Arizona Department of Health Services
Office of the Director
Office of Border Health
400 W. Congress, Suite 116 Tucson, AZ 85701
Tel: (520) 770-3110 Fax: (520) 770-3307

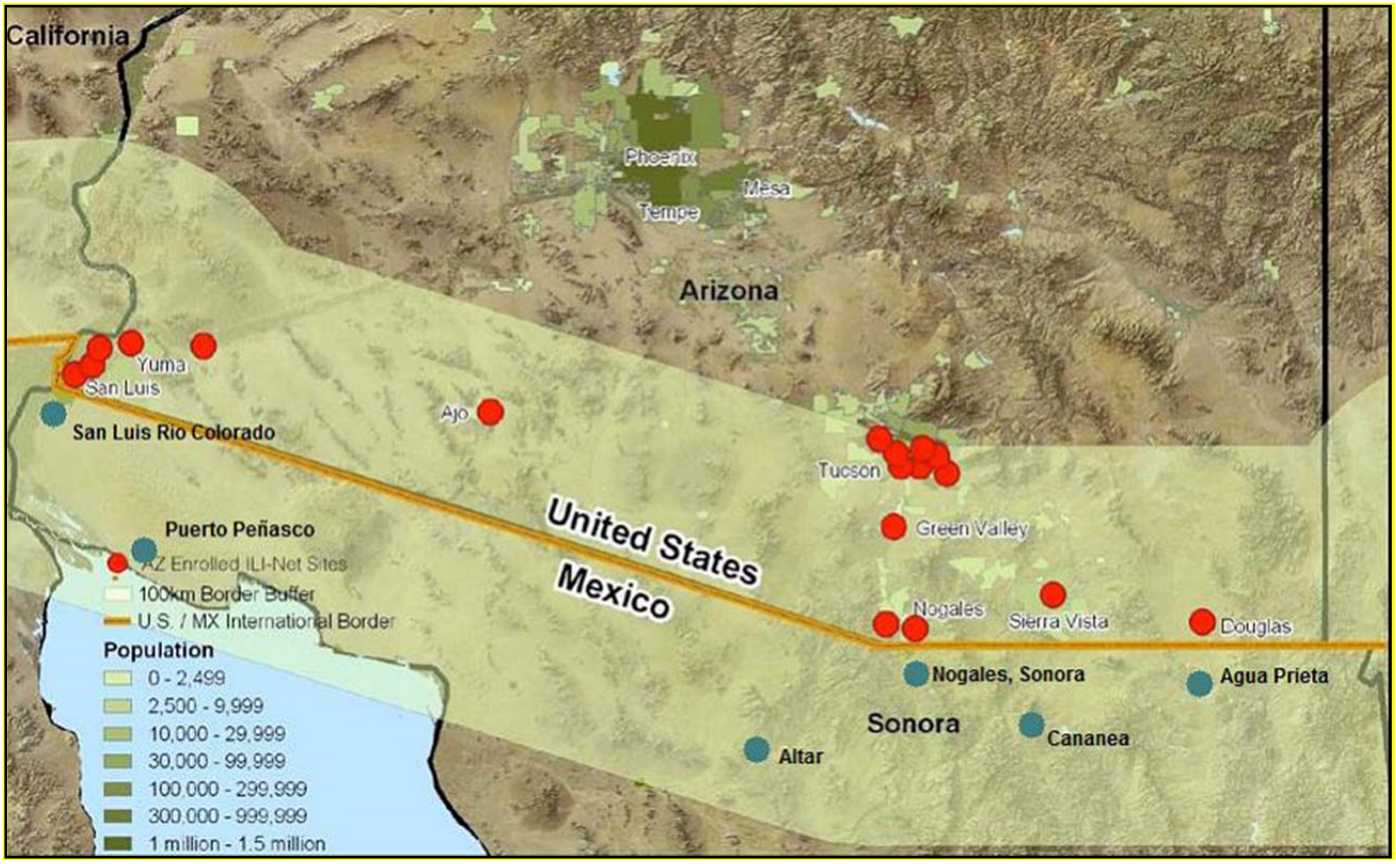
JANICE K. BREWER, GOVERNOR
WILL HUMBLE, DIRECTOR

