

Statewide Weekly Influenza Surveillance Report

Reporting Period: 1 January to 31 December 2016

Influenza Surveillance Report

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For more information contact:

Epidemiology and Research Unit, Communicable Diseases Branch, Department of Health, GPO Box 48, Brisbane QLD 4001, email epi@health.qld.gov.au, phone 33289728.

An electronic version of this document is available at

<https://www.health.qld.gov.au/clinical-practice/guidelines-procedures/diseases-infection/surveillance/reports/flu/default.asp>

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Preface

Queensland Health monitors influenza notification data throughout the year.

The influenza season occurs annually in the southern and central areas of the state typically between May and October. In the tropical region the pattern can be more variable and may include clusters outside this period.

Influenza is present throughout the year in the Queensland population but at lower levels between seasons than during the annual season. The beginning of the season in the temperate (and sometimes tropical) areas of the state coincides with a sustained increase over several consecutive weeks of both notification numbers and percentage of laboratory tests that are positive. This usually occurs sometime between late May and the middle of July but varies each year.

Summary

1 January – 31 December 2016

All Influenza Notifications	23,261
Influenza A	21,415
A(H1N1)pdm09*	833
A/H3N2	2,214
Subtype unavailable	18,368
Influenza B	1,846
Type unavailable	0
Influenza Hospitalisations†	3,197 (ICU: 402)

* World Health Organization (WHO) standard abbreviation for the influenza strain associated with the 2009 pandemic, also known as A/California/7/2009 (H1N1)

† Queensland public hospitals only

Australian Influenza Vaccine Committee (AIVC) decision on the influenza vaccine composition for the Australian 2016 season

http://www.influenzacentre.org/surveillance_vaccines.htm

Trivalent Vaccine

- an A/California/7/2009 (H1N1) - like virus, 15 µg HA per dose
- an A/Hong Kong/4801/2014 (H3N2) - like virus, 15 µg HA per dose
- a B/Brisbane/60/2008 (Victoria lineage) - like virus, 15 µg HA per dose.

Quadrivalent Vaccine

Viruses listed above, plus the additional B virus:

- a B/Phuket/3073/2013 (Yamagata lineage) - like virus, 15 µg HA per dose

1. Influenza notifications

1 January to 31 December 2016 there were 23,261 notifications

- 21,415 (92%) were typed as influenza A and 1,846 (8%) influenza B
 - 3,047 influenza A have been subtyped: 833 (27%) were A(H1N1)pdm09 and 2,214 (73%) were A/H3N2
 - Subtype was unavailable for 18,368 influenza A cases.

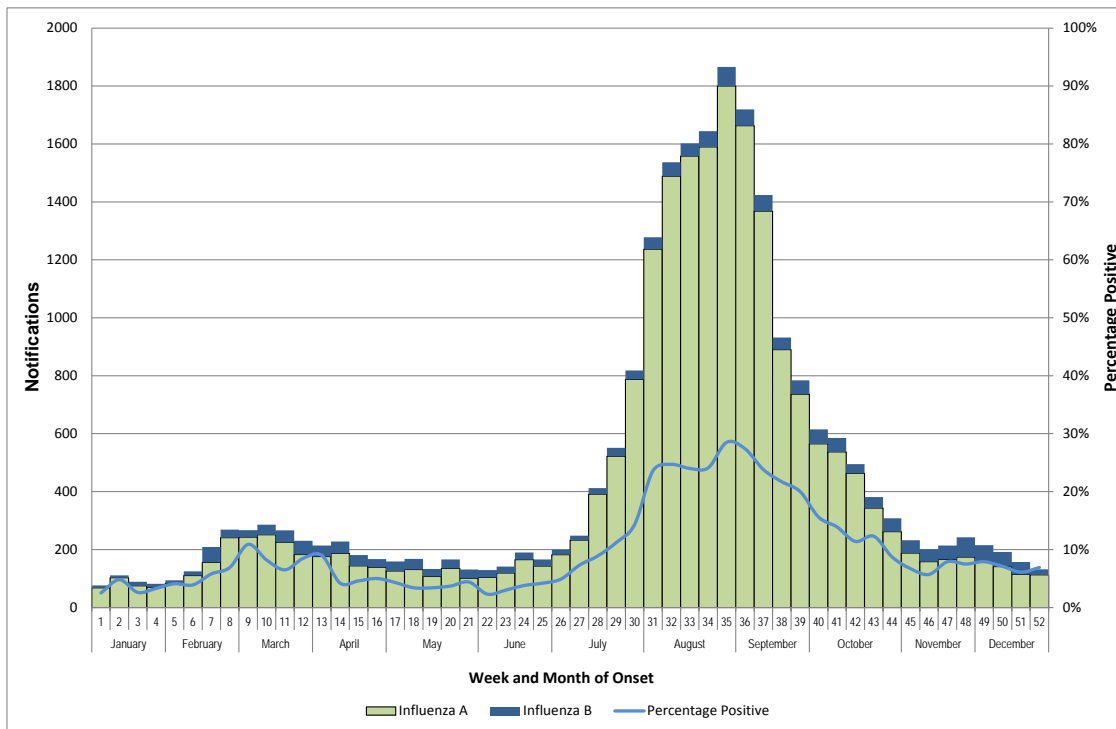


Figure 1 Weekly influenza notifications in Queensland by type and percentage of positive tests (public laboratory system only) by week and month of testing, 1 January 2016 to 31 December 2016. *Data extracted from NOCS and AUSLAB 6 March 2017.*

- Figure 1 shows the statewide notification count by week, month, type, and the percentage of positive influenza tests (public laboratory system only)
- The Queensland season reached its peak in week 35 (week beginning 29 August) with a total of 1,866 notifications and a percentage positive of 29
- YTD 2016 notification counts are summarised by region in Figure 2 and by region and Hospital and Health Service (HHS) in Table 1
- The southern region experienced peaks in weeks 33 and 35 with 975 and 968 notifications, respectively
- The central region's peak occurred in week 35, with 694 notifications
- The tropical region experienced a sustained rise in notifications from week 33 and reached a plateau between weeks 35 and 38 with a mean weekly notification count of 203 during this period
- Data from the World Health Organization Collaborative Centre for Reference and Research on Influenza (WHO CC) indicate that the circulating strains were covered by the 2016 quadrivalent vaccine
- Figure 3 shows the YTD age and gender distribution of notifications.

