USAF School of Aerospace Medicine & Defense Health Agency

DoD Global Respiratory Pathogen Surveillance Program

2017-2018

Cumulative Results

Locations	84
Collected	1,621
Tested	1,584

Influenza A	**152**
A(H1N1)pdm09	14
A(H1N1)pdm09 Coinfection	3
A(H3N2)	126
A(H3N2) Coinfection	8
A(H3N2) & B	1
Influenza B*	**25**
B	23
B & Coinfection	2
Other Respiratory Pathogens	**676**
Adenovirus	23
Chlamydophila pneumoniae	5
Coronavirus	60
Human Bocavirus	3
Human Metapneumovirus	30
Mycoplasma pneumoniae	21
Parainfluenza	84
RSV	80
Rhinovirus/Enterovirus	291
Non-influenza Viral Coinfections	73
Non-influenza Bacterial Coinfections	6
-*C. pneumo* coinfections *(2)*	
-*M. pneumo* coinfections *(4)*	
No Pathogen Detected	**731**

Results are preliminary and may change as more results are finalized.
**Influenza B lineages and specimens submitted for sequencing only will be reported in the periodic molecular sequencing reports.*

Respiratory Highlights
3 - 16 December 2017 (Surveillance Weeks 49 & 50)

- During 3-16 December 2017, a total of 439 specimens were collected and received from 67 locations. Results were finalized for 416 specimens from 66 locations. During Week 49, 16 influenza A(H3N2) (including one coinfection), two influenza A (H1N1)pdm09, and seven influenza B viruses were detected with an influenza percent positive of approximately 12%. During Week 50, 47 influenza A(H3N2) (including five coinfections), one influenza A(H3N2) and B coinfection, two influenza A(H1N1)pdm09, and six influenza B viruses (including one coinfection) were detected with an influenza percent positive of approximately 27%. The influenza percent positive for the season is 11%.
- According to the CDC FluView, influenza activity sharply increased during Week 50 in the U.S. with influenza A remaining the predominant virus type. There was one pediatric death associated with influenza A(H1N1)pdm09 and this season has a total of nine pediatric deaths. The proportion of outpatient Influenza-Like Illness (ILI) visits was 3.5%, continuing to exceed the national baseline of 2.2%. Nine of the 10 Health and Human Services regions reported ILI at or above region-specific baseline levels. Ten states experienced high ILI activity; Puerto Rico and eight states experienced moderate ILI activity; the District of Columbia, and 11 states experienced low ILI activity; and 21 states experienced minimal ILI activity (CDC, FluView Report Week 50, cited 22 December 2017).

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DoD Global Respiratory Pathogen Surveillance Program

Table 1. Finalized results by region and location for specimens collected during Weeks 49 & 50

Region*		A(H1N1)pdm09	A(H3N2)	A(H1N1)pdm09 & Corona	A(H3N2) & B	A(H3N2) & Corona	A(H3N2) & hMPV	A(H3N2) & Corona & Rhino/Entero	A(H3N2) & Rhino/Entero	B	B & Para	Adenovirus	*C. pneumoniae*	Coronavirus	hMPV	*M. pneumoniae*	Parainfluenza	RSV	Rhinovirus/Enterovirus	*Adeno & C. pneumo*	Adeno & Corona	Adeno & Corona & Rhino/Entero	Adeno & RSV & Rhino/Entero	Adeno & RSV	Adeno & Rhino/Entero	Corona & hMPV	Corona & RSV	Corona & Rhino/Entero	HBoV	HBoV & Corona	HBoV & Para	HBoV & RSV	hMPV & Rhino/Entero	Para & Rhino/Entero	RSV & Rhino/Entero	No Pathogen	Total
EUCOM	Aviano AB, Italy	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
	Landstuhl RMC, Germany	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	8	11
	NAVSTA Rota, Spain	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	4
	NSA Naples, Italy	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	3	4
	RAF Lakenheath, England	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	6
	Ramstein AB, Germany	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	6
	Spangdahlem AB, Germany	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
	USAG Baumholder, Germany	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	USAG Grafenwoehr, Germany	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	2
	USAG Stuttgart, Germany	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	10
	USAG Vicenza, Italy	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
	USAG Wiesbaden, Germany	-	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
	Vilseck AHC, Germany	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
PACOM	Camp Zama, Japan	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
	Eielson AFB, AK	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
	JR Marianas - Andersen AFB, Guam	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2
	Kadena AB, Japan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
	Yokota AB, Japan	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
Region 1	Hanscom AFB, MA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2
Region 2	Ft Drum, NY	-	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	1	-	1	-	-	-	-	-	-	2	-	-	-	-	-	-	1	3	10
	JB McGuire-Dix-Lakehurst, NJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
	USMA - West Point, NY	-	1	-	-	-	-	1	-	2	-	-	-	4	1	2	-	2	1	-	-	1	-	-	1	-	-	1	1	-	-	-	-	-	-	8	26
Region 3	Dover AFB, DE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4
	JB Andrews, MD	-	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	5
	JB Langley-Eustis, VA	-	1	-	-	-	-	-	-	1	-	-	-	-	1	-	-	3	3	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	8	18
	NCRM - Walter Reed NMMC, MD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Region 4	Eglin AFB, FL	-	3	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	9
	Ft Bragg, NC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	2
	Ft Campbell, KY	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
	Hurlburt Field, FL	-	2	-	-	-	-	-	2	2	-	-	-	1	-	-	-	2	2	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	1	14
	JB Charleston (AF), SC	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
	Keesler AFB, MS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Maxwell AFB, AL	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4
	Moody AFB, GA	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	5
	NH Camp Lejeune, NC	-	-	-	-	-	-	-	-	-	-	1	-	2	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
	Robins AFB, GA	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
	Seymour Johnson AFB, NC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Shaw AFB, SC	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	2	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	6	11
	Tyndall AFB, FL	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1

