

# CEDEP Update

October, 2015



# Strategic Planning

- **Ongoing**
- **Soliciting feedback**
- **Employee / field satisfaction critical**

# CEDEP

- **Budget ~\$100 M**
  - ~32 federal grants
  - ~200 central office positions
  - Fund field staff in all programs

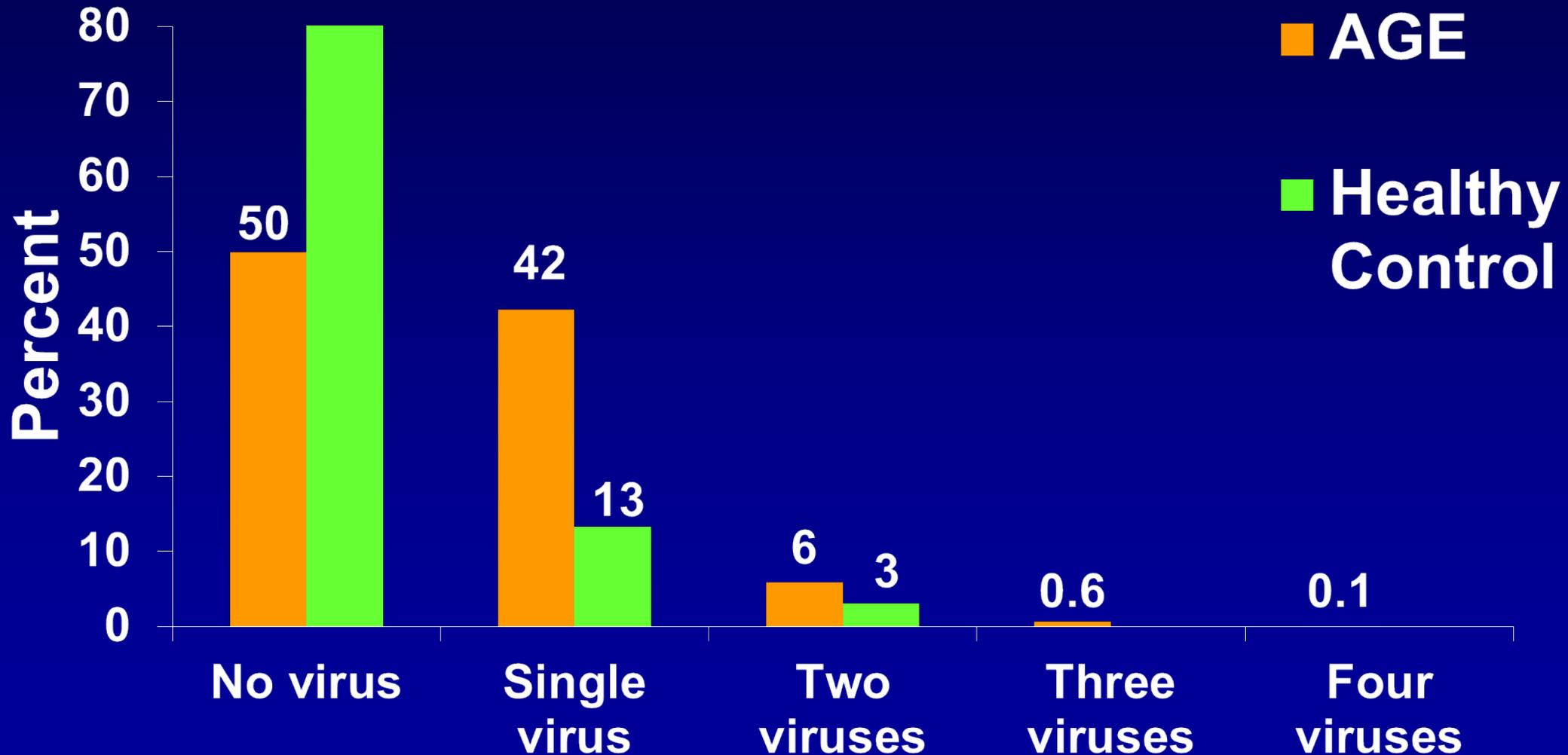
# GEH

- **FDA Food Code / rules**
- **FDA Voluntary Food Safety Standards**

# Foodborne

- **FoodCore interview teams**
- **Center of Excellence**

# Pathogens Detected in Individual Subjects



# Performance of the xTAG<sup>®</sup> Gastrointestinal Pathogen Panel, a Multiplex Molecular Assay for Simultaneous Detection of Bacterial, Viral, and Parasitic Causes of Infectious Gastroenteritis

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The xTAG<sup>®</sup> Gastrointestinal Pathogen Panel (GPP) is a multiplexed molecular test for 15 gastrointestinal pathogens. The sensitivity and specificity of this test were assessed in 901 stool specimens collected from pediatric and adult patients at four clinical sites. A combination of conventional and molecular methods was used as comparator. Sensitivity could be determined for 12 of 15 pathogens and was 94.3% overall. The specificity across all 15 targets was 98.5%. Testing for the pathogen identified was not requested by the physician in 65% of specimens. The simultaneous detection of these 15 pathogens can provide physicians with a more comprehensive assessment of the etiology of diarrheal disease.

