APIC Grand Canyon

State of the State

January 23, 2015

Arizona Department of Health Services

Health and Wellness for all Arizonans

Agenda

- **Welcome**
  - Ken Komatsu
- **MEDSIS/MU**
  - Teresa Jue/Sara Imholte
- **Hepatitis B & C**
  - Clarisse Tsang
- **Vaccine Preventable Disease**
  - Askari Addison
- **Influenza**
  - Kristen Herrick
- **Vector/RMSF**
  - Lydia Plante
- **Ebola**
  - Lydia Plante/Eugene Livar
- **HAI**
  - Eugene Livar
- **STD**
  - Lauren Young
- **HIV Surveillance, Prevention and Care**
  - David Johns
- **TB**
  - Ben Katz
- **Foodborne**
  - Heidi Dragoo
- **Cocci**
  - Shane Brady
- **Questions**

Updates

January 23rd, 2015

APIC State of the State

Teresa Jue

Arizona Department of Health Services

Health and Wellness for all Arizonans

MEDSIS Releases Information

- 4 MEDSIS releases since 8/1/2014
- 214 Total Enhancements/Fixes in 2014

2015 MEDSIS Goals

- Continue to maintain and improve our statewide surveillance system
- Introduce new functionality for all users

IP Focus Groups and Survey

Goal: To collect feedback and prioritize changes in MEDSIS to enhance hospital and provider reporting workflow

- Conduct 8-person focus groups to collect feedback
- Design a survey that will be distributed to healthcare facilities throughout AZ
- Prioritize changes based on collected feedback

Focus Group Recruitment: Spring 2015

Do I need to wait for the IP Focus Group to send feedback?

- No!
- Please feel free to send any questions, feedback/suggestions, or comments to the MEDSIS Help Desk at anytime
  - MEDSISHELPDESK@siren.az.gov
  - Also, feel free to reach out to your local MEDSIS liaisons for training requests or feedback

ADHS and Meaningful Use

January 23rd, 2015

APIC State of the State

Sara Imholte

Arizona Department of Health Services

Health and Wellness for all Arizonans

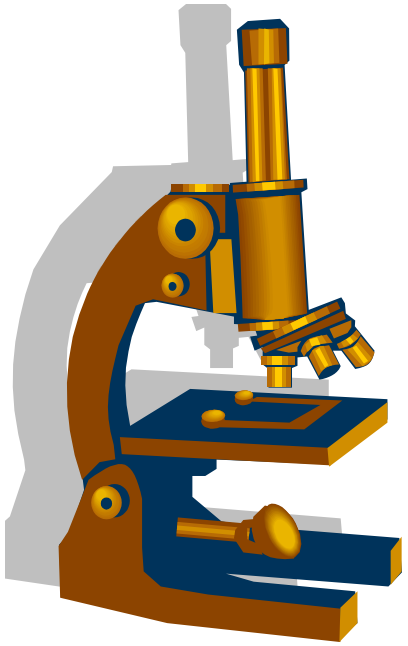
Meaningful Use

- Electronic Health Record (EHR) incentive program for healthcare facilities and providers
- 3 hospital public health objectives:
  - Immunization Registry (ASIIS)
  - Electronic Laboratory Reporting (ELR)
  - Syndromic Surveillance (BioSense)

Electronic Laboratory Reporting (ELR)

- Electronic reports are integrated into the state electronic disease surveillance systems
- ELR shortens the time for reporting and initiation of infectious disease control measures
- ELR decreases hospital staff time needed for reporting

ELR Highlights



- 7 Hospitals in Production
- 3 Commercial labs in Production
- 11 Hospitals in Validation Phase
- Total of 66 Hospital Labs Engaged

ELR Transition

- When a hospital transitions to ADHS's Production ELR system, a meeting is held to discuss how reporting changes and who is responsible for reporting
- Meeting includes Lab, Infection Control and anyone else responsible for reporting to public health

Syndromic Surveillance (BioSense)

- Public Health receives reports of demographics, chief complaint, diagnoses, etc. for all patients
- This information is used to identify outbreaks or health events and monitor the health status of a community
- Syndromic surveillance is fast – Public Health can see what's happening in a community before the patients have a confirmed diagnosis or laboratory result
- AZ is using the national BioSense system

Syndromic Surveillance Highlights

- 21 Hospitals in Production
- 5 Hospitals in Validation
- 62 Data Use Agreements Signed
- Total of 65 Hospitals Engaged

(Data from outpatient settings or Eligible Professionals are not accepted at this time)

Syndromic Surveillance and the Super Bowl

- ADHS and Maricopa County Epidemiology staff are monitoring hospital visits for syndromes of interest during the Pro Bowl and Super Bowl events
- If you are an IP in a participating hospital in Maricopa County, you may be contacted for more information if anything suspicious is seen

MeaningfulUse@azdhs.gov

www.azdhs.gov/meaningful-use

The Silent Epidemic: The Importance of Hepatitis Screening

January 23, 2014
APIC: State of the State

Clarisse Tsang, MPH
Viral Hepatitis Prevention Coordinator (VHPC)
Office of Infectious Disease Services

The Issues

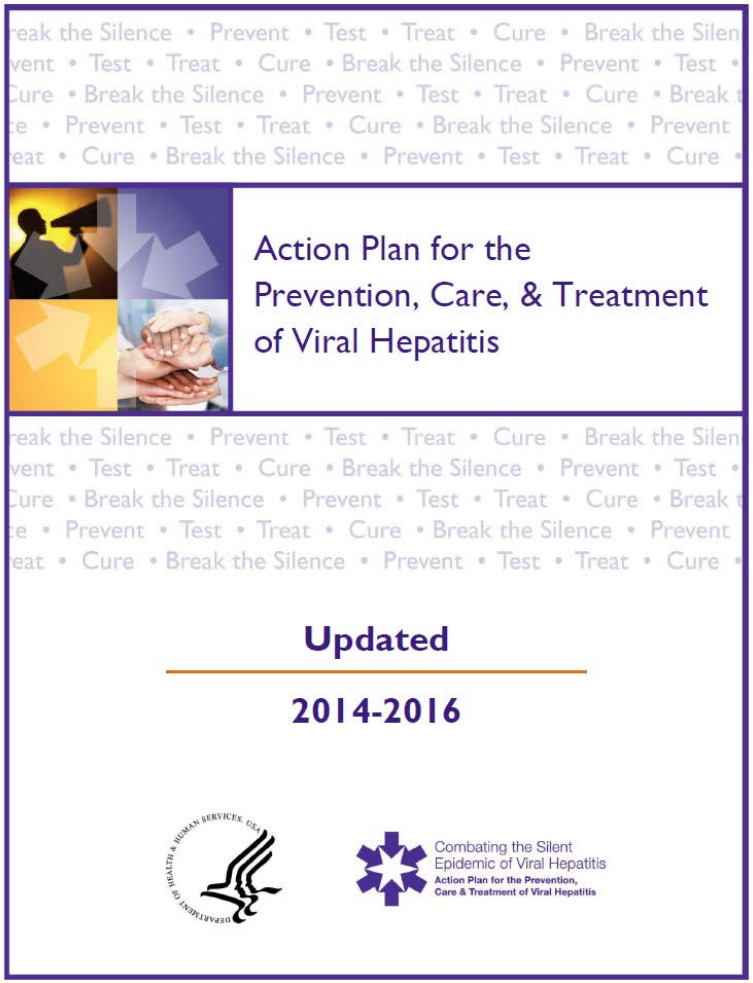
- **Hepatitis B virus (Hep B)**
  - 800,000 to 1.4 million people are chronically infected with Hep B in United States
    - Approx. 2,000-4,000 deaths each year are due to Hep B-related liver disease

- **Hepatitis C virus (Hep C)**
  - 2.7-3.9 million people are chronically infected with hepatitis C virus in United States
    - 15,000 deaths each year are due to Hep C-related liver disease

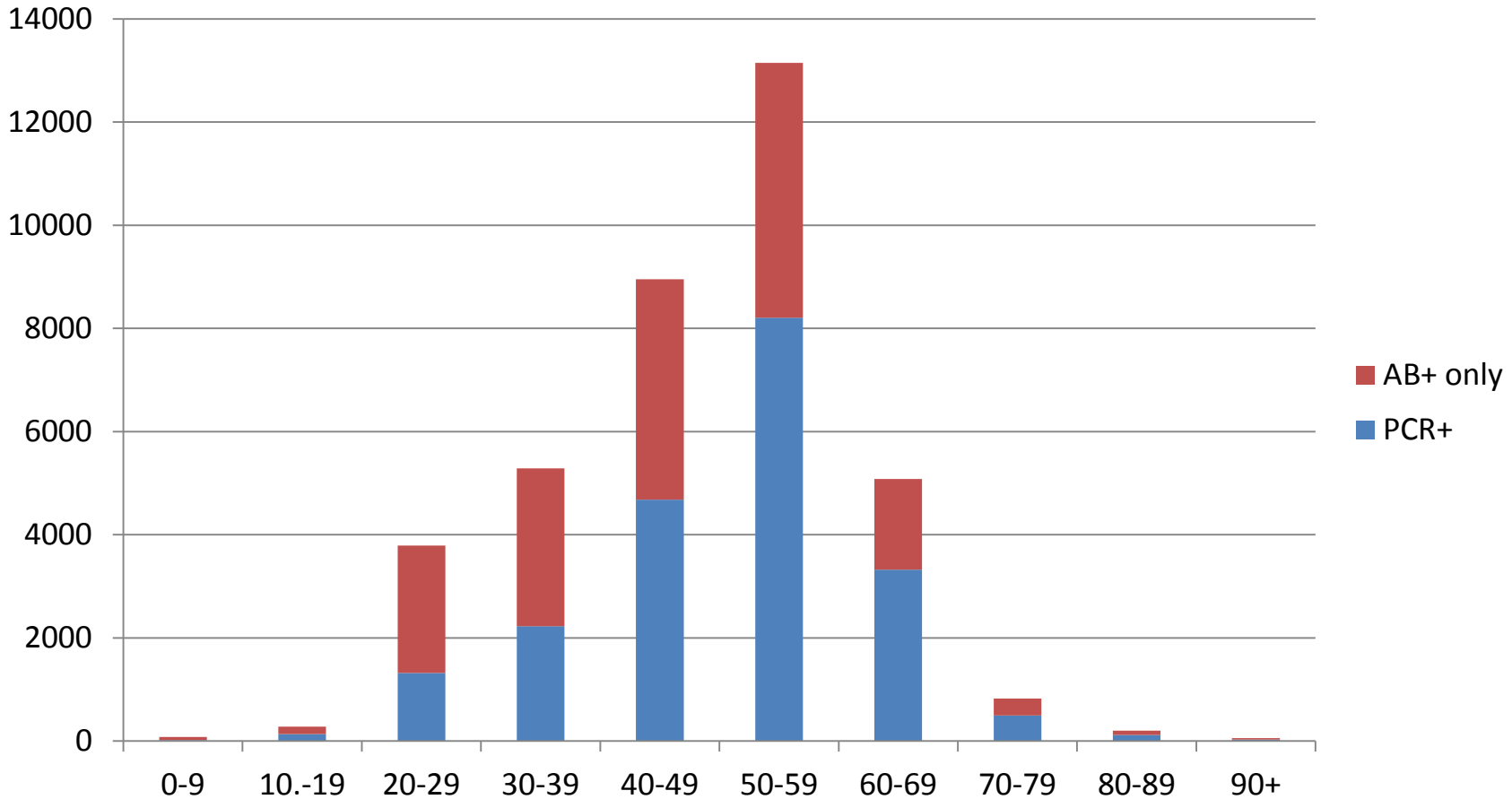
Over 150,000 deaths due to Hep B and C are projected to occur in next 10 years

National Viral Hepatitis Action Plan

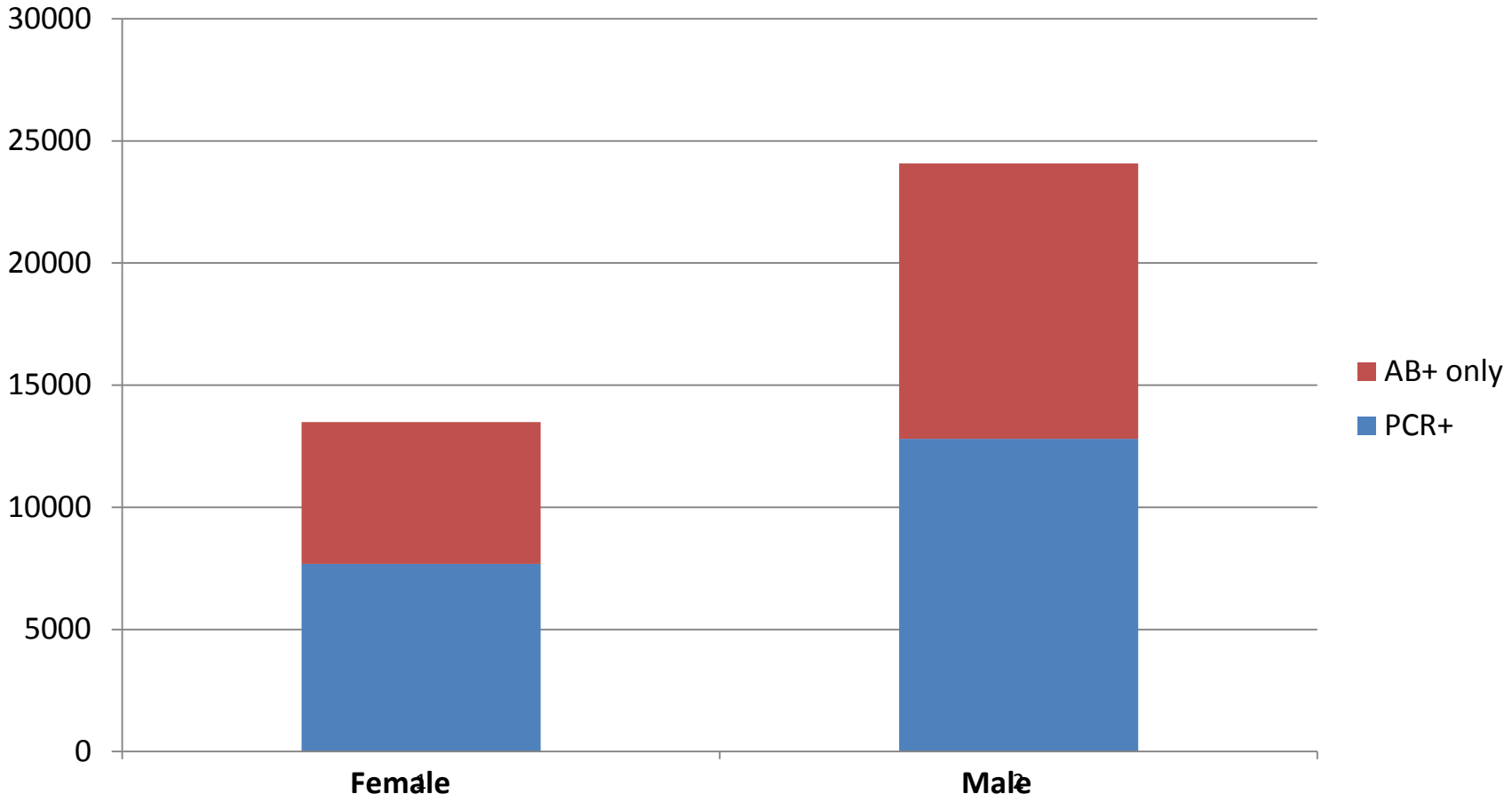
- U.S. Departments of Health and Human Services (HHS), Housing and Urban Development (HUD), Justice (DOJ), and Veterans Affairs (VA) released a 3-year update in April 2014:
  - New recommendations for HCP regarding screening for hep C
  - Promising new developments in treatments for hep C
  - Mounting public awareness of and concern about hep B and hep C
  - Expansion of access to viral hepatitis prevention, diagnosis, care, and treatment offered by the Affordable Care Act
  - http://www.hhs.gov/ash/initiatives/hepatitis/



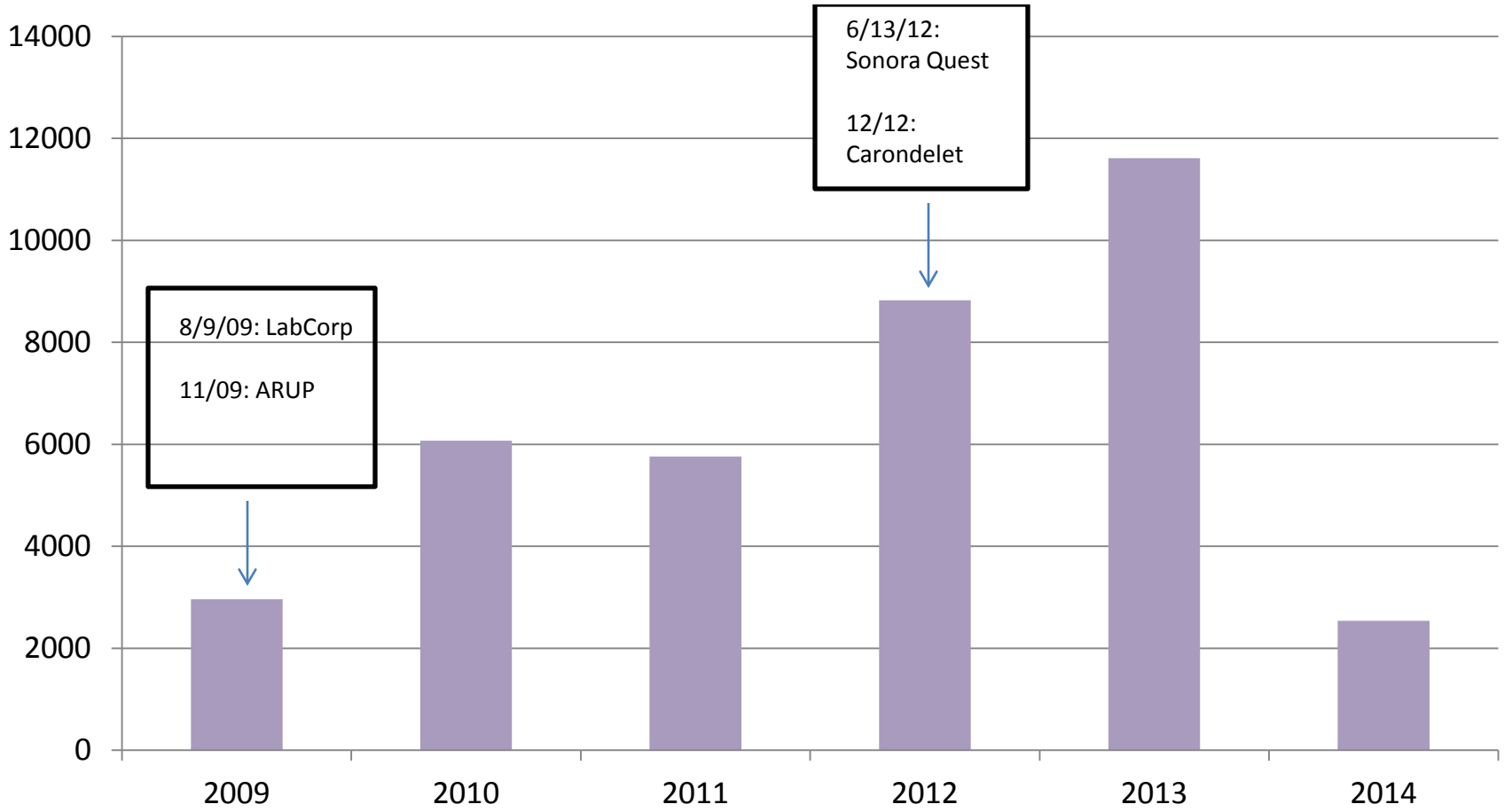
Number of ELR HCV cases by age group, Aug 2009-Feb 2014



Number of ELR HCV cases by gender, Aug 2009-Feb 2014

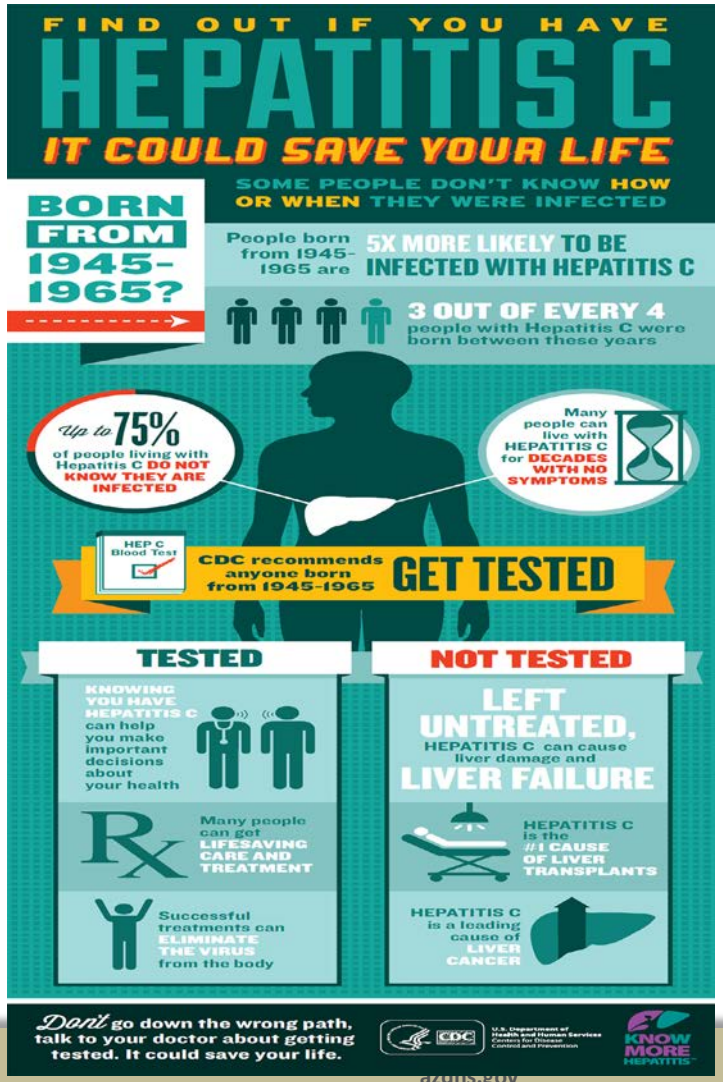


Number of ELR HCV cases by year, Aug 2009- Feb 2014



Who should be tested?

- Persons born from 1945 through 1965 (ages 48-68)
- Persons who have ever injected illegal drugs, including those who injected only once many years ago
- Recipients of clotting factor concentrates made before 1987
- Recipients of blood transfusions or solid organ transplants before July 1992
- Patients who have ever received long-term hemodialysis treatment
- Persons with known exposures to HCV, such as
  - health care workers after needlesticks involving HCV-positive blood
  - recipients of blood or organs from a donor who later tested HCV-positive
- All persons with HIV infection
- Patients with signs or symptoms of liver disease (e.g., abnormal liver enzyme tests)
- Children born to HCV-positive mothers (to avoid detecting maternal antibody, these children should not be tested before age 18 months)

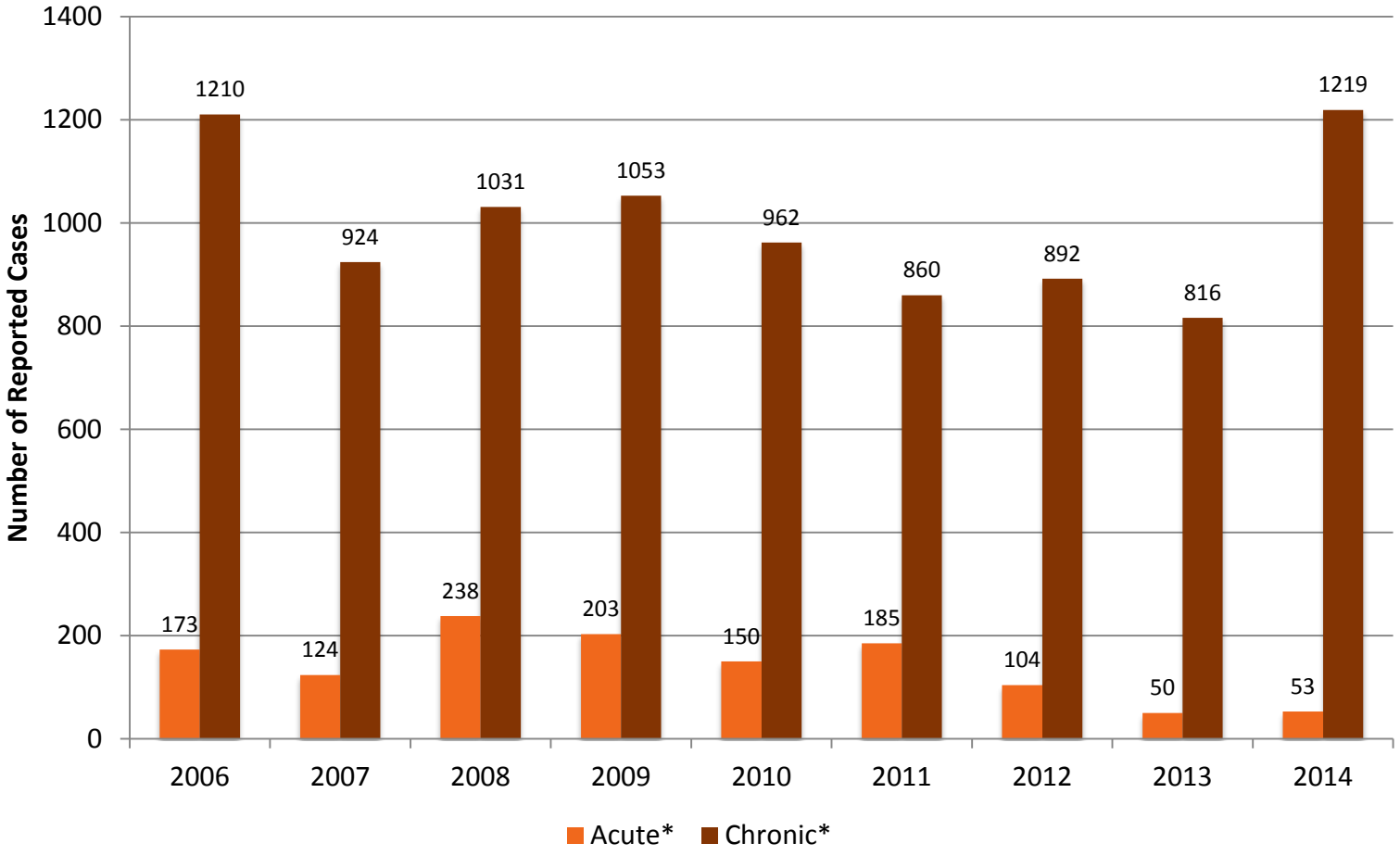


U.S. Preventive Services Task Force (USPSTF) Final Recommendation

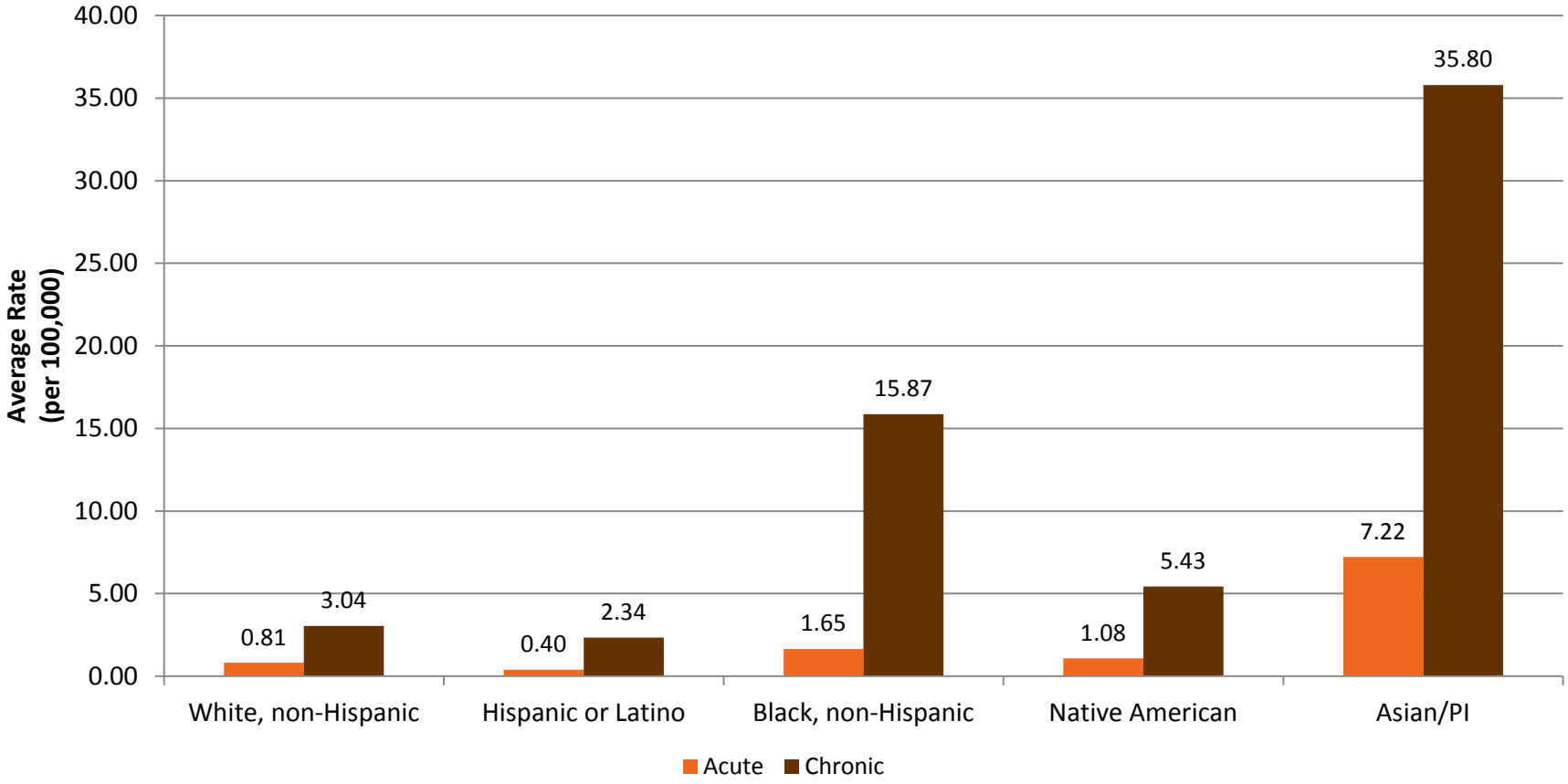
- Screening for Hepatitis C Virus Infection in Adults
  - Adults at high risk for hep C infection should be screened
  - Health care professionals should offer 1-time hep C screening to adults born b/w 1945 and 1965
    - Make up 75% of all people infected in the U.S.
    - This age group at highest risk than other age groups
- Available upon request to many people with health insurance, including Medicare
- Will become available free of cost as a preventive service for individuals under the Affordable Care Act in June 2014

http://www.uspreventiveservicestaskforce.org/uspstf/uspshepc.htm

Number of reported HBV cases in AZ, 2006-2014



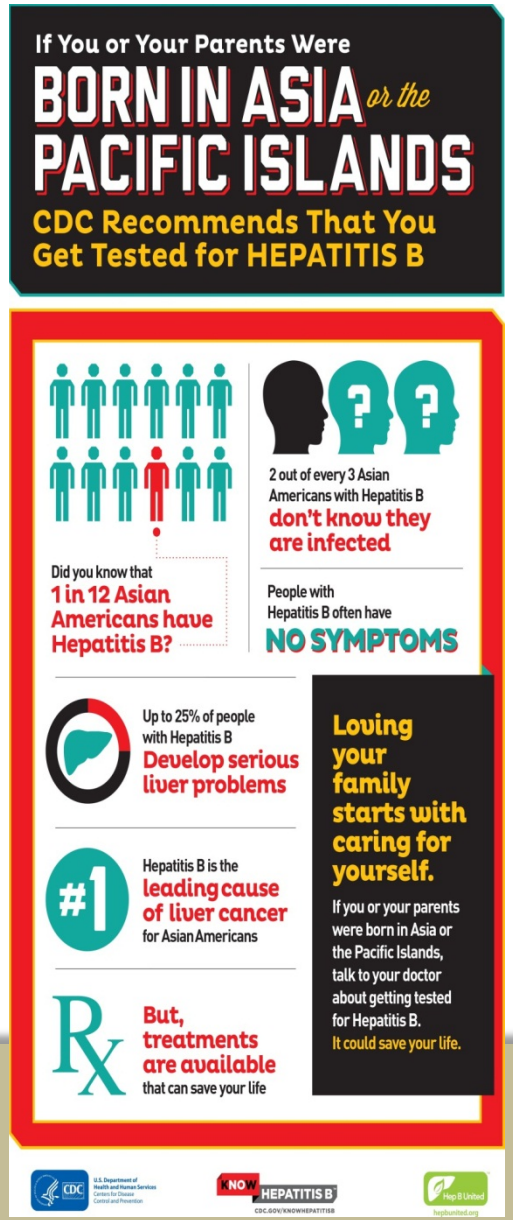
Average Rate of Acute and Chronic HBV in AZ, Race/Ethnicity, 2006-2012



Who should get tested?

- People who were born in countries where hep B is common
- U.S.-born people who were not vaccinated against hep B when they were babies and whose parents came from countries were hep B is common
- People with HIV infection, who have a weakened immune system, or are being treated for kidney failure with dialysis
- Injection drug users
- People living with or having sex with people infected with hep B
- Men who have sex with men
- Pregnant women and infants born to HBsAg-positive mothers

http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5708a1.htm (CDC Recommendations)



U.S. Preventive Services Task Force Final Recommendation

- Screening for Hepatitis B Virus Infection in Adolescents and Nonpregnant Adults
  - Persons at high risk for hep B infection should be screened
- Available upon request to many people with health insurance, including Medicare
- Will become available free of cost as a preventive service for individuals under the Affordable Care Act in May 2015

http://www.uspreventiveservicestaskforce.org/uspstf/uspshepb.htm

Questions

Clarisse.Tsang@azdhs.gov

602-364-3817

Vaccine Preventable Diseases

APIC

State of the State

January 23, 2015

Askari Addison, MS, MPH
Office of Infectious Disease Services
Arizona Department of Health Services

Measles in the US During 2014

Measles Cases and Outbreaks

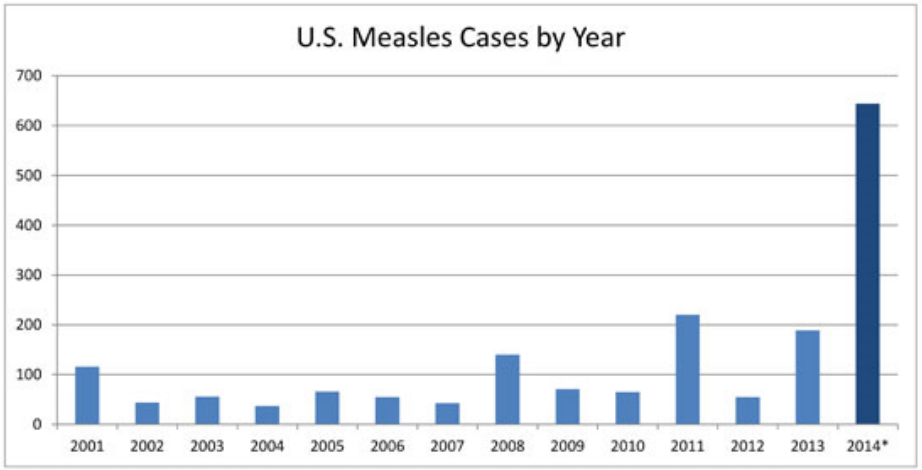
During 2014*

644 Cases

reported in 27 states: Alabama, California, Colorado, Connecticut, Hawaii, Illinois, Indiana, Kansas, Massachusetts, Michigan, Minnesota, Missouri, Nebraska, New Jersey, New Mexico, New York, North Carolina, Ohio, Oregon, Pennsylvania, South Dakota, Tennessee, Texas, Utah, Virginia, Washington, Wisconsin

23 Outbreaks

representing 89% of reported cases this year



*Provisional data reported to CDC's National Center for Immunization and Respiratory Diseases

http://www.cdc.gov/measles/cases-outbreaks.html

News Release

CALIFORNIA DEPARTMENT OF PUBLIC HEALTH

FOR IMMEDIATE RELEASE
January 21, 2015
PH15-008

CONTACT: Anita Gore
(916) 440-7259

California Department of Public Health Confirms 59 Cases of Measles

Dr. Ron Chapman, director of the California Department of Public Health (CDPH) and state health officer, announced today that local public health officials have confirmed a total of 59 cases of measles in California residents since the end of December 2014.

"If you have symptoms, and believe you may have been exposed, please contact your health care provider. Unless you have an emergency, it is best to contact your health care provider by phone to prevent spread in doctor's offices." said Chapman. "The best way to prevent measles and its spread is to get vaccinated."

Of the confirmed cases, 42 have been linked to an initial exposure in December at Disneyland or Disney California Adventure Park in Anaheim, California. The confirmed cases include five Disney employees. In addition, other cases have visited Disney parks while infectious in January. CDPH recommends that any patient with a measles compatible illness who has recently visited venues where international travelers congregate, such as theme parks, airports, etc., be considered to have a plausible exposure to measles.

Maricopa County
Department of Public Health

Administrative Offices
4041 N Central Ave, #1400 • Phoenix, Arizona 85012
Phone: (602) 506-6900 • Fax: (602) 506-6885

WeArePublicHealth.org
twitter.com/Maricopahealth
facebook.com/MCDPH

For Immediate Release

Please contact Courtney Kreuzwiesner, 602-540-5473 to schedule an interview
Media Availability from 9-10 am at Arizona Department of Health Services, 150 North 18th Avenue

Measles in Maricopa County Linked to DisneyLand

PHOENIX (Jan. 22, 2015) – Maricopa County Department of Public Health has confirmed that a woman in her 50's tested positive for measles after visiting Disneyland in mid-December. The woman has since recovered. During her infectious period, she had little exposure to Maricopa County residents. Public Health is aware of those individuals whom she may have exposed and those people are being directly contacted to ensure they do not have symptoms related to measles.

"Mitigating factors allowed this person to go unreported for a few weeks. Luckily, we were able to quickly identify the small group of individuals that may have been exposed," said Dr. Bob England, director of Maricopa County Department of Public Health.

"However, we are not out of the woods yet," added England. "California is only a state away and there may be more secondary cases in Maricopa County. This is why we need residents and our healthcare community to be vigilant in identifying measles' signs and symptoms."