Cont'd on page 3

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

DoD Global Respiratory Pathogen Surveillance Program

Table 1. Finalized results by region and location for specimens collected during Weeks 49 & 50

Cont'd from page 2

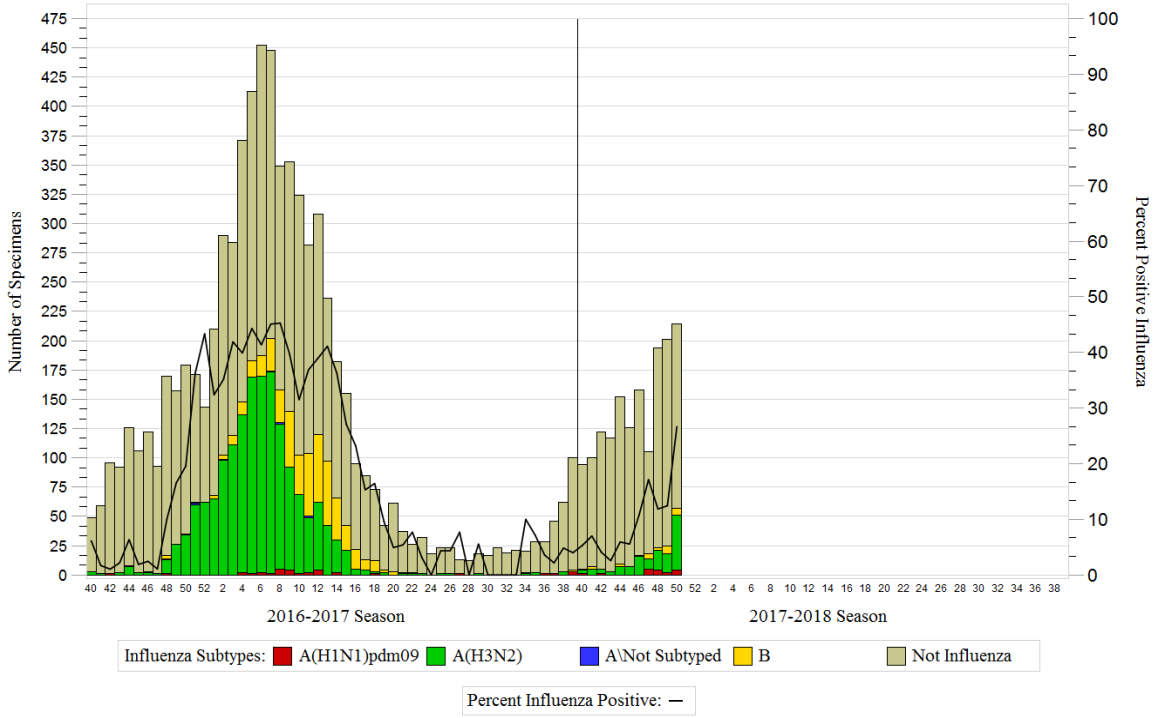
Region*		A(H1N1)pdm09	A(H3N2)	A(H1N1)pdm09 & Corona	A(H3N2) & B	A(H3N2) & Corona	A(H3N2) & hMPV	A(H3N2) & Corona & Rhino/Entero	A(H3N2) & Rhino/Entero	B	B & Para	Adenovirus	*C. pneumoniae*	Coronavirus	hMPV	*M. pneumoniae*	Parainfluenza	RSV	Rhinovirus/Enterovirus	Adeno & *C. pneumo*	Adeno & Corona	Adeno & Corona & Rhino/Entero	Adeno & RSV & Rhino/Entero	Adeno & RSV	Adeno & Rhino/Entero	Corona & hMPV	Corona & RSV	Corona & Rhino/Entero	HBoV	HBoV & Corona	HBoV & Para	HBoV & RSV	hMPV & Rhino/Entero	Para & Rhino/Entero	RSV & Rhino/Entero	No Pathogen	Total
Region 5	Scott AFB, IL	-	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	5
	Wright-Patterson AFB, OH	-	7	-	-	-	-	-	1	4	-	-	1	4	2	-	2	5	3	-	-	-	-	-	-	2	-	-	-	1	2	-	-	-	17	51
Region 6	Altus AFB, OK	-	1	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	10
	Barksdale AFB, LA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	2
	Cannon AFB, NM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
	Laughlin AFB, TX	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	3
	Little Rock AFB, AR	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
	Sheppard AFB, TX	-	1	-	-	-	-	-	-	-	-	-	-	3	2	-	-	1	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19	30
	Tinker AFB, OK	2	1	2	-	-	-	-	-	-	-	-	-	2	2	-	-	5	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	26
	Vance AFB, OK	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	4
Region 7	McConnell AFB, KS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	4
	Offutt AFB, NE	-	5	-	-	1	-	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	11
Region 8	Ellsworth AFB, SD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	6	9
	FE Warren AFB, WY	-	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
	Grand Forks AFB, ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
	Hill AFB, UT	-	1	-	-	-	-	-	-	-	-	-	2	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	8
	Minot AFB, ND	-	3	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	6
	Peterson AFB, CO	-	11	-	-	-	-	-	-	-	-	-	-	1	-	-	2	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	16
	USAF Academy, CO	-	3	-	-	-	-	-	-	-	-	-	1	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	9
Region 9	Davis-Monthan AFB, AZ	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3
	Edwards AFB, CA	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
	Luke AFB, AZ	1	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	6
	Nellis AFB, NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
	Travis AFB, CA	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	5
Region 10	Fairchild AFB, WA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4
	Mt Home AFB, ID	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
	NH Bremerton, WA	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	7
Total		4	57	2	1	1	1	1	3	12	1	6	2	32	12	4	9	40	36	1	1	1	1	1	2	1	4	3	2	1	1	2	1	1	4	165	416