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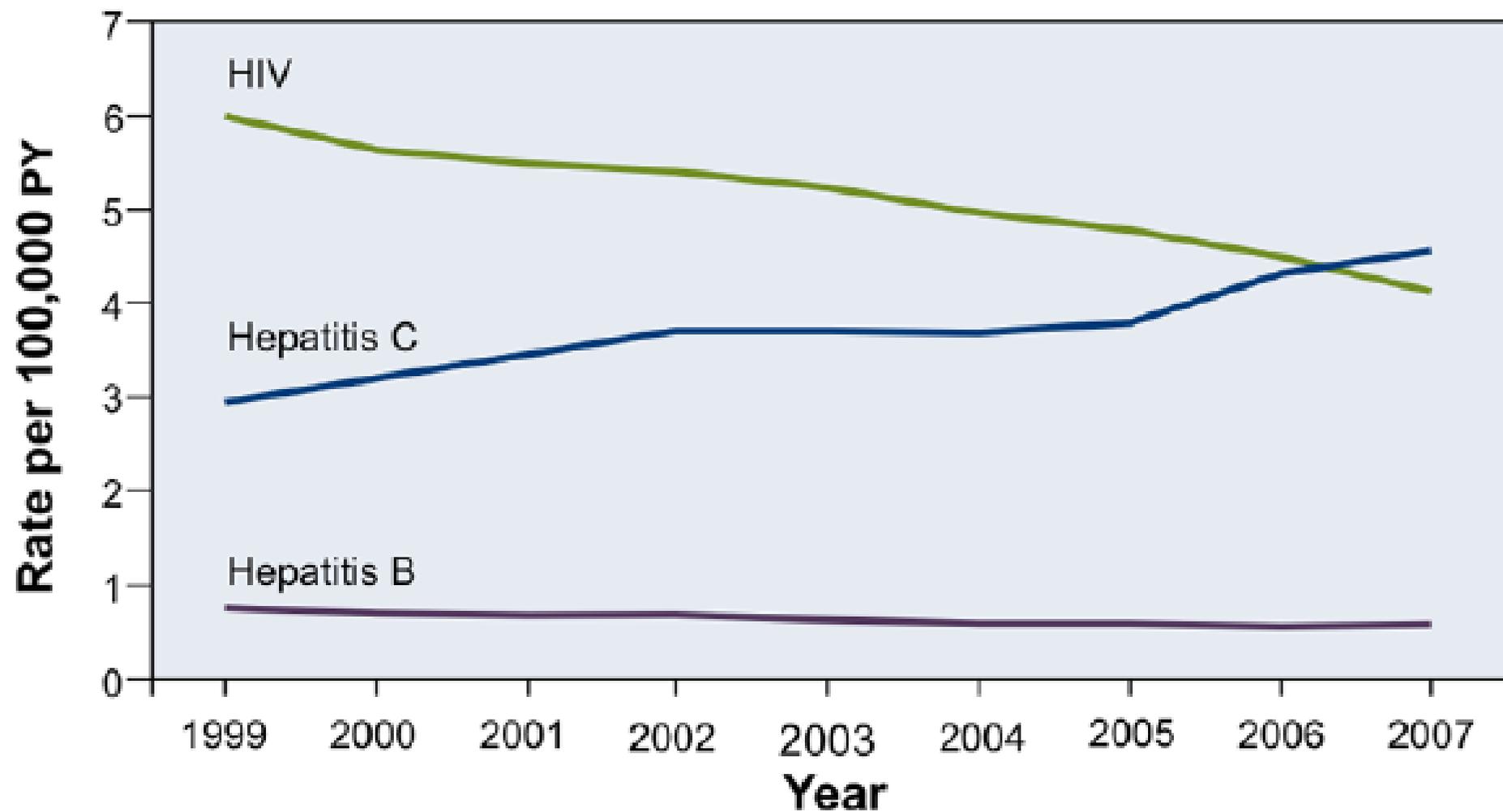
# TB

- **Revised manual**
- **3HP**
- **New diagnostics**

# **HIV / STD / Hep**

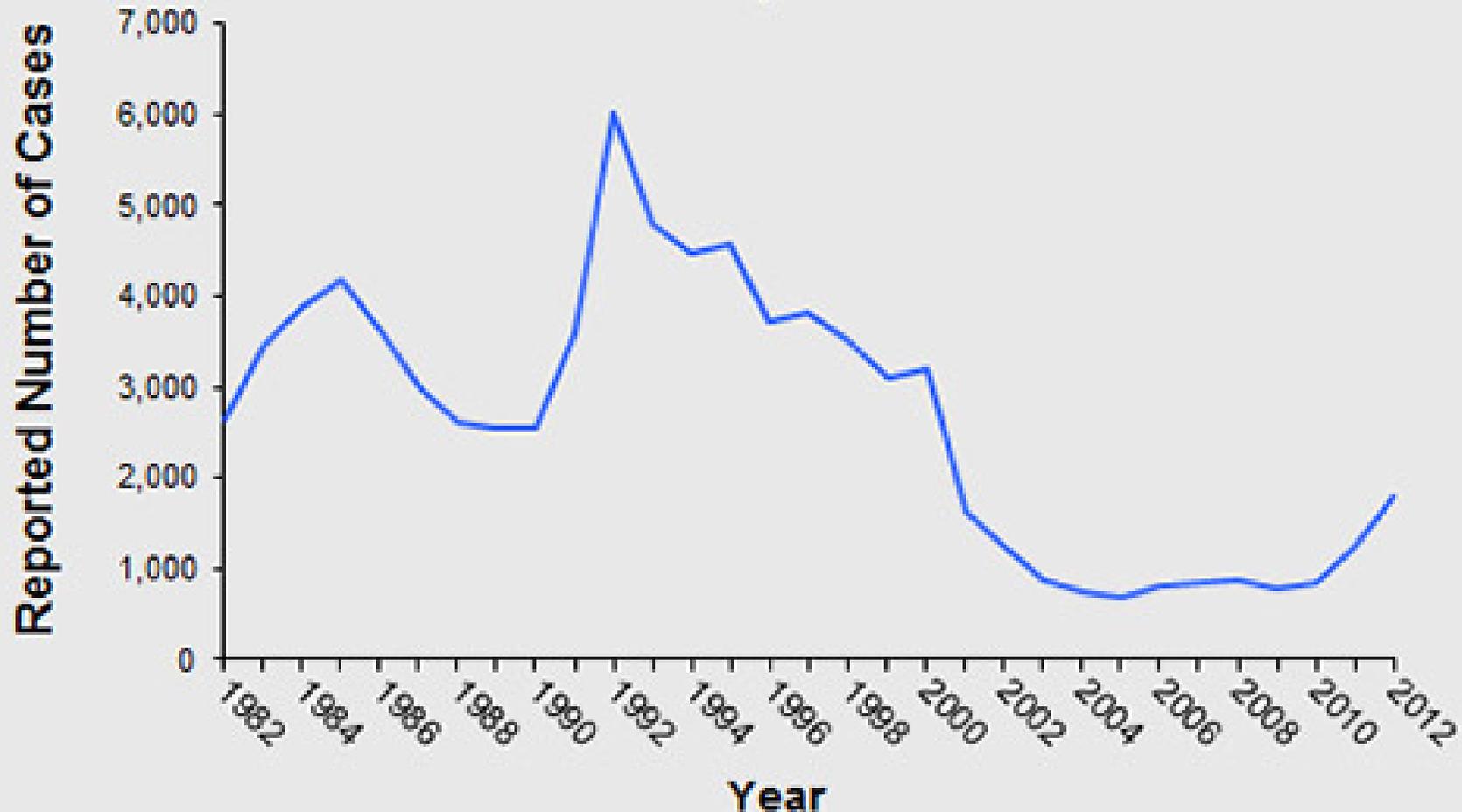
- **HIV Continuum of Care**
- **New testing / rx protocols**
- **Hep C**

# Hepatitis Mortality



# Acute Hepatitis C

Incidence of acute hepatitis C, by year  
United States, 1982-2012



# Figure 4.1. Reported number of acute hepatitis C cases — United States, 2000–2012



Source: National Notifiable Diseases Surveillance System (NNDSS)

