

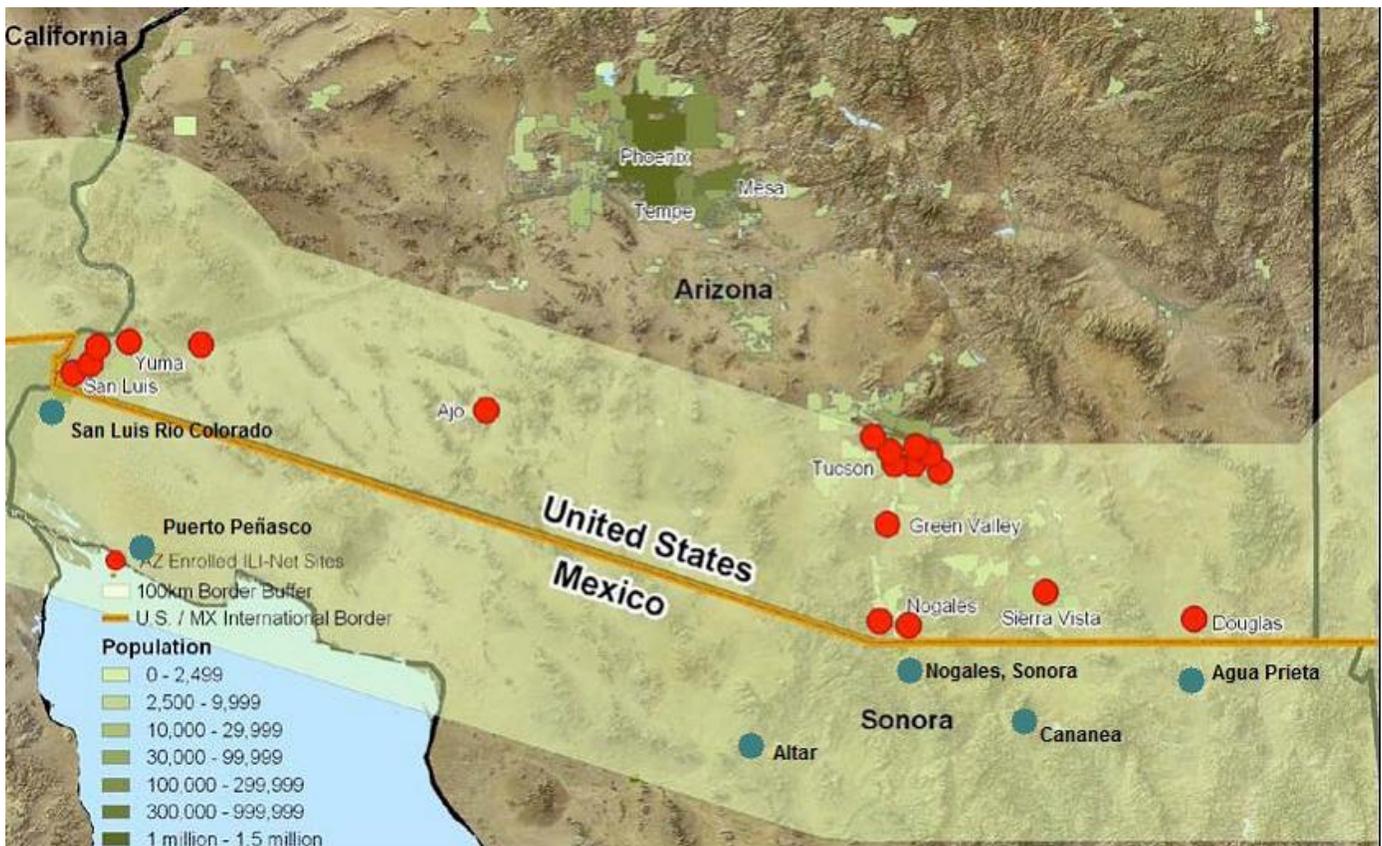
Arizona Border Region Influenza Report

2012-2013 Influenza Season (9/30/2012 –9/29/2013)

MMWR Week 8 (February 17, 2013-February 23, 2013)

Border Influenza Activity Highlights:

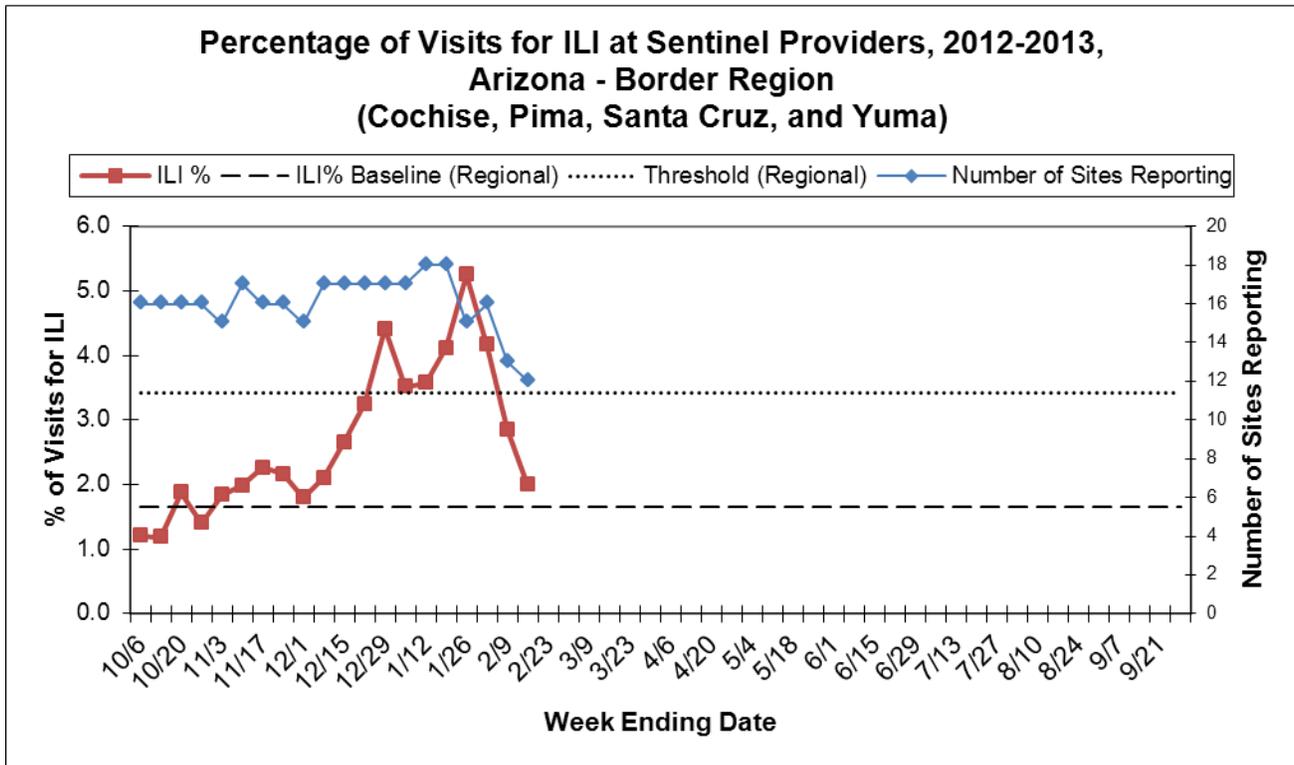
- There were 139 cases of influenza in week 8 from the Arizona border region counties (Cochise, Pima, Santa Cruz, Yuma).
- There were 2 cases enrolled in the Severe Acute Respiratory Infection (SARI) Surveillance in epidemiologic week 8.
- Influenza-like illness activity at sentinel providers was below the epidemic threshold in week 7.
- The cases included in this report represent a small proportion of the true number of cases of influenza. Many people do not visit the doctor when ill and doctors should not be expected to run tests on all patients exhibiting influenza-like symptoms.



Influenza-Like Illness (ILI) Sentinel Provider Surveillance:

In Arizona's border region 19 providers are enrolled in the national Outpatient Influenza-like Illness Surveillance Network (ILINet). The border region is defined as the geographical area approximately 100 kilometers (60 miles) north and south of the US/Mexico border. On a weekly basis, these sentinel sites report the total number of patients seen with Influenza-like Illness (ILI) and the total number of patients seen. ILI is defined as a fever of at least 100°F plus either a cough or a sore throat in absence of a known cause other than influenza.

Percentage of Visits for ILI at Sentinel Providers, Arizona-Border Region:



*Note: The baseline is defined as the mean of the state ILI% in weeks in the 2009-2012 flu seasons in which two or more consecutive weeks each accounted for less than 2% of the season's total number of specimens testing positive for influenza at the Arizona State Public Health Laboratory. The epidemic threshold is defined as the mean plus two standard deviations.