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

Cumulative Laboratory Results

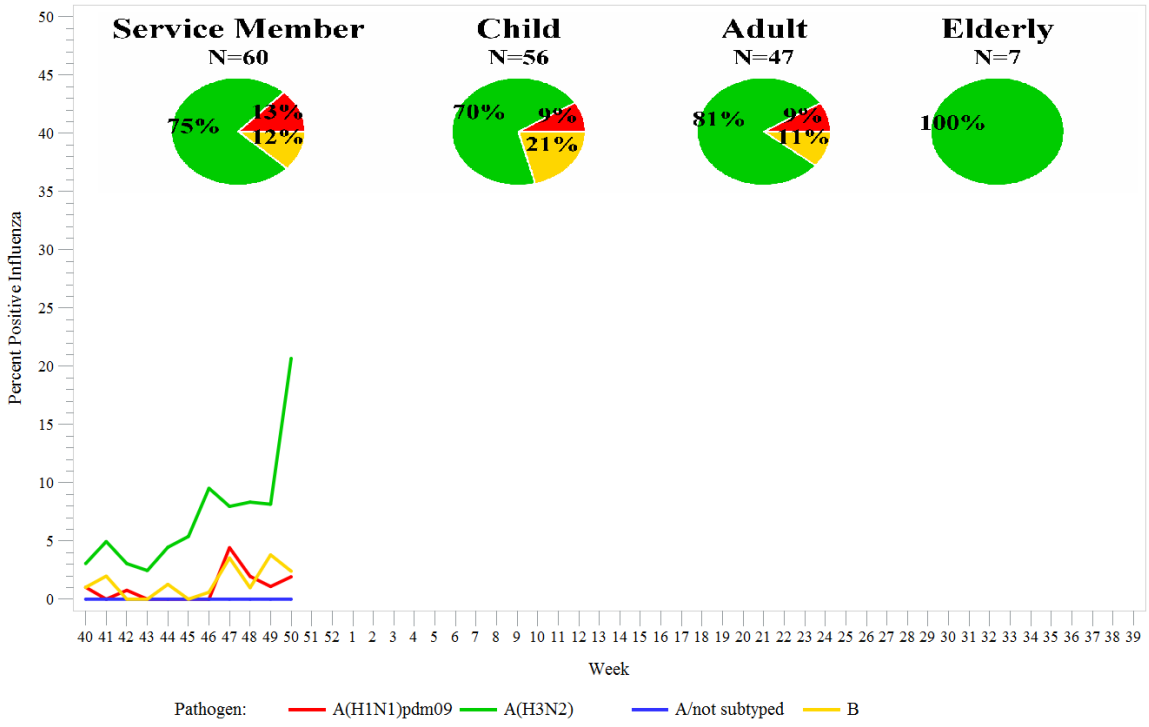
Link to cumulative results by region and location:

