DoD Global, Laboratory-Based, Influenza Surveillance Program

USAF School of Aerospace Medicine

2014 - 2015

Cumulative Results

	Season
Locations	56
Collected	295
Tested	242

Influenza A	**17**
A(H1N1)pdm09	0
A(H3N2)	13
A/not subtyped	4

Influenza B	**7**
B/Unknown or pending lineage	6
B & Rhinovirus/ Enterovirus	1
B/Victoria	0
B/Yamagata	0

Other Respiratory Pathogens	**75**
Adenovirus	4
Bordetella Pertussis	0
Chlamydophila pneumoniae	0
Coronavirus	2
Human Metapneumovirus	1
Mycoplasma pneumoniae	1
Parainfluenza	10
RSV	1
Rhino/Enterovirus	47
Non-influenza Co-infections	9

Lab data are current as of 27 October 2014. Results are preliminary and may change as more results are received.

Respiratory Highlights
12-25 October 2014 (Surveillance Week 42 & 43)

- During 12-25 October, a total of 136 specimens were collected and received from 41 locations. Results were finalized for 83 specimens from 35 locations. During Week 42, three influenza A(H3N2) and one influenza B were identified. During Week 43, four influenza A/not subtyped, two influenza A(H3N2), and one influenza B were identified. See Table 1 below for results of other respiratory viruses.
- As of 28 October 2014, USAFSAM received 72 specimens from 15 bases requesting EV-D68 testing. 47 specimens tested positive for Rhinovirus/Enterovirus on multiplex PCR. 18 specimens have been submitted to the CDC for EV-D68 testing and 11 are pending shipment. Of these 18 specimens, nine tested positive for EV-D68, five tested positive for rhinovirus, and four tested negative for EV-D68. USAFSAM will forward all specimens to the CDC that come in with an EV-D68 concern and test positive for Rhinovirus/Enterovirus on multiplex PCR.
- This report contains the molecular sequence report created on 3 October 2014.

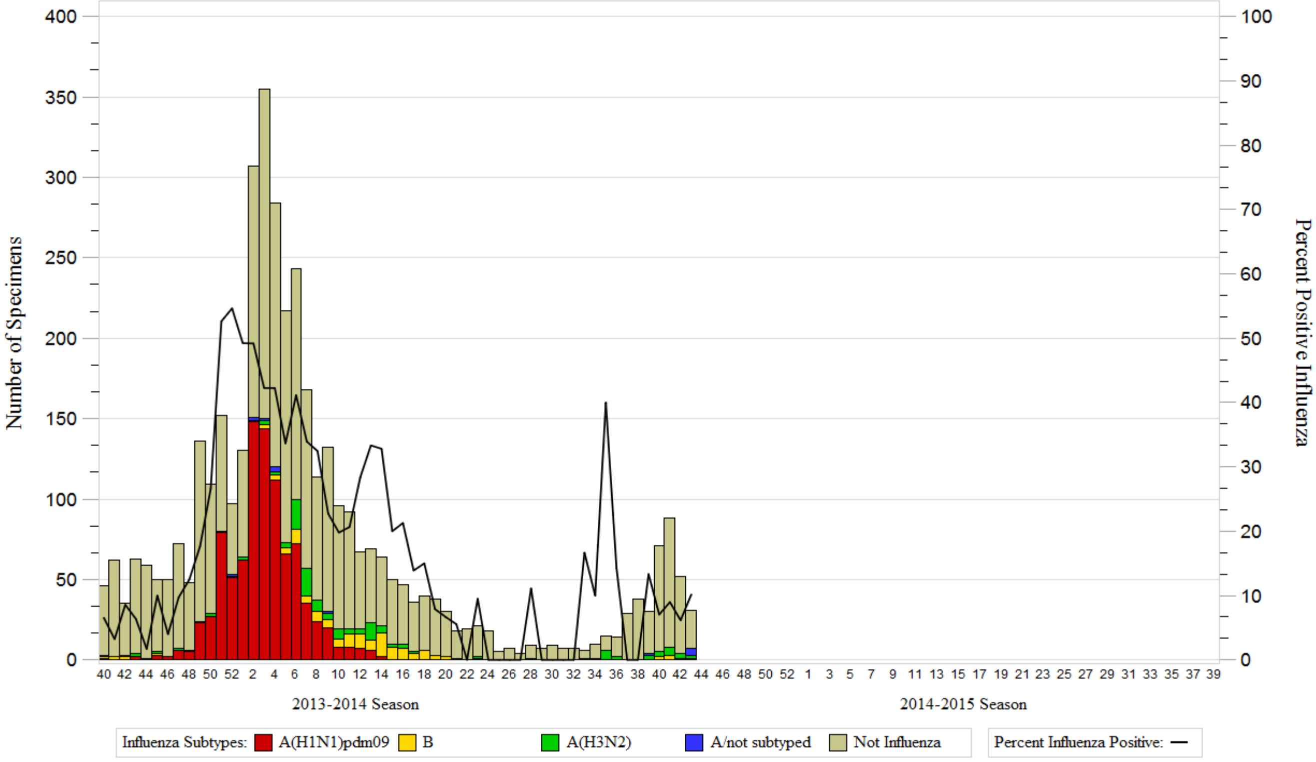
Table 1. Results by region and location for specimens collected and finalized during Week 42 & 43

