USAF School of Aerospace Medicine & Defense Health Agency

DoD Global, Laboratory-Based, Influenza Surveillance Program

2016-2017

Cumulative Results

Locations	80
Collected	5,208
Tested	5,132

Influenza A	**1,373**
A(H1N1)pdm09	24
A(H1N1)pdm09 & Influenza B	1
A(H3N2)	1,341
A(H3N2) & Influenza B	3
A(H3N2) & Coronavirus & RSV	1
A(H3N2) & RSV	1
A(H3N2) & Rhino/Enterovirus	1
A/not subtyped	1

Influenza B*	**438**
B	437
B & Human Metapneumovirus & Rhino/Enterovirus	1

Other Respiratory Pathogens	**1,097**
Adenovirus	69
Bordetella pertussis	0
Chlamydophila pneumoniae	5
Coronavirus	121
Human Metapneumovirus	91
Mycoplasma pneumoniae	37
Parainfluenza	182
RSV	174
Rhinovirus/Enterovirus	280
Non-influenza Viral Coinfections	130
Non-influenza Bacterial Coinfections	8
-*M. pneumo* coinfections *(8)*	

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
7 - 20 May 2017 (Surveillance Weeks 19 & 20)

- During 7 - 20 May 2017, a total of 54 specimens were collected and received from 24 locations. Results were finalized for 36 specimens from 18 locations. During Week 19, two influenza A(H3N2) and two influenza B viruses were identified. No influenza viruses were detected during Week 20. Approximately 17% of specimens tested positive for influenza during Week 19 and 0% during Week 20. The influenza percent positive for the season is currently 35%.
- According to CDC FluView, during Week 19, influenza activity continued to decrease in the United States. The most frequently identified influenza virus has been influenza B. All ten regions have reported ILI below their region-specific baseline levels. One influenza pediatric deaths was reported. (CDC, Flu View Report Week 19, cited 25 May 2017).

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DoD Global, Laboratory-Based, Influenza Surveillance Program

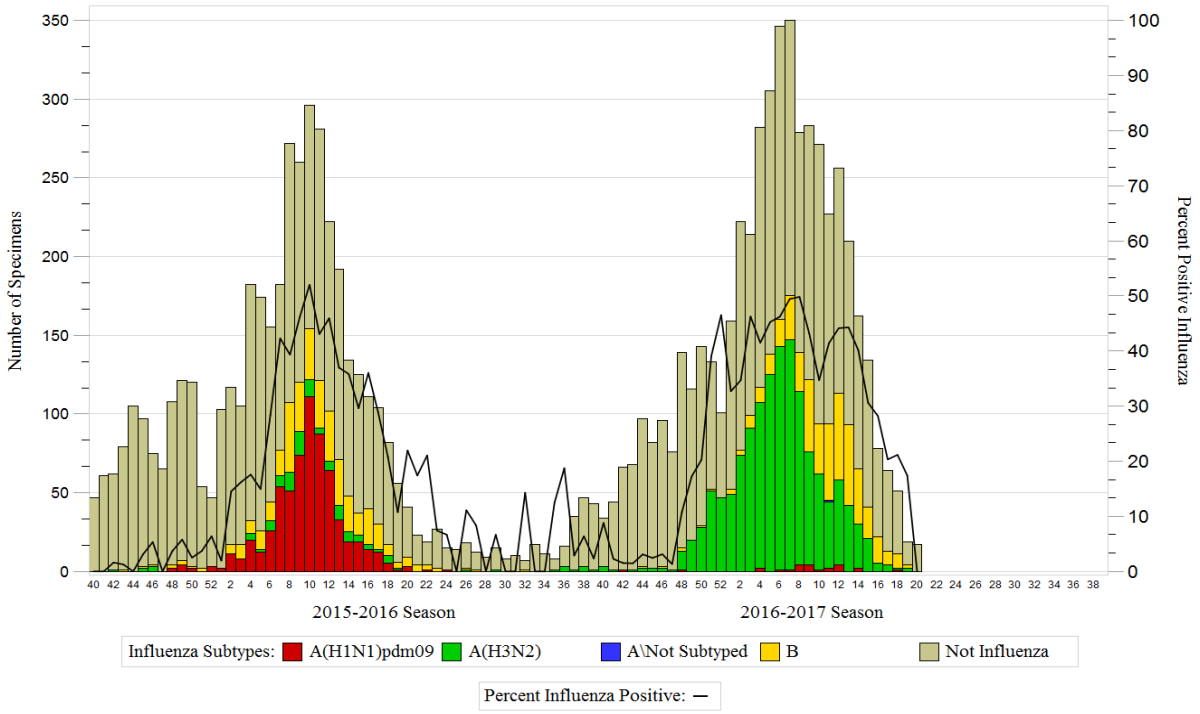
Table 1. Finalized results by region and location for specimens collected during Weeks 19 & 20

