OMG. Those smoking commercials with the lady with the hole in her neck. It’s scary:

A Content Analysis of Tweets from the CDC’s Tips from Former Smokers Campaign

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Overview

Health Media Collaboratory: Who we are? What we do?

Why do we care about Twitter?

   Can Twitter be used as an evaluation tool?

How we collected and cleaned CDC Tips-related tweets, and why it matters

Preliminary content analysis of CDC Tips tweets:

   - What are people talking about

   - What people are feeling

   - #CDCTips

Lessons learned
Anti-Tobacco Ads Reduce Smoking

Tobacco and pharmaceutical companies are the largest smoking-related advertisers (Wakefield, Szczypka, Emery et al., Addiction, 2006).

Anti-smoking ads are associated with smoking-related attitudes, beliefs, and behavior (Emery, et al., 2005, JPAM).

Tobacco Industry anti-smoking ads have a boomerang effect (Wakefield, Terry-McElrath, Emery, et al., AJPH, 2006).

Anti-smoking ads are associated with less smoking; more quitting intentions among adults (Emery, et al., AJPH, 2012)
Tobacco Library

Collect social media data on tobacco related behavior, marketing, and policy

Curation began December 6\(^{th}\), 2011

Over 100 million social media units archived
## Best Platform to Measure Engagement

<table>
<thead>
<tr>
<th>Use Any Social Networking Site</th>
<th>% of internet users who.....</th>
<th>The service is especially appealing to....</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use Facebook</td>
<td>67</td>
<td>Adults ages 18-29, women</td>
</tr>
<tr>
<td>Use Twitter</td>
<td>67</td>
<td>Women, adults ages 18-29</td>
</tr>
<tr>
<td>Use Twitter</td>
<td>16</td>
<td>Adults ages 18-29, African-Americans, urban residents</td>
</tr>
<tr>
<td>Use Pinterest</td>
<td>15</td>
<td>Women, adults under 50, whites, those with some college education</td>
</tr>
<tr>
<td>Use Instagram</td>
<td>13</td>
<td>Adults ages 18-29, African-Americans, Latinos, women, urban residents</td>
</tr>
<tr>
<td>Use Tumblr</td>
<td>6</td>
<td>Adults ages 18-29</td>
</tr>
</tbody>
</table>

Source: The Demographics of Social Media Users – 2012, PewResearchCenter
Twitter is the fastest growing platform

16% of adults use Twitter (8% in 2010)

24% of teens (16% in 2011)

Total number of users: 500 Million

Monthly number of active users: 200 million

On average, 400 million tweets per day

Twitter is an open social data platform
Why is Twitter a Good Source for Media Evaluation?

33% of active Twitter users tweet about TV (Social TV)

Tweets are concise and fast (140 Characters in real-time)

Tweets express immediate feelings and emotion (No filter)

Tweets are NOT a measure of outcome (Quit attempts?)

BUT are a good measure of process (Engagement)

What was the viewer thinking and feeling at the time of the ad
The CDC Tips 2013 Campaign

Follow up to CDC Tips 2012

- $54 million
- CDC’s first national media effort to reduce smoking prevalence
- 12 weeks of televised, radio, print and internet plus social media
- 132% increase in call volume to 1-800-Quit-Now

CDC Tips 2013

- Slightly longer campaign
- Added priority populations included Native Americans and LGBTQI
- Similar campaign executions: Graphic (e.g. Terrie’s Ad)
- Added emotional tone of sadness (e.g. Michael’s Ad)
Why methods matter:

Collection and cleaning affects **analysis**
Application Programming Interface

Data is sampled (1% ????)

The volume of tweets about public health campaigns and policy issues are low when compared to tweets about pop culture

@justinbieber – 43,038,680

@CDCgov – 180,954

Every Tweet Matters
Full Firehose of Social Data
How we Collect our Data:
Tools for Social Media Research

