Winter Weather Surveillance in Boston

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Boston's Syndromic Surveillance

- **Started in 2004 in preparation for Democratic National Convention**
- **Includes 10 emergency departments and 2 urgent care centers**
- **Data submitted daily**
  - Age, gender, race/ethnicity
  - Zip code of residence
  - ICD-9 codes (when available)
  - Chief complaint – in free text
- **Can update/create syndromes as needed**

Winter Weather in Boston
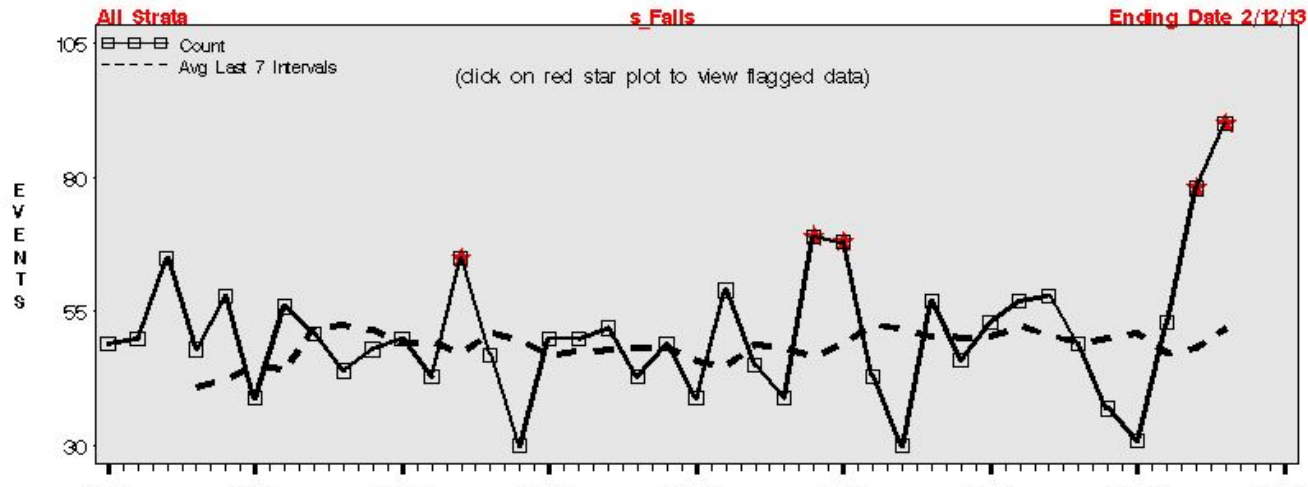
- ❑ **Snowfall**
  - ▪ Falls
  - ▪ Overall decrease in visits
  - ▪ Differences between heavy snow and fluffy snow
    - • Jan 2, 2014: 10.6 inches of snow; water content 0.38
    - • Feb 5, 2014: 10.7 inches of snow; water content 1.11
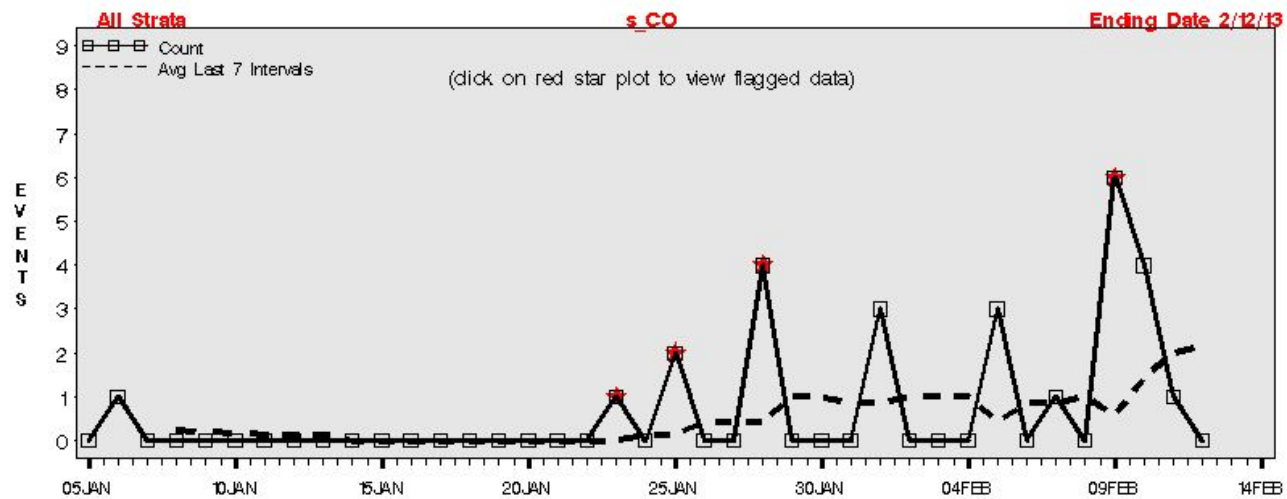- ❑ **Cold temperatures**
  - ▪ Frostbite/hypothermia
  - ▪ Carbon monoxide exposures
  - ▪ Falls (icing)

