Social media in medicine: a game changer?

Graham-Brown MPM[1], Oates T[2]
[1]John Walls Renal Unit, University Hospitals Leicester NHS Trust, Leicester, UK.
[2]UCL Centre for Nephrology, London, United Kingdom.

Correspondence Matthew Graham-Brown: mpmgb1@le.ac.uk

A digital age

In the 1990s, the arrival of the internet to homes, coupled with the affordability of the personal computer, revolutionised both how we communicate, and how we access information, goods and services. Organizations that developed an online presence prospered, whilst those who were late to the party were left behind. The birth of social media (SoMe) represents a second digital revolution in as many decades, driven in part by improvements in mobile technology.

Social media refers to user-driven content posted on social network sites. The 'media' shared by users may be blog-posts, photos, graphics and videos. Websites like Facebook, Twitter, YouTube or Instagram are symbols of the SoMe age and have connected the world like never-before. It is estimated that 70% of internet users are active on at least one SoMe platform (1) and Facebook alone has over 1 billion users.

The effective use of SoMe platforms to define and publicize activities and interact with stakeholders is a key part of modern corporate strategy. Medicine should be no different, and the potential for SoMe to enhance and influence the way medical professionals work is no longer a future possibility, it's a current reality. In this article we discuss how medical professionals and patients are using SoMe to enhance communication and professional networks, the educational value in social media enterprises, and the possibilities of using social media to conduct public health research.

Networks and communication

SoMe is uniquely placed to facilitate the formation of global networks of health professionals, allowing the exchange of ideas, sharing of resources and building of relationships in a way that would have been impossible 20 years ago. Professional organizations have started to develop SoMe channels to update

members and users and build interactive communities. National and international meetings are now routinely discussed and reported in real-time by SoMe users in attendance. This broadens the reach, power and influence of the meetings, allowing non-attenders to contribute thus enriching experience and deepening learning. Almost all medical journals now promote articles with SoMe, and 'altmetric' scoring (which tracks the influence and reach of articles through SoMe channels) is becoming an increasingly important metric for journals and academic institutions (2).

However, medical professional networks are far from the most powerful form of healthcare social network. Social media peer-to-peer support groups are becoming a staple method for patients to learn about their disease. Social networking sites support interaction between groups of individuals and foster communities that are not limited by geography, the rarity of disease, or an ability to attend meetings. Facebook groups offer private or open forums through which patients can easily find and share experiences and resources, discuss treatment options and side effects, and support and learn from each other. These groups may be for common (3) or rare (4) diseases, or to support groups undergoing a common therapy (5), but all groups can benefit from interaction and engagement from medical professionals. Indeed, some Twitter communities have been set up specifically to facilitate interaction between medical professionals and patients in a completely open platform (6). Patient SoMe support groups derive enormous benefit from the involvement of medical professionals, and there are several 'common-sense' guidelines outlining professional conduct for those wishing to engage with patients through SoMe (7). It is incumbent upon all medical professionals who engage in public SoMe to act responsibly and maintain professional standards in the public domain, regardless of whether they choose to interact with patients.

Medical education and continued professional development

The sharing of information, ideas and approaches on SoMe has educational benefit in and of itself, but emerging bespoke educational resources are challenging accepted learning models and offering educators opportunities to innovate. As long as scrupulous attention is paid to patient confidentiality, the

sharing of clinical cases and pathologic images through SoMe channels, and the discussion that results, is becoming an established educational tool (8). International SoMe journal clubs are growing in number, quality and reputation. Nephrology boasts @NephJC, one of the largest and most active journal clubs on twitter, which meets twice a month to discuss recent publications from across the specialty (9). Collaborative and competitive international educational 'games', such as the month-long educational initiative #NephMadness are not only re-shaping post-graduate education, but are also an outstanding opportunity to network with like-minded individuals (figure 1). Whilst it is accepted that empirical evidence is still required to demonstrate additive educational benefit from such programs, the potential and need for research is clear (10).

Public health research

Most posts and interactions on social networking sites are open access. As a result, the opportunities to improve patient care through the ethical extraction and use of SoMe health data are significant (11). The US Food and Drug Administration have used SoMe to track the spread of communicable disease and monitor adverse medication events. Furthermore, algorithms to remotely identify and diagnose patients with rare diseases are being developed and evaluated (12).