Graph 1. Percent influenza positive by week: 2016-2017 surveillance year and through Week 50 of the 2017-2018 surveillance year

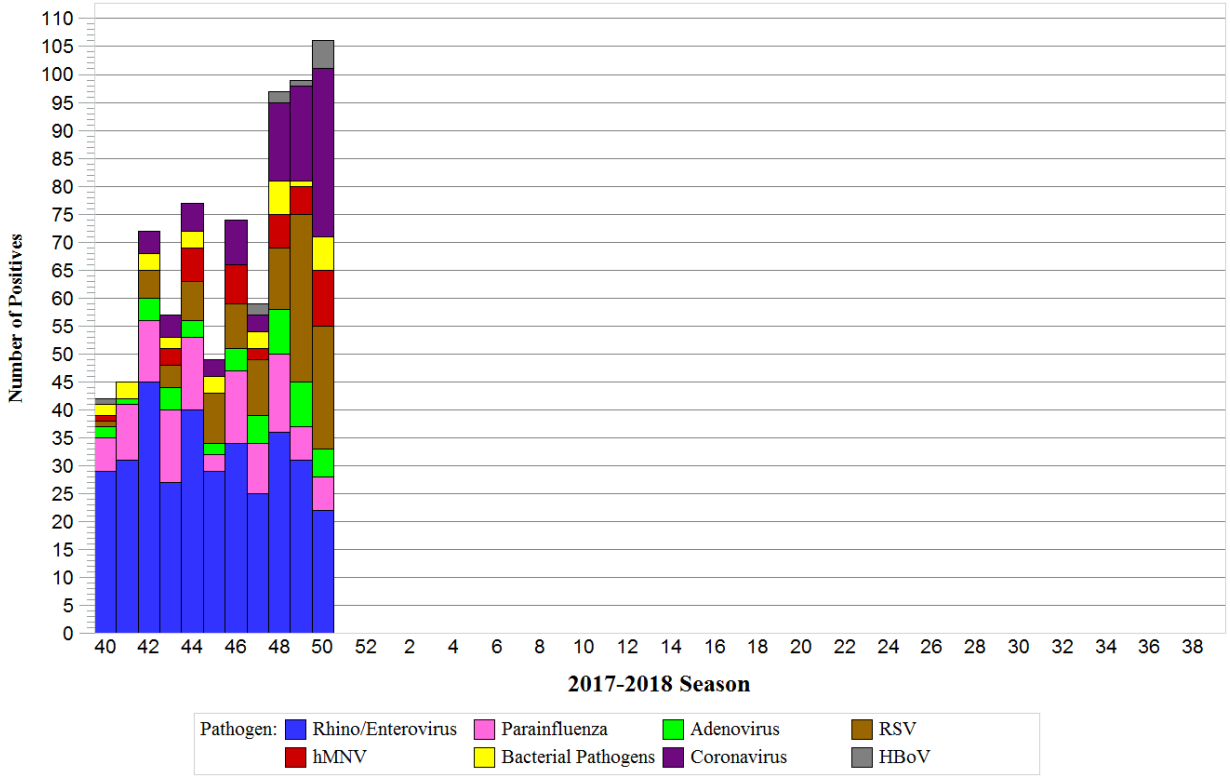


Note: Dual influenza coinfections are excluded from this graph.