Region*		A(H3N2)	B	Adenovirus	Parainfluenza	Rhinovirus/Enterovirus	hMNV & Para	No Pathogen	Total
PACOM	Yokota AB, Japan	-	-	-	-	-	-	1	1
Region 2	USMA - West Point, NY	-	-	-	-	-	-	3	3
Region 3	JB Langley-Eustis, VA	-	-	-	-	2	-	2	4
Region 4	Eglin AFB, FL	-	1	-	-	1	-	-	2
	Ft Bragg, NC	-	-	-	-	1	-	1	2
	Hurlburt Field, FL	-	-	1	-	1	-	-	2
	Keesler AFB, MS	-	-	-	-	-	1	-	1
	MacDill AFB, FL	-	-	-	1	-	-	-	1
	Moody AFB, GA	-	-	-	1	-	-	2	3
	NH Camp Lejeune, NC	-	-	-	-	-	-	1	1
	Seymour Johnson AFB, NC	-	-	-	-	-	-	1	1
	Shaw AFB, SC	1	-	-	-	2	-	3	6
Region 5	Wright-Patterson AFB, OH	-	-	-	-	-	-	1	1
Region 7	Offutt AFB, NE	-	-	-	1	-	-	-	1
Region 8	Hill AFB, UT	-	1	-	-	-	-	2	3
Region 9	Davis-Monthan AFB, AZ	1	-	-	-	-	-	-	1
	Travis AFB, CA	-	-	-	1	-	-	1	2
Region 10	Mt Home AFB, ID	-	-	-	-	-	-	1	1
Total		2	2	1	4	7	1	19	36

**CONUS locations 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: 2015-2016 surveillance year and through Week 20 of the 2016-2017 surveillance year



Note: Dual influenza coinfections are excluded from this graph. Specimens with pending results are used in the denominator to calculate percent positive, but are not displayed in the graph.

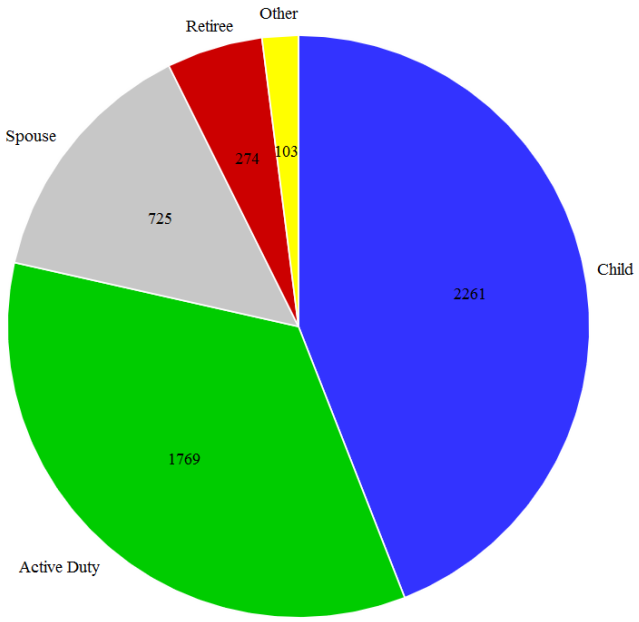
Table 2. ILI by age group for the 2016-2017 surveillance year through Week 20

