State of the State

APIC Grand Canyon Meeting
January 24, 2014
Agenda

• 1:30 - 1:40 pm Welcome, announcements, introduction – APIC and Ken Komatsu
• 1:40 - 1:50pm MEDSIS/MU - Teresa Jue/Sara Imholte
• 1:50 – 2:00pm Vaccine Preventable Disease and Flu – Karman Tam
• 2:00 - 2:10pm Cocci – Clarisse Tsang
• 2:10 - 2:20pm HAI - Eugene Livar
• 2:20 - 2:30pm Vector/RMSF – Selam Tecle
• 2:30 - 2:45 pm Foodborne - Rashida Hassan
• 2:45 - 2:55 pm Refugee Health - Zach Holden
• 2:55 - 3:10 pm STD - Jose Mireles
• 3:10 - 3:25 pm HIV Surveillance, Prevention and Care – Amanda White
• 3:25 - 3:40 pm TB - Eric Hawkins
• 3:40 - 4:00pm Questions
MEDSIS Updates & Reminders

Teresa Jue
MEDSIS Program Manager
Office of Infectious Disease Services
MEDSIS

• Medical Electronic Disease Surveillance Intelligence System

• May be used by health care facilities and providers to report communicable diseases
  – Includes TB, HIV, and STDs (since 2013)

• Allows health care facilities to view and print communicable disease reports (CDR) for all cases reported through MEDSIS
MEDSIS Updates

• Merge Functionality was released for Public Health users
  – Healthcare facilities reporting through MEDSIS may see changes/updates to MEDSIS IDs

• Case Line List
  – Previously, if a case was updated with a new reporter, the first reporter was unable to see the case in the Case Line List report
  – With the new release, all cases will display in the case line list for all associated reporters
MEDSIS Reminders

• TB Cases
  – In addition to entering the case into MEDSIS, please contact the local health department if a TB case is suspected or identified, by phone as soon as possible.

• If facilities are interested in reporting via MEDSIS, please contact your local health dept.

• Please continue to send feedback, issues, or comments to the MEDSIS Help Desk!
  – medsishelpdesk@siren.az.gov
Arizona Department of Health Services (ADHS) & Meaningful Use

Sara Imholte
Arizona Department of Health Services
January 24, 2014
• The Meaningful Use Electronic Health Record incentive program includes 3 objectives for hospitals to work with public health:

1. Immunization Registry
2. Electronic Laboratory Reporting
3. Syndromic Surveillance
Immunization Registry (ASIIS)
What is ASIIS?

• The Arizona State Immunization Information System (ASIIS) is the state’s immunization registry
• Providers are required to report all immunizations administered to ≤18 y.o. under ARS 36-135
• Pharmacists are required to report any immunizations administered regardless of patient age under ARS 32-1974
• Enables providers to access a complete immunization record for each child they treat regardless of where immunizations may have been received
ASIIS: Current Status/Future Plans

- ASIIS currently accepting submissions for MU
- Over 400 providers in production
- Standard protocols and guidelines for testing distributed after receipt of initial interest form – available by sending a request to ASIIS_Group1@azdhs.gov
Electronic Laboratory Reporting (ELR)
What is ELR?

• Labs are required to report a set of test results to ADHS (A.A.C. R9-6-204) (often integrated with Provider reporting from Infection Control)
• 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: Current Status

- ADHS is currently accepting ELR submissions for MU
- About 25 hospitals have tested (3 in production)
- Onboarding additional laboratories based on readiness and following steps outlined at [www.azdhs.gov/meaningful-use](http://www.azdhs.gov/meaningful-use)
Syndromic Surveillance
What is Syndromic Surveillance?

• Public Health receives reports of demographics and symptoms of 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 results
Syndromic Surveillance: Current Status/Future Plans

• Utilizing the national BioSense 2.0 system as the MU Syndromic Surveillance system in AZ

• Start accepting submissions from hospitals in January 2014

• Will require a Data Use Agreement between facility and ADHS
Registration of Intent
Registration of Intent to Submit data to Public Health

- Stage 2 **requires** Provider registration with the Public Health Agency (ADHS) of intent to initiate ongoing submission
- Deadline: within 60 days of the start of the EHR reporting period
Registration of Intent to Submit to PH

• ADHS is developing a website for Provider registration
  – While the website is in development, please email meaningfuluse@azdhs.gov to start the registration process.

• Once you have registered with ADHS, you will receive information on next steps for each objective you plan to complete
MeaningfulUse@azdhs.gov

www.azdhs.gov/meaningful-use
Vaccine Preventable Diseases

APIC

State of the State

January 24, 2014

Karman Tam, MPH
Office of Infectious Disease Services
Arizona Department of Health Services
Reported NNDSS pertussis cases: 1922-2013*

*2013 data are provisional.

Source: CDC, National Notifiable Diseases Surveillance System and Supplemental Pertussis Surveillance System and 1922-1949, passive reports to the Public Health Service

http://www.cdc.gov/pertussis/images/incidence-graph.jpg
# Pertussis in Arizona

<table>
<thead>
<tr>
<th>Year</th>
<th>2013 (preliminary)</th>
<th>2012</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cases</td>
<td>1,330</td>
<td>1,130</td>
<td>867</td>
</tr>
<tr>
<td>Confirmed</td>
<td>1,001</td>
<td>575</td>
<td>160</td>
</tr>
<tr>
<td>Probable</td>
<td>329</td>
<td>555</td>
<td>707</td>
</tr>
</tbody>
</table>
Mohave County Pertussis Outbreak

Epi-curve by week, AZ cases
Confirmed (n=696), Probable (n=47), and Pending Classification (n=35)
Pertussis, Arizona Strip 2012-2013
(updated 11/20/13)
Percent of Confirmed and Probable Cases Tested Positive by Culture, PCR, or Serology (2011 vs. 2012 vs. 2013)

- **Culture**
- **PCR**
- **Serology**

**Legend:**
- 2011
- 2012
- 2013
Pertussis Testing

Optimal Timing for Diagnostic Testing (weeks)

http://www.cdc.gov/pertussis/clinical/diagnostic-testing/diagnosis-confirmation.html
Confirmed and Probable Pertussis Cases in Arizona by Five Year Age Group (2013)
Reported pertussis incidence by age group: 1990-2013*

http://www.cdc.gov/pertussis/images/incidence-graph-age.jpg
# H. flu type B (Hib) in children <5 years

<table>
<thead>
<tr>
<th>Year</th>
<th>Cases</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>3</td>
<td>- 1 death in an unvaccinated 1 year old (bacteremia and meningitis)</td>
</tr>
<tr>
<td>2012</td>
<td>2</td>
<td>2 confirmed case</td>
</tr>
</tbody>
</table>
# Meningococcal Invasive Disease

<table>
<thead>
<tr>
<th>Year</th>
<th>Cases</th>
<th>Serogroups</th>
<th>Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>12</td>
<td>B, C, Y, W-135</td>
<td>3</td>
</tr>
<tr>
<td>2012</td>
<td>6</td>
<td>C, W-135</td>
<td>3</td>
</tr>
</tbody>
</table>

**2013 Cases:**
- 3 serogroup B
- 4 serogroup C
- 3 serogroup Y
- 2 serogroup W-135

**2013 Deaths:**
- 55 y.o. (serogroup B)
- 42 y.o. (serogroup W-135)
- 93 y.o. (serogroup C)
Meningococcal Invasive Disease

School-related serogroup B outbreaks in the US (2013):

1. Princeton University:
   - 8 cases reported since March 2013
   - Bring in serogroup B vaccine currently licensed in Europe, Canada, Australia (administered to 5,000+ students in December)

2. UC Santa Barbara
   - 4 cases reported since November 2013
   - FDA application underway to approve use of serogroup B vaccine
<table>
<thead>
<tr>
<th>Year</th>
<th>Cases</th>
<th>Details</th>
</tr>
</thead>
</table>
| 2013 | 1     | - Unvaccinated 13 month old  
|      |       | - International travel to endemic area  
|      |       | - Symptoms: rash, fever, cough, corzya, conjunctivitis |
| 2012 | 2     | confirmed cases (siblings) |
Measles MMWR, September 24, 2013

- Measles elimination declared in US in 2000; however, importations continue to occur
- The median number of cases reported in the United States from 2001–2012 was 60 cases (range: 37–220 cases); median annual number of reported outbreaks was 4 (range 2-16)
- In 2013, 159 cases and 8 outbreaks were reported to CDC as of August 24, 2013
- In 2013, the source of importations was most often the WHO European region, an area where measles continues to circulate
- The majority of cases reported in 2012 were unvaccinated (82%) or had unknown vaccination status (9%)
- In 2011, 220 cases were reported in the US, the largest number of reported cases since elimination in 2000. In 2008, 140 cases were reported nationwide
- In 2013, the largest outbreak since 1996 was reported in New York City, with 58 case
# Mumps

<table>
<thead>
<tr>
<th>Year</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>0 confirmed cases, 1 probable case</td>
</tr>
<tr>
<td>2012</td>
<td>3 confirmed cases (siblings)</td>
</tr>
</tbody>
</table>
Resources

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

Guideline for infection control in health care personnel, 1998
Thank you!