2013 Blizzard

❑ **~2 feet of snow in 18-hour period**

❑ **Dramatic decrease in ED visits**

   ■ Also MVAs due to driving ban

Boston Globe, February 11, 2013

Going all out

Region scrambles to resume its routines today

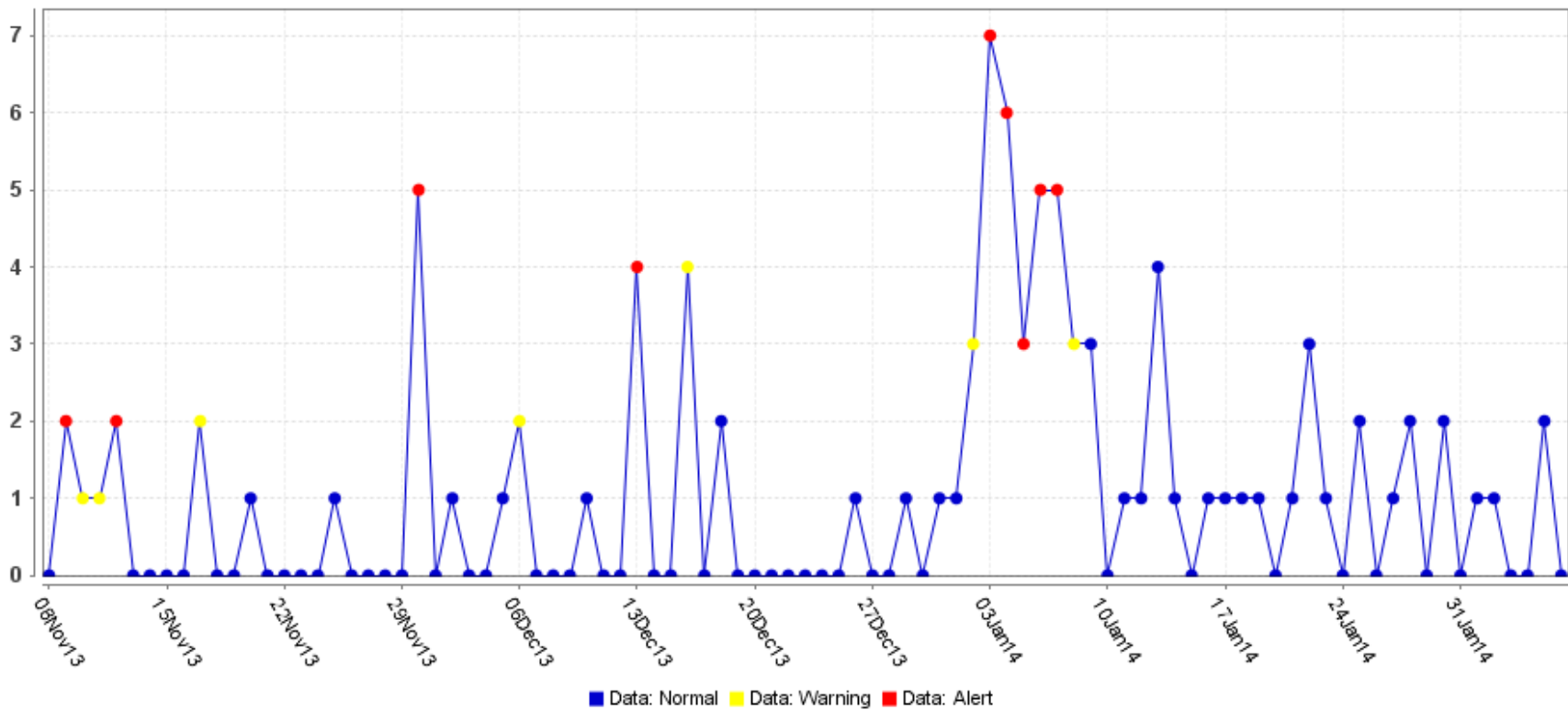## 129,000 still wait for power

