How we can use HINTS as a “virtual rallying point” to transform research, inform public health, and promote community action?

What HINTS Does

- HINTS collects nationally representative data routinely about the American public's use of cancer-related information.
- The HINTS data collection program was created to monitor changes in the rapidly evolving field of health communication.
- Program planners are using the data to overcome barriers to health information usage across populations, and obtaining the data they need to create more effective communication strategies
- Conducted approximately every 3 years (4th wave split)
- Sample sizes of 6,000 to 8,000 adults

What HINTS Can't Do (Yet)

- Describe American's use of cancer related information at the state or local level (sample is too small)
- Monitor difference in channels or content of cancer related communications below the national level (sample size and survey focus)
- Identify public response to specific cancer communications at the national, state or local level (too small and too infrequent)

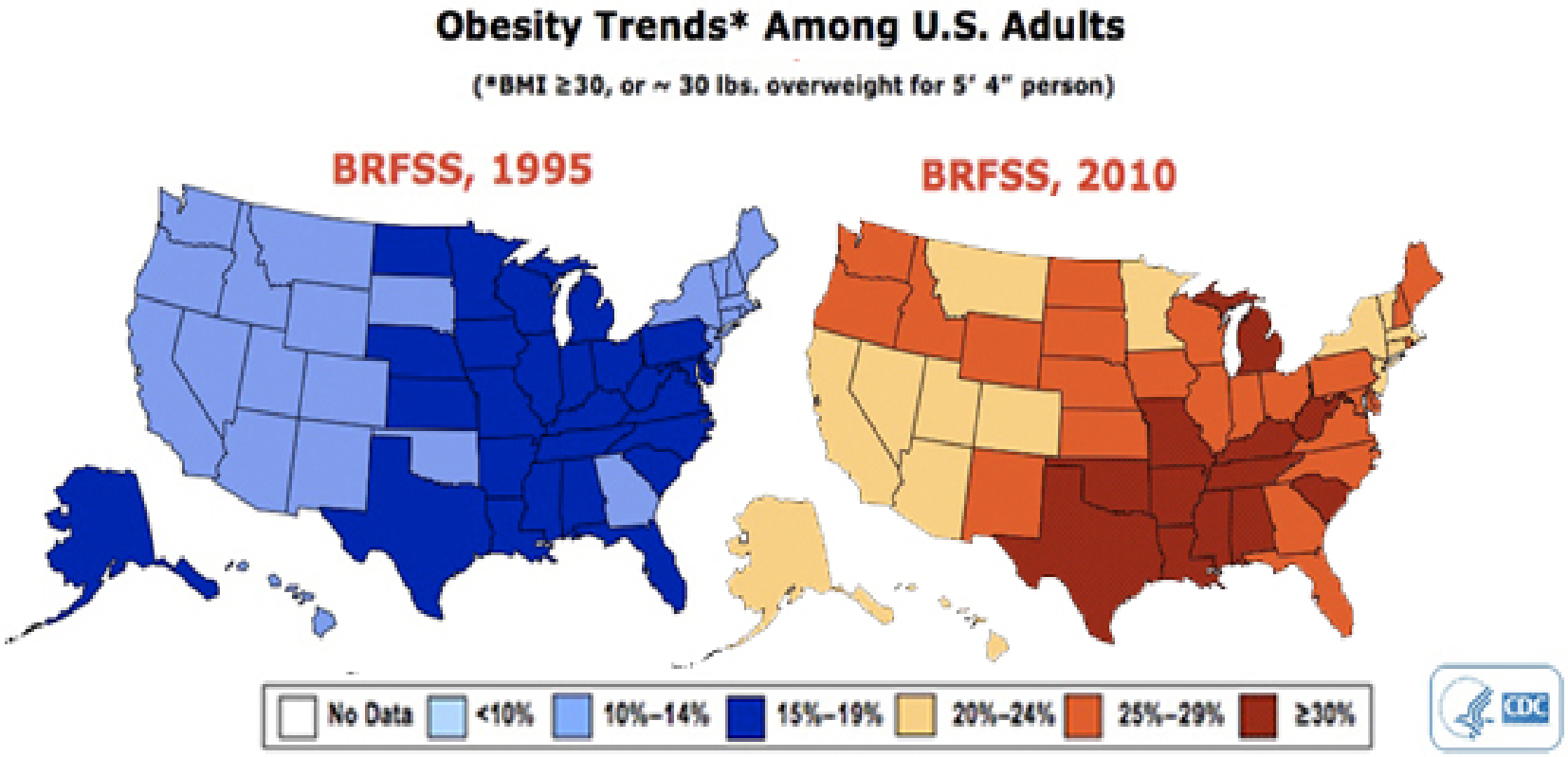
Issues for HINTS

- Relatively few national health intervention initiatives (e.g., NHBPEP)
- Health and health risk behaviors vary dramatically by geographic areas
- Public health efforts are organized by state and local areas
- National data has limited utility for planners at the state and local level
- Media interest is greatest at the local level
- How can we leverage national data (e.g. HINTS) for community impact?

