Acute Communicable Disease Outbreaks among MSM, 2016

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Acute Communicable Disease Control Program: Who We Are & What We Do

- ~70 doctors, nurses, epidemiologists, and health educators
- Key activities
  - Surveillance for reportable infections & syndromes
  - Outbreak and case investigations
  - Collaborative prevention programs
  - Emergency and BT preparedness
  - Consultation to healthcare providers
  - Public health research

(Revised 2/29/16) Please Post

County of Los Angeles • Department of Public Health

REPORTABLE DISEASES AND CONDITIONS

Title 17, California Code of Regulations (CCR), § 2500

It is the duty of every health care provider, knowing of or in attendance on a case or suspected case of any diseases or conditions listed below, to report to the local health officer for the jurisdiction where the patient resides. "Health care provider" encompasses physicians (surgeons, osteopaths, oriental medicine practitioners), veterinarians, podiatrists, physician assistants, registered nurses (nurse practitioners, nurse midwives, school nurses), infection control professionals, medical examiners/coroners, dentists, and chiropractors, as well as any other person with knowledge of a case or suspected case.

Urgency Reporting Requirements

☎ = Report immediately by telephone ✉ = Report within 1 working day of identification ⏱ = Report within 7 calendar days from time of identification

REPORTABLE DISEASES

- ⏱ Acquired Immune Deficiency Syndrome (AIDS) ■
- ✉ Amebiasis
- ⏱ Anaplasmosis/Ehrlichiosis
- ☎ Anthrax, human or animal ✚
- ✉ Babesiosis
- ☎ Botulism: infant, foodborne, or wound
- ⏱ Brucellosis, animal; except infection due to *Brucella canis* ✚
- ☎ Brucellosis, human ✚
- ✉ Campylobacteriosis
- ⏱ Chancroid ■
- ☎ Chickenpox (Varicella), only hospitalized and fatal cases, do not report cases of herpes zoster or shingles
- ⏱ Chikungunya virus
- ⏱ *Chlamydia trachomatis* infection, including lymphogranuloma venereum (LGV) ■
- ☎ Cholera ✚
- ☎ Ciguatera Fish Poisoning
- ⏱ Coccidioidomycosis
- ⏱ Creutzfeldt-Jakob Disease (CJD) and other Transmissible Spongiform Encephalopathies (TSE)
- ✉ Cryptosporidiosis
- ⏱ Cyclosporiasis
- ⏱ Cysticercosis or Taeniasis
- ☎ Dengue
- ☎ Diphtheria ✚
- ☎ Domoic Acid (Amnesic Shellfish) Poisoning
- ⏱ Ehrlichiosis/Anaplasmosis
- ✉ Encephalitis, specify etiology: viral, bacterial, fungal or parasitic
- ☎ *Escherichia coli*, shiga toxin producing (STEC) including *E. coli* O157 ✚
- ✉ Foodborne Disease
- ☎ Foodborne Outbreak; 2 or more suspected cases from separate households with same assumed source
- ⏱ Giardiasis
- ⏱ Gonococcal Infection ■
- ✉ *Haemophilus influenzae*, invasive disease only, less than 15 years of age
- ☎ Hantavirus Infection
- ☎ Hemolytic Uremic Syndrome
- ✉ Hepatitis A, acute infection
- ⏱ Hepatitis B, specify acute or chronic
- ⏱ Hepatitis C, specify acute or chronic
- ⏱ Hepatitis D (Delta), specify acute or chronic
- ⏱ Hepatitis E, acute infection
- ⏱ Human Immunodeficiency Virus (HIV) ■ (§2641-2643)
- ⏱ Influenza deaths, laboratory confirmed cases only, all ages ▲
- ☎ Influenza, novel strains, human
- ⏱ Legionellosis
- ⏱ Leprosy (Hansen's Disease)
- ⏱ Leptospirosis
- ✉ Listeriosis ✚
- ⏱ Lyme Disease
- ✉ Malaria ✚
- ☎ Measles (Rubeola)
- ✉ Meningitis, specify etiology: viral, bacterial, fungal, or parasitic
- ☎ Meningococcal Infection
- ⏱ Mumps
- ⏱ Myelitis, Acute Flaccid ▲
- ☎ Paralytic Shellfish Poisoning
- ⏱ Pelvic Inflammatory Disease (PID) ■
- ✉ Pertussis (Whooping Cough)
- ☎ Plague, human or animal ✚
- ✉ Poliovirus Infection
- ✉ Psittacosis
- ✉ Q Fever
- ☎ Rabies, human or animal
- ✉ Relapsing Fever
- ⏱ Respiratory syncytial virus, ICU or fatal cases, and <5 years only ▲
- ⏱ Rickettsial Diseases (non-Rocky Mountain Spotted Fever), including Typhus and Typhus-like Illnesses
- ⏱ Rocky Mountain Spotted Fever
- ⏱ Rubella (German Measles)
- ⏱ Rubella Syndrome, Congenital
- ✉ Salmonellosis, other than Typhoid Fever ✚
- ☎ SARS (Severe Acute Respiratory Syndrome)
- ☎ Scabies, atypical or crusted ▲
- ☎ Scombroid Fish Poisoning
- ☎ Shiga Toxin, detected in feces
- ✉ Shigellosis
- ☎ Smallpox (Variola)
- ✉ Staphylococcus aureus infection; deaths only or admission to an intensive care unit of a person who: has not had surgery or dialysis or been hospitalized, or resided in a long-term care facility in the past year, and did not have an indwelling catheter or percutaneous medical device at the time of culture.
- ☎ Streptococcal Infection, outbreaks of any type
- ✉ Streptococcal Infection, individual case in a food handler or dairy worker
- ✉ Streptococcal Infection, Invasive Group A, including Streptococcal Toxic Shock Syndrome and Necrotizing Fasciitis; do not report individual cases of pharyngitis or scarlet fever. ▲
- ⏱ Streptococcus pneumoniae, Invasive ▲
- ✉ Syphilis ■
- ⏱ Tetanus
- ⏱ Toxic Shock Syndrome
- ✉ Trichinosis
- ✉ Tuberculosis ✚ ■
- ⏱ Tularemia, animal
- ☎ Tularemia, human ✚
- ✉ Typhoid Fever, cases and carriers ✚
- ✉ Vibrio Infection ✚
- ☎ Viral Hemorrhagic Fevers, human or animal (e.g., Crimean-Congo, Ebola, Lassa and Marburg viruses)
- ✉ West Nile Virus (WNV) Infection
- ☎ Yellow Fever
- ✉ Yersiniosis
- ⏱ Zika Virus Disease
- ⏱ Zika Virus Infection, Congenital

☎ OCCURRENCE OF ANY UNUSUAL DISEASE

☎ OUTBREAKS OF ANY DISEASE, including diseases not listed above. Specify if occurring in an institution and/or the open community.

Reportable Non-Communicable Diseases or Conditions

- ⏱ Alzheimer's Disease and Related Conditions (CCR § 2802, § 2806, § 2810)
- ⏱ Disorders Characterized by Lapses of Consciousness (CCR § 2805, § 2810)
- ✉ Pesticide-Related Illnesses (Health and Safety Code §105200)

▲ Reportable to the Los Angeles County Department of Public Health.