Region*		A(H3N2)	A/not subtyped	B	Adenovirus	Coronavirus	*M. pneumoniae*	Parainfluenza	RSV	Rhinovirus/Enterovirus	Adeno & Rhino/Enterovirus	*M. pneumoniae* & Rhino/Enterovirus	No Pathogen	Total
PACOM	**CFA Okinawa, Japan**	-	-	-	-	-	-	-	-	1	-	-	2	3
	JB Elmendorf-Richardson, AK	1	-	-	-	-	-	-	-	-	-	-	-	1
	JR Marianas - Andersen AFB, Guam	1	-	1	-	-	-	-	-	-	-	-	-	2
	Osan AB, South Korea	1	-	-	-	-	-	-	-	-	-	-	-	1
Region 1	**NHCNE Newport, RI**	-	-	-	-	-	-	-	-	1	-	-	2	3
	USCG Academy, CT	-	-	-	-	-	-	1	-	1	-	-	-	2
Region 2	**Ft Drum, NY**	-	-	-	1	-	-	1	-	1	2	-	2	7
	USMA - West Point, NY	-	-	-	-	-	-	1	-	1	-	-	2	4
Region 3	**JB Langley-Eustis, VA**	-	-	-	-	-	-	-	-	-	-	-	1	1
	NCRM - Ft Belvoir CH, VA	-	-	-	1	-	-	-	-	4	-	-	1	6
Region 4	**Eglin AFB, FL**	-	-	-	-	-	-	-	-	1	-	-	-	1
	Ft Campbell, KY	-	-	-	-	-	-	-	-	1	-	-	-	1
	MacDill AFB, FL	-	-	-	-	-	-	-	-	-	-	-	2	2
	Maxwell AFB, AL	-	2	-	-	-	-	-	-	-	-	-	-	2
	Moody AFB, GA	-	1	-	-	1	1	-	-	2	-	-	-	5
	NH Camp Lejeune, NC	-	-	-	-	-	-	-	-	1	-	-	-	1
	NH Jacksonville, FL	-	-	-	-	-	-	-	-	1	-	1	-	2
	Robins AFB, GA	-	-	-	-	-	-	-	-	-	-	-	2	2
	Tyndall AFB, FL	-	1	1	-	-	-	-	-	-	-	-	1	3
Region 5	**Scott AFB, IL**	1	-	-	-	-	-	-	-	-	-	-	-	1
	Wright-Patterson AFB, OH	-	-	-	-	-	-	-	-	3	-	-	2	5
Region 6	**Laughlin AFB, TX**	-	-	-	-	-	-	-	-	-	-	-	1	1
	Tinker AFB, OK	-	-	-	-	-	-	-	-	-	-	-	4	4
Region 7	**Offutt AFB, NE**	-	-	-	-	-	-	-	-	1	-	-	1	2
Region 8	**Ellsworth AFB, SD**	-	-	-	-	-	-	-	-	-	-	-	1	1
	FE Warren AFB, WY	-	-	-	-	-	-	-	-	-	-	-	1	1
	Hill AFB, UT	-	-	-	-	-	-	1	-	-	-	-	-	1
	Minot AFB, ND	-	-	-	-	-	-	-	-	1	-	-	-	1
	Peterson AFB, CO	-	-	-	-	-	-	1	-	1	-	-	-	2
Region 9	**Davis-Monthan AFB, AZ**	-	-	-	-	-	-	-	-	-	-	-	3	3
	Edwards AFB, CA	-	-	-	-	-	-	-	-	-	-	-	1	1
	Luke AFB, AZ	-	-	-	-	-	-	-	-	-	-	-	1	1
	Travis AFB, CA	-	-	-	-	-	-	1	1	1	-	-	5	8
Region 10	**Mt Home AFB, ID**	1	-	-	-	-	-	-	-	-	-	-	-	1
	NH Bremerton, WA	-	-	-	-	-	-	-	-	-	-	-	1	1
Total		5	4	2	2	1	1	6	1	22	2	1	36	83

**US Regions are based on Health & Human Services regions. Other locations are defined by COCOM.*

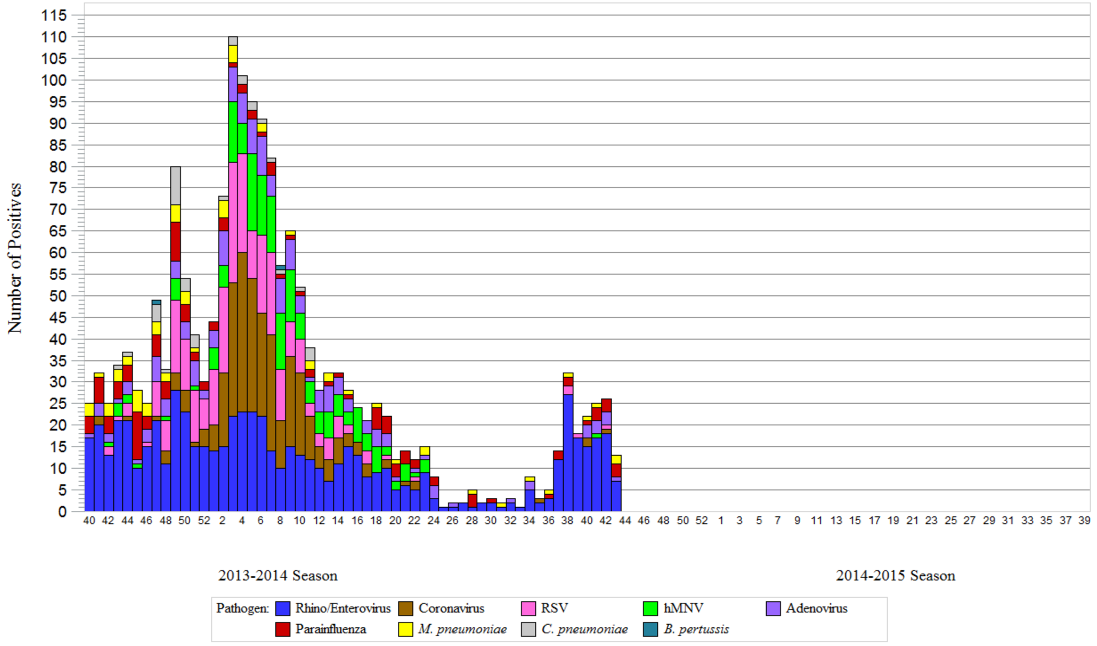
Laboratory Results - Cumulative for Season

Graph 1. Percent influenza positive by week: 2013-2014 surveillance year and through Week 43 of the 2014-2015 surveillance year



