

Outcomes in Child Health: Using Social Media to Identify Patient- Centered Outcomes

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Introduction

- Selecting relevant outcomes for research is becoming increasingly patient-centered
 - Many methods of engagement to choose from
- Could social media be used as a novel, efficient method?
 - Popular, highly accessed tools
 - Potential to allow broad dissemination to a diverse and representative sample
- OUTCH (Outcomes in Child Health) Study

Research Question

- How effective is social media as a strategy to engage with parents in determining patient-centered outcomes?
- Objectives:
 - To evaluate the process of using social media, using pediatric acute respiratory infections (ARI) to establish proof-of-principle
 - To examine the breadth and representativeness of the population engaged
 - To collect data from parents on patient-centered outcomes in pediatric ARI

Methods: Survey

- Surveyed parents about patient-important outcomes in pediatric ARI
- Administered online through an independent company (Nooro)
- Accessible via desktop or mobile devices
- Rank, rate outcomes for importance
 - Based on outcomes identified from Cochrane reviews
- Free text responses
- Demographics

Methods: Online strategy

- Developed an online presence
 - Study website ( www.outch-study.com)
 - Facebook page ( OUTCH)
 - Twitter ( @OUTCH_Study)
- Snowball sampling
 - TREKK, CCNet, ACCFCR, Stollery Family Centered Care Network, Mommy Connections

Methods: Paid advertising

- Digital media marketing company
- Implemented for last 4 weeks of study period
- Facebook advertising
 - Standard ads
 - Promoted posts

Methods: Analysis

- Web traffic
 - Google Analytics (study website)
 - Nooro (survey)
 - Facebook Insights
 - Twitter followers
- Descriptive statistics
 - Demographics
 - Survey responses
 - Comparison of parent-identified outcomes to outcomes in Cochrane reviews

Results: Web Traffic

- Survey live for 14 weeks
 - 111 responses
- Study website: 553 unique visitors (675 visits)
- Survey website: 5,027 visitors
- Facebook: 104 likes
- Twitter: 52 followers
- Source of referral:
 - Facebook – 51.8%
 - Friend – 45.5%
 - Twitter – 10.0%

Results: Demographics

Demographics	Responses
Gender	Female: 90.0%; Male: 10.0%
Year of birth	Median (range): 1978 (1946-1995)
Highest level of schooling completed	Some high school: 0.9% High school graduate: 4.6% Some college/university: 6.4% College/university graduate: 45.5% Post-graduate education/degree: 42.7%
Annual household income (USD)	<70,000: 24.6% 70-89,999: 12.7% >90,000: 62.7%
Marital status	Married/common-law: 89.1% Never married, separated, divorced, widowed: 11.0%
Number of children living in home	Median (range): 2 (0-4)

Results: Geographic Distribution

Demographics	Responses
Country	Australia: 1.8% Canada: 70.0% England: 7.3% India: 1.8% Portugal: 1.8% USA: 17.3%
Type of community	Urban ($\geq 10,000$ pop.): 92.7% Rural ($< 10,000$ pop.): 6.4% Missing: 0.9%