Please contact Karman Tam for more information:

karman.tam@azdhs.gov
(602) 364-0246
Influenza
2013-2014
APIC State of the State
Shane Brady, MPH
Influenza Epidemiologist

Photo by CDC/ C. S. Goldsmith and A. Balish
the benefits of vaccination

The estimated number of influenza-associated illnesses prevented by flu vaccination during the 2012-2013 season: 6.6 million

or the population of the state of Arizona

The estimated number of flu-associated medical visits prevented by vaccination during the 2012-2013 season: 3.2 million

or the passengers of 1,067 mega cruise ships

The estimated number of flu hospitalizations prevented during the 2012-2013 season: 79,000

or all the fans in a FULL NFL stadium

get vaccinated

www.cdc.gov/flu
2013-2014 Season

• First case confirmed on October 4th, 2013 with activity intensifying in the last few weeks (Widespread).
• CDC has received a number of reports of severe respiratory illness among young and middle-age adults.
• Vaccine is a good match to circulating strains.
  – Trivalent Vaccine:
    • an A/California/7/2009 (H1N1)pdm09-like virus
    • an A/Texas/50/2012 (H3N2)-like virus
    • a B/Massachusetts/2/2012-like virus (from the B/Yamagata lineage)
  – Quadrivalent Vaccine:
    • a B/Brisbane/60/2008-like virus (from the B/Victoria lineage)
Lab-confirmed influenza cases, 2009-2014

Number of Lab-Confirmed Influenza Cases Reported, by Week of Report, 2009-2014

- 2011-2012
- 2012-2013
- 2013-2014

Week of Report

Number of Cases
### Age Groups by Flu Type

**Age Group of Reported Influenza Cases by Type, 2013-2014 Season (Week 3)**

<table>
<thead>
<tr>
<th>Age Group</th>
<th>All Confirmed Cases (N=2,424)</th>
<th>Influenza A (N=2,191)</th>
<th>Influenza B (N=180)</th>
<th>Unknown Type (N=53)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 4 years</td>
<td>433 (18%)</td>
<td>383 (17%)</td>
<td>42 (23%)</td>
<td>8 (15%)</td>
</tr>
<tr>
<td>5 to 18 years</td>
<td>427 (18%)</td>
<td>383 (17%)</td>
<td>35 (19%)</td>
<td>9 (17%)</td>
</tr>
<tr>
<td>19 to 49 years</td>
<td>991 (41%)</td>
<td>913 (42%)</td>
<td>57 (32%)</td>
<td>21 (40%)</td>
</tr>
<tr>
<td>50 to 64 years</td>
<td>337 (14%)</td>
<td>317 (14%)</td>
<td>14 (8%)</td>
<td>6 (11%)</td>
</tr>
<tr>
<td>65 years or older</td>
<td>219 (9%)</td>
<td>180 (8%)</td>
<td>30 (17%)</td>
<td>9 (17%)</td>
</tr>
<tr>
<td>Unknown age</td>
<td>17 (1%)</td>
<td>15 (1%)</td>
<td>2 (1%)</td>
<td>0 (0%)</td>
</tr>
</tbody>
</table>

**Age Group of Reported Influenza Cases by Type, 2012-2013 Season (Week 3)**

<table>
<thead>
<tr>
<th>Age Group</th>
<th>All Confirmed Cases (N=3,888)</th>
<th>Influenza A (N=2,849)</th>
<th>Influenza B (N=912)</th>
<th>Unknown Type (N=127)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 4 years</td>
<td>692 (18%)</td>
<td>477 (17%)</td>
<td>177 (19%)</td>
<td>38 (30%)</td>
</tr>
<tr>
<td>5 to 18 years</td>
<td>948 (24%)</td>
<td>598 (21%)</td>
<td>308 (34%)</td>
<td>42 (33%)</td>
</tr>
<tr>
<td>19 to 49 years</td>
<td>1,177 (30%)</td>
<td>903 (32%)</td>
<td>242 (27%)</td>
<td>32 (25%)</td>
</tr>
<tr>
<td>50 to 64 years</td>
<td>418 (11%)</td>
<td>319 (11%)</td>
<td>91 (10%)</td>
<td>8 (6%)</td>
</tr>
<tr>
<td>65 years or older</td>
<td>625 (16%)</td>
<td>529 (19%)</td>
<td>90 (10%)</td>
<td>6 (5%)</td>
</tr>
<tr>
<td>Unknown age</td>
<td>28 (1%)</td>
<td>23 (1%)</td>
<td>4 (.4%)</td>
<td>1 (1%)</td>
</tr>
</tbody>
</table>
Percentage of Visits for Influenza-like illness at sentinel outpatient providers, 2013-2014

Percentage of Visits for ILI at Sentinel Providers, 2013-2014, Arizona

- ILI%
- ILI% Baseline
- Threshold (AZ)
- Number of Sites Reporting

Week Ending Date

0.0 1.0 2.0 3.0 4.0 5.0 6.0 7.0

% of Visits for ILI

0 10 20 30 40 50 60 70

Number of Sites Reporting

Health and Wellness for all Arizonans
School surveillance

Influenza-Like Illness Per School Enrollment in Arizona (per 100,000)
Antiviral resistance (national)

<table>
<thead>
<tr>
<th></th>
<th>Oseltamivir: Resistant Viruses, Number (total tested)</th>
<th>Zanamivir: Resistant Viruses, Number (total tested)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Influenza A (H3N2)</td>
<td>None (85 tested)</td>
<td>None (85 tested)</td>
</tr>
<tr>
<td>Influenza B</td>
<td>None (20 tested)</td>
<td>None (20 tested)</td>
</tr>
<tr>
<td>2009 Influenza A (H1N1)</td>
<td>13 (1,553* tested)</td>
<td>None (709 tested)</td>
</tr>
</tbody>
</table>

*Includes specimens tested in national surveillance and additional specimens tested at public health laboratories in 16 states (AZ, CO, DE, FL, GA, HI, MA, ME, MD, MI, NY, PA, TX, UT, WA, and WI) who share testing results with CDC.

Neuraminidase inhibitors continue to show very little resistance (e.g., Tamiflu, Relenza).
Resources

ADHS Weekly Activity Reports:  

CDC Flu:  http://www.cdc.gov/flu
Thank you!

