures Percentage of schools reporting incidents of students posting unprofessional content online, type of professionalism infraction, disciplinary actions taken, existence of institution policies, and plans for policy development.

Results Sixty percent of US medical schools responded (78/130). Of these schools, 60% (47/78) reported incidents of students posting unprofessional online content. Violations of patient confidentiality were reported by 13% (6/46). Student use of profanity (52%; 22/42), frankly discriminatory language (48%; 19/40), depiction of intoxication (39%; 17/44), and sexually suggestive material (38%; 16/42) were commonly reported. Of 45 schools that reported an incident and responded to the question about disciplinary actions, 30 gave informal warning (67%) and 3 reported student dismissal (7%). Policies that cover student-posted online content were reported by 38% (28/73) of deans. Of schools without such policies, 11% (5/46) were actively developing new policies to cover online content. Deans reporting incidents were significantly more likely to report having such a policy (51% vs 18%; $P=.006$), believing these issues could be effectively addressed (91% vs 63%; $P=.003$), and having higher levels of concern ($P=.02$).

Conclusion Many responding schools had incidents of unprofessional student online postings, but they may not have adequate policy in place.

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dents who use Web 2.0 and expect digital connectedness.^{5,12} There are few data to document unprofessional behavior in medical student-posted online content. Also, the adequacy of current institutional professionalism policies, given these new challenges, is unknown.

The goals of this study were to describe reported incidents of medical students posting unprofessional content

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online at US medical schools, describe current policies and views of medical school leaders regarding Web 2.0 use by medical students, and assess the relationship between unprofessional incidents and presence of policies.

METHODS

Population

A national survey of deans of student affairs, their proxies, or counterparts in the 130 accredited allopathic US medical schools was conducted. The student affairs dean was expected to be the medical school administrator most likely to be involved with student professionalism issues and therefore the most qualified to complete the survey.

Survey Design and Testing

Three of the study investigators (K.C.C., S.R.G., and T.K.) designed the survey instrument based on what has been reported in existing literature^{6,7} and investigator hypotheses. An online survey program was used to administer the survey (SurveyMonkey; Portland, Oregon). The survey had 4 main categories: school and respondent characteristics, incidents of student-posted unprofessional online content, level of concern among student affairs deans or proxies, and institutional policies and resources (eTable available at <http://www.jama.com>).

The instrument underwent trial testing by 3 high-level medical education administrators (vice chair for education and similar) for clarity and quality. Additionally, the survey was reviewed and approved by the Committee on Student Affairs, a subcommittee of the Association of American Medical Colleges Group on Student Affairs. This study was granted exemption from consent by the institutional review board of the Washington DC VA Medical Center.

Data Collection

The initial request for survey participation was sent by e-mail (via dedicated listserv) from the executive secretary for the Association of American Medical Colleges Group on Student Af-

fairs to the designated student affairs dean at each of the 130 US medical schools. Deans were asked to forward the invitation if another individual was more familiar with the topic. A follow-up reminder was sent through the same listserv 2 weeks later. Data collection took place in March and April 2009. No incentives to complete the survey were offered.

In compliance with institutional review board requirements, each survey response could not be linked to any specific institution. To address this limitation, the data were analyzed for discrepancies in data collection using Internet protocol addresses captured by the online survey program. Four responses that appeared to be partial duplicate responses were discarded. To preserve anonymity, Internet protocol addresses were not used for any other purpose.

Measures and Variables

Response categories were mostly categorical (yes, no, or not sure). There were also questions that elicited open-ended text responses ("Please give an example of any incident you can recall . . .").

School and Respondent Characteristics. The survey collected data on medical school enrollment, setting (rural, urban, or combination), and use of blogs or social networking for educational purposes; and on the respondent's age, sex, and level of computer use. To capture deans' perception of degree of student involvement with Web 2.0, they were asked to estimate the percentage of students at their institutions who contribute to online content.

Incidents of Student-Posted Unprofessional Online Content. The survey asked whether deans were aware of any incidents at their school in which medical students posted unprofessional online content. Provided examples included violation of patient privacy, use of profanity or frankly discriminatory language, depiction of intoxication or sexual suggestiveness, failure to reveal conflicts of interest (eg, product en-

dorsement without a conflict of interest disclosure), and communication about the medical profession or patients in a negative tone. Respondents who answered yes to an awareness of incidents were asked about the number of incidents occurring in the past year, the areas of unprofessionalism involved, how the incidents were brought to their attention, what disciplinary actions were taken, and to provide brief examples in an open-response text box. The survey also asked the deans of any awareness of incidents occurring at other schools and to provide brief examples.

