

Seasonal Influenza in Alberta 2019-2020 Season

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Seasonal Influenza in Alberta: 2019-2020 Season

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For more information about this document contact:

Analytics and Performance Reporting Branch, Alberta Health

PO Box 1360 Stn Main

Edmonton, AB T5J 2N3

Email: Health.Surveillance@gov.ab.ca

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Key Highlights

- This season there were 8,470 laboratory-confirmed influenza cases (194 cases per 100,000 population) reported in Alberta.
- The season began on week 44 (late October) and ended very early on week 14 (early April). The likely explanation for the early end is the public health intervention taken to mitigate the spread of COVID-19 as influenza testing during this time did not decrease.
- This season was characterized by three separate peaks: the first during week 52 (n=617; end of December), the second during week 5 (n=634; end of January), and the third during week 11 (n=512; early March).
- The predominant circulating strain this season was Influenza B (n=3,761 cases; 44 per cent of total cases). However, a smaller wave of Influenza A (H1N1) occurred later in the season, specifically contributing to the third peak.
- Calgary Zone had the highest number of cases reported (n=3,060), and North Zone had the highest rate of cases (281 cases per 100,000 population).
- The highest number of laboratory-confirmed influenza cases was among the 20-49 year age group (n=3,177), and the highest rate of laboratory-confirmed influenza cases was among the 0-4 year age group (405 cases per 100,000 population).
- There were 1,605 hospitalizations, 161 ICU admissions, and 41 deaths (in hospital) among people with laboratory-confirmed influenza during the season.
- A total of 129 influenza outbreaks were reported in Alberta. Most of the outbreaks were due to Influenza A (H3N2) (n=55), and occurred in supportive living/home living sites (n=56).
- There were 1,438,866 influenza vaccine doses administered this season, and vaccine coverage in Alberta was 33 per cent (an increase of 2 percentage points over the last season). The per cent of doses administered was: 61 per cent by pharmacists, 22 per cent by Public Health, and 17 per cent by other providers.
- Additional information is available on Alberta Health's [Interactive Health Data Application \(IHDA\)](#) and in [Supplementary Alberta Health Reports](#).

Influenza Activity

This season there were 8,470 laboratory-confirmed influenza cases (194 cases per 100,000 population) reported in Alberta (Figure 1 & Table 1). Last season, there were 7,712 laboratory-confirmed influenza cases (179 cases per 100,000 population) reported (Table 1). The 2019-2020 season started at week 44 and reached its peak on week 5. Overall, this season is second only to 2017-2018 for both the total number of influenza cases and the rate of influenza cases per capita since 2009-2010. In 2017-2018 there were 9,115 lab-confirmed cases.

The predominant circulating strain was Influenza B which accounted for 44 per cent (n=3,761) of laboratory-confirmed influenza cases reported (Figure 1). The remaining cases were Influenza A (H3N2) (n=1,303; 15 per cent of cases), Influenza A (Untyped) (n=1,640; 19 per cent of cases) and Influenza A (H1N1) (n=1,766; 21 per cent of cases). There was above-average Influenza B activity this season; however, there was also a late wave of Influenza A (H1N1). This began in mid-December 2019 and peaked during the third overall peak (week 11).

This season was short compared to previous seasons: ending at week 14 compared with week 29 in 2018-2019 (Figure 2). One possible explanation for the abrupt end to the season is the detection of the COVID-19 virus in Alberta in March. Recommendations and control measures such as mandatory isolation after international travel, school and non-essential service closures, and social and physical distancing were implemented due to the pandemic, possibly leading to fewer opportunities for influenza to spread through the population.

Calgary Zone had the highest number of laboratory-confirmed influenza cases (n=3,060) while the North Zone had the highest rate of laboratory-confirmed influenza cases (281 cases per 100,000 population) (Table 1, Figures 3-4). Of all the zones, South Zone saw the largest spike in influenza rates compared to the past season (rising nearly 100 cases per 100,000 population between the seasons). Similar to previous seasons, the Calgary Zone peaked earlier in the season (week 51) compared with other zones (except for Central Zone, which also peaked in the same week this season) (Figure 3). The Edmonton Zone peaked in week 4, the North Zone peaked in week 4, and the South Zone peaked in week 5. The first two peaks of the season were dominated by cases in the Calgary Zone, while the third late peak was most concentrated in the Edmonton Zone.

Compared to the previous season, the North Zone was the only zone to see a decline in its count or rate of lab-confirmed influenza (Figure 5a-5b). Of the four zones showing an increase, the South zone saw the largest increase in its rate of lab-confirmed influenza (Figure 5b). The 2019-2020 season appears to continue the general trend observed since 2010-2011 of a gradual increase in the number of lab-confirmed influenza cases in the province.

Table 1. Number and rate (per 100,000 population) of laboratory-confirmed influenza cases by Alberta Health Services zone and season

