Leveraging the Power of Social Media in Medicine

Kelly Cawcutt, MD,MS
Assistant Professor of Medicine
Associate Director of Infection Control
Co-Director of Digital Innovation & Social Media Strategy for the Division of Infectious Diseases
@KellyCawcuttMD
December 12, 2019
Objectives

- Define Social Media Platforms
- Describe How Social Media is Used In Medicine
- Understand the Impact of Social Media as Implementation Science & the Impact on Bibliometrics
Raise Your Hands
Percentage of US Population with a Social Media Profile

Why is Social Media Important In Academic Medicine?
In almost every medical sphere, from vaccines and heart health to cancer drugs and diet, experts have reported a huge increase in misinformation online, which at best obfuscates the truth and at worst contradicts it entirely.
Jefferson Health Welcomes Austin Chiang, MD, MPH, as Chief Medical Social Media Officer

11/30/18

"Social media has established itself as important forum to discuss health and medicine, but it has also become an important tool to promote and influence public health," said Dr. Chiang. "My hope is to encourage and optimize health professional's social media engagement. Without the professional voice on social media, untrained individuals can disseminate inaccurate, and at times harmful, health information."

Dr. Chiang leverages his digital presence in new, innovative position
Q: How do you stay up-to-date in Medicine?

A: Reading Up-to-Date
Consume scholarly materials
Develop powerful networks
Disseminate your research
Broaden your recognition as an expert
Based on data reported via Elsevier in 2015, this number of peer-reviewed articles published annually now exceeds 2.5 million.
Q: 29 year old with 2 months of cough not responsive to antibiotics. Differential diagnosis? ANSWER: goo.gl/ihCoJt #FOAMrad #FOAMed
Unpacking the new IDSA Community-Acquired Pneumonia guidelines: a new blog post by senior fellow @LReaigh. She made some handy flowcharts addressing treatment in various settings. Also, H/T to @ASPPhysician at the end! bit.ly/2rzVpfF

<table>
<thead>
<tr>
<th>Inpatient</th>
<th>Outpatient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Severe Patient</td>
<td>Severe Patient w/o comorbidities</td>
</tr>
<tr>
<td>MRSA or Pseudomonal Coverage if with risk factors</td>
<td>Beta-lactam + Macrolide</td>
</tr>
<tr>
<td>Consider adding</td>
<td>Beta-lactam</td>
</tr>
<tr>
<td>Cloxacillin</td>
<td>Macrolide</td>
</tr>
<tr>
<td>Fluroquinolone</td>
<td>only if pneumococcal resistance &lt;25%</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Social media as a tool for antimicrobial stewardship

Jennifer Pisano MD, Natasha Pettit PharmD, Allison Bartlett MD, Palak Bhagat PharmD, Zhe Han PharmD, Chuanhong Liao MS, Emily Landon MD

* Department of Medicine, Section of Infectious Diseases and Global Health, University of Chicago Medicine, Chicago, IL
b Department of Pharmacy, University of Chicago Medicine, Chicago, IL
c Department of Pediatrics, Section of Infectious Diseases and Global Health, University of Chicago Medicine, Chicago, IL
d Department of Public Health Sciences, University of Chicago, Chicago, IL

Key Words:
Antimicrobial stewardship
social media
medical education

Background: To increase the reach of our antimicrobial stewardship program (ASP), social media platforms, Facebook and Twitter, were used to increase internal medicine residents’ (IMRs’) antibiotic (Abx) knowledge and awareness of ASP resources.

Methods: Fifty-five of 110 (50%) IMRs consented to participate; 39 (71%) completed both pre- and post-intervention surveys and followed our ASP on social media. Along with 20 basic Abx and infectious diseases (IDs) questions, this survey assessed IMR awareness of ASP initiatives, social media usage, and attitudes and beliefs surrounding Abx resistance. Over 6 months, IMRs received posts and Tweets of basic Abx/IDs trivia while promoting use of educational tools and clinical pathways on our ASP Web site. To compare pre- and postsurvey responses, McNemar test or Stuart–Maxwell test was used for categorical variables, and paired t test or Wilcoxon signed-rank test was used for continuous variables, as appropriate.

Results: Of the IMRs, 98% and 58% use Facebook and Twitter, respectively. To compare pre- and post-intervention, median scores for Abx knowledge increased from 12 (interquartile range, 8–13) to 13 (interquartile range, 11–15; P = .048); IMRs knowing how to access the ASP Web site increased from 70% to 94%. More IMRs indicated that they used the clinical pathways “sometimes, frequently, or always” after the intervention (33% vs 61%, P = .004).

Conclusions: Social media is a valuable tool to reinforce ASP initiatives while encouraging the use of ASP resources to promote antimicrobial mindfulness.