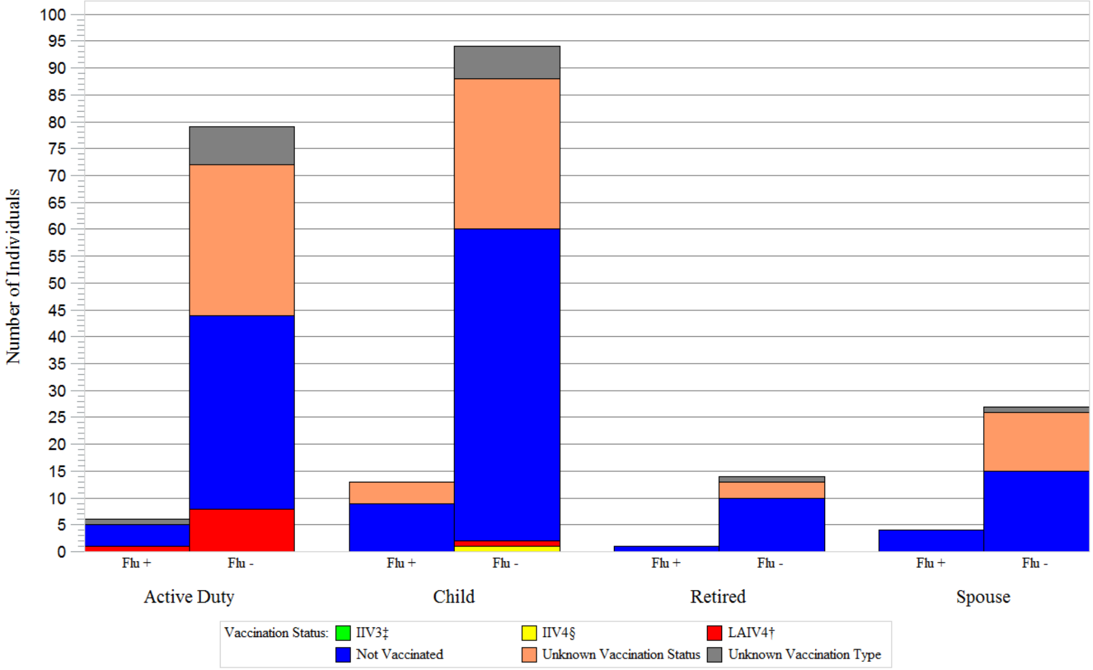
Note: A(H3N2)v has been excluded from the graph

Graph 2. Other respiratory pathogen results by week: 2013-2014 surveillance year and through Week 43 of the 2014-2015 surveillance year



Note: Due to change in protocol between the surveillance years 2013-2014 and 2014-2015, a direct comparison between the years cannot be made.

Graph 3. Vaccination status by beneficiary type for the 2014-2015 surveillance year through Week 43



‡ Influenza, inactivated vaccine (trivalent)

§ Influenza, inactivated vaccine (quadrivalent)

† Live, attenuated influenza vaccine (quadrivalent)

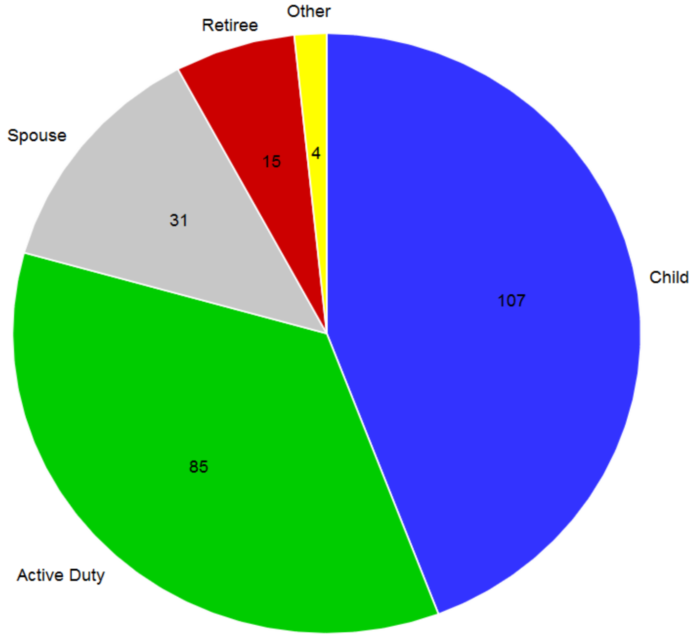
Table 2. ILI by age group for the 2014-2015 surveillance year through Week 43

Age Group	Frequency	Percent
0-5	62	25.62
6-9	24	9.92
10-18	22	9.09
19-24	35	14.46
25-44	65	26.86
45-64	25	10.33
65+	9	3.72

Demographic Summary

Of 242 ILI cases, 85 are service members (35.1%), 107 are children (44.2%), 31 (12.8%) are spouses, and 19 (7.9%) are retirees & other beneficiaries. There are no unknown beneficiary types. The median age of ILI cases with known age (n=242) is 21.0 (range 0, 84) and 108 (44.6%) of these specimens are from ILI cases 18 years of age or younger.