Social media is a potent enabler of two-way communication. Therefore, data extraction represents use of only half of this potential power. Once the needs of health communities have been identified, open source resources can be created in partnership with patients to meet these needs, and disseminated by SoMe platforms. Studies exploring ways of using SoMe health campaigns as an intervention to improve the health of discrete populations are now in progress (13). The low cost, negligible infrastructure and low maintenance needs of such projects are attractive to funding bodies, health institutions and Government.

Conclusions

Medical professionals must not be afraid of SoMe, or encouraging their patients to seek support through SoMe channels. Whilst it is essential to maintain professional standards when interacting with others on social networks, the

opportunities for personal, professional and public benefit now outweigh any perceived risks. Those of us who use SoMe already know it has changed the game for the medical community and we would encourage everyone to jump in.

References

1. Duggan M, Brenner J. The demographics of social media users, 2012. Pew Research Center's Internet & American Life Project Washington, DC; 2013.

2. Patthi B, Prasad M, Gupta R, Singla A, Kumar JK, Dhama K, Ali I, Niraj LK. Altmetrics - A Collated Adjunct Beyond Citations for Scholarly Impact: A Systematic Review. J Clin Diagn Res. 2017 Jun;11(6):ZE20.

3. Greene JA, Choudhry NK, Kilabuk E, Shrank WH. Online social networking by patients with diabetes: a qualitative evaluation of communication with Facebook. Journal of general internal medicine. 2011;26(3):287-92.

4. Jacobs R, Boyd L, Brennan K, Sinha CK, Giuliani S. The importance of social media for patients and families affected by congenital anomalies: A Facebook cross-sectional analysis and user survey. J Pediatr Surg. 2016;51(11):1766-71.

5. Ahmed S, Haines-Saah RJ, Afzal AR, Tam-Tham H, Al Mamun M, Hemmelgarn BR, et al. User-driven conversations about dialysis through Facebook: A qualitative thematic analysis. Nephrology. 2017;22(4):301-7.

6. Pemmaraju N, Utengen A, Gupta V, Kiladjian J, Mesa R, Thompson MA. Social Media and Myeloproliferative Neoplasms (MPN): Analysis of Advanced Metrics From the First Year of a New Twitter Community:# MPNSM. Current Hematologic Malignancy Reports. 2016;11(6):456-61.

7. Farnan JM, Sulmasy LS, Worster BK, Chaudhry HJ, Rhyne JA, Arora VM. Online medical professionalism: patient and public relationships: policy statement from the American College of Physicians and the Federation of State Medical Boards. Ann Intern Med. 2013;158(8):620-7.

8. Crane GM, Gardner JM. Pathology image-sharing on social media: recommendations for protecting privacy while motivating education. AMA journal of ethics. 2016;18(8):817.

9. Topf JM, Sparks MA, Phelan PJ, Shah N, Lerma EV, Graham-Brown MP, et al. The Evolution of the Journal Club: From Osler to Twitter. American Journal of Kidney Diseases. 2017.

10. Sutherland S, Jalali A. Social media as an open-learning resource in medical education: current perspectives. Advances in Medical Education and Practice. 2017;8:369.

11. Zhang S, O'Carroll Bantum E, Owen J, Bakken S, Elhadad N. Online cancer communities as informatics intervention for social support: conceptualization, characterization, and impact. Journal of the American Medical Informatics Association. 2017;24(2):451-9.

12. Svenstrup D, Jrgensen HL, Winther O. Rare disease diagnosis: a review of web search, social media and large-scale data-mining approaches. Rare Diseases. 2015;3(1):e1083145.

13. Gruver RS, Bishop-Gilyard CT, Lieberman A, Gerdes M, Virudachalam S, Suh AW, et al. A Social Media Peer Group Intervention for Mothers to Prevent Obesity and Promote Healthy Growth from Infancy: Development and Pilot Trial. JMIR research protocols. 2016;5(3).

Figure 1: #NephMadness is an annual evidence based, non-commercial, medical education game hosted by the American Journal of Kidney Disease blog. It uses the tools and interactivity of social media, and the structure of a competitive game to teach the latest advances and the most important breakthroughs in nephrology. Players have open-access to 32 blog-posts written about a specific, topical area in nephrology by experts in the field. These address controversies and developments from 8 different topic areas and players complete their 'brackets', selecting hierarchically which topics are the most important when pitted against each other. A panel of experts then determines the actual winners and losers of each round sequentially until an ultimate winner is declared. The results spark conversation and discussion which is played-out on social media (particularly Twitter) which deepens and cements learning. Figure designed by Joel Topf and Matt Sparks and used with their permission – full details of #NephMadness available https://ajkdblog.org/2017/03/03/nephmadness-101/