

BIDS ILI/SARI SURVEILLANCE

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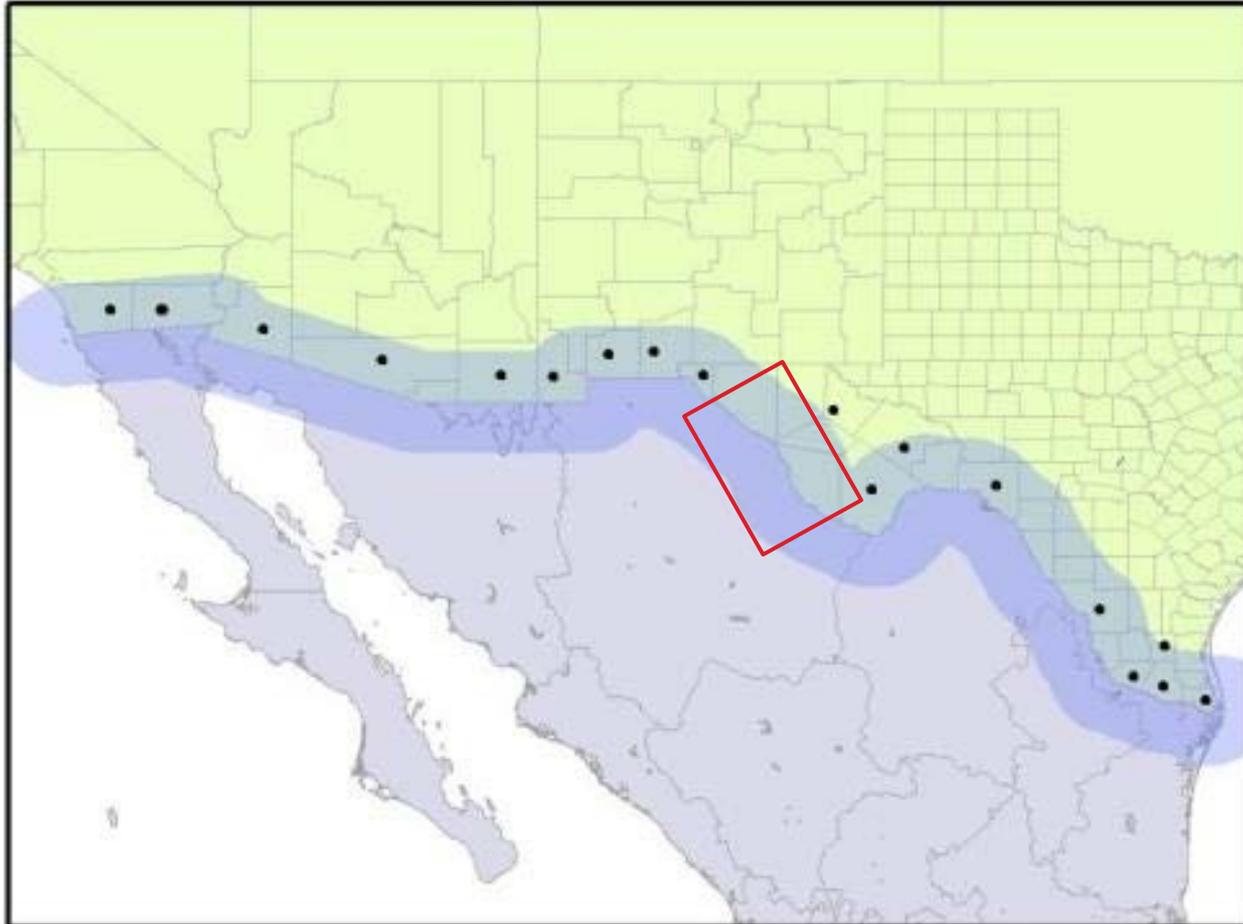


History of BIDS

- In 1997, CDC, the Mexican Secretariat of Health, and border health officials began developing the Border Infectious Disease Surveillance project based on the need for strengthened surveillance to monitor the spread of infectious disease in the border region
- In 1999, the Binational Border Infectious Disease Surveillance (BIDS) Program was established
- BIDS relies on local, state, and federal collaboration to enhance infectious disease surveillance, build border-region epidemiology and laboratory capacity, and strengthen binational communication systems to improve disease prevention
- CDC awards funding to BIDS sites at the local level, which carry out enhanced surveillance projects (sentinel- and population-based) with laboratory testing in the border region
- Active Sentinel Surveillance