Arizona Border Region Influenza Report

2014-2015 Influenza Season (9/28/2014 –9/26/2015)
MMWR Weeks 48 (November 23, 2014-November 29, 2014)

Border Influenza Activity Highlights:

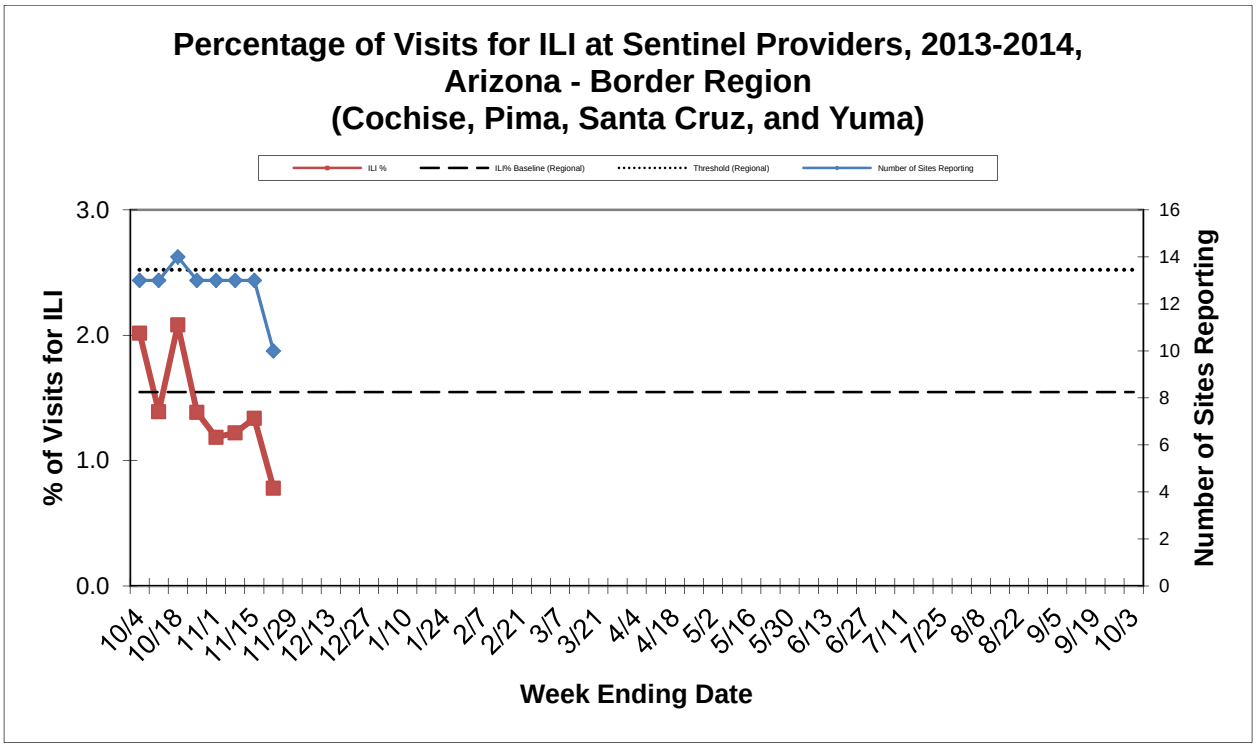
- There were 22 cases of influenza in Week 48 from the Arizona border region counties (Cochise, Pima, Santa Cruz, and Yuma).
- There were 4 cases enrolled in the Severe Acute Respiratory Infection (SARI) Surveillance in epidemiologic Week 48.
- Influenza-like illness activity at sentinel providers was below the baseline level in Week 47.
- 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 100ºF 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 2010-2014 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.

