

# FLU EXPRESS



*Flu Express* is a weekly report produced by the Respiratory Disease Office of the Centre for Health Protection. It monitors and summarizes the latest local and global influenza activities.

## Local Situation of Influenza Activity (as of Jan 23, 2019)

**Reporting period: Jan 13 – 19, 2019 (Week 3)**

- The latest surveillance data showed that the local influenza activity continued to increase last week. Currently the predominating virus is influenza A(H1).
- Children aged under 6 years were particularly affected as reflected by the very high number of outbreaks of influenza-like illness (ILI) in kindergartens and child care centres, as well as the high influenza-associated admission rate in public hospitals among children aged below six years.
- Among the severe influenza cases in adults, persons 50-64 years constituted a relative higher proportion (35%), as compared with 15% and 20% during the 2017 summer season predominated by influenza A(H3) and the 2017/18 winter season predominated by influenza B respectively.
- Influenza can cause serious illnesses in high-risk individuals and even healthy persons. Given that seasonal influenza vaccines are safe and effective, all persons aged 6 months or above except those with known contraindications are recommended to receive seasonal influenza vaccine. Particularly, children, the elderly and those with underlying illnesses are urged to receive influenza vaccination as early as possible.
- In the 2018/19 season, the Vaccination Subsidy Scheme (VSS) has been expanded to cover those aged 50 to 64 to receive subsidised seasonal influenza vaccination. It also continues to provide subsidised vaccination to children aged 6 months to under 12 years, elderly aged 65 years or above, pregnant women, persons with intellectual disabilities and recipients of Disability Allowance. Under the Government Vaccination Programme (GVP), eligible groups for free vaccination are the same as that of 2017/18. VSS and GVP have been launched on Oct 10 and Oct 24, 2018 respectively. For more details, please refer to the webpage ([http://www.chp.gov.hk/en/view\\_content/17980.html](http://www.chp.gov.hk/en/view_content/17980.html)).

### Influenza-like-illness surveillance among sentinel general outpatient clinics and sentinel private medical practitioners, 2015-19

In week 3, the average consultation rate for influenza-like illness (ILI) among sentinel general outpatient clinics (GOPC) was 11.4 ILI cases per 1,000 consultations, which was the same as 11.4 recorded in the previous week (Figure 1, left). The average consultation rate for ILI among sentinel private medical practitioners (PMP) was 54.6 ILI cases per 1,000 consultations, which was higher than 47.9 recorded in the previous week (Figure 1, right).

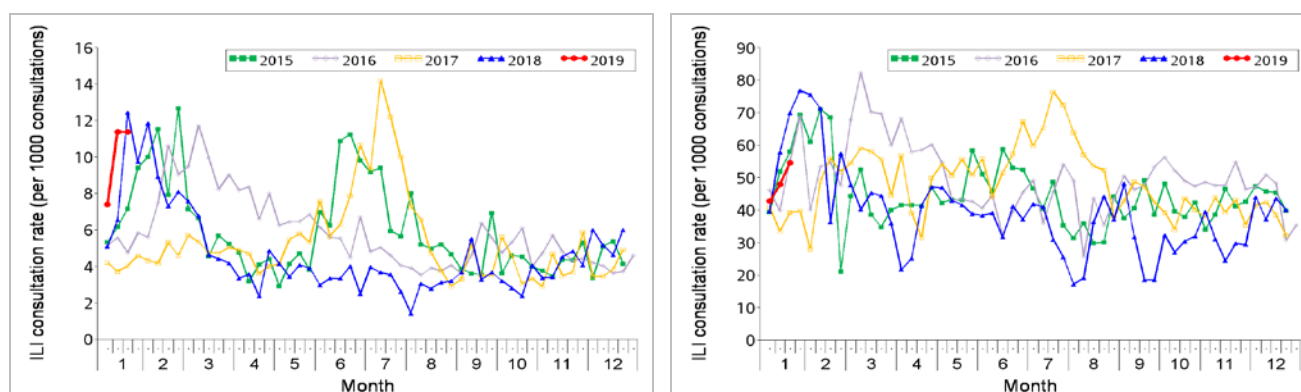


Figure 1 ILI consultation rate at sentinel GOPC (left) and PMP (right), 2015-19

### Laboratory surveillance, 2015-19

Among the respiratory specimens received in week 3, the positive percentage of seasonal influenza viruses was 29.69%, which was above the baseline threshold of 10.3% and was higher than 25.29% recorded in the previous week (Figure 2). The 2288 influenza viruses detected last week included 1980 (25.69%) influenza A(H1), 275 (3.57%) influenza A(H3), 21 (0.27%) influenza B and 12 (0.16%) influenza C.