Age Group	Frequency	Percent
0-5	1172	22.84
6-9	480	9.35
10-17	616	12.00
18-24	687	13.39
25-44	1567	30.53
45-64	502	9.78
65+	108	2.11

Demographic Summary

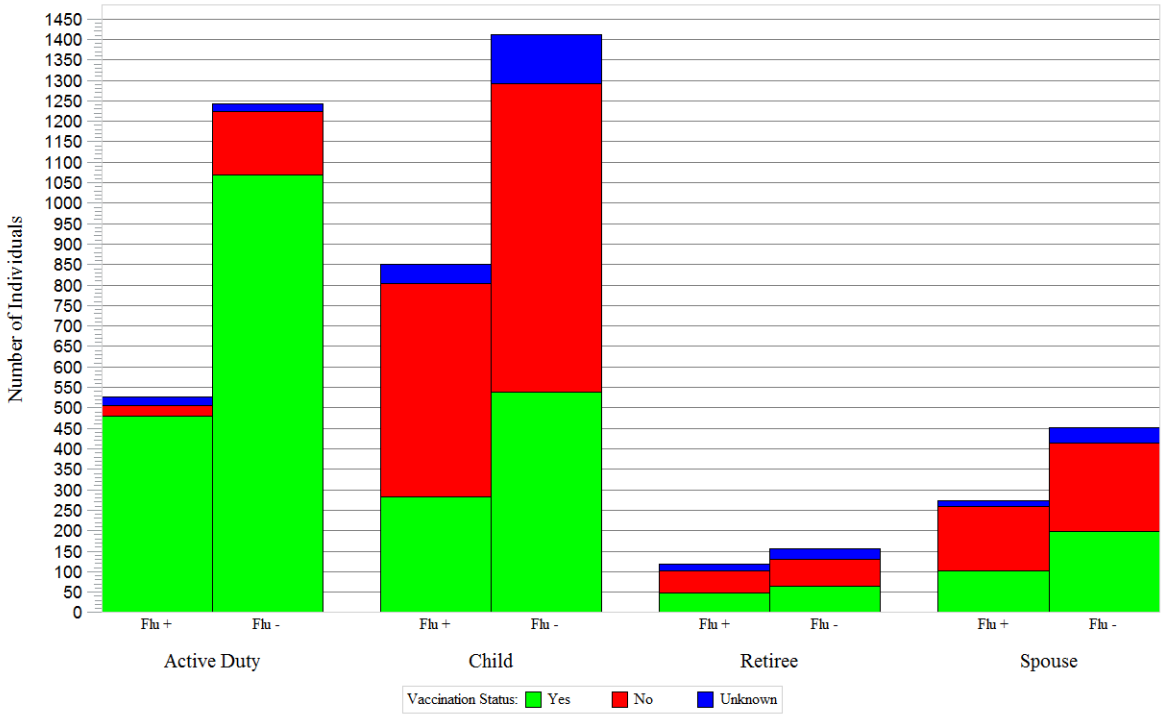
Of 5,132 ILI cases, 1,769 are service members (34.5%), 2,261 are children (44.1%), 725 are spouses (14.1%), and 377 (7.3%) are retirees and other beneficiaries. The median age of ILI cases with known age (n=5,132) is 21 (range 0, 96).