Shane Brady
Shane.Brady@azdhs.gov
602-364-3523

Photo by CDC/ Brian Judd
Coccidioidomycosis in Arizona

Clarisse Tsang, MPH
Acting Infectious Disease Epidemiology Program Manager
Office of Infectious Disease Services
APIC: January 24, 2014
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 by immunodiffusion (ID), enzyme immunoassay (EIA), latex agglutination, or tube precipitin OR IgG by ID, EIA, or complement fixation (CF) OR cultural, histopathologic, or molecular evidence of Cocci species
Epidemiology

• 2/3 of US cases reported from AZ
• 2\textsuperscript{nd} most commonly reported infectious disease in AZ
• Causes a substantial proportion of all community-acquired pneumonia in AZ
• Steadily increasing since 1997
• 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*

Reported cases per 100,000 population

<table>
<thead>
<tr>
<th>Year</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>5.2</td>
</tr>
<tr>
<td>1991</td>
<td>7.8</td>
</tr>
<tr>
<td>1992</td>
<td>11.3</td>
</tr>
<tr>
<td>1993</td>
<td>14.6</td>
</tr>
<tr>
<td>1994</td>
<td>13.6</td>
</tr>
<tr>
<td>1995</td>
<td>14.1</td>
</tr>
<tr>
<td>1996</td>
<td>14.4</td>
</tr>
<tr>
<td>1997</td>
<td>20.5</td>
</tr>
<tr>
<td>1998</td>
<td>30.2</td>
</tr>
<tr>
<td>1999</td>
<td>36.1</td>
</tr>
<tr>
<td>2000</td>
<td>37.4</td>
</tr>
<tr>
<td>2001</td>
<td>43.4</td>
</tr>
<tr>
<td>2002</td>
<td>57.2</td>
</tr>
<tr>
<td>2003</td>
<td>57.2</td>
</tr>
<tr>
<td>2004</td>
<td>62.9</td>
</tr>
<tr>
<td>2005</td>
<td>58.1</td>
</tr>
<tr>
<td>2006</td>
<td>88.7</td>
</tr>
<tr>
<td>2007</td>
<td>74.9</td>
</tr>
<tr>
<td>2008</td>
<td>73.0</td>
</tr>
<tr>
<td>2009</td>
<td>155.1</td>
</tr>
<tr>
<td>2010</td>
<td>255.8</td>
</tr>
<tr>
<td>2011</td>
<td>185.9</td>
</tr>
<tr>
<td>2012</td>
<td>108.1</td>
</tr>
<tr>
<td>2013</td>
<td>198.8</td>
</tr>
</tbody>
</table>

*Note: Data includes Laboratory reporting requirement and Lab A testing change.
Impact of Reporting and Testing Changes on the Gender Distribution of Reported VF Cases, 1990 - 2013*

% Female
% Male

*Note: The graph shows the percentage distribution of reported VF cases by gender from 1990 to 2013, highlighting changes in reporting and testing that affect the gender distribution.
Rates of Reported Cocci by County, 2012
Reported cases and rates by age groups, 2012

<table>
<thead>
<tr>
<th>Age Group* (Years)</th>
<th>Cases</th>
<th>Cases per 100,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;5</td>
<td>59</td>
<td>13.3</td>
</tr>
<tr>
<td>5-14</td>
<td>499</td>
<td>54.6</td>
</tr>
<tr>
<td>15-24</td>
<td>1387</td>
<td>150.6</td>
</tr>
<tr>
<td>25-34</td>
<td>1,857</td>
<td>214.5</td>
</tr>
<tr>
<td>35-44</td>
<td>2,215</td>
<td>267.3</td>
</tr>
<tr>
<td>45-54</td>
<td>2,175</td>
<td>260.0</td>
</tr>
<tr>
<td>55-64</td>
<td>1,923</td>
<td>257.0</td>
</tr>
<tr>
<td>65-74</td>
<td>1,587</td>
<td>294.6</td>
</tr>
<tr>
<td>75-84</td>
<td>866</td>
<td>295.2</td>
</tr>
<tr>
<td>85+</td>
<td>299</td>
<td>275.7</td>
</tr>
</tbody>
</table>

*Age could not be ascertained for 53 cases (approximately 0.4% of all cases).
Impact

• 1,000+ hospitalizations per year
• 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)

- Median of 11 days (mean 44) before first seeking care
- Time between first seeking healthcare and getting diagnosed: median 23 days, mean 5 months
- Median of 2 (mean 3) provider visits before being tested
- 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 website
• New partnerships with community organizations
  – High risk groups
Office of the Governor

* VALLEY FEVER AWARENESS WEEK *

WHEREAS, Valley Fever infections have tripled in Arizona over the last decade, with 60 percent of all reported cases of Valley Fever in the U.S. occurring in Arizona; and

WHEREAS, Valley Fever is the second 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, businesses, and community organizations are united to educate the public and healthcare providers about Valley Fever in Arizona; and

WHEREAS, research released by the Centers for Disease Control and Prevention and the announcement of a Congressional Task Force brought national attention to Valley Fever; and

WHEREAS, through public education and promoting early diagnosis, the number of individuals impacted by Valley Fever 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 9-17, 2013 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 twelfth day of September in the year Two Thousand and Thirteen, and of the Independence of the United States of America the Two Hundred and Thirty-eighth.

Karl Broman
Secretary of State
**Valley Fever and Pregnancy**

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.**

ValleyFeverARizona.org
Valley Fever

Cough  Headaches  Lack of appetite
Sore throat
Rash  Chills  Exhausted
Weight loss  Chest pain  Aching joints
Muscle aches  Fever  Shortness of breath
Wheezing  Night sweats  Stiff neck

Know the signs

www.valleyfeverarizona.org
COUGH? FEVER? EXHAUSTED?

ASK YOUR DOCTOR TO TEST YOU FOR VALLEY FEVER
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
• Upcoming clinician KAP survey
WHAT CAN YOU DO?

- Order Coccidioides 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.kidsociety.org/pg

Resources
Arizona Department of Health Services
Office of Infectious Disease Services
150 N. 18th Ave, Suite 140
Phoenix, Arizona 85007
(602) 364-8562
www.valleyfeverarizona.org

Valley Fever Center for Excellence
Mail Stop 191NE
3601 S. 5th Avenue
Tucson, Arizona 85723
Hotline: (520) 629-4777
http://www.vfce.arizona.edu/

When you suspect
Community Acquired Pneumonia

Order a
Coccidioidomycosis Serology

For more information, visit www.valleyfeverarizona.org

CDC

azdhs.gov
Thank you! Questions?

Cough? Fever? Exhausted?

ValleyFeverArizona.org

Courtesy of Mike Olbinksi

Clarisse Tsang

tsongc@azdhs.gov
602-364-3817

Mohammed Khan

Mohammed.Khan@azdhs.gov
602-364-3685
Healthcare-Associated Infections Program: A Review of 2013

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.

• Upon request, provide infection prevention technical assistance.
Technical Assistance

• County health departments
• Intra-agency
• Dialysis facilities
• Outpatient clinics
• Arizona State Board of Pharmacy
• Arizona State Board of Dental Examiners
HAI Program & Investigations
2013 HAI Investigations

• 84 outbreak investigations in HCFs in 2013
  – (including hospitals, LTCFs, and assisted living facilities)
    • 69% GI
    • 12% lice & mites
    • 12% respiratory (0% VPDs though)

What are some examples of the other 7%?
How is our role expanding?
Pima County Dental Facility

• Received notification from a dentist concerning possibly compromised dental compressor used and sold in Arizona

• Misconnection of a “T” adapter was identified within the compressor and lines

• This allowed possible exposure of infectious material and fluids to a patient’s oral mucosa or wounds
Pima County Dental Facility

• CDC’s DHQP and Division of Oral Health was contacted
  – helped determine there a reasonable risk to the exposed patients

• Compromised compressor was sold by auction to dentist in a different county

• County and ADHS worked to identify possibly exposed patients and develop a plan of action
Pima County Dental Facility

- 176 possible exposed patients identified
- BBP testing recommended
- Patient notification plan and letter developed
- FAQ and resources identified
- County hotline setup to address public concern and calls
- Regular communication established between county, ADHS, and DHQP for updates and need assessment
Pima County Dental Facility

• Outcomes
  – No HCV, HBV, or HIV cases identified related to exposure

• Issues identified
  – Need for relationship and collaboration with Arizona Board of Dental Examiners
  – Regulatory entity of private dental practices and facilities
  – Intra-agency communication of possible infection control reports and complaints
Compounding Pharmacy

- Intra-agency communication concerning a HCF notification of possible contaminants in vials
  - Vials prepared by an Arizona compounding pharmacy
- HCF immediately identified and sequestered associated lots
- *Bipolaris* species identified as possible contaminant
- 106 possible exposures identified
- Action plan developed with CDC, FDA, ASBP, ADHS, count health department, and HCF
Compounding Pharmacy

• First time ADHS collaborated and provided technical assistance with the Arizona State Board of Pharmacy (ASBP)
• Compounding site visit with ASBP and FDA
• Documentation, sterility and infection control lapses identified
• Able to verify that none of the compounded vials in question had been shipped out of state
Compounding Pharmacy

• Outcome
  – Preliminary recall of compounded medication, later expanded
  – HCF, county and ADHS coordination to address public and media concerns
  – No injuries identified or reported at this time