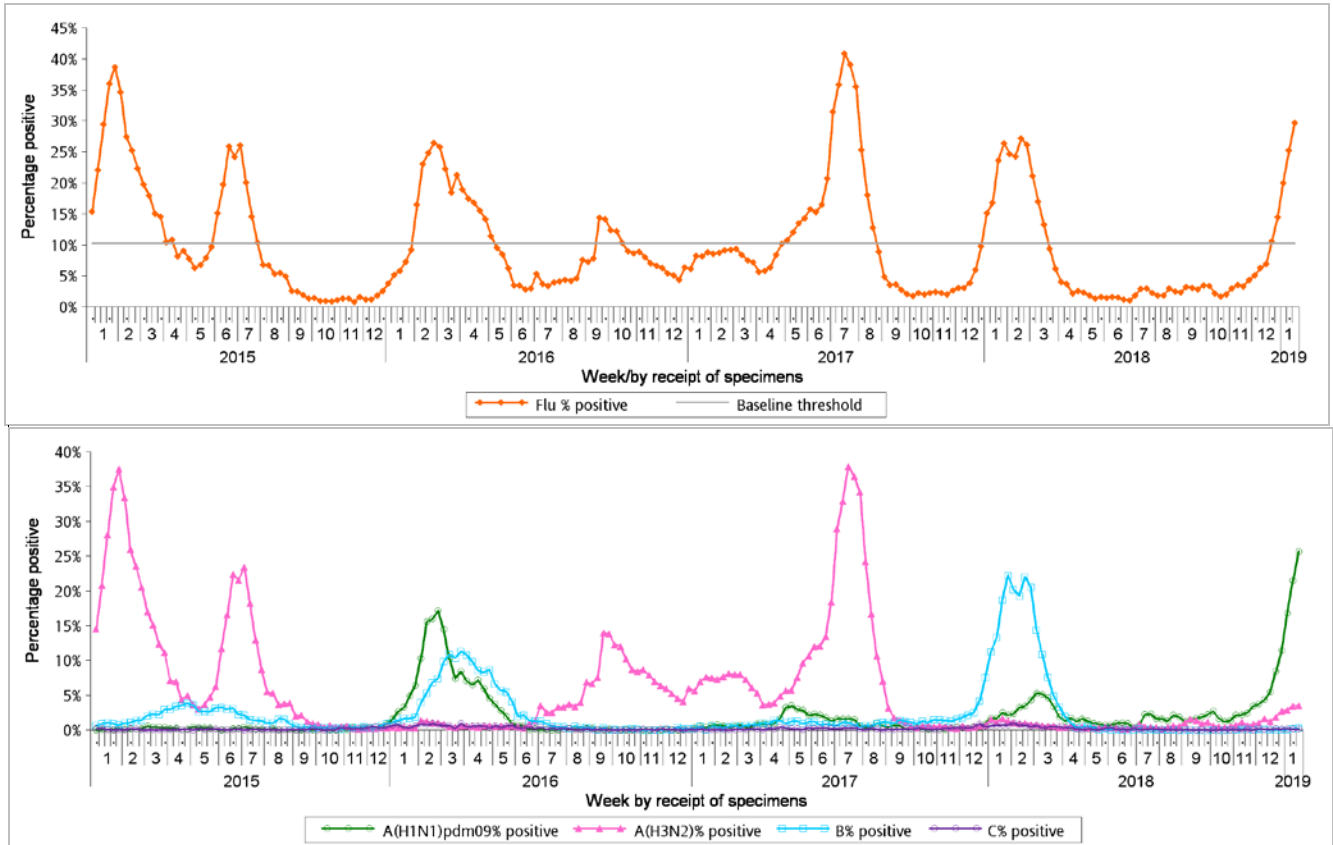


Figure 2 Percentage of respiratory specimens tested positive for influenza viruses, 2015-19 (upper: overall positive percentage, lower: positive percentage by subtypes)

[Note: The baseline threshold is 1.96 standard deviation above the average weekly positive percentage during non-season periods from 2014-2018.]

## Influenza-like illness outbreak surveillance, 2015-19

In week 3, 206 ILI outbreaks occurring in schools/institutions were recorded (affecting 1351 persons), as compared to 121 outbreaks recorded in the previous week (affecting 1017 persons) (Figure 3). The overall number was at the very high intensity level currently (Figure 4\*). In the first 4 days of week 4 (Jan 20 - 23), 184 ILI outbreaks in schools/institutions were recorded (affecting 845 persons). Since the start of the 2018/19 winter influenza season in week 1, 517 outbreaks were recorded (as of January 23).

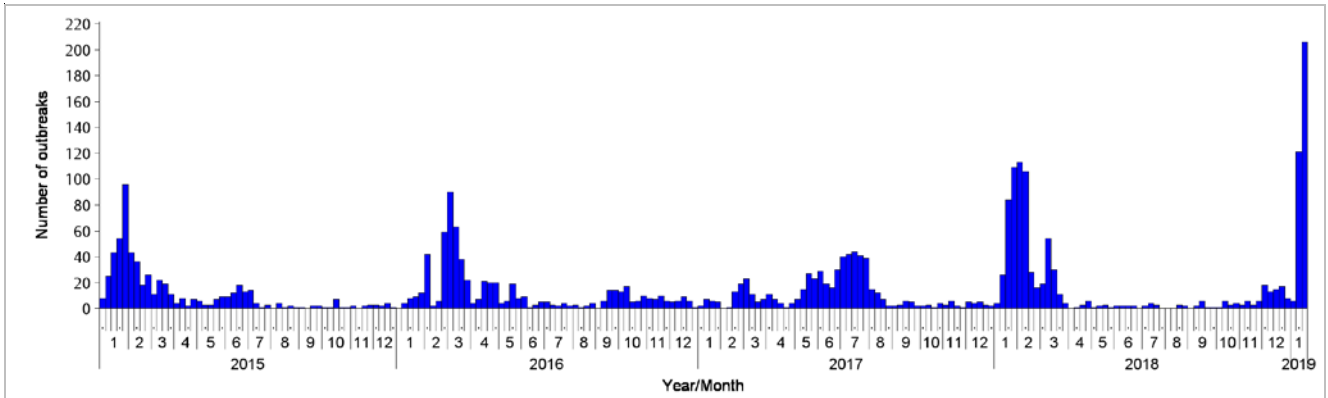


Figure 3 ILI outbreaks in schools/institutions, 2015-19

Type of institutions	Week 2	Week 3	Cumulative number of outbreaks since week 1 (as of January 23)
Kindergarten/ child care centre (KG/CCC)	87	153	384
Primary school (PS)	21	29	74
Secondary school (SS)	2	7	13
Residential care home for the elderly (RCHE)	5	5	16
Residential care home for the disabled (RCHD)	2	2	8
Others	4	10	22
<i>Total number of outbreaks</i>	121	206	517
<i>Total number of persons affected</i>	1017	1351	3241

In comparison, 75, 56, 64 and 219 outbreaks were recorded in the same duration of surveillance (three complete weeks) in the 2014/15 winter, 2015/16 winter, 2017 summer and 2017/18 winter seasons respectively, as compared with 333 outbreaks in the current season (Figure 5).