Making National Survey Data Relevent: Asthma in America (1998)

- Comprehensive survey of knowledge, attitudes and behavior related to asthma in the United States
- Largest national probability survey of current asthma patients
  - National RDD sample
  - 42,000 households screened
  - 2,500 asthma sufferers interviewed
  - 30 minutes in length
- Media is primarily local, so to capture local attention
  - Parallel survey in each of 25 major markets
    - Community sample of 400 adults
    - 5 minutes long
    - Self-weighting sample of 30-40 asthma patients per market
  - Newspaper, radio and sometimes television coverage in every market
  - Local experience segues to national survey data --- how do we compare

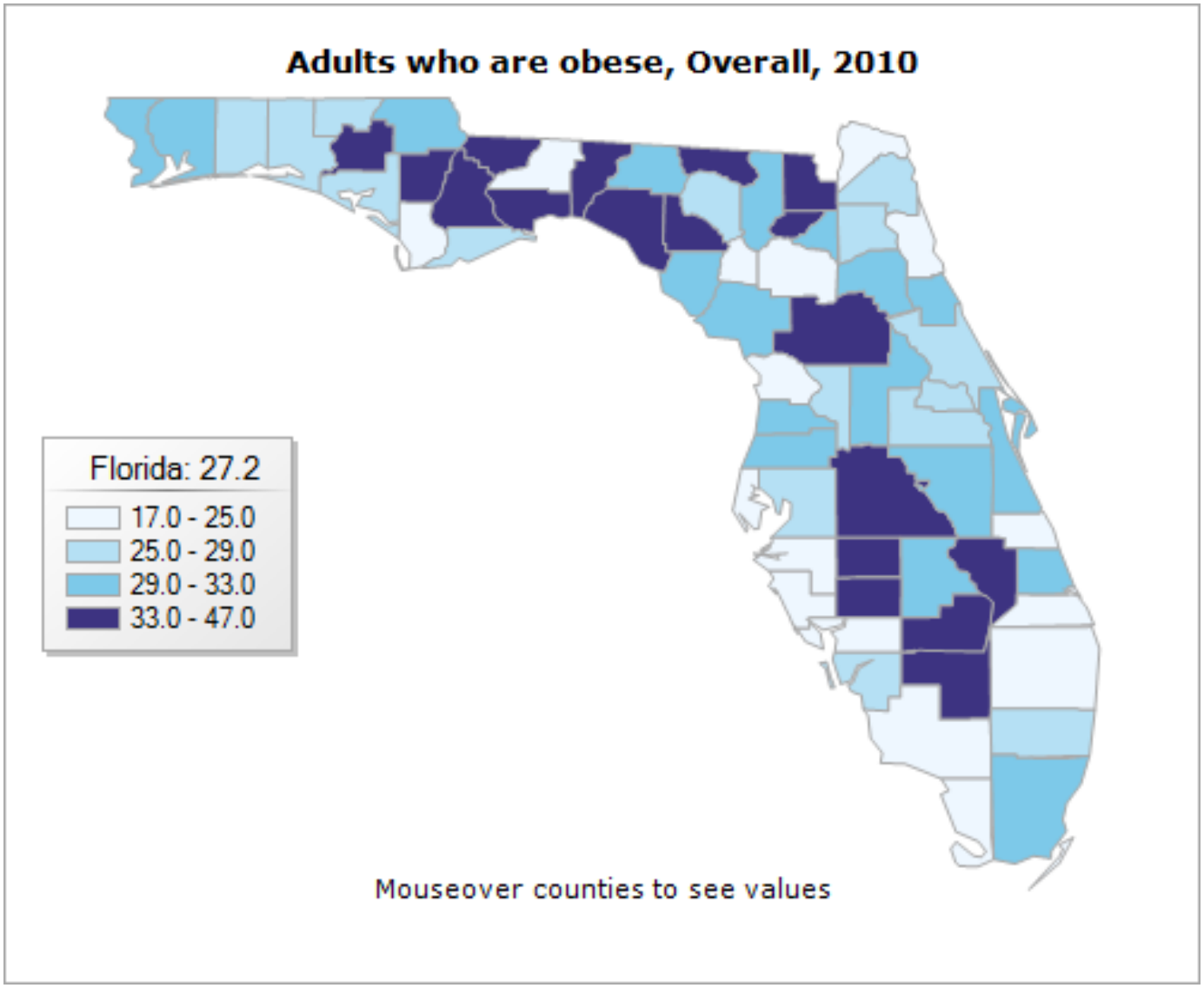
Actionable State Health Survey Data



U.S. Obesity Trends: 1995 - 2010

The U.S. obesity epidemic becomes apparent in comparing obesity trends within the last 15 years. Maps displaying data from 1985 through 2010, can be