Graph 2. ILI by beneficiary status for the 2016-2017 surveillance year through Week 20

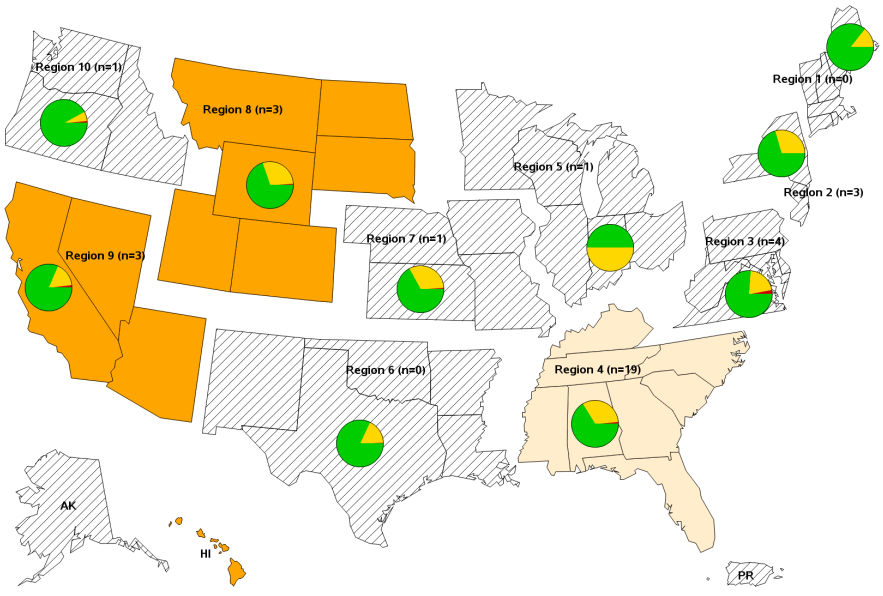


88ABW-2015-5508 and PA email guidance dated 10 November 2015.

Graph 3. Vaccination status by beneficiary type for the 2016-2017 surveillance year through Week 20



Map 1. Influenza subtypes and activity level by U.S. region for the 2016-2017 surveillance year through Week 20



Influenza Activity - Past 2 weeks

(n = # of finalized results)

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

Influenza Results - Cumulative

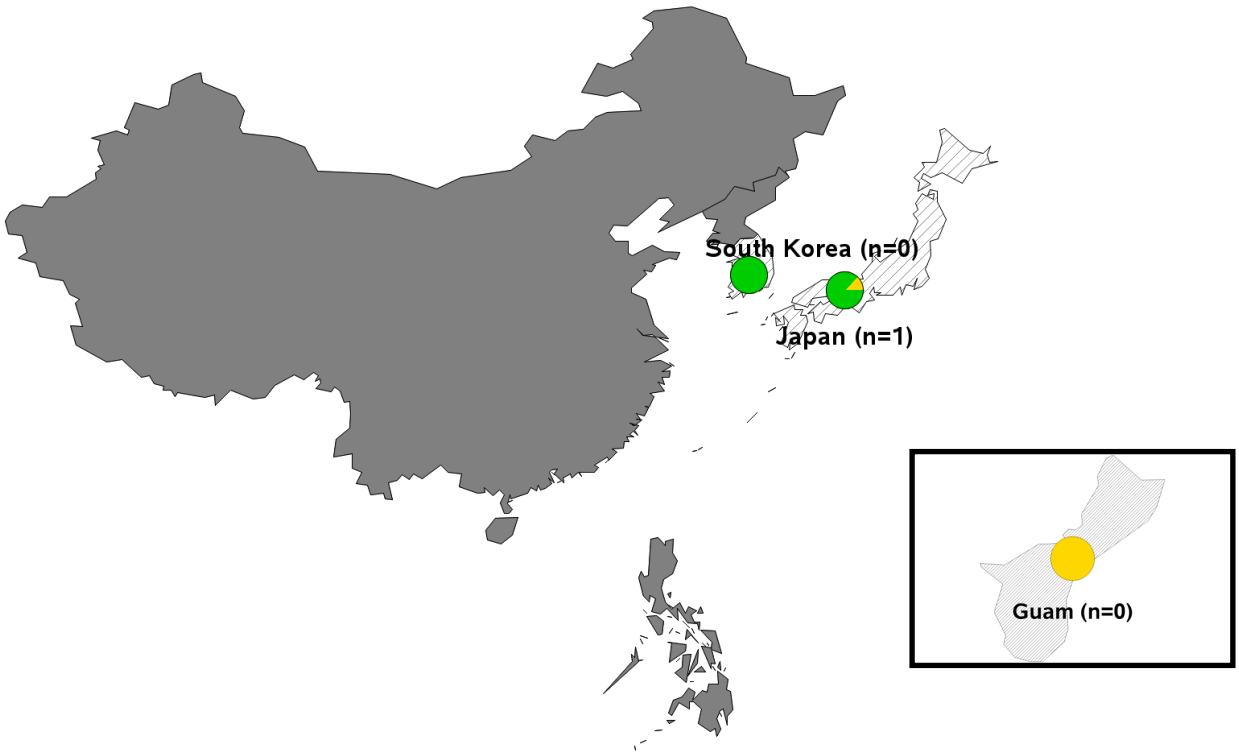
- Influenza A(H3N2)
- Influenza A(H1N1)pdm09
- Influenza B
- Influenza A/not subtyped