- YTD notification count in males was 10% lower than in females
- Median age was 40 years, with a range of younger than one year to 104 years

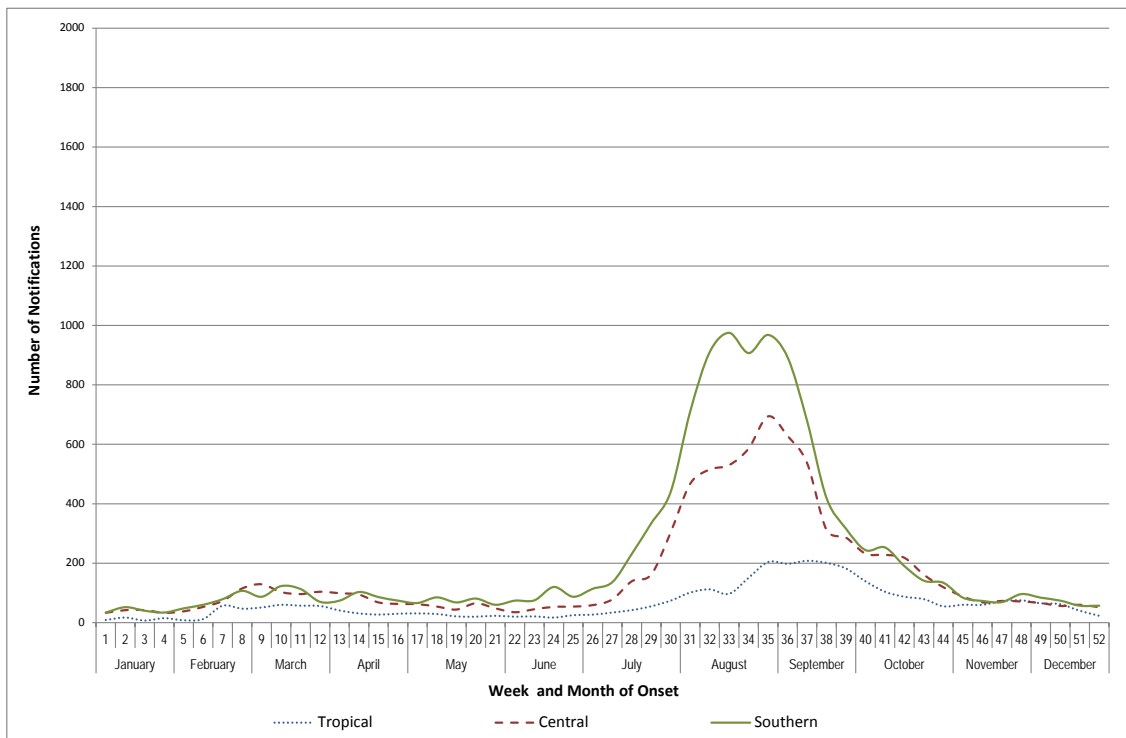


Figure 2 Queensland regional influenza notifications by week and month of onset, 1 January to 31 December 2016. *Data extracted from NOCS 6 March 2017.*