Graph 4. ILI by beneficiary status for the 2014-2015 surveillance year through Week 43



Laboratory Results—Through Current Surveillance Week 43

Table 3. Cumulative results by region and location for specimens collected during the 2014-2015 surveillance year

Region*		A(H3N2)	A/not subtyped	B	B & Rhino/Enterovirus	Adenovirus	Coronavirus	hMNV	*M. pneumoniae*	Parainfluenza	RSV	Rhinovirus/Enterovirus	Non-Influenza Co-Infection	No Pathogen	Total
Deployed	**Country 1, Location B**	-	-	-	-	-	-	-	-	-	-	-	-	4	4
	Country 2, Location A	-	-	-	-	-	-	-	-	-	-	-	-	7	7
PACOM	**CFA Okinawa, Japan**	-	-	-	-	-	-	-	-	-	-	1	-	3	4
	Eielson AFB, AK	-	-	1	-	-	-	-	-	-	-	1	-	1	3
	JB Elmendorf-Richardson, AK	1	-	-	-	-	-	-	-	-	-	-	-	1	2
	JR Marianas - Andersen AFB, Guam	7	-	3	-	-	-	1	-	1	-	-	-	2	14
	Osan AB, South Korea	1	-	-	-	-	-	-	-	-	-	-	-	1	2
	Yokota AB, Japan	-	-	-	-	-	-	-	-	-	-	-	1	-	1
Region 1	**Hanscom AFB, MA**	-	-	-	-	-	-	-	-	-	-	-	-	1	1
	NHCNE Newport, RI	-	-	-	-	-	-	-	-	-	-	1	-	2	3
	USCG Academy, CT	-	-	-	-	-	-	-	-	1	-	1	-	2	4
Region 2	**Ft Drum, NY**	-	-	1	-	1	-	-	-	1	-	4	3	12	22
	USMA - West Point, NY	-	-	-	-	-	-	-	-	1	-	2	-	8	11
Region 3	**JB Andrews, MD**	-	-	-	-	-	-	-	-	-	-	2	-	1	3
	JB Langley-Eustis, VA	-	-	-	-	-	-	-	-	1	-	-	1	4	6
	NCRM - Ft Belvoir CH, VA	-	-	-	-	1	-	-	-	-	-	4	-	2	7
Region 4	**Columbus AFB, MS**	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Eglin AFB, FL	-	-	-	-	-	-	-	-	-	-	1	-	6	7
	Ft Campbell, KY	-	-	-	-	-	-	-	-	-	-	1	-	-	1
	Hurlburt Field, FL	-	-	-	-	-	-	-	-	-	-	-	-	1	1
	JB Charleston (Navy), SC	-	-	-	-	-	-	-	-	-	-	2	-	-	2
	Keesler AFB, MS	-	-	-	-	-	-	-	-	-	-	-	-	1	1
	MacDill AFB, FL	-	-	-	-	-	-	-	-	-	-	-	-	3	3
	Maxwell AFB, AL	-	2	-	-	-	-	-	-	-	-	2	-	2	6
	Moody AFB, GA	-	1	-	-	-	1	-	1	-	-	2	-	1	6
	NH Beaufort, SC	-	-	-	-	-	-	-	-	-	-	-	1	-	1
	NH Camp Lejeune, NC	-	-	-	-	-	-	-	-	-	-	1	-	2	3
	NH Jacksonville, FL	1	-	-	-	1	-	-	-	-	-	3	1	-	6
	Robins AFB, GA	-	-	-	-	-	-	-	-	-	-	-	-	4	4
	Seymour Johnson AFB, NC	-	-	-	-	-	-	-	-	-	-	1	-	1	2
	Shaw AFB, SC	-	-	-	-	-	-	-	-	-	-	1	-	-	1
	Tyndall AFB, FL	-	1	1	-	-	-	-	-	-	-	-	-	1	3
Region 5	**Scott AFB, IL**	1	-	-	-	-	-	-	-	-	-	-	-	1	2
	Wright-Patterson AFB, OH	-	-	-	-	-	-	-	-	-	-	3	-	4	7
Region 6	**Altus AFB, OK**	-	-	-	1	-	-	-	-	-	-	1	1	3	6
	Cannon AFB, NM	-	-	-	-	-	-	-	-	-	-	-	-	1	1
	Laughlin AFB, TX	-	-	-	-	-	-	-	-	-	-	-	-	1	1
	Little Rock AFB, AR	-	-	-	-	-	-	-	-	-	-	-	-	1	1
	Sheppard AFB, TX	-	-	-	-	-	-	-	-	-	-	-	-	1	1
	Tinker AFB, OK	-	-	-	-	-	1	-	-	1	-	-	-	12	14
Region 7	**Offutt AFB, NE**	-	-	-	-	-	-	-	-	-	-	1	-	3	4
Region 8	**Buckley AFB, CO**	-	-	-	-	-	-	-	-	-	-	1	-	-	1
	Ellsworth AFB, SD	-	-	-	-	-	-	-	-	-	-	1	-	3	4
	FE Warren AFB, WY	-	-	-	-	-	-	-	-	-	-	1	-	1	2
	Hill AFB, UT	-	-	-	-	-	-	-	-	1	-	1	-	3	5
	Minot AFB, ND	-	-	-	-	-	-	-	-	-	-	1	-	-	1
	Peterson AFB, CO	-	-	-	-	-	-	-	-	1	-	1	1	5	8
	USAF Academy, CO	-	-	-	-	-	-	-	-	-	-	1	-	1	2
Region 9	**Davis-Monthan AFB, AZ**	-	-	-	-	-	-	-	-	-	-	-	-	3	3
	Edwards AFB, CA	-	-	-	-	-	-	-	-	-	-	-	-	1	1
	Luke AFB, AZ	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Nellis AFB, NV	-	-	-	-	1	-	-	-	-	-	-	-	2	3
	Travis AFB, CA	1	-	-	-	-	-	-	-	2	1	5	-	18	27
Region 10	**Fairchild AFB, WA**	-	-	-	-	-	-	-	-	-	-	-	-	1	1
	Mt Home AFB, ID	1	-	-	-	-	-	-	-	-	-	-	-	-	1
	NH Bremerton, WA	-	-	-	-	-	-	-	-	-	-	-	-	1	1
Total		13	4	6	1	4	2	1	1	10	1	47	9	143	242

**US Regions are based on Health & Human Services regions. Other locations are defined by COCOM.*

Molecular Sequence Analysis Report

3 October 2014

A total of 45 A(H1N1)pdm09 viruses and 45 A(H3N2) viruses collected between 18 October 2013 and 17 April 2014 had their matrix segments sequenced and analyzed. The matrix (M) genes from select influenza positives were sequenced using dye terminator, Sanger-based methods. Preliminary data are based on the sequence analysis of the matrix genes. Glycosylation motifs are predicated upon correlations with previously published experimental evidence. [1,2,3] Sequence data was constructed and analyzed using multiple software programs. Genetic and predicted antigenic information that resulted from the analysis is shared with Centers for Disease Control and Prevention (CDC), World Health Organization (WHO), and potentially contribute to the seasonal Northern and Southern Hemisphere vaccine component selections. Included are strains detected and contributed by the Landstuhl Regional Medical Center (LRMC), Naval Health Research Center (NHRC), Tripler Army Medical Center (TAMC), and laboratories at deployed locations (DL).