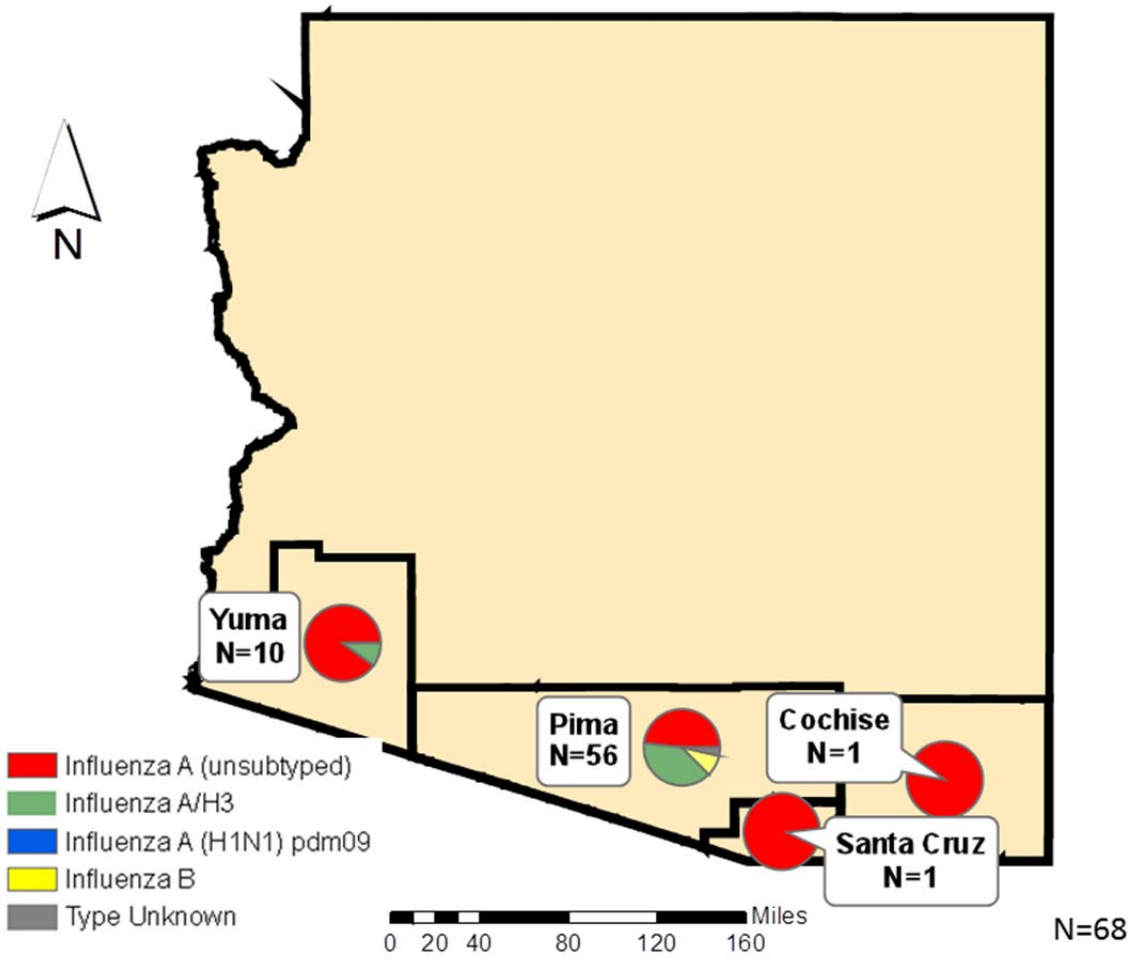
The proportion of patient visits to sentinel providers for ILI in the Arizona border region was 0.8% for week 47 (Week ending 11/22/14) which is below the baseline level for the border region. The border region ILI baseline is 1.55%*. The epidemic threshold for the Arizona border region is 2.52%*. In 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, 2014-2015 Influenza Season:

These totals include ALL positive influenza tests that were reported to ADHS by the border counties through Week 48 (November 23, 2014-November 29, 2014). 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.