Level of Concern Among Student Affairs Deans or Proxies. To gauge the level of respondents' concern, we queried their overall level of concern on a 5-point Likert scale (1 denoting "not concerned at all"; 5 denoting "very concerned").

Institutional Policies and Resources. We asked deans whether their school's current professionalism policies covered student-posted online content and if so, whether the policy explicitly mentioned Internet use such as blogs and social networking sites. If the policies did not cover student-posted online content, deans were asked whether their school was currently developing such policy and whether they thought existing policies would allow them to effectively address unprofessional student-posted online content. Deans were asked whether their institution had a committee or task force responsible for addressing student-posted online content and, if so, the composition of the committee or task force.

Statistical Analysis

Simple frequencies were calculated for respondent characteristics and responses to survey questions. Comparisons of respondent and nonrespondent school sizes, and survey responses between schools reporting and not reporting incidents of posting unprofessional online content, were calculated by using the χ^2 statistic. Because of small cell sizes for many questions, *P* values were calculated using Monte Carlo

simulation with 2000 replicates instead of asymptotic approximation ($P = .05$; 2-sided for significance). Analysis was performed with R statistical software, version 2.7.2 (R Foundation for Statistical Computing [http://www.r-project.org/]), using the `chisq.test` function for the χ^2 calculations.¹³

Open-ended text responses for the survey item asking for examples of incidents were coded by 2 authors with formal training in qualitative methods (K.C.C. and T.K.).¹⁴ One of the authors (K.C.C.) generated a codebook of themes using a portion of the data for which the rest of the data were applied. Themes were modified through discussion until consensus was reached.

RESULTS

School and Respondent Characteristics

Sixty percent (78/130) of deans or proxies responded to the survey. Responding schools were mostly urban; all school sizes were represented. Distributions of new student enrollment size were similar for respondents and non-respondents (≤ 80 , 10 vs 8; 81-120, 19 vs 14; 121-160, 20 vs 11; 161-200, 14 vs 20; > 200 , 9 vs 3; $P = .21$). TABLE 1 shows characteristics for the respondents who answered the section covering school and respondent characteristics.

The majority of respondents were daily users of the Internet for e-mail and similar communications (99%; 70/71), as well as Web surfing (71%; 50/70). Web 2.0 use was less common. Most respondents reported never or rarely using social networking sites (68%; 48/71), reading blogs (79%; 56/71), posting on blogs (87%; 61/70), reading wikis (69%; 48/70), or writing on wikis (91%; 64/70).

Incidents of Student-Posted Unprofessional Online Content

Of the respondents, 60% (47/78) reported ever having incidents involving students posting unprofessional content (TABLE 2). In the past year, 13% (6/47) of these had no incidents,

Table 1. Respondent Characteristics (n = 78)

Survey Item and Response Category	No. of Respondents per Category (%)
Entering class size of respondent's school (n = 72 respondents)	
≤80	10 (14)
81-120	19 (26)
121-160	20 (28)
161-200	14 (19)
>200	9 (13)
Setting of respondent's school (n = 70 respondents)	
Urban	53 (76)
Rural	15 (21)
Combination	2 (3)
Use blogs and/or social networking for educational purpose at respondent's school (n = 72 respondents)	
Yes	26 (36)
No or not sure	46 (64)
Respondent's estimate of percentage of students who post online content in some form (n = 70 respondents)	
0-25	6 (9)
26-50	3 (4)
51-75	15 (21)
76-90	15 (21)
>90	23 (33)
Cannot guess	8 (11)
Respondent age, y (n = 68 respondents)	
≤50	23 (34)
51-60	34 (50)
61-70	11 (16)
Respondent sex (n = 67 respondents)	
Women	36 (54)
Men	31 (46)

78% (36/47) had fewer than 5 incidents, 7% (3/47) had 5 to 15 incidents, and 2% (1/47) had some incidents but did not know how many. Incidents involving violation of patient confidentiality in the past year were reported by 13% (6/46). Student use of profanity, frankly discriminatory language, depiction of intoxication, and sexually suggestive material were more commonly reported. Issues of conflict of interest were rare.

