



# Surveillance Overview

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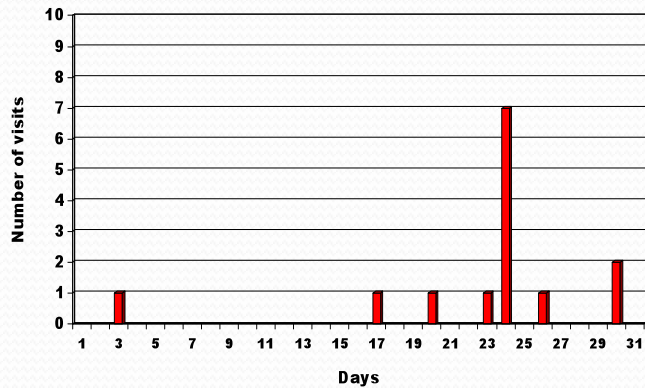
Boston Public Health Commission



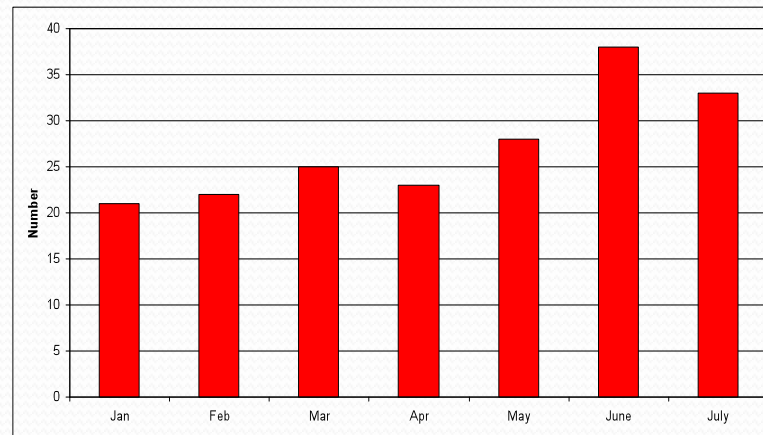
## What is the range of responsibilities of a public health monitoring agency?

- Infectious Diseases
- Environmental Issues
  - Chemical Exposures
  - Carbon Monoxide
- Injuries
  - Falls – Kids can't fly
  - Violence
- Substance Abuse
  - Overdoses
- Chronic Diseases
  - Asthma

