

# Initiatives at the State Level and Performance Characteristics of Optimal Surveillance Systems

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# Objectives

- Passive surveillance and legal authority
- Hospital health vs. public health
- State-level *Clostridium* spp. surveillance
- Optimal performance characteristics of public health surveillance systems

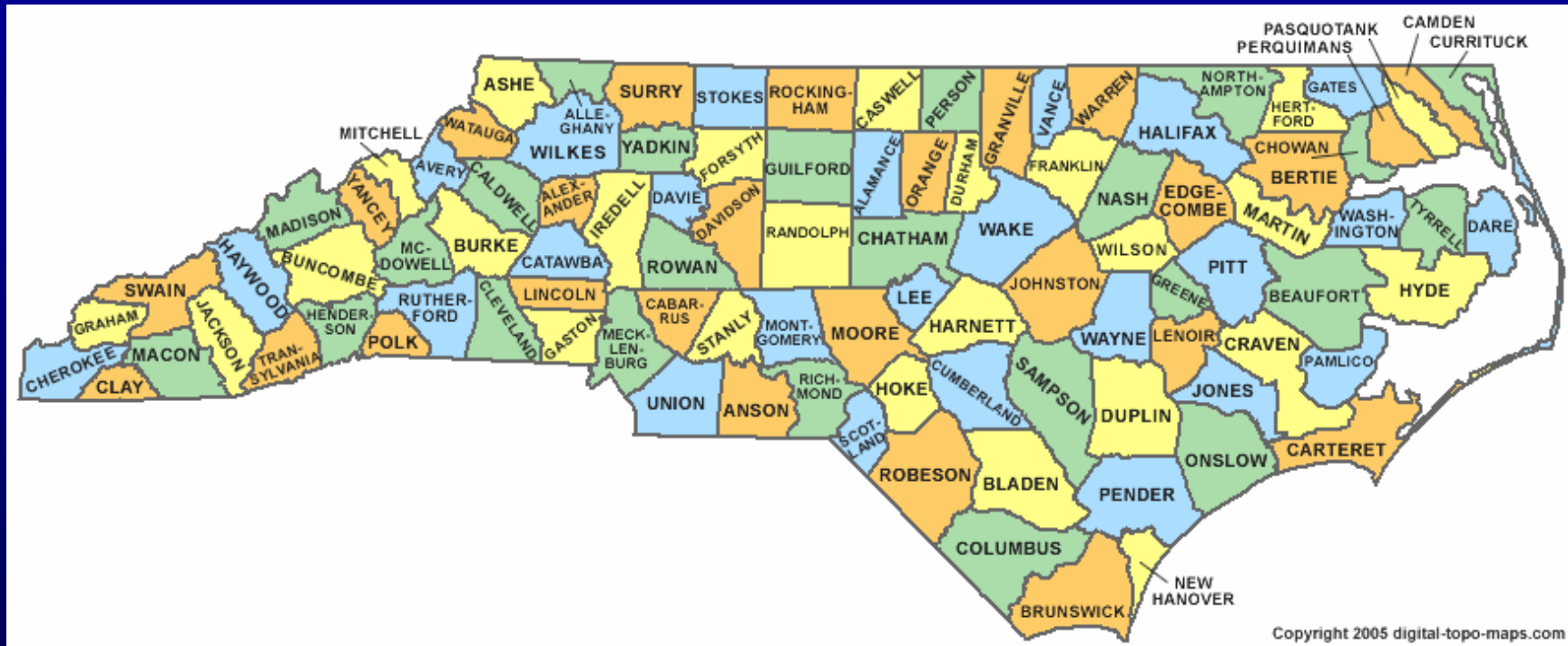


# A Passive System

- Nationally Notifiable Diseases, United States
- States adopt reporting statutes (person-based)
  - Mandatory physician reporting
  - Mandatory laboratory director reporting
  - Failure to report is a misdemeanor
- States develop rules that flesh-out statutes
  - List of reportable diseases
  - Mechanisms for reporting



# North Carolina: A “Home Rule” State



100 Counties

86 autonomous health departments



# Disease Reports

- Named reporting by disease event
  - Confidential medical record
  - Public health is a HIPAA “non-covered entity”
  - Reports are discoverable
    - Freedom of Information Act (de-identified)
    - Person’s signed consent to release
- A disease does not have to be reportable to be investigatable by public health
  - CDAD, NC investigation 2005
  - *C. sordellii* active case finding



# Emerging Infections

- How do diseases become nationally notifiable?
- Emergencies
  - SARS 2003
  - Monkey pox 2003
- Other public health threats
  - Pediatric influenza deaths 2004
  - Novel influenza virus 2006
- Case definitions: CDC/CSTE consensus statements