■ Bacterial isolates and malarial slides must be forwarded to Los Angeles County Public Health Laboratory for confirmation. Health care providers must still report all such cases separately. *Public Health Laboratory (562) 658-1300*

✚ For questions regarding the reporting of HIV/AIDS, STDs or TB, contact the respective program:

Division of HIV and STD Programs
HIV reporting (213) 351-8196 STD reporting (213) 744-3106
www.publichealth.lacounty.gov/dhsp/ReportCase.htm

TB Control Program
(213) 745-0836
www.publichealth.lacounty.gov/tb/healthpro.htm

To report a case or outbreak of any disease, contact the Communicable Disease Reporting System
Tel: (888) 397-3993 • Fax: (888) 397-3778

Presentation Outline

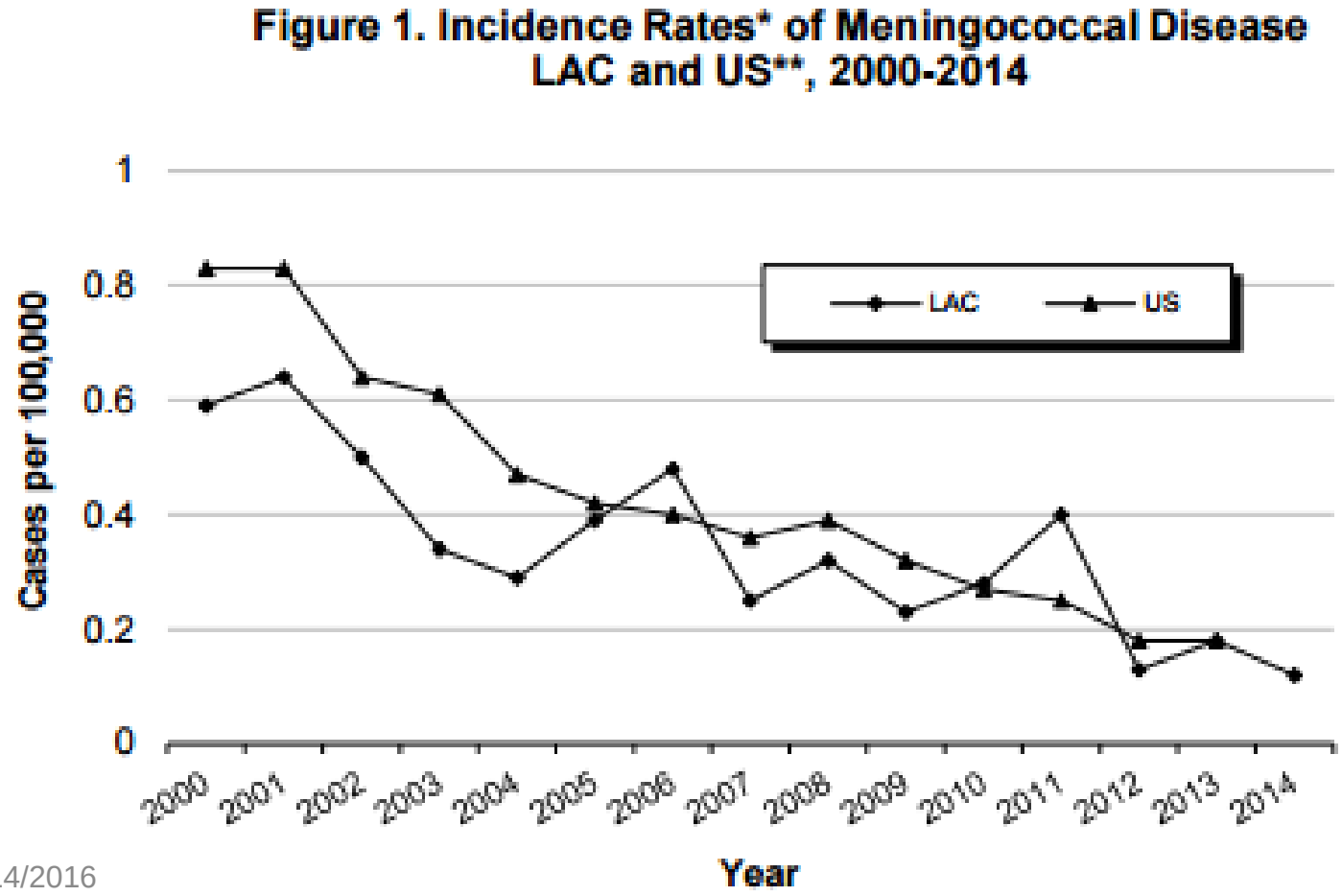
- Invasive meningococcal disease (IMD) outbreak
- *Shigella flexneri* outbreak

Meningococcal Disease Background

- Type of infections – meningitis, sepsis, pneumonia
- Decreasing incidence – currently ~15 cases/yr in LAC
- Institutional outbreaks – e.g., colleges
- Outbreaks among men who have sex with men (MSM)
  - Prior outbreaks in LAC (2013-14), NYC, Chicago, Paris, Berlin
  - Increased risk with HIV
  - Associated with multiple partners, smoking, crowding
  - Caused by serogroup C, clonal complex ST-11

Declining Incidence of IMD in LAC

LAC 2014 incidence = 0.24 cases per 100,000



LAC Meningococcal Disease Outbreak: 2012-14

- Based on knowledge of NYC outbreak and 2 cases among MSM in LAC, data on MSM status routinely collected since October 2012
- From Oct 2012 to Sept 2014, 34 cases reported in LAC
  - 13 (38%) among MSM; 5 (38%) died
  - 10 (77%) of MSM cases serogroup C
  - 4 (31%) with HIV infection
- Vaccination recommendation (4/14) for all persons with HIV and MSM with multiple partners or who identify partners using apps, particularly those who smoke or use drugs

Risk Factors for IMD: MSM & non-MSM males ≥18 yrs old (10/12 – 3/14)*

	MSM (N=11)	Non-MSM (N=12)	P-value**
Drug Use***	5 (45)	1 (8)	0.06
Smoke cigarettes	4 (36)	4 (33)	0.61
Smoke marijuana	5 (45)	2 (17)	0.15
Shared beverages	4 (36)	5 (42)	0.75
Attended large social gatherings	7 (64)	5 (42)	0.26
Met partners online, at bar, streets	5 (45)	--	--
None	1 (9)	3 (25)	0.94

*Data range reflects documented IMD cases at time of vaccine recommendation
**Fisher's Exact Test right-sided p-value.
**Includes cocaine, crystal meth, crack, and "IV drug use".
***Excludes fatal case with unknown history and another who declined to comment how he met his partners.