© 2016 Association for Professionals in Infection Control and Epidemiology, Inc. Published by Elsevier Inc. All rights reserved.
Morris, Zoë Slote, Steven Wooding, and Jonathan Grant. "The answer is 17 years, what is the question: understanding time lags in translational research." *Journal of the Royal Society of Medicine* 104.12 (2011): 510-520.
“Implementation research is the scientific study of methods to promote the systematic uptake of research findings and other evidence-based practices into routine practice, and, hence, to improve the quality and effectiveness of health services and care. This relatively new field includes the study of influences on healthcare professional and organisational behaviour.”

Step 1: Disseminate Research

Step 2: Implement Research
Bibliometrics

“the application of mathematical and statistical methods to books and other media of communication.”

Conventional versus Alternative Metrics

Fig. 1. Progression of research to clinical practice.
The PM&R Journal Implements a Social Media Strategy to Disseminate Research and Track Alternative Metrics in Physical Medicine and Rehabilitation

William N. Niehaus, MD, Julie K. Silver, MD, Matthew S. Katz, MD

What is #Physiatry?

#Physiatry is about patient-centered care & maximizing independence & mobility

Exercise Benefits for Chronic #LowBackPain in Overweight & Obese Individuals

ow.ly/vjzi309nT7w #Physiatry
<table>
<thead>
<tr>
<th>Metric</th>
<th>Jul 2016-Feb 2017</th>
<th>Mar 2017-Oct 2017</th>
<th>% Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Followers at end of time period</td>
<td>1106</td>
<td>1728</td>
<td>56.2%</td>
</tr>
<tr>
<td>Median @PMRJournal tweets/mo</td>
<td>14</td>
<td>36</td>
<td>157%</td>
</tr>
<tr>
<td>Retweets of @PMRJournal content</td>
<td>163</td>
<td>1179</td>
<td>623%</td>
</tr>
<tr>
<td>Mentions of @PMRJournal by others</td>
<td>25</td>
<td>204</td>
<td>716%</td>
</tr>
<tr>
<td>Profile visits to @PMRJournal</td>
<td>1946</td>
<td>6685</td>
<td>243%</td>
</tr>
<tr>
<td>Total engagements with @PMRJournal</td>
<td>1171</td>
<td>7787</td>
<td>565%</td>
</tr>
</tbody>
</table>

% Increase = (post − pre)/pre.

Figure 2. Total number of Tweets that included #Physiatry over the 8 months before and after the intervention of the social media plan. Data obtained from official Twitter search function.
Use of a Coordinated Social Media Strategy to Improve Dissemination of Research and Collect Solutions Related to Workforce Gender Equity

Kelly A. Cawcutt, MD, MS, FACP, Lillian M. Erdahl, MD, FACS, Meridith J. Englander, MD, FSIR, Diane M. Radford, MD, FACS, FRCSEd, Amy S. Oxentenko, MD, FACP, FACG, AGAF, Linda Girgis, MD, FAAFP, Lindsey L. Migliore, DO, Julie A. Poorman, PhD, and Julie K. Silver, MD
FIG. 2. Impact of a coordinated chat strategy on article Altmetric Attention Score. Altmetric Attention Scores are shown for the eight selected articles at the time of announcement of the upcoming chat (Day 0), before the chat (Days 1–20) and following the chat (Days 21–49). Improvement in Altmetric Attention Score between chat announcement (Day 0) and 1 month after the chat (Day 49) is shown in parentheses behind each article nickname.
FIG. 3. Impact of a coordinated chat strategy on article Altmetric Rank. Because Altmetric Rank decreases as an article receives more attention (e.g., moves from a #10 to a #1 rank) and to visually represent improvement in rank, the vertical axis in this chart was reversed. The Altmetric rank improved for seven of the eight articles between announcement of the chat (Day 0) and 1 month after the chat (Day 49). The improvement seen in the ranks of the MeToo and Judged articles is conservative as these articles were unranked on the day the chat was announced. For these articles, the Altmetric Ranks on Day 7 were substituted for the ranks on Day 0. Although the Metrics article showed the least improvement in rank during the study period, it could not have improved, holding and retaining the #1 rank from chat announcement through the end of the study period.
Table 3. Impact of a Coordinated Chat Strategy on Article Metrics

<table>
<thead>
<tr>
<th></th>
<th>Altmetric attention score</th>
<th>Altmetric rank in respective journal*</th>
<th>Art</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Day 0</td>
<td>Day 49</td>
<td>Improvement</td>
</tr>
<tr>
<td>Compensation</td>
<td>170</td>
<td>290</td>
<td>120 (70.6%)</td>
</tr>
<tr>
<td>Promotion</td>
<td>151</td>
<td>359</td>
<td>208 (137.7%)</td>
</tr>
<tr>
<td>Pregnancy</td>
<td>177</td>
<td>291</td>
<td>114 (64.4%)</td>
</tr>
<tr>
<td>Awards</td>
<td>113</td>
<td>223</td>
<td>110 (97.3%)</td>
</tr>
<tr>
<td>Evaluation</td>
<td>73</td>
<td>216</td>
<td>143 (195.9%)</td>
</tr>
<tr>
<td>Me Too</td>
<td>57</td>
<td>148</td>
<td>91 (159.6%)</td>
</tr>
<tr>
<td>Judged</td>
<td>3</td>
<td>116</td>
<td>113 (3766.7%)</td>
</tr>
<tr>
<td>Metrics</td>
<td>319</td>
<td>432</td>
<td>113 (35.4%)</td>
</tr>
<tr>
<td>Average improvement</td>
<td>126.5</td>
<td>566</td>
<td>566 (566.0%)</td>
</tr>
<tr>
<td>Sample standard deviation</td>
<td>35</td>
<td>61</td>
<td></td>
</tr>
<tr>
<td>p-value</td>
<td>&lt;0.0001</td>
<td></td>
<td></td>
</tr>
<tr>
<td>95% CI for mean</td>
<td>90.5-150.5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Statistically Significant Improvement
Visual Abstracts Increase Article Dissemination: a prospective, case-control crossover study

