Title:
PubMed Commons: Advancing Peer-to-Peer Scholarly Communication Toward Improving Health Outcomes

Learning objectives:
By the end of the presentation participants will a) be able to discuss the potential of PubMed Commons as a tool for open peer-to-peer scholarly communication and information exchange; b) understand the benefits and barriers of using Internet-based social media technologies to facilitate innovative and meaningful communication; and c) recognize the value of social network analysis and content analysis as methods for evaluating online forums, and then strategically leveraging the power of the Internet for knowledge sharing.

Abstract:
Theoretical Background and research questions/hypothesis:
Organizations are exploiting Internet-based interactive technologies to facilitate asynchronous communication and promote social connections. Given ongoing changes in academic publishing, such interactions can be leveraged to encourage scholarly dialogue and advance research toward improving health outcomes. In October 2013, the National Library of Medicine introduced PubMed Commons, a new forum for scientific discourse. Authors whose publications are indexed in PubMed are invited to comment on other authors’ work and participate in open post-publication, peer-to-peer scholarly communication. This exploratory study aimed to a) investigate the extent to which authors utilize the PubMed Commons forum as a tool for information exchange; b) examine social connections between authors; and c) identify what types of rhetoric themes emerge over time in individual- and threaded-posts.

Methods:
A cross-sectional design using UCInet social network analysis software was conducted to determine the current extent of information exchange within PubMed Commons. Demographic information was collected and included number of comments made and the communication networks formed by commenters. Data was collected manually and recorded in a rectangular matrix. NetDraw visualization software was used to map social networks (i.e., sociograms). After populating a spreadsheet with message thoughts extracted from posts, a content analysis of commenter rhetoric was conducted and analyzed for themes using a ground theory approach.
Results:
Sociograms demonstrated a highly asymmetrical network of scholarly discourse in PubMed Commons, indicating the Internet-based social media forum for scholarly communication does not openly facilitate integrated information exchange and knowledge sharing. Content themes appearing in posts included clarifying, disputing, validating, watchdogging, flaming, and humor.

Conclusions:
Peer-review is not simply a formality in the publishing process; rather, it is an opportunity to assess research findings, exchange scientific communication, and advance science—in this study health science. Providing a channel and audience for open post-publication, peer-to-peer scholarly communication is one way to achieve this ideal. Findings from this study suggest that to date only a small number of commenting authors utilize PubMed Commons as a tool for scholarly information exchange; however, early indications should not be taken as signs of success or failure. Like other culture changes, it could take years to build trust within the scientific health community and perhaps longer to coalesce an integrated, information exchange network of participating researchers.

Implications for research and/or practice:
Lessons learned from this study could inform organizations how to facilitate scholarly discourse through the use of social media and, in turn, speed the process of discovery and translational science for health care. Furthermore, health organizations of all types that are implementing interactive Internet-based social media for information exchange could benefit from using a mixed methods approach of social network analysis and content analysis to determine successes or needed alterations in the ways they architect and manage open online forums. Thoughtful data collection and subsequent analysis could aid in strategic planning for promoting information exchange and knowledge sharing.