HI - Region 9

AK - Region 10

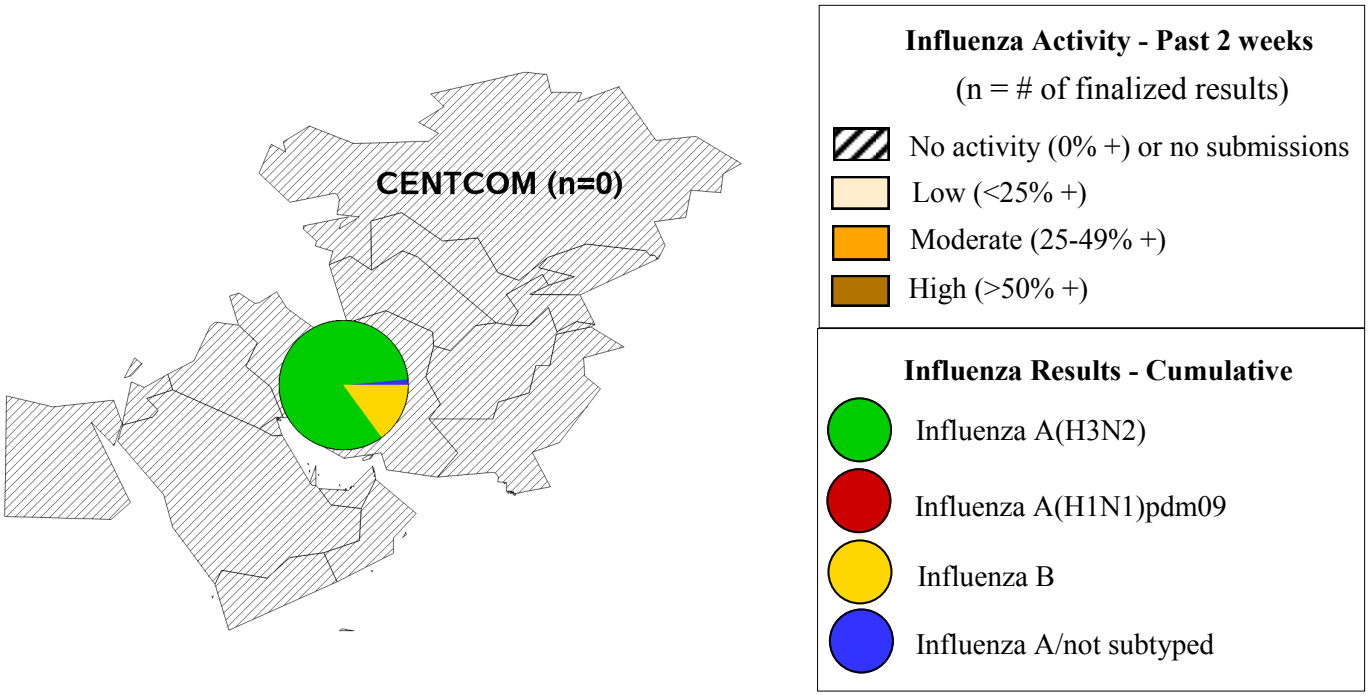
PR - Region 2

Map 2. Influenza subtypes and activity level by country for the 2016-2017 surveillance year through Week 20 (Pacific)



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

Map 3. Influenza subtypes and activity level for CENTCOM for the 2016-2017 surveillance year through Week 20



Note - Specimens for CENTCOM were tested at USAFSAM or Landstuhl Regional Medical Center (LRMC).