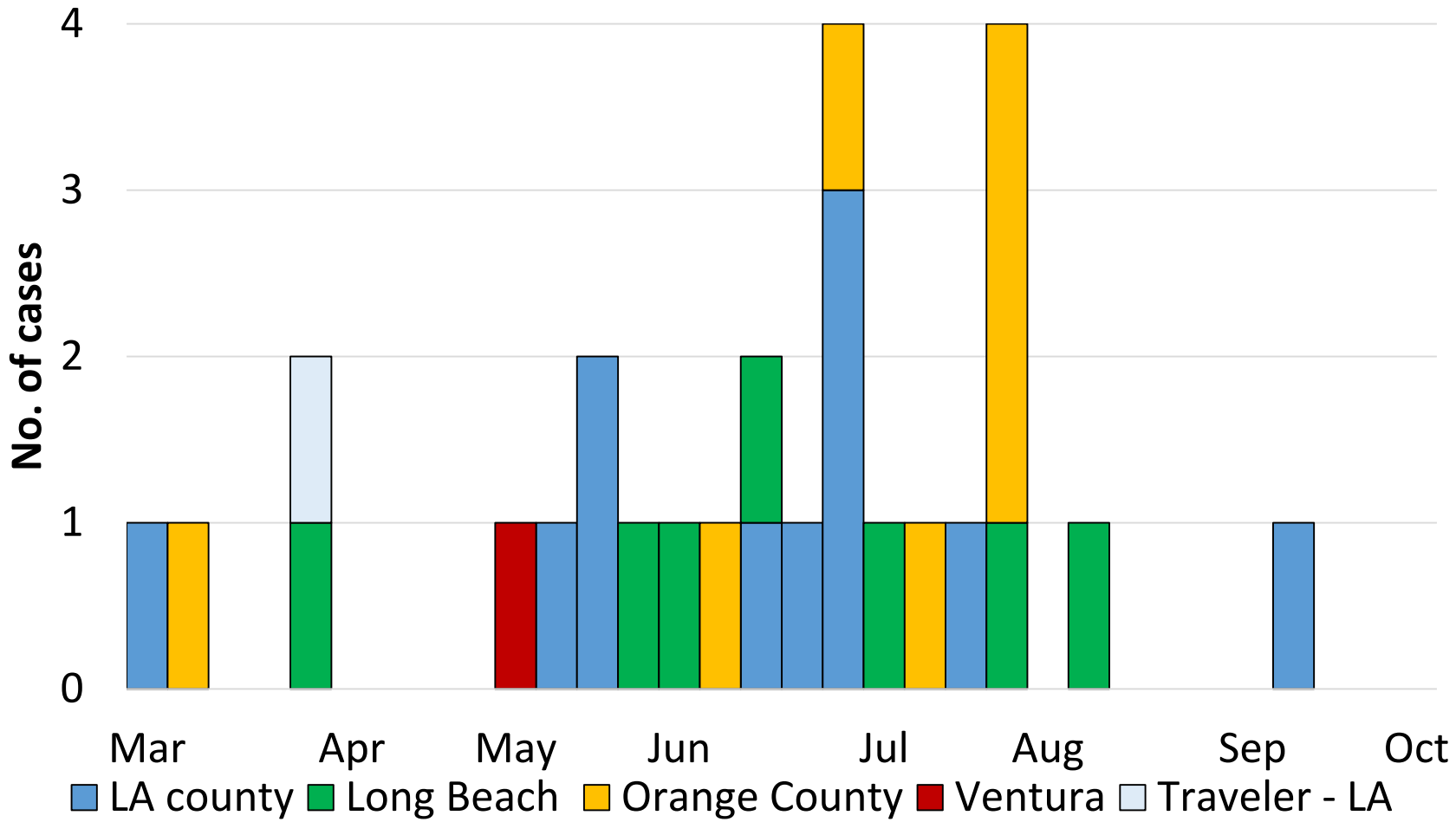
2016 Meningococcal Disease Outbreak

- Outbreak recognized after several LAC and Long Beach cases in mid- to late-May
- Investigation begun collaboratively with Long Beach, Orange County, and California Department of Public Health
- CDC invited to participate in the investigation in early July

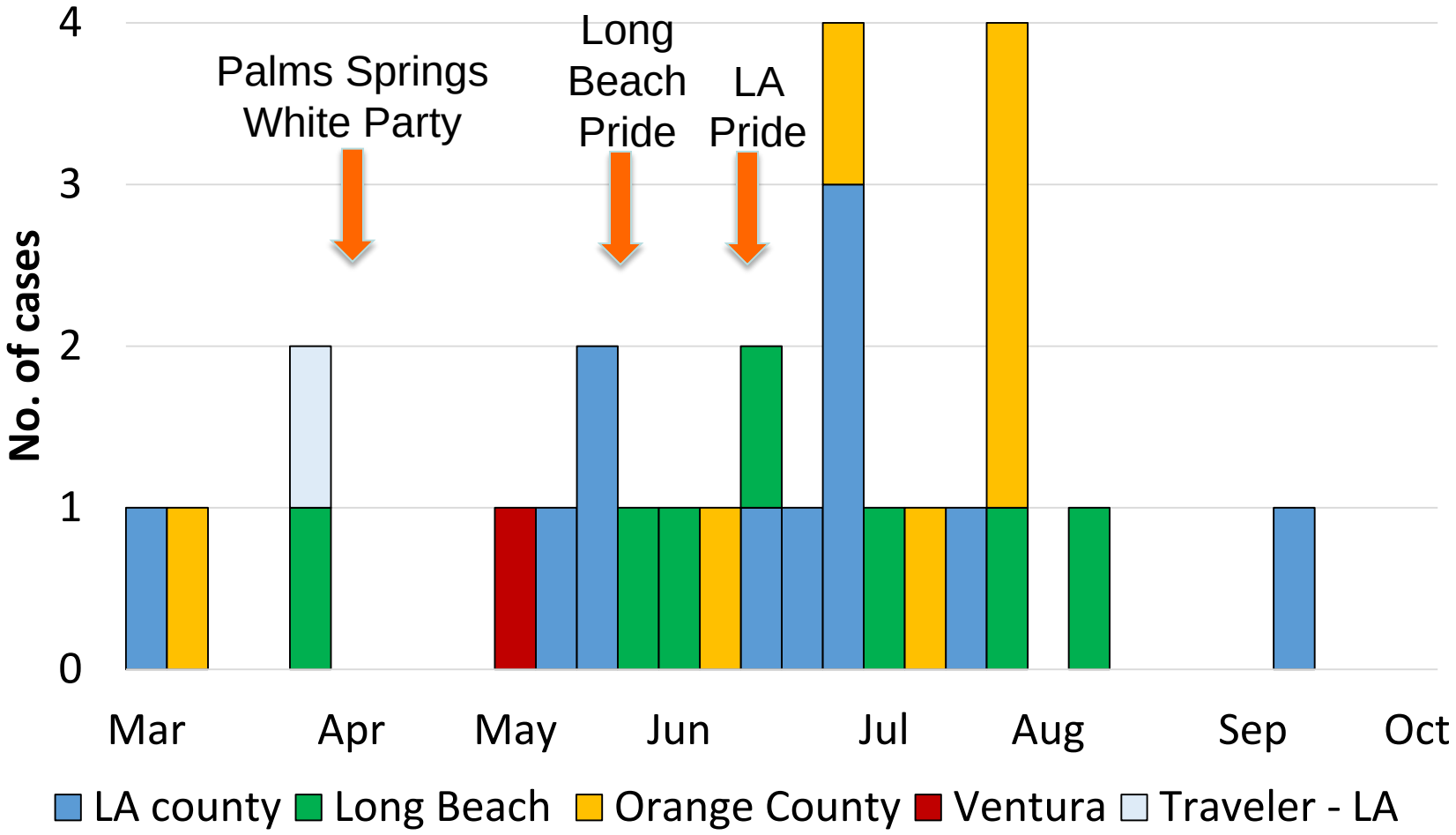
Outbreak Case Definition, 2016

- **Confirmed**
  - Invasive meningococcal disease
  - Onset since March 1, 2016
  - Epidemiologic link to LAC, Orange County, Ventura County, or Long Beach
  - Caused by *Neisseria meningitidis,* serogroup C; if sequenced clonal complex ST-11
- **Possible**
  - Same as confirmed, but pending or unknown serogroup