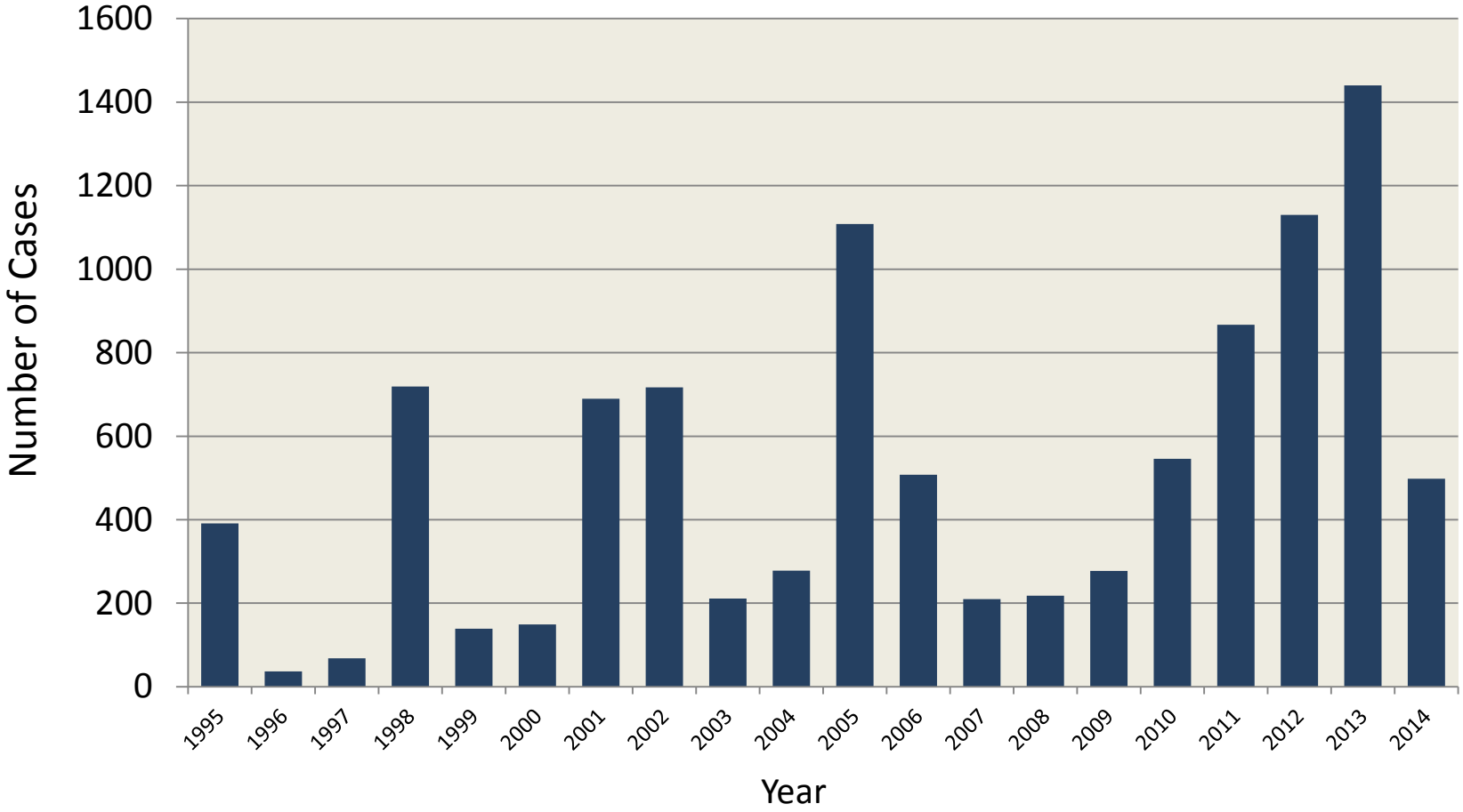
Recently Confirmed Measles in Arizona

- Maricopa County – three family members exposed to an IgM positive case out of state. All unvaccinated, all three cases had classic measles symptoms
- Maricopa County – unvaccinated resident, travel history to Disneyland, classic measles symptoms
- Suspect cases in several other counties

Measles

2014 (preliminary)	2013	2012
3 confirmed cases - Unvaccinated family members -Exposure to IgM positive case out of state - Symptoms: All had rash, fever, cough, coryza, conjunctivitis	1 confirmed case - Unvaccinated 13 month old - International travel to endemic area - Symptoms: rash, fever, cough, coryza, conjunctivitis	2 confirmed cases - Unvaccinated 5 year old - Unvaccinated 7 year old 1 probable case - 14 month old, with PCR linking to vaccine strain

Confirmed and Probable Pertussis Cases, Arizona 1995-2014 (provisional)



Pertussis in Arizona

2014 (preliminary)	2013	2012
498 cases	1,440 cases	1,130 cases
275 confirmed	1,068 confirmed	575 confirmed
223 probable	372 probable	555 probable

H. flu type B (Hib) in children <5 years

2014 (preliminary)	2013	2012
No cases	**3 confirmed cases** - 1 death in an unvaccinated 1 year old (bacteremia and meningitis)	**2 confirmed cases** - No deaths

Meningococcal Invasive Disease

2014 (preliminary)	2013	2012
9 confirmed cases 4 serogroup B 2 serogroup C 2 serogroup Y 1 serogroup W-135 3 deaths: - 50 y.o. (serogroup B) - 40 y.o. (serogroup C) - 15 mos. (serogroup B)	12 confirmed cases 3 serogroup B 4 serogroup C 3 serogroup Y 2 serogroup W-135 3 deaths: - 55 y.o. (serogroup B) - 42 y.o. (serogroup W135) - 93 y.o. (serogroup C)	6 confirmed cases 4 serogroup C 1 serogroup Y 1 serogroup W-135 1 death: - 59 y.o. (serogroup W135)

Meningococcal Invasive Disease University Serogroup B Outbreaks

- Princeton University
  - Eight cases reported since March 2013
  - One additional outbreak related case at Drexel University
  - The last outbreak associated case was March, 2014
  - Serogroup B meningococcal vaccine (Bexsero®, licensed for use in Europe, Canada, and Australia) is being used at Princeton University under an Investigational New Drug application
  - Since December 2013, more than 13,000 doses of the vaccine were administered at Princeton University with no unusual adverse events reported

Meningococcal Invasive Disease University Serogroup B Outbreaks

- University of California Santa Barbara
  - Four confirmed cases reported
  - Serogroup B meningococcal vaccine (Bexsero®, licensed for use in Europe, Canada, and Australia) being used under an Investigational New Drug application
  - More than 17,000 doses administered with no unusual adverse events reported

New Serogroup B Meningococcal Vaccine

- TRUMENBA® (Meningococcal group B vaccine) licensed October 2014
- Approved for individuals 10-25 years of age
- To be administered as a 3-dose series at months 0, 2 and 6.
- Recommended use of MenB vaccines in the U.S. is currently under review.

Mumps

2014 (preliminary)	2013	2012
11 cases	**1 case**	**3 cases**
10 confirmed cases	0 confirmed cases	1 confirmed case
1 probable case	1 probable case	2 probable cases

Resources

2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings

http://www.cdc.gov/hicpac/pdf/isolation/Isolation2007.pdf

Guideline for infection control in health care personnel, 1998

http://www.cdc.gov/hicpac/pdf/InfectControl98.pdf

Thank you!

Please contact Askari Addison or Susan Goodykoontz for more information:

Askari.Addison@azdhs.gov

(602) 364-3523

Susan.Goodykoontz@azdhs.gov

(602) 364-3669

2014-2015 Influenza: What Makes This Season Different?

Kristen Herrick, MPH, CHES
Office of Infectious Disease Services
Arizona Department of Health Services

Goals of ADHS Influenza Surveillance

- Find out when and where influenza activity is occurring
- Determine what influenza viruses are circulating
- Assess the intensity of influenza activity and monitor the impact on health
- Track trends in disease activity and identify the populations most affected
- Detect changes in influenza viruses and identify unusual events

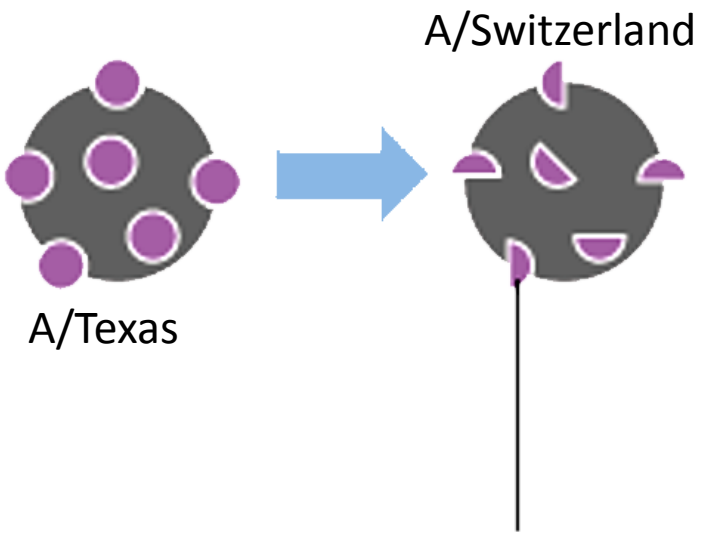
2014-2015 Influenza Vaccine Selection

February 20th, 2014

- Trivalent
  - an A/California/7/2009 (H1N1)pdm09-like virus;
  - **an A/Texas/50/2012 (H3N2)-like virus**;
  - a B/Massachusetts/2/2012-like virus.

- Quadrivalent
  - Additionally, a B/Brisbane/60/2008-like virus.

Mutation
Antigenic drift



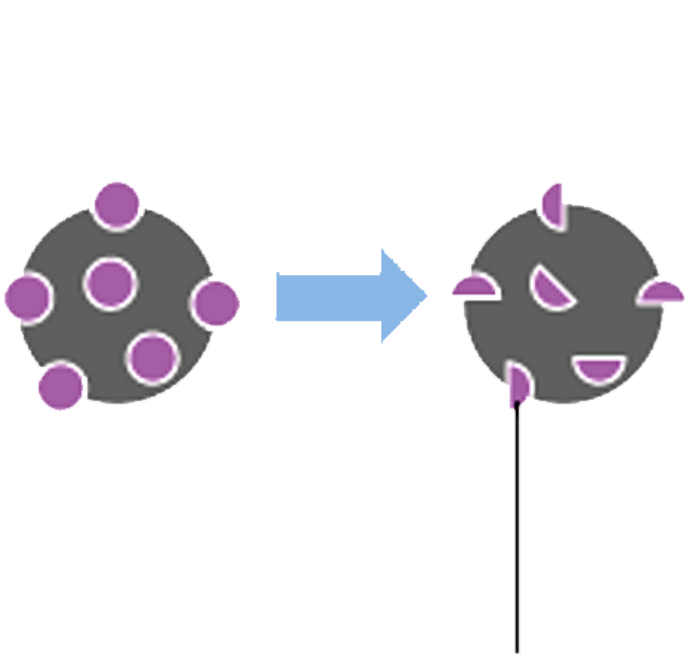
Drifted Influenza A (H3N2) Detected

March 2014

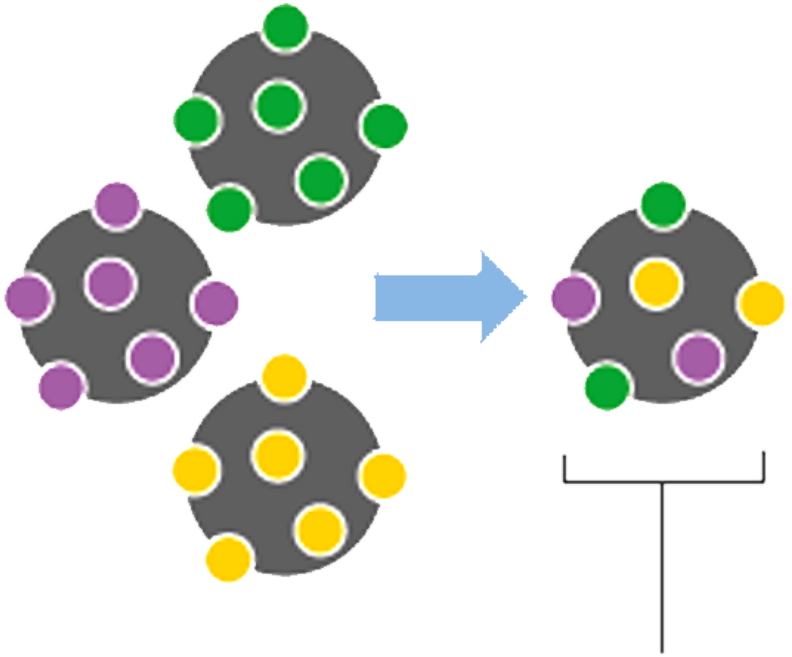
A/Switzerland/9715293/2013 is related to, but **antigenically and genetically distinguishable**, from the A/Texas/50/2012 vaccine virus

Image from: http://news.bbc.co.uk/nol/shared/bsp/hi/dhtml_slides/09/swine_flu/img/slide02.gif

Mutation Antigenic drift vs Antigenic shift

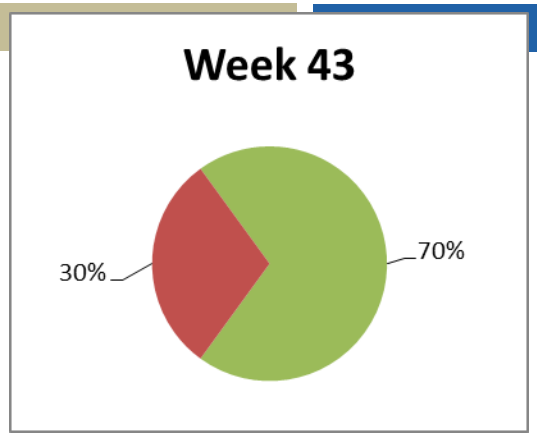


Small Mutations



New Strain

Image from: http://news.bbc.co.uk/nol/shared/bsp/hi/dhtml_slides/09/swine_flu/img/slide02.gif

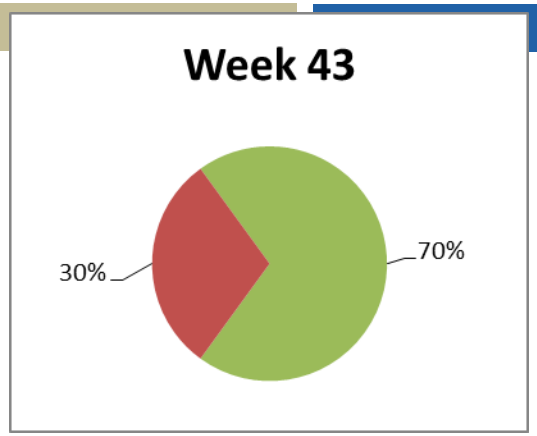


October 19th – 25th

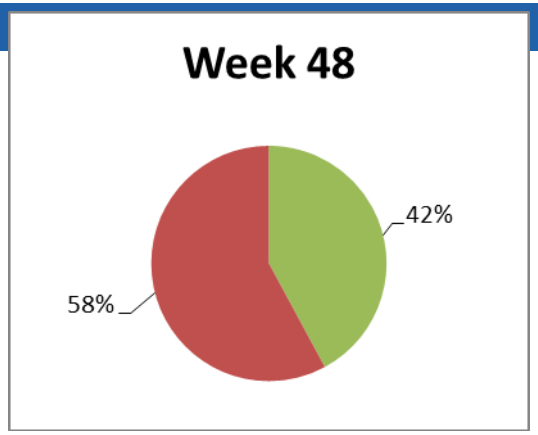
A (H3N2) vaccine-like

A (H3N2) drifted

10/25/2014 – 3 of 10 specimens tested were antigenically similar to A/Switzerland/9715293/2013 (non-vaccine virus)



October 19th – 25th

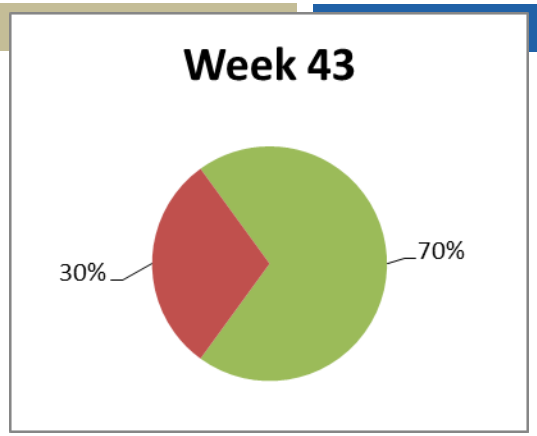


November 23rd – 29th

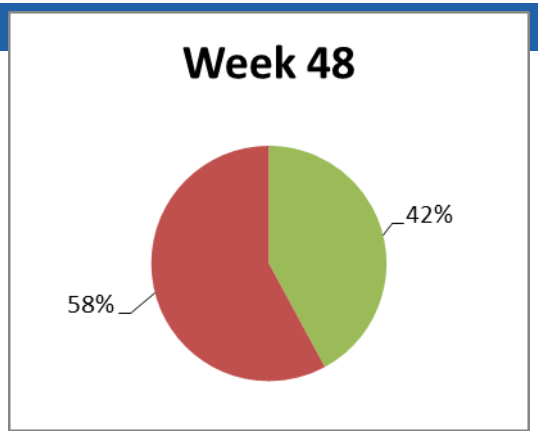
A (H3N2) vaccine-like

A (H3N2) drifted

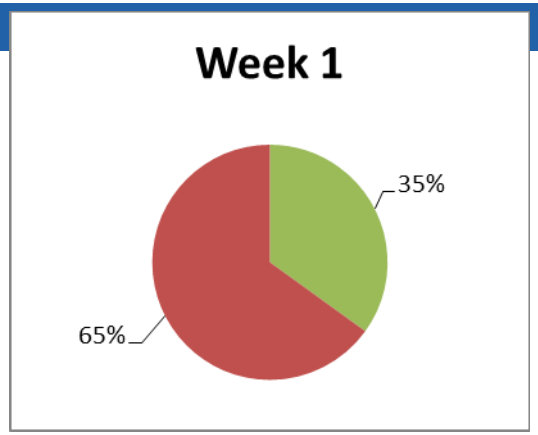
12/3/2014 – CDC Advisory Regarding the Potential for Circulation of Drifted Influenza A (H3N2) Viruses



October 19th – 25th



November 23rd – 29th



January 4th – 10th

A (H3N2) vaccine-like

A (H3N2) drifted

1/9/2015 – CDC Health Update Regarding Treatment of Patients with Influenza with Antivirals

2014-2015 Vaccine Effectiveness

1/15/2015 – CDC MMWR Early Estimates of Seasonal Influenza Vaccine Effectiveness

-2,321 children and adults enrolled in the U.S. Influenza Vaccine Effectiveness Network (November 10, 2014-January 2, 2015)

-Vaccine effectiveness (VE) against lab-confirmed flu associated with medically attended acute respiratory illness (ARI)

2014-2015 Vaccine Effectiveness

1/15/2015 – CDC MMWR Early Estimates of Seasonal Influenza Vaccine Effectiveness

-Overall VE (flu A & B): **23%** (95% CI 8%-36%)

-Adjusted VE flu A (H3N2): **22%** (95% CI 5%-35%)

- Adjusted VE flu A (H3N2) stratified by age:
  - VE 6 months – 17 years: **26%** (statistically significant)
  - VE 18 – 49 years: **12%**
  - VE >50 years: **14%**

the **benefits** of **flu vaccination** 2013-2014

The estimated number of influenza-associated **illnesses prevented** by flu vaccination during the 2013-2014 season:

7.2 million

enough people to form **a line from Maine to Oregon**

The estimated number of flu-associated **medical visits prevented** by vaccination during the 2013-2014 season:

3.1 million

more than the population of the city of Chicago

The estimated number of flu **hospitalizations prevented** during the 2013-2014 season:

90,000

enough to fill Madison Square Garden **more than 4 times**

get **vaccinated**

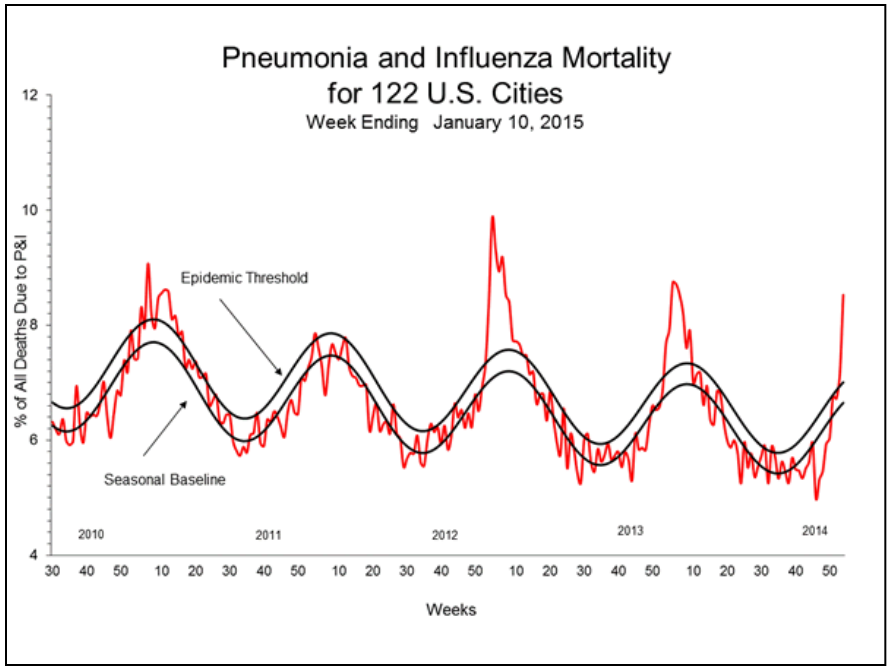
DATA: Morbidity and Mortality Weekly Report (MMWR), December 12, 2014: Vol. 63, No. 49

NCIRDig-411 | 12.12.2014

www.cdc.gov/flu

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

National Activity – week 1



P&I Mortality **above epidemic threshold** at 8.5%

46 states reporting **'Widespread'** influenza activity

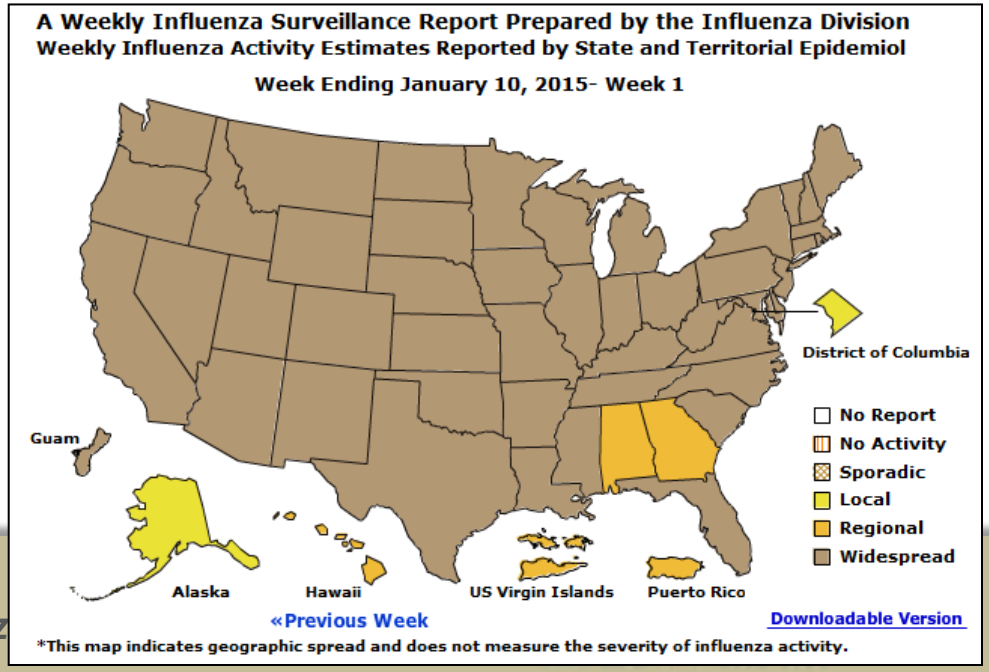


Image from: http://www.cdc.gov/flu/

National Activity – week 1

ILINet surveillance indicators show decreasing ILI activity in some regions

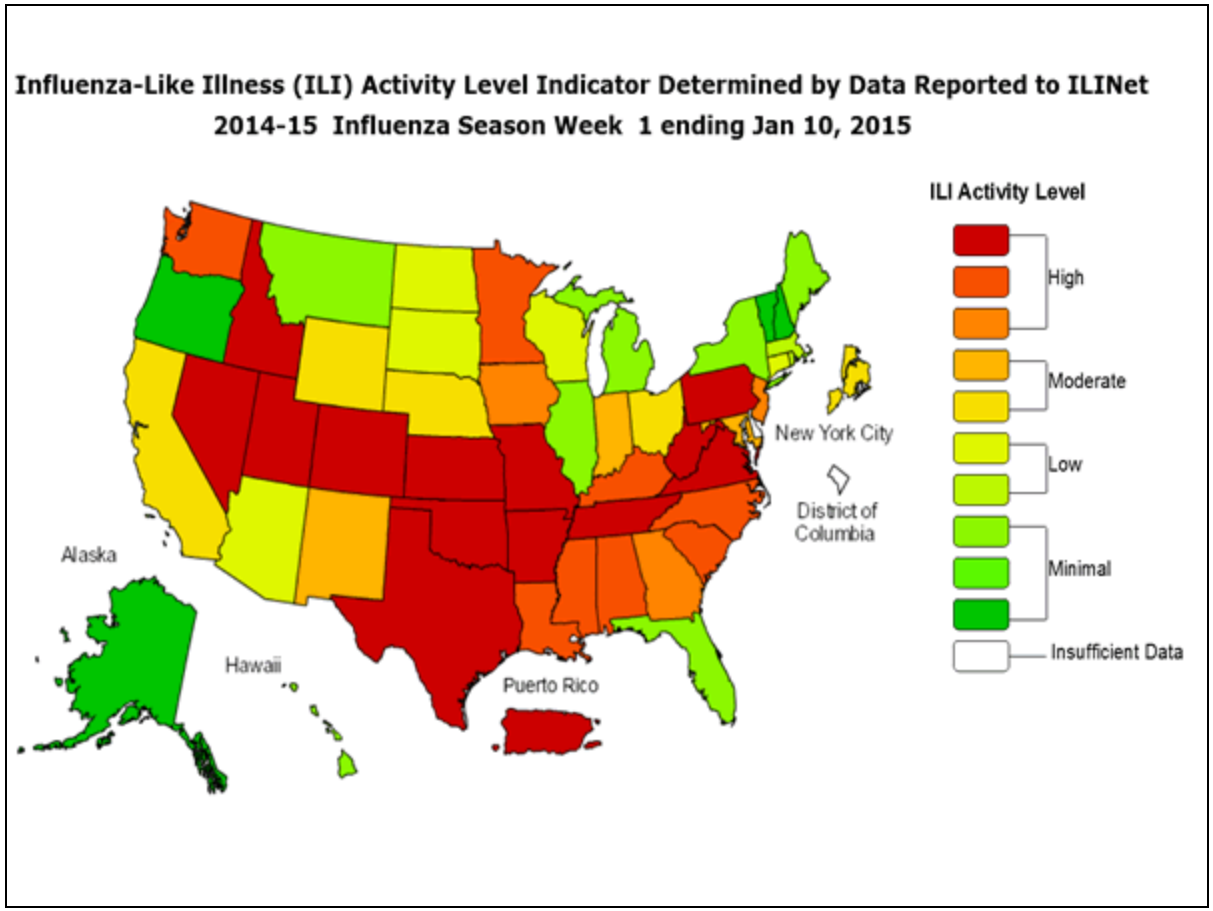
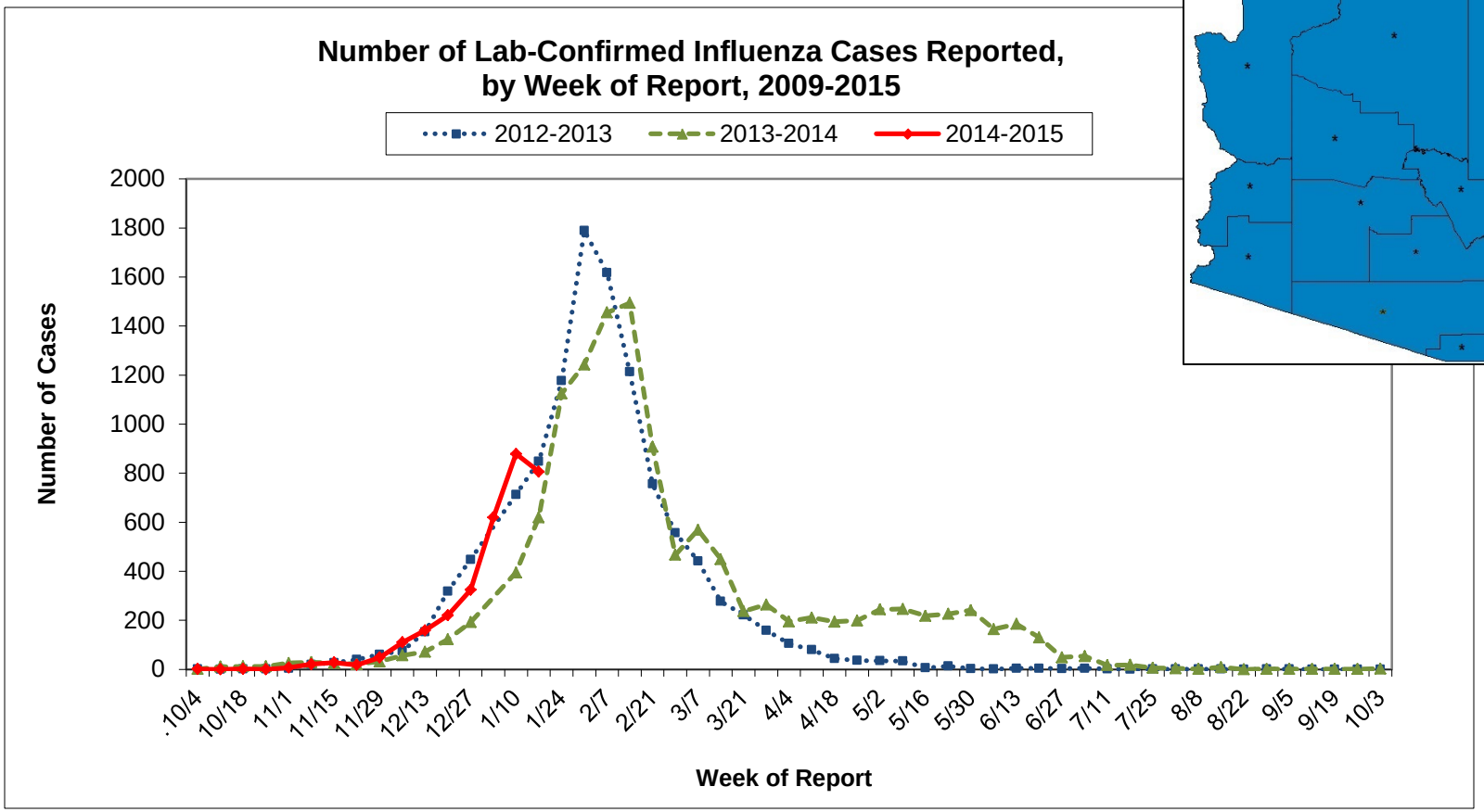
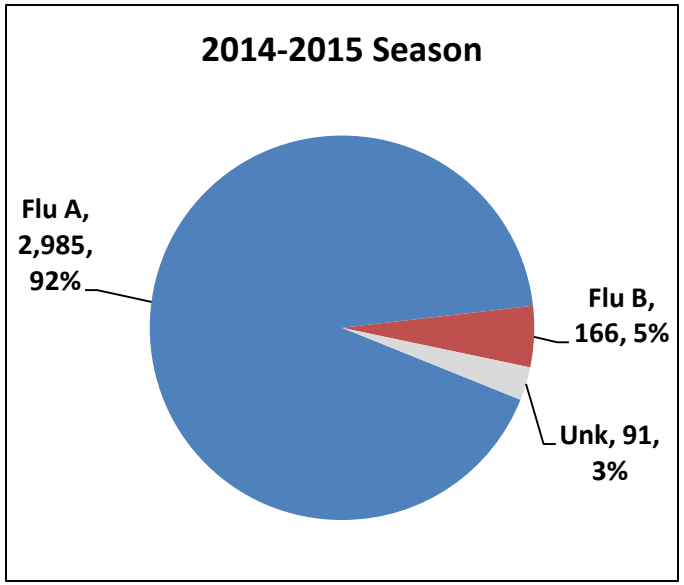


Image from: http://www.cdc.gov/flu/

Arizona Activity – week 2

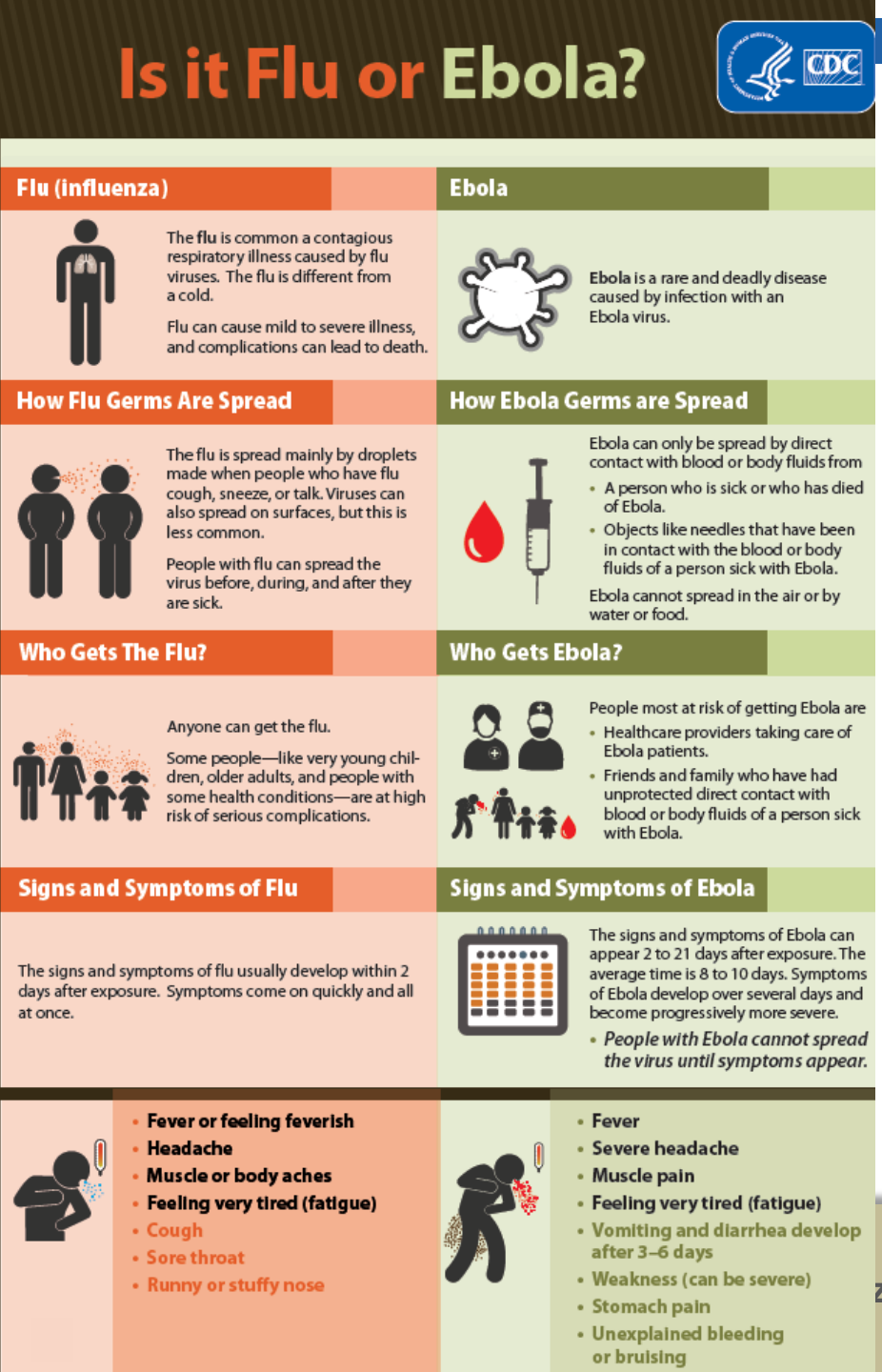


Arizona Activity – week 2



Influenza Subtypes	2014-2015 Season Number	2014-2015 Season Percent
Influenza Subtypes	610	100%
Influenza A (H1N1) pdm09	0	0%
Influenza A (H3)	393	64%
Influenza A (Unsubtyped)	196	32%
Influenza B	21	3%

Age Group	2014-2015 Season (N=3,242)	2013-2014 Season (N=12,484)
0 to 4 years	541 (17%)	2,329 (19%)
5 to 18 years	781 (24%)	2,802 (22%)
19 to 49 years	855 (26%)	4,487 (36%)
50 to 64 years	306 (9%)	1,566 (13%)
65 years or older	690 (21%)	1,205 (10%)
Unknown age	69 (2%)	95 (1%)



Resources:

ADHS Weekly Activity Reports:
http://www.azdhs.gov/phs/oids/epi/flu/

CDC Flu: http://www.cdc.gov/flu

Questions?

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602-364-0873

Emerging Arboviral Diseases in Arizona

Lydia Plante, MSPH
Vectorborne and Zoonotic Disease Epidemiologist
Arizona Department of Health Services, Office of Infectious Disease services

Presentation Outline

- Chikungunya
  - Background
  - Clinical information
  - The current outbreak
  - In Arizona
- Dengue
  - Background
  - Clinical information
  - The current outbreak
  - In Arizona
- Ricky Mountain spotted fever in AZ, an Update

Chikungunya virus

- An RNA virus spread by mosquitos
  - *Aedes spp.*
  - Mosquito-human-mosquito-human cycle
- First appeared in western hemisphere in December, 2013
  - Since then has caused a huge outbreak in the Caribbean and Latin America

Chikungunya, Clinical

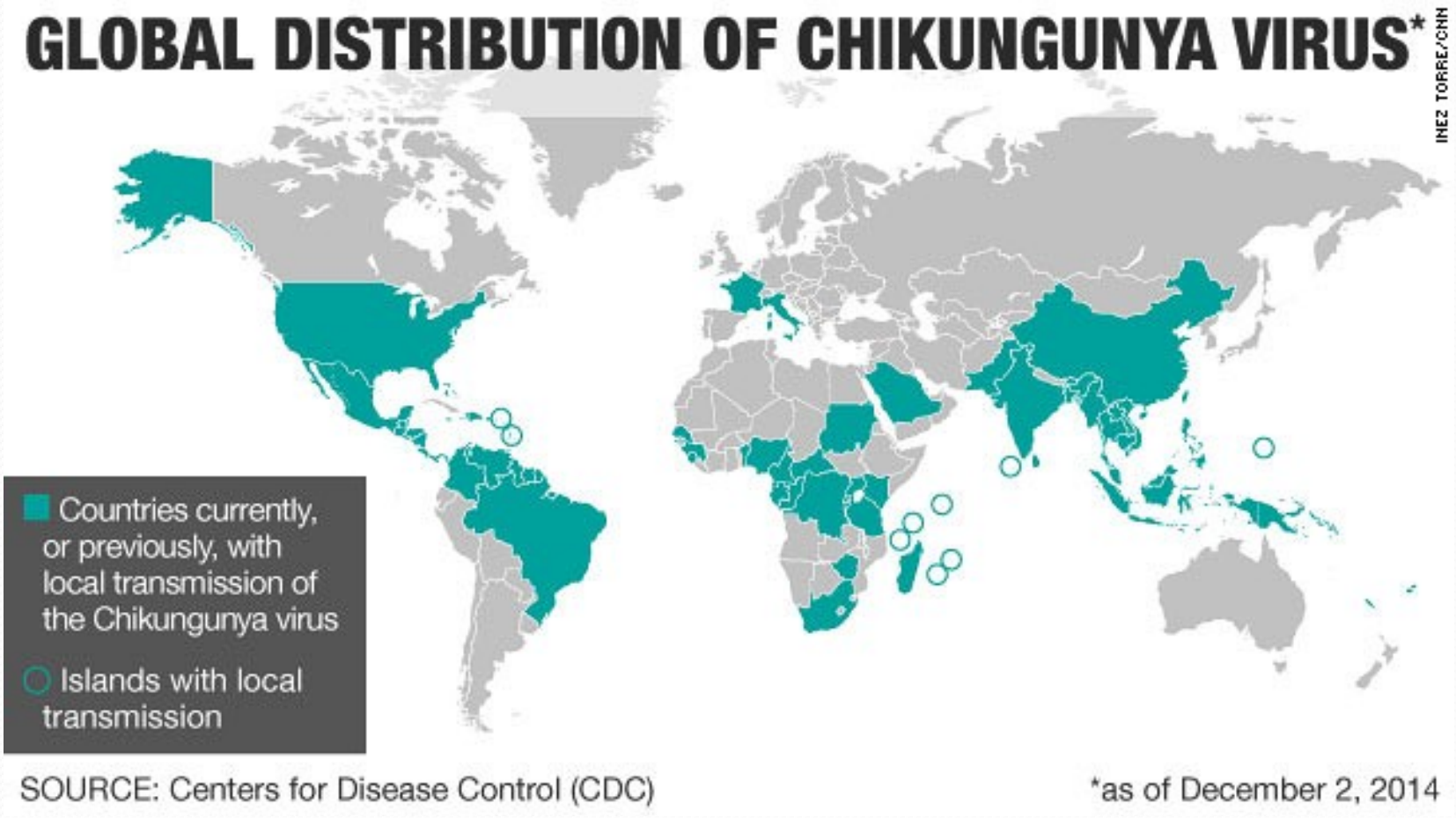
- Most common symptoms: severe joint pain, fever, rash, nausea, vomiting, diarrhea
  - Joint pain so severe can't leave bed
  - 80-90% of all infections lead to disease
- Mortality VERY LOW, <1%
- BUT morbidity may be very high
  - Chronic infection can cause months or years of rheumatic symptoms, fatigue and depression

Chikungunya, the Outbreak

- Naïve population + *Aedes* vectors = large outbreak potential

- Probable locally acquired case in Sonora, Mexico

- Current outbreak:
  - As of 1/22/15
    - 1,133,561 cases
    - 172 deaths


GLOBAL DISTRIBUTION OF CHIKUNGUNYA VIRUS*
INEZ TORRE/CNN
Countries currently, or previously, with local transmission of the Chikungunya virus
Islands with local transmission
SOURCE: Centers for Disease Control (CDC)
*as of December 2, 2014

Chikungunya in Arizona

- U.S. has had 1,545 imported cases
  - Previous yearly average was 28
- AZ: 17 cases in 2014
  - Most traveled to Caribbean or Latin American outbreak area
- Arizona is home to principal vector species, *Aedes aegypti*
  - Local establishment of virus is possible
  - Established via returning traveler or via northward expansion from Mexico

Chikungunya and ADHS

- Development of educational materials
- Outreach and education
  - Presentations for healthcare facilities are available
- Emerging Arboviral Diseases Handbook
- Work with CDC partners on surveillance via ArboNET

Dengue Background

- RNA virus transmitted by *Aedes* mosquito vectors
- Found throughout tropics and subtropics
  - First appeared in western hemisphere in 1981
- Serotypes I, II, III, IV
  - No cross-immunity
  - Second infection (with different strain) much worse than the first.
    - Antibody dependent enhancement

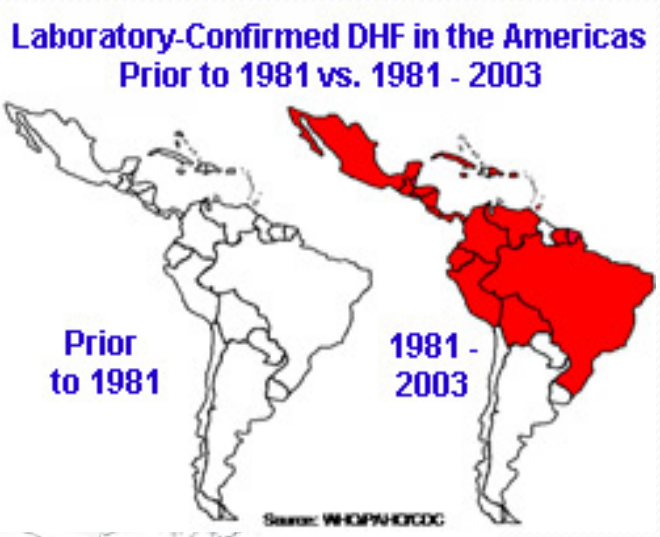


Figure 1.1 Countries/areas at risk of dengue transmission, 2008

January isotherm 10.C

July isotherm 10.C

The contour lines of the January and July isotherms indicate the potential geographical limits of the northern and southern hemispheres for year-round survival of *Adeas aegypti*, the principal mosquito vector of dengue viruses.

countries or areas at risk
(As of 1 November 2008)

The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines or maps represent approximate border lines for which there may not yest be fill agreement.