Open-Ended Text Examples of Student-Posted Unprofessional Online Content

Respondents provided 36 open-ended text examples of student-posted unprofessional online content. Four examples involved e-mail or nonpublic Web sites. Two incidents were unclassifiable due to lack of specific information. The remaining 30 examples were categorized into 4 major themes.

Sexual-Relational Content. Ten open-ended text examples detailed sexually suggestive or explicit content or inappropriate relationships. Examples in this category included sexually provocative photographs of students, requesting inappropriate friendships with patients on Facebook, and sexually suggestive comments.

Affiliation With School. Nine open-ended text examples detailed negative comments pertaining to specific medical school experiences. Examples included using profanity or other disparaging language in reference to specific faculty, courses or rotations, classmates, or medical school. Some examples were reported as discriminatory in nature.

Intoxication or Substance Use. Seven open-ended text examples detailed content suggesting intoxication or illicit substance use. Ex-

Table 2. Selected Survey Responses

Survey Questions	No. per Category/Total No. of Respondents (%)	
	Yes	No or Not Sure
Are you aware of any incidents at your school in which medical students have posted unprofessional content online?	47/78 (60)	31/78 (40)
Did any of these incidents in the past year involve violations of patient confidentiality? ^a	6/46 (13)	40/46 (87)
Did any of these incidents in the past year involve conflicts of interest? ^a	2/46 (4)	44/46 (96)
Did any of these incidents involve content that fits into the following categories ^a		
Profanity	22/42 (52)	20/42 (48)
Discriminatory language	19/40 (48)	21/40 (53)
Depicted intoxication	17/42 (40)	25/42 (60)
Sexually suggestive	16/42 (38)	26/42 (62)
Do your school's current professionalism policies cover student-posted online content?	28/73 (38)	45/73 (62)
Does your school's policy specifically address issues of Internet use such as blogs and social networking sites? ^b	5/28 (18)	23/28 (82)
Given your existing policies, do you feel you are able to effectively deal with unprofessional student-posted online content?	58/72 (81)	14/72 (19)
Is there a committee or task force at your school that is responsible for addressing student-posted online content?	14/73 (19)	59/73 (81)
Are you aware of any incidents at other schools in which medical students posted unprofessional content online?	20/75 (27)	55/75 (73)

^a Answered if the response was yes to "Are you aware of any incidents at your school in which medical students have posted unprofessional content online?"

^b Answered if the response was yes to "Do your school's current professionalism policies cover student-posted online content?"

amples involved photographs (illicit substance paraphernalia, depiction of intoxication, students holding alcoholic beverages), video, and comments.

Threats to Patient Confidentiality. Four open-ended text examples detailed references to patients in which patient privacy was at risk. The majority of examples involved blogs that described clinical experiences with enough detail that patients could potentially be identified. One example was related to posting patient details on Facebook.

Incidents were often reported to deans by trainees (57%; 26/46), non-faculty staff (37%; 17/46), faculty (35%; 16/46), and rarely by patients or their family members (4%; 2/46). Disciplinary actions most frequently involved informal warnings (67%; 30/45). Other responses included no actions taken (16%; 7/45), formal disciplinary meetings (27%; 12/45), temporary suspension (2%; 1/45), and other (13%; 6/45). Responses marked

"other" included formal warning, remedial project, discussion with student council and resolution, meeting with dean, phone call from dean, and incident discovered after students graduated. Dismissal of students was reported by 7% (3/45) of schools. Of respondents who reported student dismissal, one cited incident(s) involving patient confidentiality and one cited incident(s) involving conflicts of interest. The third respondent cited multiple incidents involving profanity, frankly discriminatory language, depiction of intoxication, and sexually suggestive material, of which 1 infraction resulted in dismissal.

Level of Concern Among Student Affairs Deans or Proxies

Of the 64 respondents who answered the question on level of concern using the 5-point Likert scale (1 indicating not concerned at all; 5 indicating very concerned), 1 reported a rating of 1 (2%), 9 reported a rating of 2 (14%), 30 reported a rating of 3 (47%), 15 re-

ported a rating of 4 (23%), and 9 reported a rating of 5 (14%).

Deans reporting more serious disciplinary actions (suspension, dismissal, or other formal disciplinary action) were more than twice as likely to report the highest and second highest level of concern than deans reporting less serious disciplinary actions, but the difference was not statistically significant (55% vs 25%; $P = .13$).