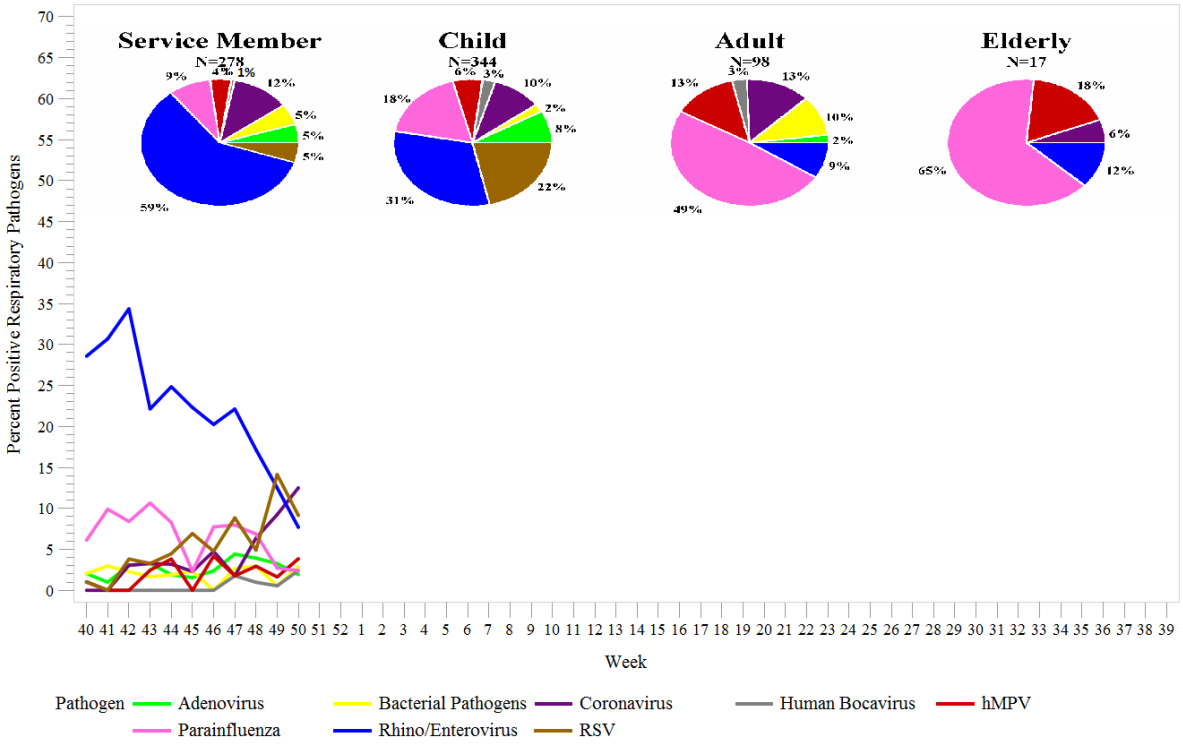
Graph 2. Percent positive for influenza through ILI trends by subtype and beneficiary status through Week 50 of the 2017-2018 surveillance year



Graph 3. Other positive respiratory pathogens for the 2017-2018 surveillance year through Week 50



Graph 4. Percent positive for respiratory pathogens through ILI trends by week and beneficiary status through Week 50 of the 2017-2018 surveillance year



88ABW-2015-5508 and PA email guidance dated 10 November 2015.