Data Source: World Health Organization Map Production: Public Health Infrmation and Geographic Information Systems (GIS) World Health Organization

World Health Organization

Multiple Clinical Manifestations

- Dengue-like illness
  - Fever and travel to dengue-endemic area
- Dengue
  - Fever and at least one of the following:
    - Nausea/vomiting, rash, aches/pains, tourniquet test positive, leukopenia, abdominal pain/tenderness, extravascular fluid accumulation, mucosal bleeding, liver enlargement, increasing hematocrit with platelet count decrease
- Severe dengue
  - Dengue with any of the following:
  - Severe plasma leakage, severe bleeding, severe organ involvement

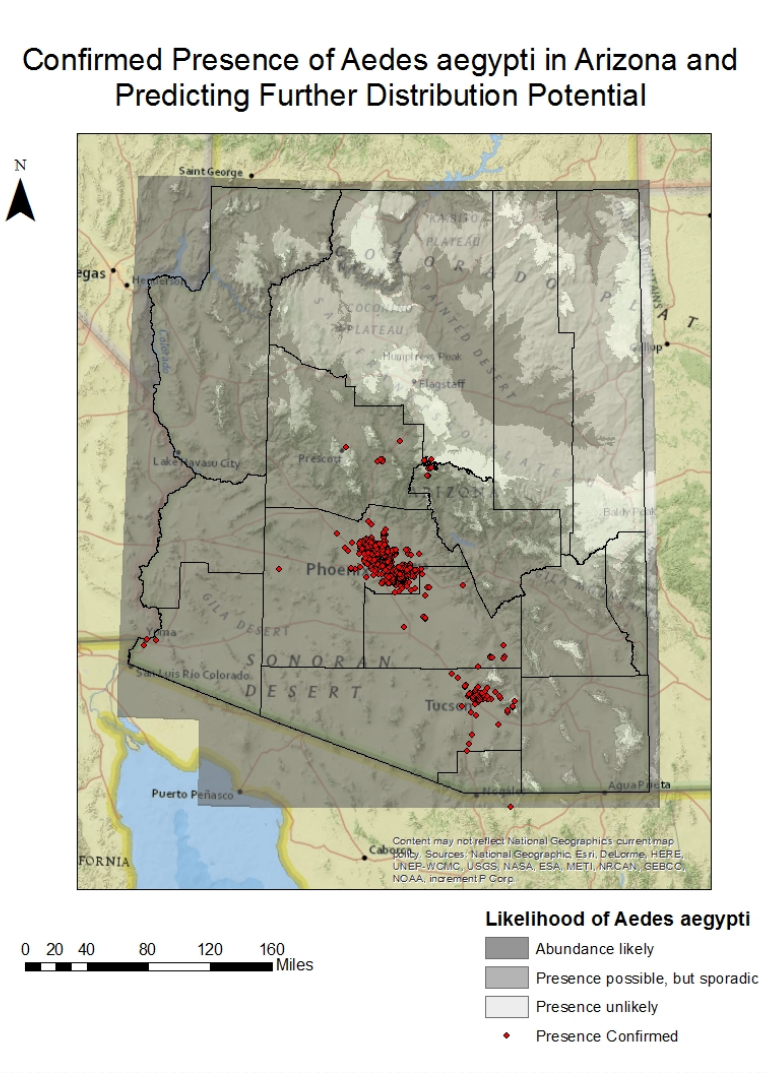
Dengue, the Outbreak

- Dengue outbreak in Sonora, Mexico

- 89 imported cases in AZ in 2014, 4 in 2013

Dengue and AZ

- Vectors present in AZ
- Could lead to local viral establishment
- Border counties especially at risk



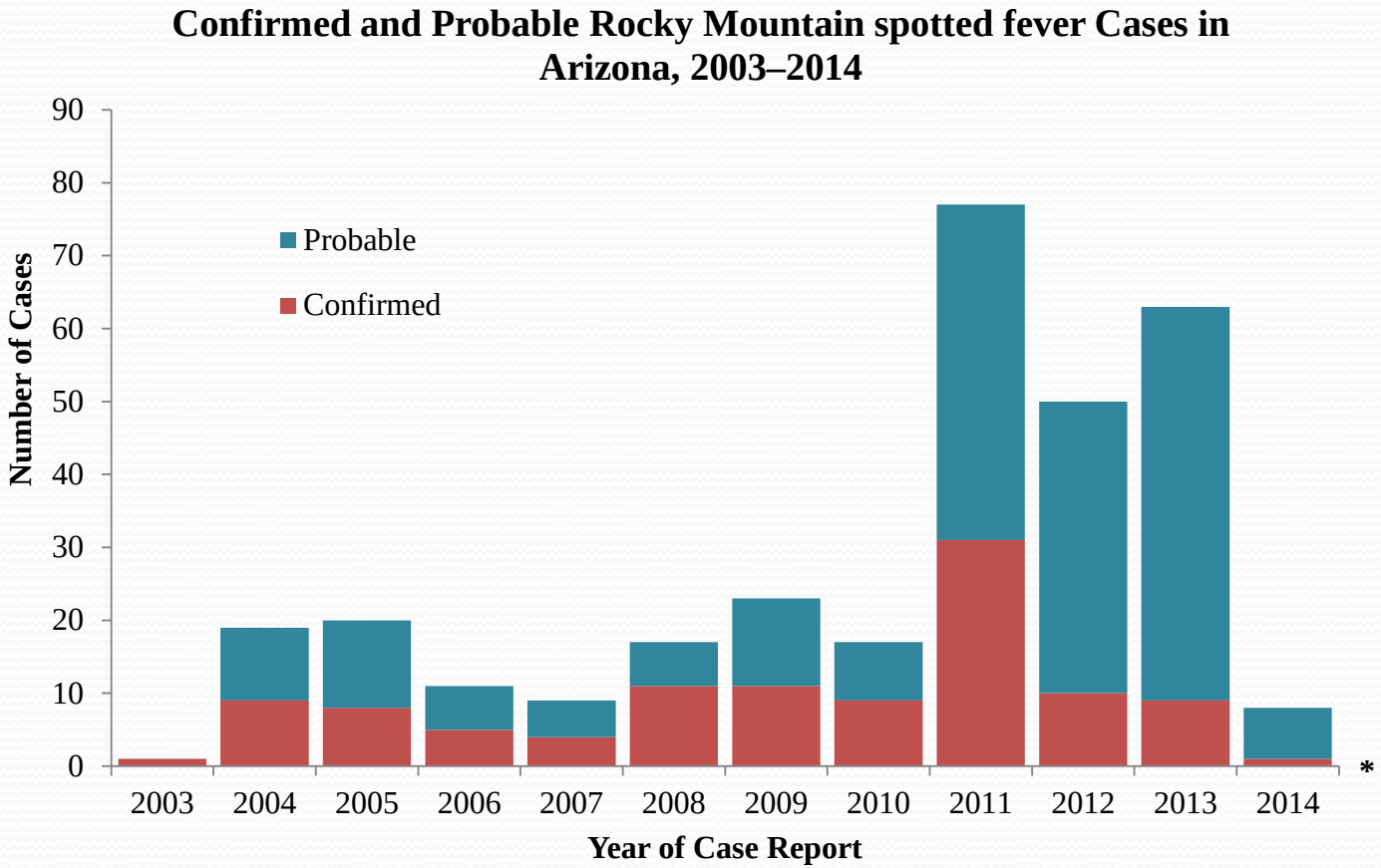
Dengue and ADHS

- Investigation with Yuma County, ADHS and CDC for risk assessment and active case seeking
  - Results pending
- Enhanced case and vector surveillance
- Educational materials development
- Handbook development
- Outreach to clinicians
- Work with CDC partners on surveillance via ArboNET

Rocky Mountain Spotted Fever Update

- Statewide RMSF & Other Insect-borne & Animal-borne Diseases Workshop
  - Tribal, state, and county partners
  - February 4-5th
- RMSF Statewide Handbook & Response Plan
  - Overview of epidemiology and history of RMSF
  - Control, prevention, and education efforts
  - Best practices and recommendations
- RMSF serosurvey in dogs in border region

RMSF By the Numbers



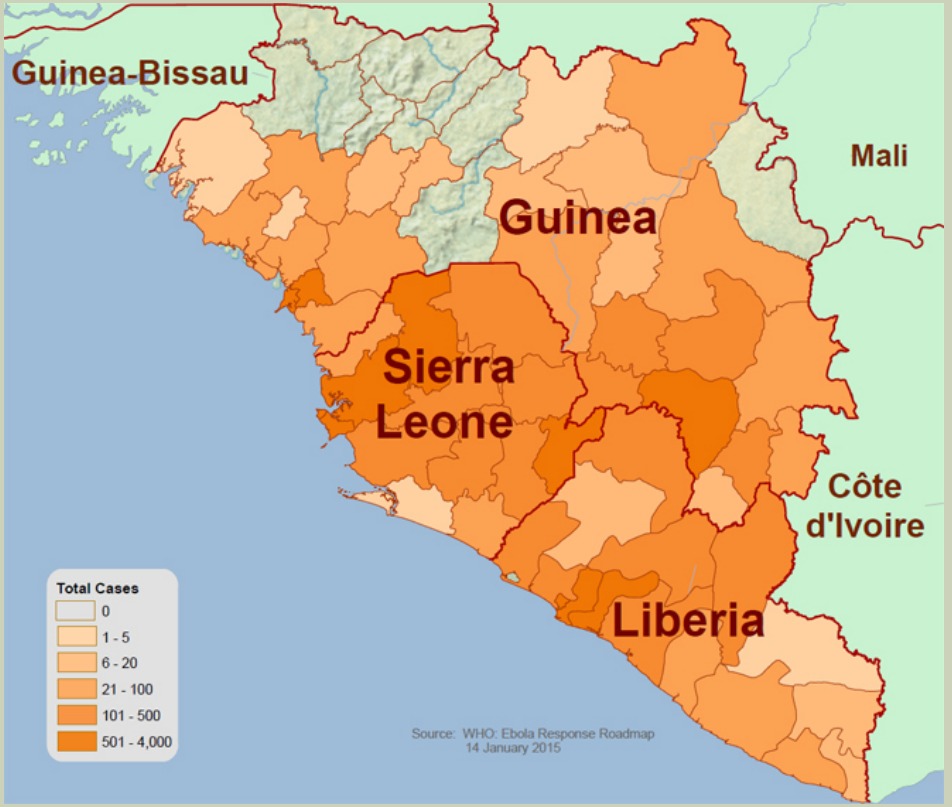
QUESTIONS???

THE 2014 EBOLA OUTBREAK

Lydia Plante, MSPH
Vectorborne and Zoonotic Disease Epidemiologist
Arizona Department of Health Services

2014 EBOLA OUTBREAK IN WEST AFRICA

- Largest Ebola outbreak in history
  - Cases: 21,724
  - Deaths: 8,641
- Index case: Guéckédou, Guinea
  - At corner of the three countries
  - December, 2013
- Affected countries:
  - Current: Guinea, Liberia, and Sierra Leone
  - Contained: Senegal, Nigeria, Mali, U.S. and Spain



STATE ACTIONS

- The State assists the counties, when requested
- Develops guidelines for local and private partners
  - EVD Toolkit found at:
    - http://www.azdhs.gov/phs/oids/ebola/preparedness/
    - Gives documents and information for a variety of audiences: hospital, outpatient clinics, EMS, public safety, laboratory resources, etc.
    - Develop online survey for travelers' self-monitoring
- Assists with patient evaluation and, if warranted, specimen testing
- Initiated an Incident Command System to prepare for a potential EVD patient presenting in AZ
- Patient monitoring
- Education and outreach

PATIENT MONITORING

- All patients returning to Arizona from a currently affected country are monitored
  - Sierra Leone, Liberia, Guinea
  - Mali recently taken off list
- Given thermometer, public health department contact number, cell phone, and information at the airport
  - Five airports which cover most incoming travel from these countries
  - CARE kit (Check And Report Ebola)

CARE KIT


EBOLA
CARE Kit Symptom Card and Log
Remember:
Week #1
Week #2
Week #3
How to Use Your Thermometer to Check Your Temperature
Digital
Thermometer

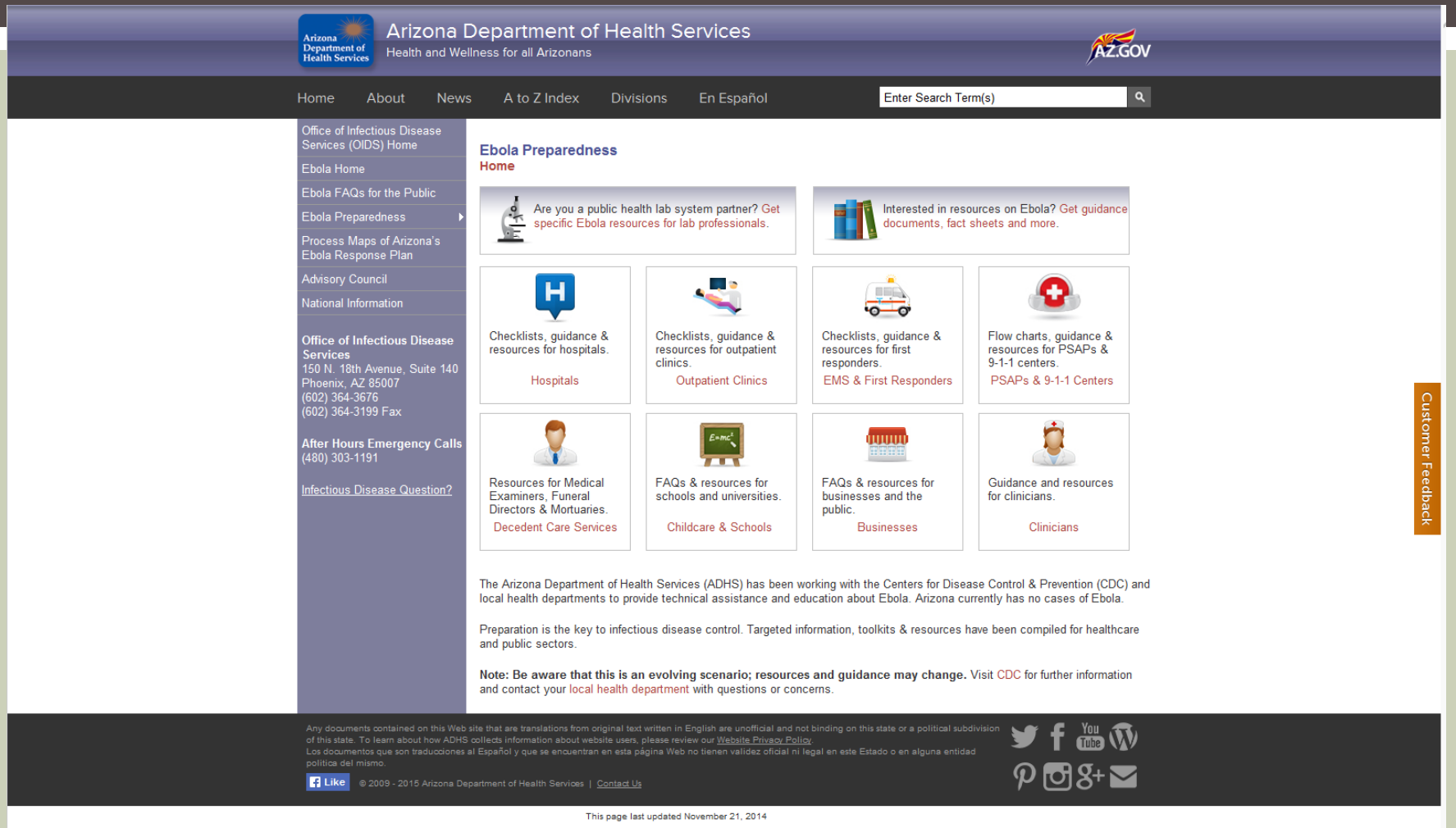
TRAVELER RISK ASSESSMENT

- Incoming travelers are categorized based on exposure status and assigned a risk category
  - No identifiable risk – no monitoring required
  - Low, but not zero, risk – active monitoring
  - Some risk – direct active monitoring
  - High risk – direct active monitoring

- **Active monitoring:** travelers call local public health daily for 21 days to reports temperature check results (or report temperature via confidential web survey)

- **Direct active monitoring:** local public health visualizes (either in-person or via video chat application) temperature check results once daily
  - Local public health supported by state public health
  - ADHS coordinates inter- and intra-state movement of travelers to maintain continuity of monitoring between counties and states

EBOLA PREPAREDNESS

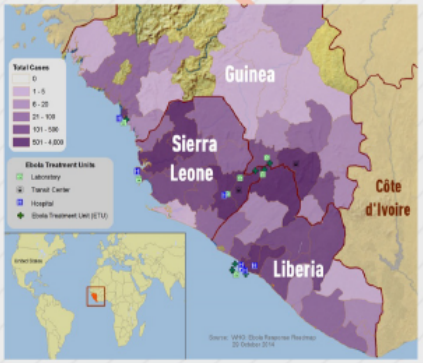


What You Need to Know About Ebola

Bureau of Epidemiology and Disease Control Services
Office of Infectious Disease

WHAT IS EBOLA?

Ebola is a virus that is found in several West African countries. It is a severe disease that is likely carried by bats. The current outbreak affects Liberia, Sierra Leone, and Guinea.



WHAT ARE THE SYMPTOMS?

- Fever
- Headache
- Weakness
- Stomach pain
- Muscle pain
- Diarrhea
- Vomitting
- Unexplained bruising or bleeding

REMEMBER

If you are experiencing any of these symptoms without travel to West Africa, or without having been in contact with a person that has Ebola, you do not have to worry.

If you have traveled to an Ebola affected country and show signs of illness within 21 days contact your doctor and local county health department immediately.

HOW DO YOU CATCH EBOLA?

Someone can ONLY get Ebola if they come in direct contact with body fluids (including blood, saliva, sweat, vomit, urine, feces and semen) from an infected person. Only a person that is showing symptoms of Ebola can spread the virus.

YOU CANNOT GET EBOLA FROM...

Water, Food, Air, or Bugs

WHAT CAN YOU DO?

The risk of catching Ebola in Arizona is very low. You are more likely to get the flu or other illnesses than Ebola.

1) Keep things in perspective
2) Get the facts
3) Stay healthy
4) Keep connected

WHERE CAN I GET MORE INFORMATION?

Arizona Department of Health Services continues to work with local and federal partners on Ebola response activities.

Visit these websites for more information:
www.azhealth.gov/ebola
www.cdc.gov/ebola

Contact

County Public Health Department
OR
AZ Department of Health Services
Office of Infectious Disease
602-364-3676
www.azhealth.gov

Arizona Department of Health Services

ADHS Ebola Resources

azhealth.gov/ebola

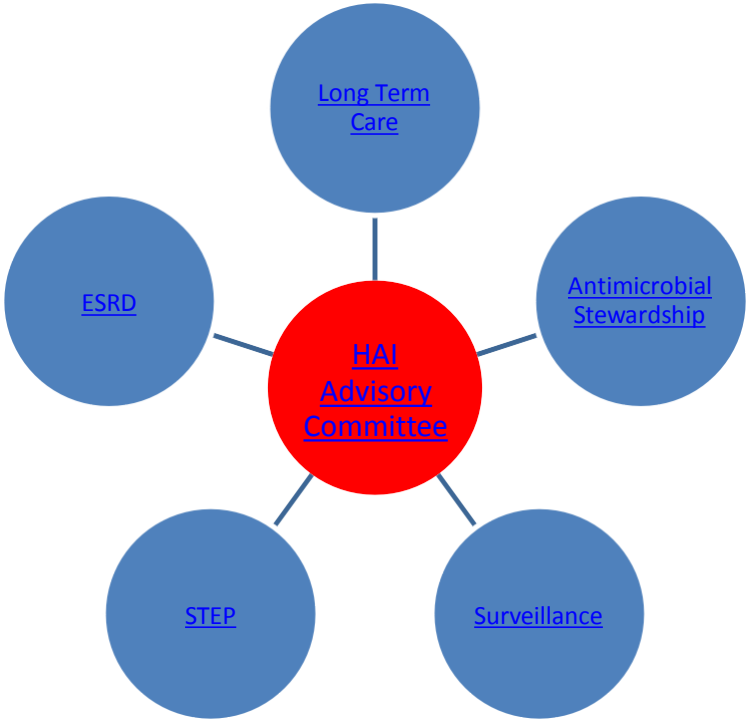
Healthcare-Associated Infections Program: A Review of 2014

Eugene Livar, MD
HAI Program Manager
Office of Infectious Disease Services
Arizona Department of Health Services

Healthcare Associated Infection (HAI) Program

- Facilitate the HAI Advisory Committee and its corresponding subcommittees as they identify and support HAI prevention priorities for the state
- Coordinate intra-agency HAI prevention activities
- Monitor and expand current HAI surveillance activities
- Build and participate in partnerships and collaborations to assist HAI efforts throughout the state

HAI Advisory Committee and Subcommittees



Click on one to view the website!

HAI Program Priorities for 2014-2015

- Infection prevention
- Injection safety
- Drug diversion
- Pharmacy and compounding
- Antimicrobial stewardship, use, and resistance
- Healthcare worker vaccination

Arizona State Health Assessment & Improvement Plan

- ADHS partnered with county health departments to conduct a Community Health Assessment (CHA)
- Arizona Health Improvement Plan (AzHIP) was developed and identified 15 leading public health issues
  - HAIs highlighted

Why was AzHIP developed?

- Collaboratively sets priorities specific to needs within the state
- Provides leadership and direction on how to improve health in next five years
- Aligns partnerships and resources to work collectively on shared goals and strategies
- Meets national standards for accreditation of state health departments

Healthy People

Interventions at the individual level, targeting individual behavior and making healthy choices.

1. Educate and encourage hand hygiene
2. Decrease the misuse of antibiotics
3. Improve healthcare worker vaccination

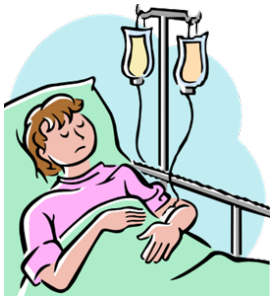
Healthy Communities

Interventions at community or society level, targeting policy, systems, and environmental approaches that shape the communities in which we live

1. Improve knowledge and implementation of infection control
2. Improve knowledge and implementation of injection safety
3. Improve knowledge and implementation of antimicrobial use and stewardship

HAI Outbreaks

- 53 outbreak in HCFs in 2014
  - Including hospitals, LTCFs, dental and assisted living facilities
    - 90% GI
    - 6% lice & mites
    - 4% respiratory
- What are some HAI investigation topics?
  - Injection safety
  - VPDs
  - Infection control lapses
  - MRSA
  - Pharmaceutical issues and recalls



Wallcur, LLC

- FDA and CDC investigating Wallcur's simulated intravenous (IV) saline products being administered to patients
- These products were shipped to medical clinics, surgical centers, and urgent care facilities in numerous states
- More than 40 patients have received infusions of the simulated saline products and there have been many adverse events
  - Including fever, chills, tremors, and headache
  - Florida, Georgia, Idaho, Louisiana, North Carolina, New York, and Colorado
- 1 death associated with the use of these products
- Wallcur initiated a voluntary recall
- FDA is working with distributors to determine how these products entered the supply chain and subsequently were administered to patients

Wallcur, LLC

National:

- 41 non-educational facilities in 22 states are known to have ordered Wallcur Practi-saline from May through December 2014
  - All states with affected facilities have been contacted
- 37 facilities in 19 states have been contacted, provided information, and questioned.
- 43 patients in 9 facilities from 8 states are known to have been infused with a Practi-saline product
  - (CO, FL, GA, ID, KY, LA, NC, NY)
- 21 patients with adverse events were reported from 7 facilities in 6 states including 5 hospitalizations
  - (FL, GA, ID, LA, NC, NY)
- All medical facilities that have received this product report that they did not know that it was a simulation product when they ordered it

Wallcur, LLC

Arizona:

- 4 providers in 2 counties received product
  - 1 Urgent care
  - 1 Chiropractor/Wellness center
  - 1 Pain/Rehabilitation center
  - 1 Primary care
- Providers contacted, informed and surveyed about products

No reported use or adverse events at this time in Arizona

National and State Healthcare Associated Infections (HAI) Progress Report

- Released by CDC on January 14th, 2015
- Nationally
  - 46 % decrease in central line-associated bloodstream infections (CLABSI) between 2008 and 2013
  - 19 % decrease in surgical site infections (SSI) related to the 10 select procedures tracked in the report between 2008 and 2013
  - 6 % increase in catheter-associated urinary tract infections (CAUTI) since 2009; although initial data from 2014 seem to indicate that these infections have started to decrease
  - 8 % decrease in MRSA bloodstream infections between 2011 and 2013
  - 10 %decrease in C. difficile infections between 2011 and 2013

How Did Arizona SIR Compare To National Average?

CLABSI		
Unit	**Arizona**	**National**
All	0.639	0.538
Critical care	0.503	0.500
Ward (non-critical)	0.881	0.608
Neonatal intensive care units	0.637	0.499

CAUTI		
Unit	**Arizona**	**National**
All	1.024	1.057
Critical care	1.169	1.180
Ward (non-critical)	0.583	0.785

SSI-Abdominal Hysterectomy		
Unit	**Arizona**	**National**
All	1.187	0.862

SSI-Colon Surgery		
Unit	**Arizona**	**National**
All	1.112	0.919

MRSA Bacteremia		
Unit	**Arizona**	**National**
All	0.969	0.917

Clostridium difficile (*C. difficile*) infections		
Unit	**Arizona**	**National**
All	1.003	0.904

Where can I get more information and resources?
http://www.azdhs.gov/phs/oids/hai/surveillance/progress-report.php

Arizona

HAI TYPE	# OF ARIZONA HOSPITALS THAT REPORTED DATA TO CDC'S NHSN, 2013 Total Hospitals in State: 97+	2013 STATE SIR vs. 2012 State SIR‡	2013 STATE SIR vs. 2013 Nat'l SIR	2013 STATE SIR vs. Nat'l Baseline‡	2013 STATE SIR	2013 NAT'L SIR
CLABSI Nat'l Baseline: 2008	56	⇧ 1%	↑ 19%	↓ 36%	0.64	0.54
CAUTI Nat'l Baseline: 2009	55	⇩ 6%	⇩ 3%	⇧ 2%	1.02	1.06
SSI, Abdominal Hysterectomy Nat'l Baseline: 2008	52	⇩ 3%	↑ 38%	⇧ 19%	1.19	0.86
SSI, Colon Surgery Nat'l Baseline: 2008	51	⇩ 1%	↑ 22%	⇧ 11%	1.11	0.92
MRSA Bacteremia Nat'l Baseline: 2011	63	2012 SIR not available	⇧ 6%	⇩ 3%	0.97	0.92
C. difficile Infections Nat'l Baseline: 2011	62	2012 SIR not available	↑ 11%	⇧ < 1%	1.00	0.90

Want more information?
http://www.azdhs.gov/phs/oids/hai/surveillance/progress-report.php

NHSN/ADHS Data Use Agreement (DUA)

- ADHS has entered into a DUA with the NHSN
- ADHS will gain access to data reported to NHSN form healthcare facilities in the state of Arizona
- The access granted to ADHS is exclusively for the purposes of surveillance and prevention
- The data will be used for HAI surveillance and prevention purposes and not legal and regulatory action

NHSN/ADHS DUA

- The CDC set up a “Super Group” for the state of Arizona that includes ADHS and participating facilities based on DUA
- Only data in a facility’s monthly reporting plan is in scope for the DUA
- When facilities are added to the Super Group and notification emails are sent
- The DUA is valid for 5 years

DUA Data Specifications

- Level of aggregation and patient identifiers
  - DOB
  - Gender
  - Ethnicity
  - Race
- General and surveys
  - Monthly reporting plans
  - Facility annual surveys
- Device-associated module events and denominators
  - CLABSI
  - CAUTI
  - VAE
  - DE
- Facility types included
  - Acute care hospitals
  - Long-term acute care hospitals
  - Rehabilitation hospitals
  - Outpatient dialysis centers

DUA Data Specifications

- Procedure-associated module events and denominators
  - SSI
    - Coronary artery bypass graft
    - Coronary artery bypass graft with chest incision only
    - Cardiac surgery
    - Knee prosthesis
    - Abdominal hysterectomy
    - Colon surgery
- MDRO module events and denominators
  - LabID event-all specimens
    - MRSA
    - *C. difficile*
    - Ceph-R *Klebsiella*
    - CRE *Klebsiella*
    - CRE *E. coli*
    - MDR *Acinetobacter*
- Facility types included (facility-wide)
  - Acute care hospitals
  - Long-term acute care hospitals
  - Rehabilitation hospitals

DUA Data Specifications

- General and surveys
  - Seasonal flu survey
- Healthcare worker influenza vaccination module
  - HCW summary flu vaccination data
- Facility types included
  - Acute care hospitals
  - Long-term acute care hospitals
  - Rehabilitation hospitals
- NHSN long-term care facility component
  - Level of aggregation and patient identifiers
    - Resident level data with no patient identifiers
  - General and surveys
    - Facility annual surveys
  - LabID events and denominators
    - MRSA
    - *C. difficile*
    - Ceph-R *Klebsiella*
    - CRE *Klebsiella*
    - CRE *E. coli*
    - *Acinetobacter*

DUA Data Specifications

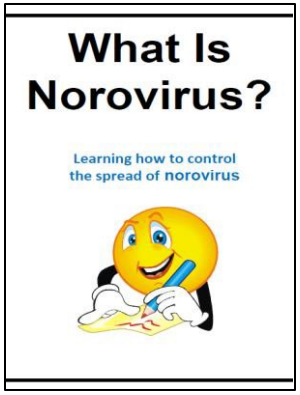
- Want More Information?
  - http://www.azdhs.gov/phs/oids/hai/surveillance/data-use-agreement.htm

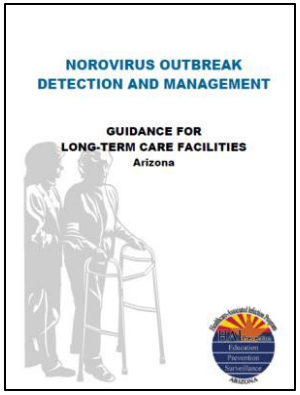
Thank you

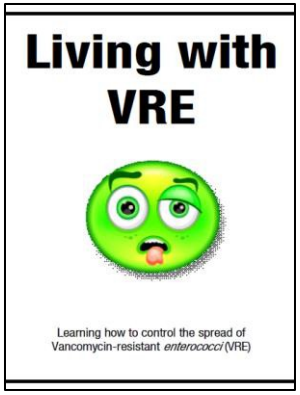
Eugene.Livar@azdhs.gov

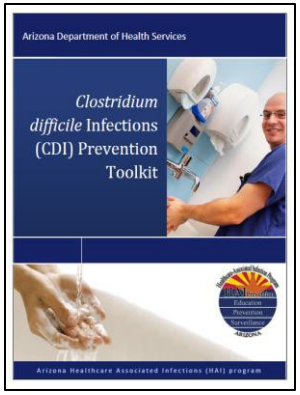
(602) 364-3522

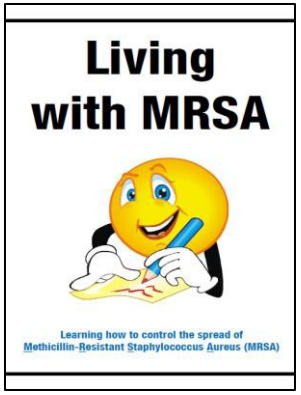
www.preventHAIaz.gov

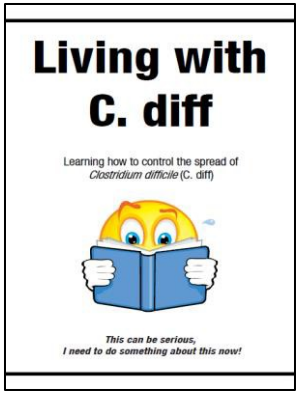












Arizona Department of Health Services STD Control Update

Lauren E. Young, MPH

APIC Meeting

January 23, 2015

Health Services Advisory Group

Objectives

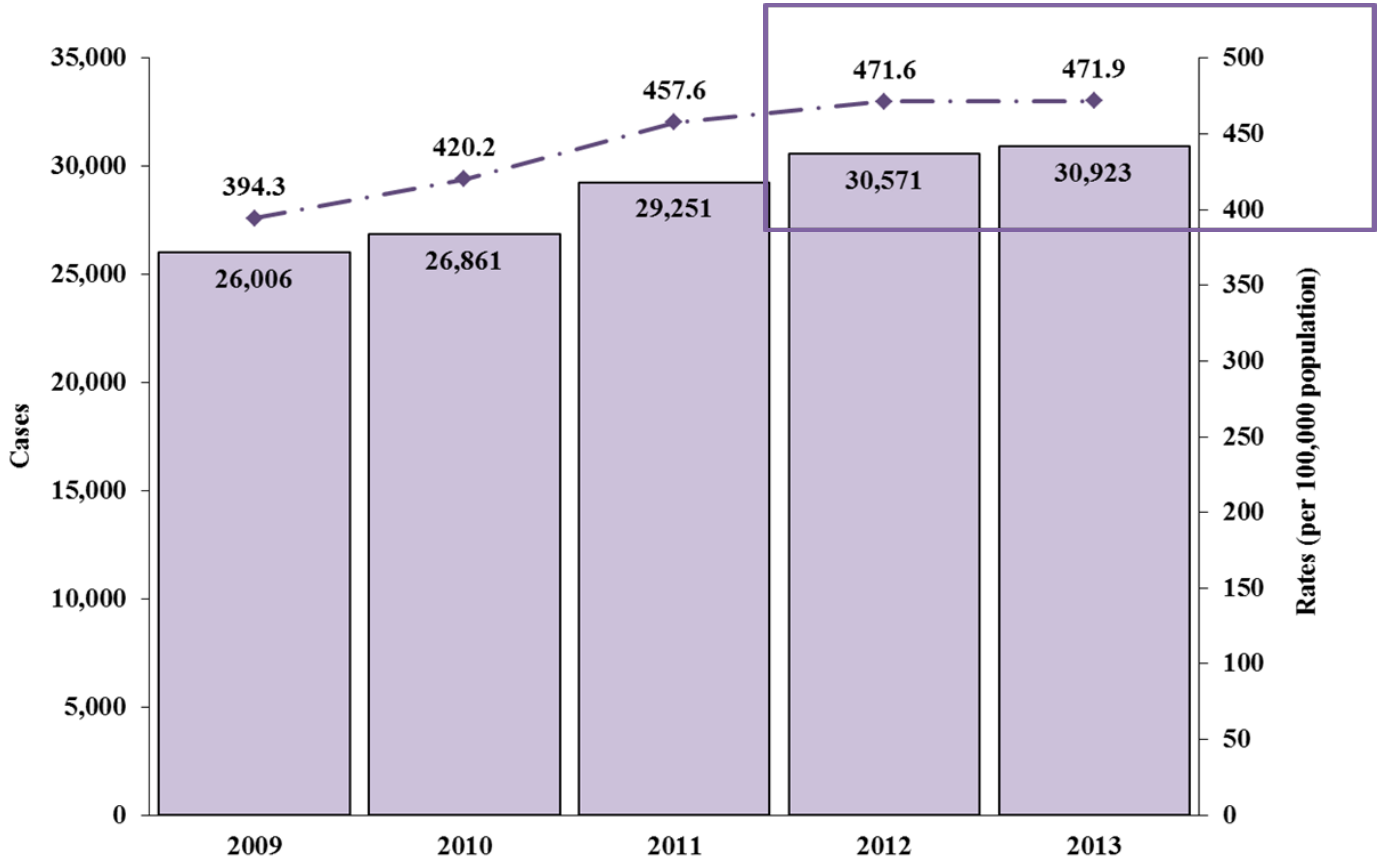
- Review the epidemiology of reportable sexually transmitted diseases in the state of Arizona
- Review the importance of STD treatment and prevention at the clinical level
- Review reporting opportunities for clinicians

Today's Items

- Trends in chlamydia, gonorrhea and syphilis infections in Arizona, 2009-2013
- Preliminary numbers for 2014
- Treatment of STDs

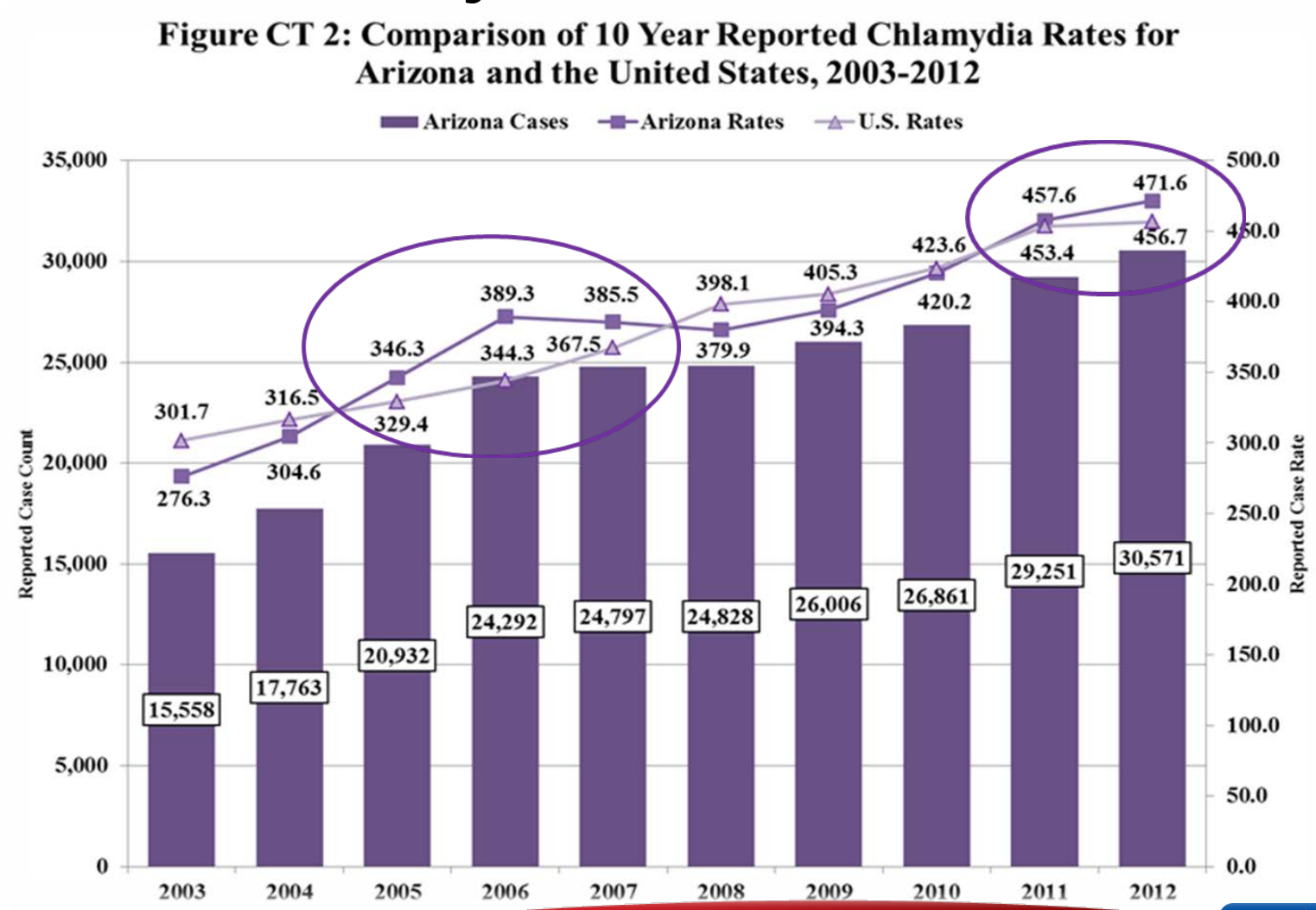
Chlamydia in Arizona

Figure CT 1: Reported Chlamydia Cases and Case Rates, Arizona 2009-2013



Data is provisional and subject to change.
*2011 CDC bridged data used for 2012 case rate population denominators.