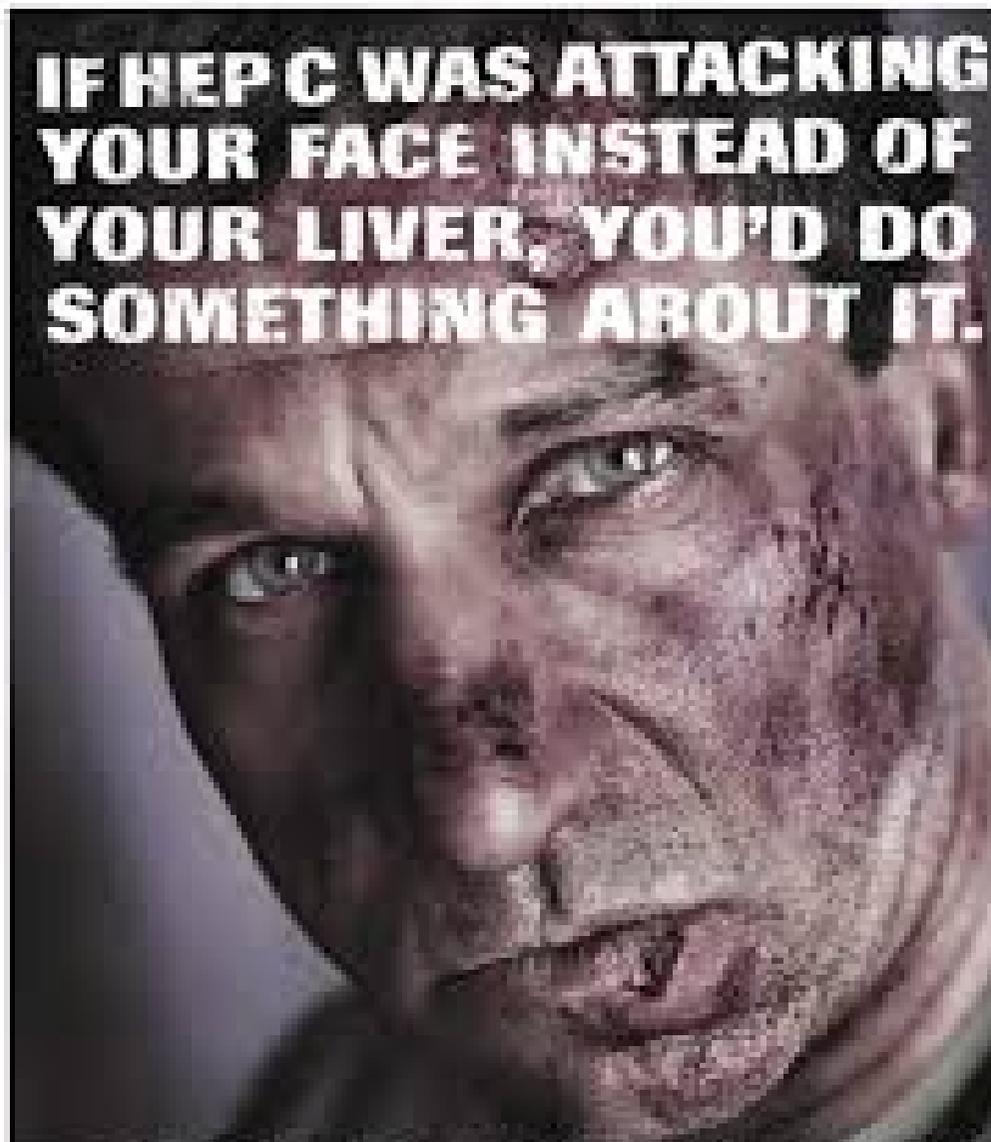


# Figure 4.2. Incidence of acute hepatitis C, by age group — United States, 2000–2012



Source: National Notifiable Diseases Surveillance System (NNDSS)





**IF HEP C WAS ATTACKING  
YOUR FACE INSTEAD OF  
YOUR LIVER, YOU'D DO  
SOMETHING ABOUT IT.**

**READY TO FIGHT BACK?**

YOU'LL NEVER BE SERIOUSLY SICK YOU ARE READY TO FIGHT. THE DAMAGE HEP C IS DOING TO YOUR LIVER  
TALK TO YOUR DOCTOR AND ASK ABOUT PROGRESSIVE TREATMENT. TODAY'S TREATMENT OPTIONS CAN HELP YOU TAKE CONTROL  
OF REDUCING THE HEP C VIRUS TO UNDETECTABLE LEVELS. TREATMENT TO PREVENT MAY VERY SLOW OR PREVENT LIVER  
DAMAGE OR CANNOT, BUT TALK TO YOUR DOCTOR TO FIND OUT IF TREATMENT IS RIGHT FOR YOU. AND HELP GET HEP C OFFERED YOU.

[HepCSource.com](http://HepCSource.com)