Epidemic Curve



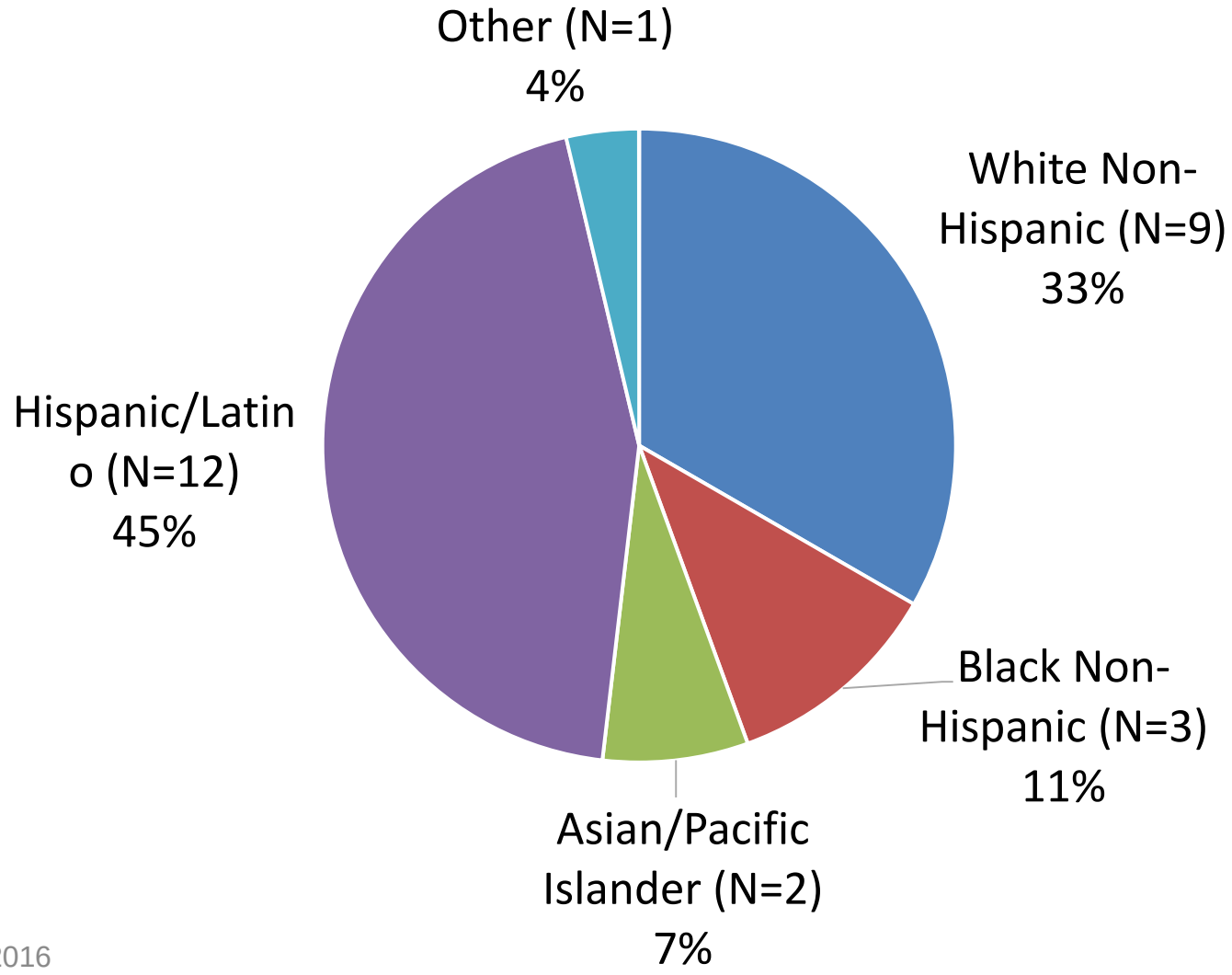
Epidemic Curve with Local Events



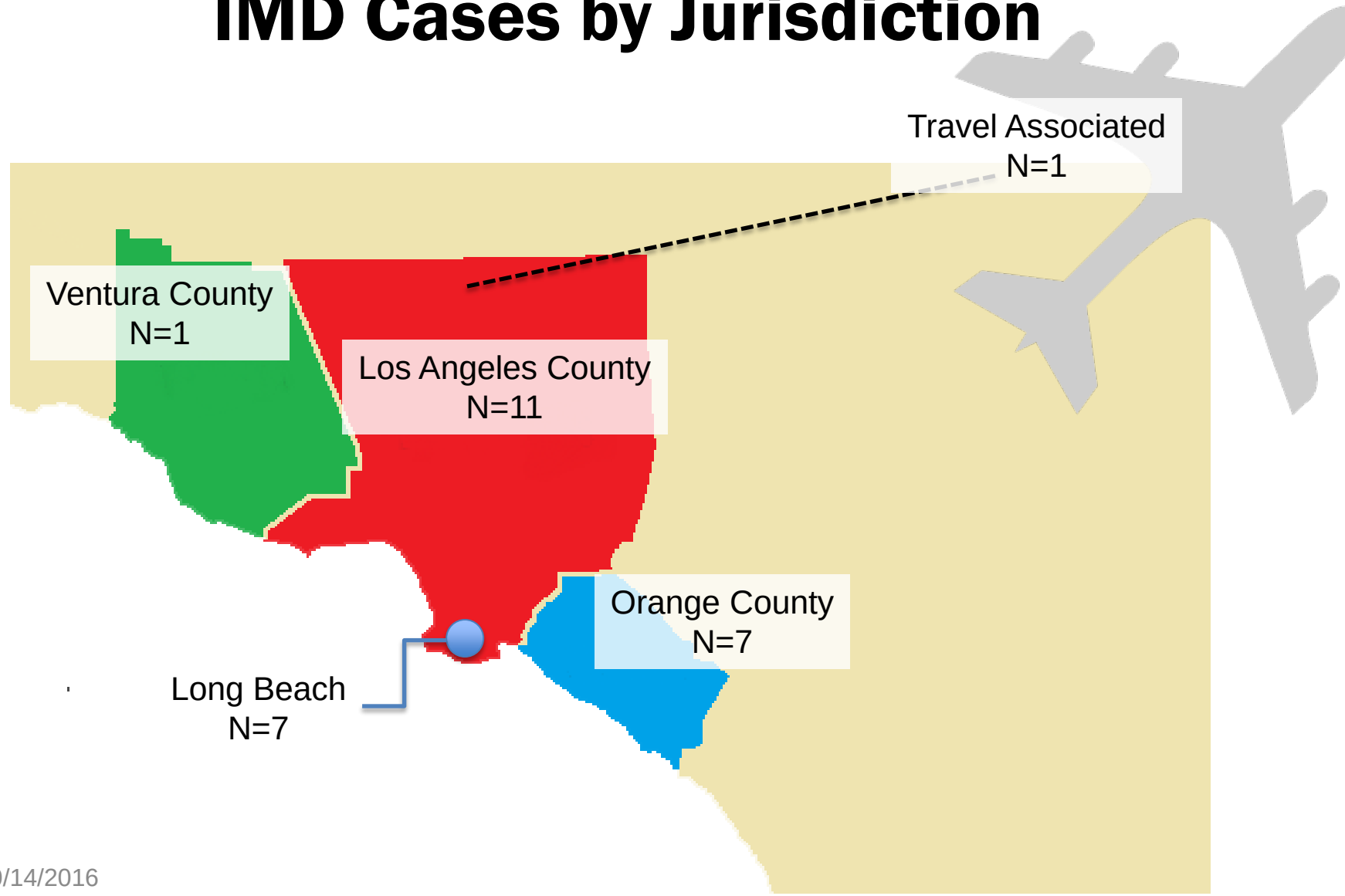
Characteristics of IMD Cases

Characteristic	Number (%)
Hospitalized (%)	27 (100)
Male (%)	25 (93)
MSM (% of Males)	21 (84)
Known HIV infected	3 (11)
Median Age (Range)	32 (17-72)