Purpose



Goals

- Increase border surveillance along the 9/10 region
- Acquire accurate infectious disease incidence rates
- Create a strong network of reporting ILI and SARI Sites
- Other potential projects:
 - Tuberculosis
 - Chikungunya/Dengue/West Nile Mosquito surveillance
 - Emerging diseases

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INFLUENZA-LIKE ILLNESS (ILI)

ILI – Influenza Like illness

- Sentinel Site Surveillance
- Clinics and community health practitioners
- Case Definition:
 - Measured Fever of ≥ 38 °C
 - Cough
 - Onset within the last 10 days
 - Sore Throat (Optional)

Paso Del Norte ILI Sites

February 21, 2015 (MMWR Week 7)



Paso Del Norte ILI Sites

April 25, 2015 (MMWR Week 16)



Data Analysis

- Weekly Reports: # of ILI Cases
- Divided by age
 - 0-4 yrs.
 - 5-24 yrs.
 - 25-49 yrs.
 - 50-64 yrs.
 - >64 yrs.
- Total Number of ILI Patients + Non ILI Patients
- Rapid Test Results



Data Analysis

U.S.-Mexico Border Influenza Surveillance Network (BISN)
2014-2015

SENTINEL SITE INFLUENZA-LIKE (ILI) WEEKLY REPORT

Sentinel Site:

Report for the 7-day period ending / /

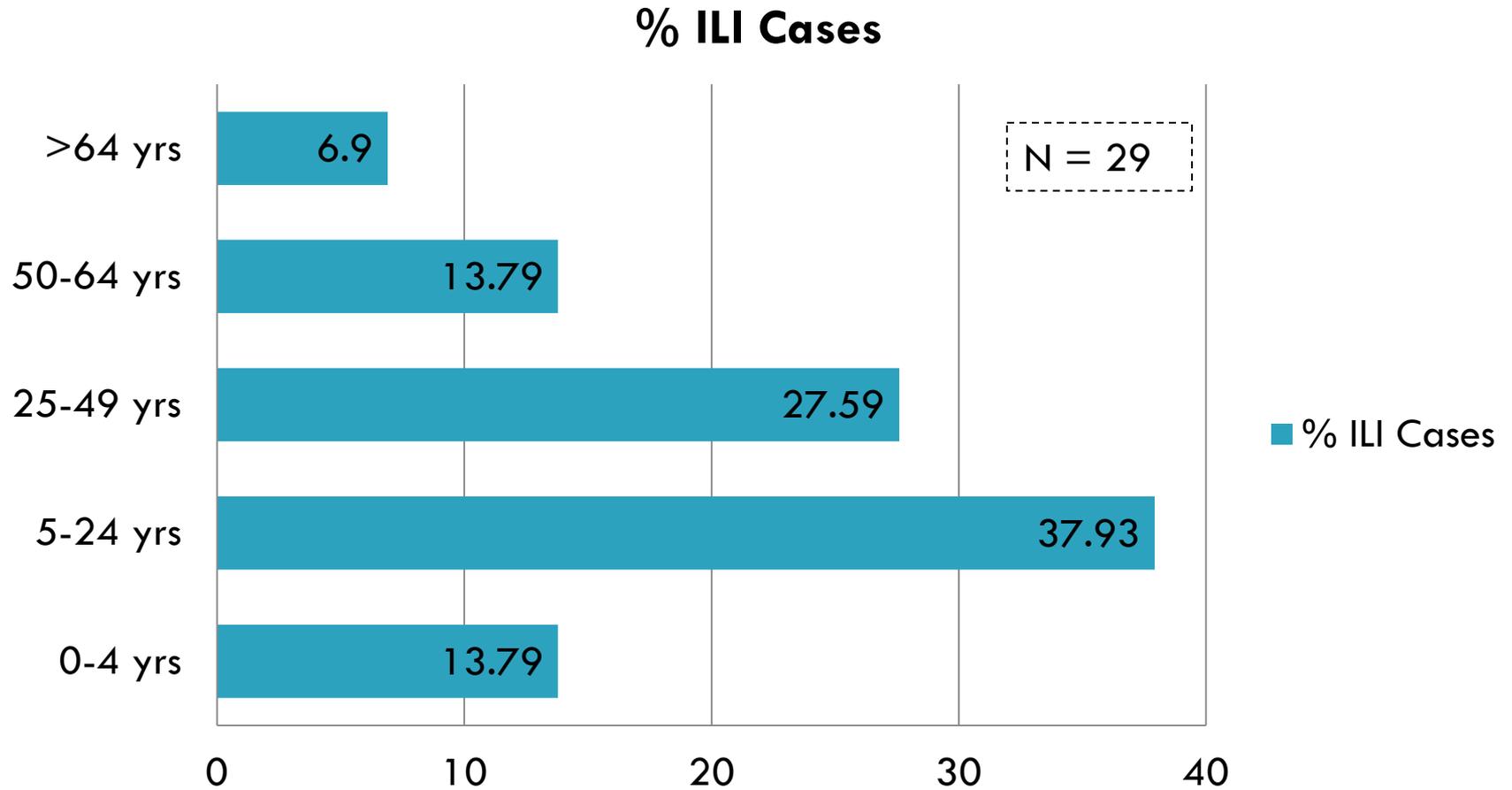
(Reporting period ends Saturday at midnight)