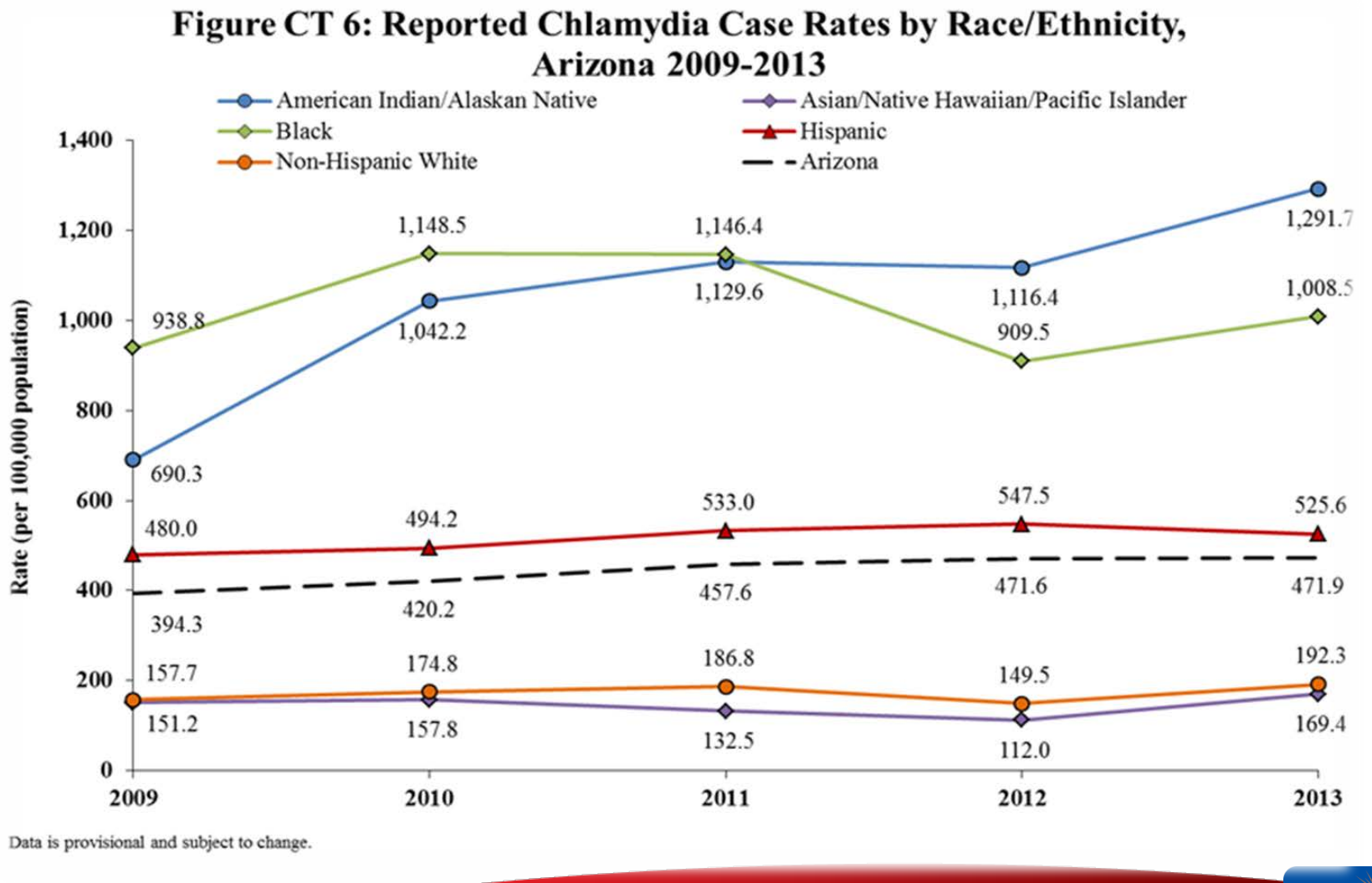
Chlamydia in the US



Arizona Department of Health Services

Health and Wellness for all Arizonans

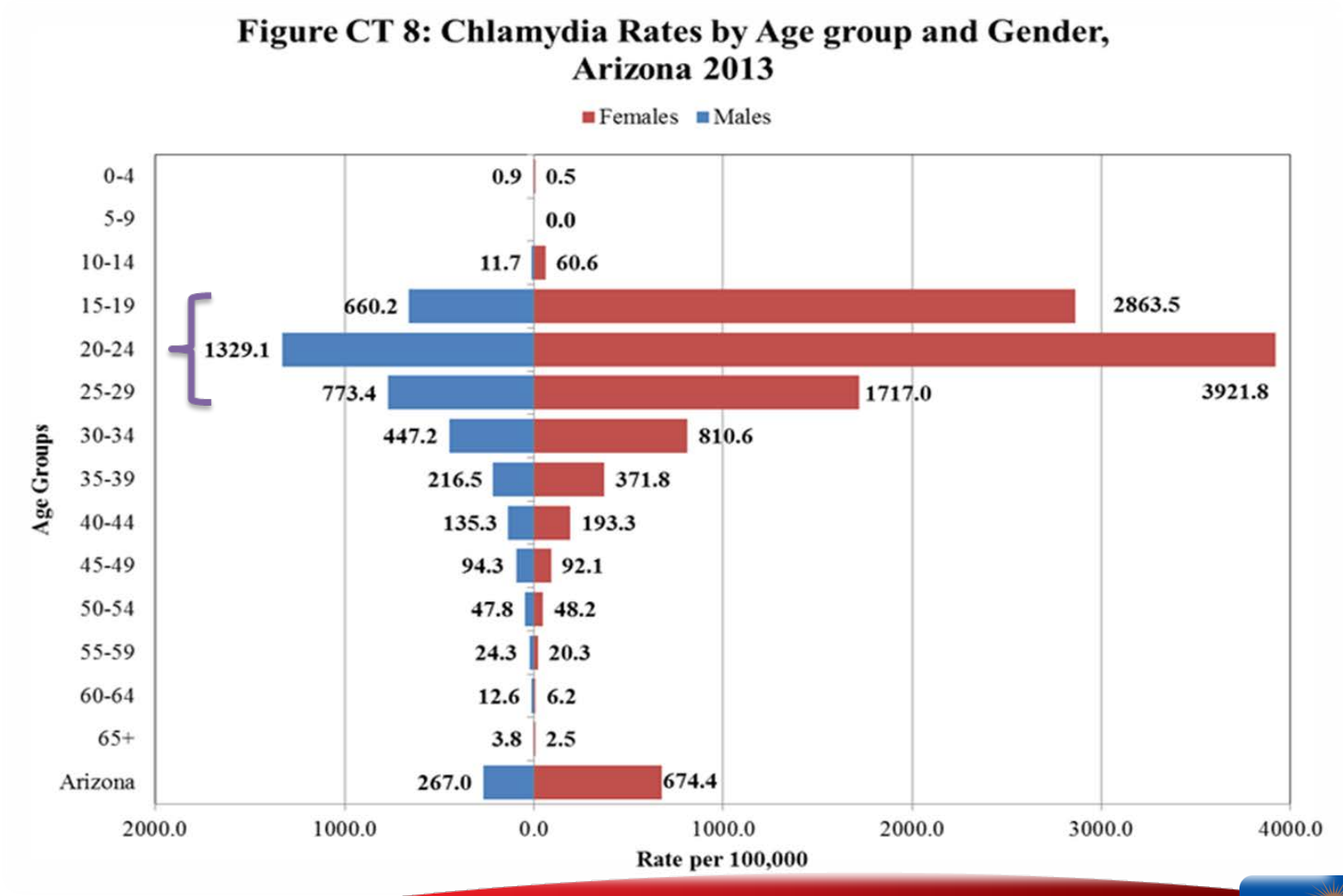
Demographic Differences



Arizona Department of Health Services

Health and Wellness for all Arizonans

Demographic Differences



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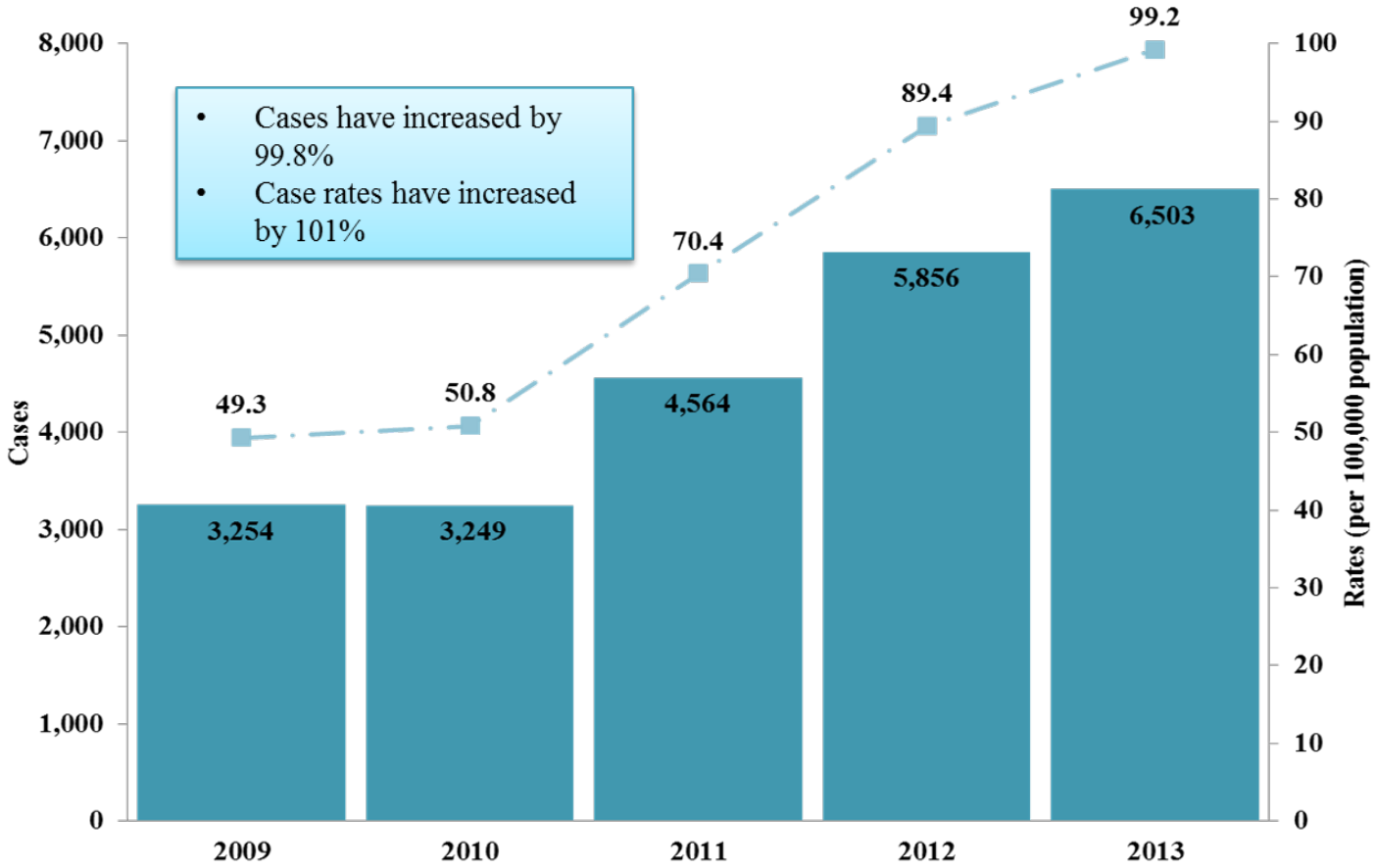
Gonorrhea in Arizona

Figure GC 1: Reported Gonorrhea Cases and Rates, Arizona 2009-2013



Data is provisional and subject to changes,
*2012 CDC bridged data used for 2013 case rate population denominators.

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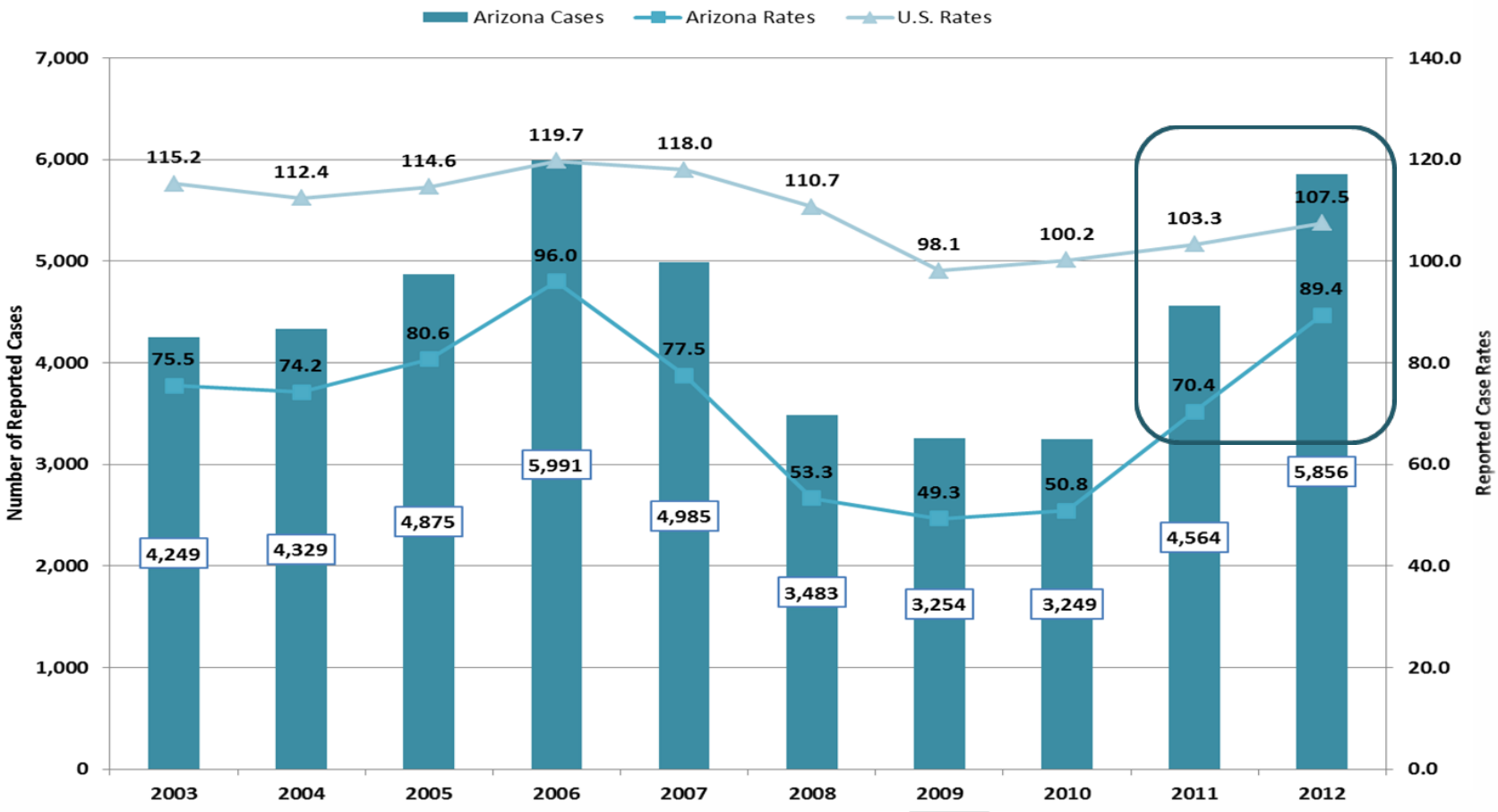
Gonorrhea in the US

Figure GC 2: Comparison of 10 Year Reported Gonorrhea Rates for Arizona and the United States, 2003-2012



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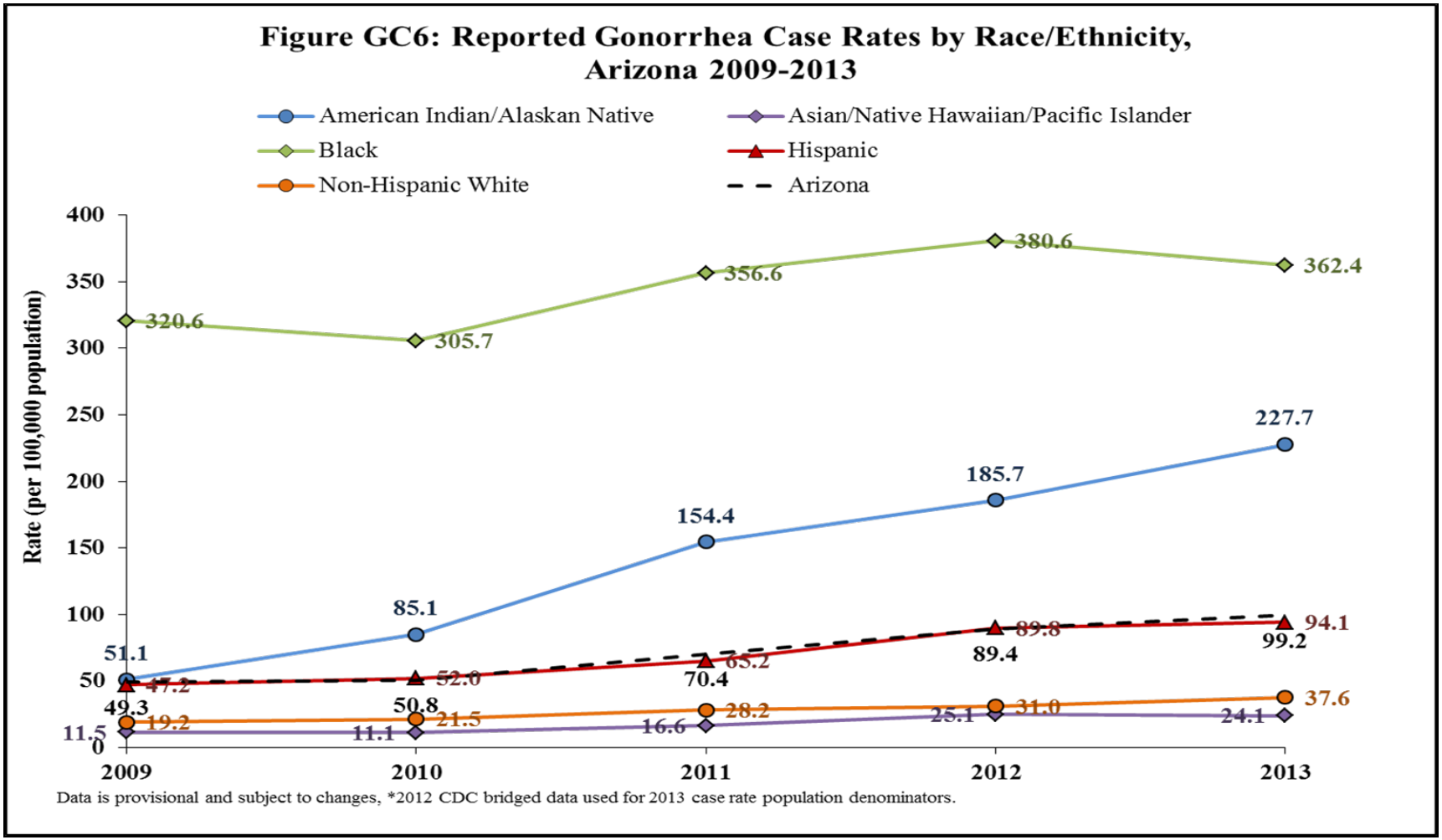
Demographic Differences



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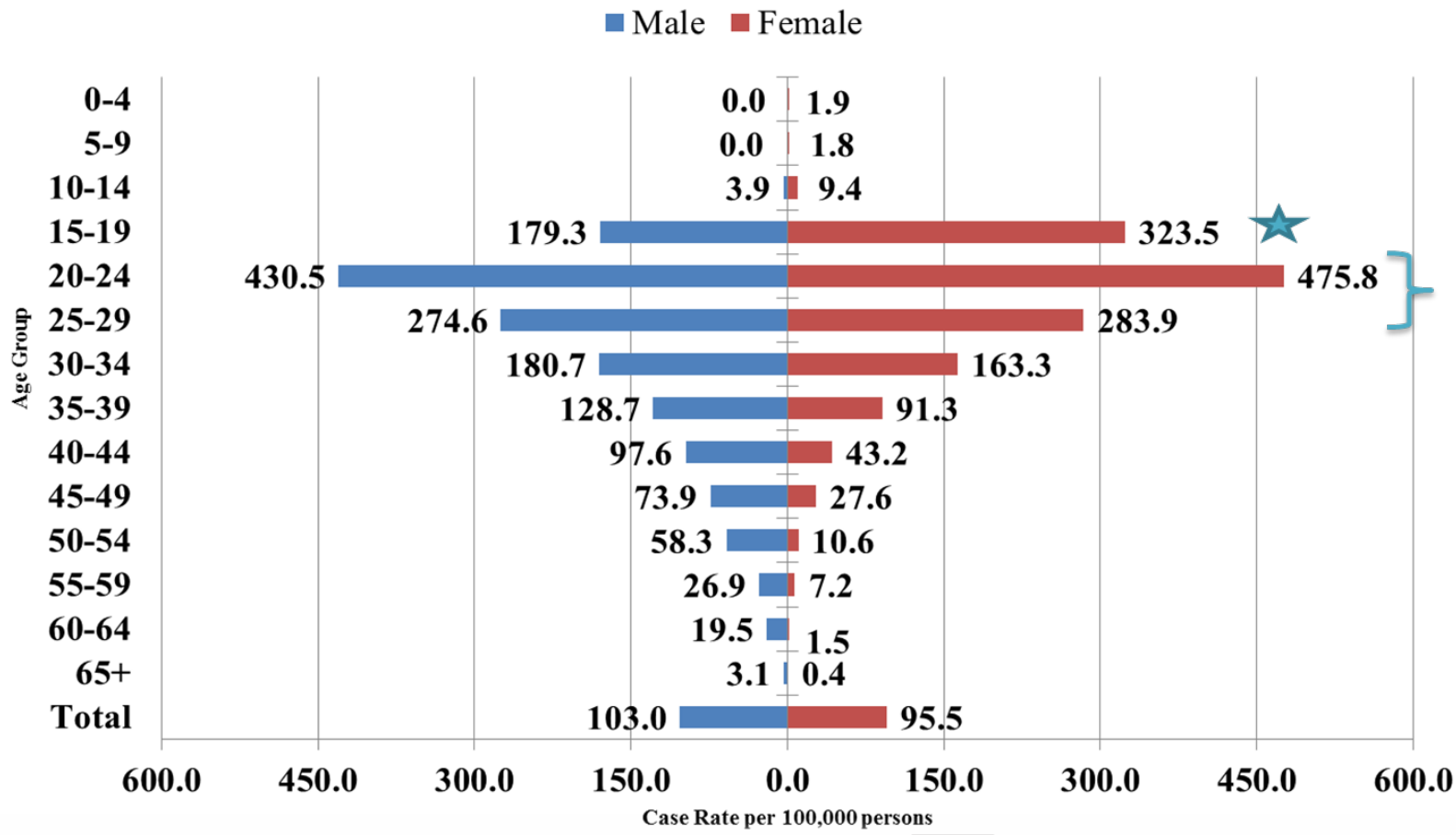
Health and Wellness for all Arizonans

Demographic Differences

Figure GC 8: Gonorrhea Rates by Age Group and Gender, Arizona 2013



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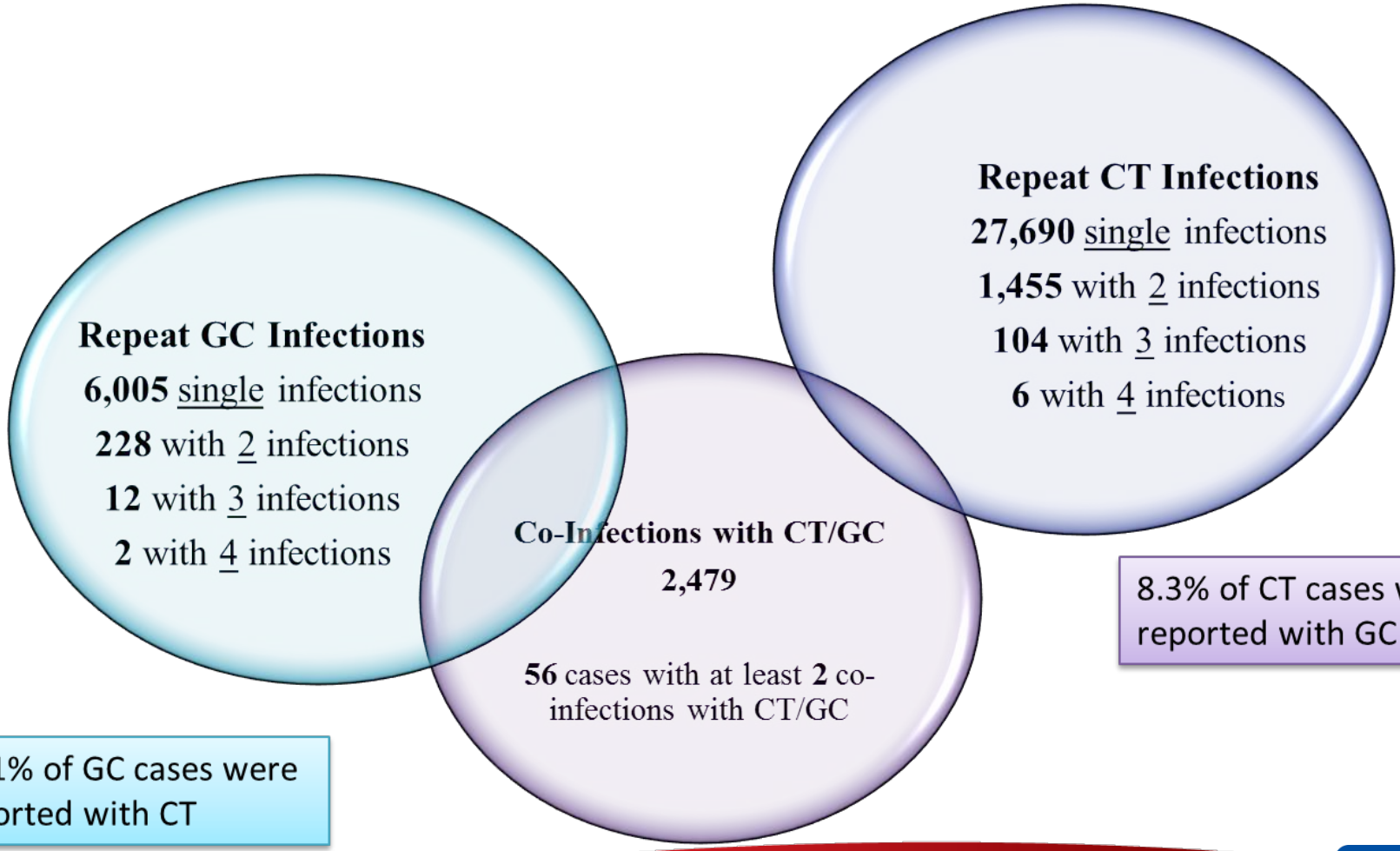
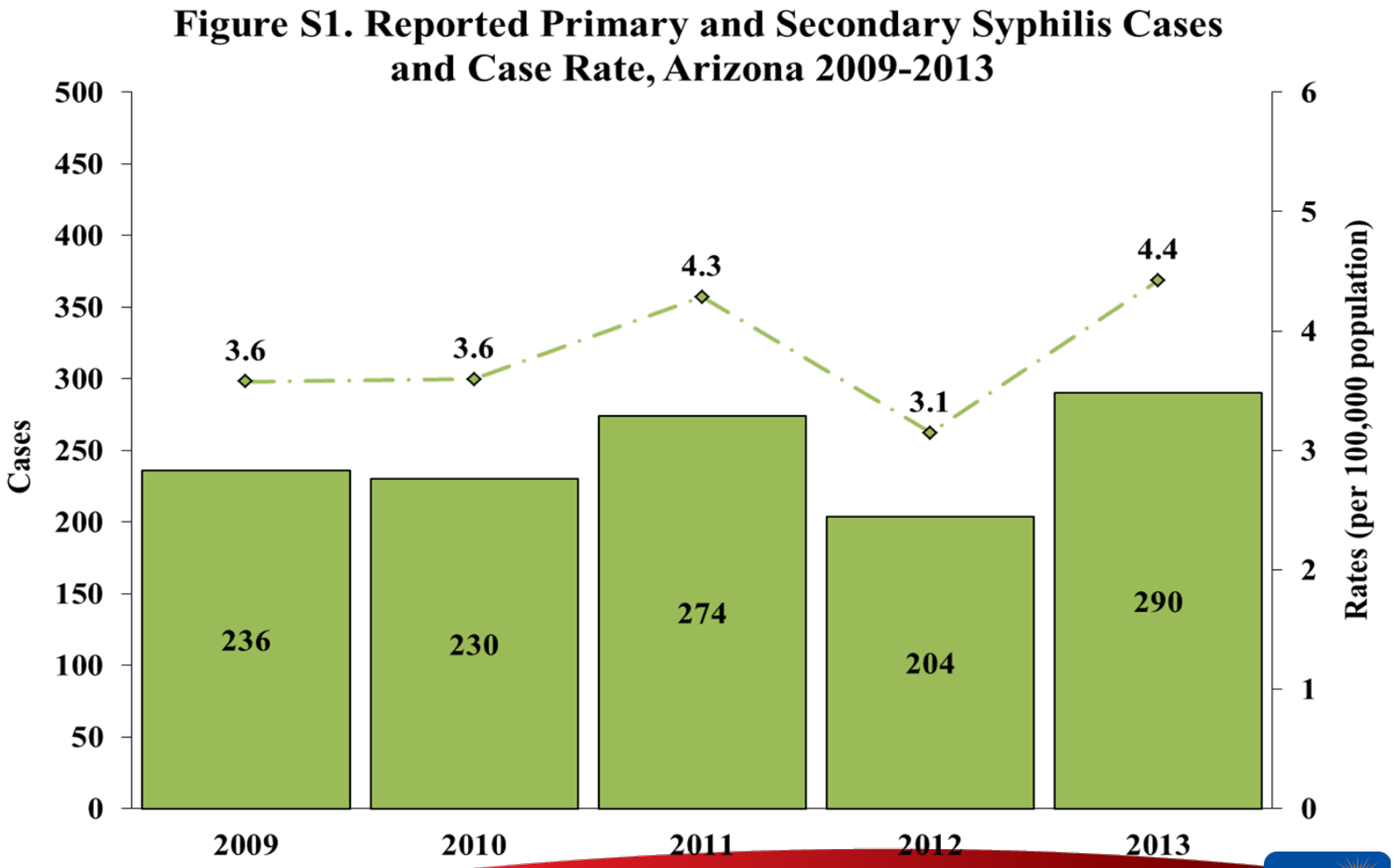
Repeat Infections



38.1% of GC cases were reported with CT

8.3% of CT cases were reported with GC

Syphilis in Arizona



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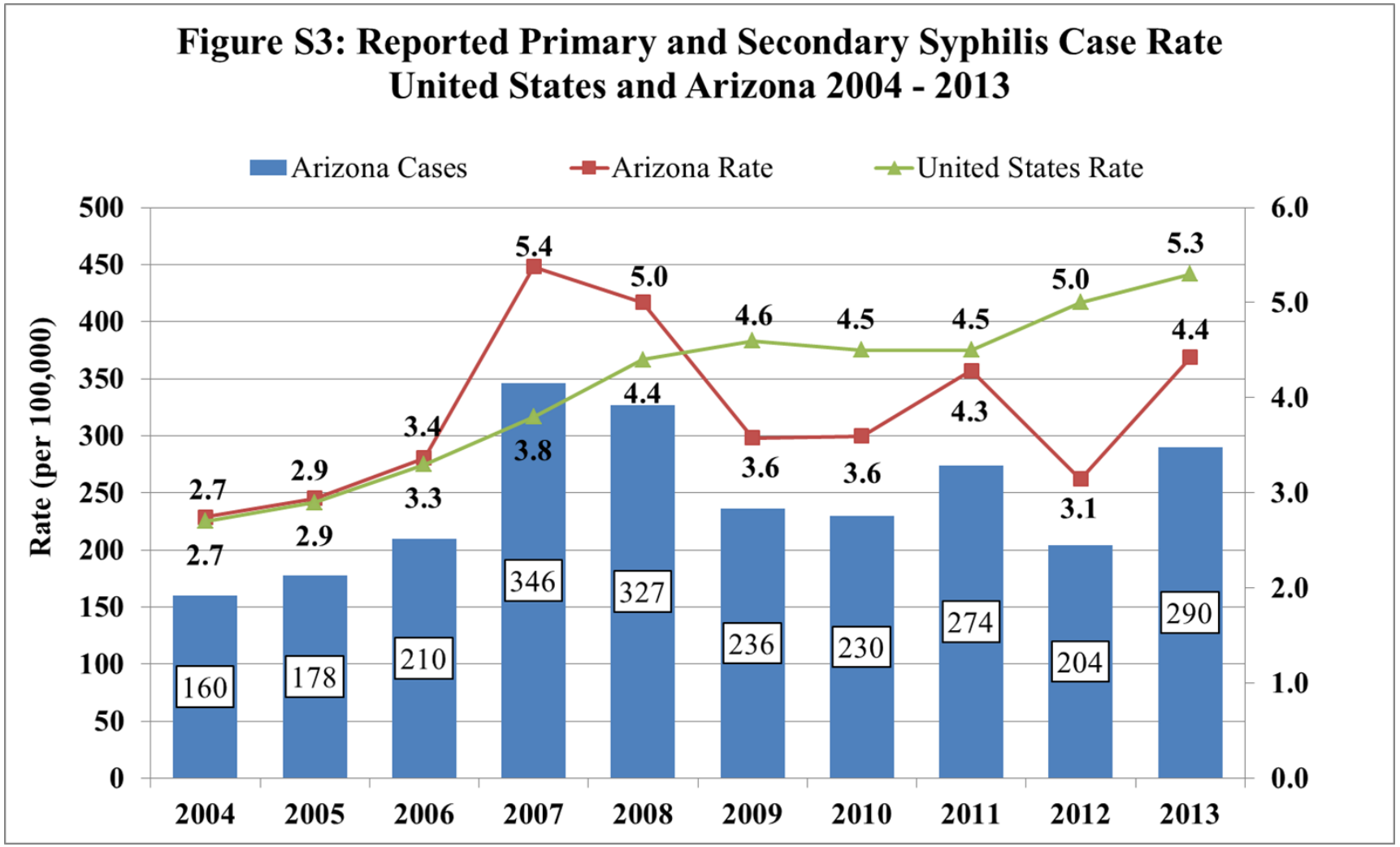
Syphilis in the US

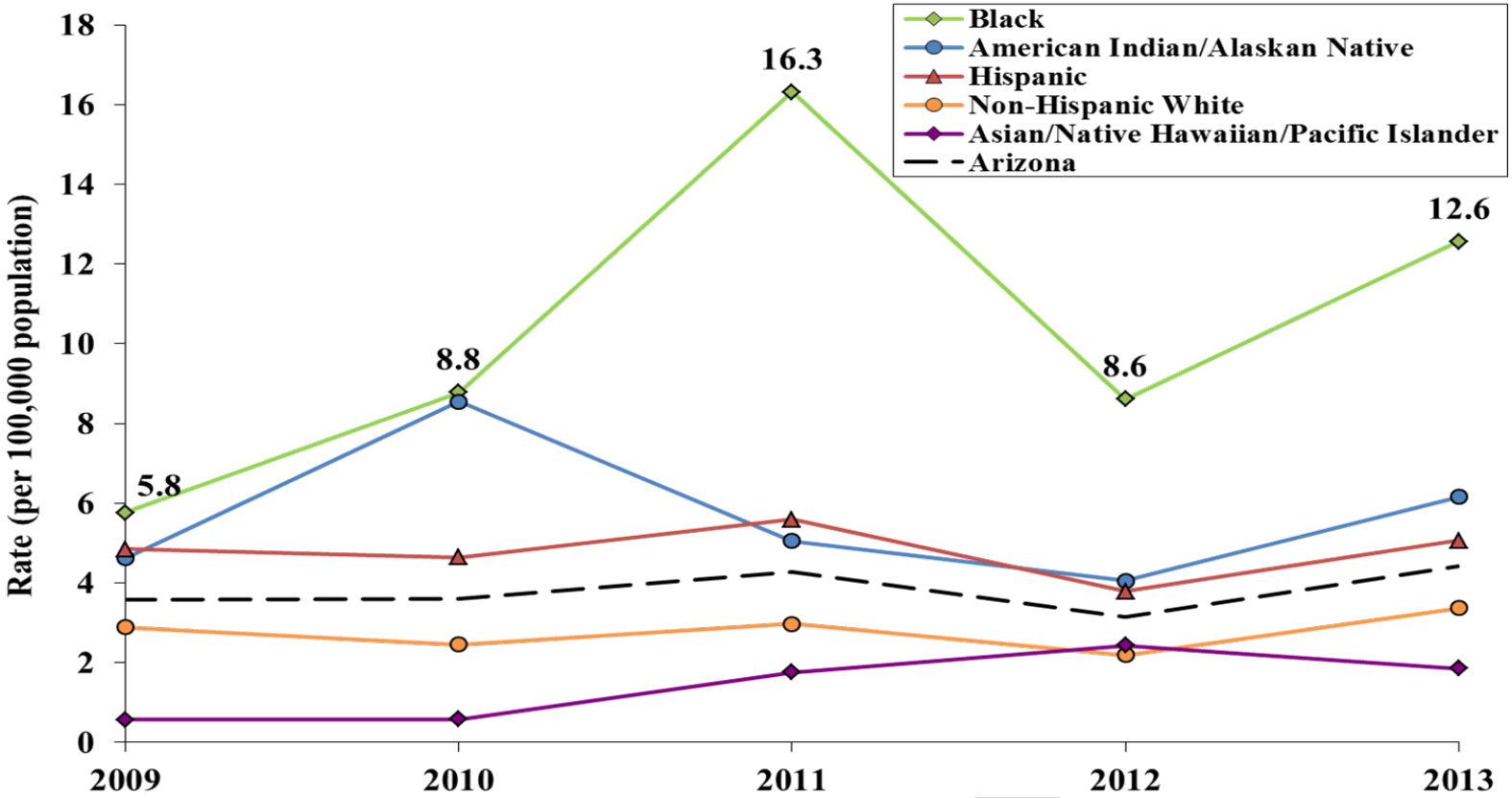


Arizona Department of Health Services

Health and Wellness for all Arizonans

Demographic Differences

Figure S6: Reported Primary and Secondary Syphilis Case Rates by Race/ Ethnicity, Arizona 2009 - 2013