Deaths (%)	2 (7)

IMD Case Race & Ethnicity



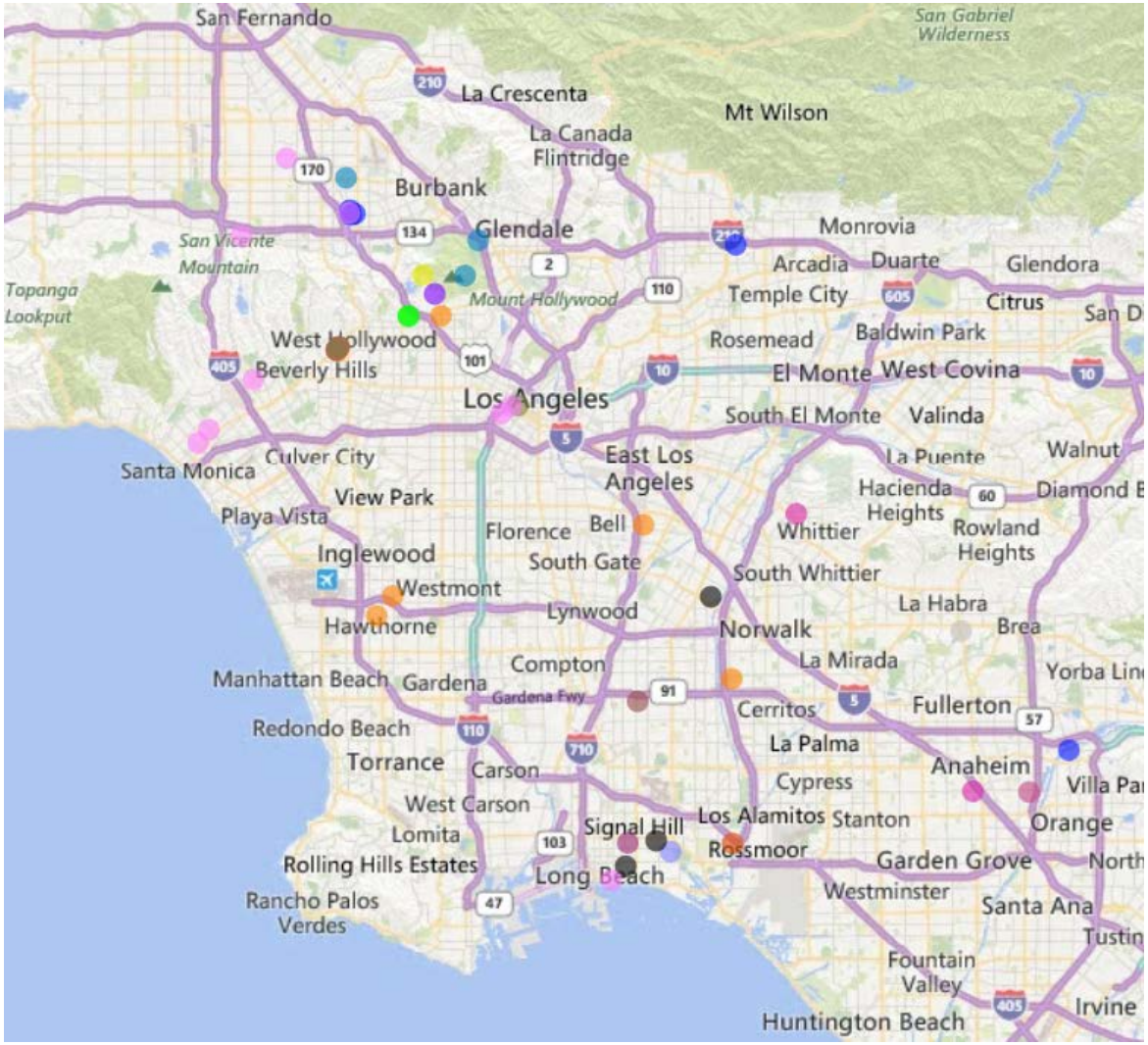
IMD Cases by Jurisdiction



Findings from Case Interviews

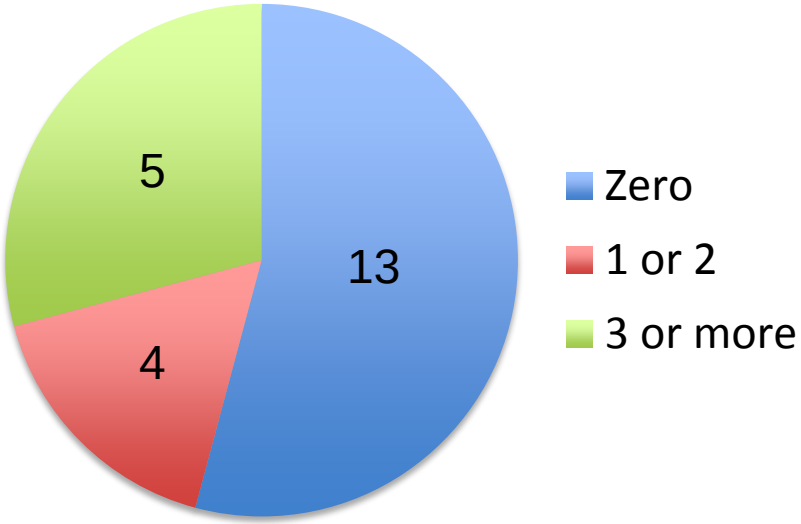
- No common geographic location
- No common venues attended
- No common exposures
- No common risk factors