Institutional Policies and Resources

Of individuals who responded to the question about current professionalism policies, 38% (28/73) reported that their schools' policies broadly cover student-posted online content (Table 2). However, most of these (82%; 23/28) reported that the policies do not explicitly mention Internet use. Of the 46 respondents who reported that their schools do not have policies to cover student-posted online content, 11% (5) were developing or revising existing policy to address this issue at survey time, 50% (23) were planning to make changes, 20% (9) did not feel any changes were necessary, and 20% (9) were not sure.

Of the schools reporting incidents, 51% (23/45) have policies. Of the remaining 22 schools, 9% (2) were developing policies, 41% (9) were planning to revise or create policies, 18% (4) did not think revisions or new policies were necessary, and 32% (7) were not sure.

Regardless of whether schools' policies covered Internet use, 81% (58/72) of respondents thought that unprofessional student-posted online content could be addressed effectively with existing policies (Table 2).

Nineteen percent of respondents (14/73) reported that a committee or task force was responsible for addressing student-posted online content. Committee members included representatives from the dean's office (93%; 13/14), medical students (79%; 11/14), faculty who were not deans (79%; 11/14), and representatives from the legal (43%; 6/14), ethics (14%; 2/14), public relations (7%; 1/14), and infor-

mation technology (7%; 1/14) departments.

Comparison of Schools With and Without Incidents

Respondents reporting incidents vs those who did not were significantly more likely to report having a policy that covers student-posted online content (51% vs 18%; $P=.006$), having a policy that allows them to deal effectively with this issue (91% vs 63%; $P=.003$), and having the highest level of concern (20% vs 0%; $P=.02$ for difference in distribution of level of concern) (TABLE 3). Respondents reporting incidents were also more likely to report having a policy that specifically addresses Internet use, a committee or task force responsible for addressing this issue, and higher estimated rates of student use. These respondents also reported higher personal use of certain Web 2.0 applications (social networking sites, reading blogs, posting on blogs) although these differences did not reach statistical significance. The distribution of class size was significantly different between schools reporting an incident vs schools not reporting an incident ($P=.04$), with schools not reporting an incident more than 7 times as likely to have 80 or fewer students per class (Table 3).

COMMENT

The majority of medical school representatives reported incidents involving students posting unprofessional content online. Some of the incidents involved violation of patient confidentiality. While most incidents resulted in informal warnings, some were serious enough to lead to dismissal. However, few respondents reported having professionalism policies that could apply to student online postings and very few of these explicitly mentioned Internet use.

Respondents reporting incidents were more likely to have policies and resources in place to effectively deal with this issue, as well as higher overall levels of concern. It is possible that

the incidents came first, followed by policy adjustments to address similar future incidents. Alternatively, schools with heightened awareness of medical student Web 2.0 use might have been more likely to detect incidents, although we did not find an association between deans' level of Internet use and reporting incidents.

To help place the student dismissal findings in context, medical student dismissals for professionalism lapses are

rare. In 2001-2002, total medical student attrition was 673 out of a total enrollment of 66 673 (1.0%), including withdrawals and dismissals. Most cases were for academic, transfer, or personal reasons (618/673, [92%]).¹⁵ Given prior work that connects unprofessional behavior in medical school with future state board disciplinary action,¹⁶ involvement in unprofessional online posting might have similar prognostic significance; if so, detecting and

Table 3. Comparison of Schools With and Without Reported Incidents^a

	No. of Respondents (%)		P Value ^b
	With Reported Incidents	Without Reported Incidents	
Do your school's current professionalism policies cover student-posted online content (n = 73 respondents)			
Yes	23 (51)	5 (18)	.006
No or not sure	22 (49)	23 (82)	
NR	2	3	
If yes, does your school's policy specifically address issues of Internet use such as blogs and social networking sites (n = 28 respondents)			
Yes	5 (22)	0	.54
No or not sure	18 (78)	5 (100)	
NR	0	0	
Are you able to effectively deal with unprofessional student-posted online content (n = 72 respondents)			
Yes	41 (91)	17 (63)	.003
No	4 (9)	10 (37)	
NR	2	4	
Is there a committee or task force at your school responsible for addressing student-posted online content (n = 73 respondents)			
Yes	10 (22)	4 (14)	.54
No or not sure	35 (78)	24 (86)	
NR	2	3	
Rate your overall level of concern about unprofessional student-posted online content (n = 64 respondents)			
1 (Not concerned at all)	1 (2)	0	.02
2	7 (16)	2 (10)	
3 (Moderately concerned)	21 (48)	9 (45)	
4	6 (14)	9 (45)	
5 (Very concerned)	9 (20)	0	
NR	3	11	
How many medical students are in your entering class this year (n = 72 respondents)			
≤80	2 (4)	8 (30)	.04
81-120	13 (29)	6 (22)	
121-160	15 (33)	5 (18)	
161-200	10 (22)	4 (15)	
>200	5 (11)	4 (15)	
NR	2	4	

Abbreviation: NR, nonresponse.