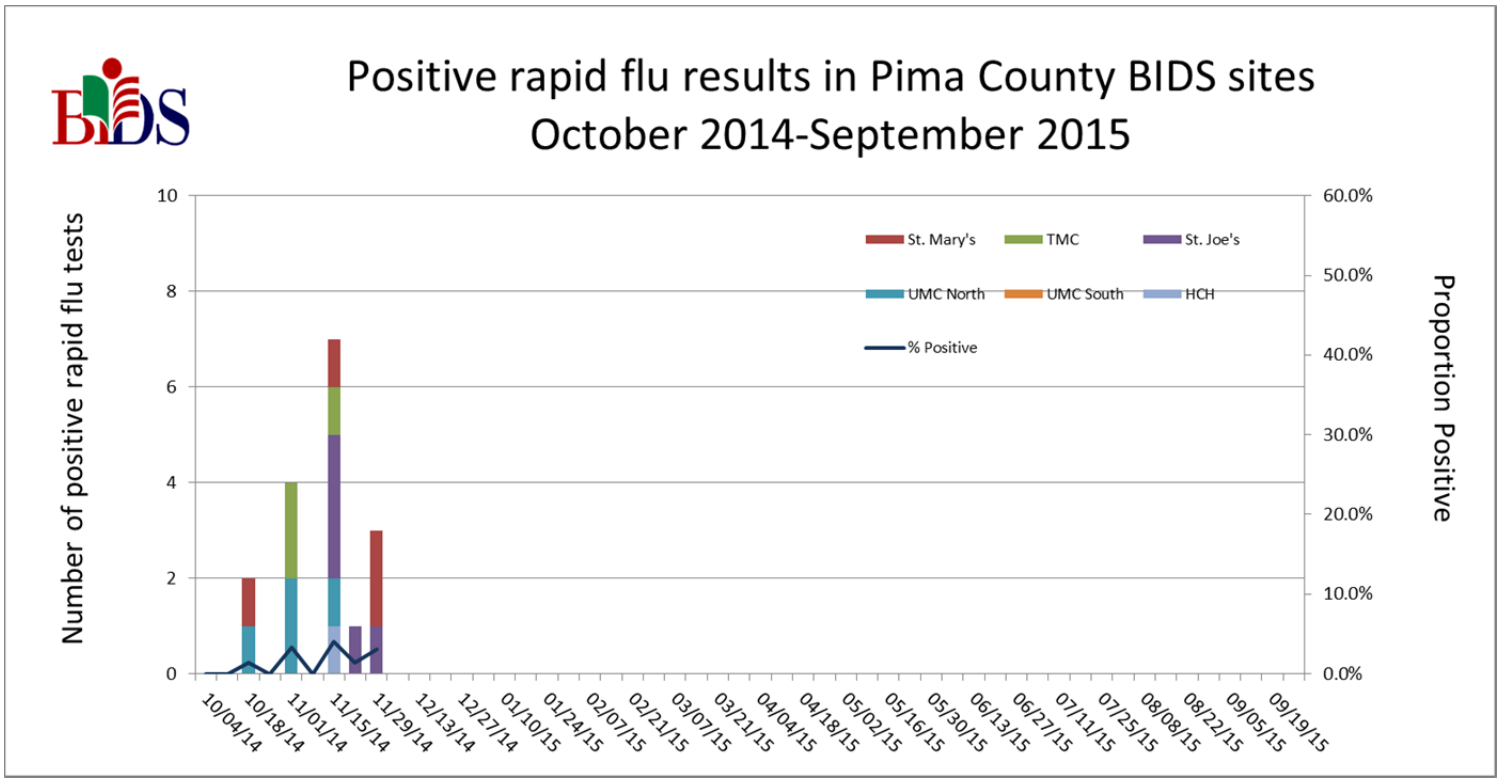
County	*Current Season 2014-2015*	*Past Three Weeks*	*Last Week*
Cochise	1	1	0
Pima	56	38	15
Santa Cruz	1	1	0
Yuma	10	10	7
Border Total	**68**	**50**	**22**
Arizona Total	131	101	53

Influenza Types and Subtypes in the Arizona Border Region, 2014-2015 influenza season YTD:
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.