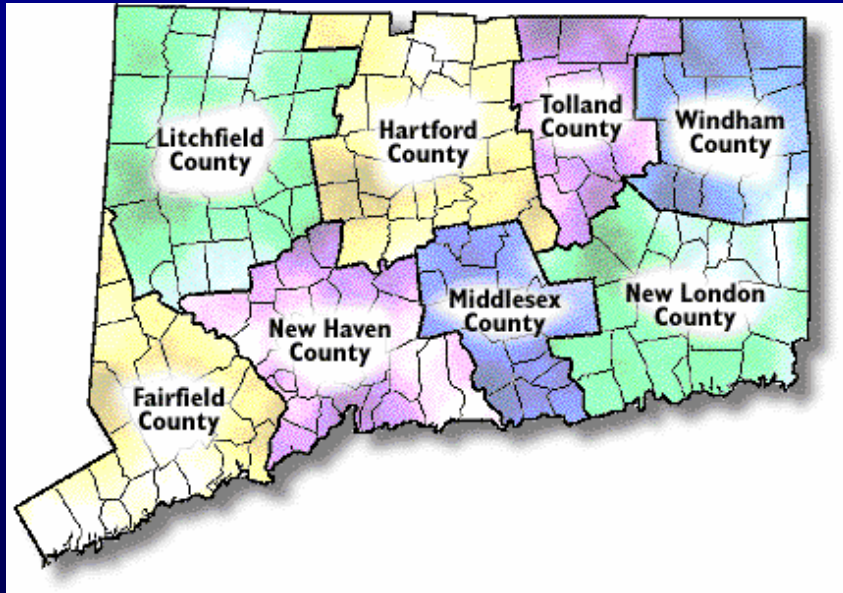
# Hospital Health vs. Public Health

- Hospitals/institutions generally do not report (in NC, hospitals “may report”)
  - Information cannot be protected
  - Healthcare-associated infections never make it to the NNDSS
  - In NC, only outbreaks are reportable to the local health department
    - TB in a LTCF→YES
    - *Acinetobacter baumannii* VAP in a SICU→NO



# CDAD Reporting A Tale of Two States

## Connecticut



## Ohio





# Connecticut

- Concern: Are toxic strains emerging in the community?
- Committee approval: hospitals, labs, and community input
- Pilot: descriptive epi, trends, evaluation phase
- Community-onset CDAD made reportable Jan. 1, 2006
  - Illness onset while living in the community
  - No hospitalization or LTCF in previous 3 months



Personal communication, Pat Mshar



# Connecticut CDAD Surveillance

- Surveillance by ICPs in 31 acute care hospitals
- Intensive questionnaire, chart review, and follow-up at physician offices
- Early results as of May 1
  - 86 cases investigated
  - 39 ruled-out
  - 17 true CO-CDAD
  - 30 pending



# Connecticut CDAD Surveillance

- Laboratory component
  - Collaboration with CDC FoodNet
  - 11 sites collecting cultures
  - Seeking 10 isolates from Connecticut
- Challenges of Surveillance
  - Resources: 0.75 FTE→0.5 FTE
  - Lab: storing stool samples while cases are under investigation



# Ohio

- Citizen/media concern regarding healthcare facility outbreaks of CDAD
- Governor directs Dept. of Health “to act”
- Mandatory hospital and LTCF surveillance established Jan. 1, 2006
- Approximately 200 hospitals and 1000 LTCFs report numerator data only by week



Personal communication, Bob Campbell



Ohio Department of Health - Microsoft Internet Explorer

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Address <http://www.odh.state.oh.us/>



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**About ODH**

- Obtaining Birth, Death, Marriage, Divorce Records
- Forms
- Health Resources
- ODH Programs
- Health Statistics
- Rules and Regulations

**Features**

**Flu information for all Ohioans**  
 Get an overview of seasonal, bird and pandemic influenza. Then visit <http://www.ohiopandemicflu.gov> to learn what the State of Ohio is doing to prepare for a potential influenza as well as what you can do. Read the [Ohio Department of Health Pandemic Influenza Preparedness and Response Plan](#).

**The Burden of Stroke in Ohio**  
 The Ohio Department of Health and the American Heart Association together created the state's first comprehensive report on the impact of stroke on Ohioans.

**Clostridium difficile Initial Case Reports**  
 Read more on this disease and see reports for hospitals and nursing homes for Jan. 1 – April 1, 2006.

**Revised medical records fees for 2006**  
 Per Ohio Revised Code 3701.742, the Ohio Department of Health is required to adjust the fees that health care providers and medical records companies may charge for medical records during 2006.