<i>Influenza-Like Illness</i>		<u>Number of Patients with ILI</u>	
0-4 yrs. (Pre-School)	<input type="text"/>	Influenza-like Illness Fever ($\geq 100^{\circ}\text{F}$ [37.8°C], oral or equivalent) AND cough and/or sore throat (in the absence of a known cause)	Total Number of Patients with ILI <input type="text"/>
5-24 yrs. (School Age)	<input type="text"/>		
25-49 yrs. (Adults)	<input type="text"/>		
50-64 yrs. (Adults)	<input type="text"/>		
>64 yrs. (Older Adults)	<input type="text"/>		
		Total Number of Patients seen for Any Reason (Total of ILI and Non-ILI patients for all age groups combined) DO NOT LEAVE BLANK, WITHOUT THIS NUMBER, THIS REPORT CANNOT BE USED. <input style="border: 2px solid black;" type="text"/>	
<i>Laboratory Activity(RT-PCR,DFA,IFA, Culture)*</i>		<i>Rapid Test Activity*(Quidel)</i>	
Collection Date	Result (Type, Subtype)	TOTAL Rapid Tests Done	<input type="text"/>
		Number of Influenza Type A	<input type="text"/>
		Number of Influenza Type B	<input type="text"/>
		Number of Influenza Positive Type Unknown	<input type="text"/>
		Number of Negative Results	<input type="text"/>

