

# The Role of State Public Health



Shoana Anderson

Arizona Department of Health Services

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# What Does State Public Health Do?

- Work with a network of local health departments to identify and prevent infections
- Two main mechanisms:
  - Routine Surveillance (Reporting)
    - Need consistent and complete reports to LHDs
  - Outbreak Investigations
    - Rely on astute partners to recognize and report

# Individual Health vs. Public Health

## INDIVIDUAL

**Clinician**

**Patient**

**Chart**

**Diagnosis**

**Prognosis**

**Therapy**

**Cure**

## PUBLIC

**Epidemiologist**

**Community/Population**

**Data**

**Time, Place, Person**

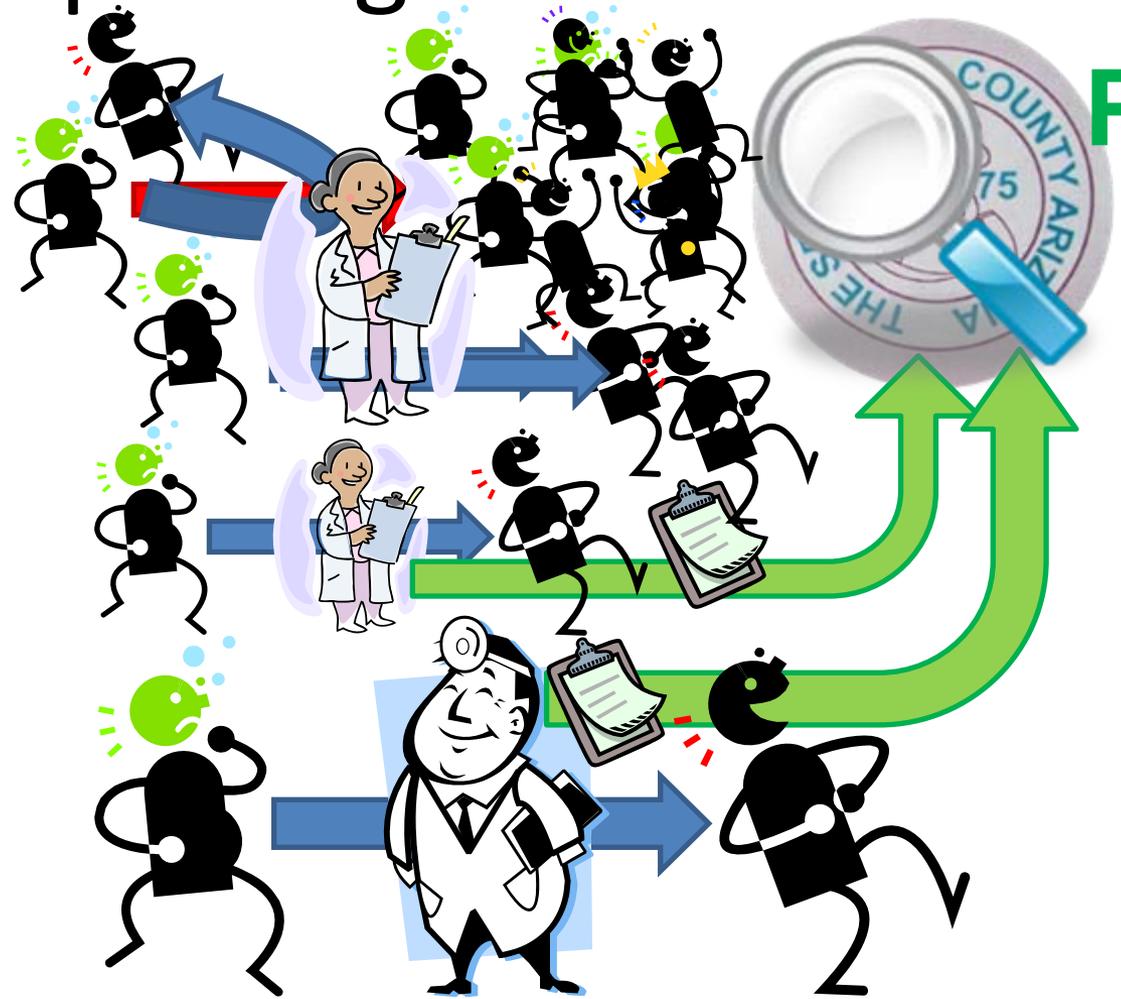
**Predict Trend**

**Control Measures**

**Prevention**

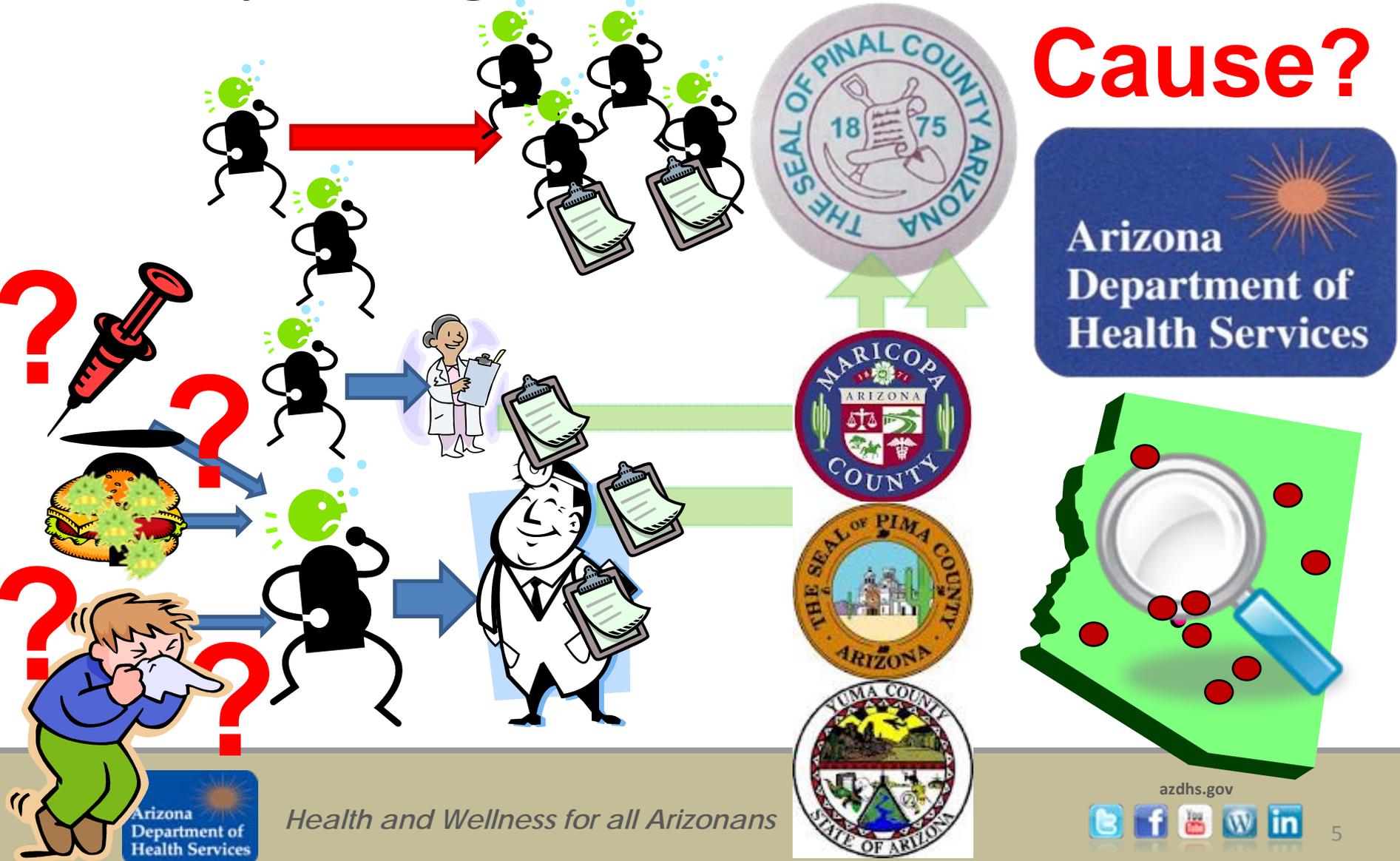
# Reporting of Infectious Diseases

# Prevention!



# Reporting of Infectious Diseases

## Cause?



azdhs.gov



# How Do We Use All This Data?

- Compile information from local health departments to identify outbreaks and risk factors
- Support local health departments in investigations
- Provide technical expertise and share best practices from other health departments/investigations
- Develop policies and recommendations

# Public Health in Action

- Prevention and Control