DoD Global, Laboratory-Based, Influenza Surveillance Program

Laboratory Results—Through Current Surveillance Week 20

Table 3. Cumulative results by region and location for specimens collected during the 2016-2017 surveillance year

Region*		A(H1N1)pdm09	A(H3N2)	A/not subtyped	A(H1N1)pdm09 & B	A(H3N2) & B	A(H3N2) & Corona & RSV	A(H3N2) & RSV	A(H3N2) & Rhino/Entero	B	B & hMNV & Rhino/Entero	Adenovirus	*C. pneumoniae*	Coronavirus	hMNV	*M. pneumoniae*	Parainfluenza	RSV	Rhinovirus/Enterovirus	Non-Influenza Viral Coinfection	Non-Influenza Bacterial Coinfection	No Pathogen	Total
Deployed	Country 1, Location A	-	3	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	7	12
	Country 1, Location B	-	14	-	-	-	-	-	-	9	-	-	-	2	-	-	-	1	2	1	-	11	40
	Country 1, Location D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
	Country 2, Location A	-	33	1	-	-	-	-	1	1	-	-	-	6	-	-	-	-	6	2	-	16	66
EUCOM	Incirlik AB, Turkey	-	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	3	5
PACOM	CFA Okinawa, Japan	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	5
	Eielson AFB, AK	-	1	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	2	-	5	10
	JB Elmendorf-Richardson, AK	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	4	6
	JR Marianas - Andersen AFB, Guam	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	5	7
	Kadena AB, Japan	-	4	-	-	-	-	-	-	-	-	-	-	-	1	-	3	-	2	1	1	23	35
	Kunsan AB, South Korea	-	2	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	-	-	1	5
	Misawa AB, Japan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
	Osan AB, South Korea	-	4	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	7	12
	Tripler AMC, HI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
	Yokota AB, Japan	-	35	-	-	-	-	-	-	6	-	1	-	3	1	2	3	2	9	5	-	67	134
Region 1	Hanscom AFB, MA	-	3	-	-	-	-	-	-	1	-	1	-	-	-	1	2	-	-	1	-	4	13
	USCG Academy, CT	-	9	-	-	-	-	-	-	1	-	-	-	1	1	1	-	-	3	-	2	6	24
Region 2	CGAS Borinquen, PR	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
	Ft Drum, NY	1	49	-	-	1	-	-	-	62	-	6	1	5	10	1	9	8	7	5	-	90	255
	JB McGuire-Dix-Lakehurst, NJ	-	54	-	-	-	-	-	-	2	-	3	-	6	9	2	9	6	12	5	-	83	191
	USMA - West Point, NY	-	86	-	-	-	-	-	-	15	-	12	-	5	7	2	10	13	10	7	-	155	322
Region 3	Dover AFB, DE	-	18	-	-	-	-	-	-	10	-	2	-	2	1	1	-	1	4	-	-	48	87
	JB Anacostia-Bolling, DC	-	14	-	-	-	-	-	-	4	-	-	-	-	-	-	-	1	-	-	-	-	19
	JB Andrews, MD	2	23	-	-	-	-	-	-	12	-	-	-	2	1	-	3	2	1	2	-	41	89
	JB Langley-Eustis, VA	6	149	-	1	1	-	-	-	31	-	1	-	4	10	2	11	20	37	11	-	261	545
	NCRM - Walter Reed NMMC, MD	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2
	NMC Portsmouth, VA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	2	3
	US Naval Academy, MD	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Region 4	CGS Mobile, AL	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1
	Columbus AFB, MS	-	5	-	-	-	-	-	-	1	-	-	-	2	-	-	-	-	1	-	-	18	27
	Eglin AFB, FL	1	15	-	-	-	-	-	-	5	-	7	-	2	1	2	1	5	12	6	-	40	97
	Ft Bragg, NC	1	8	-	-	-	-	-	-	6	-	-	-	1	1	1	3	2	7	4	3	38	75
	Ft Campbell, KY	1	15	-	-	-	-	-	-	9	1	2	-	-	1	-	-	3	-	4	-	17	53
	Hurlburt Field, FL	-	18	-	-	-	-	-	-	6	-	2	-	1	-	1	1	2	4	1	-	28	64
	JB Charleston (AF), SC	-	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	17
	Keesler AFB, MS	-	2	-	-	-	1	-	-	-	-	-	-	-	1	-	2	2	4	3	-	15	30
	MacDill AFB, FL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	-	6	8
	Maxwell AFB, AL	-	10	-	-	-	-	-	-	2	-	-	-	-	1	-	2	-	1	-	-	14	30
	Moody AFB, GA	-	36	-	-	-	-	-	-	44	-	1	-	2	7	1	13	8	16	14	1	89	232
	NH Beaufort, SC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3
	NH Camp Lejeune, NC	-	2	-	-	1	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-	9	14
	NH Jacksonville, FL	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	5
	Patrick AFB, FL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
	Robins AFB, GA	-	24	-	-	-	-	-	-	8	-	-	-	-	-	2	1	3	2	-	-	25	65
	Seymour Johnson AFB, NC	3	16	-	-	-	-	-	-	1	-	2	-	-	-	1	1	2	1	-	-	20	47
	Shaw AFB, SC	-	71	-	-	-	-	-	-	34	-	1	1	7	5	1	5	1	13	2	-	67	208
	Tyndall AFB, FL	-	11	-	-	-	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	16