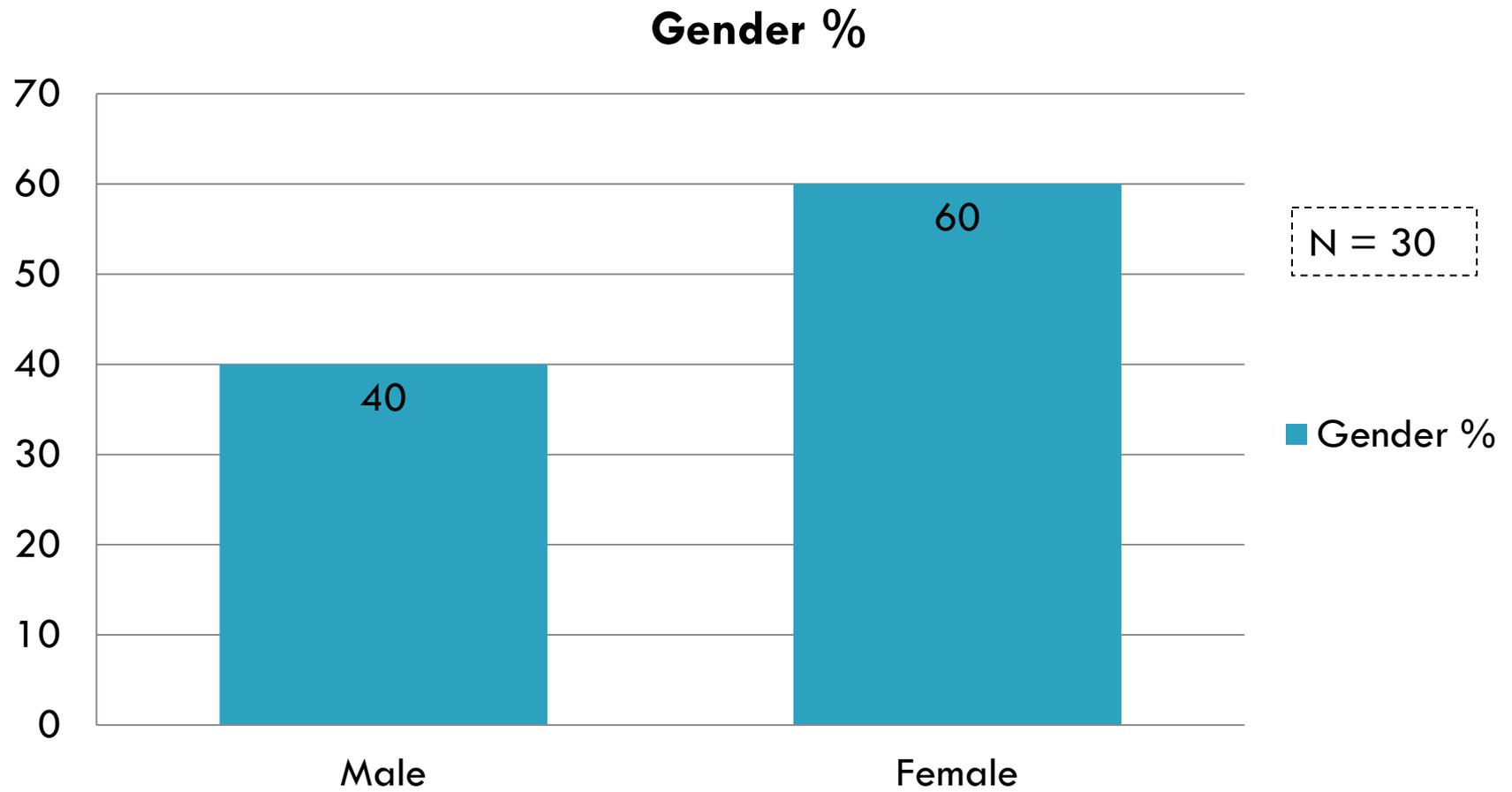
Data Analysis

- Case Report Form Questions:
 - Age
 - Sex
 - Do they fit the Case criteria
 - Fever $>100^{\circ}\text{F}$
 - Cough
 - Sore Throat
 - Race/Ethnicity
 - Country of Residence & Country of Birth
 - Pre-existing conditions
 - Any international travel?
 - Received the influenza vaccine in the last 12 months?