  - Localized: Identify practices at a facility that can be changed/improved
    - New cleaning procedures
    - Changes in infection control practices
    - Cooking temperatures and holding times
  - General: Introduce policies to identify at risk patients and prevent future infections
    - Screening
    - Vaccination



# Surveillance Data in Action

- Use the trends and reports to develop the Communicable Disease Rules

# Communicable Disease Rules

- Definitions
- Who must report
- What is reportable
  - Diseases, conditions
  - Laboratory results
  - Specific reportable information about the patient and condition
- Time frame for reporting
- Local health agency responsibilities
- Case/contact control measures
- Immunization requirements/reporting
- Control measures for animals exposed to rabies
- AAC Title 9 Chapter 6  
[http://www.azsos.gov/public\\_services/Title\\_09/9-06.htm](http://www.azsos.gov/public_services/Title_09/9-06.htm)

# Surveillance Data in Action

- Use the trends and reports to develop the Communicable Disease Rules
- Modify rules to changes in surveillance data
  - Add new conditions
  - Change testing requirements
  - Require specimens to be sent to public health
  - Change control measures

# Reportable Diseases (Providers)

**Table 1. Reporting Requirements for a Health Care Provider or an Administrator of a Health Care Institution or Correctional Facility**

☒*,O Amebiasis	☒ Hantavirus infection	☒*,O Salmonellosis
☒ Anthrax	☒ Hemolytic uremic syndrome	O Scabies
☒ Aseptic meningitis: viral	☒*,O Hepatitis A	☒ Severe acute respiratory syndrome
☒ Basidiobolomycosis	☒ Hepatitis B and D	☒*,O Shigellosis
☒ Botulism	☒ Hepatitis C	☒ Smallpox
① Brucellosis	☒*,O Hepatitis E	☒ Streptococcal Group A: Invasive disease
		☒ Streptococcal Group B: Invasive disease in infants younger than 90 days of age
☒*,O Campylobacteriosis	☒ Herpes genitalis	☒ <i>Streptococcus pneumoniae</i> (pneumococcal invasive disease)
		☒ Syphilis
☒ Chancroid	☒ HIV infection and related disease	☒*,O Taeniasis
☒ <i>Chlamydia</i> infection, genital	☒ Kawasaki syndrome	☒ Tetanus
①* Cholera	☒ Legionellosis (Legionnaires' disease)	☒ Toxic shock syndrome
☒ Coccidioidomycosis (valley fever)	☒ Leptospirosis	☒ Trichinosis
☒ Colorado tick fever	☒ Listeriosis	① Tuberculosis
O Conjunctivitis: acute	☒ Lyme disease	① Tuberculosis infection in a child younger than 6 (positive test result)
☒ Creutzfeldt-Jakob disease	☒ Lymphocytic choriomeningitis	☒ Tularemia
☒*,O Cryptosporidiosis	☒ Malaria	☒ Typhoid fever
☒ <i>Cyclospora</i> infection	☒ Measles (rubeola)	
☒ Cysticercosis	☒ Meningococcal invasive disease	