(Cont'd on

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

Laboratory Results—Through Current Surveillance Week 20

Table 3. Cumulative results by region and location for specimens collected during the 2016-2017 surveillance year

(Cont'd from page 6)

Region*		A(H1N1)pdm09	A(H3N2)	A/not subtyped	A(H1N1)pdm09 & B	A(H3N2) & B	A(H3N2) & Corona & RSV	A(H3N2) & RSV	A(H3N2) & Rhino/Entero	B	B & hMNV & Rhino/Entero	Adenovirus	*C. pneumoniae*	Coronavirus	hMNV	*M. pneumoniae*	Parainfluenza	RSV	Rhinovirus/Enterovirus	Non-Influenza Viral Coinfection	Non-Influenza Bacterial Coinfection	No Pathogen	Total
Region 5	Scott AFB, IL	-	3	-	-	-	-	-	-	3	-	-	-	-	-	1	3	1	1	-	1	9	22
	Wright-Patterson AFB, OH	-	10	-	-	-	-	-	-	10	-	-	-	1	1	1	1	-	2	2	-	39	67
Region 6	Altus AFB, OK	-	7	-	-	-	-	-	-	1	-	1	-	1	1	-	1	5	7	4	-	39	67
	Barksdale AFB, LA	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	2	-	1	-	-	8	12
	Cannon AFB, NM	-	13	-	-	-	-	-	-	4	-	-	-	2	-	1	3	-	4	1	-	39	67
	Ft Polk, LA	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	3
	JBSA Lackland, TX	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1
	Laughlin AFB, TX	1	-	-	-	-	-	-	-	1	-	-	-	1	2	-	-	-	-	-	-	5	10
	Little Rock AFB, AR	-	12	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	12	25
	Sheppard AFB, TX	-	60	-	-	-	-	-	-	9	-	1	-	9	5	1	6	2	8	-	-	85	186
	Tinker AFB, OK	1	97	-	-	-	-	1	-	25	-	2	-	10	4	1	9	6	12	6	-	139	313
	Vance AFB, OK	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
Region 7	McConnell AFB, KS	-	25	-	-	-	-	-	-	18	-	1	-	4	-	1	4	5	9	3	-	36	106
	Offutt AFB, NE	1	32	-	-	-	-	-	-	9	-	1	-	6	2	-	2	1	7	1	-	58	120
Region 8	Ellsworth AFB, SD	-	14	-	-	-	-	-	-	14	-	-	-	3	-	-	3	1	3	-	-	37	75
	FE Warren AFB, WY	-	36	-	-	-	-	-	-	7	-	3	-	4	1	2	4	6	4	-	-	52	119
	Hill AFB, UT	-	30	-	-	-	-	-	-	4	-	-	-	3	1	-	6	4	4	2	-	43	97
	Malmstrom AFB, MT	-	7	-	-	-	-	-	-	3	-	-	-	-	-	1	-	-	1	-	-	8	20