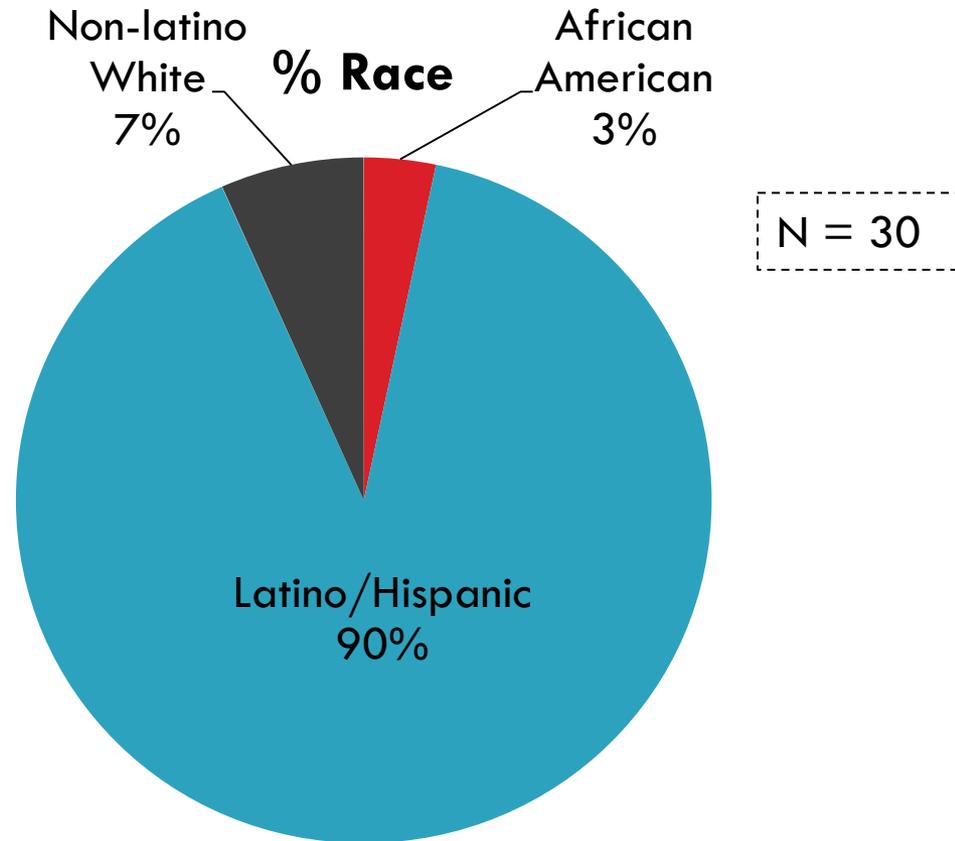
CRF Data by Age



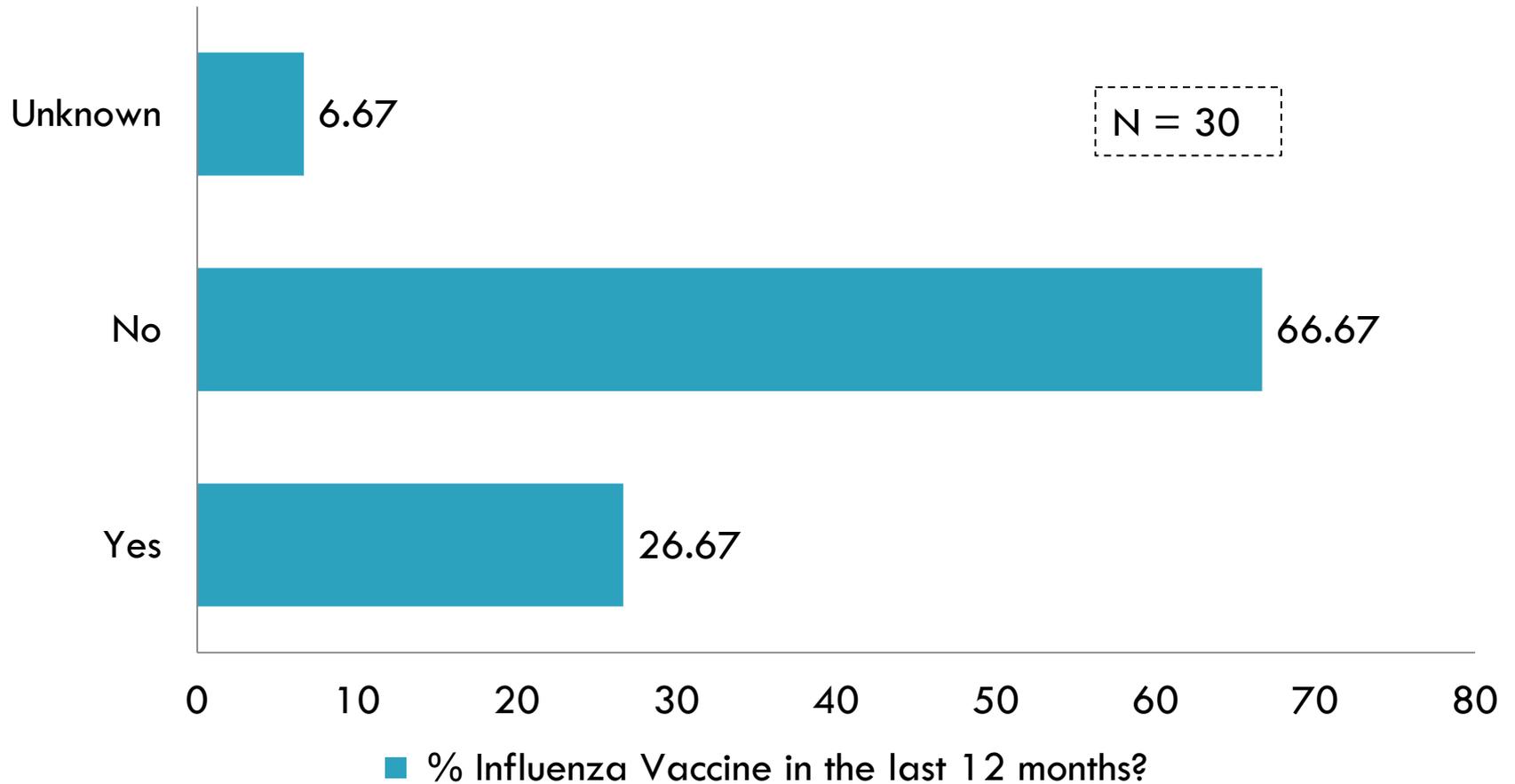
CRF Data by Gender



CRF Data by Race



CRF Data by Vaccination Status



CRF Data by International Travel

% international Travel within last 10 days

■ % international Travel within last 10 days

N = 29

93.1



No