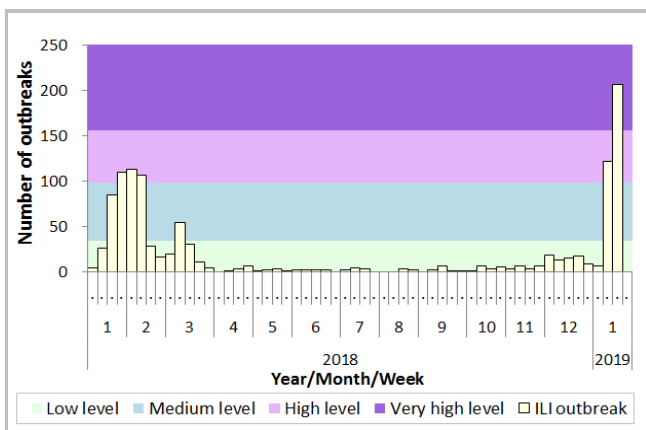


Figure 4 ILI outbreaks in schools/institutions, 2018-19

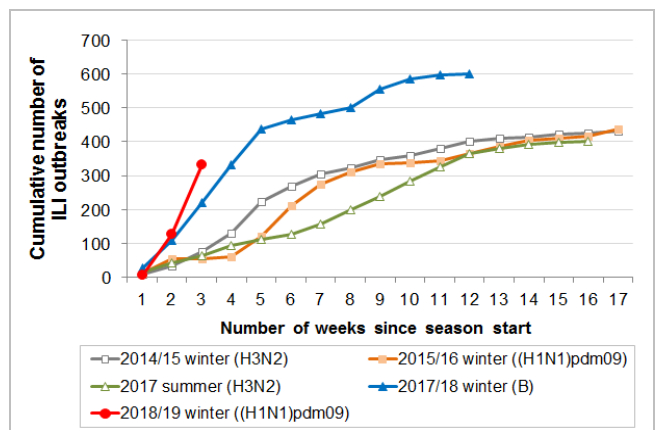


Figure 5 Cumulative numbers of ILI outbreaks reported during major influenza seasons, 2015–19

\* Various intensity levels applicable for this year were calculated with the moving epidemic method (MEM) based on the relevant historical data recorded from 2011 to 2018. For details, please refer to this webpage: [https://www.chp.gov.hk/files/pdf/explanatory\\_note\\_for\\_flux\\_mem\\_eng.pdf](https://www.chp.gov.hk/files/pdf/explanatory_note_for_flux_mem_eng.pdf)

**Intensity levels of ILI outbreaks according to type of institutions (week 3)**

- The number of ILI outbreaks in KG/CCC was 153, as compared to 87 in the previous week. It was at the very high intensity level (Figure 6).
- The number of ILI outbreaks in PS was 29, as compared to 21 in the previous week. It was at the medium intensity level (Figure 7).
- The number of ILI outbreaks in RCHE was five, as compared to five in the previous week. It was at the low intensity level (Figure 8).