**Impressions**
- x7.7 fold
- 3k → 23k
  (No. of times a Tweet was seen)

**Retweets**
- x8.4 fold
- 11 → 92
  (No. of times a Tweet was shared)

**Article Visits**
- x2.7 fold
- 65 → 175
  (No. of Article Visits via link click)

Can Tweets Predict Citations? Metrics of Social Impact Based on Twitter and Correlation with Traditional Metrics of Scientific Impact

Figure 2
Citation and tweetation dynamics of a highly cited (and highly tweeted) article [article ID 1376]; citations according to Scopus.
The h-index, or Hirsch index, measures the impact of a particular scientist rather than a journal. ‘It is defined as the highest number of publications of a scientist that received h or more citations each while the other publications have not more than h citations each.’

“For example, a scholar with an h-index of 5 had published 5 papers, each of which has been cited by others at least 5 times.”

Social Media and the 21st-Century Scholar: How You Can Harness Social Media to Amplify Your Career

Teresa M. Chan, MD, MHPE⁹, David Stukus, MD⁶, Jimmie Leppink, PhD⁶, Lina Duque, MBA⁶, Blair L. Bigham, ACPf, MSc, MD⁶, Neil Mehta, MBBS, MS⁶, Brent Thoma, MA, MD, MSc⁶

Abstract

To many physicians and professionals, social media seems to be a risky business. However, recent literature has shown that there is potential to enhance your scholarly brand by engaging your stakeholders online. In this article, we discuss the opportunities presented to modern scholars by social media. Using case studies, we highlight two success stories around how scientists and scholars might use social media to enhance their careers. We also outline five key steps you can follow to build and manage your scholarly presence online.

Key Words: Social media, branding, modern scholar, career enhancement

Social Media Scholarship and Alternative Metrics for Academic Promotion and Tenure

Daniel Cabrera, MD, Durga Roy, MD, Margaret S. Chisolm, MD

Abstract

Traditionally, scholars focused their efforts in the domains of clinical care, research, and education; however, the last decade has witnessed the rise of novel areas of development such as innovation, quality improvement, informatics, and recently, digital scholarship. Academic institutions adapted and began considering these fields for academic promotion and tenure. Social media has become a critical space for the dissemination of knowledge and outreach to community and policy makers and also for the creation of communities of practice. This new realm brings multiple challenges, such as the appraisal of the quality and appropriateness of the content, the evaluation of impact on the academy and general populations, coupled to the creation of a system to reward scholars engaged in this novel endeavor. In this article, we describe the current state of academic promotion and the definition, nature, and merit of digital scholarship. We outline new strategies and tools for the assessment of dissemination and impact of these works, such as altmetrics, and finally, we reference innovative concepts on how to organize and use this digital academia on career promotion and tenure.

Key Words: Social media, tenure, promotion, academia, altmetrics


https://www.kevinmd.com/blog/2016/10/used-twitter-get-promoted-academic-medicine.html
Risks Vs Benefits
Table 2. Best Practices for Disseminating Research via Social Media

<table>
<thead>
<tr>
<th>Practice</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Define the goal to be accomplished through social media engagement.</td>
<td>Know social media guidelines for your organization.</td>
</tr>
<tr>
<td>Understand the different social media platforms &amp; audiences.</td>
<td>Maintain professional behavior online, just as you would for in-person interactions.</td>
</tr>
<tr>
<td>Content is critical; provide high-yield points.</td>
<td>Do not share patient information (HIPPA still applies).</td>
</tr>
<tr>
<td>Add images or visual abstracts.</td>
<td>Do not share research or images that are embargoed or without author/speaker permission.</td>
</tr>
<tr>
<td>Include a link to referenced articles.</td>
<td>Create &amp; share content that is meaningful to your target audience.</td>
</tr>
<tr>
<td>Use hashtags (#) to categorize content.</td>
<td></td>
</tr>
</tbody>
</table>
- LEARN
- TEACH
- RESEARCH
- COLLABORATE
- PROMOTE
Questions?

Kelly.Cawcutt@unmc.edu
@KellyCawcuttMD