888-HepCSource

888-437-3763

# Public Health and Informatics



# SSI

- **ELR expansion**
- **Program growth (0-7)**
- **NBS user guide**

# Immunizations

- **TennIIS**
- **Certificate Validation Tool**
- **On-line VFC management**

# Avian Influenza

- **Low Pathogenicity (LPAI)**
  - To birds
  
- **High Pathogenicity (HPAI)**

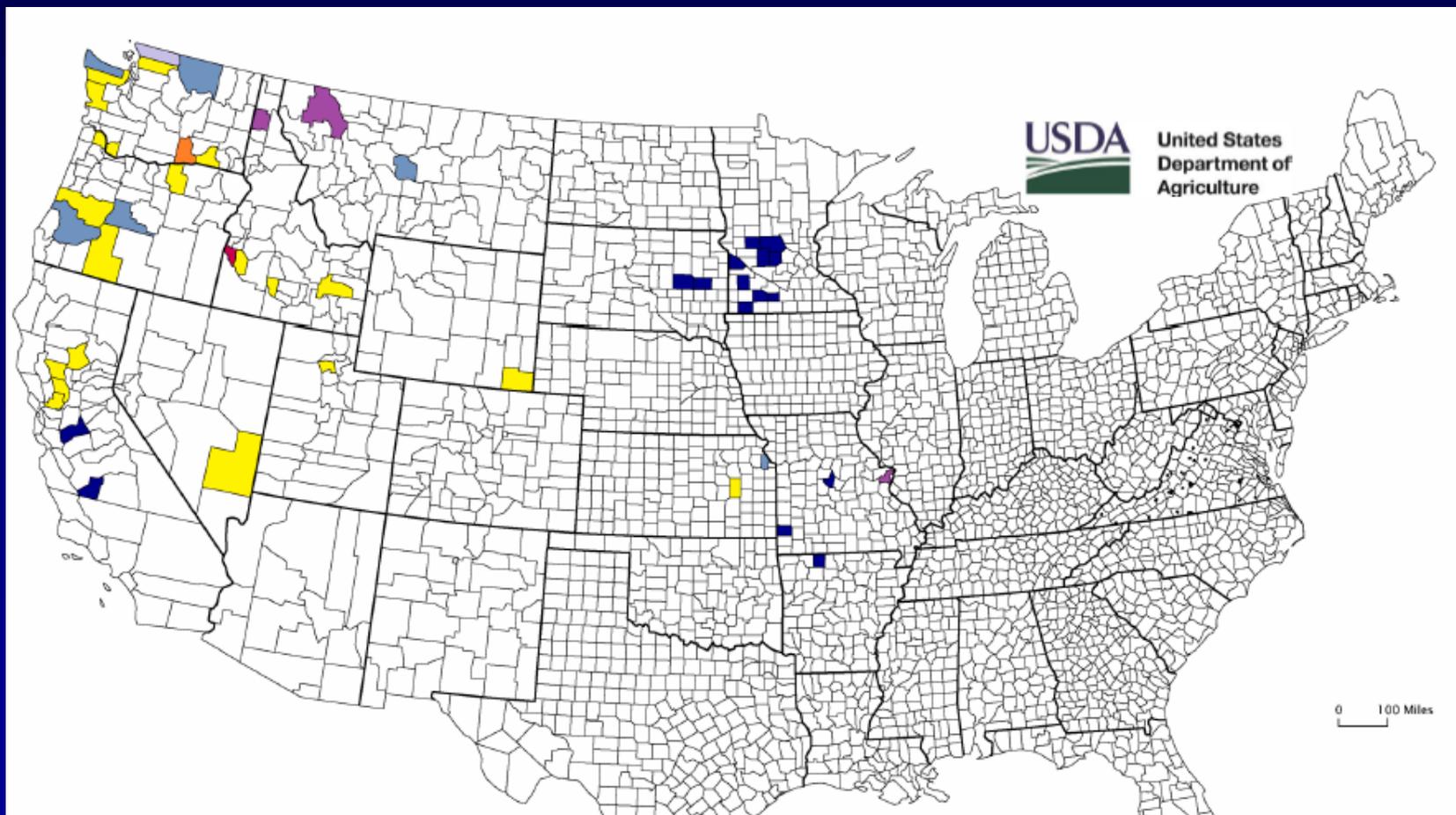
# Avian Influenza

- **Low Pathogenicity (LPAI)**
  - To birds
  - Couple of times in TN
- **High Pathogenicity (HPAI)**

# Avian Influenza

- **Low Pathogenicity (LPAI)**
- **High Pathogenicity (HPAI)**
  - **Bad!**
  - **Recently 30 commercial premises**
    - **1.3M birds**

# HPAI



**Figure 4.** All HPAI Detections *in All Birds, by Type, As Of April 9, 2015* (as reported on [www.aphis.usda.gov](http://www.aphis.usda.gov))

\*one or more detections may have occurred in county

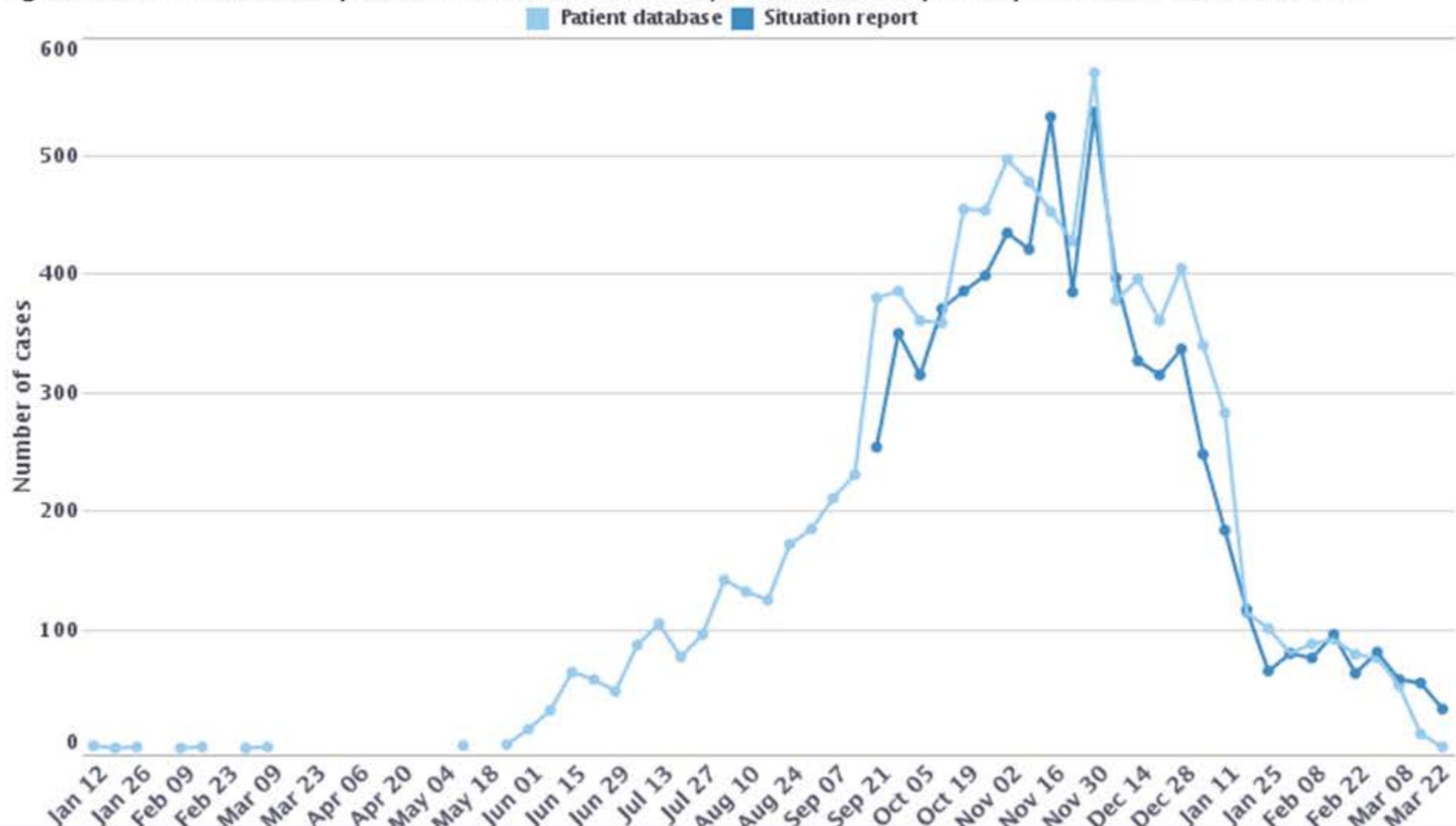
- Backyard
- Commercial
- Captive Wild Birds
- Wild Birds
- Backyard, Captive Wild Birds & Wild Birds
- Captive Wild Birds & Wild Birds
- Backyard & Wild Birds

# PHEPP

- **7 regions PPHR certified**
- **Multiple cross-program responses**

# Sierra Leone

Figure 3: Confirmed weekly Ebola virus disease cases reported nationally and by district from Sierra Leone



# Ebola Virus Disease

## TN Response in Review (as of 3/30/15)



-102 Travelers have completed 21-day Active Monitoring



-240+ Lab staff trained statewide on sample packaging/shipping

-1,000's of Health staff hours dedicated to communicating through the TDH Ebola Web site, Ebola Info Line, Health alerts, Triage guidance, and Public meetings

MONTH						
S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		



-100% of Hospitals and Health Departments exercised and assessed for Ebola readiness  
 -2,200+ healthcare workers have had intensive Personal Protective Equipment (PPE) training statewide

**Emergency Department Triage Guidance**  
 November 2014

**Facts about Ebola in the U.S.**  
 You CAN'T get Ebola through WATER  
 You CAN'T get Ebola through FOOD grown or legally purchased in the U.S.  
 You can only get Ebola from:  
 • Touching the blood or body fluids of a person who is sick with or has died from Ebola.  
 • Touching contaminated objects, like needles.  
 • Touching infected fruit bats or primates (apes and monkeys).