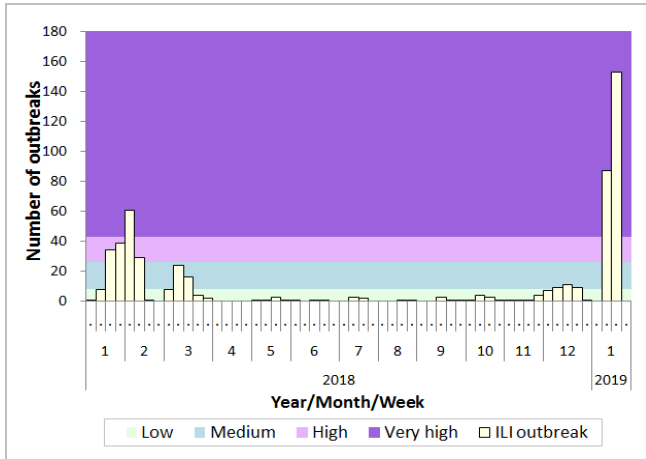


Figure 6 ILI outbreaks in KG/CCC, 2018-19

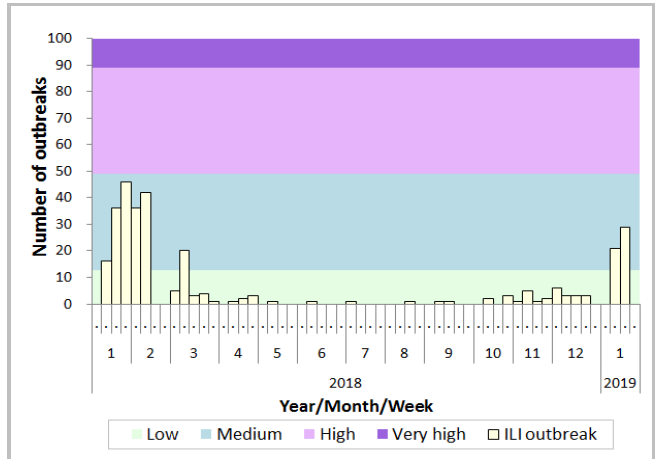


Figure 7 ILI outbreaks in PS, 2018-19

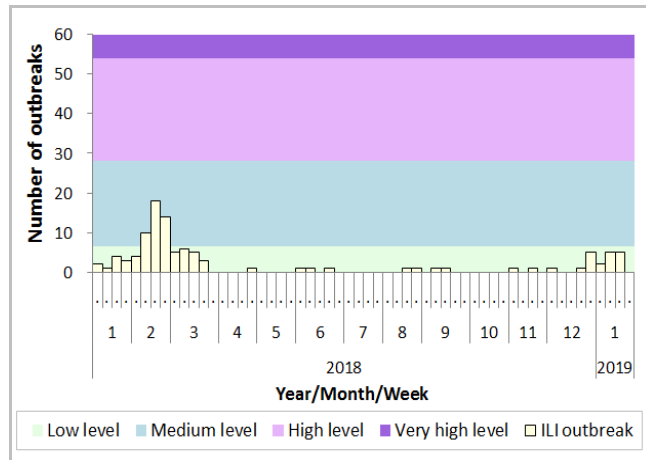


Figure 8 ILI outbreaks in RCHE, 2018-19

## Influenza-associated hospital admission rates in public hospitals based on discharge coding, 2015-19

In week 3, the overall admission rate in public hospitals with principal diagnosis of influenza was 1.38 (per 10,000 population) as compared to 1.37 recorded in the previous week (Figure 9). It was above the baseline threshold of 0.23 and at the medium intensity level (Figure 10\*). The influenza-associated admission rates for persons aged 0-5 years, 6-11 years, 12-17 years, 18-49 years, 50-64 years and 65 years or above were 10.58, 1.90, 1.20, 0.52, 0.80 and 1.93 cases (per 10,000 people in the age group) respectively, as compared to 9.80, 1.93, 0.59, 0.40, 0.84 and 2.48 cases in the previous week (Figure 9).

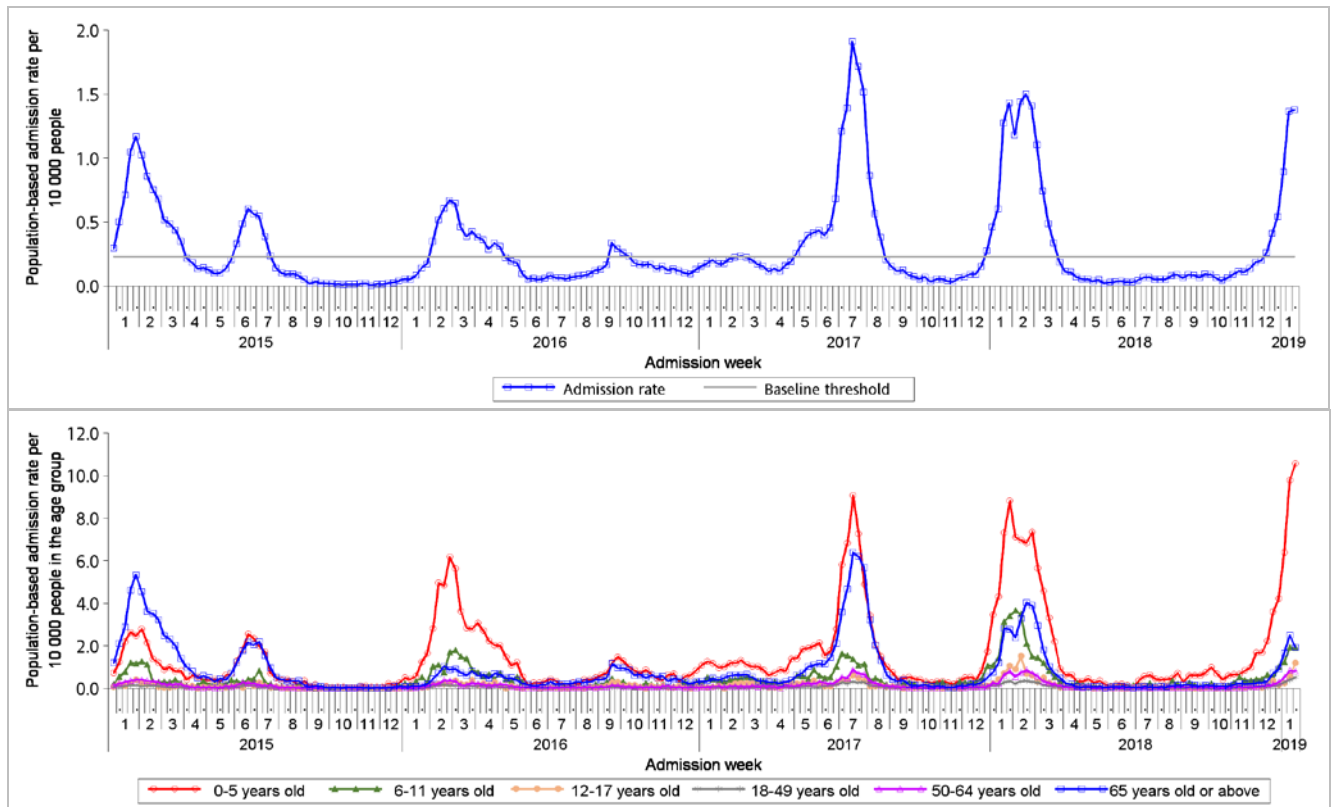


Figure 9 Influenza-associated hospital admission rates, 2015-19 (upper: overall rate, lower: rates by age groups)

[Note: The baseline threshold is 1.96 standard deviation above the average weekly admission rate during non-season periods from 2014-2018.]

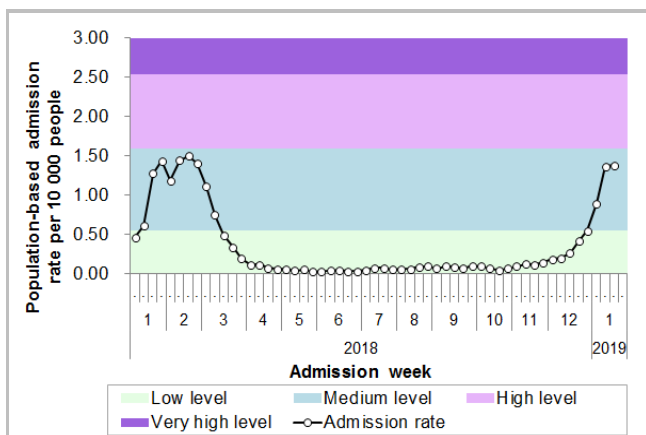


Figure 10 Influenza-associated hospital admission rates, 2018-19

\*Various intensity levels applicable for this year were calculated with the moving epidemic method (MEM) based on the relevant historical data recorded from 2011 to 2018. For details, please refer to this webpage: [https://www.chp.gov.hk/files/pdf/explanatory\\_note\\_for\\_flux\\_mem\\_eng.pdf](https://www.chp.gov.hk/files/pdf/explanatory_note_for_flux_mem_eng.pdf)

