

Background

The Problem

With the goals of improving patient safety and resident well-being, the ACGME's 2011 revision of duty-hour requirements included a 16-hour limit on continuous duty hours for postgraduate year 1 (PGY-1) trainees, increased supervision for junior trainees, as well as mandated rest periods between duty hours.¹ These rules place limitations on the ability of trainees to attend scheduled educational activities during standard work hours; a recent study showed a decrease in resident availability for teaching conferences compared with the 2003 duty hour regulations.² Residency training programs must develop alternative avenues for education and encouraging inquiry outside of traditional methods.

A Modern Solution

Social networking sites, such as Twitter, represent a promising opportunity for residency programs to foster collaborative learning and educational engagement both inside and outside of the hospital. After surveying our residents' methods of obtaining medical knowledge, the chief medical residents at Thomas Jefferson University Hospital created a shared Twitter account entitled "@JeffIMChiefs" with the goals of disseminating clinical pearls from our daily conferences and inspiring continued learning by providing links to relevant research and review articles.

Description of the Innovation

Survey of our Residents

In April 2013, 23 PGY-1 and 33 PGY-2 Jefferson residents were surveyed. Overall, 14% had used Twitter within the previous 3 months with 9% using the website weekly. With regards to our weekly summary e-mails of didactic conferences, 64% read the content weekly. In the 2 weeks prior to survey, only 63% of residents had read at least one journal article (recent or remote), and nearly 20% could not provide a one sentence synopsis of the article's findings.

@JeffIMChiefs

The Twitter account @JeffIMChiefs became active on May 1, 2013. To date 637 tweets have been posted. These include 302 (47.41%) conference teaching points, 88 (13.81%) research articles from the primary literature, 62 (9.73%) announcements regarding our residency, 75 (11.77%) review articles, 71 (11.15%) articles from the layperson press, 21 (3.3%) interactive learning resources, 13 (2.04%) messages to other programs, and 5 (0.79%) case reports. Examples of posted content can be seen in the middle column.

Twitter Glossary

Twitter: online social networking & microblogging site that enables users to send & read "tweets" from other users

@: The @ symbol is used to mention a user when placed before their username

Follow: To "follow" someone on Twitter is to subscribe to their tweets in your timeline

Hashtag (#): Adding a hashtag (#) symbol directly before words or phrases in your tweet categorizes the tweet for others to search for, or allows organization of a conversation around a theme

Mention: Bring a tweet to a user's attention by including their @username in a tweet. This will appear to the @username you mentioned and to all of your followers

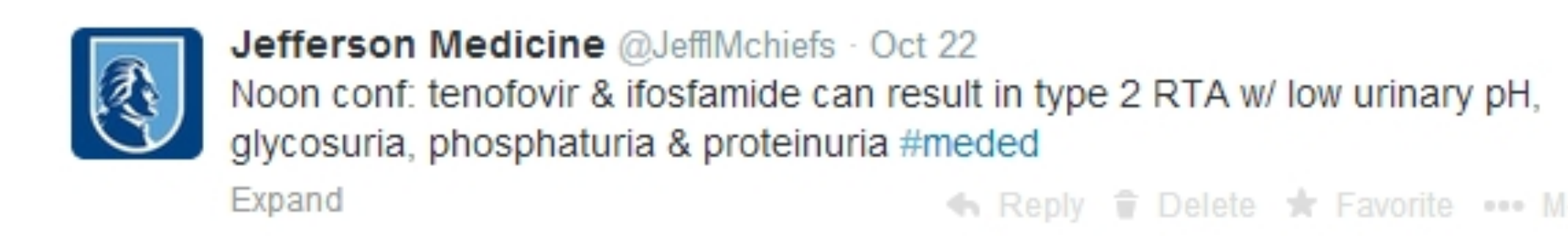
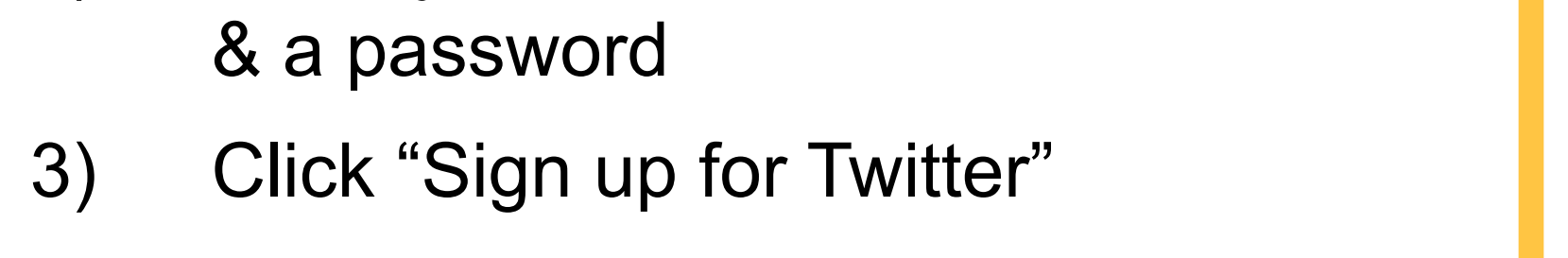
Retweet: Hitting the "Retweet" button will pass along someone else's tweet to all of your followers