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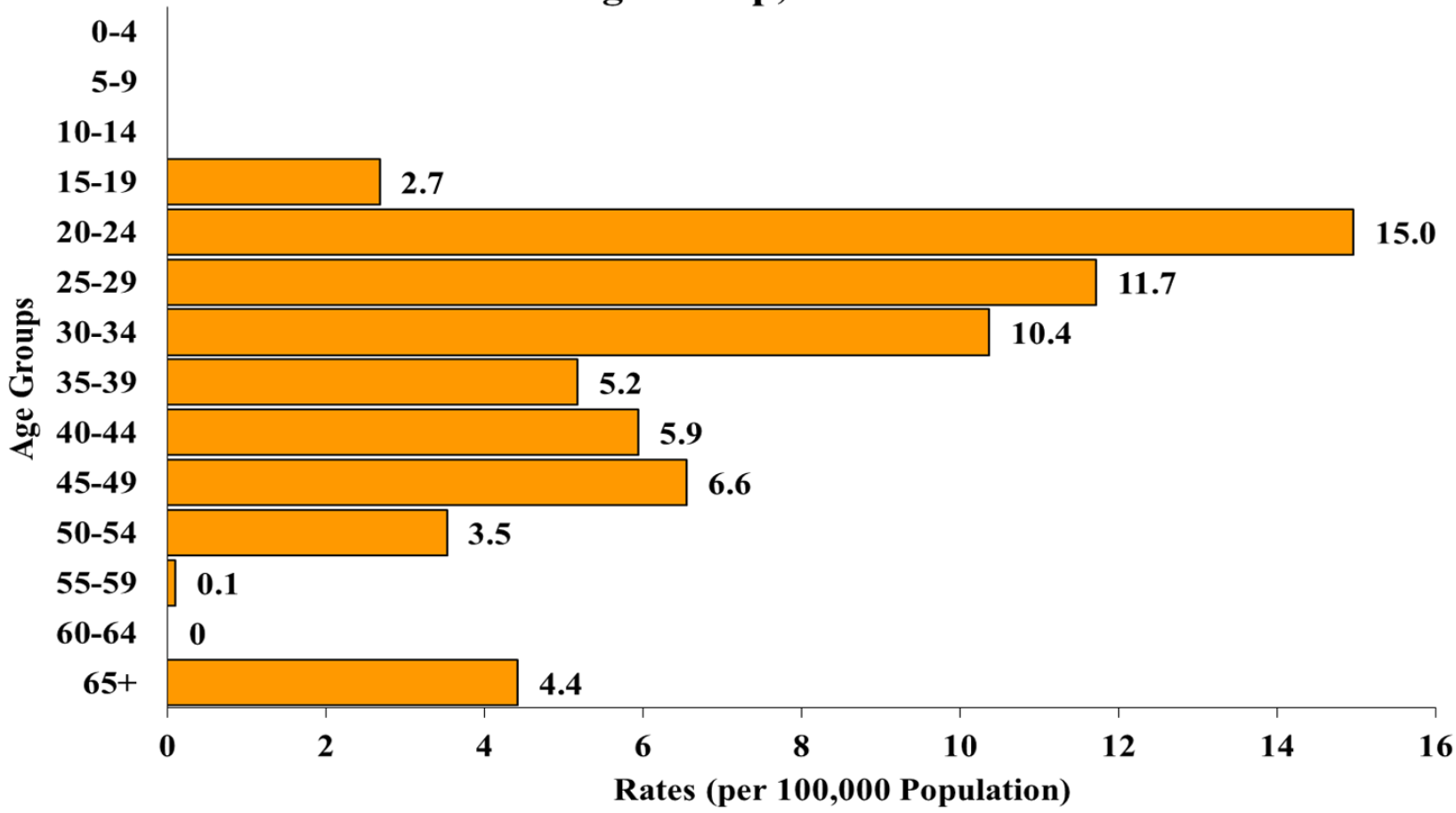
Health and Wellness for all Arizonans

Demographic Differences

Figure S5. Reported Primary and Secondary Syphilis Rates by Age Group, Arizona 2013



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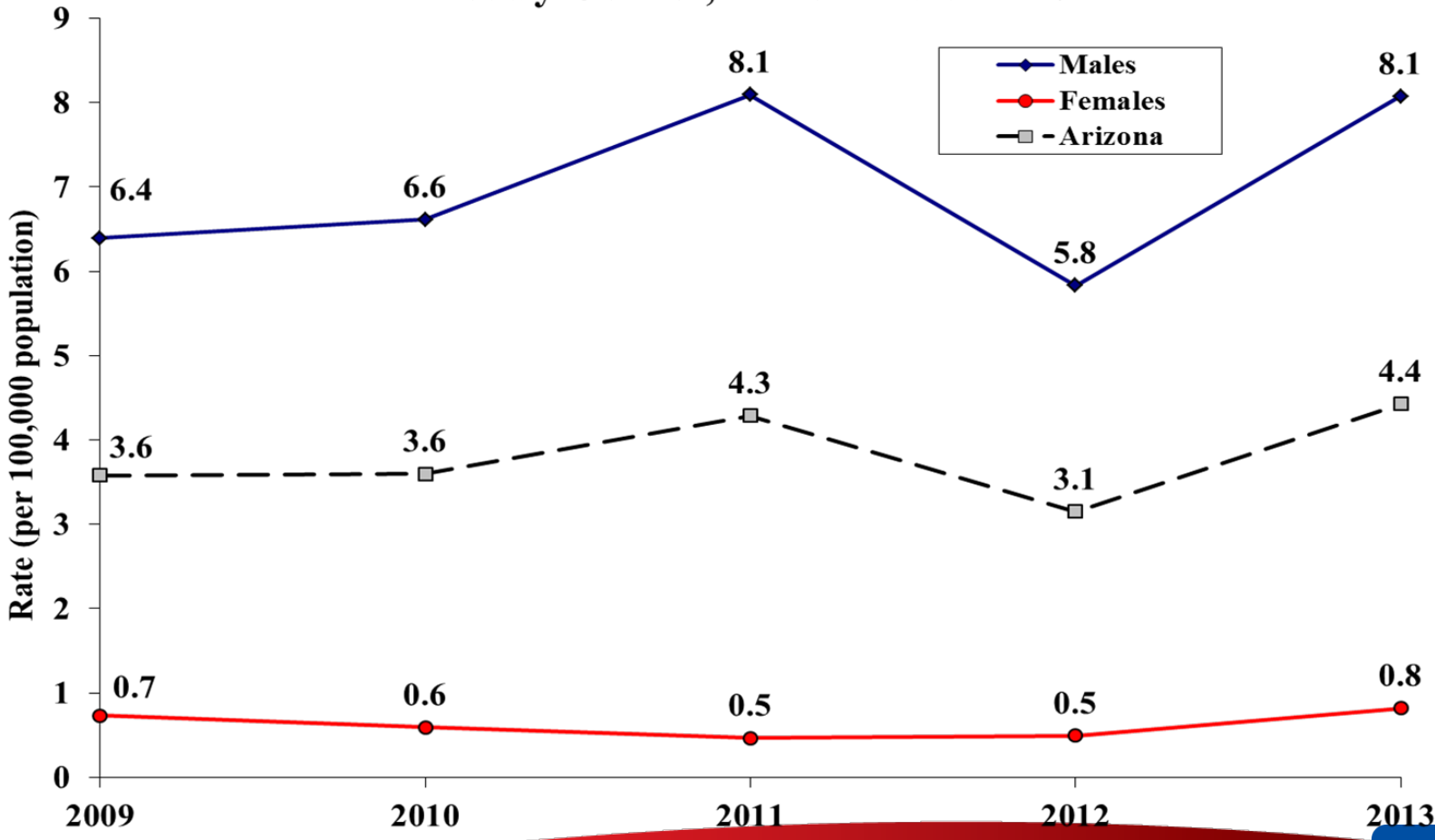
Health and Wellness for all Arizonans

Demographic Differences

Figure S5: Reported Primary and Secondary Syphilis Case Rates by Gender, Arizona 2009-2013



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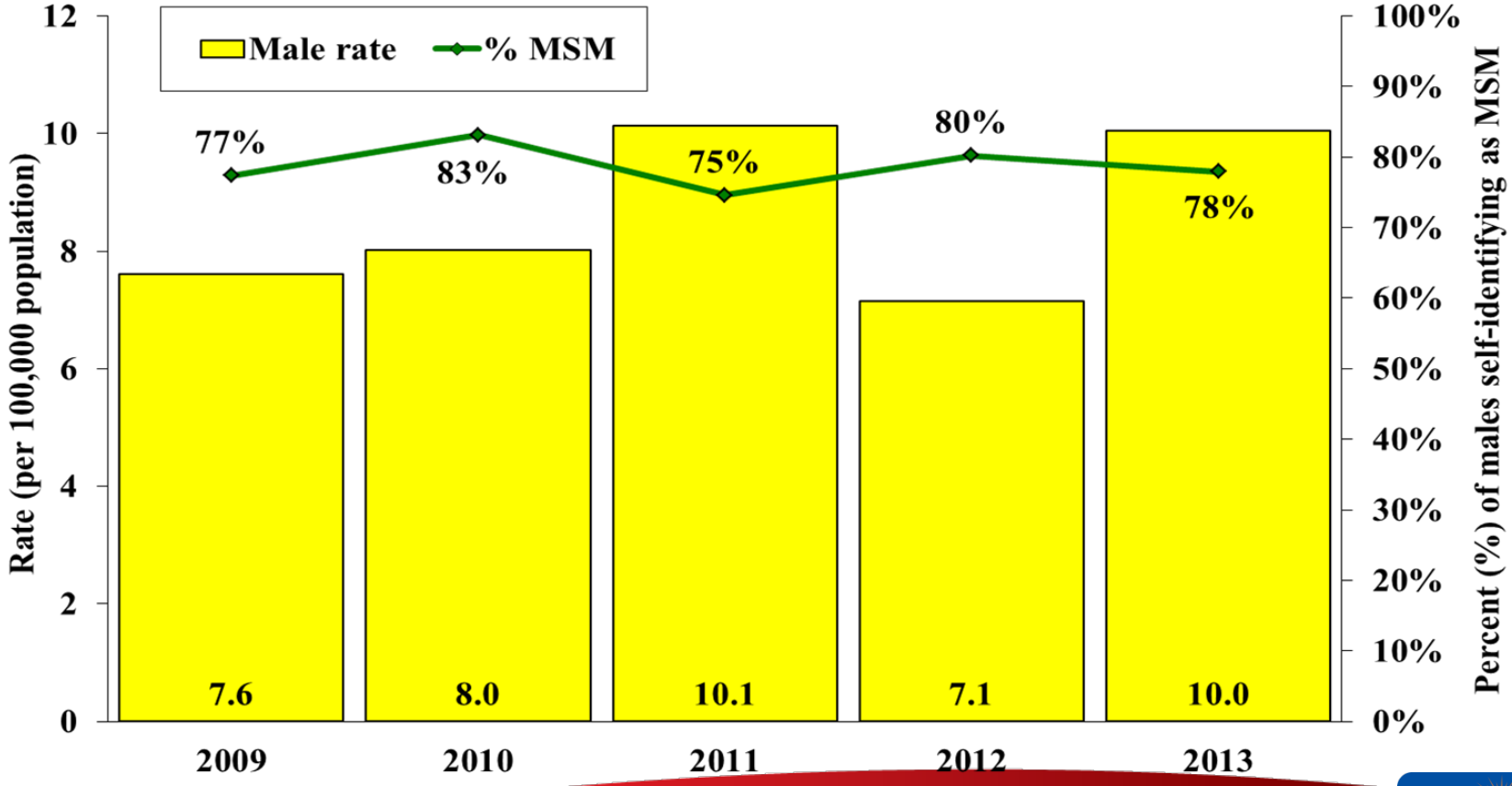
Health and Wellness for all Arizonans

Demographic Differences

Figure S7. Reported Primary and Secondary Syphilis Case among Males and the Percentage of Male Cases that Self-Identify as Men who Have Sex with Men (MSM), Maricopa and Pima Counties, 2009-2013

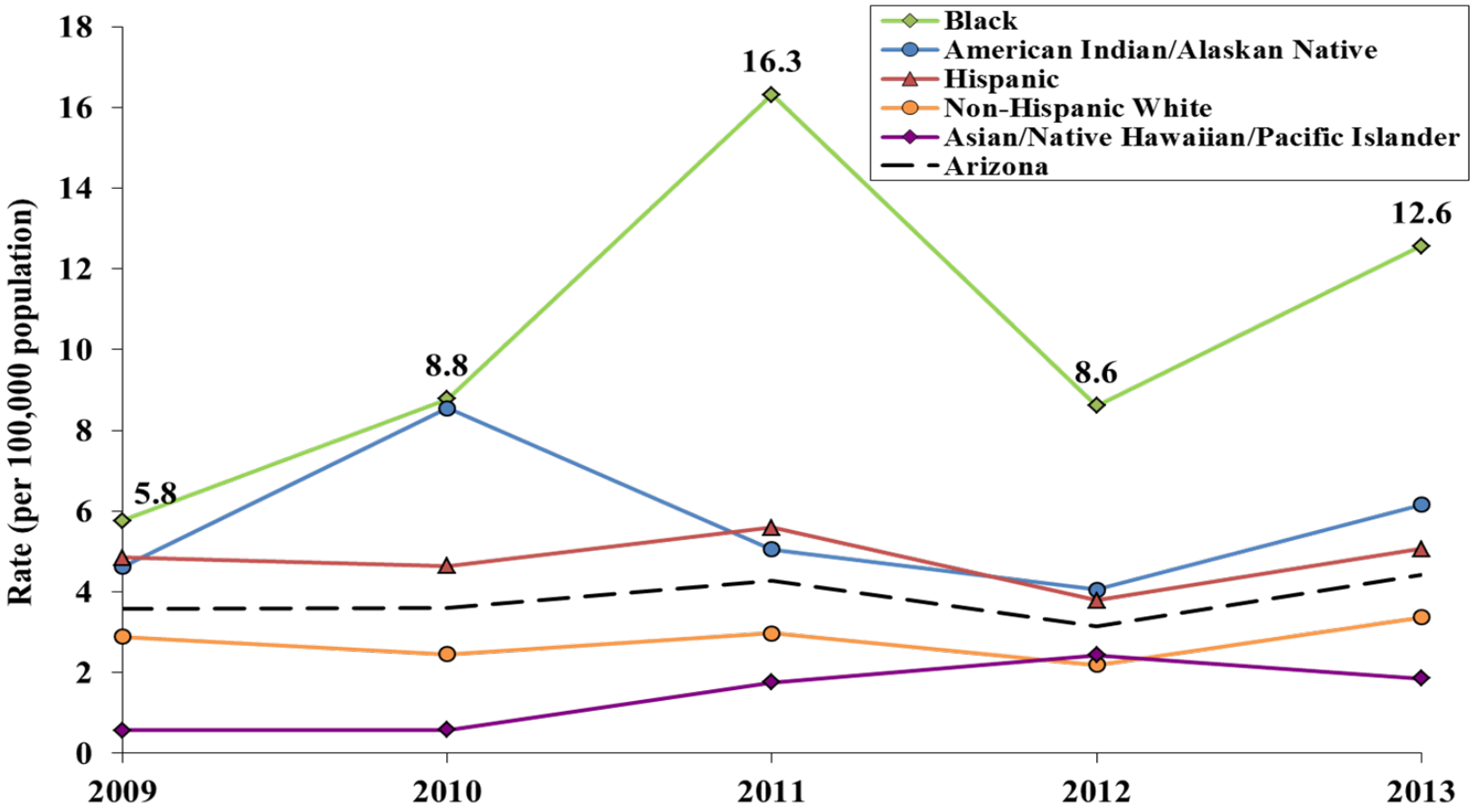


Arizona Department of Health Services

Health and Wellness for all Arizonans

Demographic Differences

Figure S6: Reported Primary and Secondary Syphilis Case Rates by Race/ Ethnicity, Arizona 2009 - 2013



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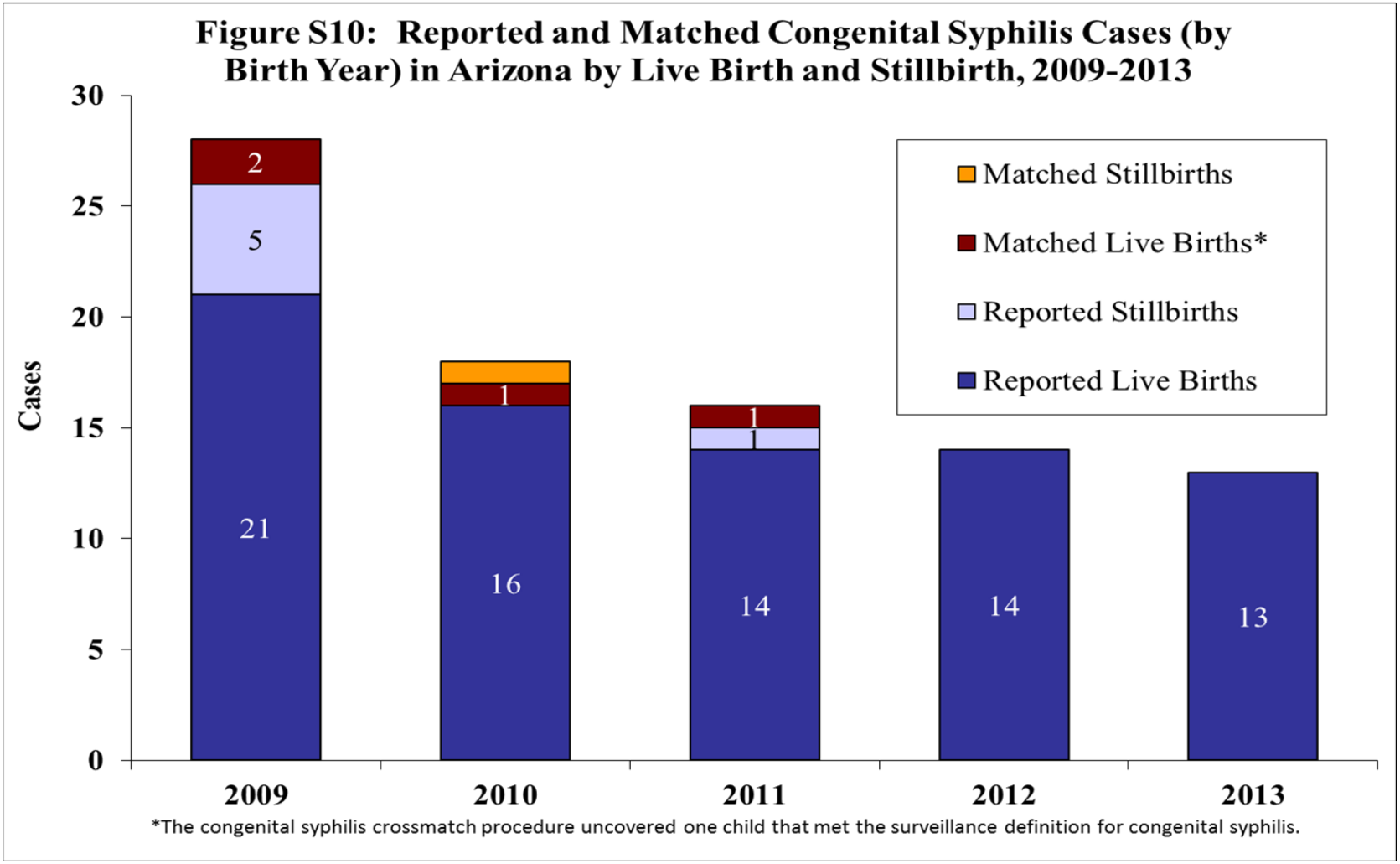
Congenital Syphilis in Arizona



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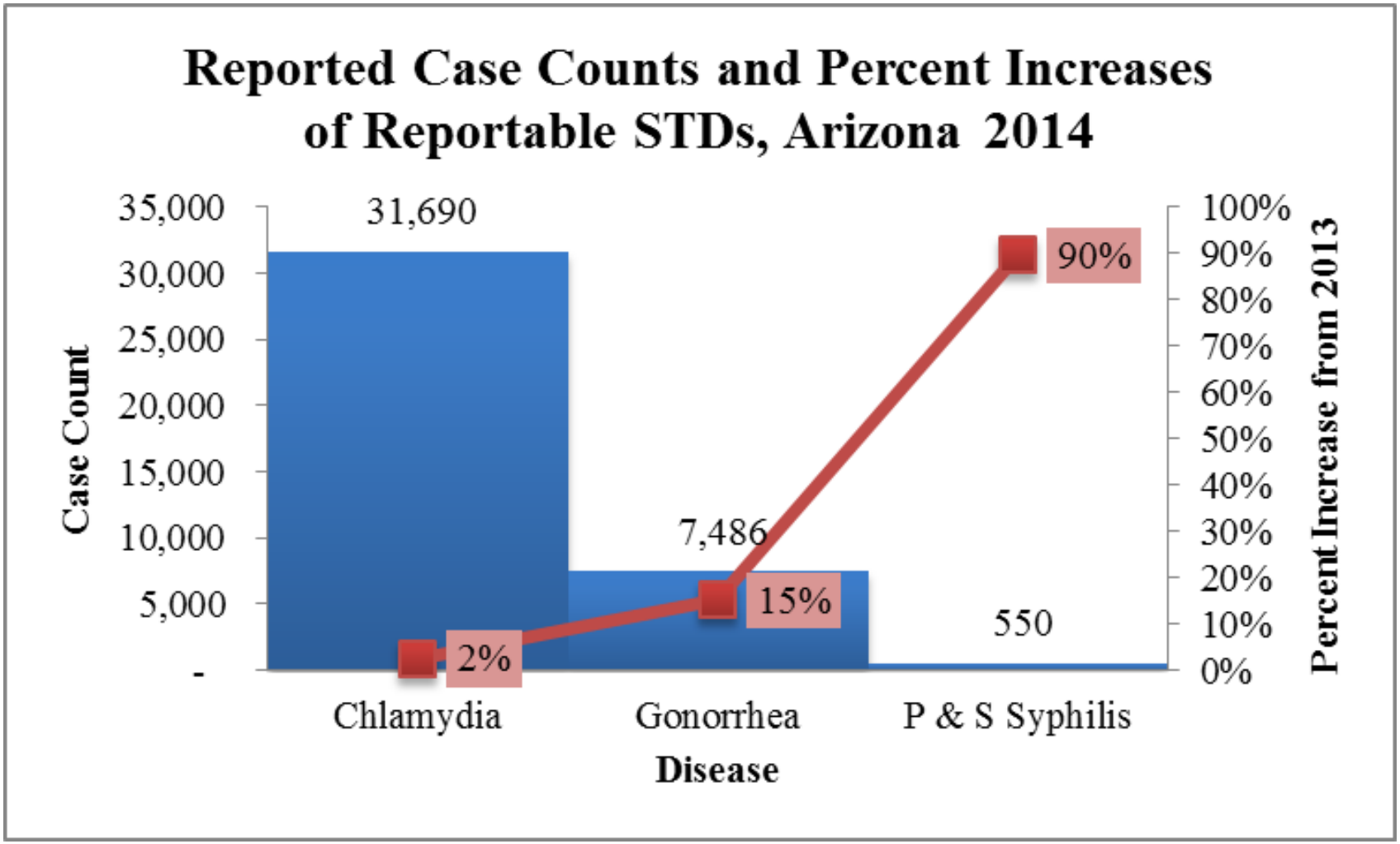
Preliminary Counts for 2014



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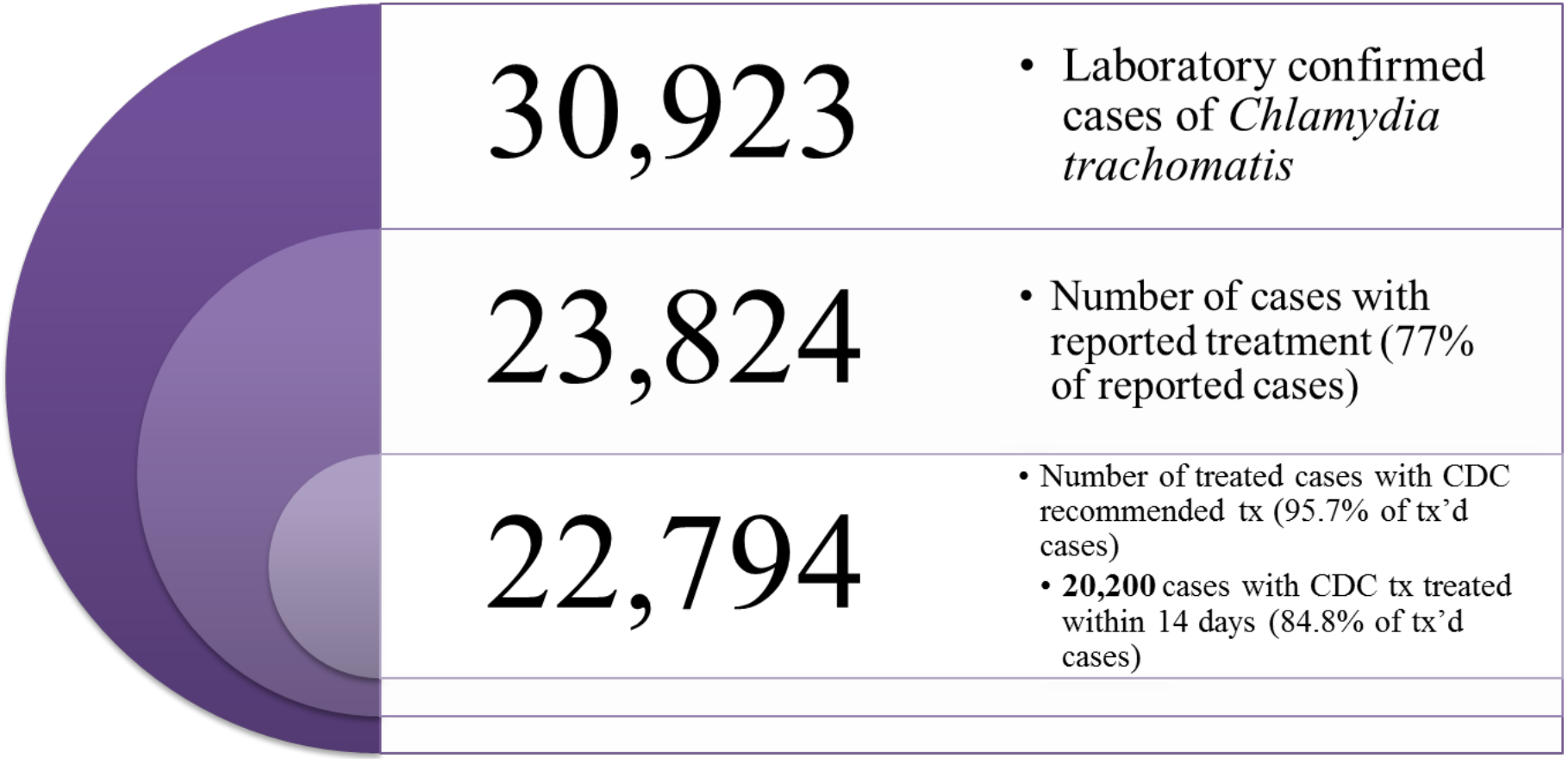
Treating Chlamydia in AZ

CDC Recommended Regimens	CDC Alternative Regimens
• **Azithromycin** 1g OR • **Doxycycline** 100mg bid/7 days	• **Erythromycin** (base) 500mg qid/7 days *OR* • **Erythromycin ethylsuccinate** 800mg qid/7 days *OR* • **Levofloxacin** 500mg daily/7 days *OR* • **Ofloxacin** 300mg bid/7 days

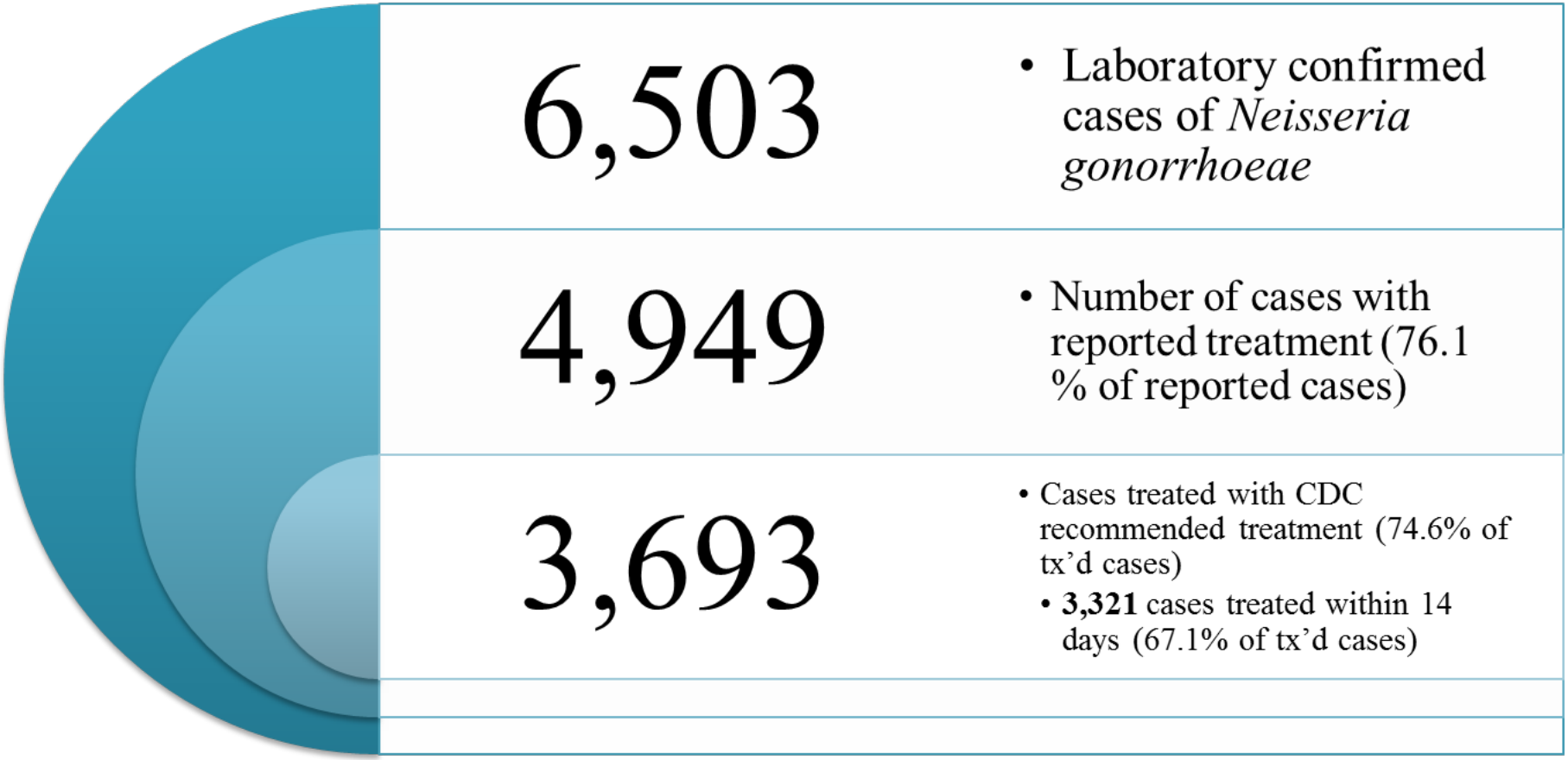
Treatment of Reported Chlamydia Cases, Arizona 2013



Treating Gonorrhea in AZ

CDC Recommended Regimen	CDC Alternative Regimens
Ceftriaxone (Rocephin) 250mg IM *PLUS* **Azithromycin** 1g **Doxycycline** 100mg bid/7 days	**Cefixime** 400mg *OR* **Ceftizoxime** 500mg IM, **Cefoxitin** 2g IM w/ Probenecid 1g, **Cefotaxime** 500mg IM *PLUS* **Azithromycin** 1g **Doxycycline** 500mg bid/7 days

Treatment of Reported Gonorrhea Cases, Arizona 2013



Questions? Concerns?

Please feel free to contact us (ADHS STD Control Program) with any questions you have regarding:

- STD Reporting
- STD Treatment
- Partner Services Referrals

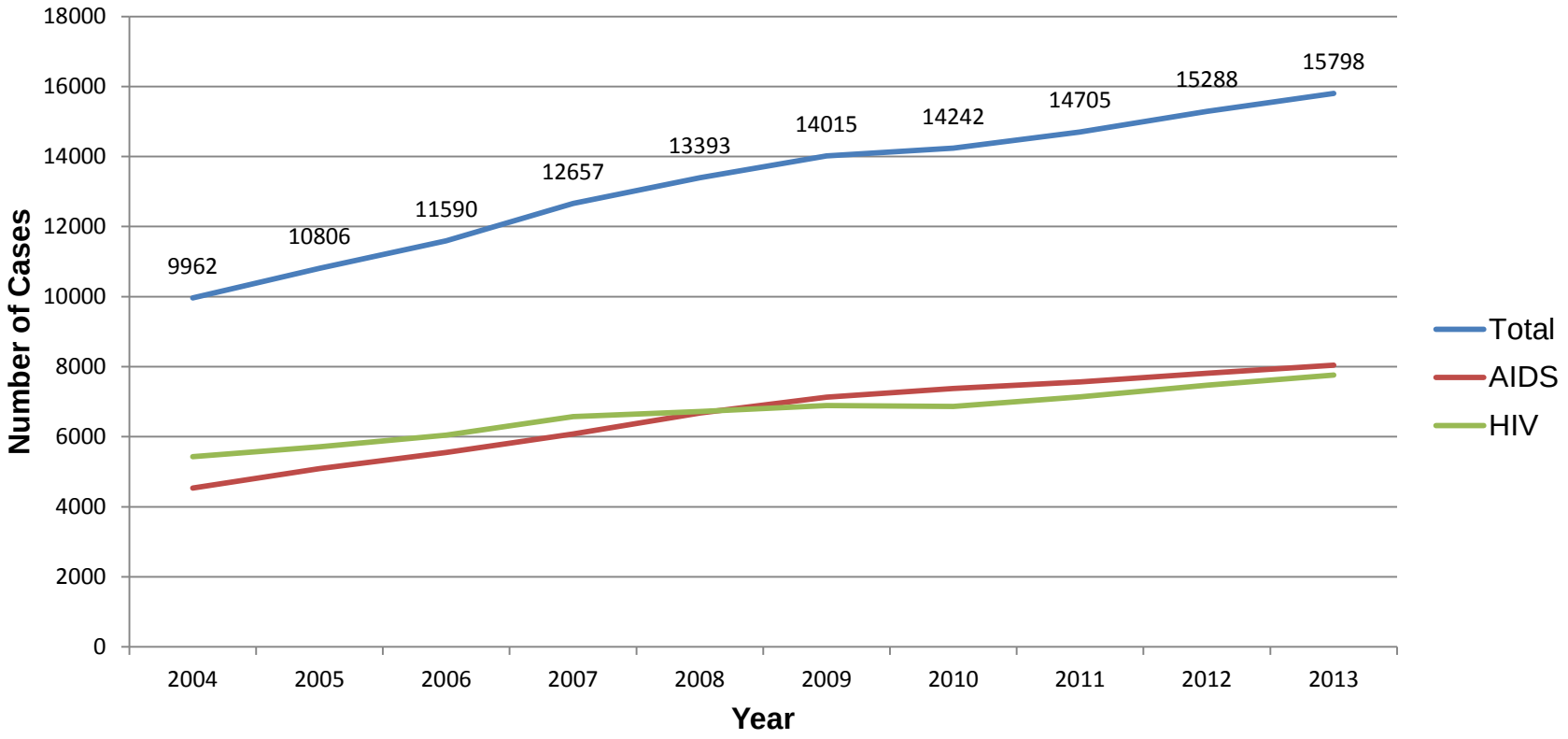
HIV EPIDEMIOLOGY IN ARIZONA

David Johns, MPH
HIV Incidence Program Coordinator
Arizona Department of Health Services – Jan, 2015