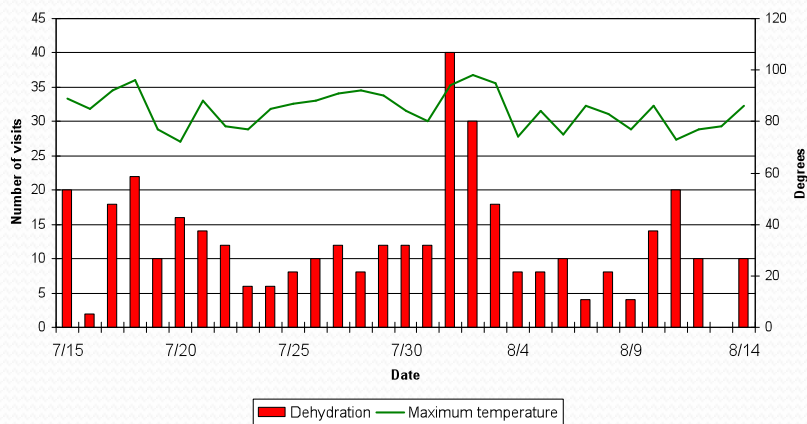
## Carbon Monoxide



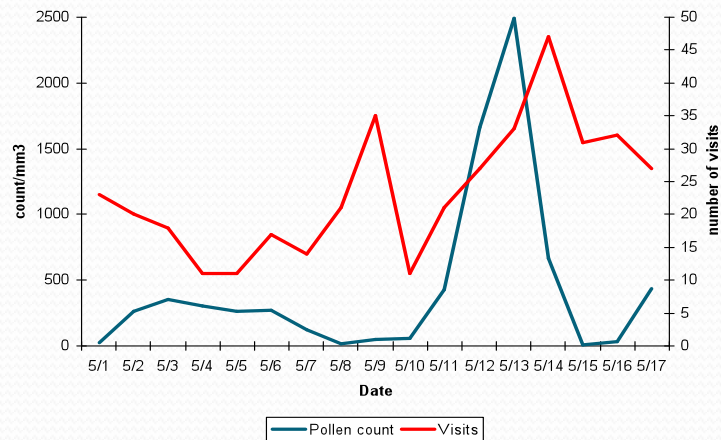
## Violence: Penetrating Injuries



## Heat Related Visits



## Asthma & Pollen Counts



# What is the range of information is available, how reliable, how often?

## Notifiable Diseases

### Notifiable Illness or Exposure in

–Research Laboratory Staff Using Select Agent or Other Priority Pathogens

## Death Certificates

### Inspectional Service Reports

**BPHC**

## Syndromic Data

- Acute Care Visits
- Boston EMS Calls
- Poison Control Calls
- Health Centers – Urgent Care Visit Volume
- Sentinel sites (as needed)

## Environmental Data

- Weather
- Pollen Counts
- News Reports
- Environmental Detection Systems

# What evidence do you consider syndromic?

## **Syndromic Data**

- Acute Care Visits
- Boston EMS Calls
- Poison Control Calls
- Health Centers – Urgent Care Visit Volume
- Sentinel sites (as needed)

# Chief Complaint Dictionary

<b>Fever</b>	<b>Respiratory</b>	<b>Cough</b>	<b>Hypoxia</b>	<b>SOB</b>	<b>Cold</b>
chiles	atelectasis	bringing up blood	color change	apnea	cold
chills	brionchitis	coguh	color off	apneic episode	cold sx
cough+fever	brochiolitis	copugh	cyancsis	breathing difficulty	cong
debrile	bronchialitis	couch	cyanotic	breathing fast	congesr
f v	bronchiectasis	coug	dec o2 sat	breathing funny	congest
faver	bronchilitis	cough	decrease 02 stat	breathing hard	congested

# Symptoms into Syndromes

**GI**

<b>GI1</b>	<b>Nausea</b>	<b>Vomiting</b>	<b>Diarrhea</b>	<b>Abd pain</b>	<b>Fever</b>	<b>Dehydration</b>	<b>Anorexia</b>
<b>GI2</b>	<b>Nausea</b>	<b>Vomiting</b>	<b>Diarrhea</b>	<b>Abd pain</b>	<b>Fever</b>	<i><b>Gyn/Pregnancy</b></i>	
<b>GI3</b>	<b>Nausea</b>	<b>Vomiting</b>	<b>Diarrhea</b>	<b>Abd pain</b>	<b>Fever</b>	<i><b>Gyn/Pregnancy</b></i>	<i><b>GU</b></i>
<b>GI4</b>	<b>Nausea</b>	<b>Vomiting</b>	<b>Diarrhea</b>				



# Interpretation of signals

- Does it make epidemiologic sense?
- Does it make clinical sense?
- Does it pass the common sense test?





## Information for signal characterization

- Descriptive characteristics of the signal
  - How big
  - Trends
- Historical patterns
- Clustering
  - Space
  - Demographics
- Syndrome definitions
  - Broad vs narrow
- Chief complaints
- Other biosurveillance data
- Local factors
  - Health care utilization patterns
  - Weather
  - Events

## What is your connection to hospitals, private physicians, urgent care centers, government decision-makers, the public?

- Varies by federal, state, local
- Varies by situation
  - Routine
  - Public Health Emergency
    - Varies by size and scope
- Local health department
  - Primary investigators of cases
  - Surveillance
  - Institute control measures
  - Provide information for local response efforts
  - Develop clinical guidance
  - Media
- Direct lines of communication with all agencies



## How often are electronic systems used, by how much staff, which what training?

- Syndromic surveillance
  - Epidemiologists
- Reportable diseases
  - Epidemiologists
  - Public Health Nurses
- Limited formal training –
  - Experience based



# What cross-jurisdictional communication exists—how much of a problem is this?

- ISDS -Distribute
  - Foster collaboration
  - Informal network
  - Trusted sources
  - Sharing of tools, codes



## What role do analytic methods currently play, if any—how much more could it be, should it be?

- Current Status
  - Aberration detection
  - Models – disease transmission – not routinely used
  - Silo
- Needs
  - Multiple data streams
  - Varied needs by agencies
  - Data to Information to Response
  - Practical and functional
  - Added value