The proportion of patient visits to sentinel providers for ILI in the Arizona border region was 2.0% for week 7 (Week ending 2/16/13) which is below the epidemic threshold for the border region. The border region ILI baseline is 1.66%*. The epidemic threshold for the Arizona border region is 3.42%*. In weeks when a relatively low number of reporting providers are present, the ILI proportion may not be representative for the border region of Arizona.

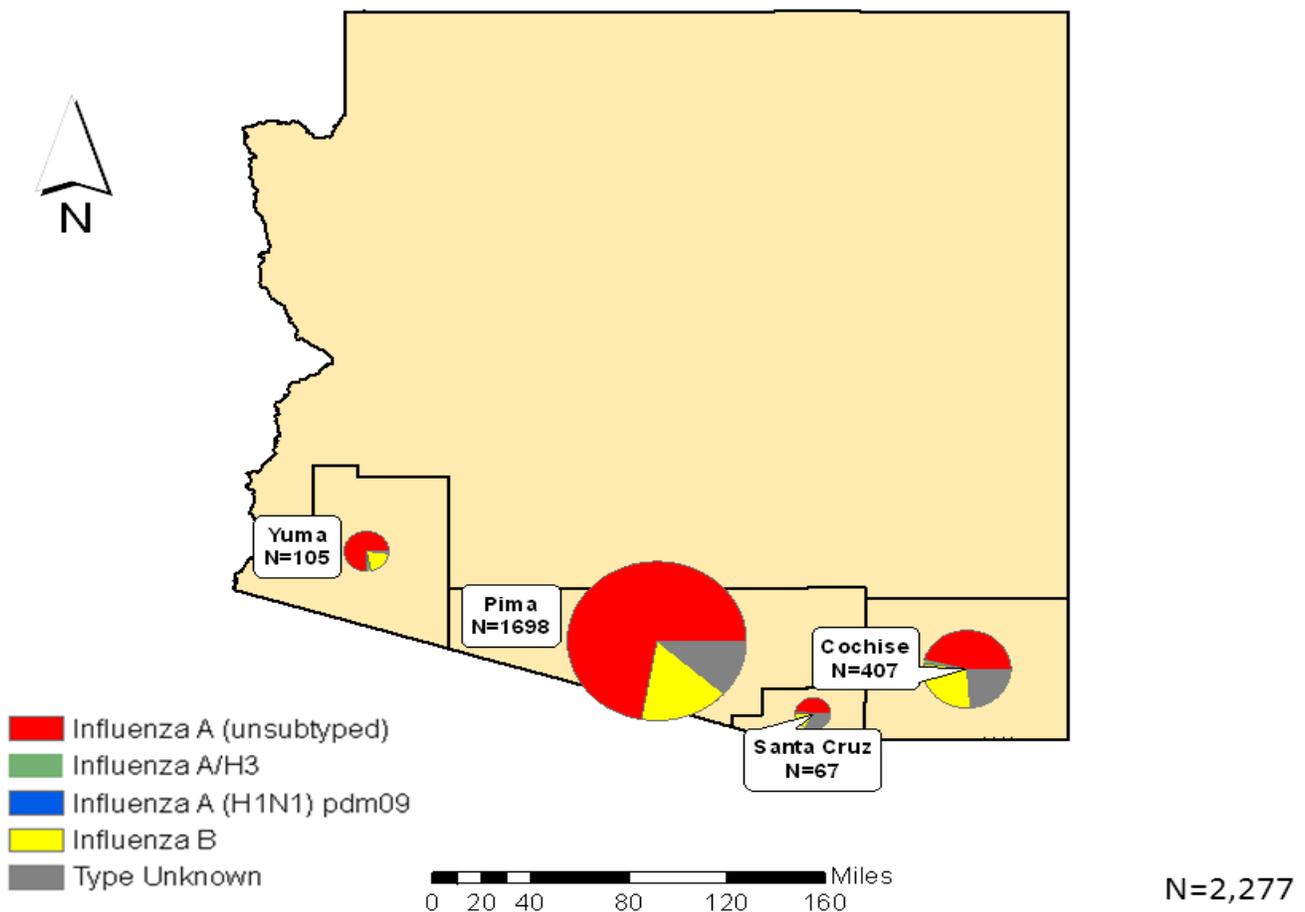
Laboratory-Confirmed Cases Reported, by County, 2012-2013 Influenza Season:

These totals include ALL positive influenza tests that were reported to ADHS by the border counties through week 8 (February 17, 2013- February 23, 2013). These include many types of tests, such as rapid antigen tests, direct fluorescent antigen tests, culture, or molecular testing (reverse transcriptase polymerase chain reaction or RT-PCR). Many of these cannot distinguish different types of influenza, but do provide information about changes in the amount of influenza in the population.

| County | 2012-2013 Season | Past Three Weeks | Last Week |
|---------------------|------------------|------------------|------------|
| Cochise | 407 | 96 | 27 |
| Pima | 1,698 | 445 | 107 |
| Santa Cruz | 67 | 4 | 1 |
| Yuma | 105 | 18 | 4 |
| Border Total | 2,277 | 563 | 139 |
| Arizona Total | 10,304 | 2,211 | 504 |

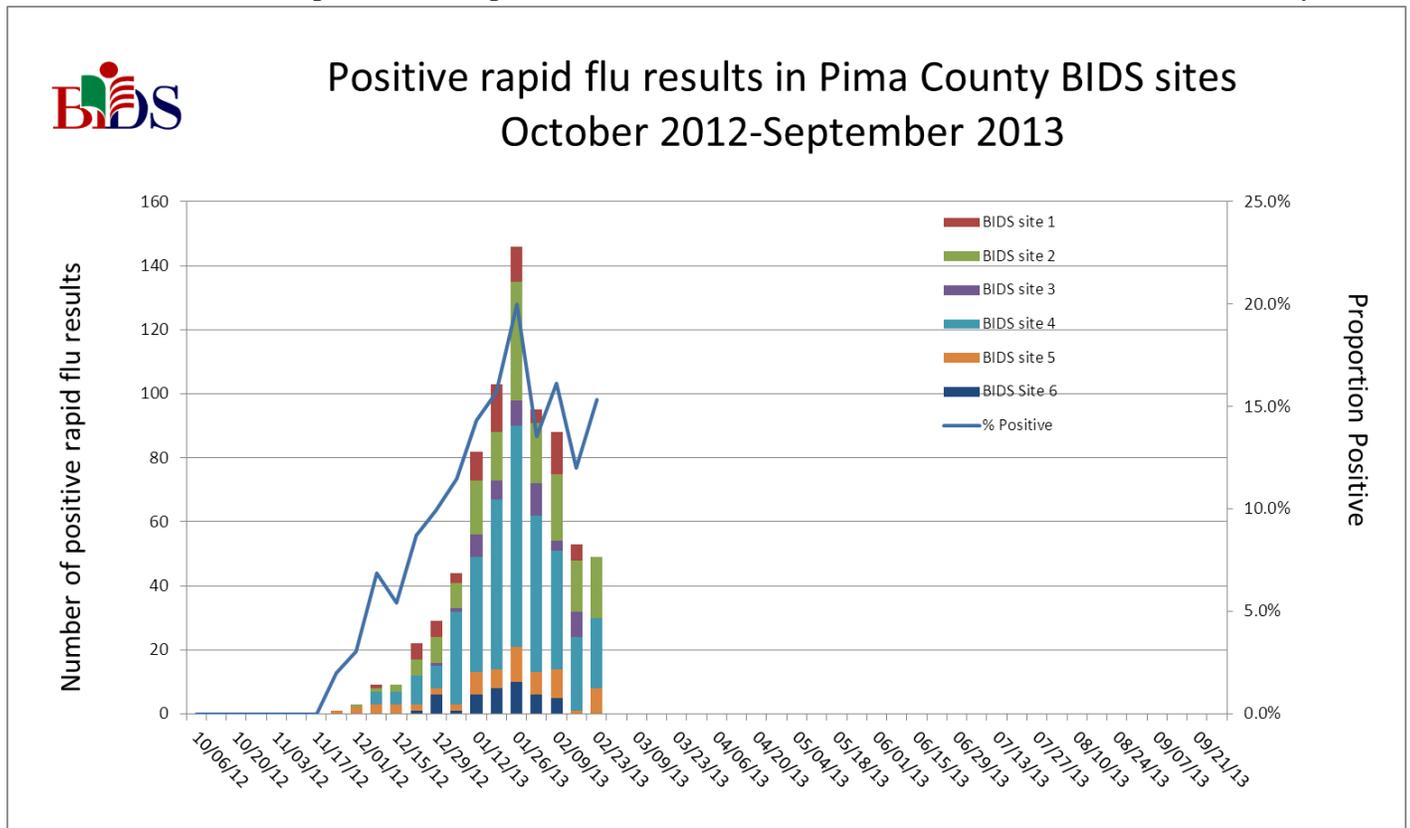
Influenza Types and Subtypes in the Arizona Border Region:

The influenza types and subtypes from all confirmed influenza cases in the Arizona border region are shown in the map below.