County Level Health Survey Data: BRFSS



Community Level Health Survey Data

ICF's County- and City-Level BRFSS Projects
Across the Country

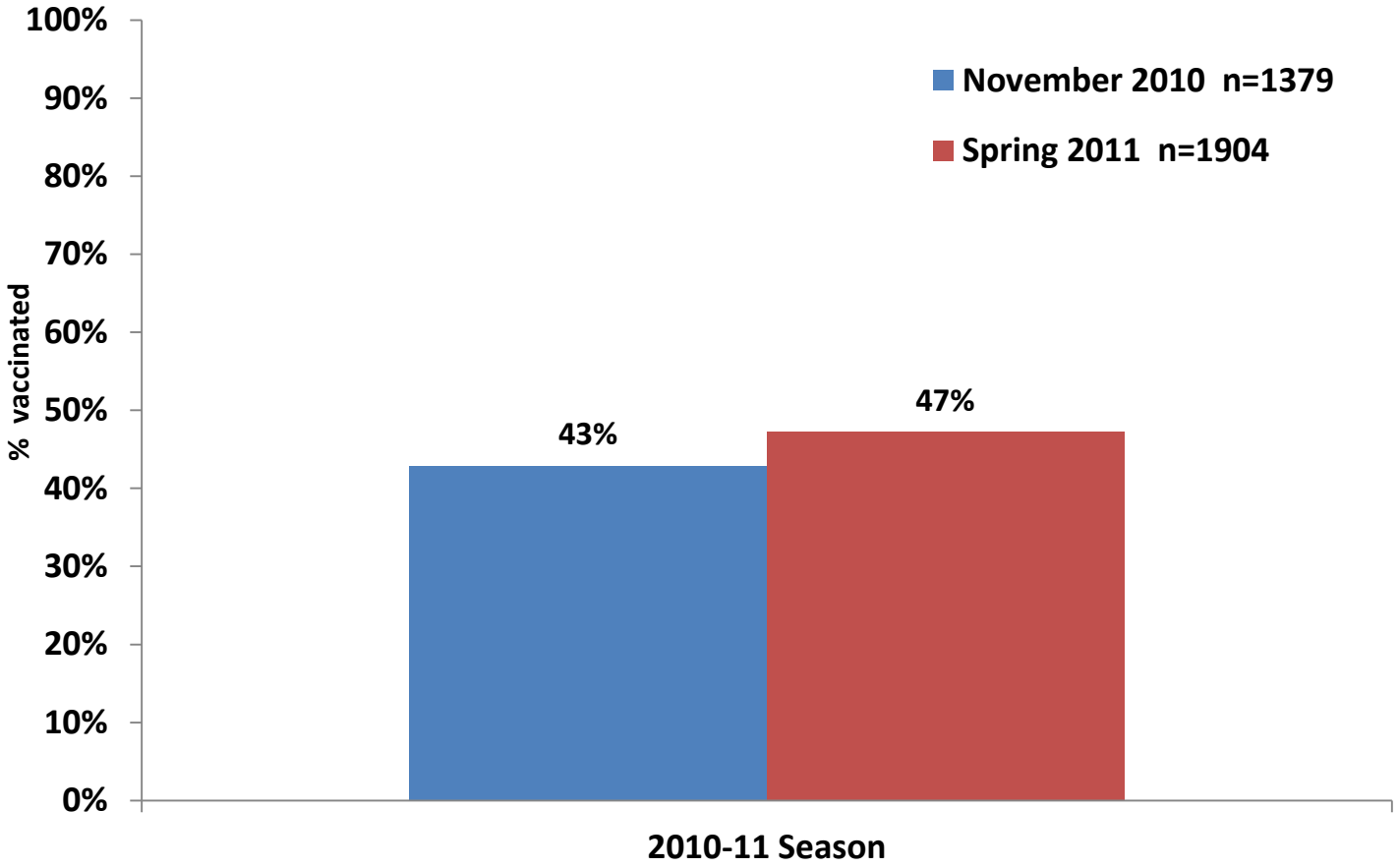
Limitations for BRFSS

- Largest health survey in U.S. (500,000 per annum)
- No state has sample sizes large enough to generate county level estimates annually
- Florida increases sample size to 30,000 every three years to generate county level estimates
- Monthly data collection would permit analysis of communication impact (pre/post) but only if we were asking the right questions
- CDC added questions about flu vaccination for this purpose, but data not available until after flu season has ended