Sample Payload

```json
{
  "id": "tag:search.twitter.com,2005:181865366610382848",
  "body": "No one wants to carry laptops any more, but we lose IPads and they are not secure.
  "verb": "post",
  "link": "http://twitter.com/ProfNikiEllis/statuses/181865366610382848",
  "generator": {
    "link": "http://twitter.com/#!/download/ipad",
    "displayName": "Twitter for iPad"
  },
  "postedTime": "2012-03-19T22:10:56.000Z",
  "provider": {
    "link": "http://www.twitter.com",
    "displayName": "Twitter",
    "objectType": "service"
  },
  "object": {
    "summary": "No one wants to carry laptops any more, but we lose IPads and they are not secure.
    "link": "http://twitter.com/ProfNikiEllis/statuses/181865366610382848",
    "postedTime": "2012-03-19T22:10:56.000Z",
    "objectType": "note"
  },
  "actor": {
    "summary": "CEO of the Institute for Safety, Compensation and Recovery Research (@ISCRR)
    "twitterTimeZone": "Sydney",
    "friendsCount": 102,
```
Collecting CDC Tips Tweets

Ad OR ads OR commercial OR commercials OR campaign

(and)

#2ndhandsmoke, #cdccconsejos, #cdctips, 2ndhand smoke, 2ndhandsmoke, amputated, amputation, amputee, antismoking, anti-smoking, antitobacco, anti-tobacco, asthma, body part, body parts, buerger's disease, cancer, cdc, cdcconsejos, cdctips, cig, cigarette, cigarettes, cigs, copd, diabetes, diabetic, heart attack, hole neck, hole throat, leg, limb, limbs, lung cancer, lung infection, lung infections, nose tube, Oglala, oxygen tube, psa, quit, quitline, quitnow, secondhand smoke, Sioux, smoke, smoked, smokefree, smoke-free, smokefree.gov, smoker, smokers, smokes, smoking, stoma, stroke, teri, terri, terrie, terry, throat cancer, tips former smokers, Tlingit, tobacco, tobacccofree, tobacco-free, trach, trache, traech, smoking, Roosevelt, larynx
The 77 key words yielded over 418K Tweets: but were they all about the Tips Campaign?

Cleaned tweets (sorted for relevance) using iterative process of human and machine coding

More than half of tweets (60%) were garbage (Not relevant to CDC Tips)

165K Tweets were relevant (talking about CDC Tips)
Pacquiao needs to **quit** doing **commercials** and concentrate on training harder!

Cigarette ads are the thanks we get for increased taxes.

The old spice **commercials** with Terry Crews were the best

I saw **commercial** for the e-c**igarette** through work today. Not gonna lie. I liked it. It made me want to try it.

Ronald Reagan in a **cigarette-ad** from the 1950s. [http://t.co/pb5ckA0OfS](http://t.co/pb5ckA0OfS)

Ya’ll see those **cigarette commercials**? Urea found in cigarettes is also found in cat pee

This is a great **campaign ad; Smoking** Kid - Best of #OgilvyCannes 2012 / #CannesLions [video] | [https://t.co/iECbzTROwi!](https://t.co/iECbzTROwi!) @SAHe
97% of relevant tweets were captured by only 21 keywords

<table>
<thead>
<tr>
<th>Keyword</th>
<th>%</th>
<th>Cumulative %</th>
</tr>
</thead>
<tbody>
<tr>
<td>smoking</td>
<td>25%</td>
<td>25%</td>
</tr>
<tr>
<td>quit</td>
<td>11%</td>
<td>36%</td>
</tr>
<tr>
<td>cigarette</td>
<td>11%</td>
<td>47%</td>
</tr>
<tr>
<td>tobacco</td>
<td>9%</td>
<td>56%</td>
</tr>
<tr>
<td>smokers</td>
<td>6%</td>
<td>62%</td>
</tr>
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<td>5%</td>
<td>67%</td>
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<td>cancer</td>
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<tr>
<td>leg</td>
<td>4%</td>
<td>76%</td>
</tr>
<tr>
<td>cigarettes</td>
<td>4%</td>
<td>79%</td>
</tr>
<tr>
<td>anti-smoking</td>
<td>3%</td>
<td>82%</td>
</tr>
<tr>
<td>hole neck</td>
<td>3%</td>
<td>84%</td>
</tr>
<tr>
<td>terry</td>
<td>3%</td>
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<td>2%</td>
<td>89%</td>
</tr>
<tr>
<td>smoked</td>
<td>1%</td>
<td>90%</td>
</tr>
<tr>
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<tr>
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<td>93%</td>
</tr>
<tr>
<td>#cdctips</td>
<td>1%</td>
<td>94%</td>
</tr>
<tr>
<td>teri</td>
<td>1%</td>
<td>95%</td>
</tr>
<tr>
<td>cigs</td>
<td>1%</td>
<td>95%</td>
</tr>
<tr>
<td>anti-tobacco</td>
<td>1%</td>
<td>96%</td>
</tr>
<tr>
<td>cig</td>
<td>1%</td>
<td>97%</td>
</tr>
</tbody>
</table>
I HATE THOSE **SMOKING COMMERCIALS** THEY ARE SO GROSS AND DISTURBING