Graph 5. Vaccination status by beneficiary type for the 2017-2018 surveillance year through Week 50 (excluding 'Other' beneficiary type)

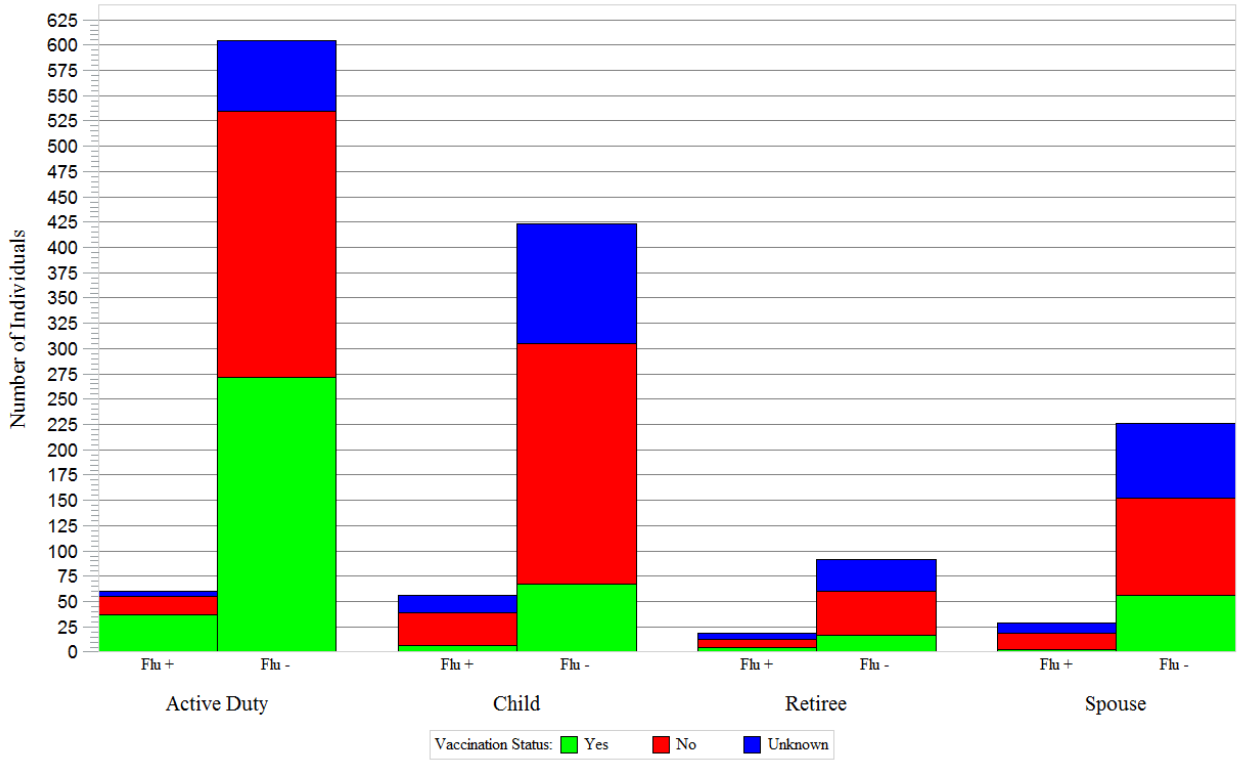
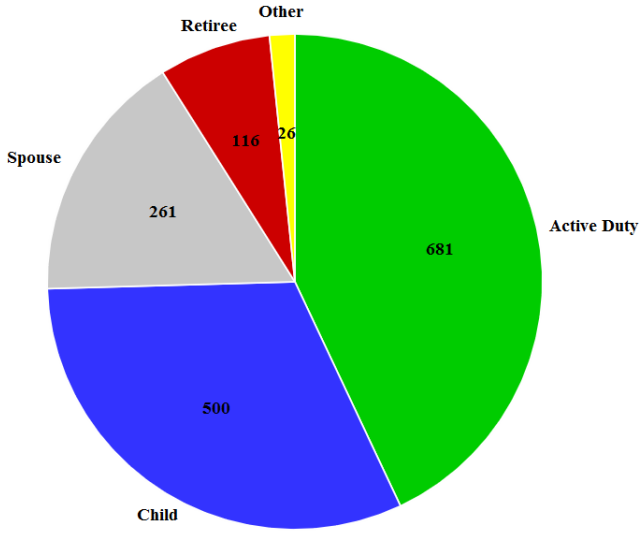


Table 2. ILI by age group for the 2017-2018 surveillance year through Week 50

Age Group	Frequency	Percent
0-5	323	20.39
6-9	82	5.18
10-17	116	7.32
18-24	279	17.61
25-44	534	33.71
45-64	169	10.67
65+	81	5.11

Graph 6. ILI by beneficiary status for the 2017-2018 surveillance year through Week 50