Flu Vaccination Rate Estimates for Pregnant Women: Sources

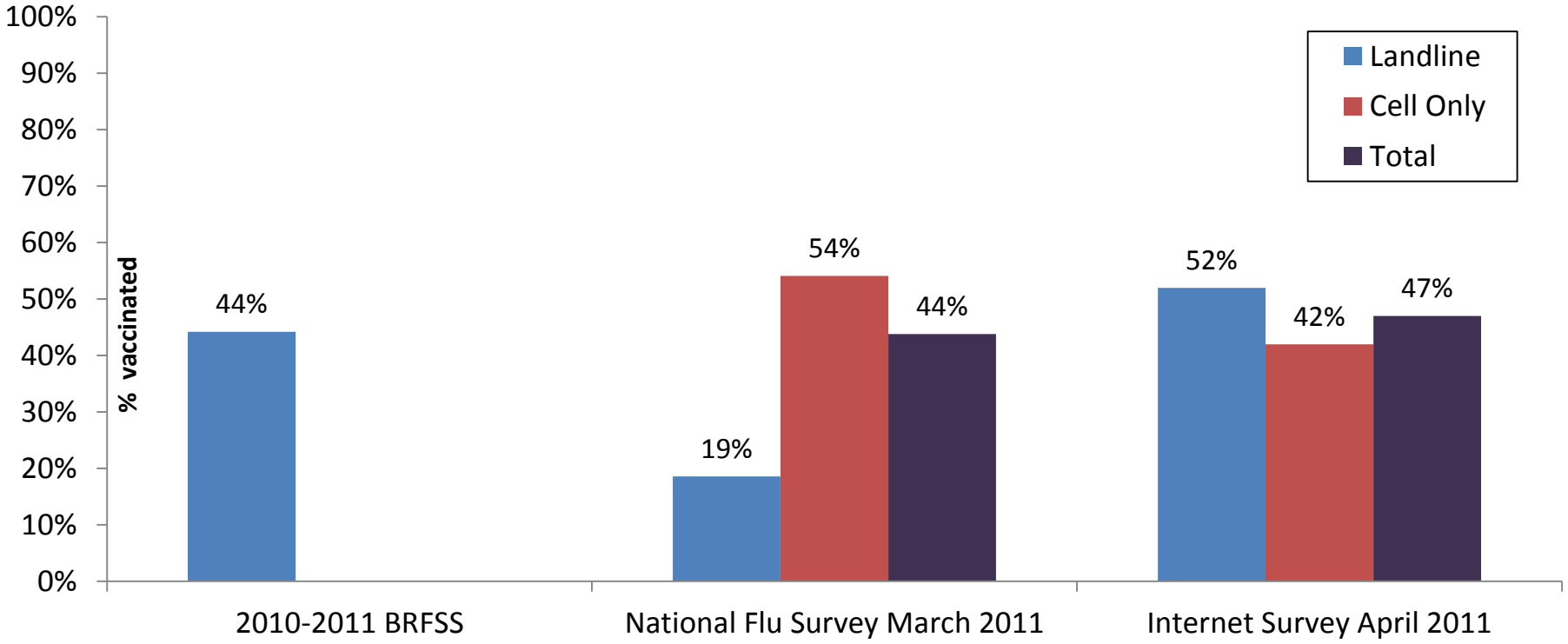
- National Health Interview Survey (2010) --- probability sample, face to face interview, data available **by mid-season of the following influenza season**, 289 women pregnant at any time during the previous 12 months
  - Cannot determine if pregnant during the current influenza season
- BRFSS (2010-11) --- probability sample, telephone interviewing, state sample aggregated at national level, data available **at the start of the following influenza season**, 1679 women pregnant during the 2010-11 influenza season
- National Flu Survey (2011) --- probability sample, telephone interviewing, dual frame RDD – 374 pregnant women during the 2010-11 influenza season, March 2011
- Pregnant Women (PW) Internet Panel Survey (2011) --- non-probability, internet panel survey, 1,904 currently pregnant women during the 2010-11 influenza season (oversamples excluded), April 2011

CDC Monitors Vaccination Status among Pregnant Women



TF1. Since August 1, 2010 have you had a flu vaccination? It could have been a shot in the arm or a spray in the nose. The spray may have seemed more like a few drops or a mist.