		A(H1N1)pdm09	A(H3N2)
CONUS	**Alabama** Maxwell AFB	1	1
	California Petaluma USCG (NHRC)	1	
	California Travis AFB	4	
	Colorado Peterson AFB	3	
	Colorado USAF Academy	1	1
	Delaware Dover AFB		1
	Florida Eglin AFB	1	
	Florida Hurlburt Field	1	
	Florida Tyndall AFB	1	
	Georgia Moody AFB	1	
	Illinois Scott AFB	1	
	Kentucky Blanchfield Army	1	1
	Louisiana Barksdale AFB	2	
	Maryland NNMC Bethesda		1
	Massachusetts Hanscom AFB	1	1
	Montana Malmstrom AFB	1	
	Nebraska Offutt AFB	3	
	Nevada Nellis AFB	1	
	New Jersey JB McGuire-Dix-Lakehurst		1
	New York Keller ACH-West Pt.	1	
	New York USAMEDDAC-Ft. Drum	1	
	North Carolina USCG-Elizabeth City	1	
	Ohio Wright-Patterson Medical Center AFB	2	
	Oklahoma Tinker AFB		2
	South Dakota Ellsworth AFB	2	
	Texas Laughlin AFB		1
	Texas Sheppard AFB	1	
	Utah Hill AFB	1	
	Virginia JB Langley-Eustis	1	
	Washington NH Bremerton		1
OCONUS	**Country 1** Location D (DL)		7
	Country 2 Location A (DL)		2
	Country 5 Location A (LRMC)	2	9
	Germany Kranke (LRMC)		1
	Germany LRMC	2	2
	Guam Andersen AFB	1	1
	Hawaii Tripler AMC		1
	Italy FDCA (LRMC)		1
	Japan Camp Zama	1	
	Japan NH Okinawa		1
	Japan Yokota AB	2	2
	Korea Kunsan AB		2
	Korea Osan AB	3	4
	Remote (LRMC)		1
TOTAL		**45**	**45**

Influenza A(H1N1)pdm09 and influenza A(H3N2) Matrix

- The influenza A genome is divided into eight segments. The three largest segments encode for polymerase proteins: PB2, PB1, and PA, while the remaining five segments encode for hemagglutinin (HA), nucleocapsid protein (NP), neuraminidase (NA), matrix (M), and non-structural protein (NS). The matrix gene encodes two proteins; unspliced mRNA encodes the matrix protein (M1) while the spliced mRNA encodes the M2 ion channel protein. M2 is a transmembrane polypeptide which functions as pH-dependent ion channel that assists with membrane fusion and budding during infection. M1 is an internal structural protein, and may create a bridge between the internal components and the membrane proteins (i.e. HA and NA) during the formation of the viral budding particle. [1,4]

- Isolates are characterized in neighbor-joining phylogenetic trees with reference and 2013-2014 vaccine strains [Figure 1 and 2].

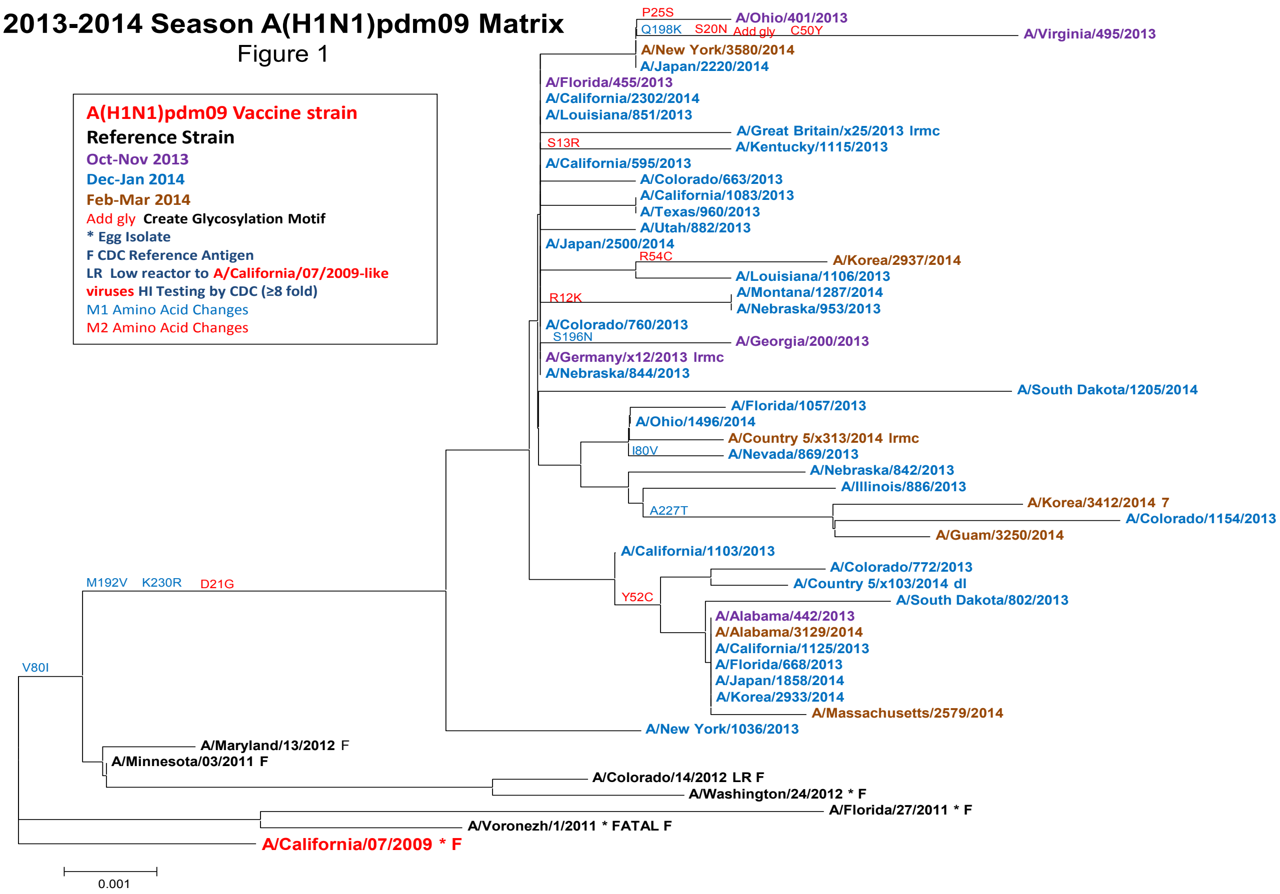
- The ClustalW method was used to align whole matrix (M) genes as well as M1 and M2 gene components, and amino acid sequence homologies were calculated. The M1 genes shared a protein identity of 98.4 - 99.2% and the M2 genes shared a protein identity of 95.9 - 99.0% as compared to the A/California/07/20090like virus.