Case Locations – Residence & Activities

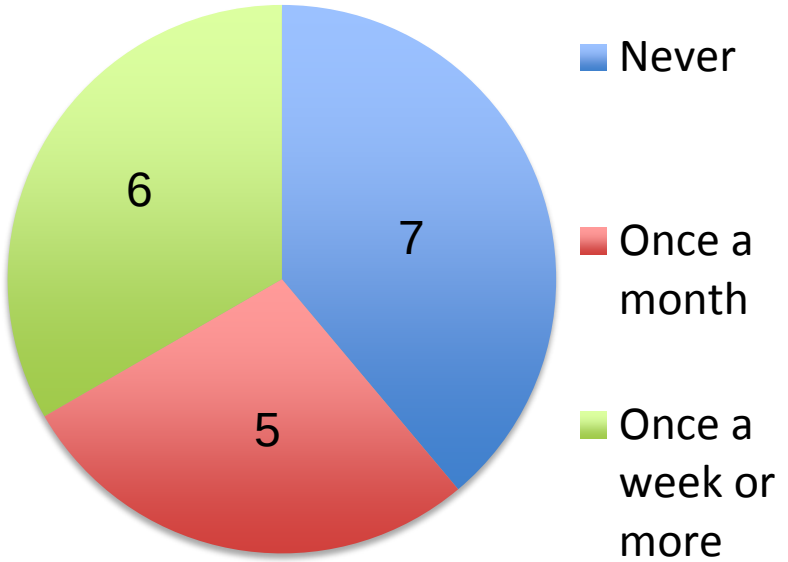


Social Behaviors of IMD Cases

times per week visit bars, nightclubs, or attend parties



In 3 mo before getting sick, number of times gone to a place where gay men hang out



Sexual Behaviors

Behavior	N (%)
Median sexual partners (range)	1 (range 0-7)
Gave oral sex	11 (57.9)
Received oral sex	8 (42.1)
Had sex with anonymous partners	2 (9.5)
Had group sex	1 (4.8)
STD diagnosis in past year	1 (5.3)
Paid for sex	0 (0.0)
Had sex in exchange for money, drugs, or shelter	0 (0.0)

Two cases reported only heterosexual behavior

Prevention

- Vaccination recommended for
  - All MSM in the affected jurisdictions (and SD)
  - All persons with HIV (national recommendation by ACIP)
- Free vaccine available regardless of health insurance status
- Outreach
  - Information and education via media, LGBT orgs, apps
  - Vaccination through healthcare providers, LGBT orgs, public health clinics, venues

Ongoing Investigations

- Surveillance and investigation of new cases
- Laboratory testing at CDC to identify type cc11
- Assessment of meningococcal carriage among gay and bisexual men: why does cc11 cause outbreaks in gay men?
  - Obtain throat, urethral and rectal cultures from 500 men to identify carriage at those sites

Shigella flexneri Outbreak

Background (1)

- Shigellosis
  - Febrile gastrointestinal illness
  - Typically transmitted person-to-person via fecal-oral route
  - Small infective dose (>10 organisms) so easily spread
  - Incubation period is 1-4 days
  - Symptoms typically start 1–2 days after exposure
  - LAC incidence 5.31 per 100,000 people (2015) – over 500 reports per year

Background (2)

- MSM are more likely to acquire shigellosis than other adults
  - Most LAC *Shigella* cases occur among males
  - Recent MSM outbreaks
    - US: Oregon (2015/16), San Francisco (2014/15), Chicago (2003/04)
    - Quebec (2012/13), Tokyo (2011), London (2004/05)
- HIV-infected persons may have more severe and prolonged illness, including bacteremia
- MSM *Shigella* outbreaks more often caused by resistant strains
  - Azithromycin
  - Ciprofloxacin

Shigella flexneri serotype 7

- Requires testing at California Department of Public Health
- Uncommon
  - 2012 CDC report noted only 6 cases nationwide
  - No CA cases since 2014 before current cluster
- Symptoms and clinical illness does not appear to differ from other *S. flexneri* serotypes

Current Southern California *Shigella* Outbreak

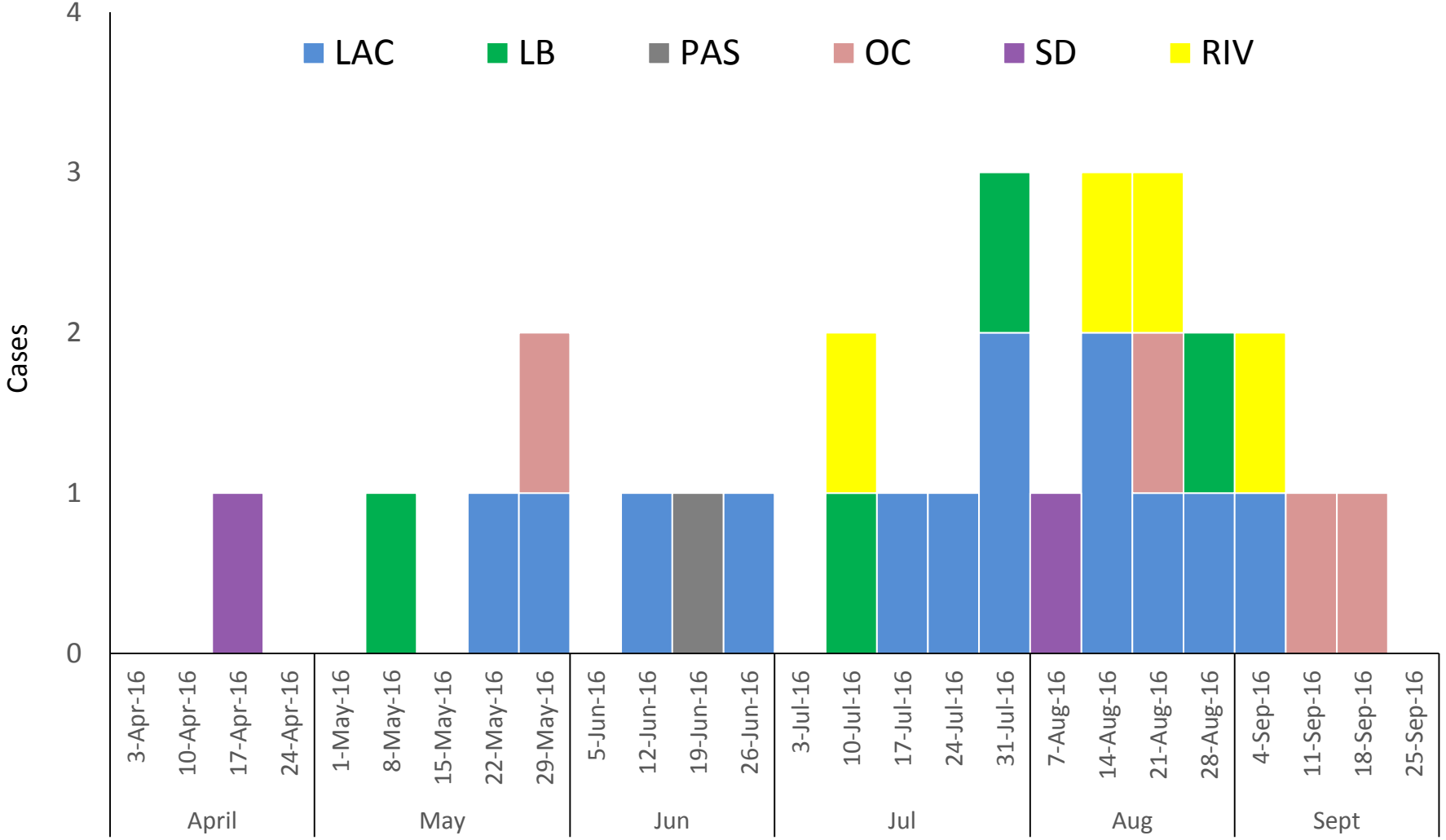
- *S. flexneri,* Serotype 7 (aka 1c or provisional 88-893)
- 28 confirmed cases
  - 10+ possible cases
  - 92% (22/24) identify as MSM
  - Case onset April – September, 2016
- 6 Local Health Jurisdictions with cases
  - Los Angeles County
  - Pasadena
  - Long Beach
  - Orange County
  - Riverside County
  - San Diego County