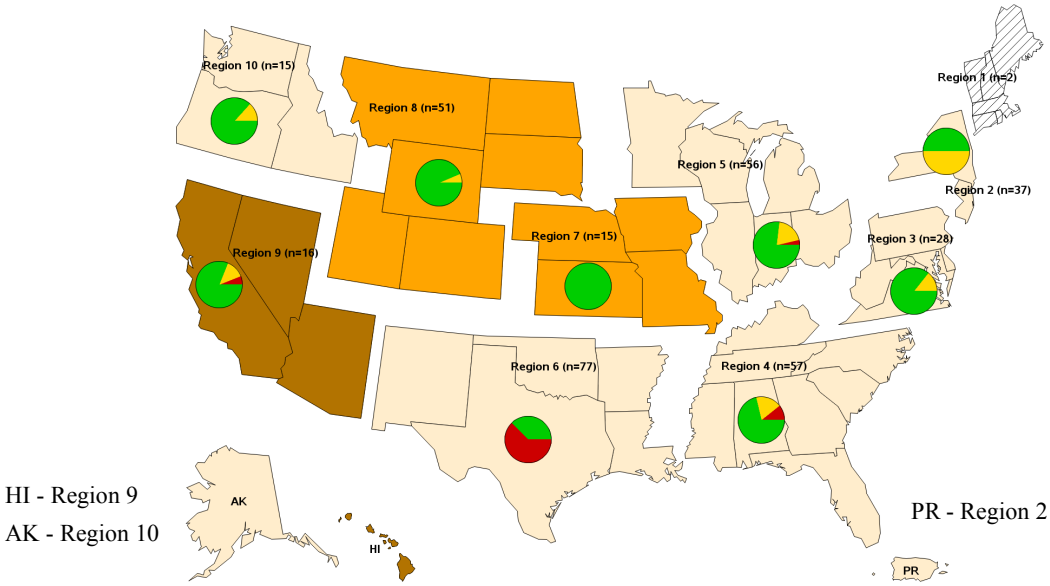


Demographic Summary

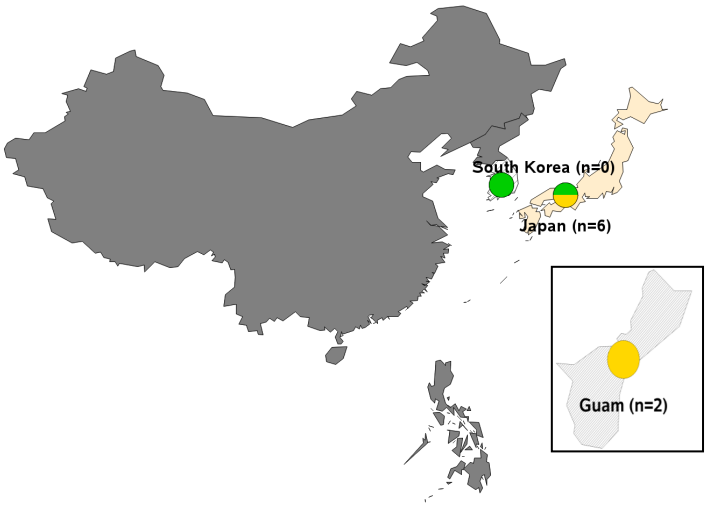
Of 1,584 ILI cases, 681 are service members (43.0%), 500 are children (31.6%), 261 are spouses (16.5%), and 142 are retirees and other beneficiaries (8.9%). The median age of ILI cases with known age (n=1,584) is 24 (range 0, 96).

DoD Global Respiratory Pathogen Surveillance Program

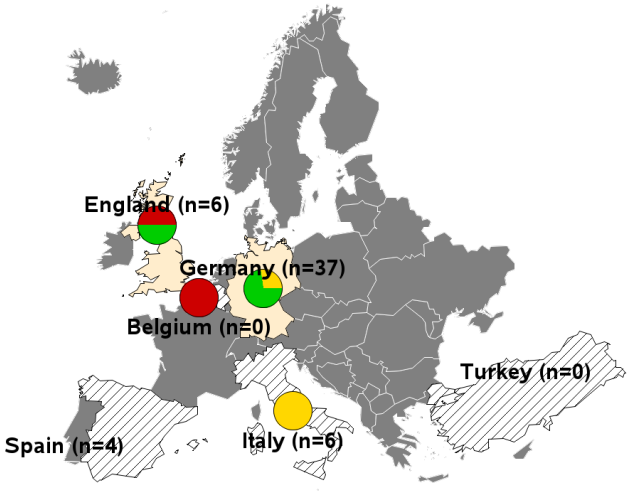
Map 1. Influenza subtypes and activity level by U.S. region for the 2017-2018 surveillance year through Week 50