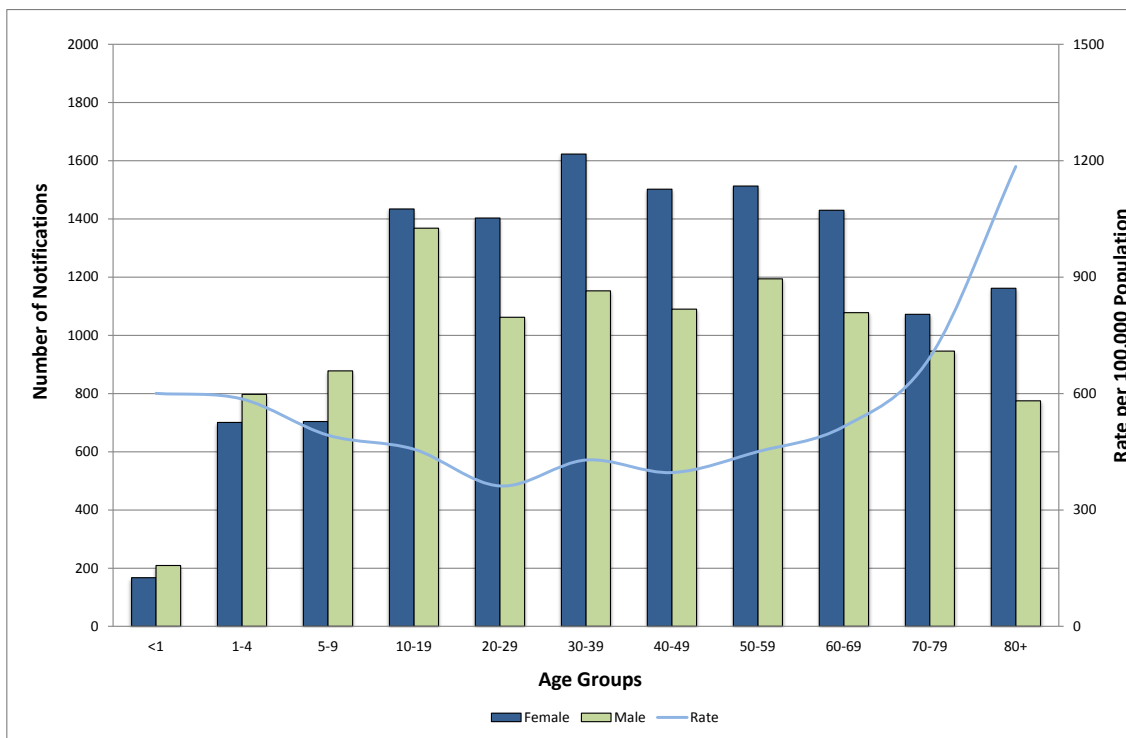


Figure 3 YTD 2016 influenza notifications in Queensland by age group and gender, and annual age specific rates, 1 January to 31 December 2016. *Data extracted from NOCS 6 March 2017.*

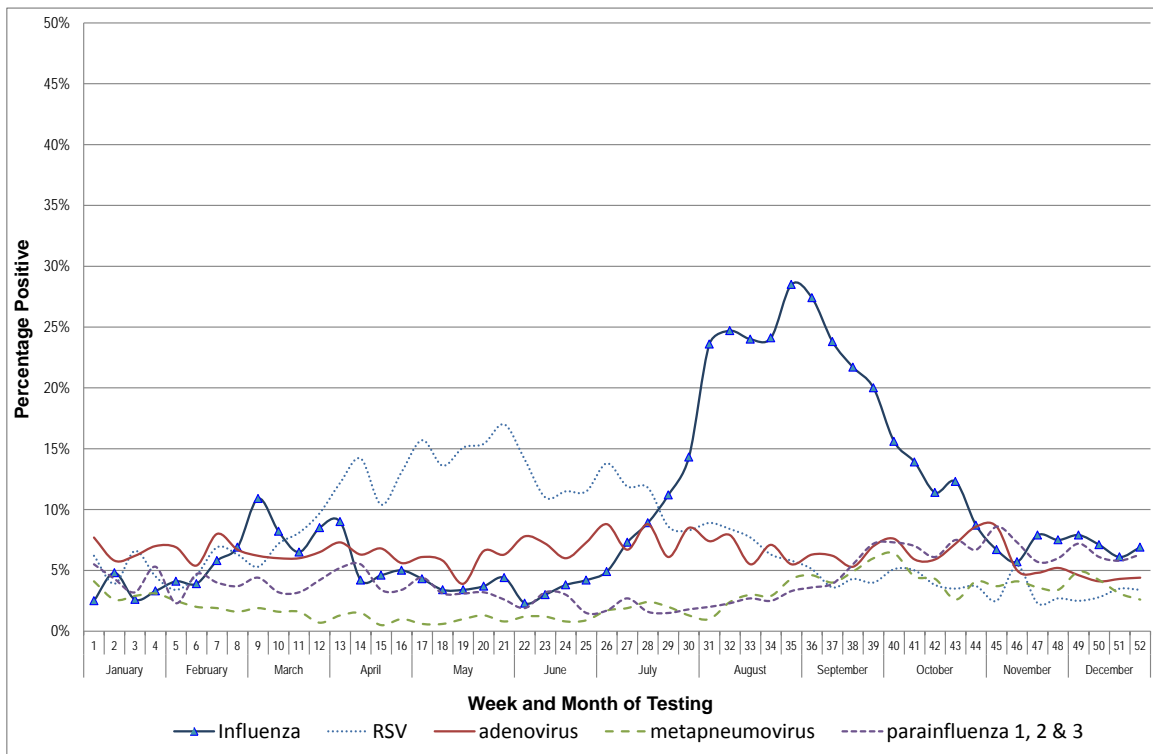


Figure 4 Percentage of positive influenza, respiratory syncytial virus (RSV), adenovirus, metapneumovirus and parainfluenza tests (public laboratory system only) by week and month of testing, 1 January 2016 to 31 December 2016. *Data extracted from AUSLAB 6 March 2017.*

- Figure 4 shows the percentage of positive tests for influenza as well as non-notifiable respiratory viruses, which are important causes of influenza like illness.

Table 1 Influenza notifications by week of onset, Region* and Hospital and Health Service (HHS), 1 January 2016 to 31 December 2016. Data extracted from NOCS 6 March 2017.