**Resources**  
 Tennessee Department of Health Resource Portal  
 (CDC) Evaluation of Patients Returning from Foreign Countries

**Weekly Updates**

# Hospitals

- Treatment hospitals
- Assessment hospitals

# Ebola \$

- **Healthcare coalitions**
- **Support “Assessment Hospitals”**
- **Evaluation**
- **Training**

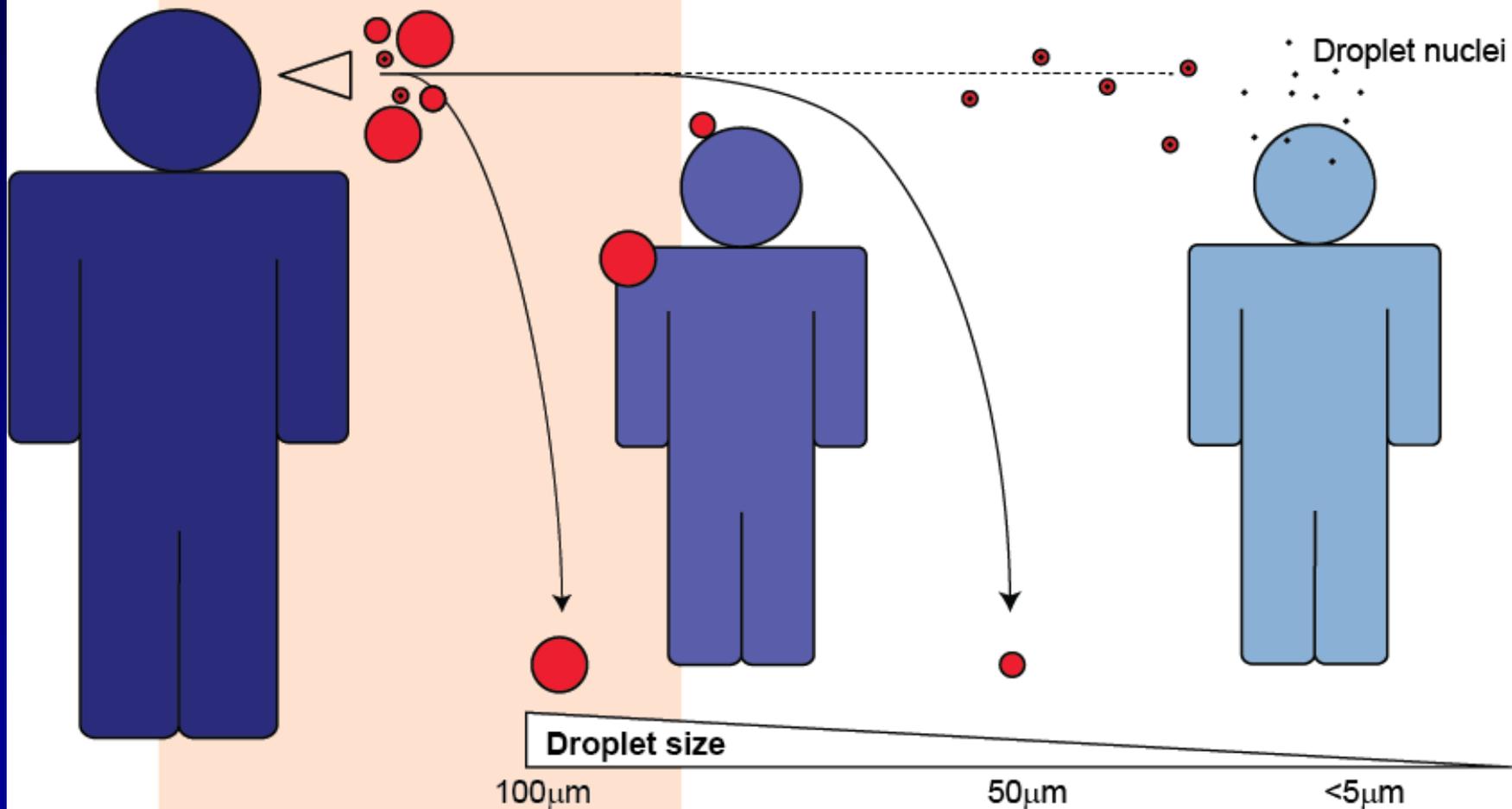
**DROPLET PRECAUTIONS**

**AIRBORNE PRECAUTIONS**

1m

Distance

10m+



**Droplet size**

100µm

50µm

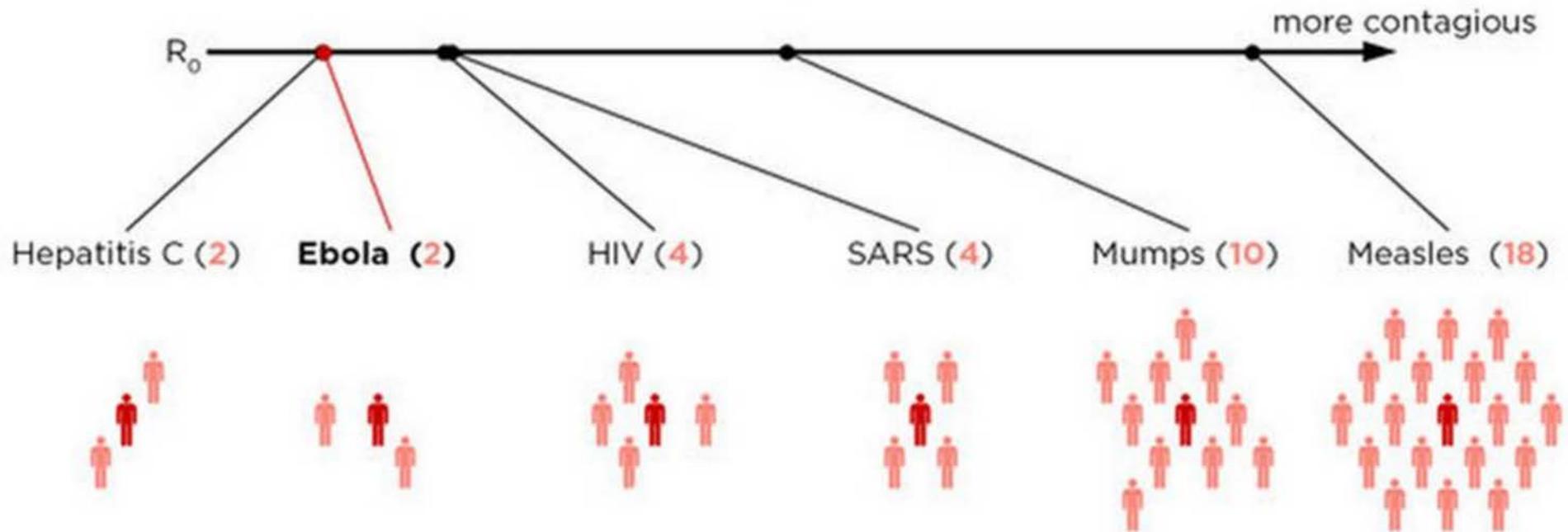
<5µm

— Zaire ebolavirus —