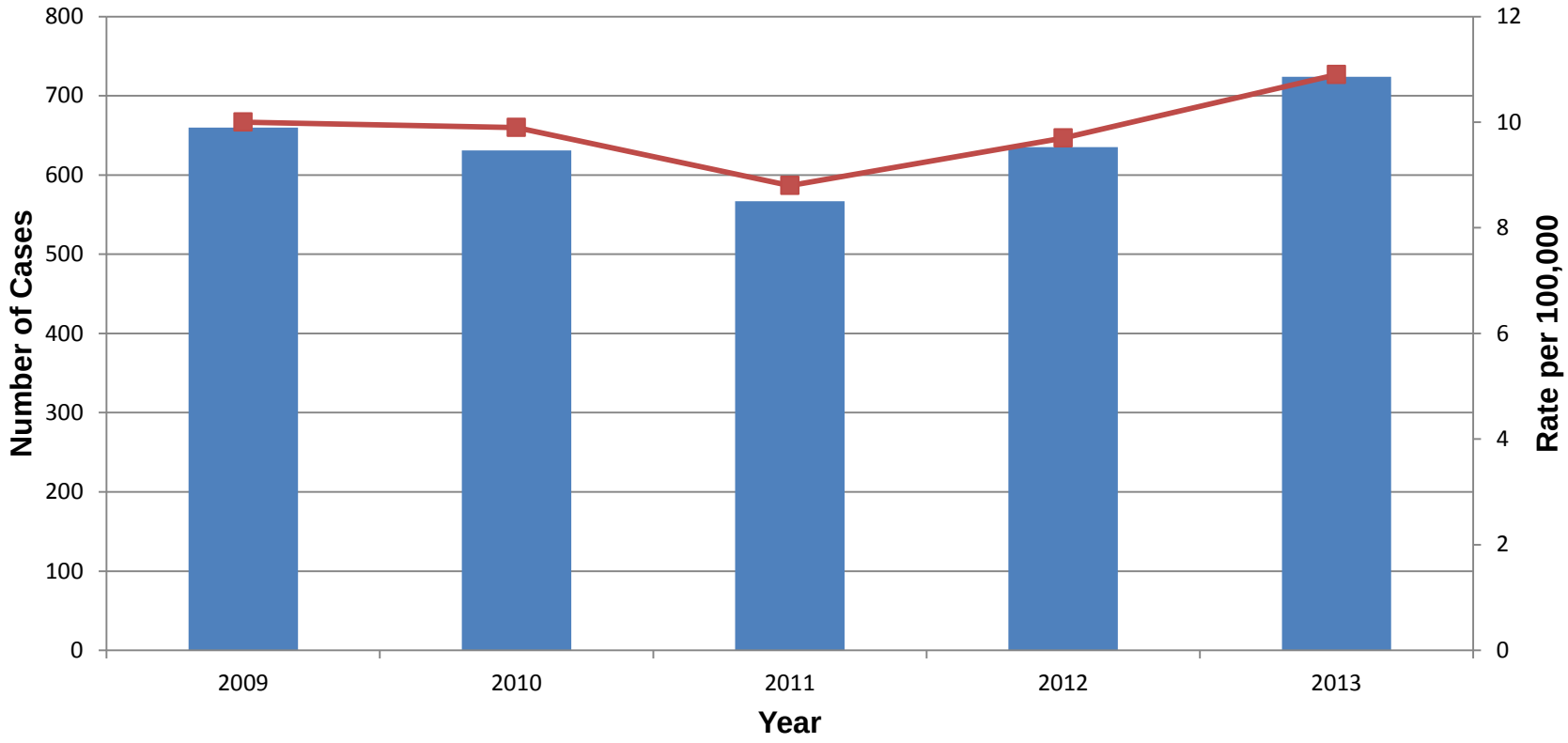
Arizona Department of Health Services

Health and Wellness for all Arizonans

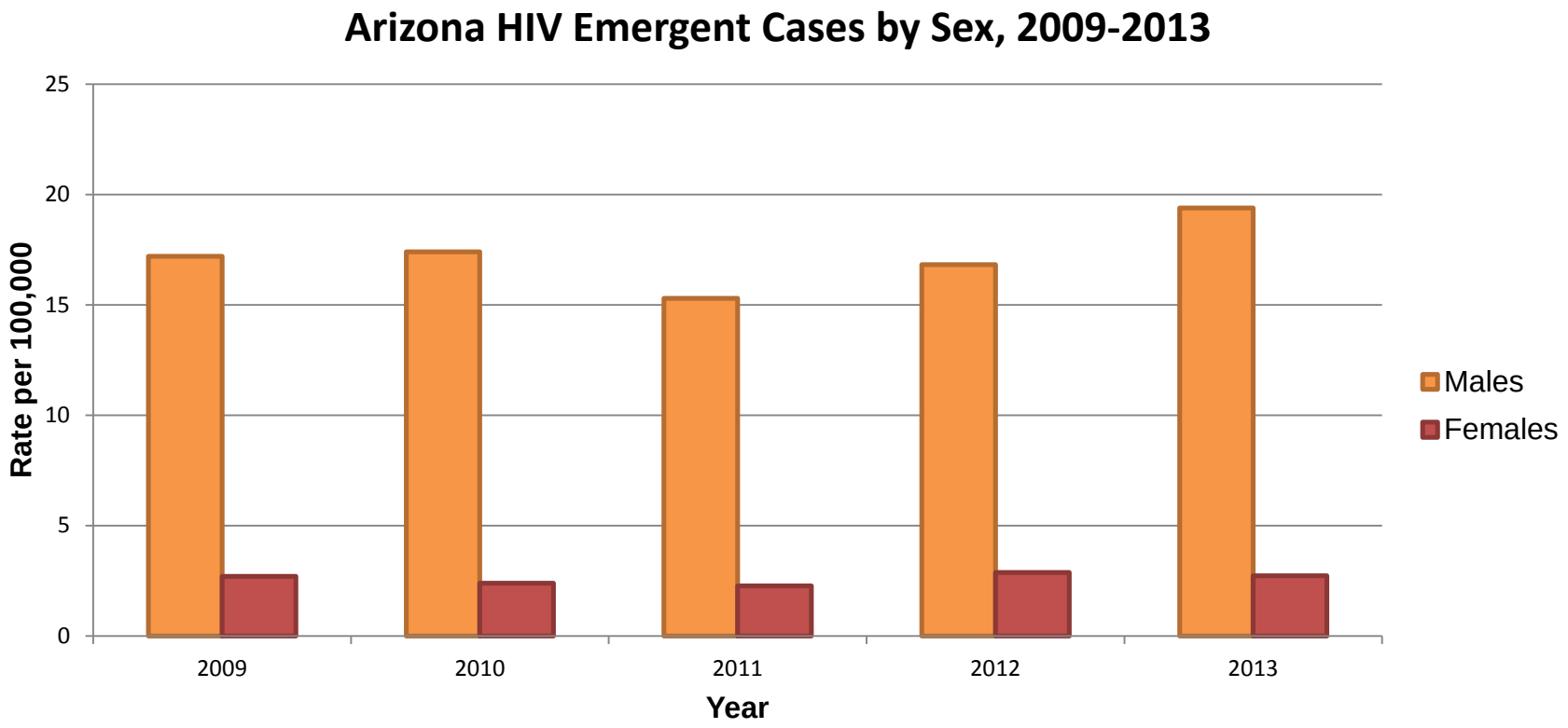
Arizona HIV/AIDS Prevalence, 2004-2013



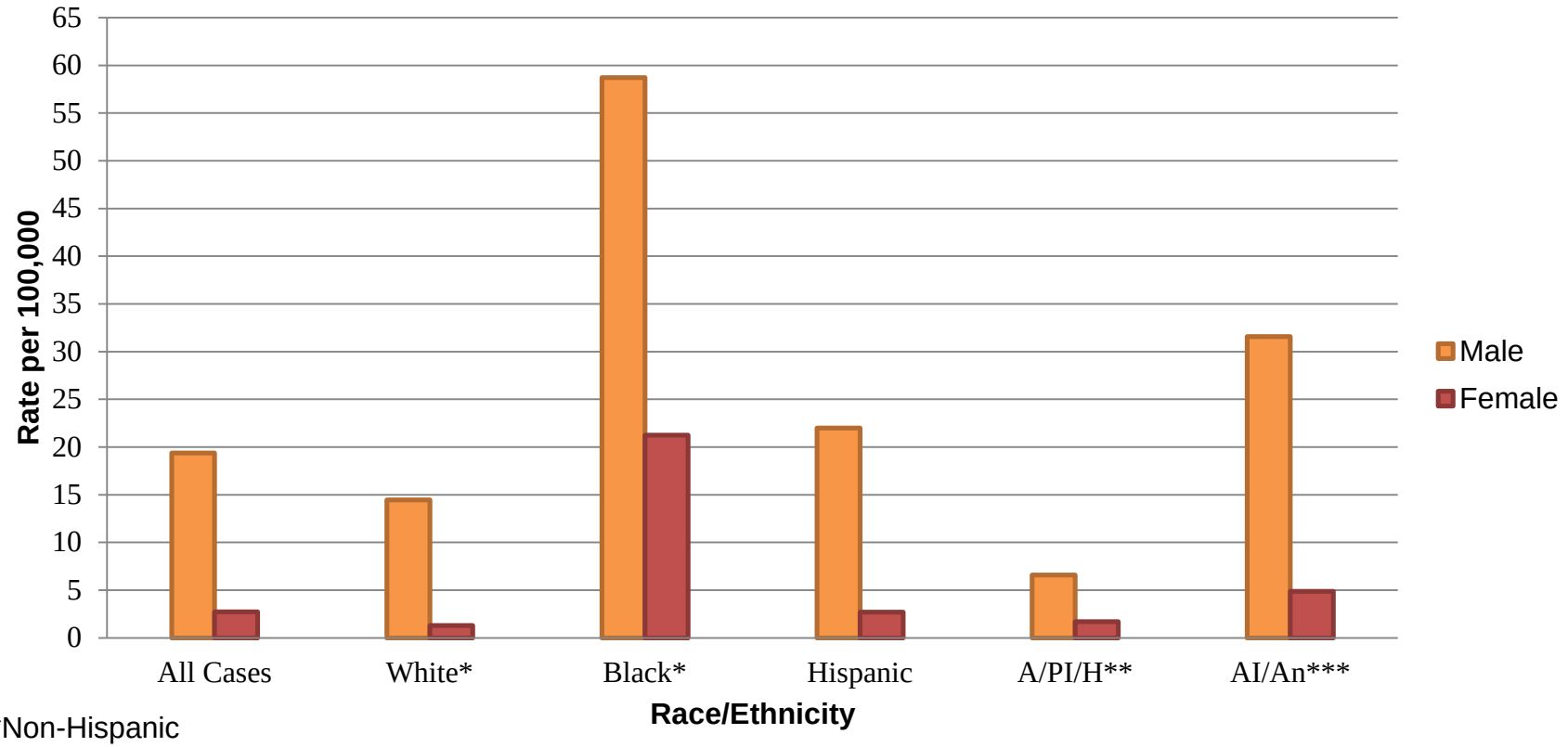
Arizona HIV Emergence, 2009-2013



Arizona HIV Emergent Cases by Sex, 2009-2013

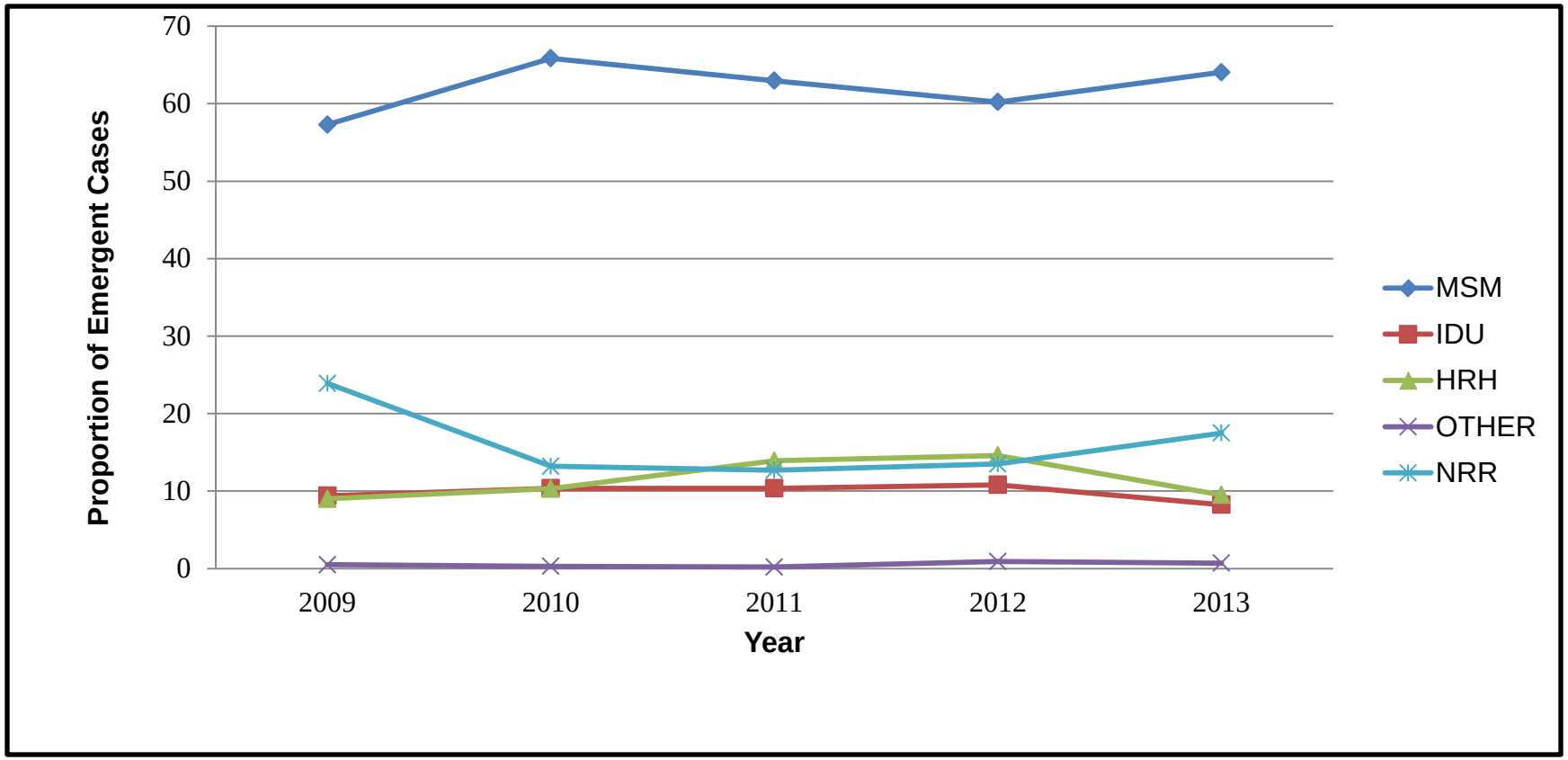


Arizona HIV Emergence Rates by Sex and Race/Ethnicity, 2013

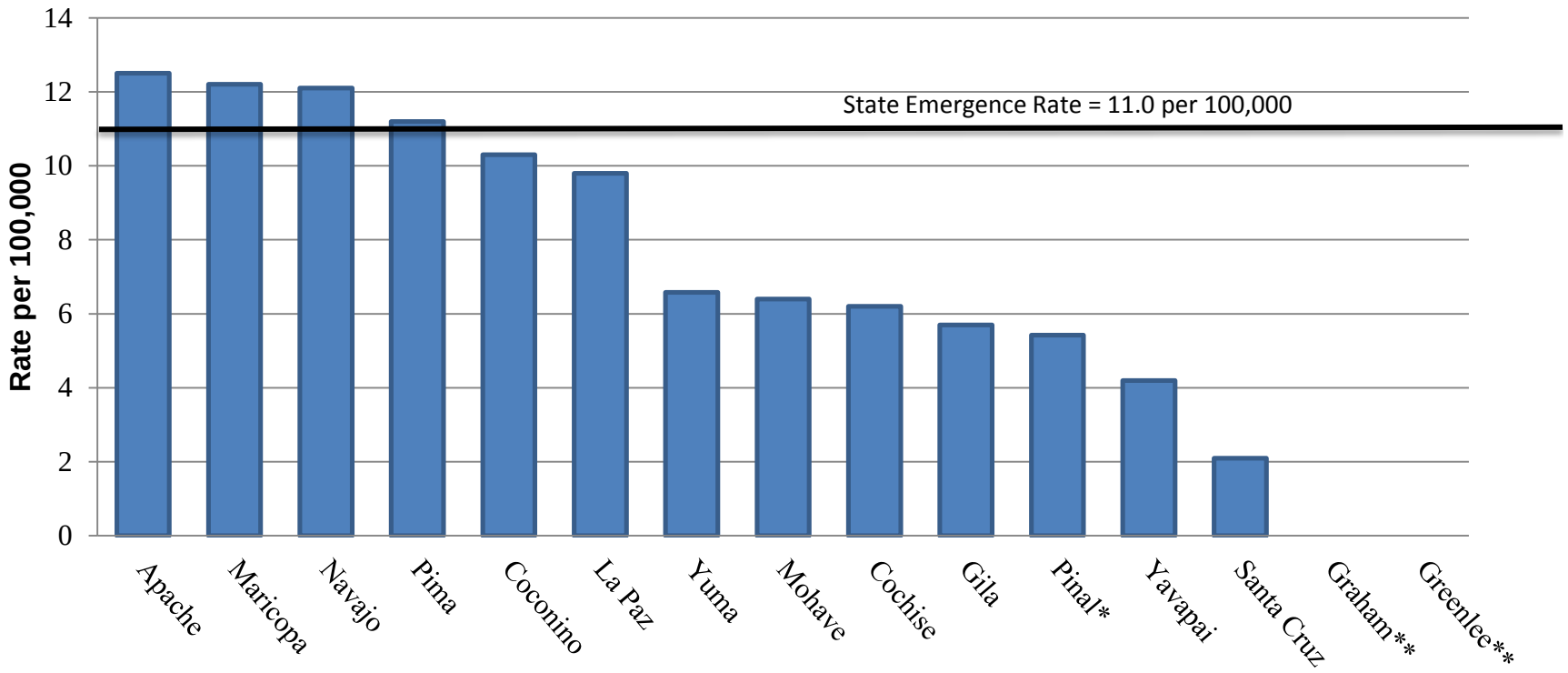


*Non-Hispanic
**A/PI/H=Asian/Pacific Islander/Native Hawaiian
***AI/AN=American Indian/Alaska Native

Arizona Emergent Cases by Reported Risk, 2009-2013



Arizona County-Specific Emergent HIV Rates, 2013



*Incarcerated cases removed. 52% of incident cases in Pinal were incarcerated at the time of diagnosis. The rate before removal was 11.3

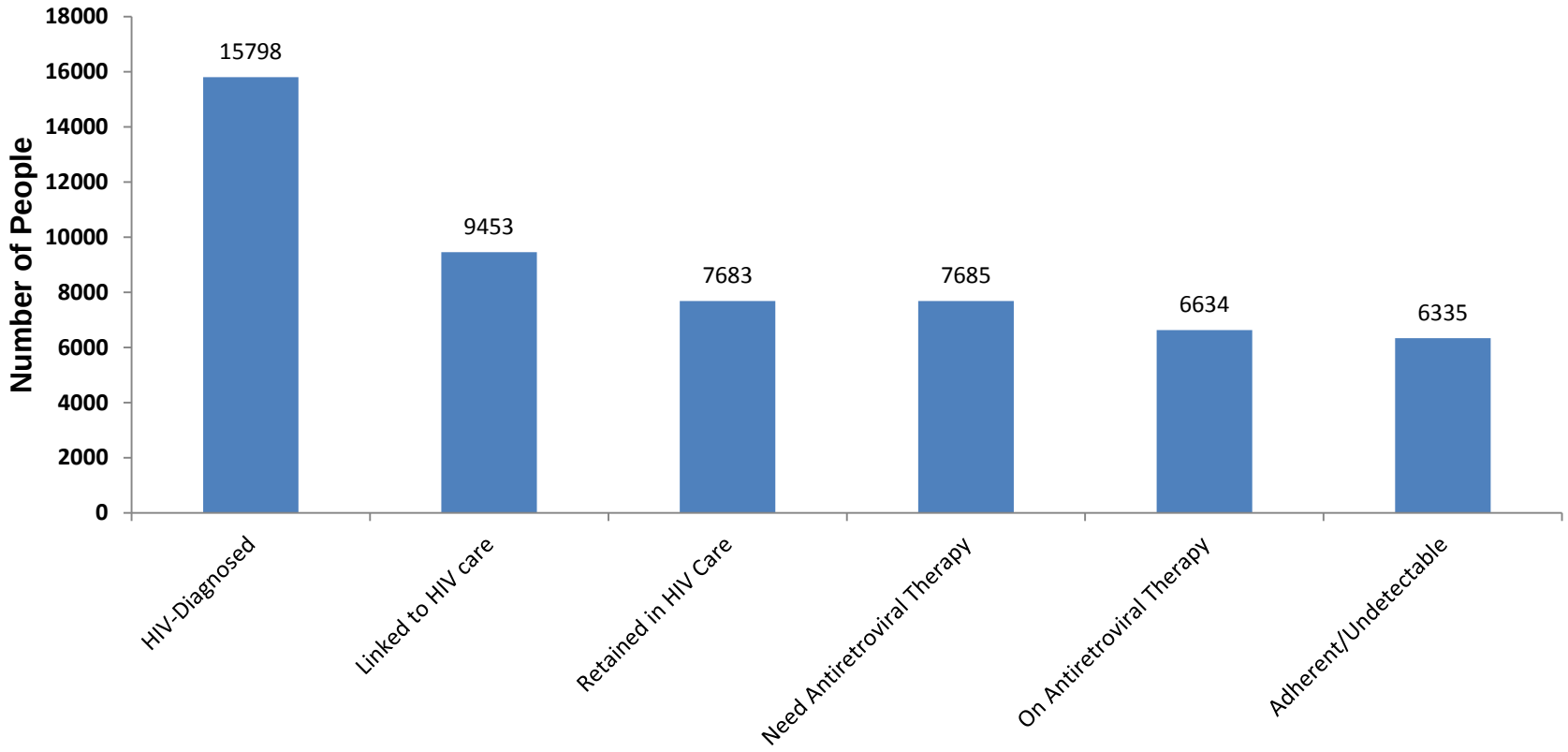
* * These counties had 0 incident cases in 2013.

Spectrum of Care Cascades

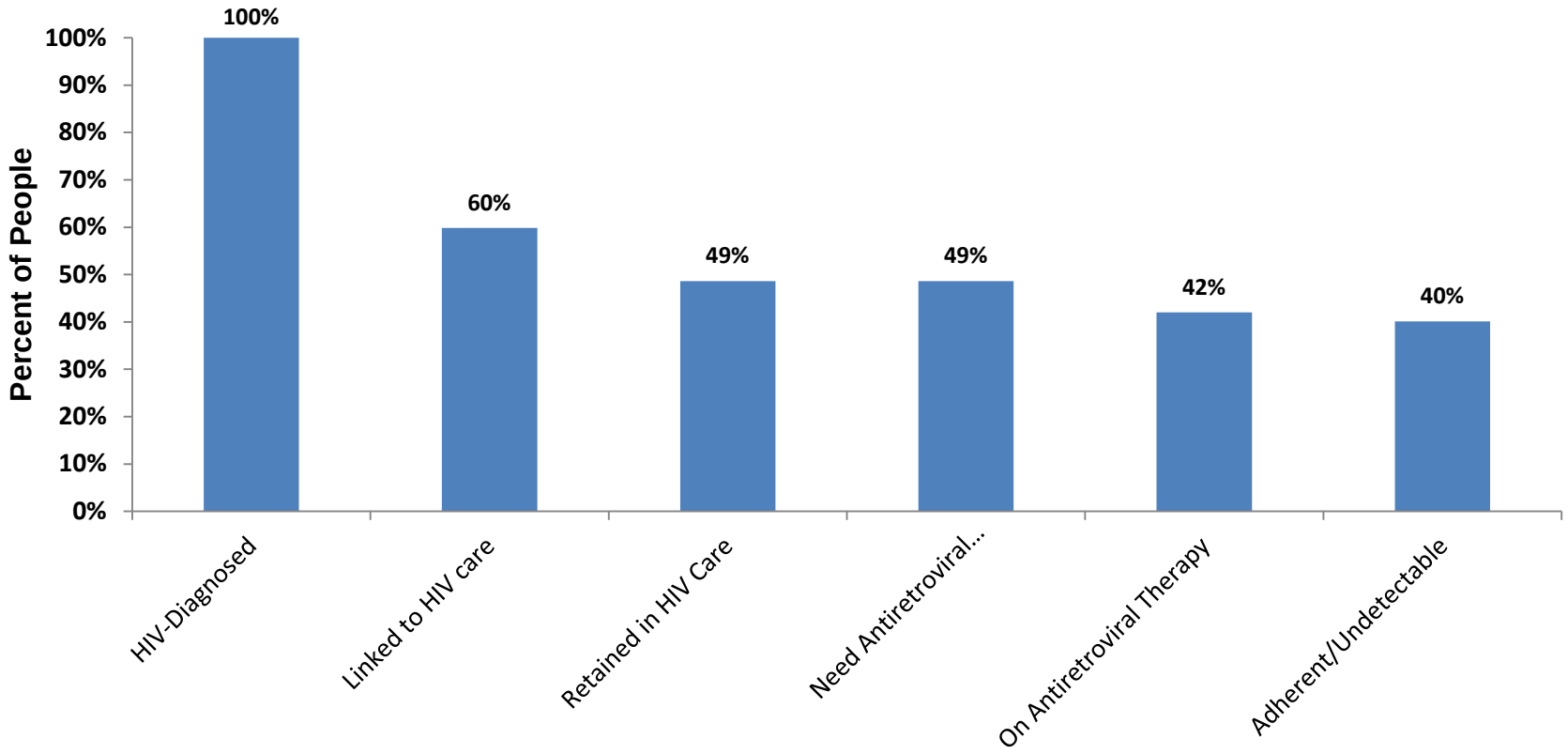
- Gives graphical representation on the spectrum of HIV care in Arizona
- 2013 spectrum of care cascades created using data from eHARS, Unmet Needs, and ADAP.
  - 2013 Arizona prevalent cases (alive through 2013)

- Disclaimer: Cascade data is limited by the data we receive

Spectrum of Care Cascades, 2013 Prevalence Cases



Spectrum of Care Cascades, 2013 Prevalence Cases



HOW YOU CAN HELP ARIZONA'S EPIDEMIOLOGY PROGRAM?

- What we need:
  - Negative test reporting, including CD4 and undectable viral loads, which are currently not required to be reported by state law.
  - Complete and submit Communicable Disease Report form.

HIV Prevention

Required Components

HIV Testing

Emergency Department, Integrated Health Home and Healthcare
Opt-Out Screening
Urban and Rural Testing Programs
Partner Services
Linkage to Care
4th Generation Testing
Acute Case Identification
Behavioral Health Testing Partnership

Comprehensive Prevention with Positives

Partner Services to all Positives (original and ongoing)
Linkage to Care- Initial w/in 90 days, Ongoing Re-Engagement to Care Systems
Referral and Linkage to Other Medical and Social Services
Evidence-Based Targeted Behavioral Interventions

Policy Initiatives

Sharing of Epidemiologic Data
Opt-Out Testing in Emergency Departments and Healthcare Settings (who currently do not offer routine testing)
In Support of Adherence to HIV-Specific Medical Care

Condom Distribution

Ryan White Providers and Case Managers
Pharmacies and FQHCs
Prevention Funded Programs
Targeted Community Partners
IDU and Behavioral Health Services
Governmental and Tribal Agencies
Colleges and Universities

Required Program Activities

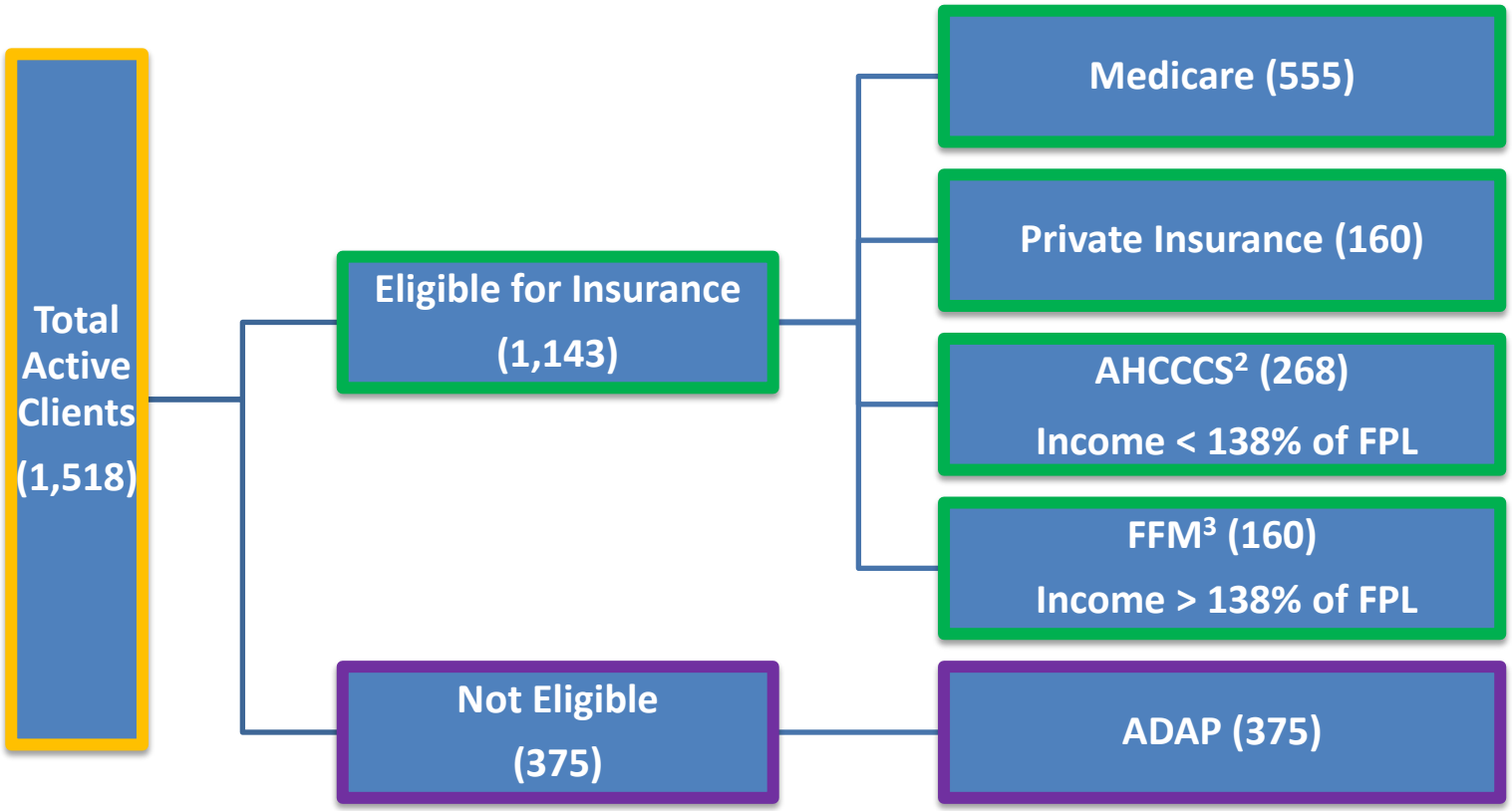
HIV Prev Planning
Statewide Advisory Group- Integrated Prevention and Care Planning
Jurisdictional Plan

Program Planning M&E, QA
Comprehensive Program Plan/Program Improvement Plan
Data Quality
Program Monitoring
Site Visits and Communication
Materials Review
Surveillance Data Use for Program Improvement

Capacity Building & TA
Integrated HIV Symposium, Contractors' Meetings
Training and CRIS Requests for CDC Supported Assistance
TA- All Required Components and Program Activities and Additional Topics
Develop Collaborations and Referral Networks
Training to Medical Providers referred to AZ AIDS Education and Training Center

Social marketing media and Community Mobilization
Use of CDC developed campaigns "Know Your Status" for Targeted Populations and "Speak Out" Anti-Stigma Campaign
National HIV Testing Day (June 27) and National Latino AIDS Awareness Day (Oct 15)
Internal New Media Options
Community mobilization through partnerships, collaborations and involvement of community members

Estimated Number of ADAP Clients by Insurance Type January 1, 2016[1]



1. Estimated based on enrollment data as of January 8, 2015
2. Clients with SSN and income under 138% of the Federal Poverty Level (FPL) will be eligible for AHCCCS/will not be enrolled in ADAP
3. FFM (Federally-facilitated Marketplace): Has SSN and income greater than 138% of FPL

Resources

- HIV Surveillance and Epidemiology Program
  - http://azdhs.gov/phs/edc/odis/hiv-epidemiology/index.php
- HIV Prevention Program
  - http://azdhs.gov/phs/hiv/index.htm
- Ryan White Part B HIV Care and Services Program
  - http://azdhs.gov/phs/edc/odis/hiv-care/index.php

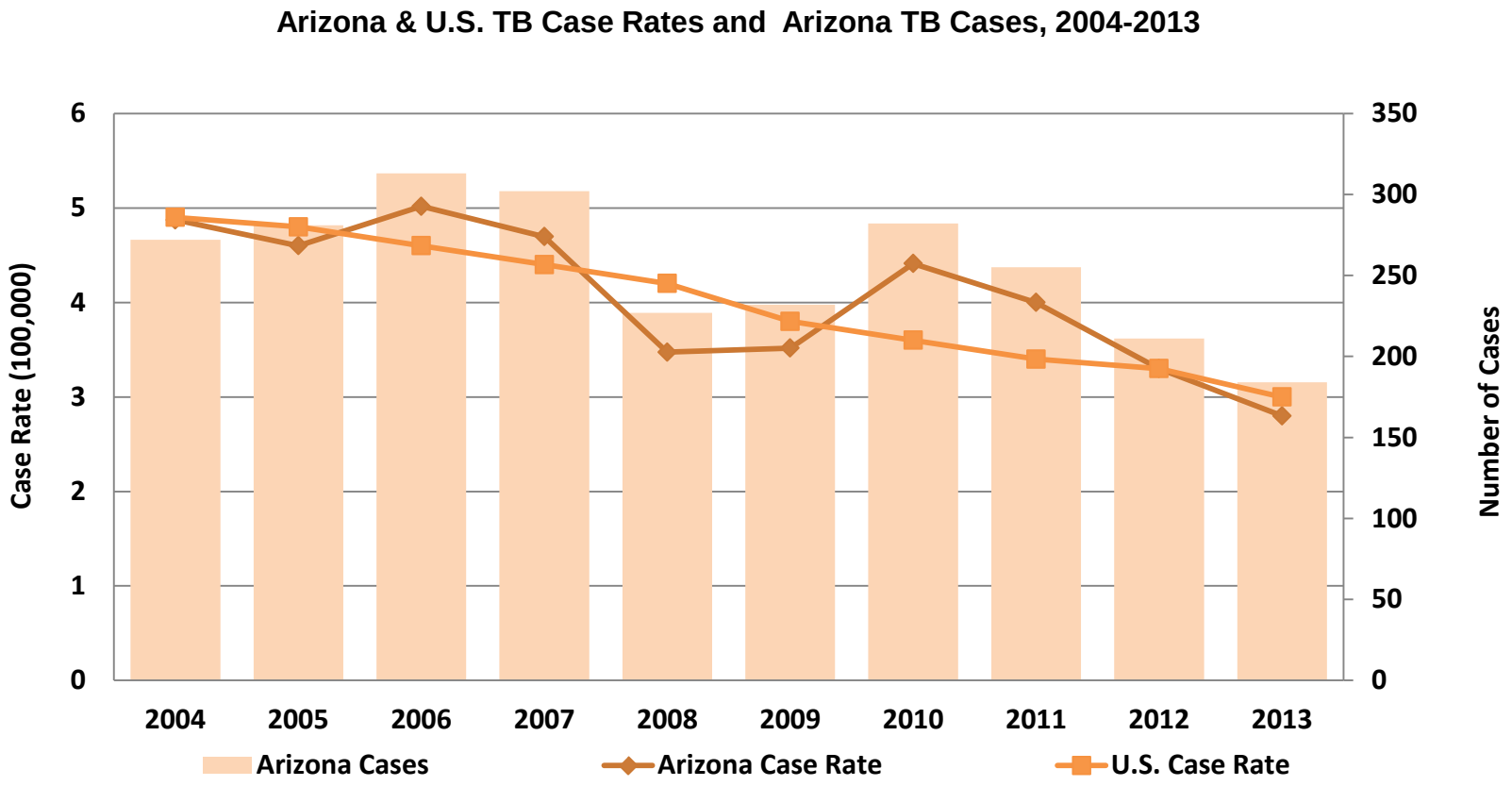
Questions?

Tuberculosis in Arizona

Tuberculosis Control Program

Arizona Department of Health Services

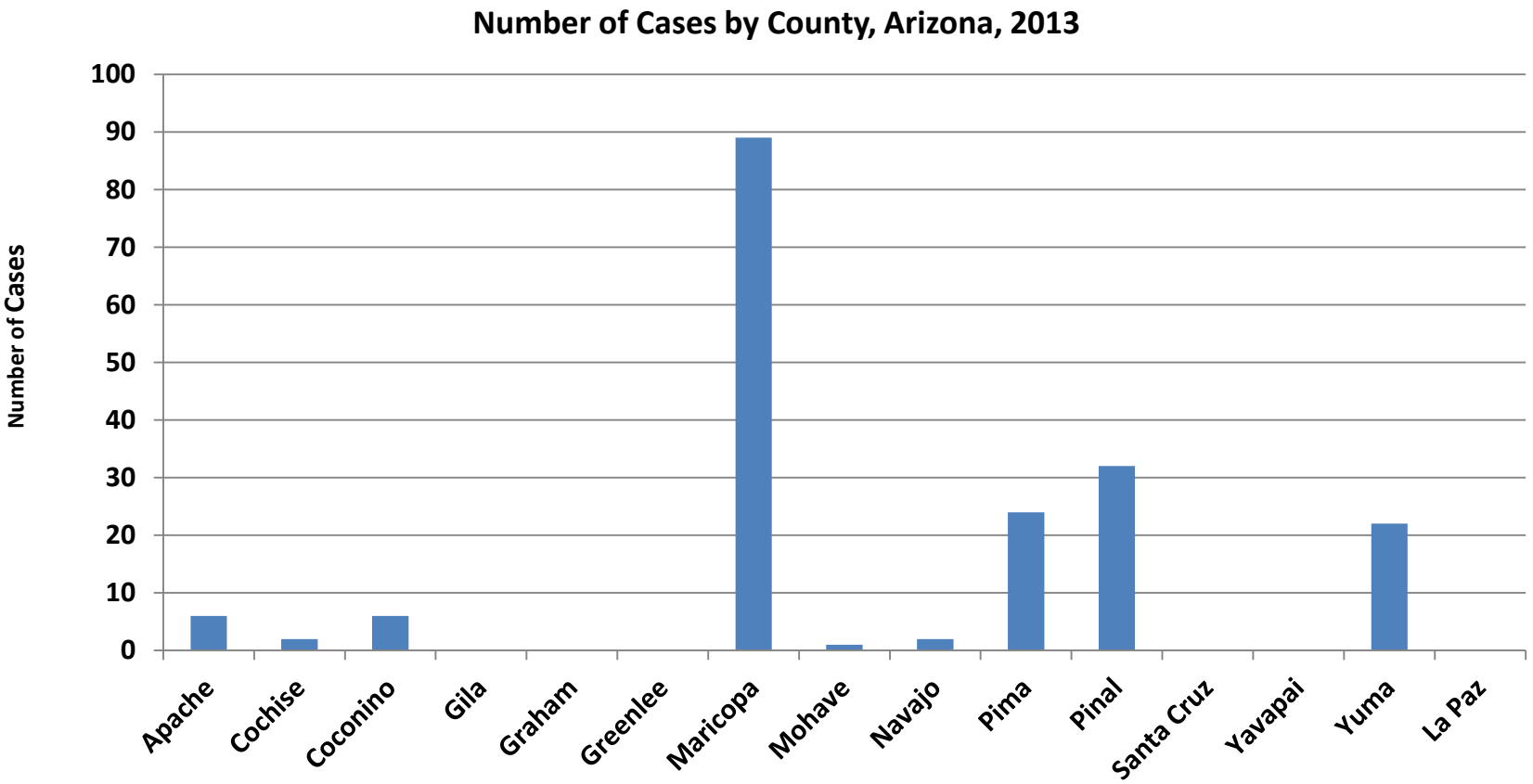
TB Case Rates per 100,000 population, Arizona & U.S., 2004 - 2013



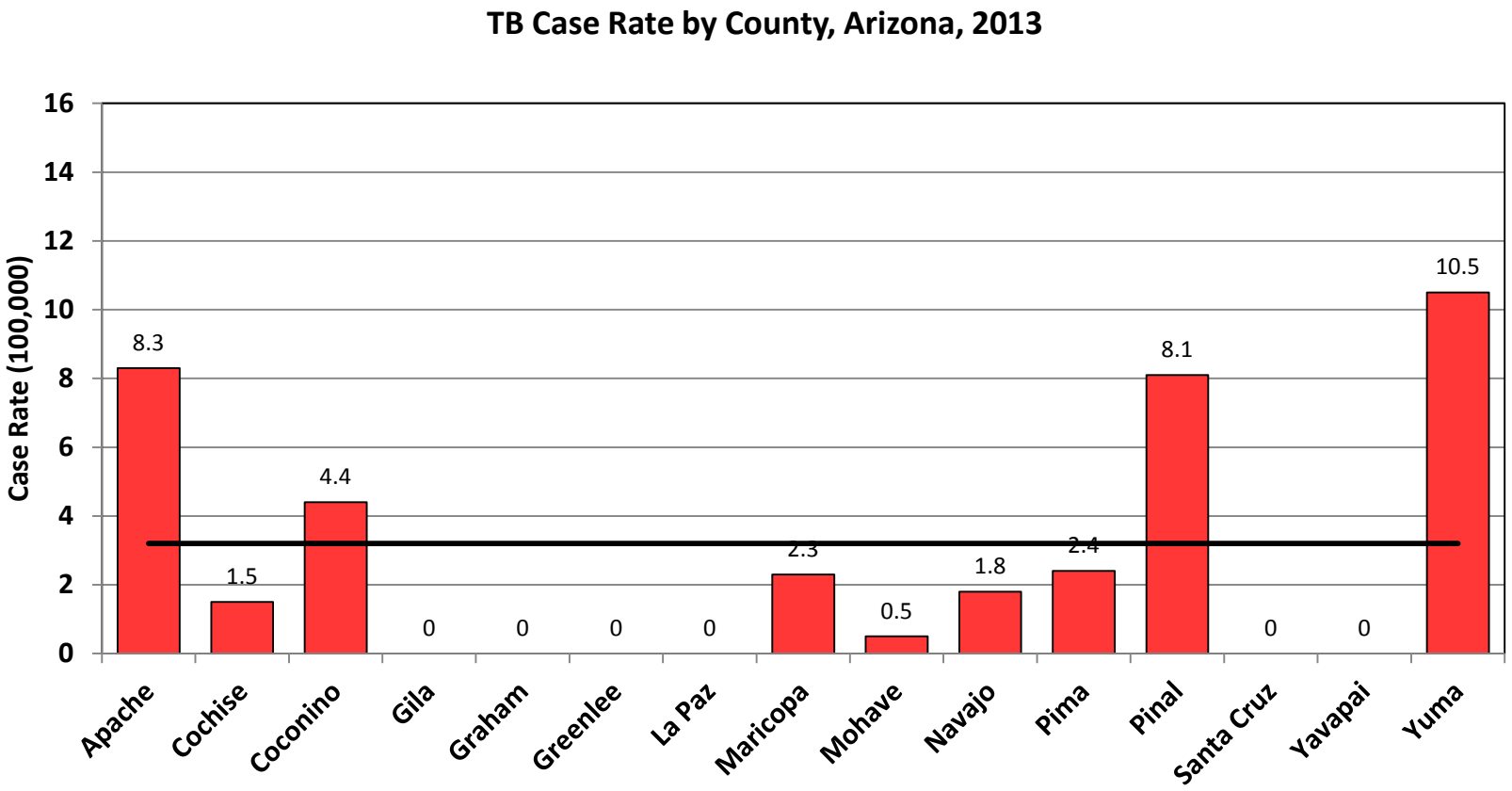
Arizona Department of Health Services

Health and Wellness for all Arizonans

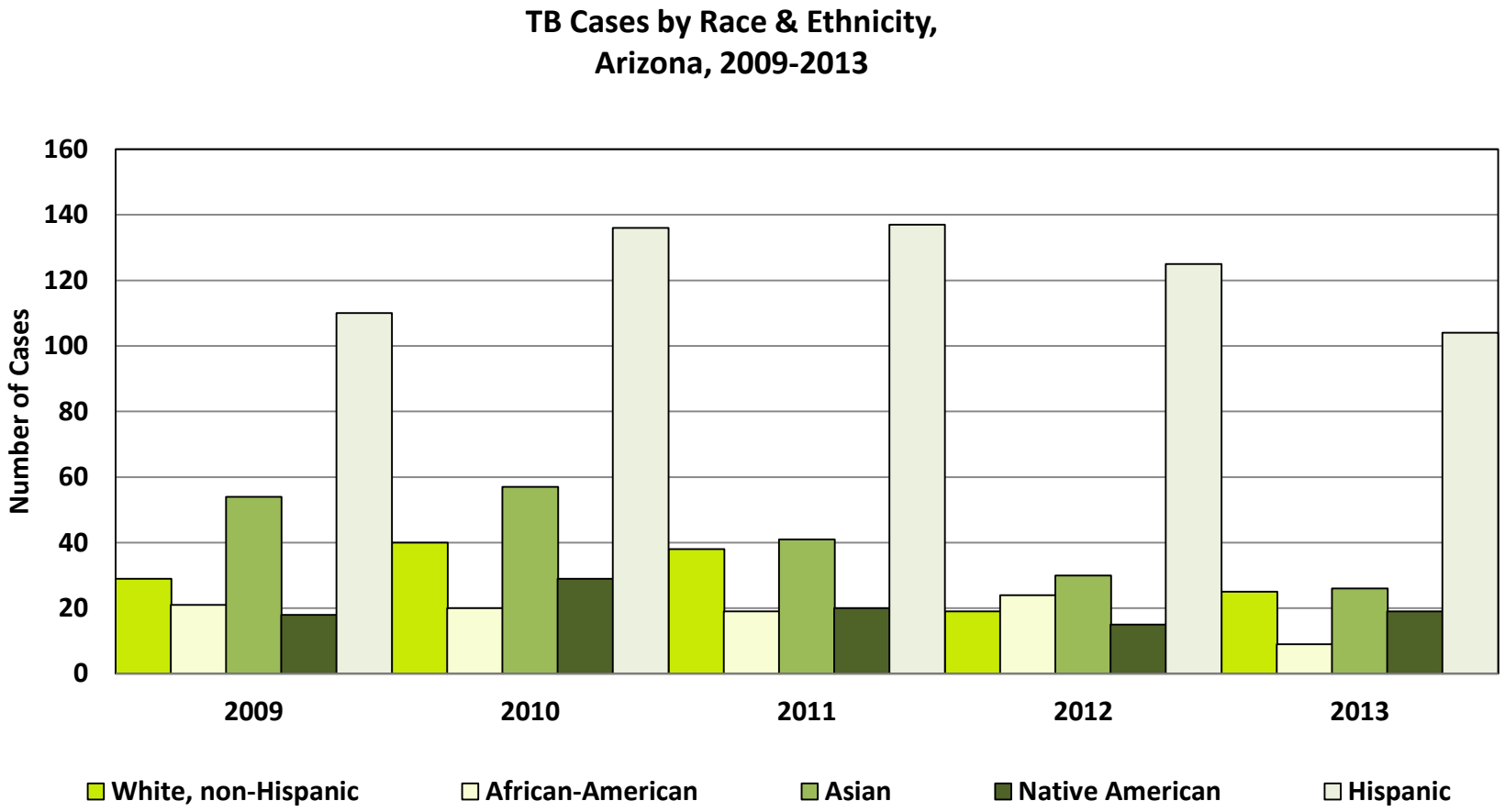
TB Cases by County of Residence, Arizona, 2013