Influenza Vaccination among Pregnant Women (2010-2011): BRFSS, National Flu Survey, PW Internet Survey

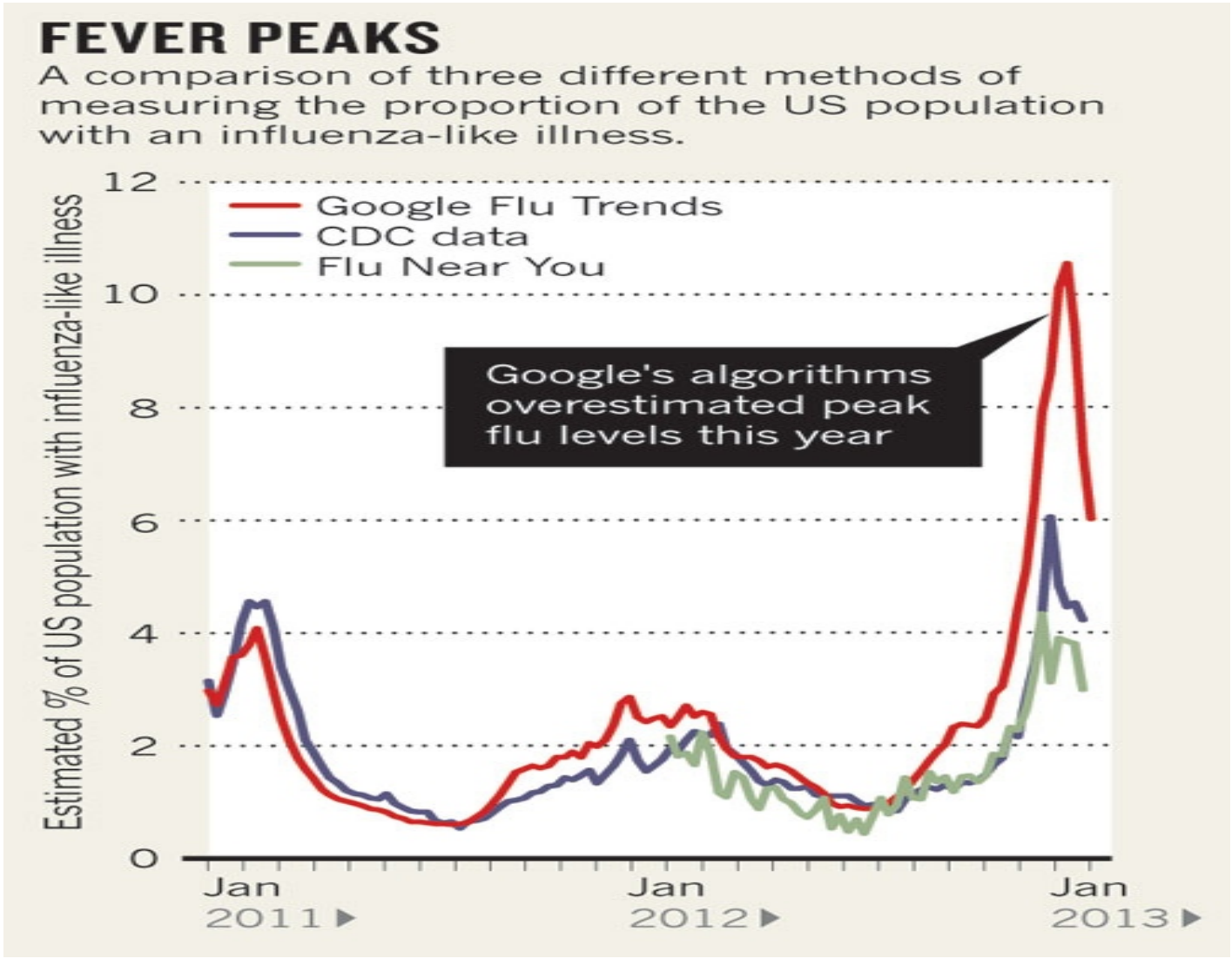


BRFSS: During the past 12 months, have you had a flu shot?" "During what month and year did you receive your most recent seasonal flu shot?" "The seasonal flu vaccine sprayed in the nose is also called FluMist™. During the past 12 months, have you had a seasonal flu vaccine that was sprayed in your nose?" and "During what month and year did you receive your most recent seasonal flu vaccine that was sprayed in your nose?"