Region	Hospital & Health Service	Week of onset																									
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Tropical	Torres and Cape	0	0	0	0	0	0	1	1	0	0	0	1	1	1	0	3	0	3	1	0	4	0	1	1	4	3
	Cairns and Hinterland	1	4	3	3	5	5	43	24	23	24	18	40	18	15	13	7	13	10	6	9	7	10	13	9	13	16
	North West	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	0	0	1	1	0	0	0	1
	Townsville	5	5	3	10	3	7	9	17	25	31	36	10	18	7	12	19	11	9	7	5	3	6	5	6	6	5
	Mackay	3	8	0	2	0	0	4	5	2	5	3	5	3	8	2	1	6	7	7	6	8	3	2	1	2	2
Central	Central Queensland	1	3	4	3	2	3	5	8	14	14	22	11	30	15	13	8	3	4	12	14	4	5	7	8	10	15
	Central West	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
	Wide Bay	7	5	2	7	3	7	8	7	6	6	5	16	14	6	10	11	12	6	8	10	5	2	3	2	4	2
	Sunshine Coast	8	6	8	3	7	10	12	38	34	21	15	21	12	25	6	11	6	11	8	13	4	10	9	5	9	8
	Metro North	17	28	28	20	26	33	48	62	72	61	54	56	43	48	39	33	41	32	16	28	35	18	26	38	31	34
Southern	Metro South	22	31	20	12	28	31	43	63	43	75	70	41	40	56	50	35	45	41	31	38	35	38	39	72	46	55
	Darling Downs	5	3	5	4	4	5	2	8	11	4	4	6	6	7	10	9	3	13	8	11	7	11	5	10	8	10
	West Moreton	2	6	2	2	7	3	9	16	8	7	9	3	7	11	5	9	6	10	4	20	7	14	12	12	10	17
	South West	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	1	0	0	0	1
	Gold Coast	5	12	12	16	9	21	25	20	25	37	29	20	21	29	21	20	12	21	25	12	11	10	19	26	23	31
Queensland (Total)	76	111	89	82	94	125	209	269	267	286	266	230	214	228	181	167	159	168	133	166	131	129	141	190	166	200	

Region	Hospital & Health Service	Week of onset																								YTD Total		
		27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50		51	52
Tropical	Torres and Cape	0	1	1	0	1	4	3	2	11	12	13	10	25	14	15	5	2	1	2	5	5	9	10	2	1	2	181
	Cairns and Hinterland	13	24	17	39	52	24	33	37	46	38	33	38	44	31	25	29	24	18	22	18	11	14	11	10	10	9	1,022
	North West	1	2	0	2	2	14	8	4	2	2	1	5	0	2	1	6	1	0	0	0	0	1	1	0	0	0	62
	Townsville	8	14	28	17	31	47	42	92	122	115	115	106	82	59	40	38	37	25	23	31	43	43	28	31	23	7	1,527
	Mackay	12	1	9	16	15	23	11	16	23	31	46	42	31	33	23	9	15	11	13	6	13	8	15	19	6	5	547
Central	Central Queensland	11	20	18	33	32	52	42	43	57	71	61	39	69	29	38	28	30	14	18	18	5	3	6	6	2	2	985
	Central West	0	0	0	0	0	2	2	4	5	3	2	10	6	4	1	0	0	0	1	0	1	0	0	0	0	1	47
	Wide Bay	7	4	4	8	13	23	23	22	37	45	51	30	23	28	25	26	15	20	16	6	18	13	8	4	4	2	649
	Sunshine Coast	10	38	45	79	133	126	135	131	148	121	124	46	26	38	49	54	53	25	8	12	23	20	11	12	23	29	1,839
	Metro North	50	77	95	184	289	312	328	386	447	388	299	187	162	133	115	110	63	60	46	31	27	34	41	34	31	18	4,914
Southern	Metro South	61	93	192	243	367	371	461	475	474	446	349	209	167	123	138	93	73	63	45	19	26	43	39	40	29	33	5,772
	Darling Downs	13	30	46	48	100	224	211	192	193	169	107	51	53	31	39	38	19	29	20	25	18	11	11	6	6	10	1,879
	West Moreton	15	18	30	44	83	128	129	111	150	120	83	61	32	21	20	22	7	16	4	7	9	8	14	6	4	2	1,362
	South West	1	0	0	0	4	5	12	15	9	15	9	9	6	8	3	4	1	3	0	5	1	3	2	2	2	2	126
	Gold Coast	46	90	66	105	156	182	162	114	142	143	131	89	58	61	53	33	41	23	15	17	15	31	18	20	16	10	2,349
Queensland (Total)	248	412	551	818	1278	1537	1602	1644	1866	1719	1424	932	784	615	585	495	381	308	232	201	214	242	215	192	157	132	23,261	

*Regions defined here are aggregates of HHS used for surveillance purposes only and are not official geographical areas

2. Influenza hospitalisations (public hospitals)

Public hospital admissions with confirmed influenza:

- 1 January to 31 December 2016 there were 3,197 admissions, including 402 to intensive care (Figure 5)
- Public hospital admissions reached a peak in week 35 (week beginning 29 August) with 268 patients admitted with laboratory confirmed influenza
- Admissions by influenza type and subtype are summarised in Figure 6
- 3,133 (98%) of the 3182 admissions of Queensland residents were due to influenza A
- The weekly number of beds occupied by patients with influenza in public hospitals is summarised in Figure 7. The season peak occurred in week 35 (week beginning 29 August), with 337 beds occupied