**Intensity levels of influenza-associated hospital admission rates according to age group (week 3)**

- The rate for patients aged 0 to 5 years was 10.58 (per 10,000 people in the age group), as compared to 9.80 in the previous week. It was at the high intensity level (Figure 11).
- The rate for patients aged 6 to 11 years was 1.90 (per 10,000 people in the age group), as compared to 1.93 in the previous week. It was at the medium intensity level (Figure 12).
- The rate for patients aged 65 years or above was 1.93 (per 10,000 people in the age group), as compared to 2.48 in the previous week. It was at the medium intensity level (Figure 13).

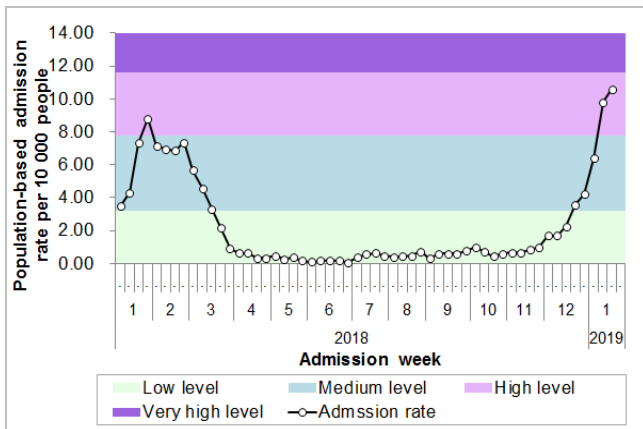


Figure 11 Influenza-associated hospital admission rates for patients aged 0-5 years, 2018-19

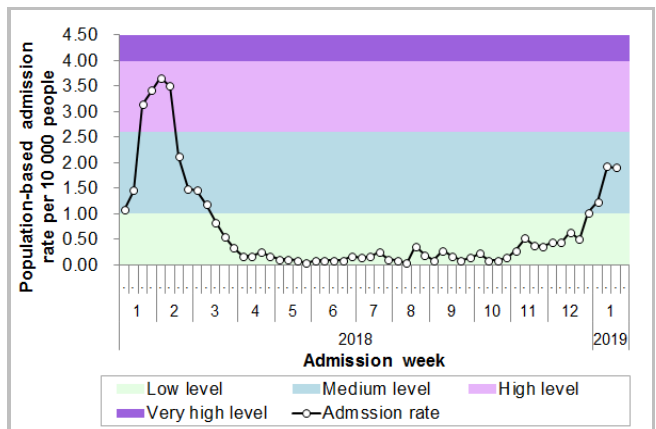


Figure 12 Influenza-associated hospital admission rates for patients aged 6-11 years, 2018-19

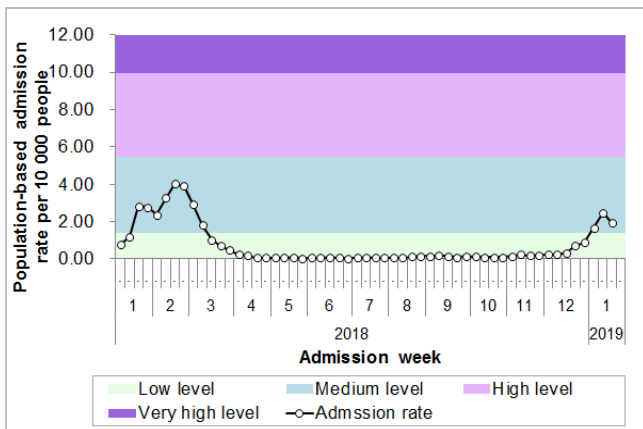


Figure 13 Influenza-associated hospital admission rates for patients aged 65 years or above, 2018-19

### Rate of ILI syndrome group in accident and emergency departments, 2015-19<sup>#</sup>

In week 3, the rate of the ILI syndrome group in the accident and emergency departments (AEDs) was 254.7 (per 1,000 coded cases), which was higher than the rate of 243.9 in the previous week (Figure 14).

*#Note: This syndrome group includes codes related to ILI such as influenza, upper respiratory tract infection, fever, cough, throat pain, and pneumonia.*

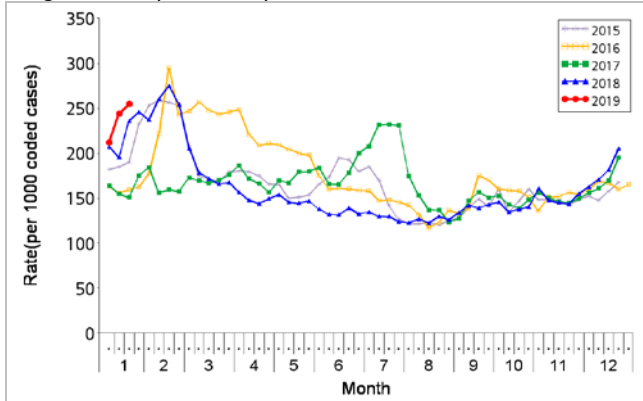


Figure 14 Rate of ILI syndrome group in AEDs, 2015-19

### Fever surveillance at sentinel child care centres/ kindergartens, 2015-19

In week 3, 1.23% of children in the sentinel child care centres / kindergartens (CCCs/KGs) had fever (38°C or above) as compared to 1.09% recorded in the previous week (Figure 15).