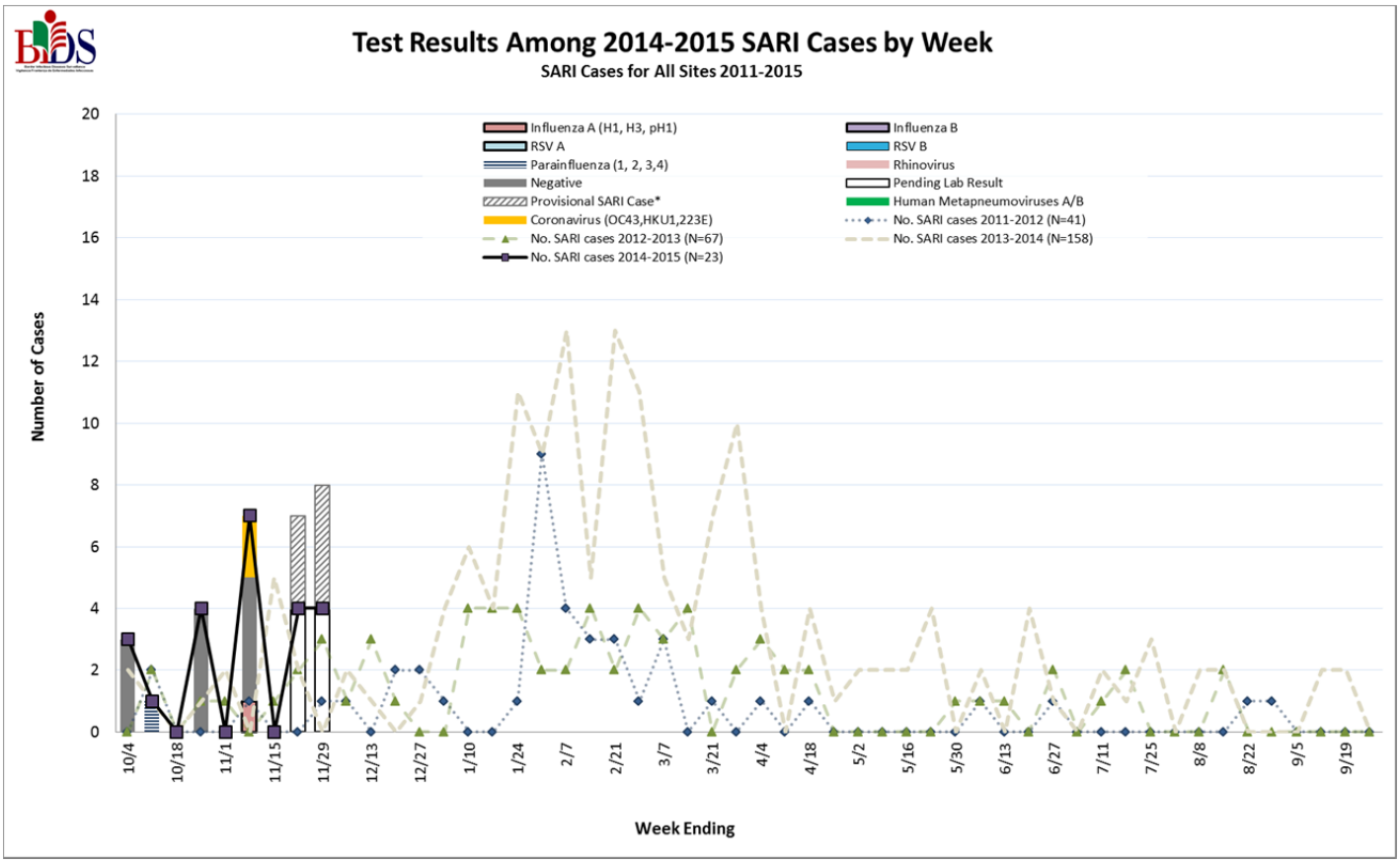


*Rather than performing rapid influenza diagnostic testing, BIDS site 4 utilizes a real-time RT-PCR assay which detects influenza A/B and respiratory syncytial virus (RSV) as their form of a rapid diagnostic test.