# Reportable Results (Labs)

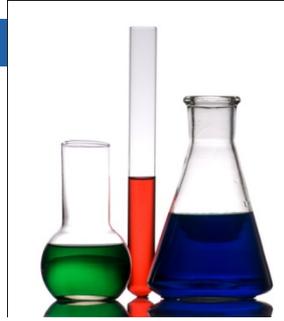
Reports should be sent to:  
 Arizona Department of Health Services  
 Infectious Disease Epidemiology  
 150 N 18<sup>th</sup> Ave, Ste 140  
 Phoenix, AZ 85007  
 602-364-3676 or 602-364-3199 (fax)

Isolates should be sent to:  
 Arizona State Laboratory  
 250 N. 17<sup>th</sup> Avenue  
 Phoenix, AZ 85007

## Arizona Laboratory Reporting Requirements

☐	Arboviruses	☒, ☐	<i>Haemophilus influenzae</i> , type B, isolated from a normally sterile site	☐+	Respiratory syncytial virus
☒, ☒, ☐	<i>Bacillus anthracis</i>	☐, ☐	<i>Haemophilus influenzae</i> , other, isolated from a normally sterile site	☐, ☐	<i>Salmonella</i> spp.
☒, ☐	<i>Bordetella pertussis</i>	☐	Hantavirus	☒	SARS-associated corona virus
☐, ☐	<i>Brucella</i> spp.	☐	Hepatitis A virus (anti-HAV-IgM serologies)	☐, ☐	<i>Stigella</i> spp.
☐	<i>Campylobacter</i> spp.	☐	Hepatitis B virus (anti-Hepatitis B core-IgM serologies, Hepatitis B surface antigen serologies, and polymerase chain reactions)	☐, ☐	<i>Streptococcus</i> Group A, isolated from a normally sterile site
☐	CD <sub>4</sub> -T-lymphocyte count of fewer than 200 per microliter of whole blood or CD <sub>4</sub> -T-lymphocyte percentage of total lymphocytes of less than 14%	☐	Hepatitis C virus	☐	<i>Streptococcus</i> Group B, isolated from a normally sterile site in an infant younger than 90 days of age
☐	<i>Chlamydia trachomatis</i>	☐	Hepatitis D virus	☐, ☐	<i>Streptococcus pneumoniae</i> and its drug sensitivity pattern, isolated from a normally sterile site
☒, ☒	<i>Clostridium botulinum</i> toxin (botulism)	☐	Hepatitis E virus	☐	<i>Treponema pallidum</i> (syphilis)
☐	<i>Coccidioides</i> spp., by culture or serologies	☐	HIV (by culture, antigen, antibodies to the virus, or detection of viral nucleic acid)	☐	Vancomycin-resistant <i>Enterococcus</i> spp.

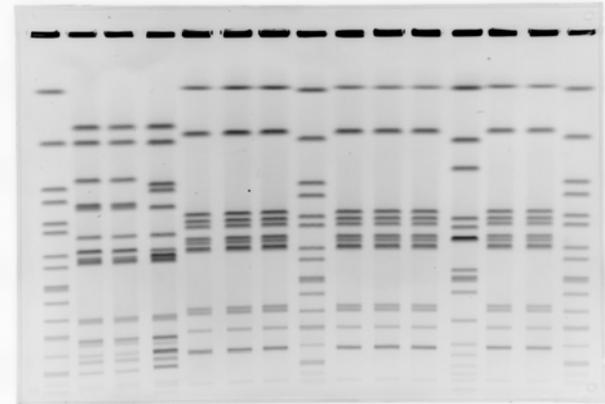
# State Public Health Lab



- Provide testing free of charge for public health investigations (requires public health approval)
- Advanced Testing Methods
  - Serotyping: More information about the infection
    - Clinical importance: *E. coli* O157:H7
    - Comparison with other infections: *Salmonella* Bredeney

# State Public Health Lab

- Pulsed Field Gel Electrophoresis (PFGE)
  - Can compare bacterial DNA
  - Helps identify whether infections are from the same source
  - Allows public health to sort through thousands of reports to find those that may be part of an outbreak