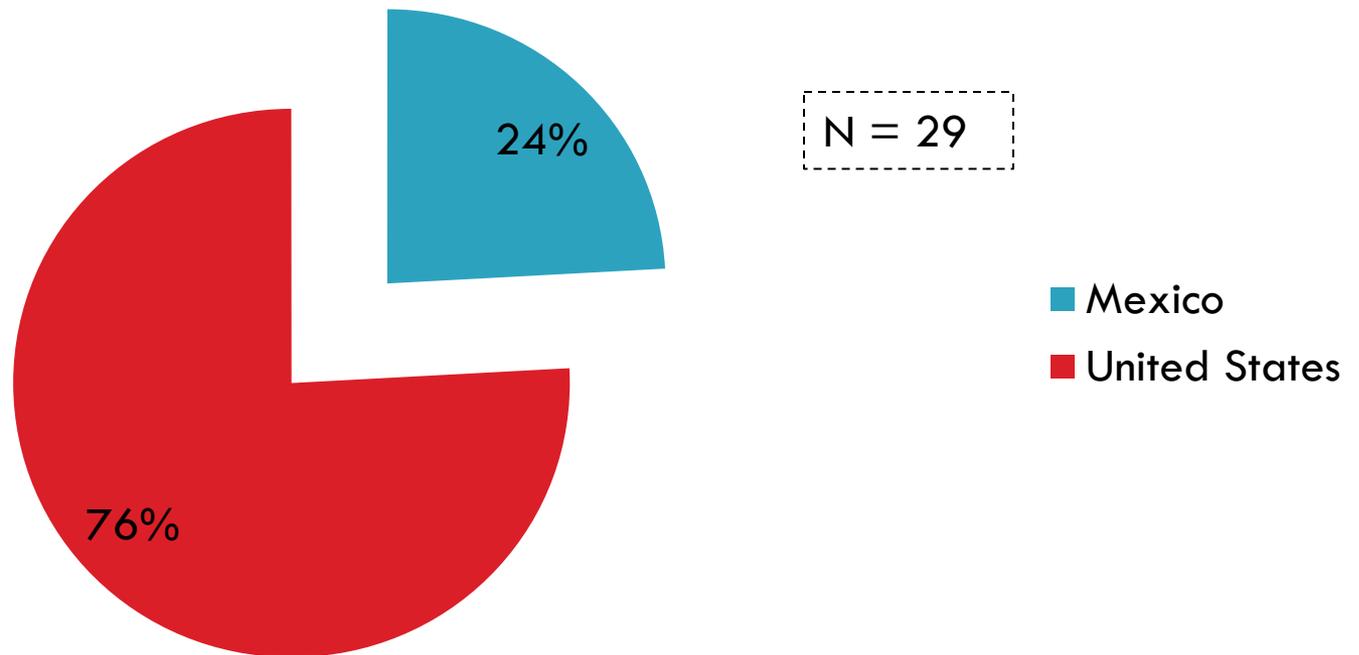
6.9



Yes, Mexico

CRF Data by Country of Birth

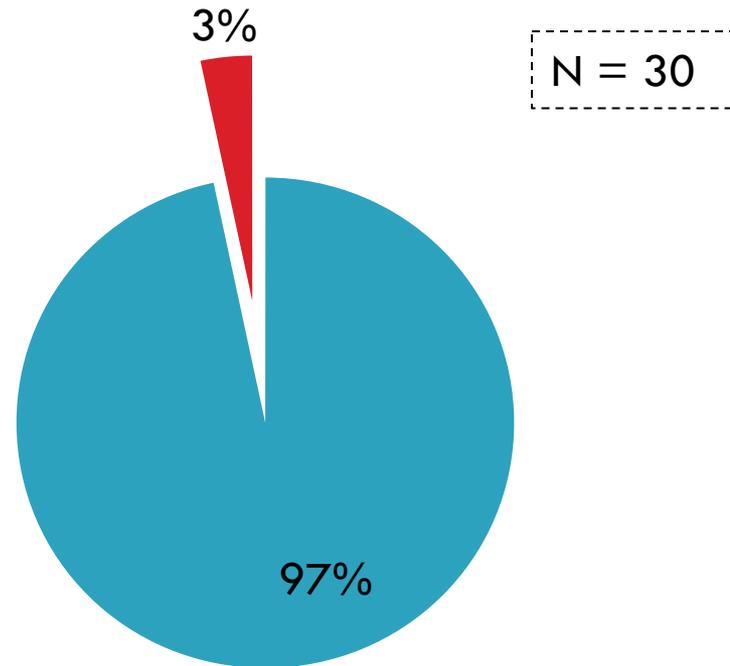
Birth Country



CRF Data by Country of Residence

% Country of Residence

■ US ■ Other



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SEVERE ACUTE RESPIRATORY INFECTION (SARI)