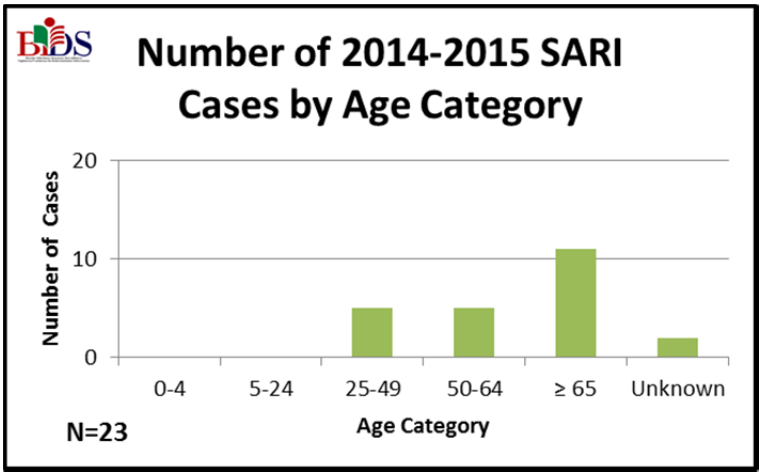
Severe Acute Respiratory Infections (SARI) Surveillance

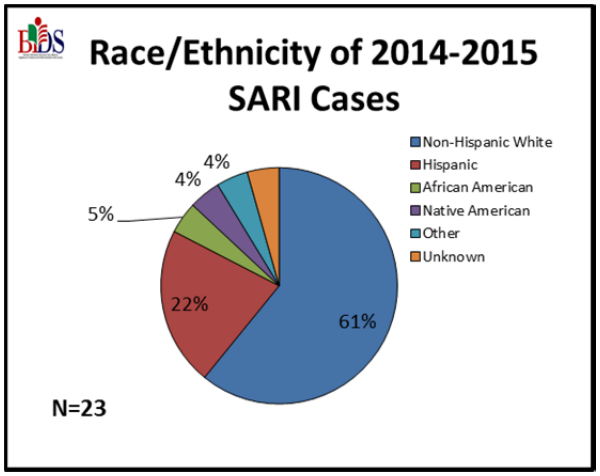
Severe Acute Respiratory Infections (SARI) surveillance is currently conducted by the BIDS program at selected hospitals in Arizona counties in the US-Mexico border region. SARI is defined as a hospital admission with onset within the last 10 days with a fever of at least 100.4ºF (or a history of fever) plus a cough. 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 (B, C, and E); influenza A, A H1 (seasonal subtype), A H3 (seasonal subtype), A H1N1, and B; and coronavirus (NL63, HKU1, 229E, and OC43). After conducting further patient chart reviews, bacterial testing results performed on site have been found and incorporated into the graph below.



*These cases are considered provisional until state-reviewed.