	Minot AFB, ND	1	24	-	-	-	-	-	-	15	-	-	-	3	2	1	1	6	5	3	-	46	107
	Peterson AFB, CO	1	19	-	-	-	-	-	-	12	-	-	-	3	-	-	3	11	3	4	-	26	82
	USAF Academy, CO	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	1	-	-	2	6
Region 9	Beale AFB, CA	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5
	Davis-Monthan AFB, AZ	1	16	-	-	-	-	-	-	4	-	-	-	-	2	-	5	1	6	5	-	35	75
	Edwards AFB, CA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Luke AFB, AZ	-	-	-	-	-	-	-	-	4	-	1	-	2	-	-	1	3	1	1	-	17	30
	Nellis AFB, NV	1	3	-	-	-	-	-	-	4	-	3	-	1	-	-	4	4	5	7	-	32	64
	Travis AFB, CA	-	58	-	-	-	-	-	-	5	-	1	1	6	7	-	7	13	15	5	-	44	162
	Vandenberg AFB, CA	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	6
Region 10	CGS North Bend, OR	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4
	Fairchild AFB, WA	2	17	-	-	-	-	-	-	2	-	3	-	3	-	-	5	2	4	-	-	46	84
	JB Lewis-McChord, WA	-	2	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	3
	Mt Home AFB, ID	-	23	-	-	-	-	-	-	1	-	1	1	1	-	1	23	12	12	5	-	75	155
	NH Bremerton, WA	-	67	-	-	-	-	-	-	5	-	8	1	3	1	2	8	7	7	4	-	27	140
Total		24	1341	1	1	3	1	1	1	437	1	69	5	121	91	37	182	174	280	130	8	2224	5132

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

USAF School of Aerospace Medicine & Defense Health Agency

DoD Global, Laboratory-Based, Influenza 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 over 95 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, USAMRU-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. This process seeks to provide more timely results and efficient transport of specimens.

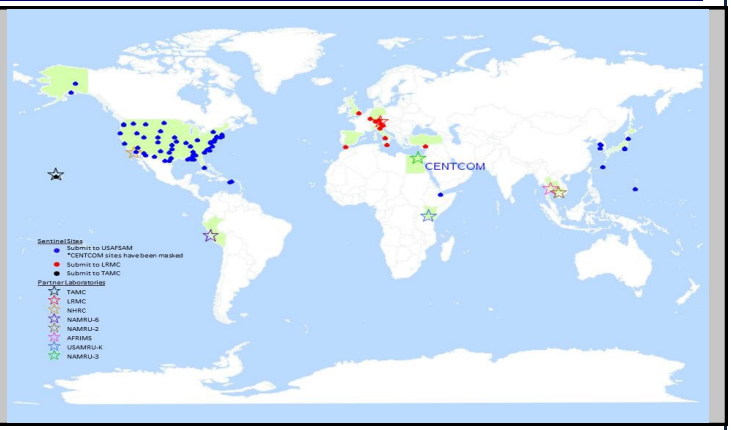
Available on our website (listed below) is a list of previous weekly surveillance reports, program information (including an educational briefing and instruction pamphlets for clinic staff), and a dashboard containing respiratory data for our sentinel sites.

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.