NFS: Q2. Since August 1st, 2010 have you had a flu vaccination? It could have been a shot or a spray or mist in the nose.

Internet Survey: TF1. Since August 1, 2010 have you had a flu vaccination? It could have been a shot in your arm or a spray in your nose. The spray may have seemed more like a few drops or a mist.

Google Flu Trends



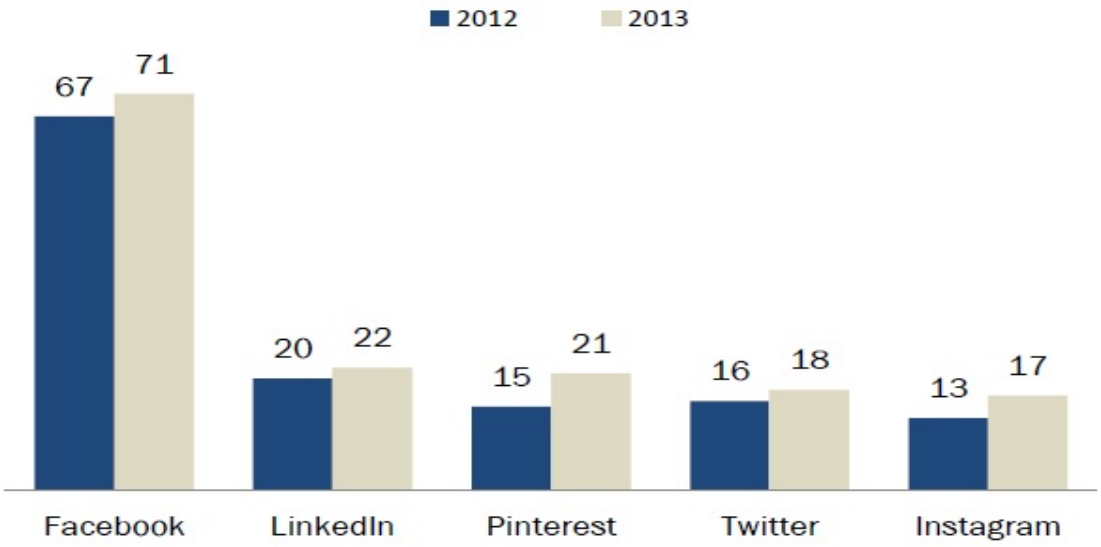
Retrospective Analysis

- The study found Google's tool was about 72% accurate in predicting confirmed cases of the flu over the 2003-2008 study period. That compares to an 85% accuracy rate for the CDC's own surveillance network for flu-like illnesses.
- Google Flu Trends has always emphasized its tracking of flu-like illness rather than cases of the virus confirmed by a lab. Each of the different tools used to track flu trends "tells a slightly different story," Matt Mohebbi, the lead engineer for Google Flu Trends, tells the Health Blog. "It's important to look at them [together] in order to get a real sense of the situation."
- The Google tool gives nearly real-time estimates, says Mohebbi. It can also give more location-specific information, in some cases, than the CDC's data. (Here's a Nature article on the Google Flu Trends concept.)
- As one CDC epidemiologist told the Health Blog last fall about this kind of "infodemiology" tool, "It'll always be a nice adjunct to current surveillance systems and … may serve as an early warning system."

Social Media and the Public

Social media sites, 2012-2013

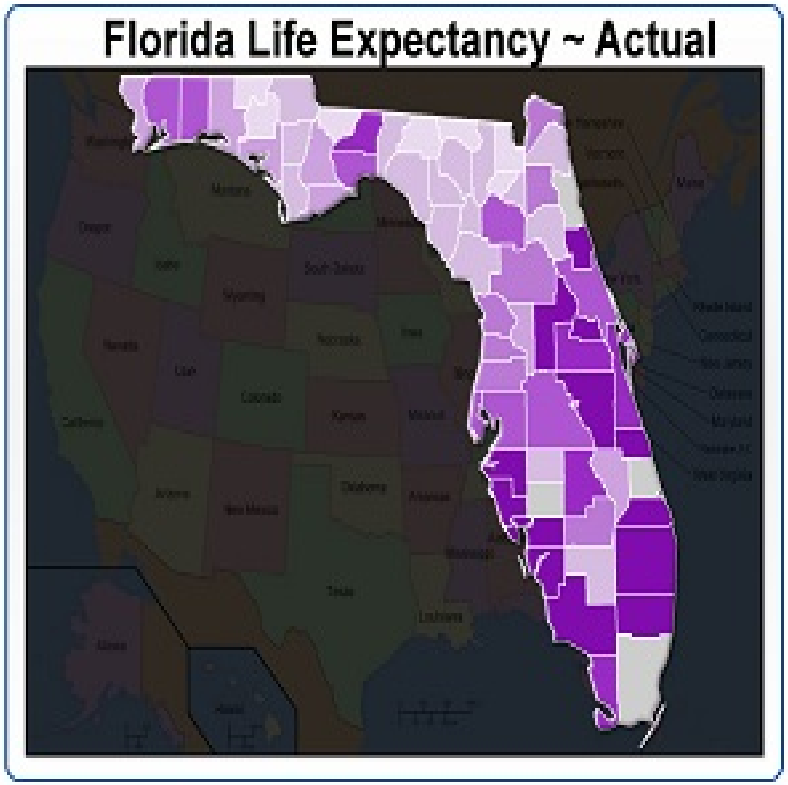
% of online adults who use the following social media websites, by year