S. flexneri Outbreak Case Definition

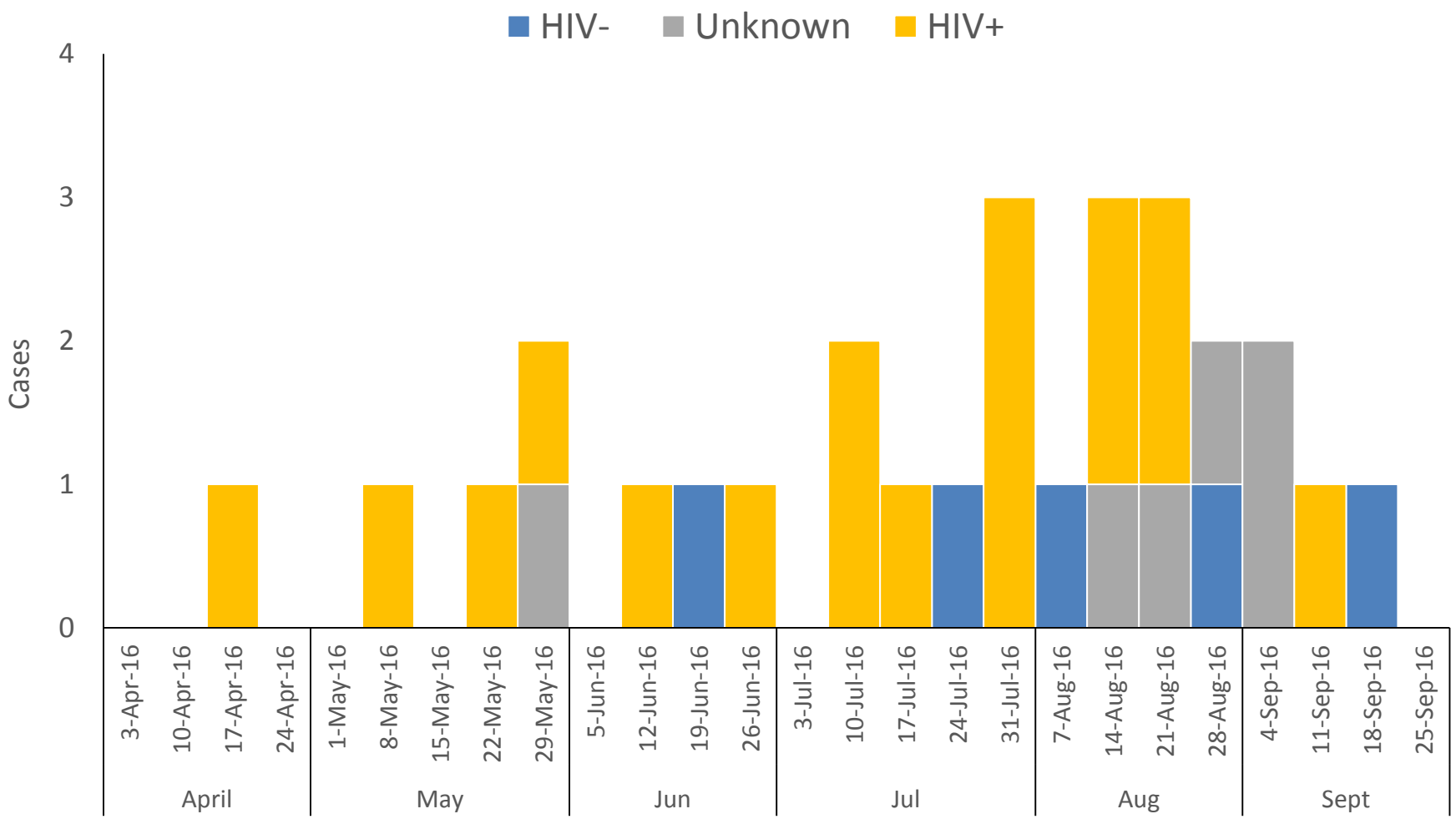
- **Confirmed**: lab confirmed *S. flexneri* serotype 7 with onset date from April – September, 2016, with an epidemiologic link to Southern California

- **Possible**: lab confirmed ungroupable *S. flexneri* with serotyping results from April – September, 2016, with an epidemiologic link to Southern California