Border Infectious Disease Surveillance Sentinel-site and Virologic Report

The Arizona Border Infectious Disease Surveillance (BIDS) program of the Office of Border Health has initiated enhanced sentinel-site surveillance at selected acute care hospitals within the Arizona border region. The sites are not ILI-Net providers but provide additional information on influenza results* on a weekly basis.



*Rather than performing rapid influenza diagnostic testing, BIDS site 1 utilizes a real-time RT-PCR assay (manufactured by Focus Diagnostics) which detects influenza A/B and respiratory syncytial virus (RSV) as their form of a rapid diagnostic test.

Severe Acute Respiratory Infections (SARI) Surveillance

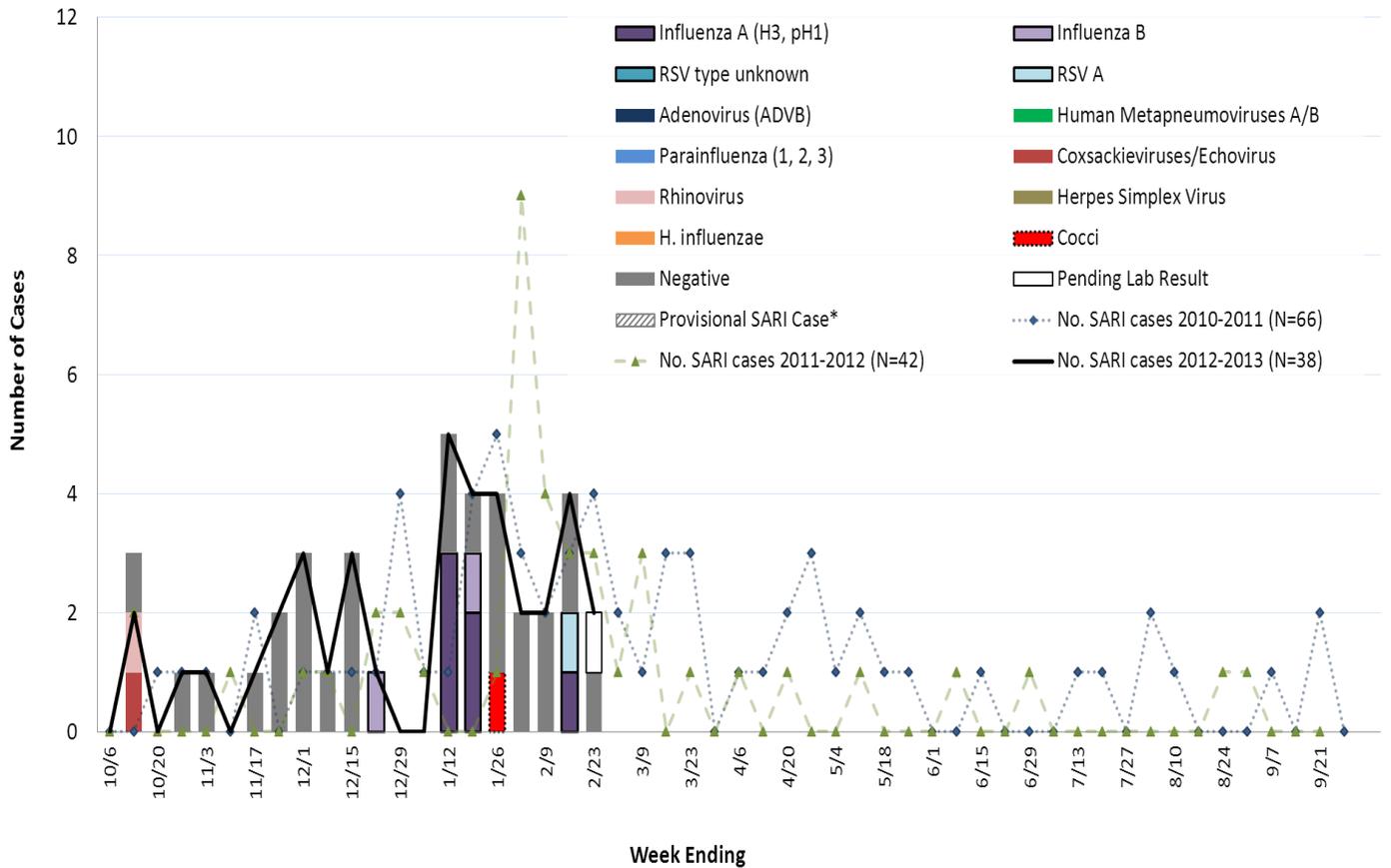
Severe Acute Respiratory Infections (SARI) surveillance is currently conducted by the BIDS program at selected hospitals in Arizona counties in the US-Mexico border region. SARI is defined as a hospital admission with a fever of at least 100°F plus either a cough or a sore throat. Integrating hospital-based surveillance for SARI with existing influenza surveillance will complement and strengthen both of these surveillance activities. Enhancing hospital-based surveillance for respiratory pathogens will increase the ability to detect influenza strains currently in circulation, and monitor causes of morbidity and mortality among inpatients with SARI. Overall, this will provide a clearer epidemiological picture of influenza activity in our community.