• Issues identified
  – Oversight of compounding pharmacies
  – Need for communication algorithm between state agencies
  – Restriction of communication between federal and state agencies at times
  – Review and familiarity with
    • ASBP rules and statutes
    • USP 797 Standards and Guidelines for pharmaceutical compounding
• Infection Prevention and Control Advisory Committee (IPCAC) created by Senate Bill 1356 in 2008
• IPCAC evolved into HAI Advisory Committee in 2010
• Comprised of various state stakeholders and partners
• Steers HAI subcommittee activities and projects
• Bi-monthly meeting
• Chaired by State HAI Coordinator
HAI Subcommittees

• Antimicrobial Stewardship Subcommittee
• Education and Training Subcommittee
• Prevention Strategies Subcommittee
• Surveillance Subcommittee
• Long Term Care Subcommittee
• End-Stage Renal Disease Subcommittee
60 Minutes For Change

• APIC members are great resources for our HAI Subcommittees!
• Subcommittee meetings occur monthly and average 60 minutes in length
• Voluntary and open participation by members
• Attendance through physical presence or provided conference line

Could you give 60 minutes a month to improve our statewide efforts to address emergent HAI issues?
Thank you

Eugene.Livar@azdhs.gov
(602) 364-3522

www.preventHAIaz.gov
Vector-borne and Zoonotic Disease Update

- Brucellosis
- Hantavirus
- Plague
- Psittacosis
- RMSF
- Rabies
- West Nile Virus
2013 Brucellosis Update

• 2 human cases
  – Maricopa residents
  – 16 y.o. male, 14 y.o. female
  – Hispanic
  – *Brucella melitensis*
  – Consumed unpasteurized dairy products from Mexico months prior
Brucellosis should be considered if:

• Symptoms: intermittent fever, chills, malaise, sweating, joint pain, weakness, headache, anorexia/weight loss, fatigue

• Recent out-of-county travel (esp. to Mexico)

• Consumed unpasteurized dairy products (e.g. raw milk, queso fresco, goat cheese)

• Physicians should ALWAYS document “Suspect or Rule-Out Brucella”
Brucellosis & Lab Exposures

• Most lab exposures occur because “R/O BRUCELLA” was not indicated by MD
• Brucellosis is the most commonly reported lab-acquired bacterial infection
• Follow up: PH to evaluate risk levels of all lab staff (high vs. low risk)
  – High risk staff should receive PEP and recommend serial blood draws (baseline, 2, 4, 6, and 24 wks)
Testing: Brucellosis

• Culture positive from hospital lab → report to public health immediately
  – ASPHL will perform confirmatory tests: PCR (rapid) and *Brucella* speciation (approx. 5-7 days)

• Serologic testing
  – Tube agglutination is gold standard
  – *Brucella* antibody IgM/IgG tests are commercially available – false positives are common
  – F/U confirmation testing at ASPHL/CDC is recommended
2013 Hantavirus Update

• 6 cases (3-Apache, 2-Coconino, 1-Graham)
  – Median age: 42 (26-75 y.o.);
  – 50% female
  – 2 fatal cases
  – 3 summer cases (May-Aug),
    3 fall cases (Sept-Dec)

• Common Sx: fever (67%), myalgias, GI symptoms, SOB, respiratory distress, thrombocytopenia (100%)

• Varying severity – 67% intubated/critical care
Hantavirus

• 5/6 cases reported from Northern Arizona but can occur anywhere in the state
• 5/6 reported rodent exposure in the previous months before onset
• Testing: commercial labs for rule outs, high suspect cases should be tested at ASPHL
  – False positives common at commercial labs
  – Contact PH for testing/reporting high suspect cases
2013 Plague Activity Update

• In August, 5 feral cat deaths in Navajo County – 2 tested positive for plague
  – Living cat with bubo on neck also found
• PHS staff collected fleas from inactive prairie dog colonies → tested positive for \textit{Y. pestis} at NAU
• Pest/flea control
• No human cases
2013 Psittacosis Activity

• In August, a peach-faced lovebird die-off was reported in residential area near Mesa, AZ

• Sample of the dead birds tested positive for *Chlamydophila psittaci*

• A resident with a bird feeder/bird bath originally reported the die-off and had a respiratory illness

• Advised to seek medical care
Psittacosis case

- 50 y.o. female Maricopa resident
- Sx: fever, sore throat, night sweats, cough, congestion, history of asthma
- Seen at urgent care early Sept; Rx – amoxicillin
- Prescription not effective
- Reported bird-die off and cleaned a good amount of bird droppings prior to onset – had potential for aerosolization/inhalation
Psittacosis should be considered if:

- Fever, chills, headache, muscle aches, dry cough. Pneumonia often evident on x-ray.
  - Typically presents as flu-like symptoms and can progressive to severe pneumonia or even death

- Bird owner, pet shop employee, veterinarian OR exposure to dried bird droppings

- Treatment: Doxycycline or other tetracycline for 10-14 days after fever subsides
2013 Rocky Mountain Spotted Fever Update

• 45 cases reported in AZ (55 cases in 2012)
  – 1 fatal case (3 fatal cases in 2012)
  – 91 suspect cases still under investigation

• Common Symptoms:
  – fever (100%), headache (47%), myalgia (40%), N/V/D (38%)

• Not-so-common:
  – rash (<10%), reported tick exposure (24%)

• All endemic cases associated with tribal lands

• 2 NEW tribal lands in Arizona areas identified
Transfer Protocol

TRIBAL FACILITY

ADHS

COUNTY

HOSPITAL
RMSF Control Efforts: ADHS

- Developed and implemented RMSF transfer protocol
- Outreach to counties
- Develop surveillance tools for emergence of RMSF in new areas
- Assist in Epi-Aids and prevention projects
- Statewide Tribal RMSF Stakeholder meetings
- Provide tick control supplies
- Ongoing surveillance for cases and laboratory testing
2013 Rabies Update

• 69 total positive animals
  – 42 bats
  – 18 skunks
  – 4 foxes
  – 4 bobcats
  – 1 coyote

• 19 human exposures

• 40 domestic animal exposures
2013 West Nile Virus Update

• 61 human cases (6 deaths) reported in Arizona
  – Greenlee, La Paz, Maricopa, Navajo, Pima, Pinal, and Yavapai
  – 87% of reported cases in Maricopa County
  – 77% of reported cases were neuroinvasive
  – Median age: 56 (range 12-93 y.o.)
  – 43% female
Questions??

Contact Information:
Selam Tecle, ADHS-Epi
selam.tecle@azdhs.gov
o: (602) 364-3890
Foodborne Disease Outbreaks in Arizona

Rashida Hassan, MSPH
Outbreak Capacity Epidemiologist
Arizona Department of Health Services
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

Additional CDC Findings:

• *Salmonella* – leading cause of hospitalizations and deaths
  – Responsible for ~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 was caused by norovirus
Figure 7. Reported Outbreaks by Infectious Disease Category - Arizona 2012

- **GI Illness**: 128
- **Other^**: 40
- **Vaccine-Preventable Disease**: 25
- **Respiratory***: 22
- **Lice & Mites**: 18

^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.
Figure 8. Leading 6 Reported Infectious Agents Causing Outbreaks - Arizona 2012

- Norovirus: 42%
- Unknown GI: 14%
- Unknown: 13%
- Scabies: 7%
- Varicella: 6%
- Conjunctivitis: 4%
- Hand Foot and Mouth: 7%
- Pertussis: 7%
Figure 10: Reported Outbreaks by Location Category - Arizona 2012

- **Hospital or Assisted Living Facility**: 4 (LTAF/Rehab), 14 (LTAF), 38 (Assisted Living), 12 (Nursing & Rehab), 2 (Hospice), 7 (Hospital)
- **Other**: 24
- **Prison/Jail**: 7
- **Restaurant**: 36
- **School or Childcare Facility**: 33

Outbreak Location Category

*Other includes community outbreaks (such as private homes, recreational facilities and parks)*
Figure 11: Norovirus Outbreaks by Location Category - Arizona 2012