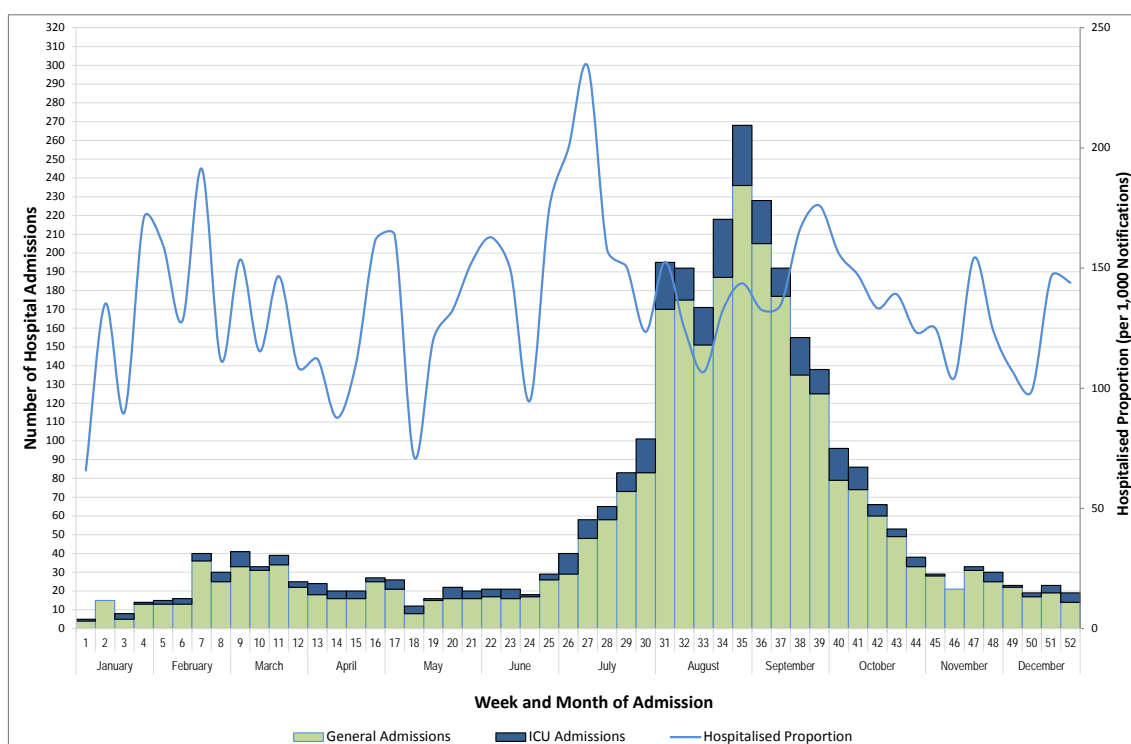


Figure 5 Laboratory confirmed influenza admissions to Queensland public hospitals (n=3,197) by week, month, and type of admission, and weekly proportion of admitted patients (per 1,000 notifications), 1 January to 31 December 2016. Data extracted from EpiLog 6 March 2017.

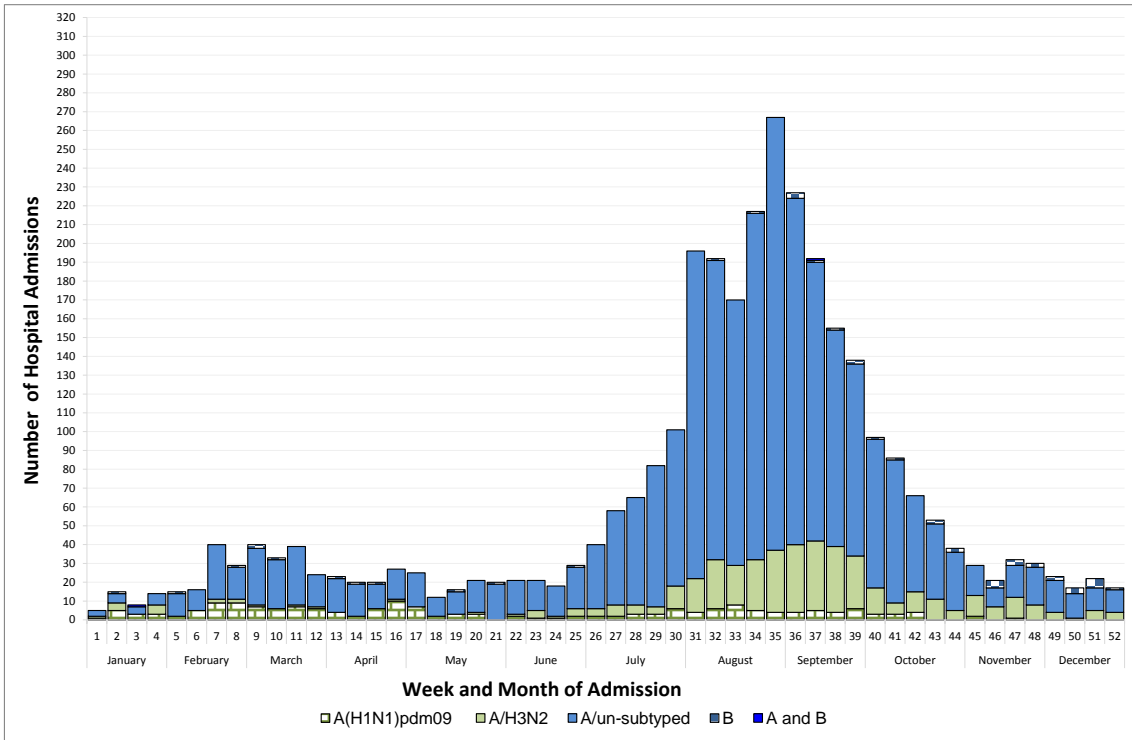


Figure 6 Laboratory confirmed influenza admissions of Queensland residents to Queensland public hospitals (n=3,182) by week, month, and influenza type/subtype, 1 January to 31 December 2016. *Data extracted from EpiLog and NOCS 6 March 2017.*