^aThe number of eligible respondents for each question varied based on prior survey answers.

^bP values are for differences between schools with and without reported incidents among schools responding to the question (ie, the NR category is not included in the comparisons).

addressing such activities would be warranted.

Although some of the incidents identified in this survey appear to be clear-cut lapses in professionalism (eg, violation of patient privacy and photos involving illicit drug use), others fall into more ambiguous categories (eg, using profanity and being sexually suggestive). Certain examples, such as negative comments about a student's institution or profession, might not be considered unprofessional. The line separating protected First Amendment rights and inappropriate postings may be unclear. The categories of unprofessional incidents used in this survey were based on prior studies on Internet professionalism^{6,7} but are subject to disagreement. Notably, examples of students' public behaviors that fall into many of these categories have been documented long before the advent of the Internet.^{17,18} Some, such as socially inappropriate medical student shows (in which medical students write and perform satirical comedy skits), may serve important coping and stress-release functions during difficult training¹⁸; however, when disseminated on media-sharing sites such as YouTube or Google Video, they carry the potential for significant public impact and viral spread of content.¹⁹

Our findings support recent literature highlighting the implications of the Internet for medical professionalism.^{6,7,19} Medical students may not be aware of how online posting can reflect negatively on medical professionalism or jeopardize their careers.²⁰ Educating students about these concerns may change Internet behavior. For example, at one institution, teaching about how to elect privacy settings on Facebook resulted in an 80% decrease in publicly accessible accounts.²¹ Sharing patient stories that are de-identified and respectful, as health professionals might do on personal blogs, can encourage reflection, empathy, and understanding.^{3,22,23} However, content may risk violation of pa-

tient privacy, even without using names or other identifiers⁶; awareness and appropriate measures to safeguard patients' identities are critical.

Limitations of this study include the possibility of responder bias. Those responding may have been more likely to have had incidents or higher levels of concern than nonrespondents. However, the responding schools represent all school sizes and settings, and this survey includes most US medical schools. Despite nonresponse, these results indicate that a substantial proportion of schools experienced incidents. Another limitation is that the survey instrument was designed without student input and with little available literature on the topic. Some of the survey items required categorization of incidents (eg, discriminatory language) that could be subject to individual interpretation. The survey was not designed to determine when reported unprofessional online content was originally posted; however, the majority of open-ended text examples that were provided appear to have occurred during medical school. There was no specific information about the content of schools' programs or policy elements. The survey did not include osteopathic schools, which are another source of practicing physicians. Finally, as a cross-sectional survey, our findings can suggest associations but cannot prove causality.

There are a number of actions that medical schools could take that might address some of the concerns raised by these findings. The formal professionalism curriculum^{24,25} should include a digital media component, which could include instruction on managing the "digital footprint," such as electing privacy settings on social networking sites and performing periodic Web searches of oneself.¹² This is important given that residency program directors, future employers, and patients may access this information.¹² Relevant laws, such as the Health Insurance Portability and Accountability Act (HIPAA) and the Family Educational Rights and Privacy Act (FERPA, 20 U.S.C. § 1232g) should be

incorporated into instruction. Assessments of professional competence can include assessment of students' digital footprints, perhaps using confidential peer assessment²⁶⁻²⁸ or mentored self-assessment.²⁹ Residents and faculty should model appropriate Web 2.0 behaviors to impart these professional behaviors to students.³⁰⁻³² Faculty should be aware of the capabilities of the various Web 2.0 applications. Research should examine existing policies, identify superior models, and determine the effects of having specific policies and curricular programs on students' online behaviors and professional development. Discussions among students, residents, and faculty should occur to help define medical professionalism in the era of Web 2.0.

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Our moral progress may be measured by the degree in which we sympathize with individual suffering and individual joy.

—George Eliot (1819-1880)