<table>
<thead>
<tr>
<th>Location Category</th>
<th># of Outbreaks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital or Assisted Living Facility</td>
<td>37</td>
</tr>
<tr>
<td>LTCF/Rehab</td>
<td>7</td>
</tr>
<tr>
<td>LTCAF</td>
<td>4</td>
</tr>
<tr>
<td>Assisted Living</td>
<td>24</td>
</tr>
<tr>
<td>Nursing &amp; Rehab</td>
<td>9</td>
</tr>
<tr>
<td>Hospice</td>
<td>1</td>
</tr>
<tr>
<td>Hospital</td>
<td>5</td>
</tr>
<tr>
<td>Other*</td>
<td>10</td>
</tr>
<tr>
<td>Prison/Jail</td>
<td>1</td>
</tr>
<tr>
<td>Restaurant</td>
<td>17</td>
</tr>
<tr>
<td>School or Childcare Facility</td>
<td>1</td>
</tr>
<tr>
<td>K-12 Elementary Childcare</td>
<td>1</td>
</tr>
</tbody>
</table>

Outbreak Location Category

61%

*Other includes community outbreaks (such as private homes, recreational facilities and parks)
Figure 9. Reported Outbreaks by Mode of Transmission - Arizona 2012

- Person-to-Person: 73% (171 outbreaks)
- Foodborne: 19% (45 outbreaks)
- Other/Unknown: 9% (16 outbreaks)
- Environmental: 0% (1 outbreak)
Foodborne Disease Outbreaks in Arizona, 2012

- Norovirus (23)
- Unknown (14)
- Salmonella (21)
- Botulism (2)
- Suspect toxin (1)
- Scromboid poisoning (1)
- Lye toxicity (1)
- Campylobacter (1)
- Hepatitis A (1)
- C. perfringins (1)
How Do We Identify an Outbreak?

• Calls from public
  – Group of people from wedding reception ill at same time

• Calls from doctors/clinics
  – Physician seeing more than the usual number of patients with the same illness

• Laboratory reports
Burden of Foodborne Illness: The Tip of the Iceburg

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**

* = 24 hour reportable disease
Laboratory Data

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

- Specimens serotyped to tell which type of species (i.e. *Salmonella* saintpaul, tennessee, typhimurium, etc.)

- Intense testing down to DNA fragments of the bacteria using Pulsed Field Gel Electrophoresis (PFGE)
  - Data entered into national database: PulseNet
    - Monitored by CDC
What is PulseNet?

• National network of over 75 public health and regulatory labs

• Molecular sub-typing of bacteria that cause foodborne disease
  – PFGE to create DNA fingerprints

• Share these fingerprints electronically and are kept in a database at CDC

• CDC searches for similar patterns within last 2-4 months and notifies epidemiologists if a cluster is identified
PFGE Gel Example:

- Peanut Butter Envr Sample
- S. typhimurium Human Samples
Epidemiology Investigates Clusters

Case 1:
JEGX01.0004

Case 2:
JEGX01.0004

Case 3:
JEGX01.0004
Product Supply Chain Traceback

Seed Growers

Seed Consolidators / Brokers

Sprout Growers

Distributors

Retailers

Many Small

Few Large

Many Small

Few Small & Few Large

Many Small & Many Large

Food Service Chains

Grocery Chains

Ind. Restaurants

Ind. Grocers
2013 Foodborne Outbreak Investigations
Hepatitis A Outbreak

- 162 hepatitis A cases in 10 states: Arizona (23), California (79), Colorado (28), Hawaii (8), New Hampshire (1), New Jersey (1), New Mexico (11), Nevada (6), Utah (3), and Wisconsin (2)
  - 90 (56%) female
  - Age range 1 – 84 years
    - 94 (58%) of those ill were between 40 – 64 years of age.
  - Onsets dates 3/31 – 7/26
  - 71 (44%) hospitalized
Hepatitis A Outbreak – Arizona Cases

- 23 confirmed cases
  - 15 (65%) female
  - Age range 24 – 69 years
  - Onsets dates 5/1 – 7/1
  - 10 (43%) hospitalized
  - 22 reported consuming the Townsend Farms product
    - 1 secondary case was a contact of 3 confirmed cases

the fecal-oral route
Product Actions

• Costco removed product from shelves on 5/30/2013
  – Robo-calls to 250,000+ people

• Recalls:
  – June 4, 2013: Townsend Farms, Inc. voluntarily recalled certain lots of its frozen Organic Antioxidant Blend
    • June 28, 2013: Townsend Farms expanded its recall to additional lots
  – June 26, 2013: Scenic Fruit Company voluntarily recalled certain lots of Woodstock Frozen Organic Pomegranate Kernels
Trace-Back Investigation

• Most likely vehicle: common shipment of pomegranate seeds
  – Import alert on pomegranate seeds from Goknur Foodstuffs Import Export Trading in Turkey
E. coli 0157 Outbreak at a Mexican Style Restaurant

- OB reported by the Infection Preventionist (IP) at a children’s hospital on 7/30
  - 3 cases of bloody diarrhea in teenage girls on the same volleyball team
- Cases were hospitalized — STEC strongly suspected
- Initial investigation focused on common exposure to a restaurant or other venue during team activities
  - Team attended multiple camps in the weeks leading up to illness onset
- Suspect restaurant mentioned in early reports
Case Definitions

• **Confirmed Case (n=59)**
  – History of eating at Restaurant X from July 18–31, with **any one** of the following criteria:
    • Onset of bloody diarrhea within 10 days of meal
    • *E. coli* 0157:H7 positive culture result
    • Shiga-toxin positive test result
    • Hemolytic Uremic Syndrome (HUS)

• **Probable Case (n=35)**
  – History of eating at Restaurant X from July 18–31 with onset of diarrhea (non-bloody) within 10 days of meal

• **94 total cases identified**
Demographics (n=94)

- 53 (56.4%) female
- Age range 2–88; median 32 years
- 24 (25.5%) children <18 years; 70 (74.5%) adults
- At least 33 (35.1%) sought medical care
  - 22 hospitalized
  - 11 visited ED or urgent care
- 2 (2%) developed hemolytic uremic syndrome (HUS) — both children
- All survived
Epi Curve: Disease Onset and Meal Date

Number of Confirmed/Probable Cases with Meal Date (n=82)

- Onset date of Probable Cases
- Onset Date of Confirmed Cases
- Meal Date

Health and Wellness for all Arizonans
Case-Control Results

• Interviewed 180 persons with detailed food questionnaire
  – 81 cases
  – 99 controls

• Analyzed over 43 food items from Restaurant X

• **Shredded lettuce was the highest risk food item in all analyses**
Any Questions?

Rashida Hassan, MSPH
Outbreak Capacity Epidemiologist

Rashida.hassan@azdhs.gov
602-364-3671
2013 REFUGEE HEALTH SNAPSHOT

Arizona Department of Health Services – Jan, 2014

Zachary Holden, MPH
Refugee Health Coordinator
Who are refugees?

A refugee is a person who is outside his or her home country and is unable or unwilling to return due to persecution, or well-founded fear of persecution on account of

- race,
- religion,
- nationality,
- gender,
- membership in a particular social group,
- or political opinion.

- 15.4 million refugees worldwide
- 70,000 resettle to the US every year
- AZ is the #5 resettlement state
Refugee Arrival Stats

2013 Total: 3336

Arrivals By County
- Pima 23%
- Maricopa 77%

62,000 arrivals since 1980 from 106 countries speaking 115 languages and dialects
# Refugee Screening Clinics 2013

<table>
<thead>
<tr>
<th>Condition</th>
<th>Maricopa</th>
<th>Pima</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Latent TB</td>
<td>317</td>
<td>203</td>
<td>520</td>
</tr>
<tr>
<td>Ova &amp; Parasites</td>
<td>301</td>
<td>87</td>
<td>388</td>
</tr>
<tr>
<td>Hepatitis B</td>
<td>63</td>
<td>21</td>
<td>84</td>
</tr>
<tr>
<td>Syphilis</td>
<td>28</td>
<td>4</td>
<td>32</td>
</tr>
<tr>
<td>HIV</td>
<td>15</td>
<td>10</td>
<td>25</td>
</tr>
<tr>
<td>Chlamydia</td>
<td>10</td>
<td>5</td>
<td>15</td>
</tr>
<tr>
<td>Gonorrhea</td>
<td>3</td>
<td>1</td>
<td>4</td>
</tr>
</tbody>
</table>

All refugees are screened within 90 days of arrivals to AZ
### MEDSIS Reported ID 2013