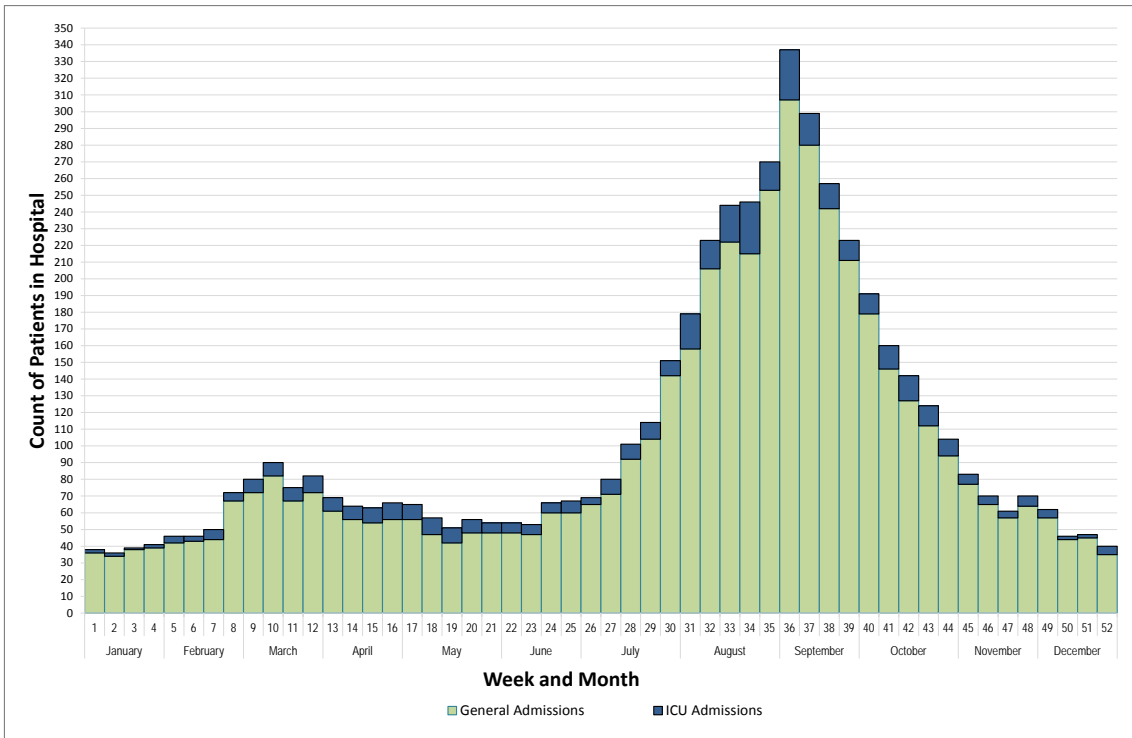


Figure 7 Beds occupied by patients with laboratory confirmed influenza in Queensland public hospitals by admission type, week and month, 1 January 2016 to 31 December 2016. *Data extracted from EpiLog 6 March 2017.*

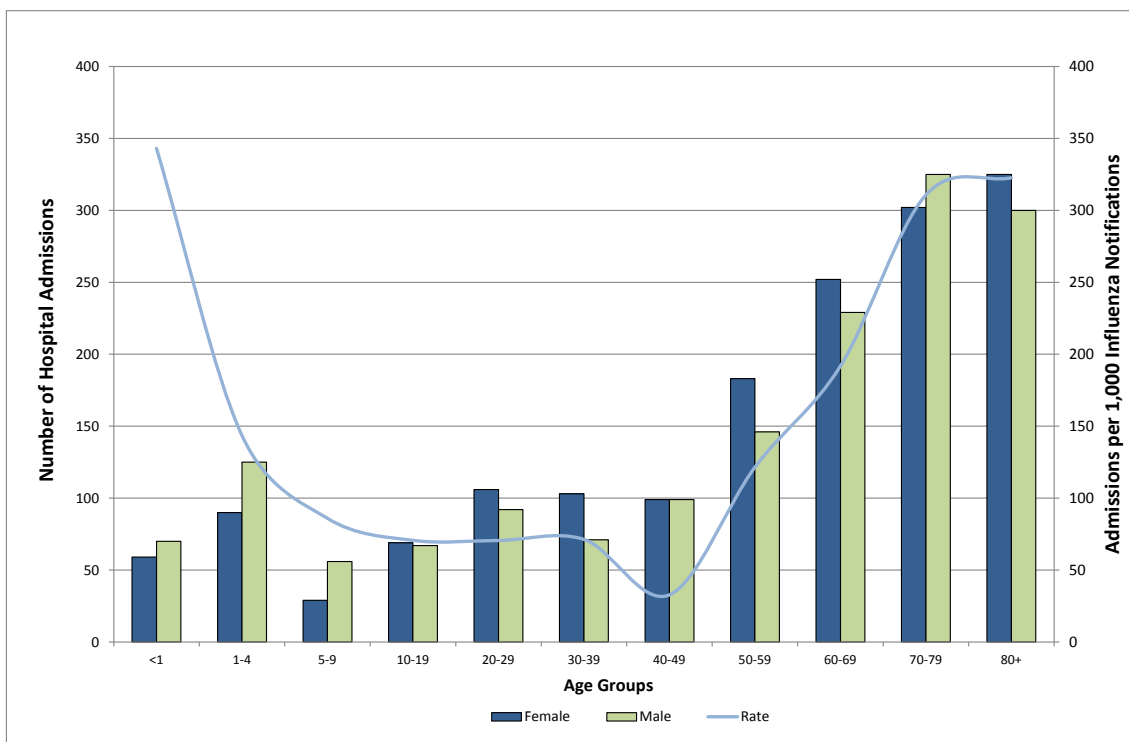


Figure 8 Laboratory confirmed influenza admissions to Queensland public hospitals, by age group and gender and annual age specific admission rates, 1 January 2016 to 31 December 2016. *Data extracted from EpiLog and NOCS 6 March 2017.*

- Figure 8 shows the YTD age and gender distribution of hospitalisations
 - Admissions counts were similar in males and females
 - The age distribution is skewed toward the older age groups with an overall median age of 63 years and a range of younger than one year to 100 years.