Those **smoking commercials** be pissing me off at least warn someone that is gonna be graphic! I have a very weak stomach”

These cigarette **smoking commercials** scare me and I don't even smoke

The **smoking commercials** are tooo serious

These **smoking commercial** are the most scary commercial ever

Nothing makes me lose my appetite faster than those nasty ***smoking commercials***
My Lil brother gets so scared when that commercial comes on w/h the lady who has throat cancer. He practically begs his daddy to quit smokin.

I hate the quit smoking commercials they're stupid and people are still gonna smoke #stop.

The commercials that are trying to convince you to quit smoking freak me out.

Can everyone just stop smoking so they can quit showing disgusting tv ads when I'm trying to eat..

Those smoking commercials don't make me wanna quit it just really scares the **** out of me. Lol.

That lady in that smoking commercial with the ****ing hole in her throat makes me want to quit.

I HATE SEEING THAT QUIT SMOKING COMMERCIAL WITH THE LADY WITH THE HOLE IN HER NECK. THAT **** NASTY THO. GOT MY NECK HURTIN.
Content Analysis

Preliminary Findings

What are people talking about?

What are people feeling?
Graphic Advertising Works

Ads with disfigurement were talked about the most

Majority of these tweets contained language indicative of fear—reacting to the graphic imaging of the ads
The lady on the cigarette commercial with the hole in her throat saddens me...

Smoking leads to a hole in your throat... Didn't that commercial scare you? Lol

The lady on the cigarette commercial with the hole in her throat saddens me...

#honestyhour the smoker commercials with the hole in the throat freaks me out!! #gladtobeanonsmoker

The cigarette commercial with the lady who has a hole in her throat is the grossest scariest commercial
OMFG THESE SMOKING COMMERCIALS ARE DISGUSTING. You got a woman with no ****ing finger tips. You got a guy with no leg and arm.

I hate them smoking commercials, nobody wants to see an amputated leg or body part.

Those cigarette commercials scare me" u could lose a leg man :o"I know that's scary /

Man NOBODY should be smoking cigarettes after seeing all these commercials shoooott I'd be scared ill lose a leg.

Anytime my friends smoke a cig I tell them they're gonna lose an arm & a leg like them commercials lol.
#hashtags & Social TV

#hashtags - used to indicate the emotional tone of a message often through humor or sarcasm, organize social groups, direct conversation to a specific topic, or function as advertising for brands or campaigns

Used by TV networks to encourage viewers to comment about storylines (increased ratings)

Used by TV advertisers to further the brand experience (increased sales)

#hashtags are easy to collect
Only 1890 tweets contained hashtag #CDCTips

Top 25 users of #CDCTips

Most users were CDC stakeholders

Little to no organic engagement with #CDCTips hashtag

Why ????
Deep Layers of Engagement

I sound like the old lady from the anti-smoking commercials with the hole in her throat):

There was a lady with a hole in her throat like the tobacco commercials

Your senior portrait makes you look like that girl with the hole in her throat from the smoking commercial

A lady come through my line with the hole on her throat like Terry off that commercial

Engagement – social conversation that furthers the brand experience (beyond the 30 second ad)
Twitter Analysis Lessons Learned

As an evaluative tool, tweets can offer valuable insights about health behavior and emerging trends.

Every tweet matters. Engagement with public health campaigns is low when compared to popular culture topics like Justin Beiber.

Twitter Public API only offers a 1% sample and may not gather sufficient numbers of tweets for informed analysis.

The use of #hashtags in advertising would improve collection and evaluation efforts (underutilized #cdctips).

Social media should be integrated into public health campaigns to drive awareness and engagement.
Acknowledgments

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This presentation is the work entirely of the authors and does not necessarily represent the views of the NCI.

For more information about this research, visit www.healthmediacollaboratory.org.

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