<table>
<thead>
<tr>
<th>Disease</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hepatitis B</td>
<td>113</td>
</tr>
<tr>
<td>Coccioidomycosis</td>
<td>57</td>
</tr>
<tr>
<td>Tuberculosis</td>
<td>18</td>
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<tr>
<td>Salmonellosis</td>
<td>7</td>
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<tr>
<td>Malaria</td>
<td>5</td>
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<tr>
<td>Campylobacteriosis</td>
<td>3</td>
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<tr>
<td>Cryptosporidiosis</td>
<td>2</td>
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<tr>
<td>MRSA</td>
<td>2</td>
</tr>
<tr>
<td><em>E. coli</em> Enterohemorrhagic (Shiga Toxin)</td>
<td>1</td>
</tr>
<tr>
<td>Giardiasis</td>
<td>1</td>
</tr>
<tr>
<td>Hepatitis A</td>
<td>1</td>
</tr>
<tr>
<td>Shigellosis</td>
<td>1</td>
</tr>
<tr>
<td>Streptococcal Group A, Invasive</td>
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<tr>
<td>Streptococcus Pneumoniae, Invasive</td>
<td>1</td>
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<tr>
<td>Typhoid Fever</td>
<td>1</td>
</tr>
<tr>
<td>Varicella (Chickenpox)</td>
<td>1</td>
</tr>
</tbody>
</table>

### Hepatitis B

<table>
<thead>
<tr>
<th>Type</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chronic</td>
<td>110</td>
</tr>
<tr>
<td>Acute</td>
<td>2</td>
</tr>
</tbody>
</table>

### Valley Fever

- Myanmar
- Somalia
- Sudan

### TB

- Bosnia
- Sudan
- Vietnam

### Other Conditions

- Bhutan
- Somalia
- Iraq

---

Health and Wellness for all Arizonans
Treating Refugees

• Understand the refugee experience

• Sensitivity to cultural and religious beliefs

• Meeting language needs (Title VI)

• Engender trust

Zachary Holden
602-364-3592
www.AZRefugeeHealth.org
Arizona Department of Health – STD Update

Joe R. Mireles MPH
APIC MEeting
January 24, 2014
Health Services Advisory Group
Objective

• Provide a review of the epidemiology of sexually transmitted diseases throughout the state of Arizona

• Participants will be able to identify sexually transmitted disease case count/rate trends in Arizona
Topics

• Chlamydia
• Gonorrhea
• Gonorrhea and Chlamydia – Arizona Hospitals
• Syphilis
• Congenital Syphilis
Chlamydia

• State wide cases and rates
• Rates by race/ethnicity
Figure CT 1. Reported Chlamydia Cases and Case Rates, Arizona 2007-2012

Data is provisional and subject to change.
*2011 CDC bridged data used for 2012 case rate population denominators.
Figure CT 3. Reported Chlamydia Case Rates by Race/Ethnicity, Arizona 2007-2012

Data is provisional and subject to change.
*2011 CDC bridged data used for 2012 case rate population denominators.
Reported Chlamydia Rates by Age Group, Arizona 2012

- 10-14: 49.4
- 15-19: 1,912.8
- 20-24: 2,246
- 25-29: 1,147.2
- 30-34: 549.8
- 35-39: 307.2
- 40-44: 157.0
- 45-54: 62.2
- 55-64: 14.7
- 65+: 3.5
- Arizona: 471.6

Rates (per 100,000 Population)

Provisional and subject to change.

DC bridged data used for 2012 case rate population denominators. *Ages 0-9 not shown, Arizona rate reflects all ages.
# Chlamydia Treatment

## Recommended Regimens

**Azithromycin** 1 g orally in a single dose

OR

**Doxycycline** 100 mg orally twice a day for 7 days

## Alternative Regimens

**Erythromycin** base 500 mg orally four times a day for 7 days

OR

**Erythromycin ethylsuccinate** 800 mg orally four times a day for 7 days

OR

**Levofloxacin** 500 mg orally once daily for 7 days

OR

**Ofloxacin** 300 mg orally twice a day for 7 days
Review

• Number of reported chlamydia cases continue to increase statewide

• Percent increase in cases from 2010 to 2011: 8.9%

• Percent increase in cases from 2011 to 2012: 3.1%
Gonorrhea

- State wide cases and rates
- Rates by race/ethnicity
Reported Gonorrhea Cases and Rates, Arizona 2007-2012

Data is provisional and subject to changes.
*2011 CDC bridged data used for 2012 case rate population denominators.
Figure GC 3. Reported Gonorrhea Case Rates by Race/Ethnicity, Arizona 2007-2012

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

• Counts and rate of gonorrhea continue to increase in Arizona
Gonorrhea Isolate Surveillance Project

• Short Overview
• Quick review of Antimicrobial Susceptibility Testing of Arizona specimens
Gonococcal Isolate Surveillance Project (GISP)

- US sentinel surveillance
- Monitors trends in NG antibiotic susceptibility
- 26–29 STD clinic sites
- Urethral NG isolates obtained from first 25 men per site each month
- Susceptibility testing by 4–5 regional labs
- Confirmatory testing by CDC
- Minimum inhibitory concentrations (MICs) by agar dilution
Cephalosporin Susceptibility MICs

• MICs of cephalosporin-resistance not defined
  – Don’t know what MIC is predictive of clinical treatment failure
  – Surveillance of cephalosporin MIC trends, rather than “resistance”

• Cefixime and ceftriaxone susceptibility: $\leq 0.25 \, \mu\text{g}/\text{ml}$*

• “Decreased susceptibility”: $\geq 0.50 \, \mu\text{g}/\text{ml}$

* Clinical and Laboratory Standards Institute (CLSI), 2010

Source: Robert Kirkcaldy, MD, MPH - CDC/NCHHSTP/ Division of STD Prevention
NCSD Annual Meeting – November 2, 2011
Gonorrhea Treatment
Uncomplicated Genital/Rectal Infections

Ceftriaxone 250 mg IM in a single dose

**OR, if not an option:**

Cefixime 400 mg orally in a single dose

**PLUS***

Azithromycin 1 g orally or
Doxycycline 100 mg BID x 7 days

* Regardless of CT test result

CDC 2010 STD Treatment Guidelines
[www.cdc.gov/std/treatment](http://www.cdc.gov/std/treatment)
Gonorrhea Treatment
Oropharyngeal Infections

Ceftriaxone 250 mg IM in a single dose

PLUS

Azithromycin 1 g orally or Doxycycline 100 mg BID x 7 days

IN CASE OF SEVERE ALLERGY:

- Azithromycin 2 g orally once

CDC 2010 STD Treatment Guidelines
www.cdc.gov/std/treatment
"In instances where ceftriaxone is not available, CDC recommends cefixime 400 mg orally, plus either azithromycin 1 g orally or doxycycline 100 mg orally twice daily for seven days," Kirkcaldy says. "For patients with a severe allergy to cephalosporins, CDC recommends a single 2-g dose of azithromycin orally. In both of these circumstances, CDC recommends a test of cure for these patients one week after treatment.‘‘ – Robert Kirkcaldy MD, MPH
Gonorrhea and Chlamydia – Arizona Hospitals
• Chlamydia – 30,571 cases reported state wide in 2012.

• STD Prevention and Control Program recorded 3,097 (10.1%) as being reported from state hospitals.

• Gonorrhea – 5,857 cases reported state wide in 2012.

• STD Prevention and Control Program recorded 1,015 (17%) as being reported from state hospitals.
Gonorrhea and Chlamydia Cases by Gender, Arizona 2012

<table>
<thead>
<tr>
<th></th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>State of Arizona</td>
<td>51.4</td>
<td>48.6</td>
</tr>
<tr>
<td>Hospitals in Arizona</td>
<td>47.3</td>
<td>52.7</td>
</tr>
<tr>
<td>State of Arizona</td>
<td>27.5</td>
<td>72.5</td>
</tr>
<tr>
<td>Hospitals in Arizona</td>
<td>21.2</td>
<td>78.8</td>
</tr>
</tbody>
</table>

Health and Wellness for all Arizonans
Summary

- Large number of cases from state hospitals.
- MEDSIS reports will be electronically imported to STDCP surveillance system (PRISM)
- Complete and accurate information is important.
Syphilis

• State wide cases and rates
• Selected demographic information
Reported Primary and Secondary Syphilis Cases and Case Rate, Arizona
2007-2012
Reported Primary and Secondary Syphilis Rates by Age Group, Arizona 2012