Map 2. Influenza subtypes and activity level by country for the 2017-2018 surveillance year through Week 50 (Pacific)



Map 3. Influenza subtypes and activity level by country for the 2017-2018 surveillance year through Week 50 (Europe)



Note - Countries shaded in gray do not contain submitting sites and are only displayed for geographical perspective.

Legend

Influenza Activity - Past 2 weeks

(n = # of submissions)

- No activity (0% +) or no submissions
- Low (<25% +)
- Moderate (25-49% +)
- High (>50% +)

Influenza Results - Cumulative

- Influenza A(H3N2)
- Influenza A(H1N1)pdm09
- Influenza B
- Influenza A/not subtyped

88ABW-2015-5508 and PA email guidance dated 10 November 2015.

USAF School of Aerospace Medicine & Defense Health Agency

DoD Global Respiratory Pathogen Surveillance Program

Background

The DoD-wide program was established by the Global Emerging Infections Surveillance and Response System (GEIS) in 1997. The surveillance network includes the Defense Health Agency/Armed Forces Health Surveillance Branch—Air Force Satellite Cell (DHA/AFHSB-AF) and 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 (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 GEIS Operations, a Division of the Armed Forces Health Surveillance Branch (AFHSB).

Sentinel Site Surveillance

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. DHA/AFHSB-AF and USAFSAM manages the surveillance program that includes global surveillance among DoD beneficiaries at 79 sentinel sites (including deployed locations) and many non-sentinel sites (please see map below). Collaborating partner laboratories include five DoD overseas medical research laboratories (AFRIMS, NAMRU-2, NAMRU-3, NAMRU-6, USAMRD-K) who collect specimens from local residents in surrounding countries that may not otherwise be covered in existing surveillance efforts. Additionally, the Naval Health Research Center (NHRC) in San Diego, CA collects specimens from DoD recruit training centers and conducts surveillance along the Mexico border.

Landstuhl Regional Medical Center (LRMC) and Tripler Army Medical Center (TAMC) assist the program by processing DoD specimens for the EUCOM region and the State of Hawaii, respectively. EUCOM respiratory data is obtained from LRMC and incorporated into our weekly report. This process seeks to provide more timely results and efficient transport of specimens.

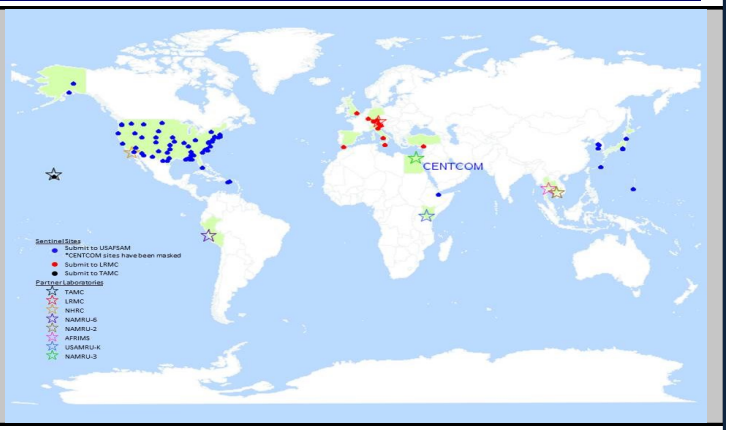
Available on our website (listed below) is a list of previous weekly surveillance reports, program information (including an educational briefing and instruction pamphlets for clinic staff), and a dashboard containing respiratory data for our sentinel sites.

Errata:

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

For Laboratory Services
937-938-4140; DSN 798-4140

USAFSAM.PHRFlu@us.af.mil



Collaborating Partners

In addition to all participating DoD military sentinel sites, collaborating laboratories and medical centers (described above) may be further understood by reviewing the sites' website. Click on the sites' icon to be directed to their webpage.

88ABW-2015-5508 and PA email guidance dated 10 November 2015.