Pew Research Center's Internet Project Tracking Surveys, 2012 -2013. 2013 data collected August 07 –September 16, 2013. N=1,445 internet users ages 18+. Interviews were conducted in English and Spanish and on landline and cell phones. The margin of error for results based on all internet users is +/- 2.9 percentage points.

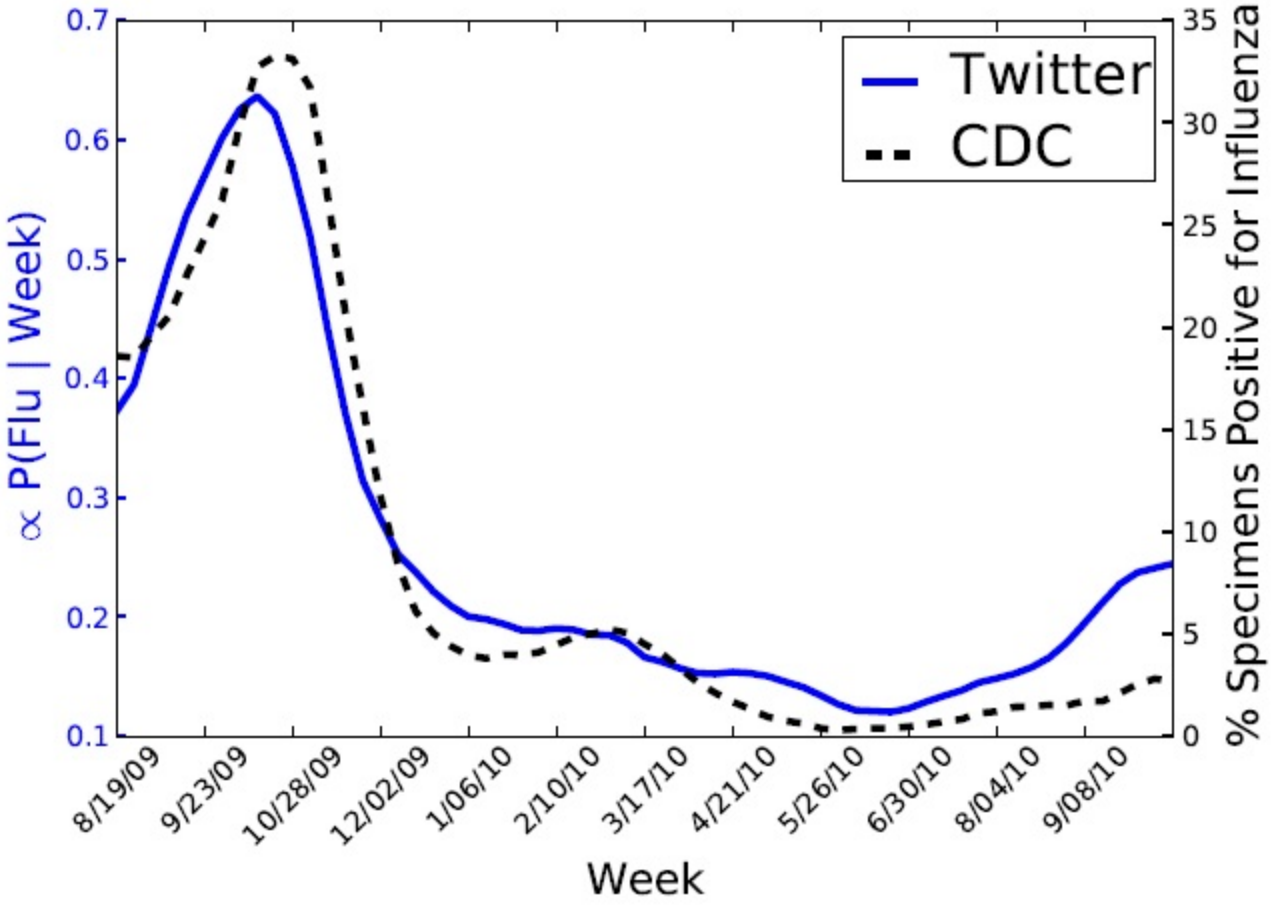
PEW RESEARCH CENTER

Using Facebook Likes to Estimate Local Health Behaviors and Outcomes



Source: Steve Gittelman, Sample Solutions LLC (Data Mining Guest Post)