**College Immunizations**  
 (This file is in .PDF format. The free [Adobe Acrobat Viewer](#) is required to view it.)  
 Obtain information on meningitis and hepatitis B as well as a vaccine

Healthy Ohioans  
 OHIO PANDEMIC FLU  
 Food Safety  
 Consumer Guide  
 Hospital

Start Microsoft PowerPo... Ohio Department ... My Documents Internet 1:39 PM



17-page pdf file: County, Institution, case count by week



# Ohio CDAD Surveillance

- Public reports of healthcare-associated CDAD
  - Onset >48 hours after admission
- New version: disease rates (by patient-day)
  - April 1: hospitals
  - July 1: LTCFs
  - No risk-adjustment
- Early benefits
  - Established a secure, web-based reporting tool
  - Education opportunities
    - Appropriate antibiotic usage
    - Infection control



# A Tale of Two States

## Connecticut

Scientific concern  
regarding  
an emerging  
Community Health  
threat



## Ohio

Public concern  
regarding  
a common  
Nosocomial  
infection

Health Policy?



Community-associated *Clostridium difficile* disease  
North Carolina  
2005

CDC EpiAid in response to a NC  
VAMC registry of CDAD cases

Chris Woods, M.D. DUMC/VAMC





## Community-associated CDAD North Carolina , 2005

- Retrospective study : January 1<sup>st</sup> through December 31<sup>st</sup>
- Study population:
  - 4 Veterans Affairs
  - 1 Tertiary care center
  - 1 Regional Hospital
- Preliminary results:
  - 625 cases of CDAD classified so far
  - 298 (48%) are community onset CDAD
  - 149 (24%) are community associated CDAD



## Community Associated CDAD (CA CDAD), North Carolina VAMC\* 2005

Characteristic or exposure	No. (%) (N=58)
Median age, range	60.5 (36-85)
Proton Pump Inhibitors	19 (33)
H2 blocker	9 (16)
NSAIDS	11 (19)
Antibiotics	29 (50)



**Kutty P, Benoit S, Tomoye E, et al. Unpublished data. EpiAid 2006-032**  
**\* 4 VA hospitals –data abstraction is ongoing**



Community Associated CDAD (CA CDAD) cases by Antimicrobial and Proton Pump Inhibitor (PPI) Exposure, North Carolina, VAMC\*, 2005 (N=58)

	PPI exposure	No PPI exposure
Antimicrobial exposure	10 (35%)	19 (66 %)
No Antimicrobial exposure	9 (31 %)	20 (69 %)

P > 0.05



Kutty P, Benoit S, Tomoye E, et al. Unpublished data. EpiAid 2006-032  
\* 4 VA hospitals – data abstraction is ongoing



# Outpatient CA- CDAD cases by Antimicrobial and Proton Pump Inhibitor (PPI) Exposure, North Carolina, VAMC\*, 2005 (N=33)

	PPI exposure	No PPI exposure
Antimicrobial exposure	5 (36%)	9 (65%)
No Antimicrobial exposure	6 (32 %)	13 (68 %)

P>0.05



Kutty P, Benoit S, Tomoye E, et al. Unpublished data. EpiAid 2006-032  
 \* 4 VA hospitals – data abstraction is ongoing



# Public Health Surveillance

Public health surveillance is the ongoing, systematic collection, analysis, interpretation, and dissemination of data regarding a health-related event for use in public health action to reduce morbidity and mortality and to improve health.

MMWR, July 27, 2001, Vol. 50, No. RR-13



# Tasks of Public Health Surveillance Systems

- Engage the stakeholders in the evaluation
- Describe the surveillance system to be evaluated
- Focus the evaluation design
- Gather credible evidence regarding the performance of the surveillance system
- Justify and state conclusions, and make recommendations
- Ensure use of evaluation findings and share lessons learned



MMWR, July 27, 2001, Vol. 50, No. RR-13



# Optimizing Performance of Surveillance Systems

- **Simplicity:** structure and ease of operation
- **Flexibility:** adapt to changing information needs
- **Data quality:** completeness and validity of data
- **Acceptability:** willingness of persons and organizations to participate



MMWR, July 27, 2001, Vol. 50, No. RR-13



# Optimizing Performance of Surveillance Systems

- **Sensitivity:** proportion of cases detected by the surveillance system and/or ability to detect outbreaks
- **Predictive value positive:** proportion of reported cases that actually have the disease
- **Representativeness:** accurate description of the disease over time and its distribution in the population by place and person
- **Timeliness:** speed between steps in the surveillance system
- **Stability:** reliability and availability of the system



MMWR, July 27, 2001, Vol. 50, No. RR-13





# The Ultimate Guideline: Resources

- The Ohio Department of Health received no additional resources to begin the healthcare-associated CDAD surveillance
- Connecticut is part of the Emerging Infections Program (EIP)
  - Active Bacterial Core Surveillance
  - FoodNet
- North Carolina: EpiAids are free



# EIP Sites

## State EIP Links