Severe Acute Respiratory Infection

SARI



- ❑ Developed by WHO, PAHO, CDC
- ❑ Syndromic surveillance
- ❑ Includes hospitalized and more severe cases
- ❑ Provide a clearer epidemiological picture of respiratory infections, including influenza activity in our community

Respiratory Surveillance in TX

- Surveillance data in TX
 - ILI-net
 - Lab confirmed cases Influenza - RSV
 - Hospital influenza cases data limited to
 - Pediatric mortality
- Severe infections surveillance data limited

Importance



- Complication of seasonal influenza results in ~36.000 deaths and >200.000 hospitalization in US
- H1N1 pandemic in 2009 first US cases were identified in San Diego and Imperial County by the BIDS program

Border Region Surveillance

- High volume of travelers that cross the border every day
- BIDS has enhanced surveillance for
 - ▣ ILI since 2005
 - ▣ SARI since 2009

Major objectives SARI program

- Year round SARI surveillance in US border counties
- Increase existing influenza surveillance systems
- Describe SARI and SARI etiologies among migrant, mobile or foreign population
- To improve awareness of influenza or other respiratory disease activity in these populations over the course of the year.
- To help identify and monitor groups at higher risk for severe disease or death

SARI Objectives

- 1. To determine the epidemiology and clinical characteristics of patients hospitalized with SARI
- 2. To determine epidemiologic and clinical characteristics of influenza-positive SARI cases and compare with influenza-negative SARI cases.
- 3. To determine the virologic characteristics of influenza and other respiratory viruses.

Sentinel sites

- Multiple SARI Sites in CA
- 2 Hospital-based sentinel sites in Tucson AZ
 - ▣ Carondelet Network: St Mary's and St Joseph's
- 1 future site in Nogales AZ
 - ▣ Carondelet Network Holy Cross Hospital
- No SARI Sites in TX & NM

Population under surveillance



- Patients seeking medical care through the emergency department (admission or transfer)
- Cases admitted directly to the hospital by a health-care provider.

SARI case definition

- **Temperature** ≥ 100.4 °F (38°C) or subjective fever,
- **AND Cough,**
- **With onset within the last 10 days**
- **AND Requiring hospital admission**

Additional Pediatric cases

- **Children < 5 years old will be considered cases if presenting with:**
 - Clinical suspicion of pneumonia,
 - With onset within the last 10 days
 - AND Requiring hospital admission.

- Pediatric definition is used in California and Arizona sites

SARI Case Report Form

- Based using the Hospitals own Infection Control Programs
- Infection Control Assistant - Theradoc



SARI CRF – Infection Control Assistant

Report Date/Time: 07/16/2015 13:31

Notifiable Disease Report

Influenza (07/16/2015)

Patient Demographic Data MRN: X308283 Name: ██████████ Address: ██████████ City: SUNLAND PARK County: O State: NM Zipcode: 88063 Birthdate (Age): 09/29/1977 (37 years) Birth weight (grams): Birth weight category: Race: WHITE CAUCASIAN Ethnic Group: Hispanic or Latino Sex: F Marital Status: SINGLE Home Phone: 915-██████ CELL	Inpatient Encounter Data Admit Date: Admit Diagnosis: Discharge Date: Death Date: Attend Phys: Attend Phys Phone: Reporting Institution / Person Las Palmas Medical Center 1801 N. Oregon Street El Paso, TX 79902 Documented/Reported By: CHAMBERS, TODD
Related Flags No Linked Flag Records	
Related Encounters No Linked Encounter Records	
Related Bed Trace No Linked Bed Trace Records	
Anti-Infective Orders None found	
Related Micro Results No Linked Micro Result Records	
Related Laboratory Data None Found	
Related Radiology No Linked Radiology Records	
Related Surgeries No Linked Surgery Records	
Related Devices No Linked Device Records	
Related Vital Signs No Linked Vital Sign Records	
Other Pertinent Data	

Report Date/Time: 07/16/2015 13:31

Influenza Like Illness

General Information

Age at Onset: Year(s) Month(s)

Is the Patient a Student: Yes No

Where:

Clinical and Diagnostic Data

Does the Patient have ILL: Yes No

Was the Patient Hospitalized: Yes No Floor: Room:

Date of Symptom Onset:

Date of Hospital Presentation:

Was Patient Seen in the ED: Yes* No

If Yes, date of ED visit:

Was a Rapid Antigen Test Performed? Yes* No

If Yes*, results: Negative Influenza A Influenza B Influenza (type unk)

