An analysis of twitter conversations on global surgical care

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Background: Social media networks, such as microblogging site Twitter, are used by healthcare providers, policy makers, health advocates and the general public around the world. While there is growing interest in using disruptive technologies to problem-solve in health, little is known about the effect of social media platforms on creating solution for global health. To understand this better, we studied Twitter conversations related to global surgical care, an emerging area in global healthcare.

Methods: Individual tweets containing keywords related to global surgery were collected from March 27th to May 22nd 2015. A random sample was drawn for detailed analysis. Qualitative and quantitative data was abstracted from the selected tweets on pre-identified themes related to user-specific information (location, type of user, profile keywords), content of the individual tweet (type of tweet, presence and type of hyperlinks, number of favorites, and retweets), and global surgery (area of surgery, type of information, geographic location, research interest, and type of research). Standard summary statistics were used.

Findings: A total of 4169 tweets were identified; 900 tweets from 348 unique users were selected for analyses. Among users, 52.1% were from North America, 33.9% identifying as a health organization followed by 22.1% as surgeons, and 86.3% used keywords in their profile related to global health. The majority of tweets were retweets (57.2%). Overall, most of the tweets contained a hyperlink (56.3%) with 23.3% leading to media sources and 16.5% to peer-reviewed scientific journals; 72.3% of these articles specifically discussed global surgical care. The tweets were retweeted an average of 7 (range:0-73) times and favorited 4 (range: 0-43) times. In total, 39.3% of the tweet shared news and 27.6% personal opinions about global surgery; specifically, 16.3% discussed education and 13% epidemiology of surgery globally.

Interpretation: Robust Twitter conversations is being generated by health organizations, surgeons and others who are utilizing a wide variety of media and scholarly sources to discuss global surgical care needs. A more comprehensive understanding of social media networks is necessary to optimize their use in the dissemination and consumption of accurate global heath data and build surgical capacity internationally.

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Current practices and attitudes regarding central venous catheter placement technique at a large teaching hospital in Guatemala

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Background: The ultrasound-guided technique is superior to the traditional landmark technique for central venous catheter (CVC) placement. However, most low-to-middle income countries (LMIC) rely solely on the latter method. Thus, we set out to assess the effectiveness of landmark-based CVC placement and receptiveness towards ultrasound-guided technique among resident physicians in a public teaching hospital in Guatemala.

Methods: Direct observations of CVC placement at Roosevelt Hospital in Guatemala City, Guatemala were made over a 21-day period in March 2015. Participants were selected by convenience sampling. All residents performing CVC placements and all adult patients requiring this procedure were eligible for the study. The primary investigator directly observed procedures and recorded data using a standardized checklist. Additionally, we distributed a quantitative questionnaire to internal medicine and surgery residents. Descriptive data analyses were utilized, with Fischer's exact test and student-t test employed to compare variables between experienced and novice operators. Written informed consent was obtained from operator and receiver participants, and IRB approval was obtained at the respective institutions.

Findings: 41 observations were recorded from 13 operator and 19 patient participants. Nearly half (46%) of CVCs were successfully placed and 29.3% had complications. Experienced operators had a significantly higher success rate compared to novice operators (57.1% vs. 40.7%, p = 0.0036) but similar complication rates (21.4% vs. 29.6%, p = 0.15). 82 of 117 internal medicine and surgery residents responded to the survey. 86.6 % of all residents overestimated their success rate, with 97.6% of senior residents reporting >60% success rates. Most residents had limited knowledge of the ultrasound-guided technique but most agreed it might improve success and complication rates.

Interpretation: Although our study was limited by the single center design, small sample size, and un-blinded approach, it demonstrates that CVC placement in LMIC can be improved. Specifically, the ultrasound-guided technique may improve CVC placement success rates, reduce complications, and thus increase overall patient safety. Moreover, an institution's own awareness of outcome measures may incentivize implementation of the ultrasound-guided technique in LMIC.

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