Age Groups

- 0-4: 3.3
- 5-9: 10.4
- 10-14: 5.9
- 15-19: 7.7
- 20-24: 6.7
- 25-29: 6.7
- 30-34: 3.9
- 35-39: 3.9
- 40-44: 2.1
- 45-49: 2.1
- 50-54: 2.1
- 55-59: 0.5
- 59-64: 0.1
- 65+: 0.1

Rates (per 100,000 Population)
Reported Primary and Secondary Syphilis Case Rates by Race/Ethnicity, Arizona 2007-2012

- Black
- Hispanic
- Non-Hispanic White
- American Indian/Alaskan Native
- Arizona

Rate (per 100,000 population)

2007: 13.0
2008: 11.3
2009: 5.8
2010: 8.8
2011: 16.3
2012: 8.6
Reported Primary and Secondary Syphilis Case among All Males and the Percentage of Male Cases that Self-Identify as Men who Have Sex with Men (MSM), Maricopa and Pima Counties, 2007-2012

Rate (per 100,000 population)

<table>
<thead>
<tr>
<th>Year</th>
<th>Rate</th>
<th>% MSM</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>10.2</td>
<td>58%</td>
</tr>
<tr>
<td>2008</td>
<td>9.6</td>
<td>63%</td>
</tr>
<tr>
<td>2009</td>
<td>7.6</td>
<td>77%</td>
</tr>
<tr>
<td>2010</td>
<td>8.0</td>
<td>83%</td>
</tr>
<tr>
<td>2011</td>
<td>10.1</td>
<td>75%</td>
</tr>
<tr>
<td>2012</td>
<td>7.1</td>
<td>80%</td>
</tr>
</tbody>
</table>
Summary

• Counts and rate of primary and secondary syphilis show an overall decline for the previous 5 years

• Large percentage of Primary and Secondary syphilis cases in men are among MSM
Congenital Syphilis

• Statewide cases
Figure S9. Reported and Matched Congenital Syphilis Cases (by Birth Year) in Arizona by Live Birth and Stillbirth, 2007-2012

*The congenital syphilis crossmatch procedure uncovered one child that met the surveillance definition for congenital syphilis.
Arizona Department of Health Contact Information

Program Manager
Roxanne Ereth
Phone: 602-364-3661

Epidemiologist/IPP Coordinator – Chlamydia
Anita Betancourt
Phone: 602-364-3895

Epidemiologist - Gonorrhea
Lauren Young
Phone: 602-364-4761

Epidemiologist - Syphilis
Joe Mireles
Phone: 602-364-4565
HIV EPIDEMIOLOGY IN ARIZONA

Amanda White, MPH
ADHS
1/24/2014
Overview

• HIV Surveillance and Epidemiology data
  – All information from eHARS, data through 2012
  – Emergent cases- Cases reported in a specific year not necessarily infected in that year

• Spectrum of Care Cascades

• HIV Prevention Program

• ADAP-AIDS Drug Assistance Program
Arizona HIV/AIDS Events Per Year, 1981-2012

- AIDS Diagnosis
- HIV Diagnosis
- Deceased

Key Events:
- 1ST Test
- AZT
- HAART

Number of Cases

Month

Dec 2004
May 2005
Sep 2005
Jan 2006
May 2006
Sep 2006
Jan 2007
Jun 2007
Dec 2007
May 2008
Sep 2008
Apr 2009
Dec 2009
Jun 2010
Nov 2010
Mar 2011
Jul 2011
Nov 2011
Mar 2012
Jul 2012
Nov 2012

HIV
AIDS
Total
Arizona 5-Year New HIV/AIDS Rate by Race/Ethnicity, 1990-2011

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

Health and Wellness for all Arizonans
Arizona Relative Percentage of Emergent Cases by Reported Risk Behavior, 1990-2011

Proportion of Emergent Cases

5-Year Period


- MSM
- IDU
- HRH
- OTHER
- NRR

Health and Wellness for all Arizonans
Male United States and Arizona Estimates of New HIV Infections, By Transmission Category

AZ Males (2012)

- MSM: 67%
- IDU: 8%
- MSM/IDU: 5%
- HRH: 12%
- NRR: 8%

US Males (2011)

- MSM: 78%
- HRH: 12%
- NRR: 12%

MSM = Men Who Have Sex with Men
IDU = Injection Drug User
HRH = High-Risk Heterosexual
NRR = No Risk Reported

The United States estimate does not include an NRR category.
Female United States and Arizona Estimates of New HIV Infections, By Transmission Category

AZ Females (2012)

- NRR* 24%
- IDU 16%
- Perinatal 3%
- HRH 57%

US Females (2011)

- IDU 14%
- HRH 86%

MSM = Men Who Have Sex with Men
IDU = Injection Drug User
HRH = High-Risk Heterosexual
NRR = No Risk Reported
The United States estimate does not include an NRR category

* 23% NRR are Presumed Heterosexual
SPECTRUM OF CARE- CASCADE

• 2012 spectrum of care cascades created using data from eHARS, Unmet needs, and ADAP.
  – 2012 Arizona prevalent cases (alive through 2012)

• Total HIV infected is an estimate based on the CDC’s national estimate of the percent of people who are unaware they are HIV positive – 18.1%
SPECTRUM OF CARE ENGAGEMENT-ARIZONA PREVALENT CASES 2012

- HIV Infected: 16929
- HIV Diagnosed: 15288
- Linked to HIV care: 8764
- Retained in HIV Care: 7183
- Need Antiretroviral Therapy: 7436
- On Antiretroviral Therapy: 6669
- Adherent/Undetectable: 5453

Note: HIV infected is derived using CDC’s national infection estimation guidelines.
SPECTRUM OF CARE ENGAGEMENT—ARIZONA PREVALENT CASES 2012

Percent of Individuals

<table>
<thead>
<tr>
<th>Stage</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIV Diagnosed</td>
<td>100%</td>
</tr>
<tr>
<td>Linked to HIV Care</td>
<td>57%</td>
</tr>
<tr>
<td>Retained in HIV Care</td>
<td>47%</td>
</tr>
<tr>
<td>Need ARV Therapy</td>
<td>49%</td>
</tr>
<tr>
<td>On ARV Therapy</td>
<td>44%</td>
</tr>
<tr>
<td>Adherent/Undetectable</td>
<td>36%</td>
</tr>
</tbody>
</table>
SPECTRUM OF CARE ENGAGEMENT - AZ PREVALENT CASES BY SEX 2012

<table>
<thead>
<tr>
<th>Percent of Individuals</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIV Diagnosed</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Linked to HIV Care</td>
<td>57%</td>
<td>61%</td>
</tr>
<tr>
<td>Retained in HIV Care</td>
<td>46%</td>
<td>50%</td>
</tr>
<tr>
<td>Need ARV Therapy</td>
<td>48%</td>
<td>50%</td>
</tr>
<tr>
<td>On ARV Therapy</td>
<td>44%</td>
<td>44%</td>
</tr>
<tr>
<td>Adherent/Undetectable</td>
<td>36%</td>
<td>36%</td>
</tr>
</tbody>
</table>
SPECTRUM OF CARE ENGAGEMENT - AZ PREVALENT CASES BY RACE/ETHNICITY 2012

Percent of Individuals

- American Indian/Alaska Native Non-Hispanic
- Asian/Pacific Islander/Native Hawaiian Non-Hispanic
- White Non-Hispanic
- Black Non-Hispanic
- Hispanic
- Multi-Race/Other/Unknown

HIV Diagnosed
Linked to HIV care
Retained in HIV care
Need Antiretroviral...
On Antiretroviral...
Adherent/Undetectable
SPECTRUM OF CARE ENGAGEMENT - AZ PREVALENT CASES BY RISK 2012

Percent of Individuals

HIV-Diagnosed
Linked to HIV care
Retained in HIV Care
Need Antiretroviral Therapy
On Antiretroviral Therapy
Adherent/Undetectable

HR Hetero
MSM
Perinatal/Blood/Other
Presumed Heter.
MSM/IDU
IDU
IDU
NRR

HOW YOU CAN HELP HIV EPIDEMIOLOGY

• What we need:
  – Negative test reporting, including undetectable viral loads and CD4, which are not reportable by state law
  – Risk, Race, Address, 1st Positive
  – HIV Medication History
HIV PREVENTION
REQUIRED COMPONENTS

HIV Testing
Healthcare Opt-Out Screening
Urban and Rural programs
Partner Services
Linkage to Care
4th Generation testing
Acute Case Identification