- The A(H3N2) M1 genes shared a protein identity of 99.6 - 100.0% and the M2 genes shared a protein identity of 98.0 - 100.0% as compared to A/Texas/50/2012-like virus.

- Gain or loss of *N*-linked glycosylation sites has been shown to alter protein surface topology. A gain in glycosylation could be advantageous to the virus by virtue of a masking effect on important antibody recognition sites, thus potentially modulating viral antigenicity.[3] Observations are based solely on sequence motifs. In this matrix protein analysis report, only the A(H1N1)pdm09 M2 matrix protein mutation S20N (serine to asparagine), which was present in the specimen A/Virginia/495/2013, could cause the addition of a glycosylation motif. No mutations that could potentially cause the loss of a glycosylation motif were observed for either A(H1N1)pdm09 or A(H3N2) specimens.

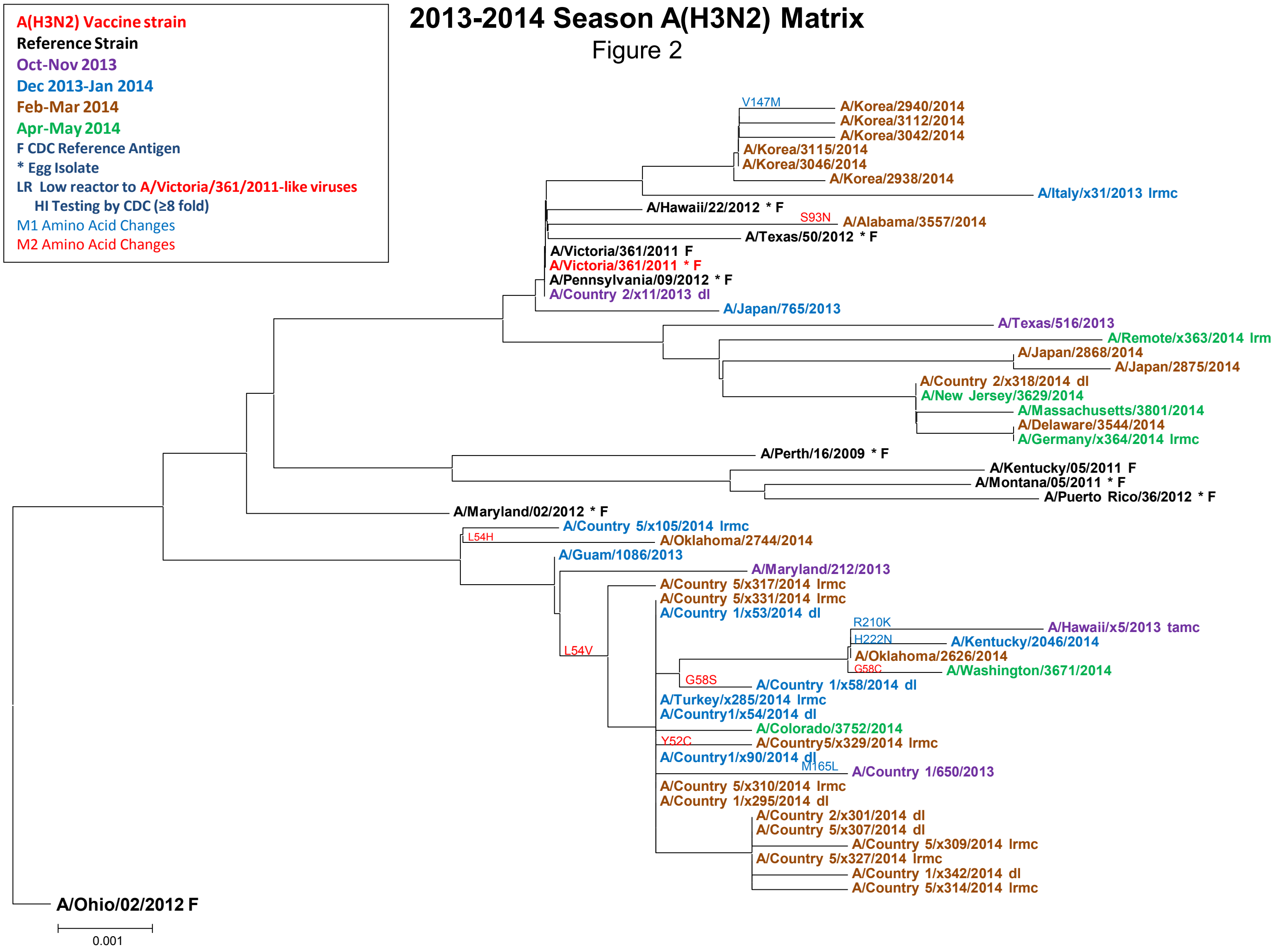
2013-2014 Season A(H1N1)pdm09 Matrix

Figure 1



2013-2014 Season A(H3N2) Matrix

Figure 2



References:

1. Wright, P, Neumann, G, Kaqaoka, Y 2007. Orothomyxoviruses In: Knipe, D.M., Howley, P.M. (Eds.), Fields Virology. Wolters Kluwer, Lippincott Williams & Wilkins, Philadelphia, pp.1692-1740.
2. Cherry JL, Lipman DJ, Nikolskaya A, Wolf YI. Evolutionary Dynamics of N-Glycosylation Sites of Influenza Virus Hemagglutinin. *PLoS Curr Influenza*. 2009 August 18: RRN1001.
3. Deem, M., and Pan, K. (2009). The epitope regions of H1-subtype influenza A, with application to vaccine efficacy. Protein Engineering, Design and Selection. 22, no. 9. 543-546.
4. Gomez-Puertas P, Albo C, Perez-Pastrana E, Vivo A, Portela A. Influenza Virus Matrix Protein Is the Major Driving Force in Virus Budding. *J Virology*. 2000 December, pp. 11538-11547.

USAFSAM POCs for sequence data and analysis are:

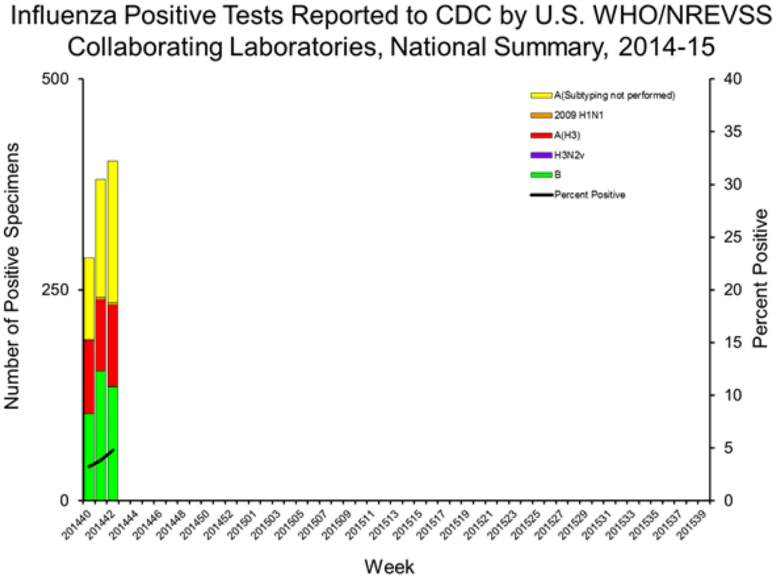
Maj Robel Yohannes, robel.yohannes@us.af.mil

Mr. Willliam Gruner, william.gruner.1.ctr@us.af.mil

Influenza-Like Illness (ILI) Overview

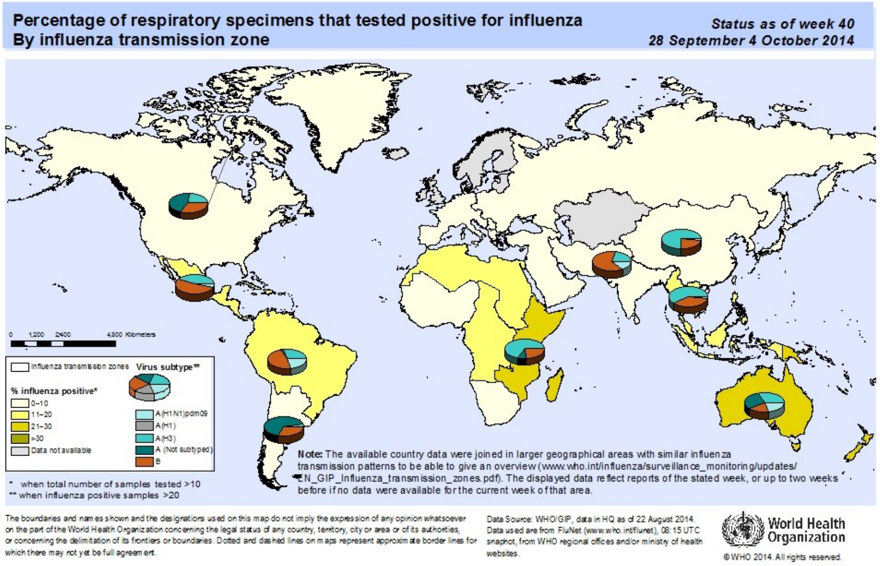
CDC National Surveillance

During Week 42 (12-18 October 2014), influenza activity was low in the United States. **Viral Surveillance:** Of 8,412 specimens tested and reported by U.S. World Health Organization (WHO) and National Respiratory and Enteric Virus Surveillance System (NREVSS) collaborating laboratories during Week 42, 403 (4.8%) were positive for influenza. **Novel Influenza A Virus:** One human infection with a novel influenza A virus was reported. **Pneumonia and Influenza (P&I) Mortality:**The proportion of deaths attributed to P&I was below the epidemic threshold. **Influenza-Associated Pediatric Deaths:** Two influenza-associated pediatric deaths were reported, including one influenza-associated pediatric death that occurred during the 2013-2014 season. **Outpatient Illness Surveillance:** The proportion of outpatient visits for ILI was 1.4%, which is below the national baseline of 2.0%. One region reported ILI above region-specific baseline level. Puerto Rico experienced high ILI activity; one state experienced low ILI activity; New York City and 49 states experienced minimal ILI activity, and the District of Columbia had insufficient data. **Geographic Spread of Influenza:** The geographic spread of influenza in Guam was reported as widespread; Puerto Rico and five states reported local activity; the U.S. Virgin Islands and 36 states reported sporadic activity; and the District of Columbia and nine states reported no influenza activity. See the [CDC report]() for more information (Week 42 report, cited 29 October 2014).