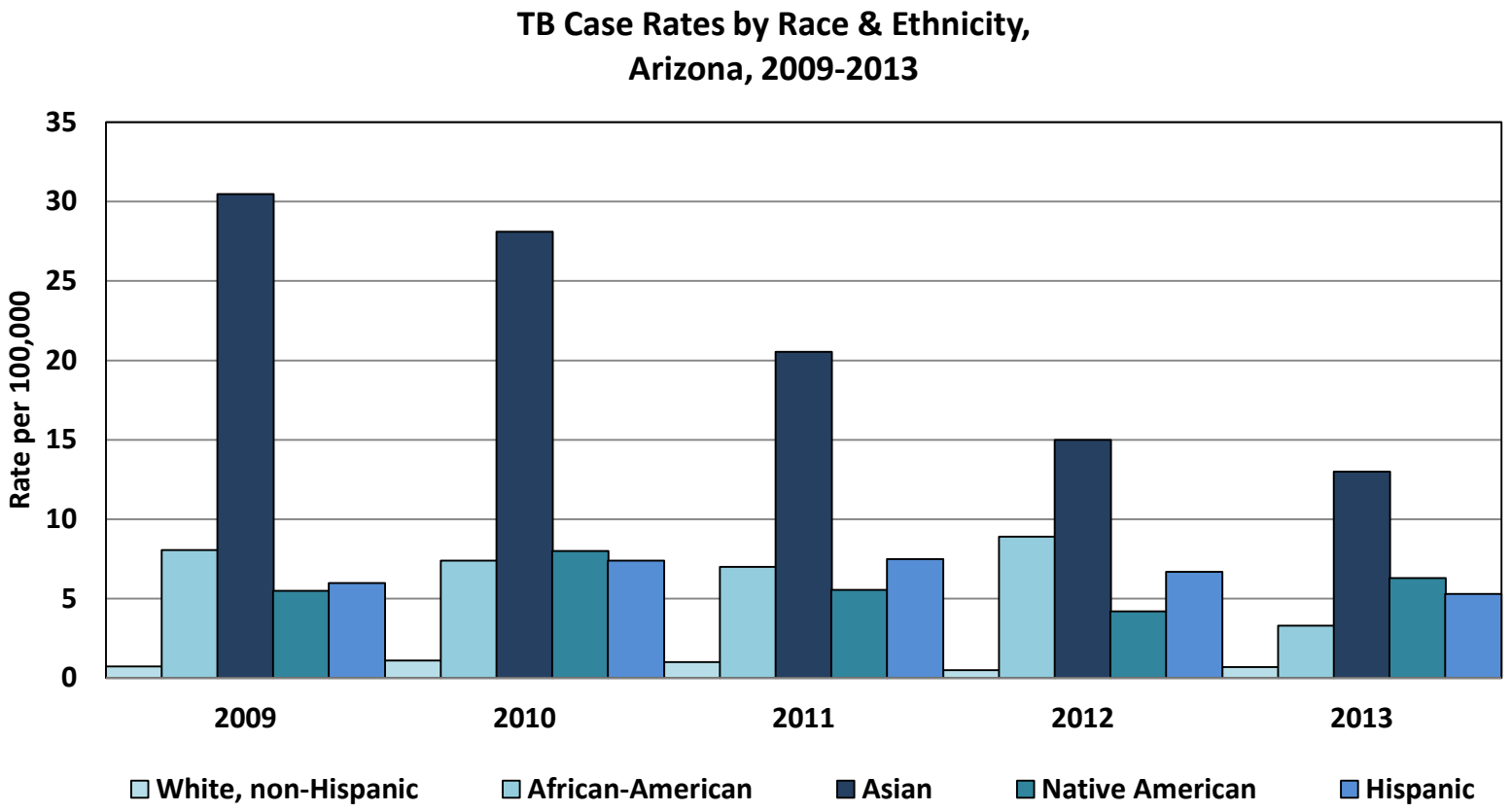
TB Case Rates by County of Residence, Arizona, 2013



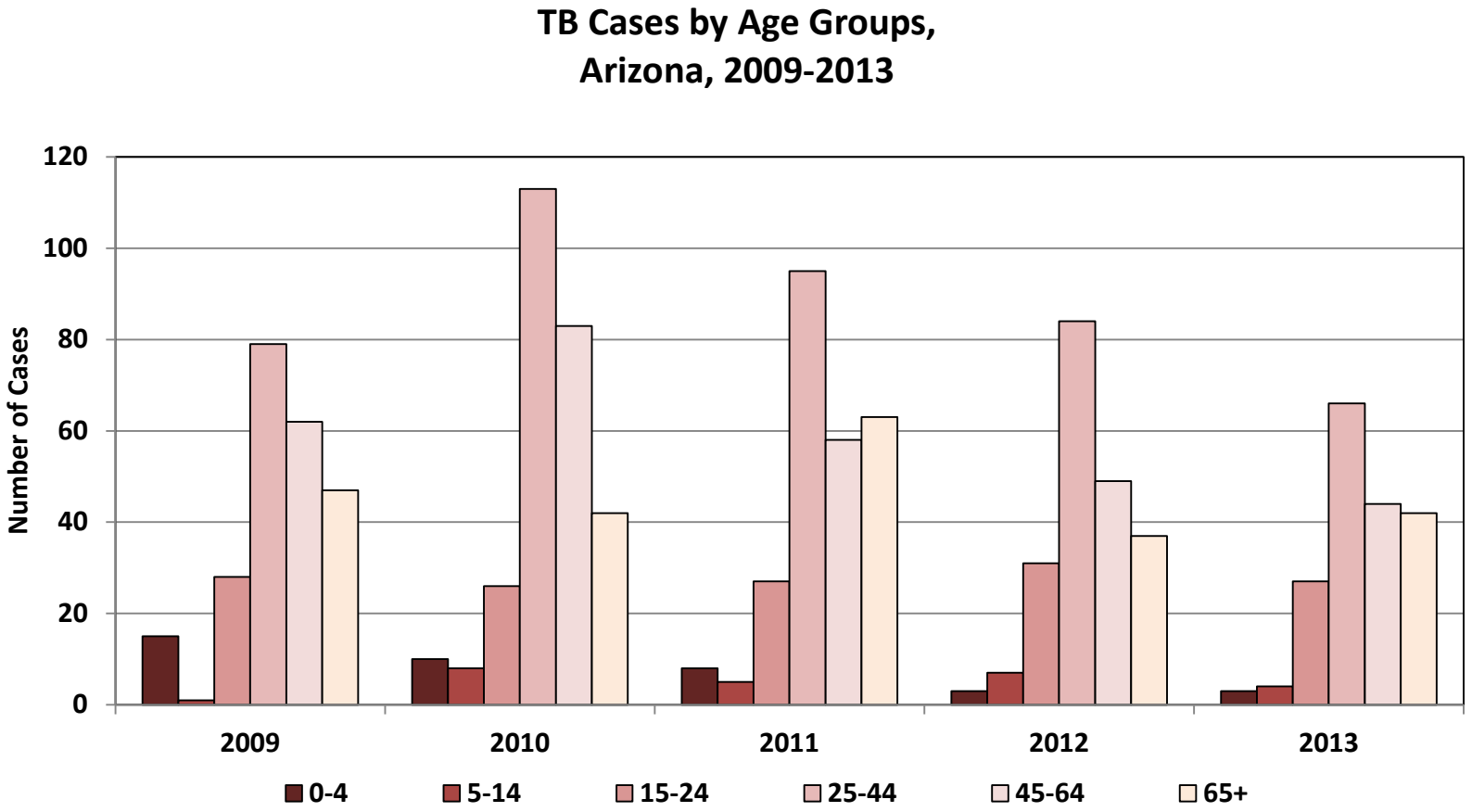
TB Cases by Race & Ethnicity, Arizona, 2009-2013



TB Case Rates by Race & Ethnicity, Arizona, 2009-2013



TB Cases by Age Groups, Arizona, 2009 - 2013

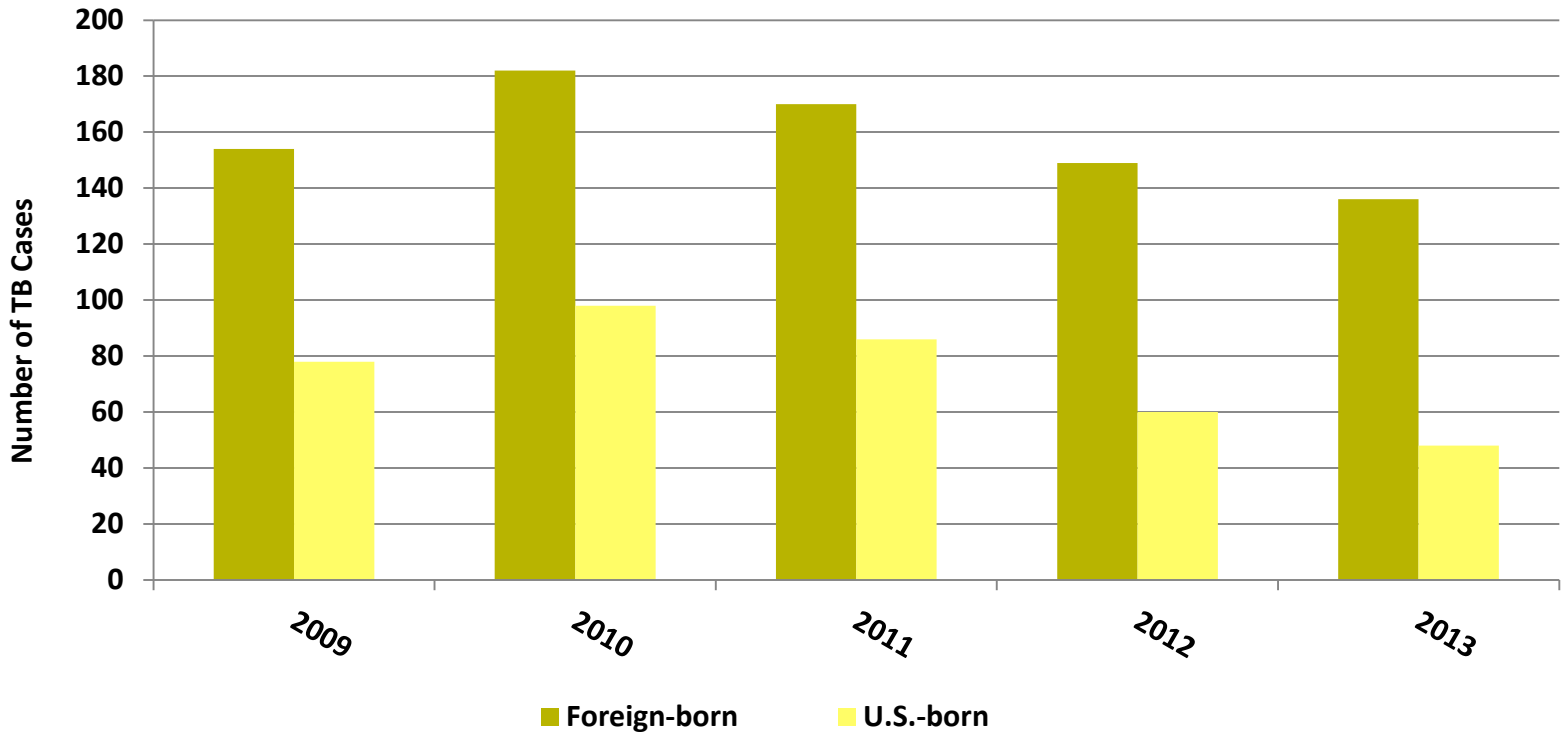


Risk Factors for TB Cases, Arizona, 2011-2013

	2011		2012		2013	
	Cases	%	Cases	%	Cases	%
Total Cases	255		211		184	
Occupation						
Health Care Worker ≥15 years	10	4.1	8	4.0	5	2.8
Migrant Farm Worker ≥15 years	19	17.9	17	8.4	7	4.0
Reported Behaviors						
Injecting Drug Use[a] ≥15 years	8	3.3	8	4.0	14	7.8
Non-injecting Drug Use[a] ≥15 years	25	10.3	26	12.9	29	15.8
Excess Alcohol Use[a] ≥15 years	34	14.1	24	11.9	21	11.9
Type of Residence						
Long Term Care Facility[b]	6	1.8	2	1.0	4	2.2
Homeless[a]	24	8.5	12	5.7	17	9.2
Comorbidity						
Diabetes Mellitus[c]	31	12.2	36	17.1	36	19.6
Immunosuppression (Not HIV/AIDS)[c]	6	2.3	4	1.9	9	4.9
Incomplete LTBI Therapy[c]	6	2.4	5	2.4	4	2.2
Contact of infectious TB case (2 years or less)[c]	15	5.9	8	3.8	7	3.8
[a]Within one year prior to diagnosis of tuberculosis.						
[b]Residence at time of diagnosis.						

U.S. –born & Foreign-born TB Cases, Arizona, 2009 - 2013

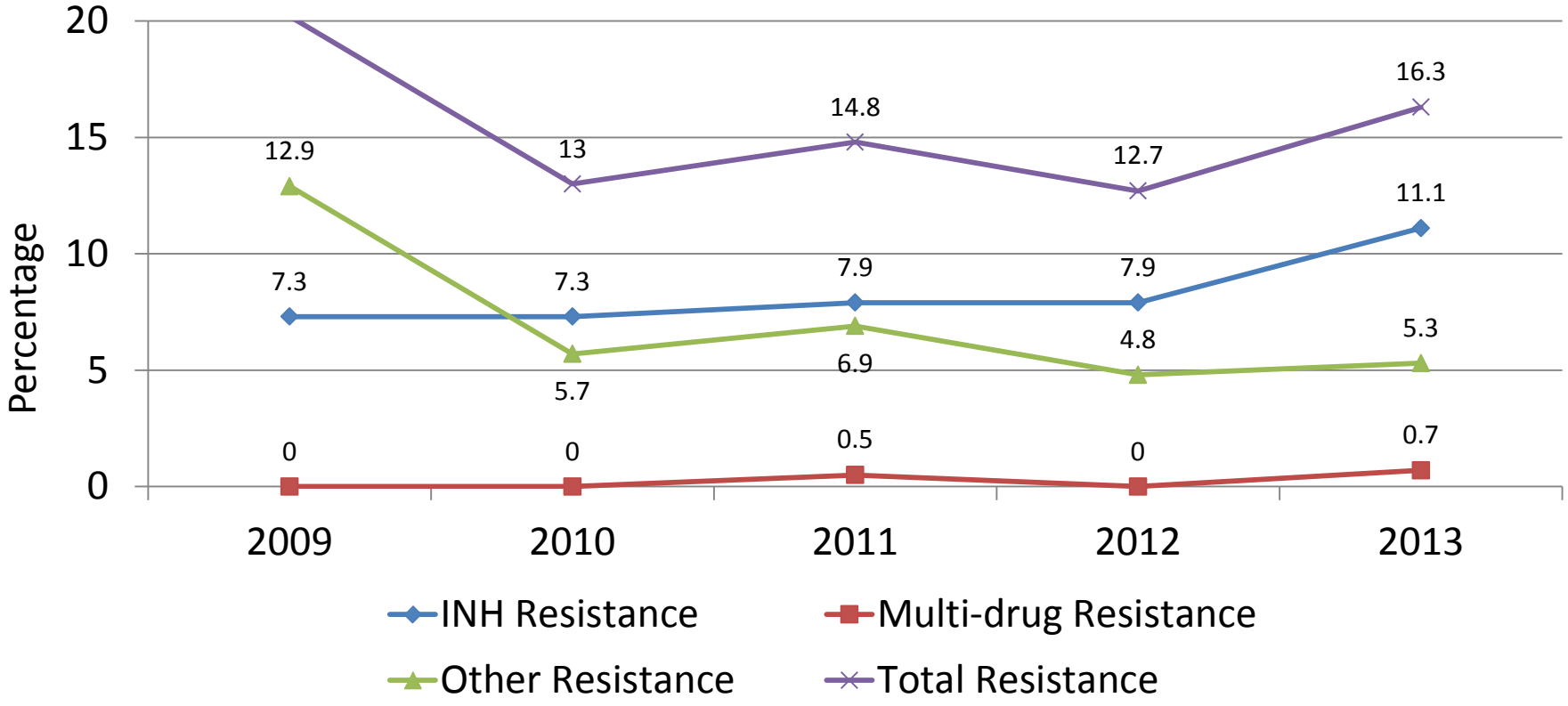
Figure 11. TB Cases by Nativity, Arizona, 2009-2013



Drug Resistance Definitions

- Mono-Resistant – resistance to one anti-TB medication
- MDR-TB – resistance to both isoniazid and rifampin
- XDR-TB – resistance to isoniazid, rifampin, at least one injectable, and at least one fluoroquinolone

Primary Resistance to Anti-TB Drugs, Arizona, 2009 – 2013



TB Program Contacts

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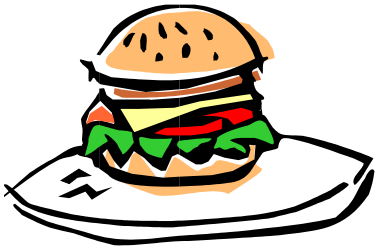
Amanda Baker, MPH Surveillance Epidemiologist 602-364-3849 Amanda.Baker@azdhs.gov	Ben Katz, MPH Special Projects Epidemiologist 602-364-3845 Benjamin.Katz@azdhs.gov
Cherie Fulk, MSN/MPH TB Nurse Coordinator 602-364-0715 Cherie.Fulk@azdhs.gov Mary Gullion Program Project Specialist 602-364-3848 Mary.Gullion@azdhs.gov	Maria Galvis CDC Public Health Advisor 602-542-0025 Maria.Galvis@azdhs.gov Judith Sebastian Data Entry Judith.Sebastian@azdhs.gov



"It must've been something I ate"

A Foodborne Disease Outbreak Update for Infection Prevention Colleagues

Heidi Dragoo, MPH
Foodborne Disease Epidemiologist
Arizona Department of Health Services

Before we get started…

What is foodborne illness?

- Caused by agents (viruses, bacteria, parasites) that enter the body through ingestion of contaminated food or beverage
  - Everybody is at risk
  - No long-term health effects for most people
  - May be serious for infants, elderly, pregnant women, people with underlying conditions
  - Illness may occur within a few hours or up to several days or weeks after exposure

Foodborne Illness in the US

Every year:

- 48,000,000 illnesses
- 128,000 hospitalizations
- 3,000 deaths
- Estimated $152,000,000,000 annual burden

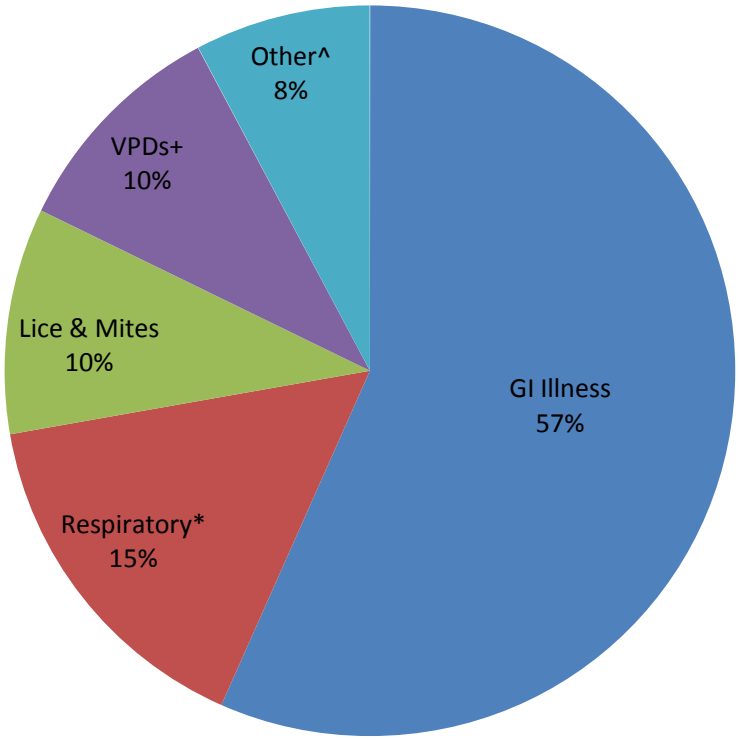
Reducing foodborne illness by 10% would keep about 5 million Americans from getting sick each year

Scallan E, Griffin PM, Angulo FJ, Tauxe RV, Hoekstra RM. Foodborne illness acquired in the United States—unspecified agents. Emerg Infect Dis. 2011;17(1):7-15

Additional CDC Findings

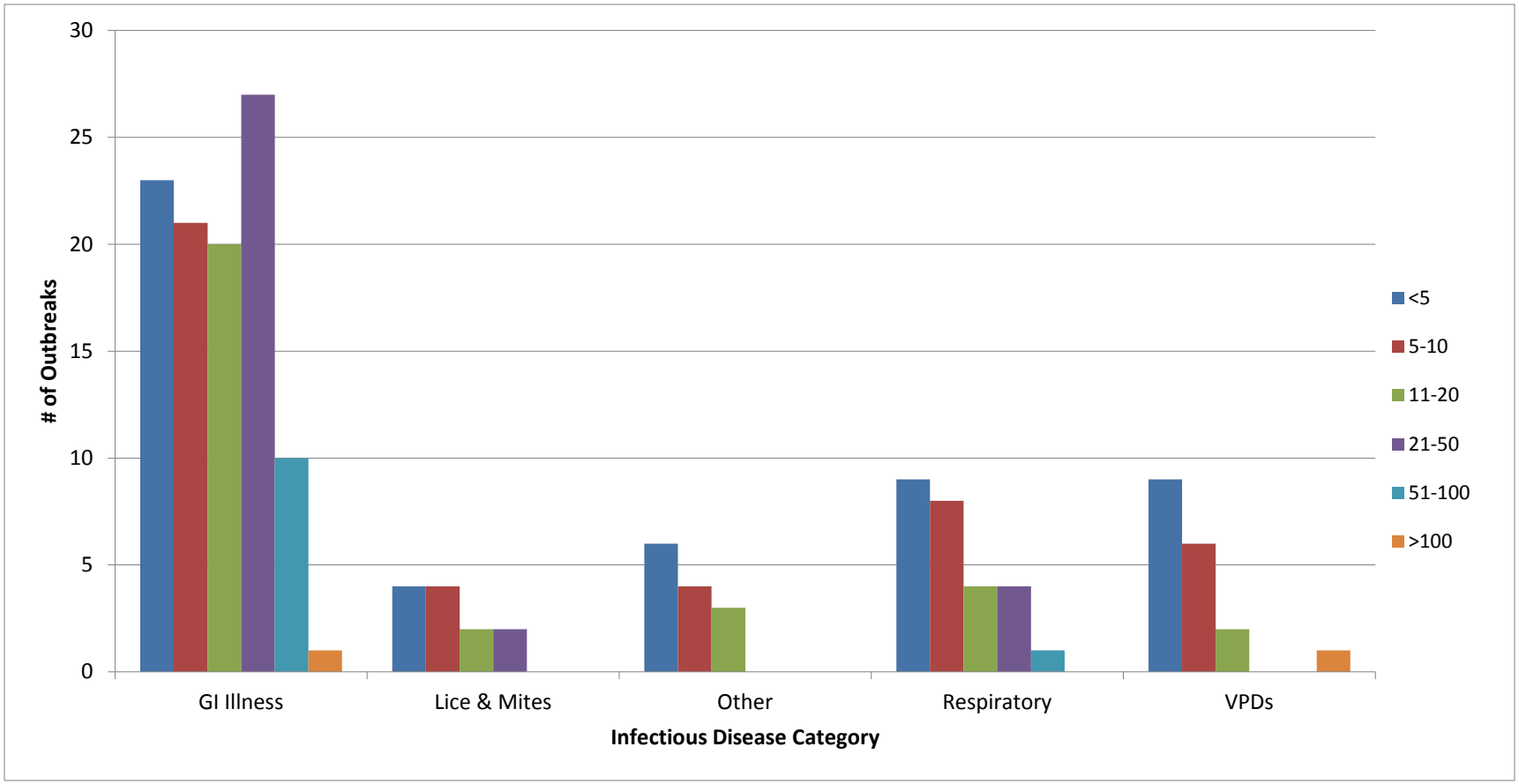
- *Salmonella*
  - Leading cause of hospitalizations and deaths
    - Responsible for approximately 28% of deaths and 35% of hospitalizations due to known pathogens transmitted by food
- About 90% of estimated illnesses, hospitalizations and deaths were due to 7 pathogens:
  - *Salmonella*, norovirus, *Campylobacter*, *Toxoplasma*, *E. coli* O157, *Listeria* and *Clostridium perfringens*
- Nearly 60% of illnesses were caused by norovirus

Outbreaks by Infectious Disease Category - Arizona 2013

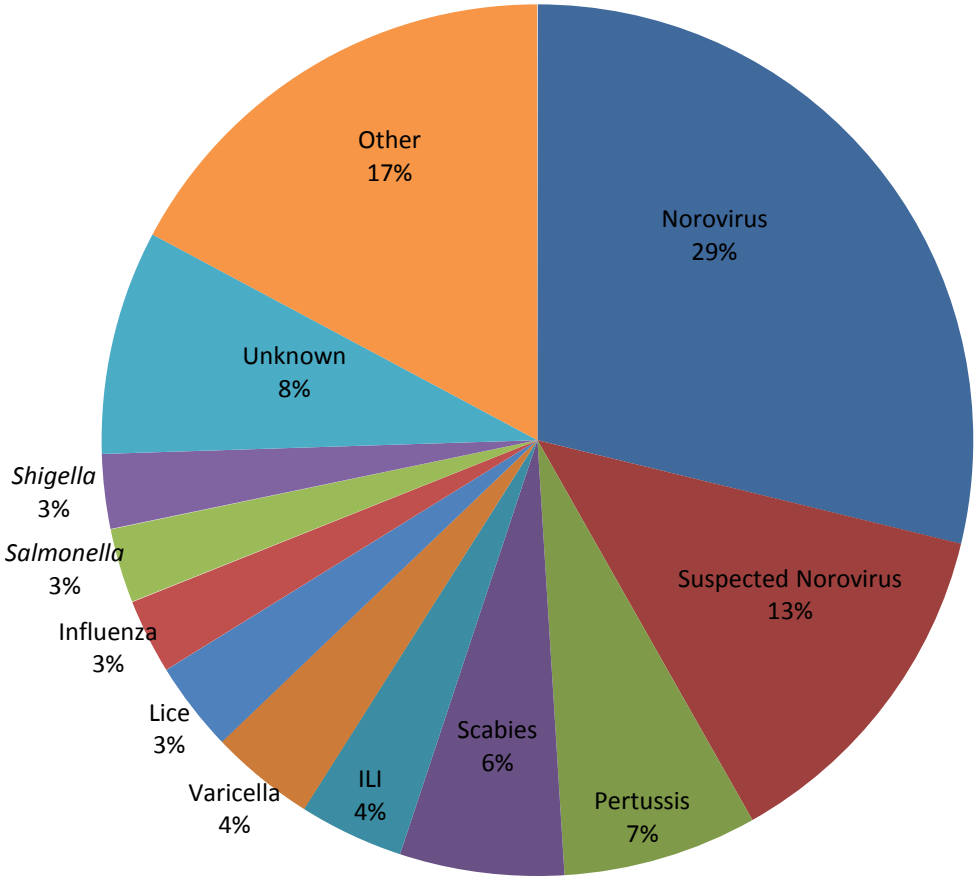


^Other includes conjunctivitis, certain rash illnesses, MRSA, and agents/symptom presentations that do not fit in the other categories
*Respiratory includes upper and lower respiratory illness, influenza, and influenza-like illness unless classified elsewhere
+VPDs are vaccine-preventable diseases (including pertussis and varicella), excluding influenza

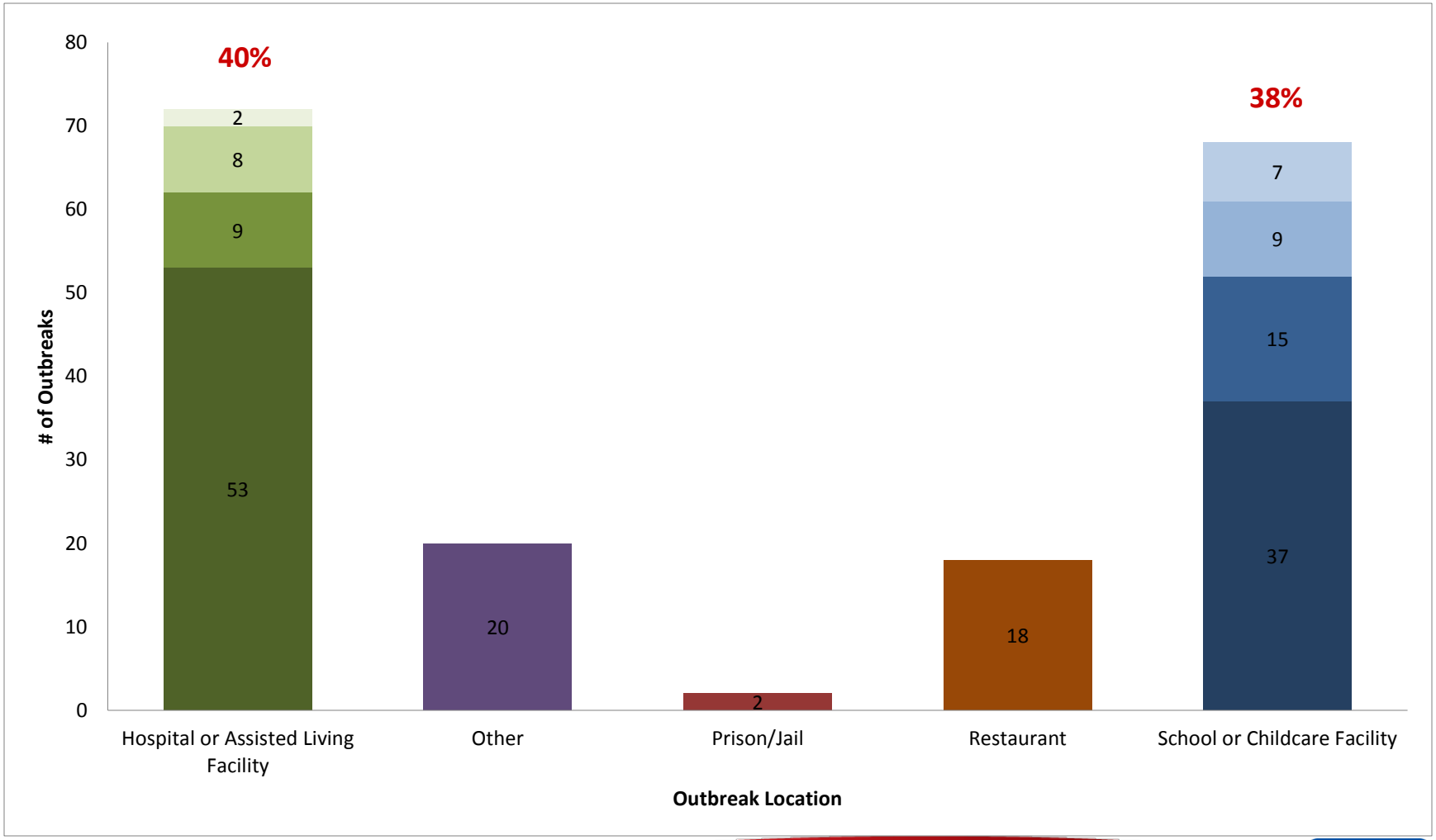
Outbreaks by Size and Infectious Disease Category – Arizona 2013



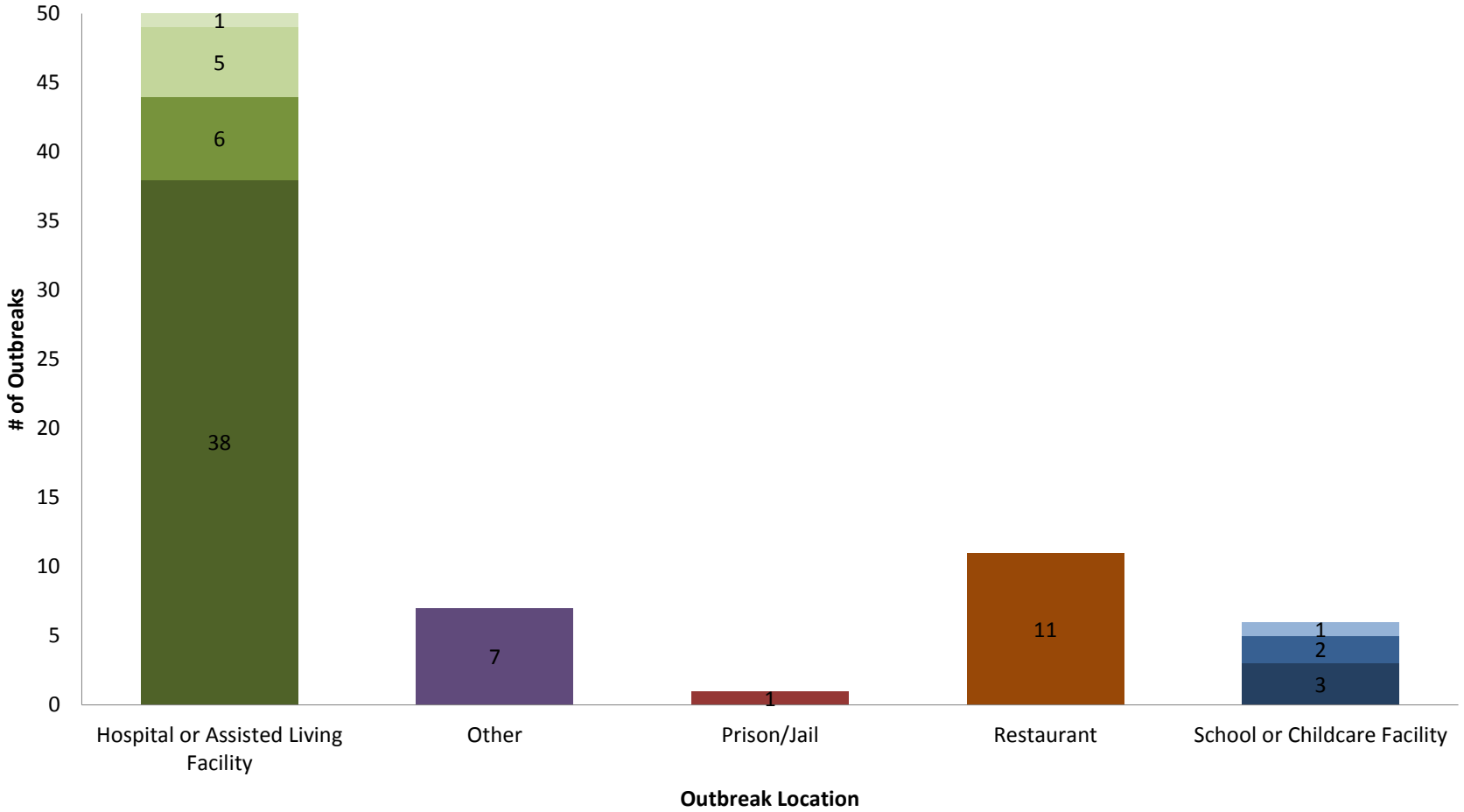
Outbreak Etiologies – Arizona 2013



Outbreaks by Location – Arizona 2013

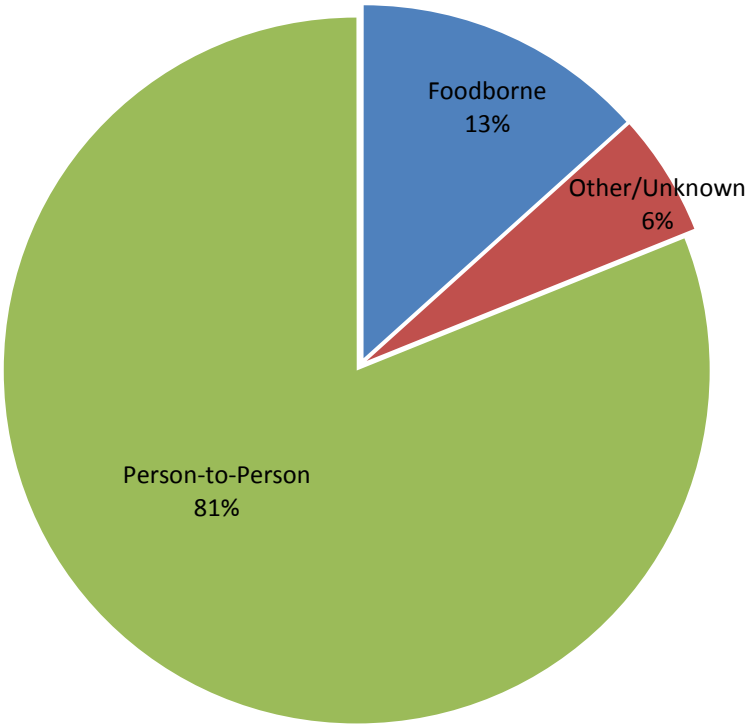


Norovirus Outbreaks by Location – Arizona 2013

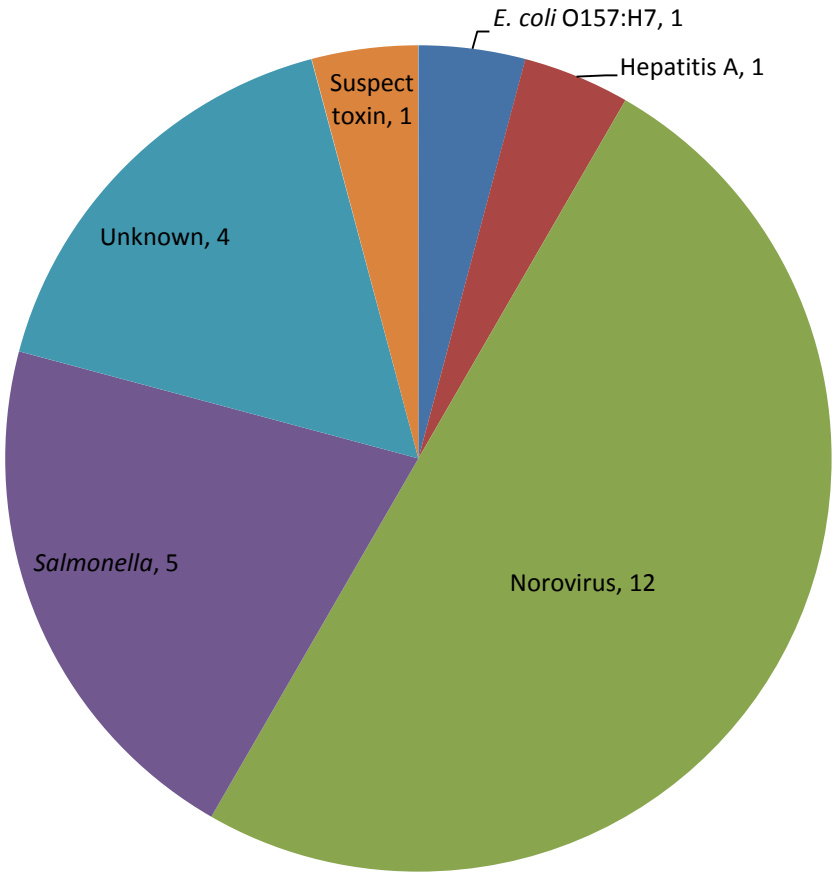


Includes confirmed & suspected norovirus outbreaks (n = 75)

Outbreaks by Mode of Transmission – Arizona 2013



Foodborne Disease Outbreaks, Arizona 2013



2013 Multi-State Cluster Investigations

In 2013, Arizona was involved in 37 multi-state cluster investigations; 13 of these investigations were confirmed as outbreaks.

One of the clusters was identified as *Escherichia coli* O157:H7, one was due to hepatitis A, and the remaining 11 outbreaks were due to various *Salmonella* serotypes. The 24 ruled out multi-state clusters were all suspected *Salmonella* clusters.