Comprehensive Prevention with Positives
Partner Services to all Positives (initial and ongoing)
Linkage to Care and Re-engagement
Referral and linkage to other medical and social services
Evidence Based Interventions
Behavioral Risk Screenings

Policy Initiatives
Opt-Out Testing and removal of written consent
Sharing of Epidemiologic Data
Testing in Emergency Departments who currently do not offer testing

Condom Distribution
Ryan White Providers and Case Mangers-RW Parts A and B
ADAP Pharmacies- paired with medication delivery
Prevention funded programs
Targeted Community Partners
IDU services and Needle Exchange
HIV PREVENTION
REQUIRED PROGRAM ACTIVITIES

HIV Prev Planning
Prevention Planning Group of Arizona (HPG)
Jurisdictional Plan
Engagement Process

Program Planning M&E, QA
Comprehensive Program Plan
Data Quality
Program monitoring
Site Visits and Communication
Materials Review
Surveillance data use for allocations

Capacity Building & TA
Contractors’ Meeting, Training and CRIS Requests for CDC Assistance
TA- all areas including: Social Determinants of Health, Health Disparities,
Cultural competency, data quality, security and sharing
Develop collaborations, referral networks
Training to Medical Providers referred to AZ AIDS Education and Training Center

Social marketing media and Community Mobilization
Use of CDC developed campaign “Let’s Stop HIV Together” for targeted populations
Internal new media options
Community mobilization through partnerships, collaborations and involvement of community members

Health and Wellness for all Arizonans
ADG/DRM 12/19/13
Projected ADAP Clients on January 1st 2014
Breakdown by Insurance Groups

Total Active Clients (2254)

With SSN (1869)
- Client age >= 65 or with disability
  Medicare (405)
- Client under 138% FPL
  AHCCCS* (851)
- Client over 138% FPL
  FFM** (544)

No SSN (384)
- ADAP (384)

*Clients with SSN and under 138% Federal Poverty Level will be eligible for AHCCCS and will not be enrolled in ADAP.
**FFM--Federally-facilitated Marketplace
Questions?
REFERENCES

ACKNOWLEDGMENTS

Thank You:

• Rick DeStephens - HIV Epidemiology Program Manager
• Julia Skinner - Capacity Building Epidemiologist
• Megan Swanson – HIV Epidemiologist/MHS Coordinator
• David Johns – HIV Incidence Coordinator
• Jonathan Gonzales - HIV Epidemiologist
• Ann Gardner – HIV Prevention
• Lena Hu - ADAP Data Manager
• Jenny Warrington – Ryan White Quality Assurance Manager
Tuberculosis in Arizona

Tuberculosis Control Program
Arizona Department of Health Services
TB Case Rates per 100,000 population, Arizona & U.S., 2002 - 2012
TB Cases by County of Residence, Arizona, 2012
TB Case Rates by County of Residence, Arizona, 2012
TB Case Rates by Race & Ethnicity, Arizona, 2008-2012

Rate per 100,000

- White, non-Hispanic
- African-American
- Asian
- Native American
- Hispanic

2008 2009 2010 2011 2012
TB Cases by Age Groups, Arizona, 2008 - 2012

Number of Cases

- 0-4
- 5-14
- 15-24
- 25-44
- 45-64
- 65+

Year
- 2008
- 2009
- 2010
- 2011
- 2012
# Risk Factors for TB Cases, Arizona, 2010-2012

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th></th>
<th>2011</th>
<th></th>
<th>2012</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cases</td>
<td>%</td>
<td>Cases</td>
<td>%</td>
<td>Cases</td>
<td>%</td>
</tr>
<tr>
<td><strong>Total Cases</strong></td>
<td>282</td>
<td>1.5</td>
<td>255</td>
<td>4.1</td>
<td>211</td>
<td>4.0</td>
</tr>
<tr>
<td><strong>Occupation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health Care Worker  &gt;15 years</td>
<td>4</td>
<td>1.5</td>
<td>10</td>
<td>4.1</td>
<td>8</td>
<td>4.0</td>
</tr>
<tr>
<td>Migrant Farm Worker  &gt;15 years</td>
<td>8</td>
<td>3.0</td>
<td>19</td>
<td>7.9</td>
<td>17</td>
<td>8.4</td>
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<tr>
<td><strong>Reported Behaviors</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Injecting Drug Use a &gt;15 years</td>
<td>8</td>
<td>3.0</td>
<td>8</td>
<td>3.3</td>
<td>8</td>
<td>4.0</td>
</tr>
<tr>
<td>Non-injecting Drug Use a &gt;15 years</td>
<td>16</td>
<td>6.1</td>
<td>25</td>
<td>10.3</td>
<td>26</td>
<td>12.9</td>
</tr>
<tr>
<td>Excess Alcohol Use a &gt;15 years</td>
<td>27</td>
<td>10.2</td>
<td>34</td>
<td>14.1</td>
<td>24</td>
<td>11.9</td>
</tr>
<tr>
<td><strong>Type of Residence</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long Term Care Facility b</td>
<td>6</td>
<td>1.8</td>
<td>8</td>
<td>3.1</td>
<td>2</td>
<td>1.0</td>
</tr>
<tr>
<td>Homeless a</td>
<td>24</td>
<td>8.5</td>
<td>15</td>
<td>5.9</td>
<td>12</td>
<td>5.7</td>
</tr>
<tr>
<td><strong>Comorbidity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diabetes Mellitus c</td>
<td>31</td>
<td>11.0</td>
<td>31</td>
<td>12.2</td>
<td>36</td>
<td>17.1</td>
</tr>
<tr>
<td>Immunosuppression (Not HIV/AIDS) c</td>
<td>9</td>
<td>3.2</td>
<td>6</td>
<td>2.3</td>
<td>4</td>
<td>1.9</td>
</tr>
<tr>
<td>Incomplete LTBI Therapy c</td>
<td>10</td>
<td>3.5</td>
<td>6</td>
<td>2.4</td>
<td>5</td>
<td>2.4</td>
</tr>
<tr>
<td>Contact of infectious TB case (2 years or less) c</td>
<td>15</td>
<td>5.3</td>
<td>15</td>
<td>5.9</td>
<td>8</td>
<td>3.8</td>
</tr>
</tbody>
</table>

---

*aWithin one year prior to diagnosis of tuberculosis.

*bResidence at time of diagnosis.

Number of TB Cases

- U.S.-born
- Foreign-born
- Unknown
TB Reporting

• What is reportable by Health Care Providers?
  1. Tuberculosis, active disease
  2. Tuberculosis latent infection in a child 5 years of age or younger

• By laboratories?
  • Mycobacterium complex and its drug sensitivity pattern
TB Reporting

- When reporting a case or suspect case of TB
  a) The site of infection; and
  b) A description of the treatment prescribed, if any, including:
     i. The name of each drug prescribed
     ii. The dosage prescribed for each drug, and
     iii. The date of prescription for each drug
Case Control Measures

1. Isolation and airborne precautions for infectious active TB or a suspect case until:
   a. 3 successive sputums collected 8 hrs apart are negative (at least one in early in the AM)
   b. Treatment has been initiated
   c. Clinical signs/symptoms improved
   d. For MDR, TB control officer approval

2. Notify LHD at least one working day before discharging TB case or suspect case
R9-10-112. Tuberculosis Screening

- Two options for health care institutions to follow if TB screening is required at the facility
  1. a) On or before date of HCW providing services
     - Documentation of negative skin test or other approved screening test within six months before providing services
     - Written statement from medical practitioner that individual is free of infectious TB if prior history of approved screening test
  b) Repeat every 12 months thereafter
R9-10-112. Tuberculosis Screening

2) Establish, document, and implement a TB infection control program that complies with the Guidelines for Preventing the Transmission of *Mycobacterium tuberculosis* in Health-Care settings, 2005.
R9-10-112. Tuberculosis Screening

2) Continued

a) Conducting TB risk assessments, TB screening tests, screening for signs or symptoms, and providing training and education related to recognizing signs and symptoms

b) Maintain documentation of:
   i. TB risk assessment
   ii. TB screening tests
   iii. Screening for signs or symptoms of TB
Guidelines for Preventing the Transmission of Mycobacterium tuberculosis in Health-Care Settings, 2005

www.cdc.gov/mmwr/pdf/rr/rr5417.pdf
Questions?
Thank You!