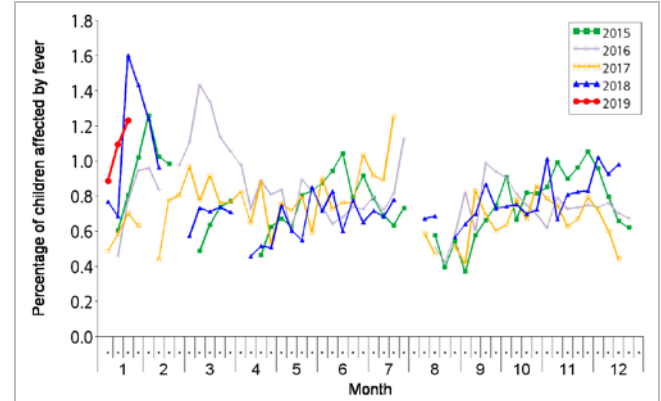


Figure 15 Percentage of children with fever at sentinel CCCs/KGs, 2015-19

### Fever surveillance at sentinel residential care homes for the elderly, 2015-19

In week 3, 0.07% of residents in the sentinel residential care homes for the elderly (RCHes) had fever (38°C or above), compared to 0.10% recorded in the previous week (Figure 16).

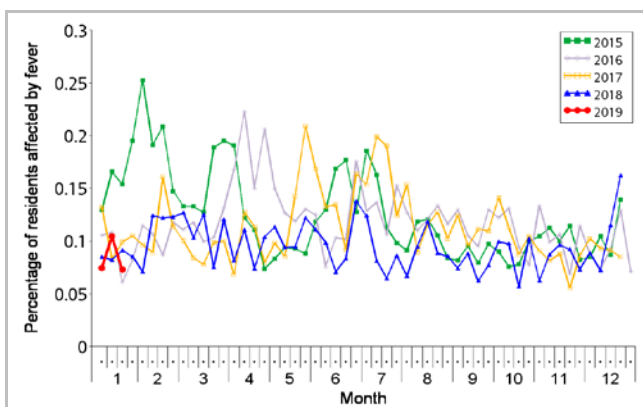


Figure 16 Percentage of residents with fever at sentinel RCHes, 2015-19

### Influenza-like illness surveillance among sentinel Chinese medicine practitioners, 2015-19

In week 3, the average consultation rate for ILI among Chinese medicine practitioners (CMPs) was 3.00 ILI cases per 1,000 consultations as compared to 2.67 recorded in the previous week (Figure 17).

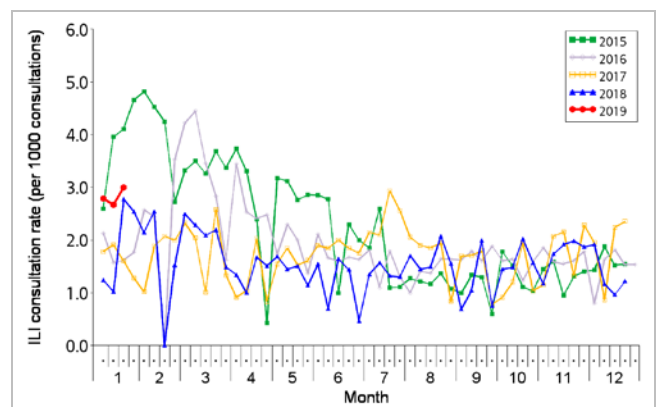


Figure 17 ILI consultation rate at sentinel CMPs, 2015-19

## Surveillance of severe influenza cases

(Note: The data reported are provisional figures and subject to further revision.)

### Surveillance for intensive care unit (ICU) admissions/deaths with laboratory confirmation of influenza among adult patients (Aged 18 years or above)

Since 2018, the Centre for Health Protection (CHP) has collaborated with the Hospital Authority and private hospitals to monitor ICU admissions and deaths with laboratory confirmation of influenza among adult patients regularly. For surveillance purpose, the cases refer to laboratory-confirmed influenza patients who required ICU admission or died within the same admission of influenza infection. Their causes of ICU admission or death may be due to other acute medical conditions or underlying diseases.

- In week 3, 55 adult cases of ICU admission/death with laboratory confirmation of influenza were recorded, in which 19 of them were fatal. Nine of the 55 severe adult cases were known to have received the 2018/19 influenza vaccine. In the first 4 days of week 4 (Jan 20 to 23), 44 cases were recorded, in which 23 of them were fatal.

Week	Influenza type				
	A(H1)	A(H3)	B	C	A (pending subtype)
Week 3	48	5	0	0	2
First 4 days of week 4 (Jan 20 to 23)	30	4	0	0	10

- Since the start of the 2018/19 winter influenza season in week 1, 185 adult cases of ICU admission/death with laboratory confirmation of influenza were recorded, in which 81 of them were fatal (as of Jan 23). Among them, 146 patients had influenza A(H1N1)pdm09, 24 patients with influenza A(H3N2) and 15 patients with influenza A pending subtype.
- In comparison, 91, 99, 41 and 113 adult cases were recorded in the same duration of surveillance (three complete weeks) in the 2014/15 winter, 2015/16 winter, 2017 summer and 2017/18 winter seasons respectively, as compared with 141 cases in the current season (Figure 18, left). The corresponding figures for deaths were 55, 32, 28, 70 in the above seasons, as compared with 58 deaths in the current season (Figure 18, right).