SARI cases are tested by a reverse-transcriptase polymerase chain reaction (RT-PCR) viral panel test that includes: respiratory syncytial virus A and B; parainfluenza virus 1, 2, 3, and 4; human metapneumoviruses A/B; rhinovirus; adenovirus (ADVB and ADVE); influenza A and B; coronavirus (NL63, HKU1, 229E, and OC43); coxsackieviruses/echovirus; bocavirus. Bacterial testing for *Mycoplasma pneumonia*, *Chlamydia pneumonia*, *Legionella pneumophila* and *Bordetella pertussis* is also conducted. Serum from these patients is tested for Coccidioidomycosis.



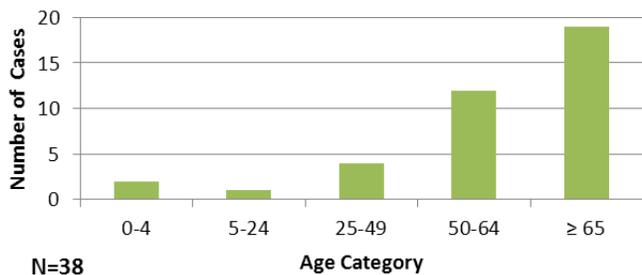
Test Results Among 2012-2013 SARI Cases by Week

SARI Cases for All Sites 2010-2013

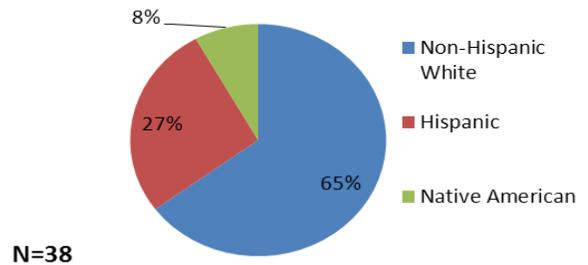


*These cases are considered provisional until state-reviewed.

Number of 2012-2013 SARI Cases by Age Category



Race/Ethnicity of 2012-2013 SARI Cases



| Gender | No. of Cases (N=38) | Percentage |
|--------|---------------------|------------|
| Male | 22 | 58% |
| Female | 16 | 42% |

Virologic Data

One of the BIDS programs sentinel sites has been providing virologic data from all the molecular respiratory testing done in the hospital site. This graph found on the next page includes several reportable conditions such as influenza and respiratory syncytial virus (RSV), and also infections that are not reportable such as adenovirus, parainfluenza, coxsackievirus/echovirus, rhinovirus, and coronavirus. These aggregate data show trends in respiratory pathogens among all patients receiving the molecular testing.

ACKNOWLEDGEMENTS:

We gratefully acknowledge all our border partners for their contributions and support of the border influenza network including: Border Infectious Disease Surveillance Program, Early Warning Infectious Disease Surveillance, Naval Health Research Center Laboratory, Cochise County Health Department, Pima County Health Department, Santa Cruz County Health Department, Yuma County Health Department, and all participating hospital facilities.

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