# Investigating and Reporting Cases

- You are an important public health partner
  - Report cases to public health!
- We are here to help:
  - Local health departments can support investigations
  - Arrange for testing
  - Provide evidence-based recommendations and education
  - Prevent future cases

# Investigations



- Establish the diagnosis and case classification
- Isolate/treat confirmed, probable and suspected cases
- Identify contacts for tracing, vaccination and follow-up
- Identify source of infection
- Monitor course and outcome
- Monitor epidemiology and obtain information for analysis and communication

# Why do we ask so many questions?

- Identifying a source can be complex and challenging
  - Individuals may not want to share risky/illegal behavior
  - People can't always remember
  - Sometimes we want to talk to people who are not sick to find out if an exposure is unusual

# Correctional Facility Environment

## High Risk Populations

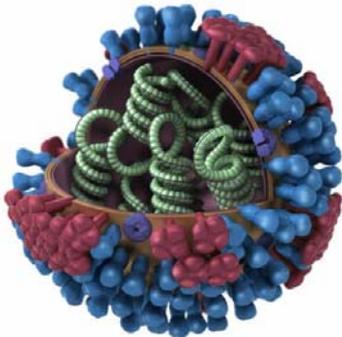
- Pre-existing conditions
  - HIV, Hepatitis C, STDs
- Homelessness
- Substance abuse
- Mental health issues



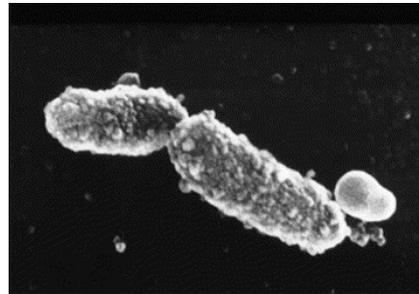
# Correctional Facility Environment

## Close Quarters

- Person-to-person spread
  - Droplet transmission
    - Coughing, sneezing – **Close proximity**



Influenza Viruses

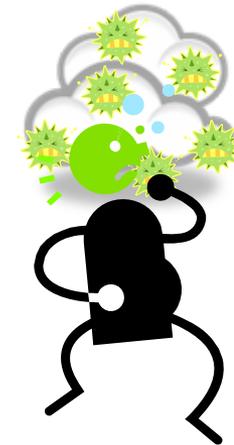
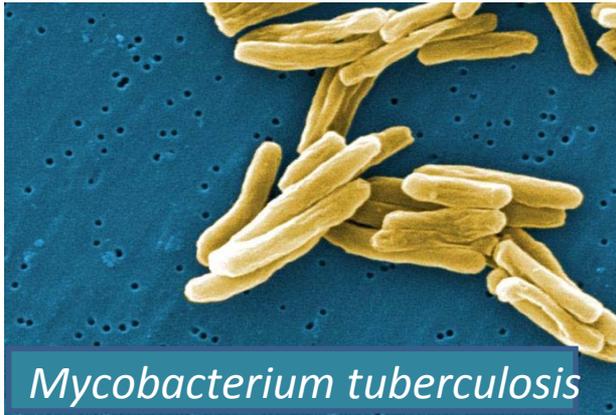


Whooping Cough

# Correctional Facility Environment

## Close Quarters

- Person-to-person spread
  - Airborne transmission
    - Coughing, sneezing – **Remains in Air!**



# Correctional Facility Environment

## Close Quarters

- Person-to-person spread
  - Fecal-Oral Transmission
    - **HAND HYGIENE**
  - Close Contact and Shared Items
    - Scabies and Lice



# Correctional Facility Environment

## Additional Risk Factors

- Food-borne Transmission
  - Large serving operations
  - Shared food/drink from prisoners
    - Some of these may be prepared under less than ideal conditions



*Escherichia coli,*  
*Salmonella species*

# Correctional Facility Environment

## Additional Risk Factors

- Blood-borne pathogens
  - Contaminated needles or medical products
    - Healthcare associated infections
  - Sharing of needles
  - Tattooing



# Correctional Facility Environment

- Logistical Challenges
  - Reliability of information
  - Isolation and quarantine