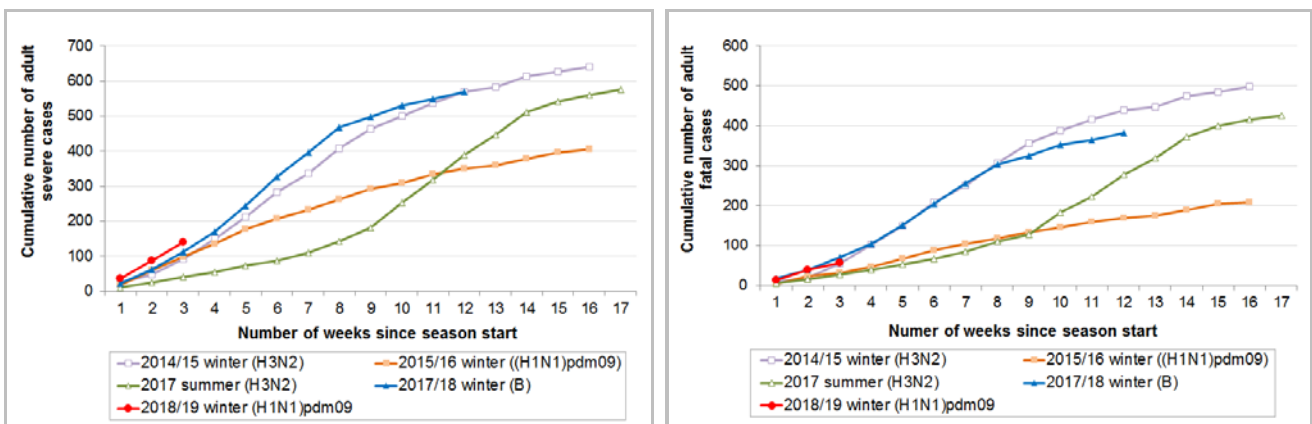


Figure 18 Cumulative numbers of adult severe influenza cases reported during major influenza seasons, 2015–19 (left: ICU admission/death cases; right: deaths)

Note: The predominating virus was shown in bracket.



### **Surveillance of severe paediatric influenza-associated complication/death (Aged below 18 years)**

- In week 3 and the first 4 days of week 4 (Jan 20 to 23), there were eight cases of severe paediatric influenza-associated complication.

Reporting week	Age	Sex	Complication	Fatal case?	Influenza subtype	Ever received influenza vaccine for this season
3	8 years	Male	Encephalopathy	No	Influenza A(H1)	No
3	11 months	Female	Severe pneumonia	No	Influenza A(H1)	No
3	11 months	Male	Encephalopathy	No	Influenza A(H1)	No
3	6 years	Male	Encephalopathy	No	Influenza A(H3)	Yes
3	4 years	Male	Encephalopathy	No	Influenza A(H1)	No
4	2 years	Male	Encephalopathy	No	Influenza A(H1)	No
4	3 years	Male	Severe pneumonia	No	Influenza A(H1)	Yes
4	35 months	Male	Encephalitis	No	Influenza A(H1)	No

Data as of Jan 23, 2019

- In 2019, 13 paediatric cases of influenza-associated complication were recorded, and no fatal cases were recorded (as of Jan 23). 11 patients had infection with influenza A(H1) and two with influenza A(H3). Nine (69%) did not ever receive the influenza vaccine for the 2018/19 season.
- In comparison, 4, 7, 4 and 9 paediatric cases of influenza-associated complication/death were recorded in the same duration of surveillance (three complete weeks) in the 2014/15 winter, 2015/16 winter, 2017 summer and 2017/18 winter seasons respectively, as compared with 10 cases in the current season (Figure 19, left). The corresponding figures for deaths were 0, 1, 1 and 2 in the above seasons, as compared with 0 deaths in current season (Figure 19, right).

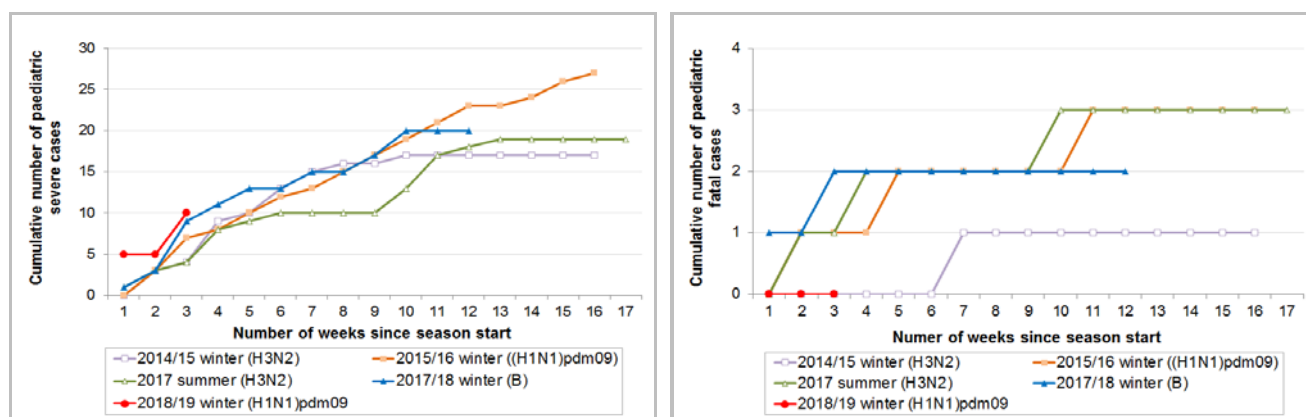


Figure 19 Cumulative numbers of cases of paediatric influenza-associated complication/death reported during major influenza seasons, 2015–19 (left: complication/death cases; right: deaths)

Note: The predominating virus was shown in bracket.

**Severe influenza cases of all ages**

- Since the start of the current winter influenza season in week 1, 198 severe influenza cases among all ages have been reported, including 81 deaths (as of Jan 23) (Figure 20).

Age group	Cumulative number of cases (death)
0-5	8 (0)
6-11	5 (0)
12-17	0 (0)
18-49	27 (3)
50-64	64 (11)
>=65	94 (67)

- Among the adult fatal cases, about 83% had chronic diseases.
- Among patients with laboratory confirmation of influenza admitted to public hospitals in this season (from Dec 30, 2018 to Jan 23, 2019), 1.2% of admitted cases died during the same episode of admission. So far, it was below the historical range between 1.9% (2015/16 winter season) and 3.3% (2015 summer season).