Table 2 YTD 2016 laboratory confirmed influenza notifications and admissions to Queensland public hospitals, by Region and Hospital and Health Service (HHS), 1 January 2016 to 31 December 2016. *Data extracted from EpiLog and NOCS 6 March 2017.*

Region	Hospital & Health Service	YTD Notifications	YTD Hospital Admissions	Admission Proportion (per 1,000 notifications)
Tropical	Torres and Cape	181	38	209.9
	Cairns and Hinterland	1,022	165	161.4
	North West	62	9	145.2
	Townsville	1,527	233	152.6
	Mackay	547	107	195.6
Central	Central Queensland	985	79	80.2
	Central West	47	15	319.1
	Wide Bay	649	118	181.8
	Sunshine Coast	1,839	107	58.2
	Metro North	4,914	766	155.9
Southern	Metro South	5,772	769	133.2
	Darling Downs	1,879	120	63.9
	West Moreton	1,362	281	206.3
	South West	126	18	142.9
	Gold Coast	2,349	372	158.4
Total		23,261	3,197	137.4

3. FluTracking

FluTracking is an online surveillance initiative run jointly by Hunter New England (NSW Health), The University of Newcastle, The Hunter Medical Research Institute and Business Continuity Institute (Australasia). Currently there are around 20,000 participants across Australia.

The system gathers data on the emerging influenza season by collating and reporting responses to online weekly surveys. Participation is quick and easy, open to any individual who is resident in Australia and can include family and friends.

Figures 9 and 10 summarise data contributed by Queensland based participants. It represents the final data available for 2016.

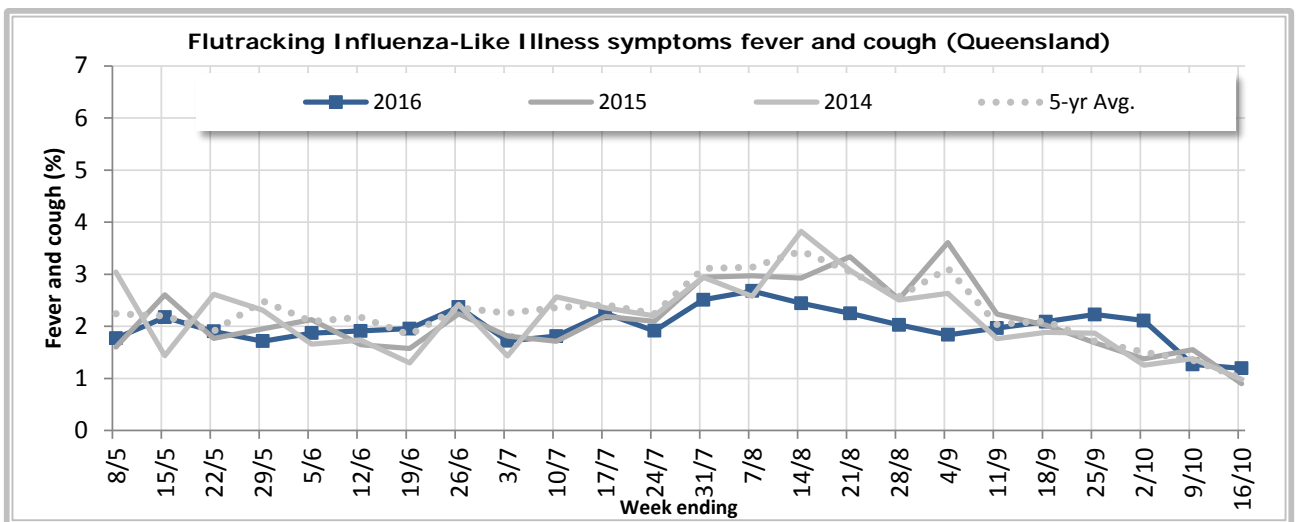


Figure 9 Weekly percentage of Queensland FluTracking participants reporting fever and cough up to the week ending 16 October 2016. Figure presented with permission from FluTracking .