Signs and Symptoms:

Fever > 38 C (100 F): Headache

Feversh (Temperature not taken) Shortness of Breath

Sore Throat Conjunctivitis

Cough Vomiting

Rhinorrhea/Congestion Diarrhea

Other (specify):

Was the patient admitted to the ICU? Yes No Unknown

Does the patient require mechanical ventilation? Yes No Unknown

Did the patient have a chest x-ray or CAT scan performed? Normal Abnormal Test not performed Unknown

If abnormal: Was there evidence of pneumonia? Yes No Unknown

Does this patient have acute respiratory distress syndrome? Yes No Unknown

Underlying Conditions

1. Cognitive dysfunction Yes No Unknown

If Yes, specify: Down's Syndrome Dementia Other:

2. Seizure disorder Yes No Unknown

Report Date/Time: 07/16/2015 13:31

3. Neuromuscular disorder Yes No Unknown

If Yes, specify: Cerebral Palsy History of stroke Other:

4. Guillain-Barre Syndrome Yes No Unknown

5. Asthma Yes No Unknown

If Yes, specify: Past intubations? Yes No
Past hospitalizations? Yes No

6. COPD Yes No Unknown

If Yes, specify: Past intubations? Yes No
Past hospitalizations? Yes No

7. Other chronic lung disease Yes No Unknown

If Yes, specify: Cystic Fibrosis Other:

8. Diabetes Mellitus Yes No Unknown

If Yes, specify: Type I (insulin dependent) Type II (non-insulin dependent)

9. Other chronic metabolic disorders, excluding diabetes mellitus Yes No Unknown

If Yes, specify:

10. Chronic cardiovascular disease, excluding hypertension Yes No Unknown

If Yes, specify:

11. Hemoglobinopathy, including sickle cell disease Yes No Unknown

If Yes, specify:

12. Renal disease Yes No Unknown

If Yes, specify:

13. Cancer diagnosed in last year, including leukemia/lymphoma (Excluding: non-melanoma skin cancer) Yes No Unknown

14. Immunosuppressive condition, including chemotherapy and steroids Yes No Unknown

If Yes, specify condition and/or medication:

15. Pregnant, currently or delivered within 10 days of hospitalization Yes No Unknown

If Yes, specify gestational weeks:

16. Obesity? Yes No Unknown

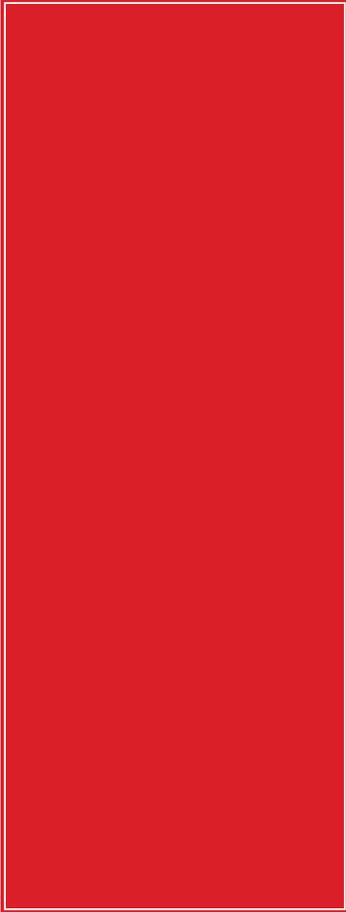
If Yes, was the patient morbidly obese? Yes No Unknown

17. Other condition. Specify:

Enhanced Laboratory testing

- ❑ Aliquot 500ul for storage.
- ❑ Extract nucleic acid and run the multiplex RT-PCR
- ❑ Gen Mark Dx Sensor test for the presence of 7 viruses:
 - ❑ Respiratory syncytial virus: RSVA, RSVB
 - ❑ Influenza viruses: influenza A (H1N1 pdm09m, H3N2) and B
 - ❑ Parainfluenza viruses: PIV1, PIV2, PIV3, PIV4
 - ❑ Human metapneumovirus: hMPV
 - ❑ Rhinoviruses: RHV
 - ❑ Adenoviruses: ADVB, ADVC, ADVE
 - ❑ Coronaviruses: NL63, HKU1, 229E, OC43

Acknowledgements



- Arizona Department of Health Services
- Border infectious disease surveillance officers (NM, AZ, CA)
- Texas Department of State Health Services
- Centers for Disease Control and Prevention
- Our Healthcare Providers

QUESTIONS?