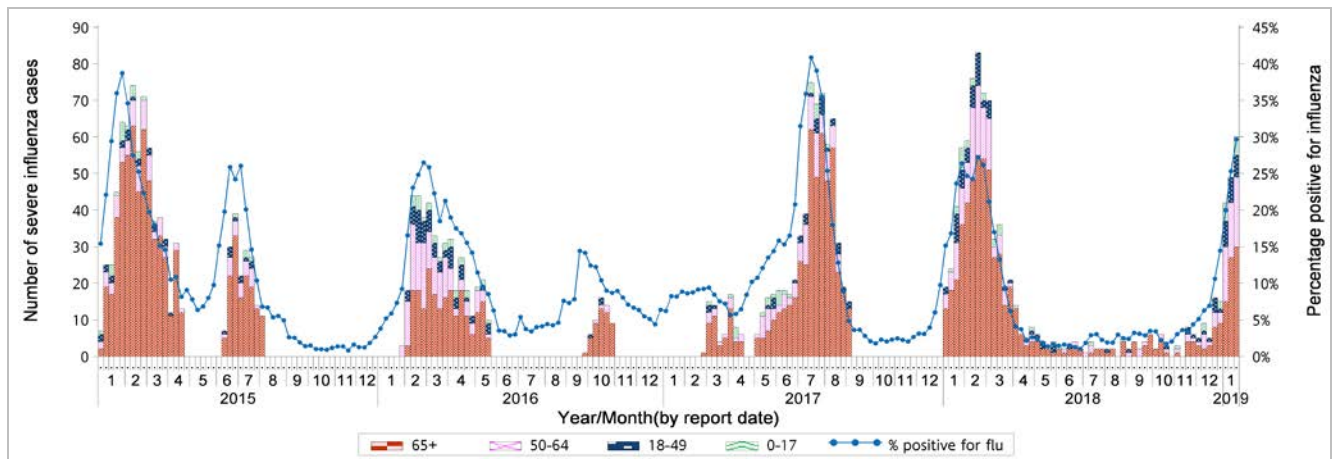


Figure 20 Weekly number of severe influenza cases by age groups, 2015-19 (the percentage positive for influenza viruses in Figure 2 is also shown in this graph)

Note: The surveillance system for severe influenza cases among adult patients aged 18 years or above was only activated intermittently during influenza seasons before 2018.

## Surveillance of oseltamivir resistant influenza A(H1N1)pdm09 virus infection

- In week 3 and the first 4 days of week 4 (Jan 20 to 23), there were no new reports of oseltamivir (Tamiflu) resistant influenza A(H1N1)pdm09 virus infection. There are totally 48 reports of oseltamivir resistant influenza A(H1N1)pdm09 virus detected in Hong Kong since 2009.

## Global Situation of Influenza Activity

In the temperate zone of the northern hemisphere influenza activity continued to increase slowly. In East Asia, influenza activity continued to increase, with influenza A(H1N1)pdm09 most frequently detected. In Europe, influenza activity continued to increase, with both A viruses circulating. In the temperate zones of the southern hemisphere, influenza activity returned to inter-seasonal levels with exception of some parts in Australia. Worldwide, seasonal influenza A viruses accounted for the majority of detections.

- In the United States (week ending Jan 12, 2019), influenza activity remained elevated. The proportion of outpatient visits for ILI decreased from 3.5% to 3.1%, but remained above the national baseline of 2.2%. The percent of respiratory specimens testing positive for influenza was 12.41%, similar to 12.44% recorded in the previous week. Influenza A(H1N1)pdm09, influenza A(H3N2), and influenza B viruses continued to co-circulate.
- In Canada (week ending Jan 12, 2019), influenza activity remained elevated. The influenza season started in late October which was earlier than in recent years. Laboratory detections for influenza continued to decline sharply from the previous week, confirming that nationally the influenza season reached peak levels in the last week of December. Influenza A was the most common influenza virus, and the majority of these viruses were A(H1N1)pdm09.
- In the United Kingdom (week ending Jan 13, 2019), influenza was now circulating in the community with activity indicators at low intensity. The positivity of influenza detection was 20.4%, which was above the baseline threshold of 9.2%. Influenza A(H1N1)pdm09 is the dominant circulating subtype.
- In Europe (week ending Jan 13, 2019), influenza activity continued to increase. 42.2% of sentinel specimens were tested positive for influenza virus. Influenza type A virus detections dominated with A(H1N1)pdm09 viruses being slightly more prevalent than A(H3N2). Very few influenza B viruses were detected.
- In Mainland China (week ending Jan 13, 2019), influenza activity in southern and northern provinces continued to increase, reaching the peak of the influenza season currently. Influenza viruses detected were mainly influenza A(H1N1), followed by influenza A(H3N2), and there were few influenza B(Victoria) and B(Yamagata) detections.
- In Taiwan (week ending Jan 19, 2019), influenza activity continued to increase and was above the national baseline. The predominating viruses were influenza A (96.6%) in recent four weeks, with influenza A(H1N1) and A(H3N2) viruses co-circulating, but influenza A(H1N1) was on an increasing trend.
- In Macau (Jan 23, 2019), influenza activity remained at the peak level. The proportions of ILI cases in emergency departments remained at a high level. The most frequently detected influenza virus was influenza A(H1).
- In Japan (week ending Jan 13, 2019), the influenza season started in early December last year. Influenza activity continued to increase. The average number of reported ILI cases per sentinel site increased to 38.54 in the week ending Jan 13, 2019, which was much higher than the baseline level of 1.00. The predominating virus in the past four weeks was influenza A(H1N1)pdm09.

### Sources:

Information have been extracted from the following sources when updates are available: [World Health Organization](#), [United States Centers for Disease Control and Prevention](#), [Public Health Agency of Canada](#), [Public Health England](#), [Joint European Centre for Disease Prevention and Control-World Health Organization/Flu News Europe](#), [Chinese National Influenza Center](#), [Taiwan Centers for Disease Control](#), [Health Bureau of Macao Special Administrative Region](#) and [Japan Ministry of Health, Labour and Welfare](#).