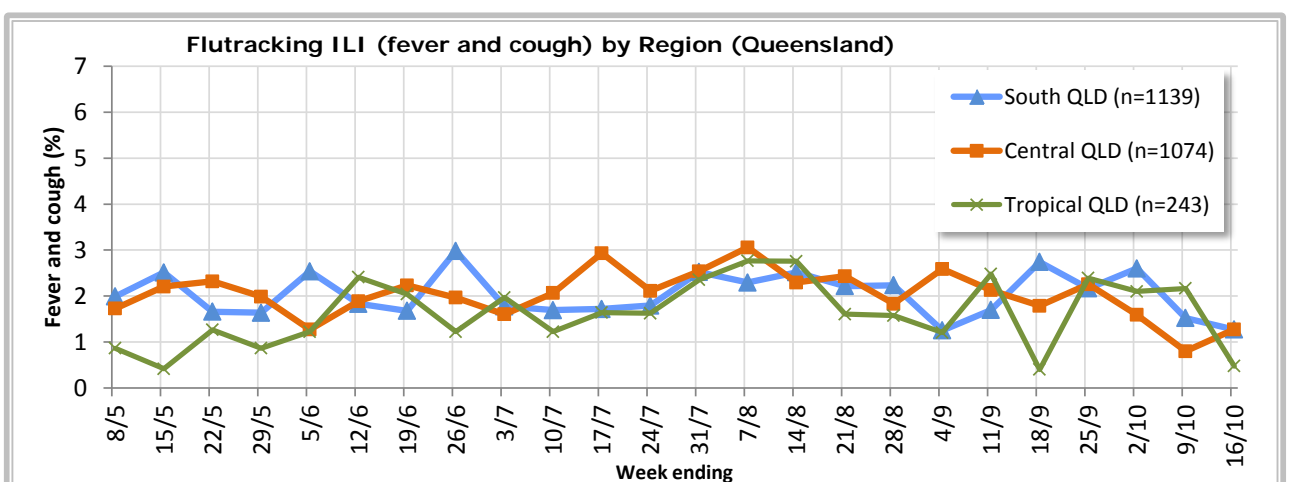
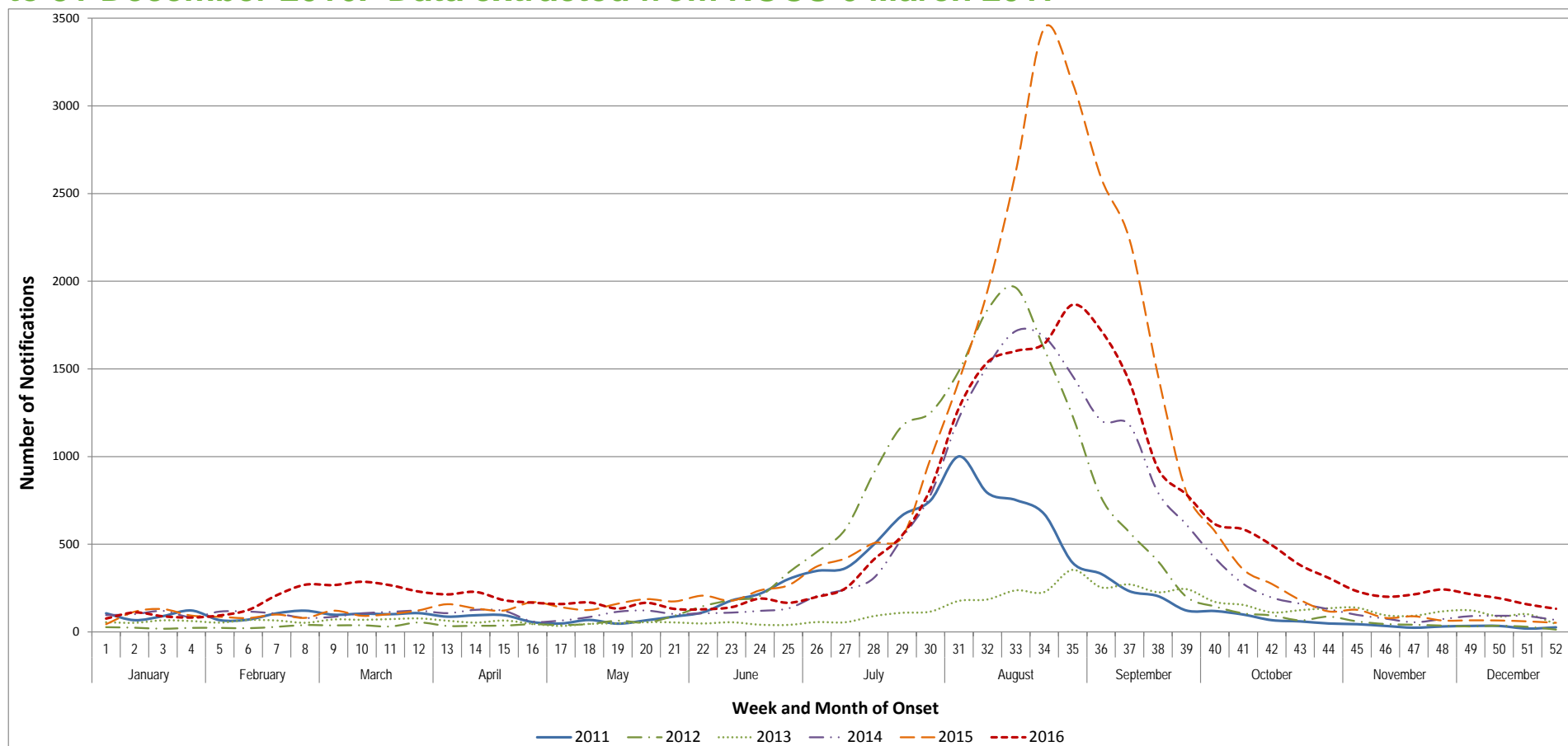


Figure 10 Weekly percentage of Queensland FluTracking participants, by region, reporting fever and cough up to the week ending 16 October 2016. Figure presented with permission from FluTracking .

If you would like to find out more about FluTracking, or register to participate, please go to <http://www.flutracking.net/Info>

4. Appendices

Appendix 1: Laboratory confirmed influenza notifications, by week of onset, 1 January 2011 to 31 December 2016. Data extracted from NOCS 6 March 2017



Appendix 2: Hospital and Health Services by Region

**Hospital and Health Services, Queensland Health
by Recognised Public Hospitals
and Primary Health Centres**



Prepared by: Statistical Reporting and Coordination, Health Statistics Branch, 29 January 2015
Hospital and Health Services by recognised public hospitals and primary health centres as at 29 November 2014

Regions and Hospital and Health Services		
Tropical	Central	Southern
Torres and Cape	Central Queensland	Metro South
Cairns and Hinterland	Central West	Darling Downs
North West	Wide Bay	West Moreton
Townsville	Sunshine Coast	South West
Mackay	Metro North	Gold Coast