— Respiratory viruses e.g. influenza A virus, coronavirus, rhinovirus —

# How Contagious is Ebola?

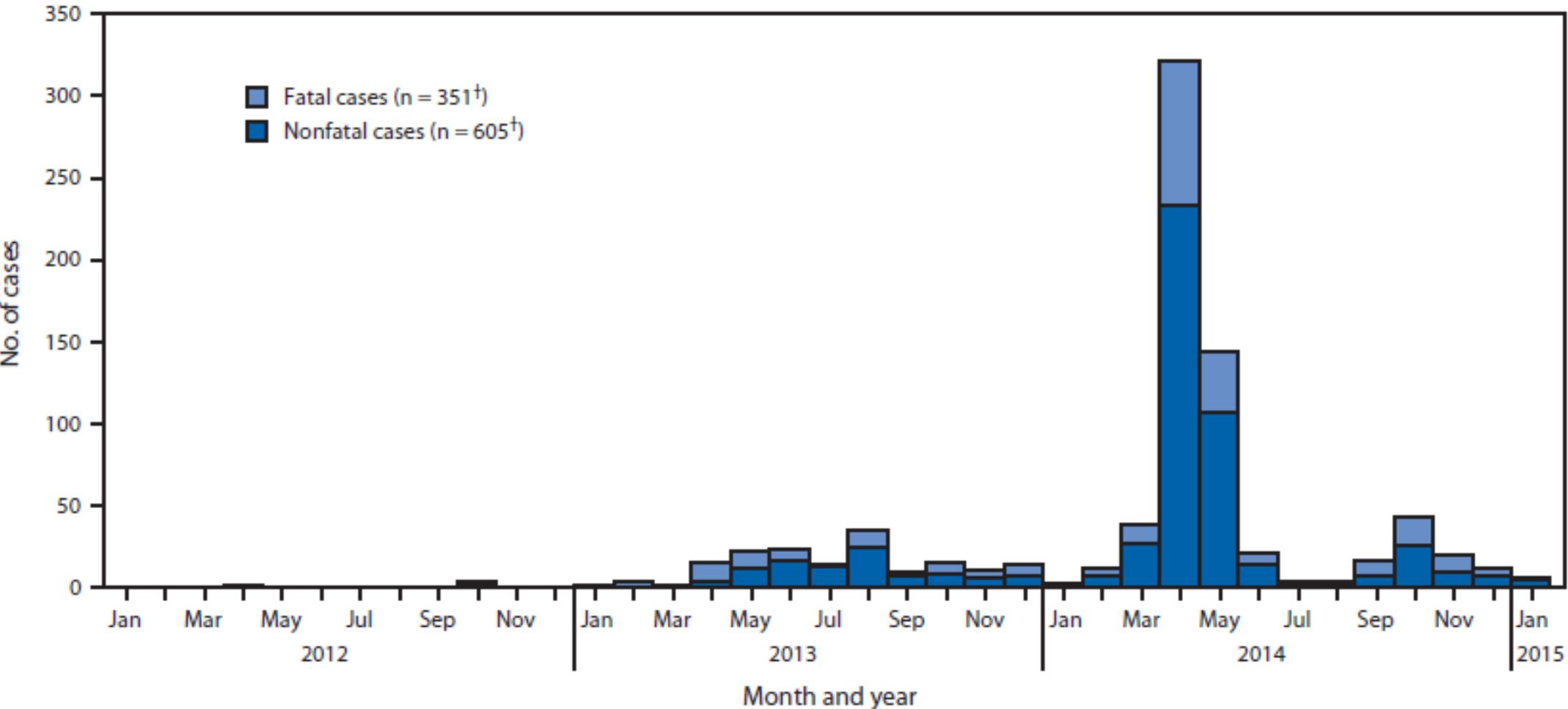
The number of **people** that **one sick person** will infect (on average) is called  $R_0$ . Here are the maximum  $R_0$  values for a few viruses.



# MERS-CoV

- **956 cases**
  - 351 deaths
- **Fever and respiratory symptoms**
  - Arabian peninsula
  - 14 days
  - Camels

# MERS-CoV

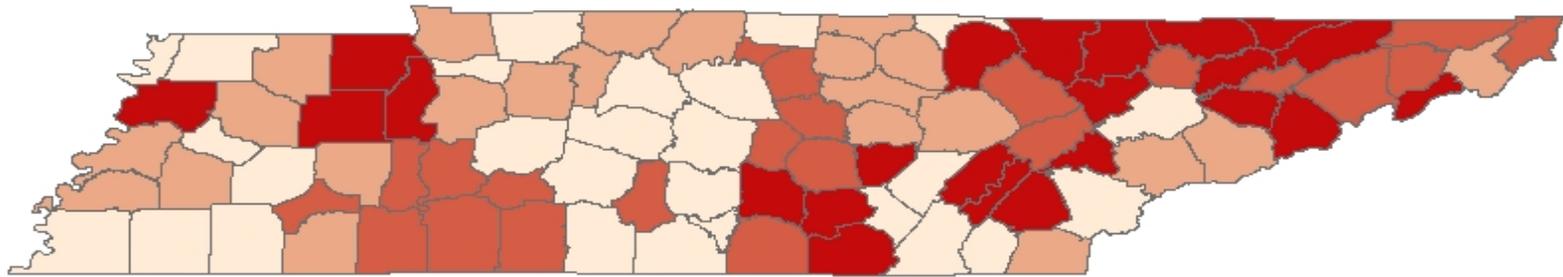


# PDO Epi

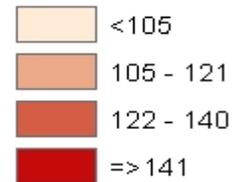
- **Obtained grant**
- **Building staff**
- **Integrating with CSMD / HLR**