Outbreaks were associated with:

- Consumption of a frozen mixed berry blend
- Cucumbers
- Food at a tapas restaurant
- Small turtles
- Live baby poultry
- Ready-to-eat salads

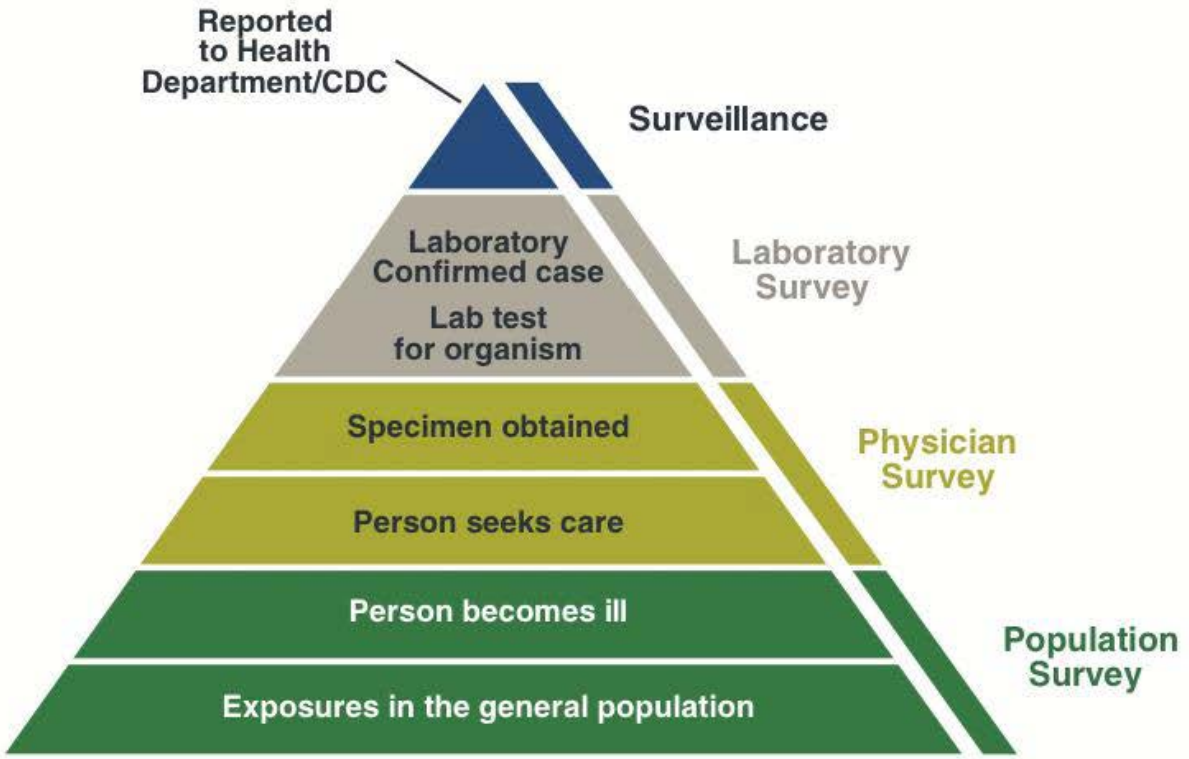
How Do We Identify an Outbreak?

- Calls from public
  - Group of people who attended an event that became ill at same time
- Calls from healthcare providers/clinics
  - Physician seeing more than the usual number of patients with the same illness
- Laboratory reports

Burden of Foodborne Illness: Tip of the Iceberg

FIGURE 1:

CDC's FoodNet Surveillance, Burden of Illness Pyramid



Source: CDC. National Center for Infectious Diseases.
http://www.cdc.gov/foodnet/surveillance_pages/burden_pyramid.htm

Foodborne Illness Report Card

Here is an update on how Arizona is doing with foodborne illness.

Pathogens	2013 AZ Rate*	2012 AZ Rate*	% Change	2013 US Rate*	2020 CDC Target Rate†	For every case reported...‡
Campylobacteriosis	12.9	14.5	11% decrease ✓	13.82	8.5	30 cases go undiagnosed.
Shiga-toxin producing *E. coli*	3.7	2.2	68% increase ✗	1.15	0.6	26 cases go undiagnosed.
Listeriosis	0.05	0.2	75% decrease ✓	0.26	0.2	2 cases go undiagnosed.
Salmonellosis (excluding *S. typhi and S. paratyphi*)	15.3	13.2	16% increase ✗	15.19	11.4	29 cases go undiagnosed.
Shigellosis	6.5	6.8	4% decrease ✓	4.8	n/a	8 cases go undiagnosed.
Vibrio infection (excluding toxigenic *V. cholerae*)	0.3	0.4	25% decrease ✓	0.51	0.2	142 cases go undiagnosed.

* Rate calculated per 100,000 population † Based on *Healthy People 2020* target rates ‡ Estimates of foodborne illness burden in the United States from 2011 CDC data

Did you know? 1 in 6 Americans are affected by foodborne illness every year.

Arizona Department of Health Services

Which Enteric Diseases are Mandated as Reportable by Providers/Labs in Arizona?

- Amebiasis
- **Botulism***
- Brucellosis
- Campylobacteriosis
- Cholera
- Cryptosporidiosis
- *Cyclospora*
- Cysticercosis
- **Enterohemorrhagic *E. coli****
- **Entertoxigenic *E. coli****
- Giardiasis
- Hepatitis A and E
- **Listeriosis***
- Salmonellosis
- Shigellosis
- **Typhoid Fever***
- *Vibrio* infection (including cholera)
- Yersiniosis
- **AND outbreaks of diarrhea, nausea or vomiting**

Laboratory Data

- By law all positive specimens are forwarded to the State Lab
  - *Salmonella*
  - *Shigella*
  - Enterohemorrhagic *E. coli*
  - *Listeria*
  - *Vibrio*

- Specimens serotyped to determine species (i.e. *Salmonella* Saintpaul, Enteritidis, Typhimurium, etc.)
- Intense testing down to DNA fragments of the bacteria using Pulsed Field Gel Electrophoresis (PFGE)
  - Data uploaded to national database: PulseNet
    - Monitored by CDC

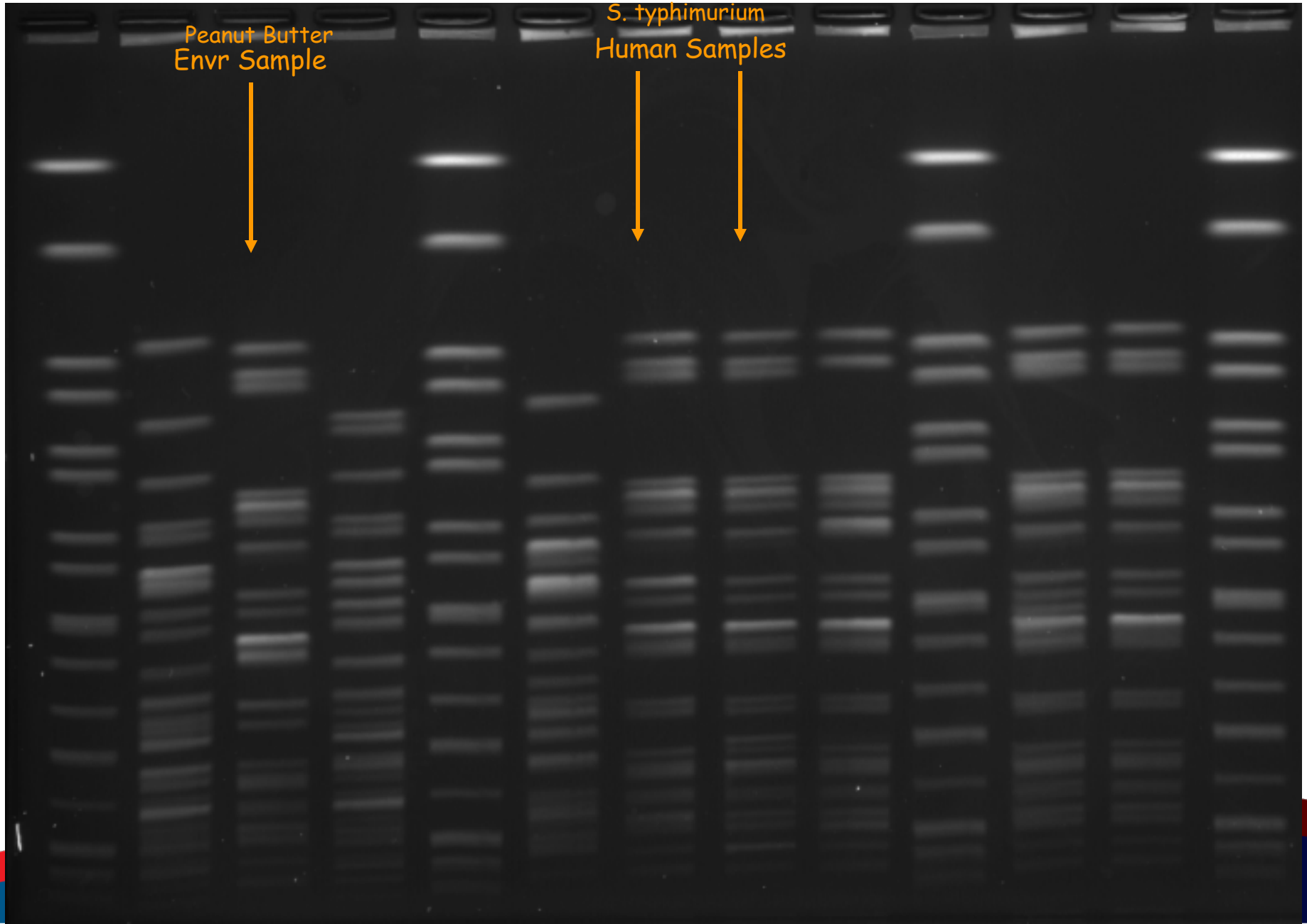
What is PulseNet?

- National laboratory network established in 1996
  - Following 1993 *E. coli O157* outbreak from hamburgers (726 people infected and 4 pediatric deaths)
  - Need for health departments to have data to determine which illnesses were linked by a common food source
- PulseNet USA is made up of 87 federal, regional, state, and local laboratories
- PulseNet compares the 'DNA fingerprints' of bacteria from patients to find clusters of disease that might represent unrecognized outbreaks
  - Notify epidemiologists if a cluster is identified
- PulseNet detects subtypes of—
  - Shiga toxin-producing *E. coli*
  - *Campylobacter jejeuni*
  - *Clostridium botulinum*
  - *Listeria monocytogenes*
  - *Salmonella*
  - *Shigella*
  - *Vibrio cholerae and Vibrio parahaemolyticus*

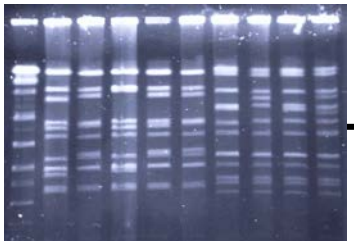
Isolates Reported to PulseNet

	Human Isolates	Non-Human Isolates
1996	254	5
2012	58,799	4,337

PFGE Gel Example:



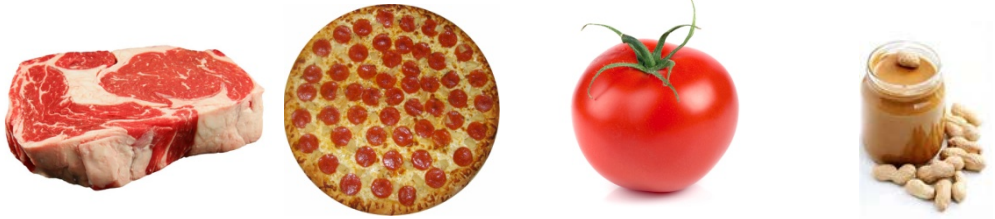
Epidemiology Investigates Clusters



ADHS Epidemiology

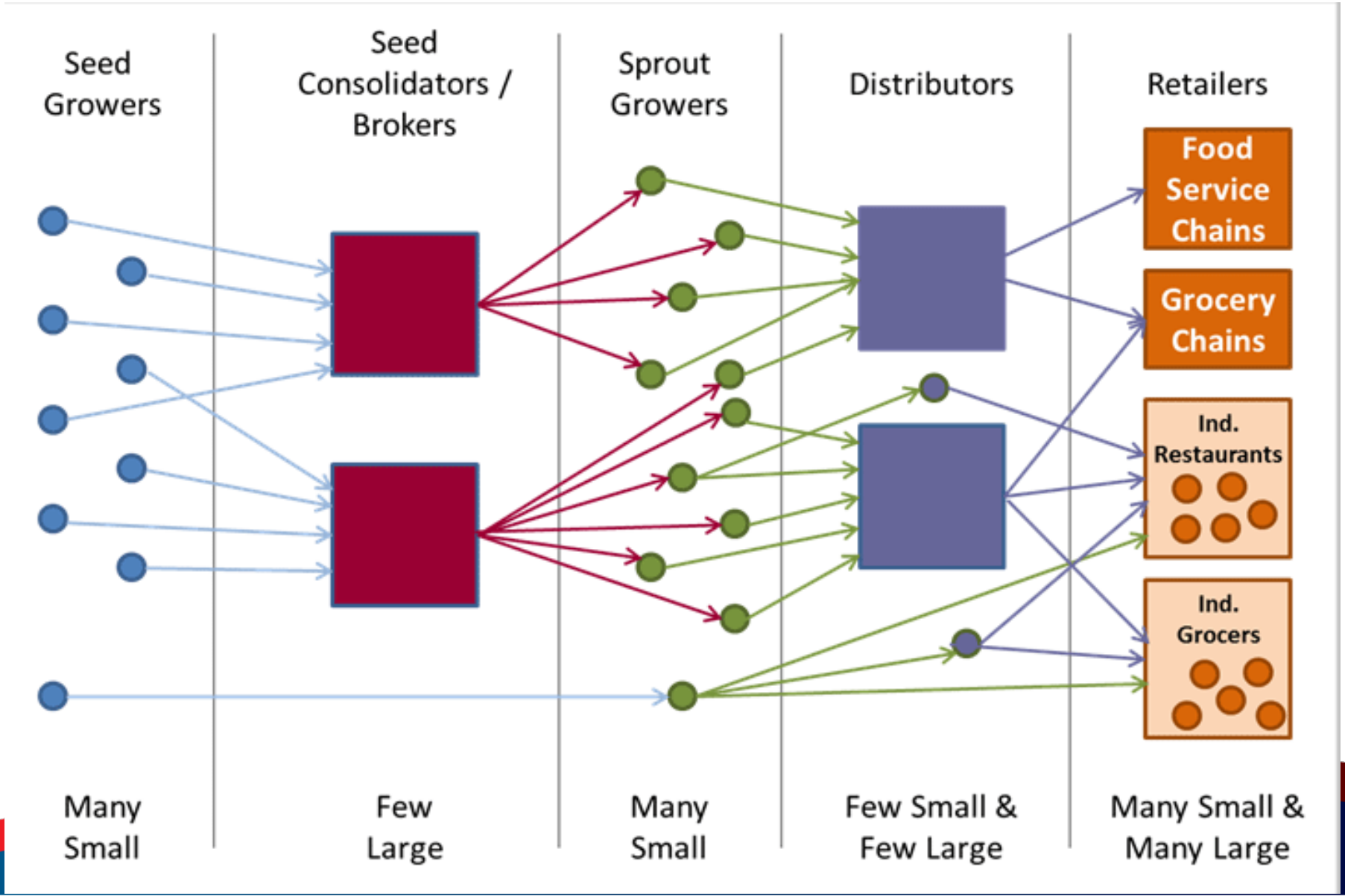
Case 1:
JEGX01.0004

Case 2:
JEGX01.0004



Case 3:
JEGX01.0004

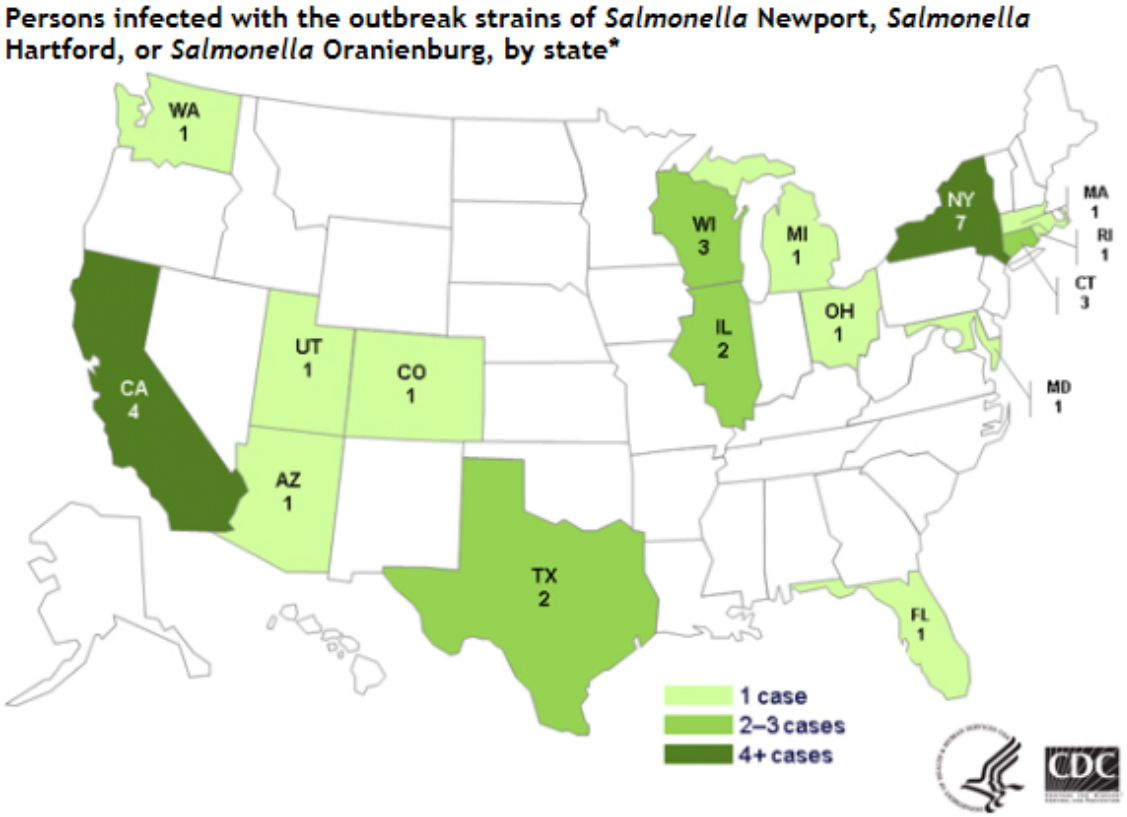
Product Supply Chain Traceback



2014 Foodborne Outbreak Investigations

Multi-serotype *Salmonella* Outbreak

- Thirty-one persons infected with outbreak strains of *Salmonella* Newport (20 persons), *Salmonella* Hartford (7 persons), or *Salmonella* Oranienburg (4 persons) from 16 states



Epi Info

- Illness onsets ranged from January 21, 2014 to July 22, 2014
- Case patients ranged in age from 1 year to 81 years with a median of 48 years
  - 61% of cases were female
  - 22% hospitalized
  - No deaths reported
- Investigation identified products containing chia as a common exposure
  - 19/21 (90%) reported eating chia seeds or chia powder
    - 15/19 (79%) specifically reported chia powder

Product Traceback

- Traceback of reported products identified Bioessential Botanicals as common supplier of organic sprouted chia powder
  - Multiple recalls issued
    - May 28, 2014: Navitas Naturals
    - June 4, 2014: Health Matters America
    - June 5, 2014: Green Smoothie Girl
  - FDA Import Alert (issued June 11, 2014)

Other details

- Lab testing by state public health labs isolated the outbreak strains from leftover recalled products containing chia powder provided by cases
- Antibiotic susceptibility testing performed on sample of outbreak specimens found isolates to be pansusceptible

Any Questions?

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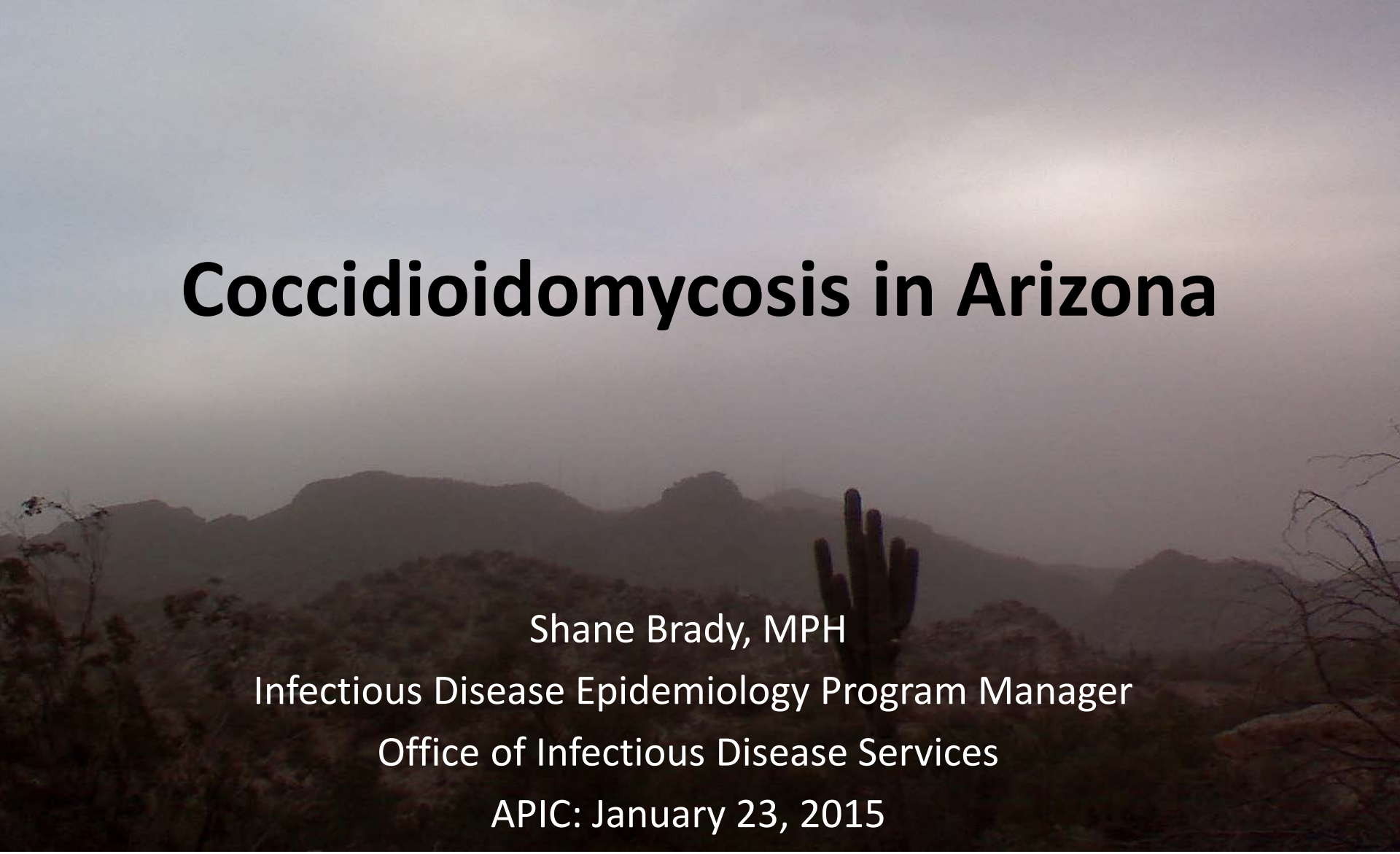
Foodborne Disease Epidemiologist
Arizona Department of Health Services
602-364-0780
heidi.dragoo@azdhs.gov

OUTBREAKS HAPPEN.



Coccidioidomycosis in Arizona

Shane Brady, MPH
Infectious Disease Epidemiology Program Manager
Office of Infectious Disease Services
APIC: January 23, 2015

Surveillance: Case Definition

- Council for State and Territorial Epidemiologists (CSTE)
  - Updated in 2007
    - Clinical case definition
    - Lab criteria*
- Arizona Department of Health Services (ADHS)
  - Since 1997
    - No clinical symptoms required
    - Lab criteria*

*Lab criteria for diagnosis includes either detection of IgM or IgG by
- Immunodiffusion (ID)
- Enzyme immunoassay (EIA)
- Latex agglutination
- Tube precipitin
- Complement fixation (CF)

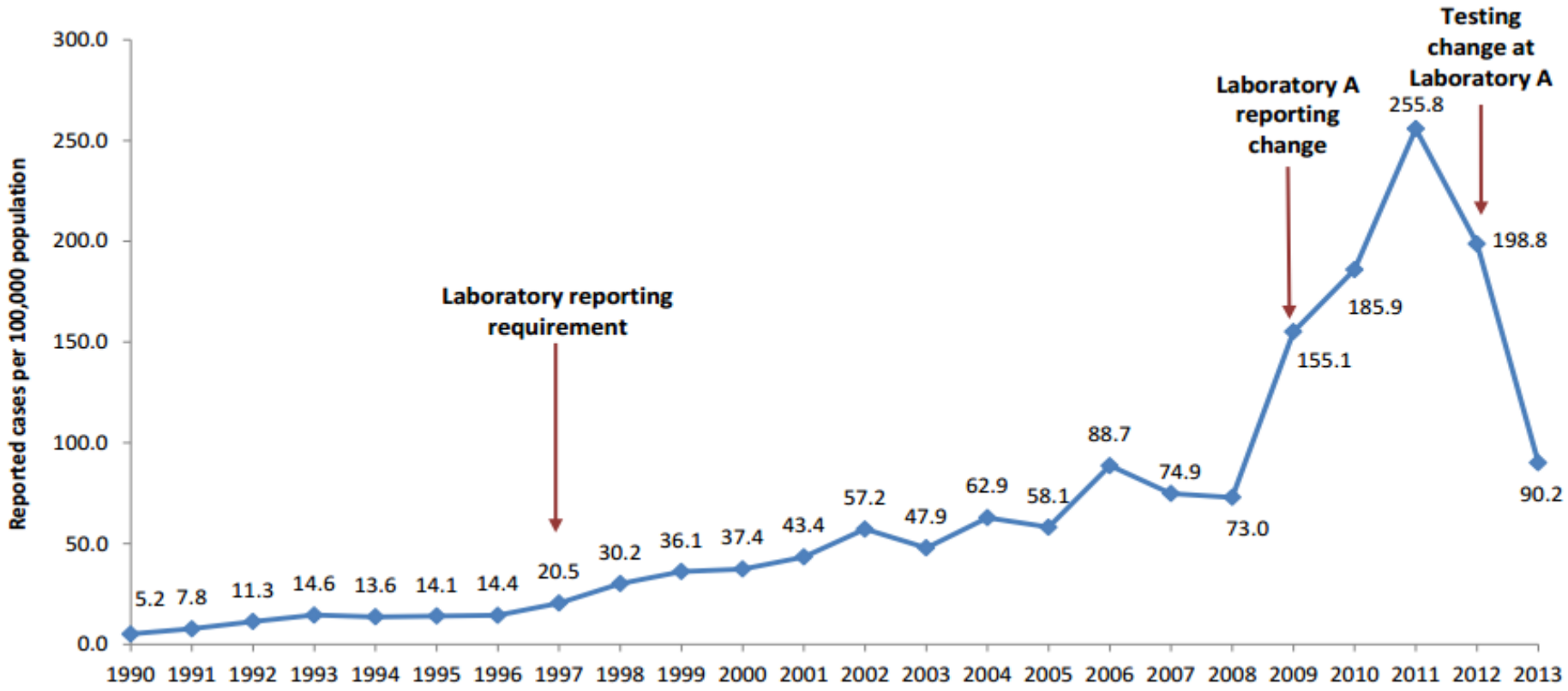
OR

Cultural, histopathologic, or molecular evidence of *Coccidioides* species

Epidemiology

- 2/3 of US cases reported from AZ
- One of the most commonly reported infectious diseases in AZ
- Causes a substantial proportion of all community-acquired pneumonia in AZ
- Rates increased up to 2011 but have been declining since 2012
- Potential Reasons
  - **Reporting and laboratory test method changes**
  - Changes in population (growth, aging, chronic diseases)
  - Increased recognition and testing
  - Precipitation, dust storms, climate, construction

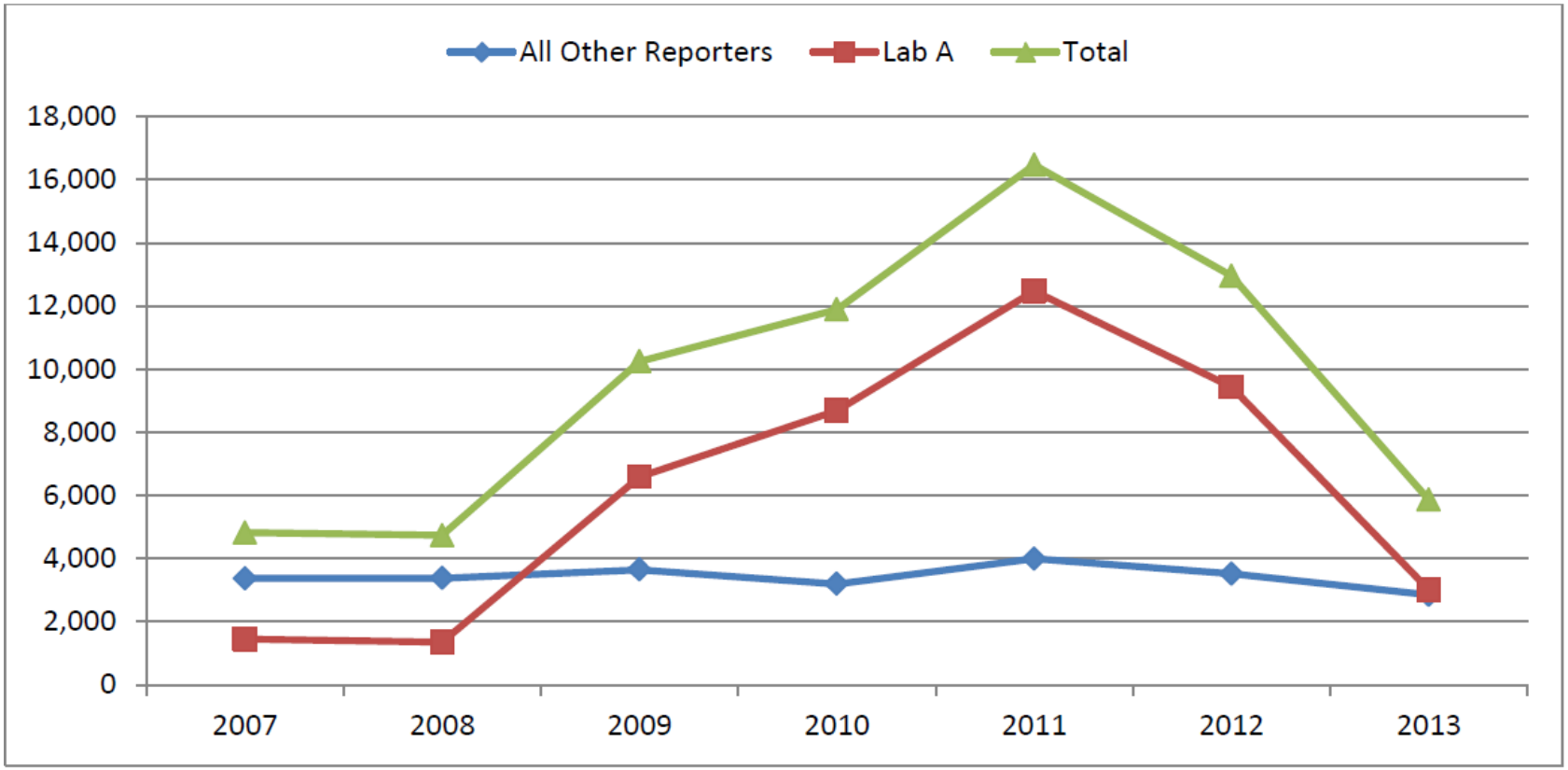
Rates of Reported Cocci, Arizona, 1990-2013



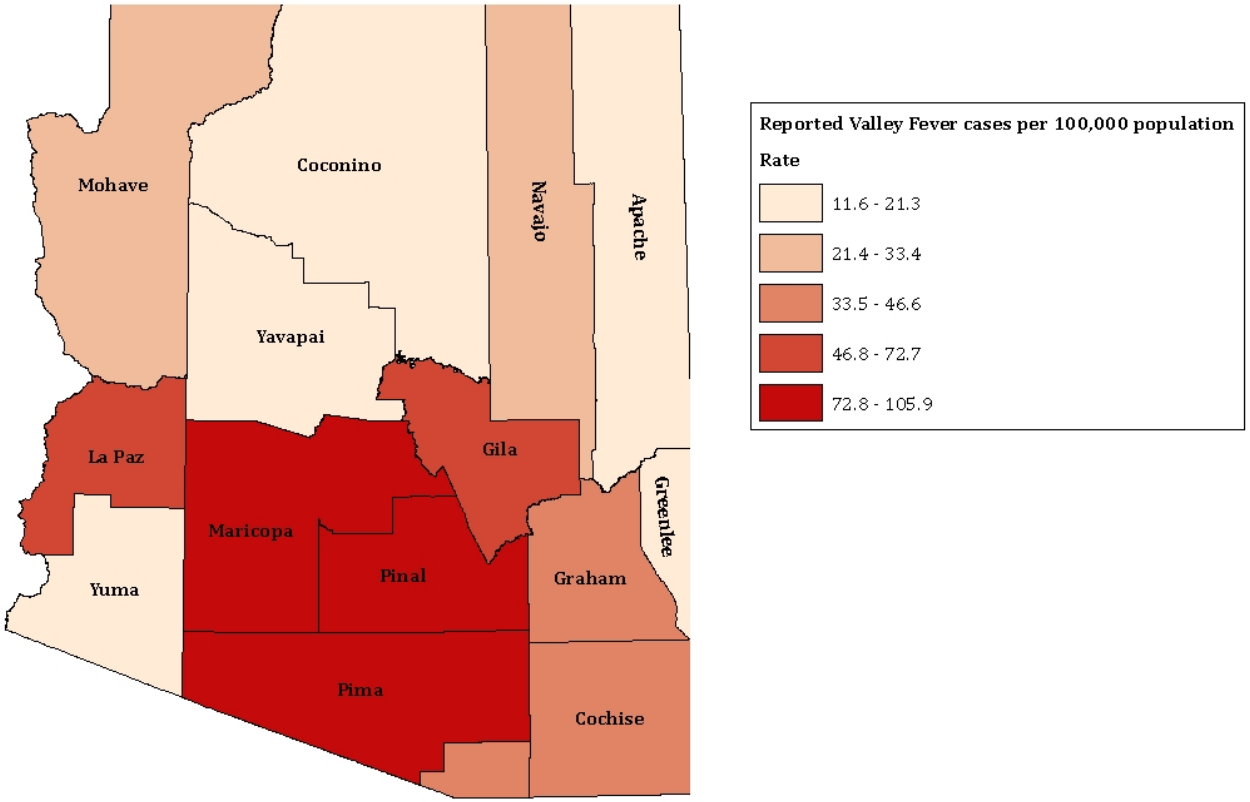
Impact of Changes in Laboratory Reporting and Test Methods

- 99% cases were reported by laboratories in 2013
- Lab A changed reporting practices in 2009
  - Increased total number of reported cases
- Lab A changed testing in 2012
  - Decreased total number of reported cases

Annual Cases by Reporter, 2007-2013



Rates of Reported Cases by County, 2013



Reported Cases and Rates by Age Groups, 2013

Age Group* (Years)	Cases	Cases per 100,000
<5	29	6.4
5-14	243	26.9
15-24	516	57.1
25-34	713	83.2
35-44	767	93.3
45-54	940	111.6
55-64	1,008	138.8
65-74	880	176.7
75-84	507	180.7
85+	204	197.3

*Age could not be ascertained for 54 cases (approximately 0.9% of all cases).

Impact

- 1,000+ hospitalizations per year
  - 2003 – 2013: $950+ million in charges
- ADHS interview study (2007)
  - Ill for a median of 120 days
  - 75% missed school or work
    - Median: 14 days
  - 75% unable to do daily activities
    - Median: 47 days
  - 46% went to an ER
  - 25% saw a doctor 10+ times

Delays in Diagnosis (2007 study)

- Average of 44 days before first seeking care
- Average time between first seeking healthcare and getting diagnosed: 5 months
- Average provider visits before being tested: 3 visits
- More likely to ask for testing if knew about VF

Public Education Campaign

- Valley Fever Awareness Week
- Outreach
  - Radio PSAs
  - Billboard ads
  - Social media

- New partnerships with community organizations
  - High risk groups

Janice K. Brewer
Governor

Office of the Governor

*** VALLEY FEVER AWARENESS WEEK ***

WHEREAS, Valley Fever infections in Arizona have greatly increased over the last decade, with 60 percent of all nationally reported cases of Valley Fever occurring in Arizona; and

WHEREAS, Valley Fever is one of the most commonly reported infectious disease in Arizona; and

WHEREAS, enhanced surveillance of Valley Fever cases demonstrates the serious impact Valley Fever has on the health of our citizens and on Arizona's healthcare system; and

WHEREAS, the Arizona Department of Health Services, government agencies, other government agencies, businesses, and community organizations are united to educate the public and healthcare providers about Valley Fever in Arizona; and

WHEREAS, through public education and promotion of early diagnosis, the impact of Valley Fever on individuals may be reduced; and

WHEREAS, Arizona is the focal point of quality clinical care and research for Valley Fever.

NOW, THEREFORE, I, Janice K. Brewer, Governor of the State of Arizona, do hereby proclaim November 8 - 16, 2014 as

*** VALLEY FEVER AWARENESS WEEK ***

in recognition of the outstanding treatment and research conducted by the Valley Fever Center for Excellence at the University of Arizona, its new clinical center at St. Joseph's Hospital in Phoenix, and for the advances in Valley Fever education and public health by the Arizona Department of Health Services.

IN WITNESS WHEREOF, I have hereunto set my hand and caused to be affixed the Great Seal of the State of Arizona

Janice K. Brewer
GOVERNOR

DONE at the Capitol in Phoenix on this seventeenth day of September in the year Two Thousand and Fourteenth, and of the Independence of the United States of America the Two Hundred and Thirty-ninth.
ATTEST:

Ken Bennett
Secretary of State

COUGH
HEADACHES
FEVER
ACHING
JOINTS
EXHAUSTED
NIGHT
RASH
SWEATS

Valley Fever

Arizona Department of Health Services

COUGH
HEADACHES
FEVER
ACHING
JOINTS
EXHAUSTED
NIGHT
RASH
SWEATS

Valley Fever and Pregnancy

Arizona Department of Health Services

VALLEY FEVER

Valley Fever is an infection caused by breathing in fungal spores found in hot, dry places like Arizona

MORE THAN 10,000 PEOPLE IN ARIZONA ARE INFECTED WITH VALLEY FEVER EVERY YEAR

40 OF EVERY 100

infected people become sick with symptoms such as cough, fever, fatigue, rash, and night sweats.

5 will have severe pneumonia and need treatment

In less than 1 in 100, the disease spreads outside the lungs and can cause serious symptoms

People who become sick with Valley Fever:

- can be ill for weeks or months
- can miss two weeks of work or school

In 2012:

- more than 1,000 people were hospitalized with Valley Fever
- these hospitalizations cost more than $68 million

**COUGH? FEVER? EXHAUSTED?
ASK YOUR DOCTOR TO TEST YOU
FOR VALLEY FEVER**

Arizona Department of Health Services

VALLEYFEVERARIZONA.ORG


VALLEY FEVER
COUGH
HEADACHES
LACK OF APPETITE
SORE THROAT
RASH
CHILLS
EXHAUSTED
WEIGHT LOSS
CHEST PAIN
ACHING JOINTS
MUSCLE ACHES
WHEEZING
FEVER
SHORTNESS OF BREATH
NIGHT SWEATS
STIFF NECK
KNOW THE SIGNS
Arizona Department of Health Services
WWW.VALLEYFEVERARIZONA.ORG

Physician Outreach

- 2007: Recommendation to test all CAP patients in Arizona for Valley Fever
- Annual free CME course with VFCE
  - In-person and online
- Maricopa County Medical Society Honor Roll
- Clinician KAP survey

WHAT CAN YOU DO?

- Order Cocci serology on CAP cases
- Manage Valley fever cases
  - Inform patient of diagnosis
  - Report the case to public health
  - Consider treatment with anti-fungal drugs if the patient is at risk for severe disease

For more information on treatment guidelines, visit www.idsociety.org/pg

Resources

Arizona Department of Health Services
Office of Infectious Disease Services
150 N. 18th Ave, Suite 140
Phoenix, Arizona 85007
(602) 364-4562
www.valleyfeverarizona.org

Valley Fever Center for Excellence
Mail Stop 1-111NF
3601 S. 6th Avenue
Tucson, Arizona 85723
Hotline: (520) 629-4777
http://www.vfce.arizona.edu/

Coccidiodal Skin Testing

- SPHERUSOL® (*Coccidioides immitis* Spherule-Derived Skin Test Antigen)
- Manufactured by Nielson BioSciences, Inc
- Introduced in 2014
- >=5 mm induration indicates current or past infection

Thank you! Questions?

Courtesy of Mike Olbinksi

Shane Brady

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602-364-3147

Aisha Rafiq

Aisha.Rafiq@azdhs.gov

602-364-4068

Questions?

END

Arizona Department of Health Services