Timeline: a real-time list of tweets from users you are following

Tweet (noun): A message posted via Twitter containing ≤140 characters

Tweet (verb): The act of posting a message

Examples of Content



How to Create an Account

- 1) Go to <http://twitter.com/signup>
- 2) Enter your full name, email address & a password
- 3) Click "Sign up for Twitter"
- 4) Select a username
- 5) Double-check information entered
- 6) Click "Create my Account"
- 7) You will be sent a confirmation email. Click link to confirm.

Results to Date

@JeffIMChiefs currently has 436 Twitter followers. This includes 21 residents from our program, 73 attendings from academic medical centers across the country, 17 residency program accounts, 20 medical students, and 19 residents outside of Jefferson. Interactions with Twitter users include 77 mentions of our account, as well as 104 favorites and 102 re-tweets of our content. Examples of collaboration within the residency include residents sharing novel online learning resources as well as articles from the layperson press and medical literature. Multiple residents have incorporated teaching videos into their conference presentations based on material posted by @JeffIMChiefs. Interaction with other internal medicine (IM) programs similarly produced sharing of a wide array of learning resources, in addition to discussions on how to create a residency-produced annual research journal. An unanticipated facet of our Twitter experience was interaction with the medical student community.

Table 1. Twitter Content

Category of Tweet	Number (%)
Conference Recap	302 (47.41%)
Research Article	88 (13.81%)
Review article	75 (11.77%)
Layperson press article	71 (11.15%)
Interactive learning resource	21 (3.3%)
Messages to other programs	13 (2.04%)
Case report	5 (0.79%)

Table 2. Followers and Interactions

Type of Follower	Number
Attending Physicians	73
Residents from our program	21
Residents outside of Jefferson	19
Residency program accounts	17
Undefined	306
Interaction	Number
Tweet was favorited	104
Tweet was retweeted	102
@JeffIMChiefs mentioned	77

Discussion

Twitter is a promising tool to serve as a forum for interactive learning and medical inquiry within internal medicine (IM) residency programs. To date 12 IM programs utilize Twitter in a variety of manners for curricular enrichment. This site will become an increasingly important tool over time as its highest rates of use are among young adults. The Pew Research Center found that approximately 27% of adults 18-29 years old use Twitter.³ Utilization of Twitter as a medical educational platform is not restricted to the newly trained, as nearly every major biomedical journal has embraced the site as a place to share content and stimulate open discussion. In addition to resident education and sharing ideas across the spectrum, IM programs are given the opportunity to interact with the medical student community, which may facilitate recruitment efforts.

Future Directions

Only three published studies describe the subjective effects of incorporating Twitter into an educational curriculum, one of which included housestaff.^{4,5} Additional prospective studies are needed to objectively quantify the benefits of Twitter on medical education at the residency level.

References

1. Accreditation Council for Graduate Medical Education. The ACGME 2011 duty hour standards (http://www.acgme.org/acgme/Portals/0/PDFs/Common_Program_Requirements_07012011%5B2%5D.pdf).
2. Desai SV, Feldman L, Brown L, et al. Effect of the 2011 vs 2003 Duty Hour Regulation-Compliant Models on Sleep Duration, Trainee Education, and Continuity of Patient Care Among Internal Medicine House Staff. *Jama Intern Med* 2013;173(8):649-655.
3. Pew Research Center. The Demographics of Social Media Users – 2012 (http://www.pewinternet.org/files/old-media/Files/Reports/2013/PIP_SocialMediaUsers.pdf).
4. Cheston CC, Flickinger TE, Chisolm MS. Social media use in medical education: a systematic review. *Acad Med* 2013;88:893-901.
5. Bahner DP, Adkins E, Patel N, Donley C, Nagel R, Kman NE. How we use social media to supplement a novel curriculum in medical education. *Med Teach* 2012;34(6):439-44.