In 2013, NLM introduced PubMed Commons, providing an audience and a forum for “authors to share opinions and information about scientific publications in PubMed.”

**Research Questions**

RQ1: To what extent do authors utilize PubMed Commons as a tool for health information exchange?

RQ2: What types of social connections exist among authors?

RQ3: What types of information are exchanged in threaded posts?

**Methods**

- Cross-sectional design using UC Irvine social network analysis (SNA)1 and NetDraw visualization programs demonstrated the current extent of communication connections within PubMed Commons.
- Grounded theory-based content analysis of message ideas extracted from posts revealed communication themes.

**Limitations**

- Forum interaction is dynamic. Posts were collected through March, 2015; SNA sociogram depicts data as of April, 2014.
- Authors commenting on their own posts gives a false sense of community activity, as well as community size.
- Defining network parameters is problematic.
- Investigation examined online posts; no member checking.
- Cannot measure licker impressions and information sharing.
- PubMed does not support searching within comments.

**Findings from PubMed Commons**

The social network analysis sociogram depicts a disconnected structure with only 12 article authors brokering connections.

**Comment Examples and Themes**

*"This kind of perspective from a cardiovascular scientist is most beneficial to general internists like me."*

*"There are several inconsistencies and misinterpretations in the data which seriously undermines the main conclusion on the paper."*

*"Since the JAIDA denied us the opportunity to reply to the letter in print, we are posting our response here on PubMed Commons."*

*"With all respect to the commenter, the misleading posted arguments and evident lack of insight... underscores the danger of such unsolicited and unreviewed posting, not subject to peer review."*

*I had contact with the main author to alert her to certain misconceptions published earlier. Sadly, I found I had wasted my time."

*"Here is a link to the related paper on using machine learning..."*

**Implications**

- A mixed-methods investigation using social network analysis (SNA) and qualitative content analysis could be used for any social media forum to identify successful information exchange and indicate needed alterations to promote meaningful communication.
- Open, post-publication discussion could accelerate translational science toward improving health care.
- The PubMed Commons forum facilitates interaction between authors, readers, practitioners, researchers, educators, students, and others who otherwise would not have the opportunity for information exchange; the forum effectively demonstrates the broader impact of ‘open’ science.
- Collective, societal peer-review aims to expose “bad science” and rectify erroneous information shared in comments.
- Early indications of activity on networks should not be taken as signs of success or failure. Like other cultural changes, it could take years to build trust within a scientific community and create an integrated, information exchange network of practitioners and authors.

**Future Research**

- Quantify content analysis themes, publication profiles, article subject matter, and posting time of day.
- Define, investigate, and visually demonstrate distinct networks.
- Evaluate the role and effects of moderator.
- Compare PubMed Commons with similar forums (e.g., PubPeer).
- Conduct survey and key informant interviews, including NLM workers.
- Investigate discourse flow.

**Selected References**


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*Images and diagrams are not included in the text representation.*