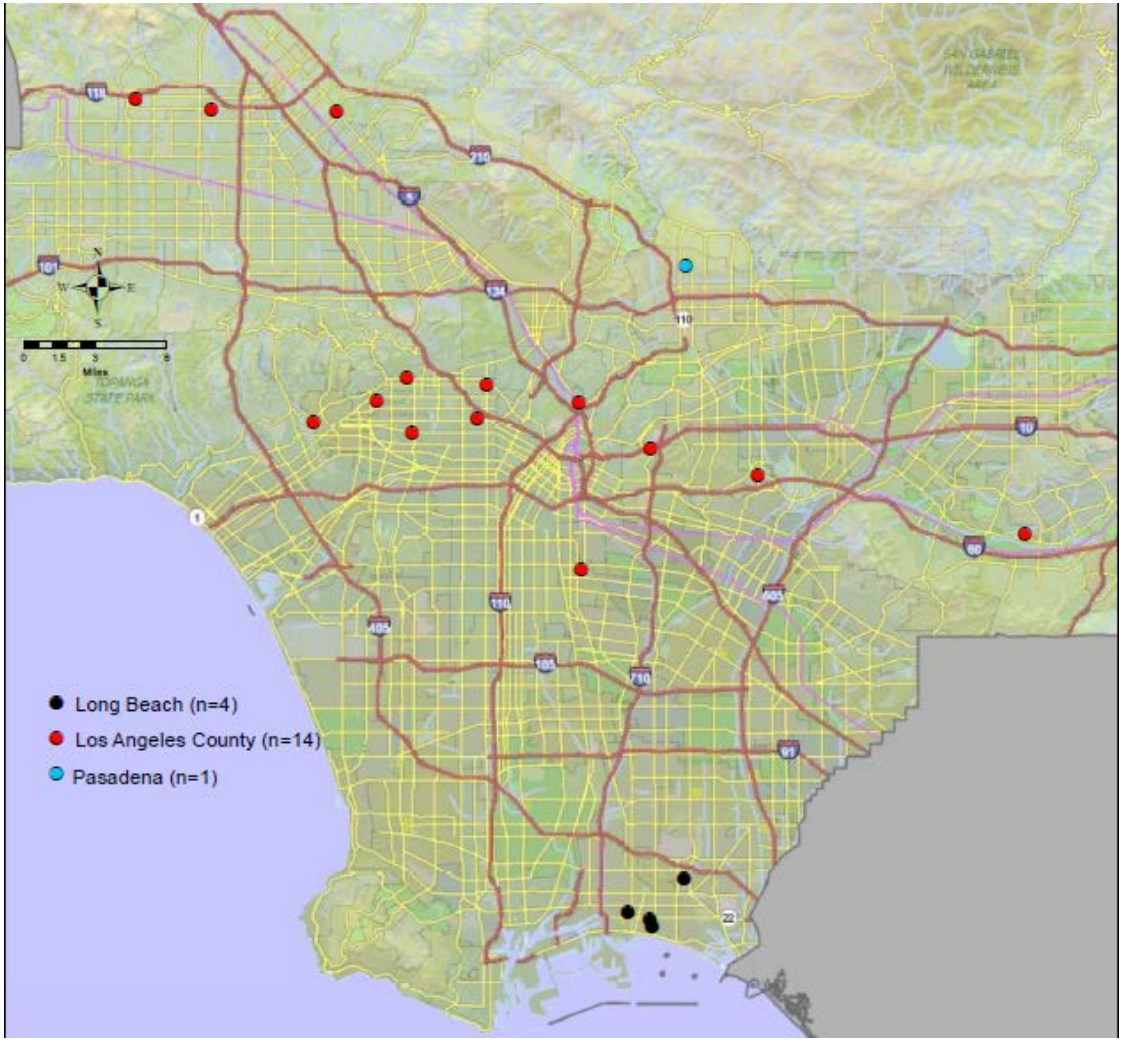
Epidemic Curve of *S. flexneri* Serotype 7 by Local Health Jurisdiction, Southern California - 2016



Epidemic Curve of *S. flexneri* Serotype 7 by HIV Status, Southern California - 2016



LAC* *S. flexneri* Serotype 7 Cases, May - September 2016



10/14/2016

*includes Long Beach and Pasadena

Outbreak Characteristics & Case Demographics

- All cases are male
- Median age: 35 (range 22-67)
- Race/ethnicity: 54% Latino/Hispanic; 43% White; 4% Black
- 92% MSM
- 77% (17/22) HIV+
  - 5 HIV-
  - 6 with unknown HIV status
- 1 death (LAC)

Clinical Presentation

Characteristic	HIV- or UNK (n=11)		HIV+ (n=17)		TOTAL (n=28)	
	Num	%	Num	%	Num	%
Hospitalized	2	25%	9	53%	11	44%
Days hosp. (mean)		3		6		5
Fever	6	75%	14	82%	20	80%
Diarrhea	8	100%	17	100%	25	100%
Bloody Diarrhea	5	63%	8	47%	13	52%
Abdominal cramps	7	88%	9	53%	16	64%
Antibiotic treatment	8	100%	16	94%	24	96%

Social/Behavioral Characteristics

- 32% (6/19) are homeless or transiently housed
  - All 6 are HIV+
- 33% (6/18) have Hepatitis C
  - All 6 are HIV+
- 24% (5/18) have Syphilis
  - All 5 are HIV+
- 50% (7/14) are IDUs
  - 6 of the 7 are HIV+
- 72% (13/18) are non-IDU meth and/or other drug users

HIV Characteristics

- Of the 17 HIV+ cases
  - 1 death: not on HAART at time of death and CD4 <10
  - 5 reported adherence to HAART
    - Only 2 reported last CD4: 589 and 700
  - 10 reported non-adherence/not in care
    - 6 reported last CD4: ranged 10-183
    - 3 did not report last CD4/could not remember
  - 2 had no data on if they were on HAART

Antimicrobial Susceptibility Testing

- 18 isolates tested
  - 0% susceptible to Ampicillin
  - 0% susceptible to Trimethoprim/sulfamethoxazole
  - 100% susceptible to Ciprofloxacin

Guidance to Health Care Providers

1) Obtain a stool culture from MSM who present with fever and diarrhea, particularly if the diarrhea is bloody

- PCR does not replace culture as an isolate is needed for serotyping and antimicrobial susceptibility testing

2) Treat *Shigella* infection among MSM to shorten duration of illness, reduce shedding, and the risk of transmission

- Empiric therapy may be warranted
- Isolates from this cluster & most *Shigella* susceptible to cipro

3) Educate patients to reduce risk of transmitting *Shigella*

Guidance to Clinical Labs

- California Code of Regulations Title 17 changes in May/June 2016
  - Section 2505 - *Shigella* isolates are to be submitted as soon as available to the public health laboratory
  - New subsection (m)(3) states laboratories must attempt to obtain a bacterial culture isolate whenever there is a laboratory test result indicative of infection with *Shigella*

Prevention and Outreach

- Advise MSM to reduce oral-fecal contact, especially shortly after illness:
  - Avoid sex for at least 2 weeks after recovery from illness
  - When having sex again, refrain from oral-anal contact or use barriers
  - Wash hands, genitals, anus and sex toys before and after sexual activity to reduce transmission risk
  - If no access to soap and water, use gel or wipes

Health Communications

SAVE YOUR ASS.

Shigellosis is a disease that's spreading among men who have sex with men.

- It spreads very easily from any contact with poop
- High risk of getting it during ass play (rimming, fisting, and anal toys)
- It causes diarrhea, stomach cramps, and fever
- It can be a serious illness, especially if you have HIV

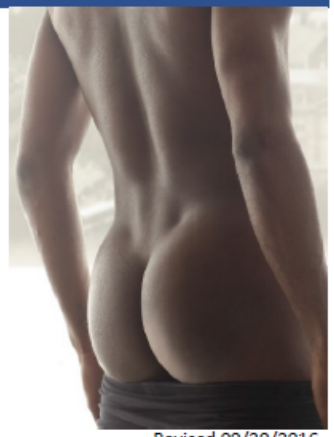
If you think you have Shigellosis, call 2-1-1 to help you find a doctor for free.

Public Health

SAVE YOUR ASS.

You can prevent Shigellosis.

- Don't get poop in your mouth
- Wash your hands, penis, butt, and sex toys with soap and water before and after sex
- If you don't have soap and water, use wipes or hand sanitizer (hand gel)
- No sex if you or your partner have diarrhea, or have had it in the last 2 weeks



Public Health

Revised 09/29/2016

Conclusions

- Ongoing cluster among MSM, HIV + and homeless or transiently housed
- Many HIV+ cases not taking antiretrovirals or lost to care
- Culture is important to detect outbreak cases
- Strain of *Shigella* susceptible to Ciprofloxacin
- Prevention messaging should emphasize antibiotic completion, ease of transmission, washing hands, and avoiding high risk behaviors.
- Silver lining? May be opportunity to get back into HIV care