2013 Blizzard

Winter 2014

❑ **Northern US hit with "polar vortex"**

❑ **Boston: Not as cold as some**

- Several days of negative wind chills, lows in single digits

❑ **Snowfall: Above average**

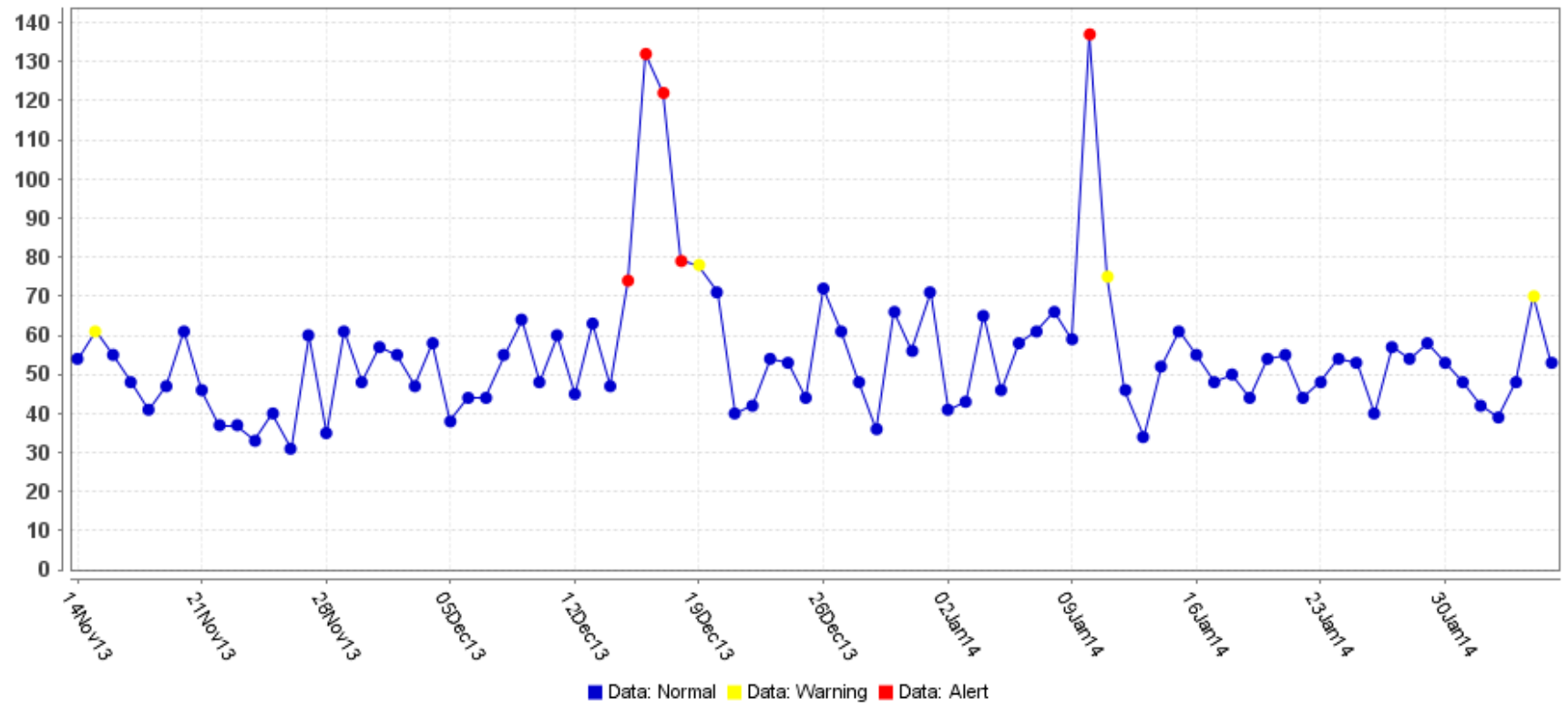❑ **Syndromes: Cold (frostbite/hypothermia), falls, CO exposure**