Influenza Positive Tests Reported to CDC by U.S. WHO/NREVSS Collaborating Laboratories, National Summary, 2014-15

World Health Organization (WHO) Global Surveillance

Report Summary: Globally, influenza activity remained low, with the exception of some tropical countries in the Americas and some Pacific Islands. In Europe and North America, overall influenza activity remained at interseasonal levels. In tropical countries of the Americas, influenza B co-circulated with RSV. In Africa and Western Asia, influenza activity was low. In Eastern Asia, influenza activity in most countries remained low or decreased after some influenza A(H3N2) activity in August and September. In tropical Asia, influenza activity continued to decrease or remain low with influenza A(H3N2) predominant. In the Southern Hemisphere, influenza activity decreased in general except in several Pacific Islands where ILI activity remained high. In the temperate zone of South America, ILI decreased and continued to be associated with RSV. Influenza A(H3N2) virus was the most frequently detected influenza virus. In Australia and New Zealand, influenza activity also decreased. The WHO recommendation on the composition of influenza vaccines for the Southern Hemisphere 2015 was announced on 25 September and are posted here: http://www.who.int/influenza/vaccines/virus/recommendations/2015_south/en/. Additional and updated information on non-seasonal influenza viruses can be found at the [WHO website]() (20 October 2014 report, cited 29 October 2014).


Percentage of respiratory specimens that tested positive for influenza
By influenza transmission zone

Status as of week 40
28 September 4 October 2014

* when total number of samples tested >10
** when influenza positive samples >20

Note: The available country data were joined in larger geographical areas with similar influenza transmission patterns to be able to give an overview (www.who.int/influenza/surveillance_monitoring/updates/EN_GIP_Influenza_transmission_zones.pdf). The displayed data reflect reports of the stated week, or up to two weeks before if no data were available for the current week of that area.

The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

Data Source: WHO/GIP, data in HQ as of 22 August 2014. Data used are from FluNet (www.who.int/flunet), 08:15 UTC snapshot, from WHO regional offices and/or ministry of health websites.

World Health Organization

DoD Global Laboratory-Based Influenza Surveillance Program

USAF School of Aerospace Medicine

2014 - 2015

Respiratory Surveillance
2014-2015 Year
(beginning 28 September 2014)

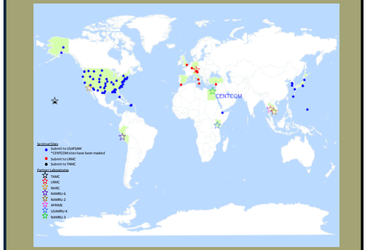
USAF School of Aerospace Medicine

2510 5th Street, Bldg 20840
Wright-Patterson AFB, OH
45433-7913

For Public Health Services
937-938-3196; DSN 798-3196

For Laboratory Services
937-938-3163; DSN 798-3163

E-mail
USAFSAM.PHRFlu@us.af.mil



Contributions to the CDC for National Influenza Surveillance

All sequence data are sent to the CDC and selected original specimens or isolates are sent for further characterization and possible use as influenza vaccine seed viruses. Specimens may also undergo antiviral testing.

DoD Global, Influenza Surveillance Program

https://gumbo2.area52.afnoapps.usaf.mil/epi-consult/influenza

Background

The DoD-wide program was established by the Global Emerging Infections Surveillance and Response System (GEIS) in 1997. The surveillance network includes the U.S. Air Force School of Aerospace Medicine (USAFSAM) (sentinel site respiratory surveillance), the Naval Health Research Center (recruit and shipboard population-based respiratory surveillance), the Naval Medical Research Unit (NAMRU-3) in Cairo, Egypt, the Naval Medical Research Unit (NAMRU-2) in Phnom Penh, Cambodia, the Armed Forces Research Institute of Medical Sciences (AFRIMS) in Bangkok, Thailand, the Naval Medical Research Unit-6 (NAMRU-6) in Lima, Peru, and the United States Army Medical Research Unit-Kenya (USAMRU-K) located in Nairobi, Kenya. This work is supported by the Air Force and the Division of Global Emerging Infections Surveillance and Response System (GEIS) Operations, a Division of the Armed Forces Health Surveillance Center (AFHSC).

Sentinel Site Surveillance at USAFSAM

In 1976, the U.S. Air Force Medical Service began conducting routine, global, laboratory-based influenza surveillance. Air Force efforts expanded to DoD-wide in 1997. USAFSAM manages the surveillance program that includes global surveillance among DoD beneficiaries at over 80 sentinel sites (including deployed locations) and many non-sentinel sites (please see map on the left). Unique sentinel sites include three DoD overseas medical research laboratories (AFRIMS, NAMRU-6, USAMRU-K) and the US Army Public Health Command Region South (PHCR-S). These sites collect specimens from local residents in surrounding countries that may not otherwise be covered in existing surveillance efforts.

Since the 2006-2007 season, Landstuhl Regional Medical Center (LRMC) has served EUCOM as a USAFSAM contributing laboratory. The initiative seeks to provide more timely results and efficient transport of specimens.

For an expanded view of this report, visit our website. Also available on the website is a list of previous weekly surveillance reports, program information (including an educational briefing and instruction pamphlets for clinic staff), and an overview of historical data. Please visit the AFHSC/GEIS website for an overview of influenza surveillance at all collaborating organizations.

Errata: *In the Week 42 report, NCRM - Ft Belvoir CH, VA submitted four specimens and they were incorrectly marked as NCRM - Walter Reed NMMC, MD. They have been corrected in this report.*

Collaborating Partners

In addition to all participating DoD military sentinel sites, several collaborating partners (described above) may be further understood by reviewing the partner's website.