Twitter and Rheumatology Based Medical Education
Analysis of the First 100 Followers
Christopher Collins MD
Georgetown University/Washington Hospital Center, Washington, DC

Introduction
Twitter is a social networking and microblogging service which enables its users to send and read messages called tweets (text-based posts of 140 characters or less). Users can “follow” a particular person or group and subscribe to their Twitter feed. Numerous groups utilize Twitter as a means of communicating with interested individuals and the emergence of Twitter in the world of healthcare is gaining popularity. Users range from professional medical organizations, healthcare advocacy groups, individual healthcare providers, medical trainees and patients. There are numerous Twitter accounts specific to the field of rheumatology as well as to medical education, however there are few profiles dedicated to both. @RheumPearls was created in March of 2011 to tweet rheumatology based medical “pearls of wisdom” geared towards medical trainees and physicians interested in rheumatology. In order to understand who was following @RheumPearls as well as ascertain if the target audience (medical trainees and physicians) was being reached, an analysis of the first 100 followers was conducted.

Identifying Followers of @RheumPearls
Methods: The first 100 followers of @RheumPearls were analyzed for the nature of the account (individual, patient, medical trainee, physician, medical organization, or healthcare advocacy group). Since one of the methods for attracting followers to a particular twitter feed is through the phenomenon of “I follow you, you follow me”, and given that several of the followers of @RheumPearls were likely obtained through this method, a second analysis was conducted just on the followers which discovered @RheumPearls through other means (n=70).
Results: The largest group of followers was physicians (25%) of whom 65% were rheumatologists. Patients with self identified rheumatologic conditions were next representing 23% of the followers (rheumatoid arthritis and related symptoms being the most common diagnosis). Professional medical organizations accounted for 18% and self identified medical trainees (medical students, residents, and fellows) 11%. The remaining identified groups were healthcare advocacy groups, individuals with interests in medical education and healthcare, and unknown individuals representing 7%, 7%, and 8% respectively (Figure 1). When looking at just followers who @RheumPearls did not follow first (n=75), the percentages of medical trainees, patients, and individuals all increased whereas physicians and medical organizations decreased (Figure 4).

Analyzing Followers of @RheumPearls
Methods: In order to visualise the growth of @RheumPearls, the first 100 followers were analyzed by the date they began following @RheumPearls and stratified by the identity of the account (individual, patient, medical trainee, physician, medical organization, or healthcare advocacy group). Additionally, followers were identified by geographic location and plotted on a density map of the world.
Results: @RheumPearls added approximately 1.2 new followers each day after its inception and achieved 100 followers by day 82 (approx 12 weeks). The growth was mostly linear for each of the groups (Figure 5). The geographic distribution of the followers revealed a global reach spanning 21 countries on 6 continents. The countries with the most of the followers were the US (n=53), Mexico (n=7), Canada (n=5), and India (n=5) (Figure 6).

Survey Results
A survey was developed and hosted on a companion website for @RheumPearls (www.rheumpearls.com). Over the course of a week, several tweets were posted asking followers to take a short satisfaction survey comprised of 6 questions on a Likert scale. 15 respondents completed the survey (physician n=7, trainee n=3, patient n=3, and other n=2). The results of the survey suggest that most of the respondents felt that the tweets were of high quality, relevance, and usefulness (Figure 7).

Conclusions
@RheumPearls is a Twitter feed broadcasting rheumatology based medical education directed towards medical trainees and physicians, but available to everyone. An analysis of the first 100 followers suggests that with medical trainees and physicians representing 36% of the cohort, this goal is being achieved. The diversity of the followers as well as an extensive geographic distribution also suggests a wide appeal for rheumatology based education. Finally, a Likert survey suggests that the followers of @RheumPearls find the twitter feed relevant, useful, and of high quality.

References

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Hashtags in Rheumatology and Medical Education
What is a hashtag?
Hashtags are a community-driven convention for adding additional context and metadata to tweets. Twitter messages may be “tagged” using a word or phrase prefixed with a “#”, such as #rheum. This enables tweets on a specific subject to be found by simply searching for their common hashtag, provided that the user has tagged his or her tweet.

A variety of hashtags are utilized in rheumatology as well as medical education related tweets. One of the most common hashtags in rheumatology is #rheum or medical education related tweets, the most common hashtag is #rheum.

Utilizing data from the healthcare hashtag project, graphs depicting the number of tweets over a one week span from October 7th through the 13th, 2011 with the hashtags #rheum or #rheum (as well as related hashtags) were generated (Figure 1).

An analysis of the various hashtags used in the @RheumPearls twitter feed was also conducted using an online analysis tool and revealed #rheum and #rheum were the most commonly used tags (Figure 2).

Sample Tweets from @RheumPearls
• Great apes, dolphins, dogs, & humans are the only mammals that lack a functional uricase gene and, thus, are the only mammals who get gout.
• The incidence of gout and hyperuricemia increases with age: 90% of patients over 75 have hyperuricemia so the knees, #meded
• Between 10% and 25% of patients with chronic (IP) and a positive ANA develop a “peripheral” flare (Wegener’s). Or, treatment with Glucocorticoids
• Children with GCA often require higher doses prednisone than their adult counterparts because of rapid drug metabolism (0.8 mg/kg/day for adults, 0.6 mg/kg/day for children)
• Onset of a patient with RA who has not done anything to improve his health was why the patient was referred for rehabilitation
• The title of the lecture was: “At What Stage of Life is Rheumatoid Arthritis the Most Likely to Appear?”
• Criteria-induced severe arthropyathy most commonly occurs when renal dysfunction is present, but is reversible. Known #rheum
• Onset: 10-20% of patients with Sjögren’s syndrome have anti-ribonucleoprotein antibodies and may go on to develop autoimmune thyroiditis.
• A different patient with HIV and a recent onset of rhino pharyngitis and swelling most likely has parvovirus. Known #rheum
• Paroxysmal nocturnal hemoglobinuria, and hemolytic anemia are three key prognostic factors for adverse outcome in primary Sjögren’s Syndrome.
• Clonally Figures @rheum Pearls and other posters of lesser extremities can be distal signs of a long term: Hypertrophic Osteoarthropathy

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Update on @RheumPearls
As of the printing of this poster (10/20/11), @RheumPearls has 299 followers from 28 different countries. The twitter feed has posted 165 unique tweets.

References