Measuring Flu Trends with Twitter



Source: Michael Paul and Mark Dredze, "You Are What You Tweet: Analyzing Twitter for Public Health", Association for Advancement of Artificial Intelligence, 2011.

Conclusions

- Vital statistics, medical records and probability surveys do not provide sufficiently actionable data for community interventions
- Non-probability sources can provide more actionable data, but their reliability depends on records and probability based models
- Health information programs, like HINTS, can be a catalyst for generating actionable data which will support better health efforts and promote health information infrastructure

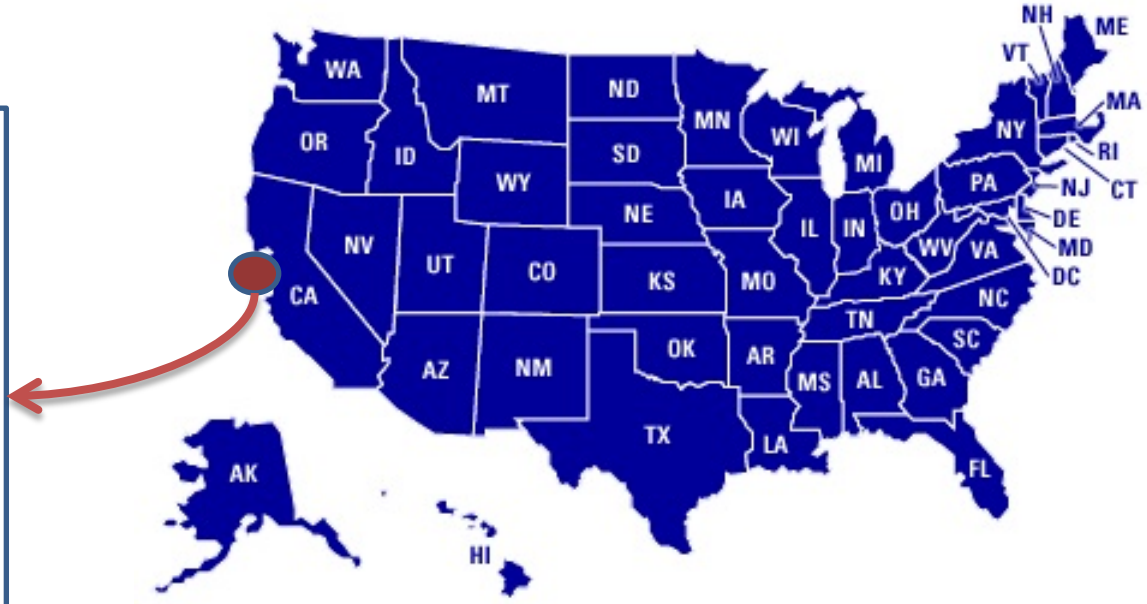
Community Hints

- Community HINTS (C-HINTS)
  - State or local (e.g., Chicago)
  - Selected to promote or support community efforts
  - Goals
    - Target to the community's health issues
    - Collaborate on design, implementation, analysis, and post-study communications
    - Share proven processes, approaches, and protocols
    - Benchmark against national study

Community HINTS - Benchmarking

Marin County, California
HINTS Report

	Compared to National			
	-2	-1	+1	+2
% Online				X
% Cancer Search				X
% Health Insurance				X
% Physically Active				X
% Mammogram				X



HINTS Surveillance

- Identify national, state or local trends in cancer knowledge, attitudes, behaviors or communications
- Develop models of disease, treatment and related communication for cancer(s)
- Use backend social media data to track searches, posting and tweets to chart incidence by time (and area)

Community Engagement

- Evaluate and Coordinate Training and Research
  - Encourage and support networks among health communication scientists
  - Foster collaboration and high-quality research
  - Provide logistics support / infrastructure to the C-HINTS communities
  - Support data coordination, analysis, and synthesis
  - Support for online CME/CE and related training programs for health communication scientists at different career stages