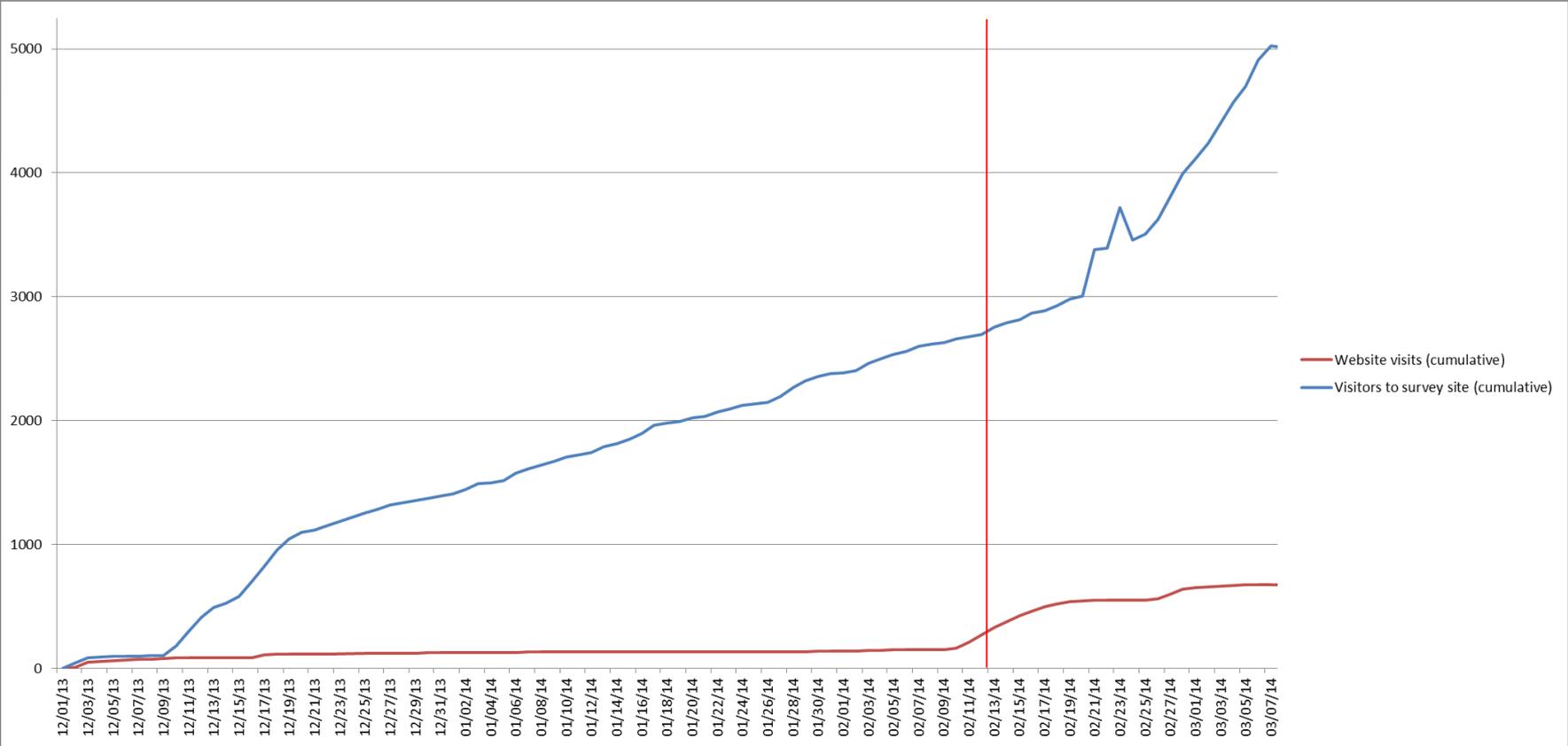
Results: Children's Illnesses

Demographics	Responses
Acute respiratory infections experienced	Croup: 44.6% Wheezing: 43.6% Influenza: 38.2% Strep throat/tonsillitis: 32.7% Sinusitis: 29.1% Asthma: 26.4% Bronchiolitis: 26.4% Pneumonia: 21.8%
Most concerning episodes	Croup: 24.7% Pneumonia: 19.8% Asthma: 18.5% Bronchiolitis: 12.4% Wheezing: 7.4% Strep throat/tonsillitis: 3.7% Sinusitis: 3.7%
Hospital admission	Yes: 20.0%; No: 80.0%