# Opioid Prescription Rates by County

## TN, 2007

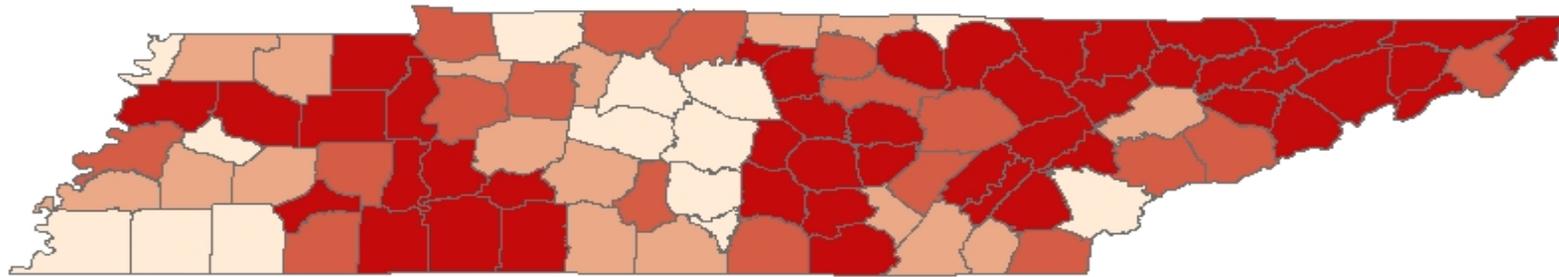


### Prescription Rate per 100 Population

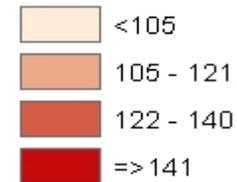


# Opioid Prescription Rates by County

## TN, 2008

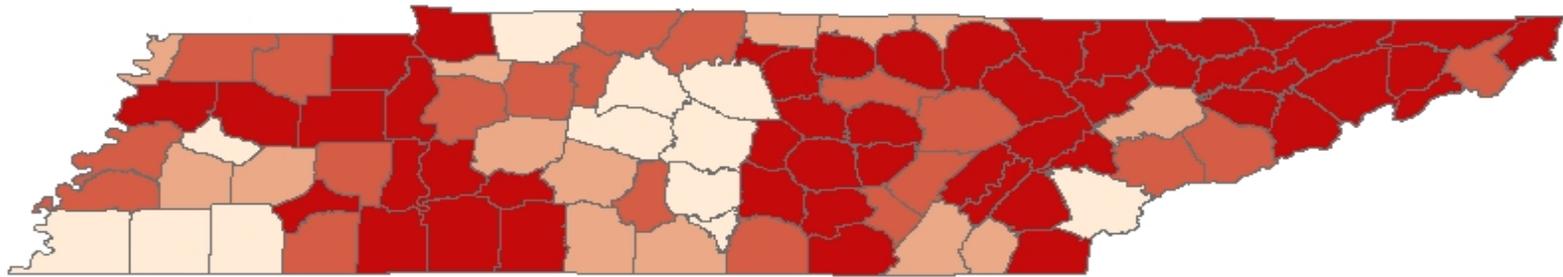


### Prescription Rate per 100 Population

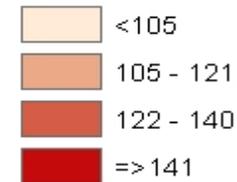


# Opioid Prescription Rates by County

## TN, 2009

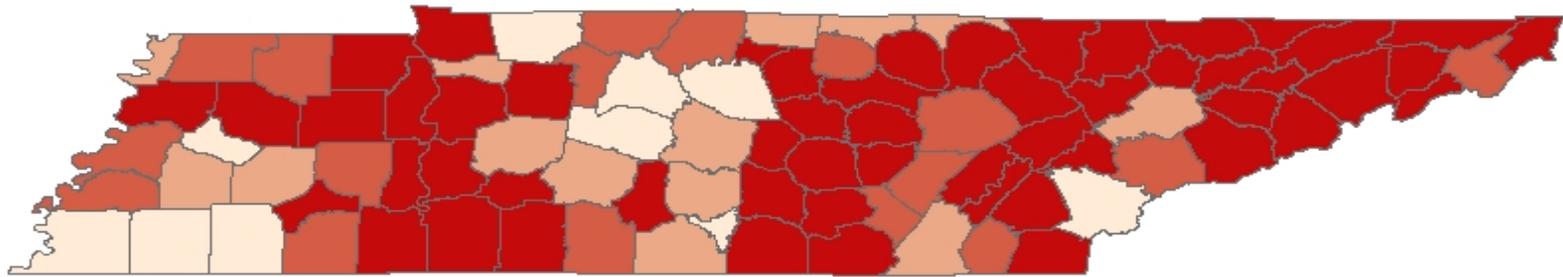


### Prescription Rate per 100 Population

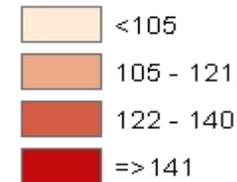


# Opioid Prescription Rates by County

## TN, 2010

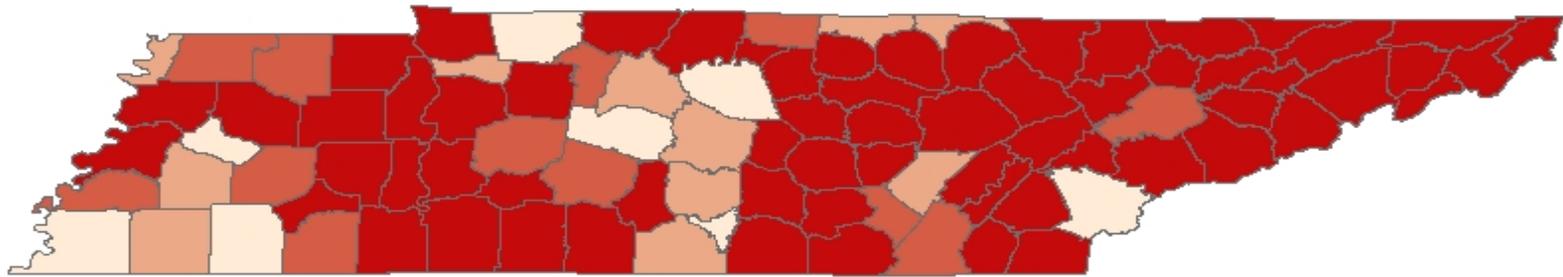


### Prescription Rate per 100 Population

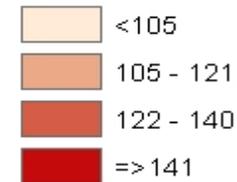


# Opioid Prescription Rates by County

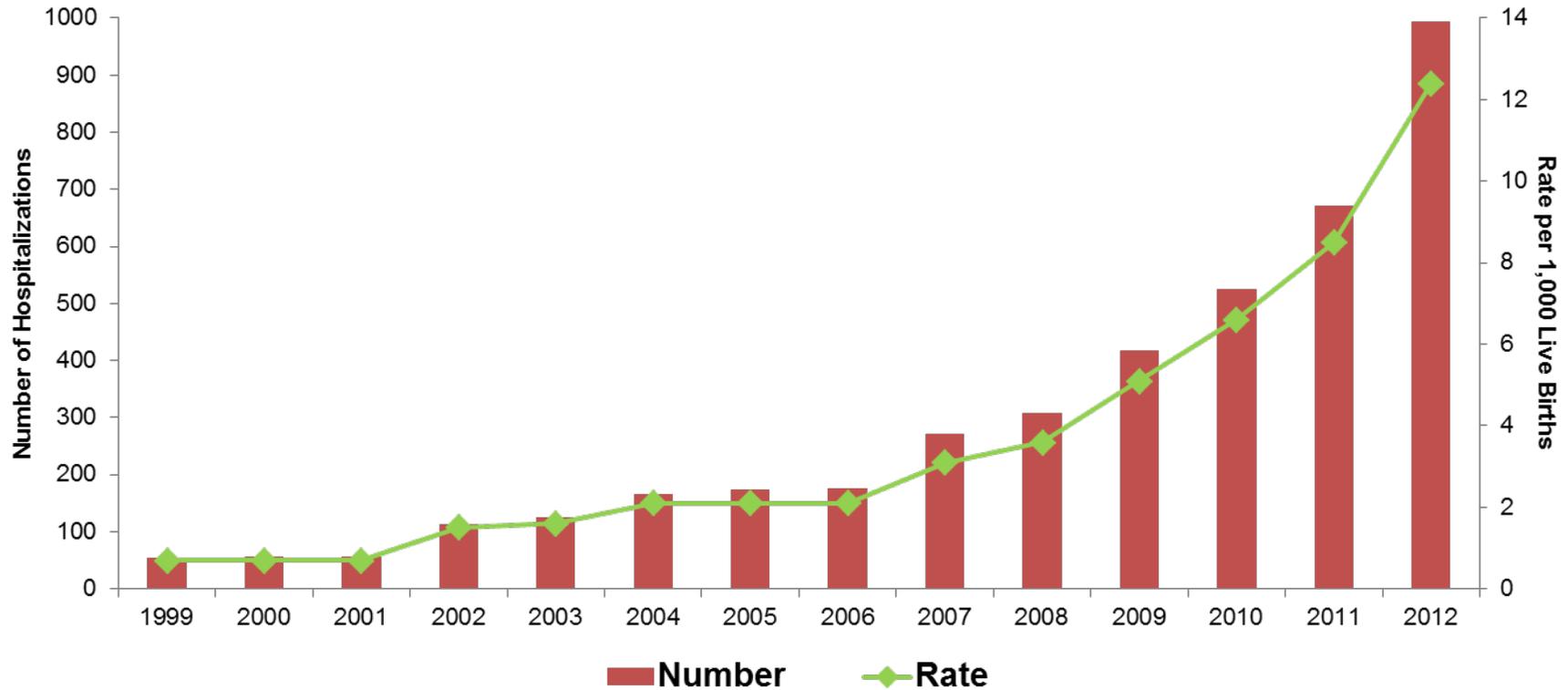
## TN, 2011



### Prescription Rate per 100 Population



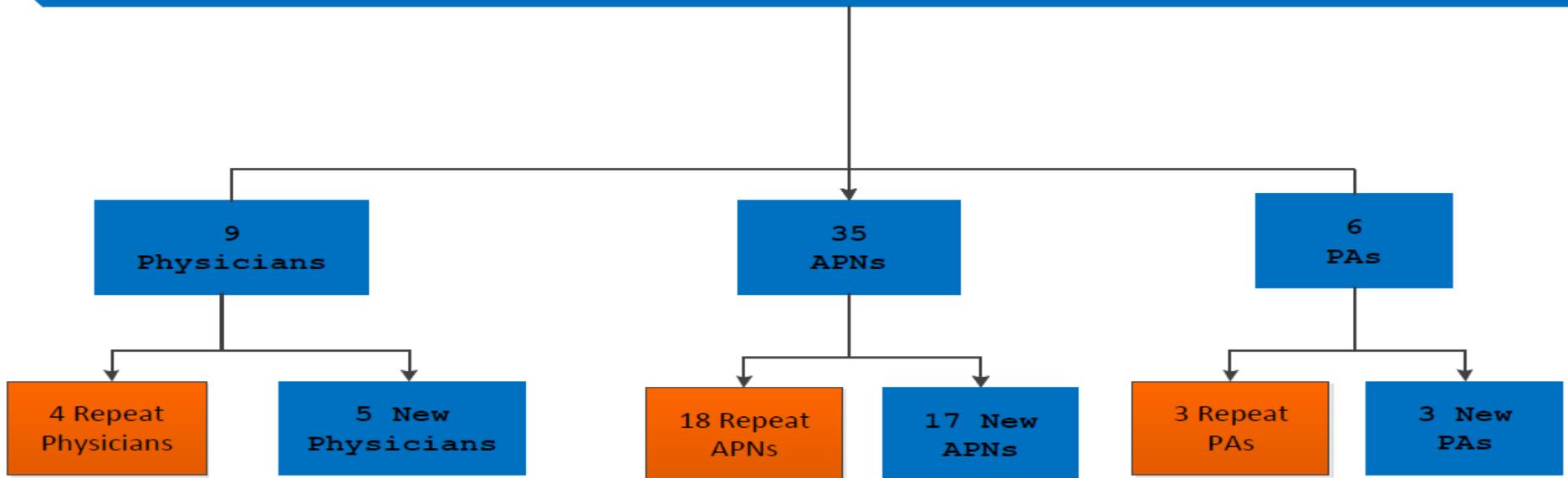
# NAS Hospitalizations in TN: 1999-2012



# 2014 Top 50 Data

Top 50 2014

Letters sent out by July 31, 2014





# nEmesis: Which Restaurants Should You Avoid Today?

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## Abstract

Computational approaches to health monitoring and epidemiology continue to evolve rapidly. We present an end-to-end system, *nEmesis*, that automatically identifies restaurants posing public health risks. Leveraging a language model of Twitter users' online communication, *nEmesis* finds individuals who are likely suffering from a foodborne illness. People's visits to restaurants are modeled by matching GPS data embedded in the messages with restaurant addresses. As a result, we can assign each venue a "health score" based on the proportion of customers that fell ill shortly after visiting it. Statistical analysis reveals that our inferred health score correlates ( $r = 0.30$ ) with the official inspection data from the Department of Health and Mental Hygiene (DOHMH). We investigate the joint associations of multiple factors mined from online data with the DOHMH violation scores and find that over 23% of variance can be explained by our factors. We demonstrate that readily accessible online data can be used to detect cases of foodborne illness in a timely manner. This approach offers an inexpensive way to enhance current methods to monitor food safety (*e.g.*, adaptive inspections) and



Figure 1: *nEmesis* analyses people's online messages and reveals individuals who may be suffering from a foodborne disease. Precise geo coordinates embedded in the messages enable us to detect specific restaurants a user had visited prior to falling ill. This figure shows a sample of users in New York City. Their most recent location is shown on the map and their likelihood of suffering from a foodborne illness is color coded from low (green) to high (red).

# Crosscutting

- **Handheld inspection app**
- **TDOC collaboration**
- **Dashboards**
- **Multi-agency hep C response**

# Crosscutting

- **ACA enrollment**
- **Healthy Homes hub**
- **Multiagency anti-drug response**