Gender	No. of Cases (N=23)	Percentage
Male	11	48%
Female	11	48%
Unknown	1	4%

Virologic Data

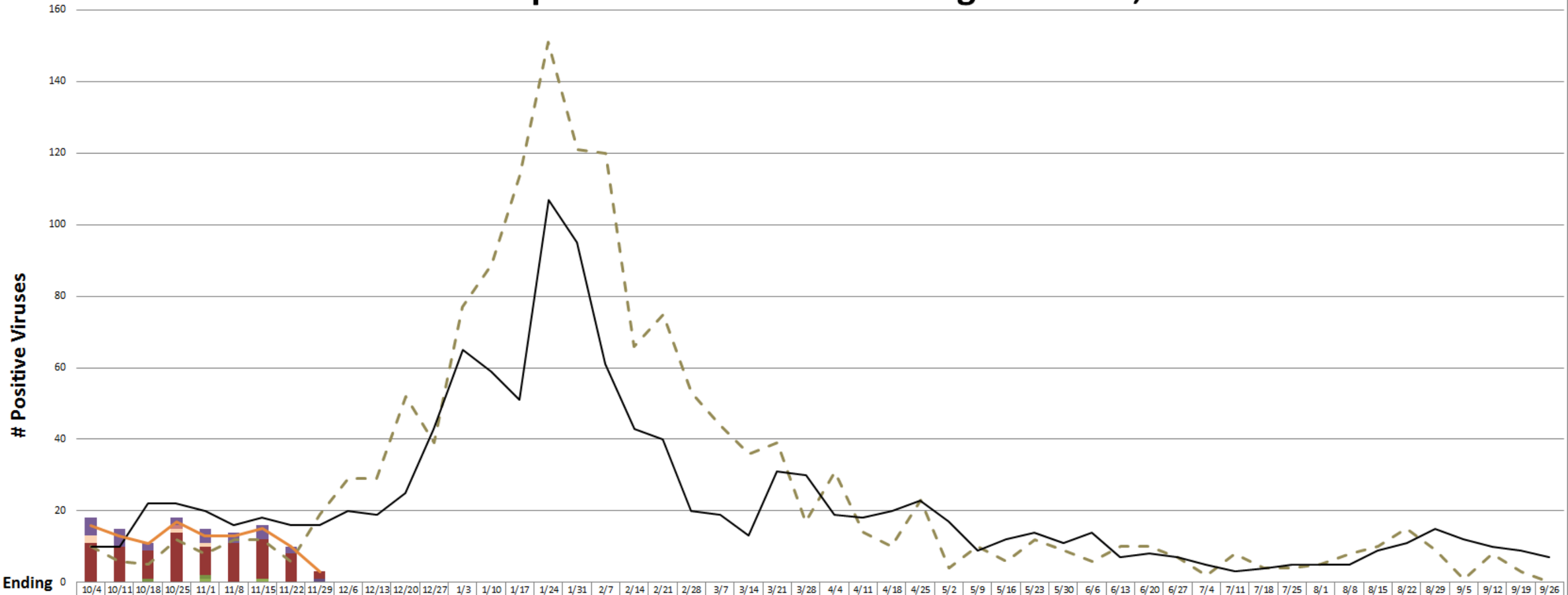
One of the BIDS programs sentinel sites has been providing virologic data from all the molecular respiratory testing done in the hospital site. This graph found on the next page includes several reportable conditions such as influenza and respiratory syncytial virus (RSV), and also infections that are 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.

Any questions please contact Zimy Wansaula: zimy.wansaula@azdhs.gov or Mariana Casal: mariana.casal@azdhs.gov

Sentinel BIDS Hospital-site 1 Positive Virologic Results; 2012-2015



Week Ending	10/4	10/11	10/18	10/25	11/1	11/8	11/15	11/22	11/29	12/6	12/13	12/20	12/27	1/3	1/10	1/17	1/24	1/31	2/7	2/14	2/21	2/28	3/7	3/14	3/21	3/28	4/4	4/11	4/18	4/25	5/2	5/9	5/16	5/23	5/30	6/6	6/13	6/20	6/27	7/4	7/11	7/18	7/25	8/1	8/8	8/15	8/22	8/29	9/5	9/12	9/19	9/26
Parainfluenza 1, 2, 3, 4	5	5	2	2	4	3	4	2																																													
Human Metapneumoviruses A/B				1																																																		
Adenovirus	2			1	1																																																	
Enterovirus																																																						
Coronavirus																																																						
Rhinovirus	11	10	8	14	8	11	11	8	2																																												
RSV B																																																						
RSV A																																																						
RSV (unsubtyped)									1																																												
Influenza B			1		1																																																	
Influenza A H1N1																																																						
Influenza A					1		1																																															
No. Positive Cases 2012-2013	10	6	5	12	8	12	12	6	19	29	29	52	39	77	89	114	151	121	120	66	75	53	44	36	39	17	31	14	10	23	4	10	6	12	9	6	10	10	7	2	8	4	4	5	8	10	15	9	1	8	3	0
No. Positive Cases 2013-2014	10	10	22	22	20	16	18	16	16	20	19	25	43	65	59	51	107	95	61	43	40	20	19	13	31	30	19	18	20	23	17	9	12	14	11	14	7	8	7	5	3	4	5	5	5	9	11	15	12	10	9	7
No. Positive Cases 2014-2015	16	13	11	17	13	13	15	10	3																																												