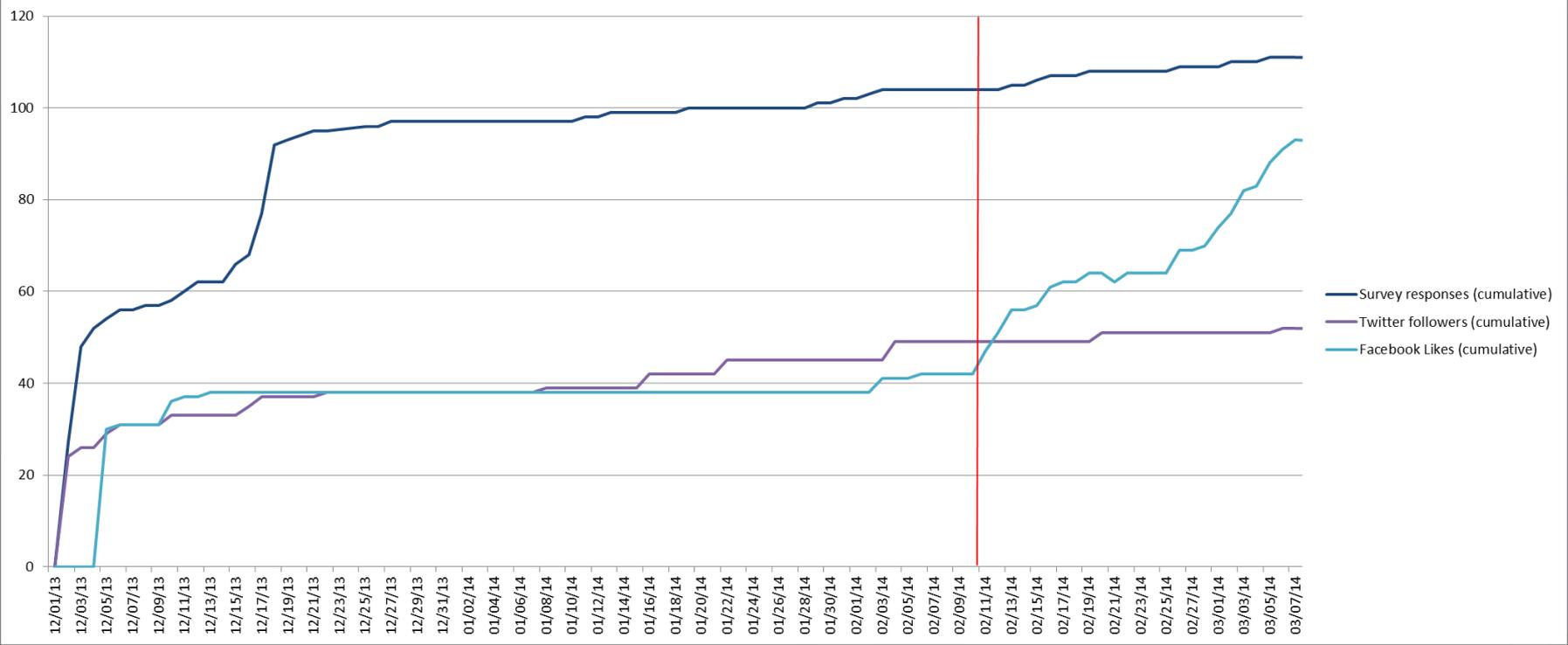
Results: Paid Advertising

- Multiple ads were run simultaneously and evaluated – the better performing ones were kept and others were adapted
- Promoted posts more effective than standard ads
- Ads containing prize information were the most popular
- Ad reach: 684,887
- Total clicks: 3,240
- Cost: \$1,330
- Survey responses: 7 in 25 days

Results: Web Traffic



Results: User Engagement



Results: Patient-Important Outcomes

Parents' ranking of items they would find most concerning

1. That your child could have major complications from their illness, such as a long-term disability.
2. Your child's symptoms (for example, coughing, fever, sore throat).
3. How long your child needed to stay in the emergency department or hospital.
4. If your child needed to see a doctor.
5. If your child needed to return to the doctor or hospital after being sent home.
6. Your child's reaction to his or her medicine (for example, if it caused side effects).
7. Your child's test results that tell the doctor how he or she is doing.
8. How well you and your child could keep up the day-to-day activities of your normal life.
9. That your child could develop minor complications from their illness, such as cough or rash.
10. The costs of your child's illness (for example, for medicine or child care).

Results: Patient-Important Outcomes

- Agreement between parents and reviews:
 - **Safety:**
 - Adverse events reported 26 times in 35 reviews
 - Major side effects scored 86.7/100 by parents
 - **Costs:**
 - Reported in 2 reviews; among the least important concerns to parents

Results: Patient-Important Outcomes

- Discrepancies between parents and reviews:
 - **Complications** were parents' top concern (94.5/100); addressed 9 times in 35 reviews
 - **Resource utilization:** admission rates, length of stay/time to discharge frequently reported in reviews; less prominent among parents

Results: Patient-Important Outcomes

Other concerns identified by parents:

- Most frequently ‘social and family outcomes’
 - E.g., spread between siblings/parents, how child or siblings are coping, how to communicate with/reassure child
- Most common (mentioned by ≥ 10 respondents)
 - Being able to recognize signs/symptoms
 - Being able to monitor child’s condition/administer treatment properly at home
 - Timely access to care

Discussion: Social Media

- Most surveys were completed in the first month
- Most survey respondents were:
 - Highly educated
 - Urban dwelling
 - Female
- Facebook and friends were the most common sources of referral to the survey
- Paid advertising offered a low return on investment

Discussion: Outcomes

- Safety was of primary importance to parents and they ranked major complications as their top concern
- Outcomes reported in Cochrane reviews had moderate agreement with outcomes identified by parents
- Outcomes not reported in Cochrane reviews that were identified by parents were most often social and family outcomes

Conclusions and Future Directions

- Use of social media did not result in broad reach as a stakeholder engagement strategy
 - Acute condition?
 - Too little buy-in from community?
- Future research
 - Evaluate the outcomes identified through our strategy and via other methods
 - Qualitative follow-up: discussion via Facebook
- Value of social media in stakeholder engagement: topic identification, prioritization, interpretation of results, and KT

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