Cold Syndrome

ED Visits for Cold

Falls Syndrome

ED Visits for Falls

Falls, continued

❑ **Using data, we are able to send messages to city residents.**

Boston Public Health Commission shared a link.
January 21

Are you a property owner? Make sure your sidewalks are thoroughly shoveled to help prevents slips and falls. Learn more: http://www.cityofboston.gov/snow

Know Snow | City of Boston
www.cityofboston.gov

The City of Boston prepares year-round to ensure that residents are safe from snow, ice and extreme cold. Help us by looking out for your neighbors, particularly the elderly and disabled. Follow the rules and guidelines on...

Like · Comment · Share

Boston Public Health @HealthyBoston · Dec 17
Code enforcement officers will issue fines to any resident or business owner who fails to shovel/salt. #bosnow
Expand   Reply Retweet Favorite ••• More

Boston Public Health @HealthyBoston · Dec 17
Please remember to shovel/salt your sidewalks. Area hospitals are seeing increase incidents of falls from ice. #bosnow
Expand   Reply Retweet Favorite ••• More

ALL CLEAR.   TRY AGAIN.

Property Owners:
PLEASE CLEAR WALKWAYS.
IT'S THE LAW... AND YOUR
NEIGHBORS THANK YOU.

bit.ly/knowsnow @NotifyBoston #BOSNOW

Carbon Monoxide (CO)

❑ **Primary causes of CO exposure in Boston:**

- Use of oven/stove for heat
- Faulty boilers/heating not up to code
- Blocked exhausts (cars and buildings)

❑ **BPHC Environmental Health follows up on CO exposures:**

- Assessments for all combustibles

Carbon Monoxide

❑ **Recent example:**

ESP_Event	AgeGroup	SiteID	EncounterID	ChiefComplaint	UNCOutput	ZipCode	SiteName	Gender	RaceID
s_CO	1_LessThan1	11	▮▮▮▮	co2 exposure	co exposure	▮▮▮▮	▮▮▮▮	F	4

- Follow-up with hospital gives us address and type of exposure
- BPHC Environmental Health notified to evaluate problem

❑ **Environmental Health performs site visit**

Carbon Monoxide

❑ **Myriad problems found:**

- Stove main source of CO; may have been used for heat
- Primary heating system malfunctioning
- Multiple space heaters posed fire risk
- Evidence of rodents

❑ **Environmental Health partners with other city agencies to ensure ALL issues are resolved:**

- New stove installed
- Heating repaired
- Treatment by exterminators

Summary

- **Cold weather surveillance is contextual**
  - Flexibility is key
  - Awareness of other events (New Year, type of snowfall expected)
  - CO exposures without losing power
- **Populations at risk**
  - Homeless population for cold syndrome, 18–45-year-olds for shoveling/falls
- **Working with partners to use data**
  - Who can do something with this data?