| Season | Zone | | | | | | | | | | | |
|-----------|---------|------|---------|------|---------|------|----------|------|-------|------|-------|------|
| | Alberta | | Calgary | | Central | | Edmonton | | North | | South | |
| | Count | Rate | Count | Rate | Count | Rate | Count | Rate | Count | Rate | Count | Rate |
| 2009-2010 | 4,959 | 135 | 1,704 | 125 | 803 | 180 | 1,375 | 119 | 635 | 146 | 442 | 156 |
| 2010-2011 | 991 | 27 | 249 | 18 | 168 | 37 | 330 | 28 | 190 | 43 | 54 | 19 |
| 2011-2012 | 1,219 | 32 | 293 | 21 | 152 | 34 | 450 | 38 | 163 | 36 | 161 | 56 |
| 2012-2013 | 2,888 | 75 | 781 | 54 | 373 | 82 | 1,091 | 90 | 327 | 71 | 316 | 108 |
| 2013-2014 | 3,911 | 98 | 997 | 67 | 620 | 134 | 1,365 | 109 | 691 | 147 | 238 | 81 |
| 2014-2015 | 4,853 | 119 | 1,612 | 104 | 664 | 142 | 1,563 | 121 | 658 | 138 | 354 | 119 |
| 2015-2016 | 5,308 | 128 | 1,699 | 108 | 772 | 164 | 1,567 | 119 | 845 | 176 | 425 | 142 |
| 2016-2017 | 4,578 | 109 | 1,827 | 114 | 645 | 137 | 1,272 | 95 | 471 | 99 | 362 | 120 |
| 2017-2018 | 9,115 | 215 | 3,382 | 208 | 1,401 | 296 | 2,319 | 169 | 1,317 | 278 | 634 | 209 |
| 2018-2019 | 7,712 | 179 | 2,976 | 180 | 947 | 200 | 1,735 | 124 | 1,407 | 295 | 546 | 178 |
| 2019-2020 | 8,470 | 194 | 3,060 | 182 | 1,107 | 233 | 2,051 | 144 | 1,349 | 281 | 838 | 271 |

Note:

Unknown zone included in Alberta total

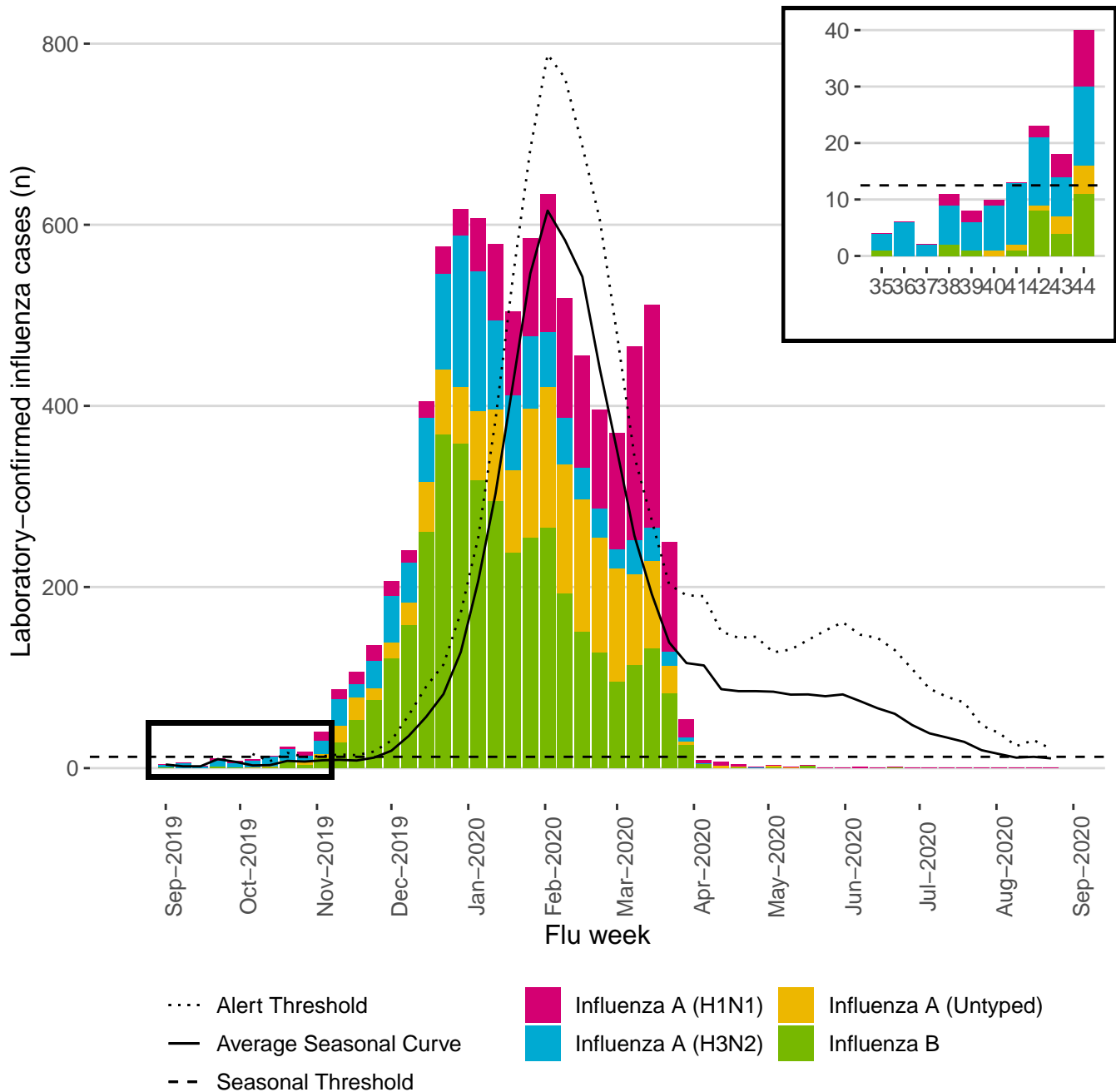


Figure 1. Laboratory-confirmed influenza cases by week, 2019-2020. The average seasonal threshold is the average number of cases per week at interseasonal levels, and can be used to define the season start and end. The seasonal curve is the average number of cases each week based on aligning peaks from the previous five seasons. The seasonal curve is shifted to align with the peak week of the current season. The alert threshold is the upper 90% confidence limit of the seasonal curve, which identifies unusually high numbers of cases, if exceeded. More information is available in the [Appendix](#).

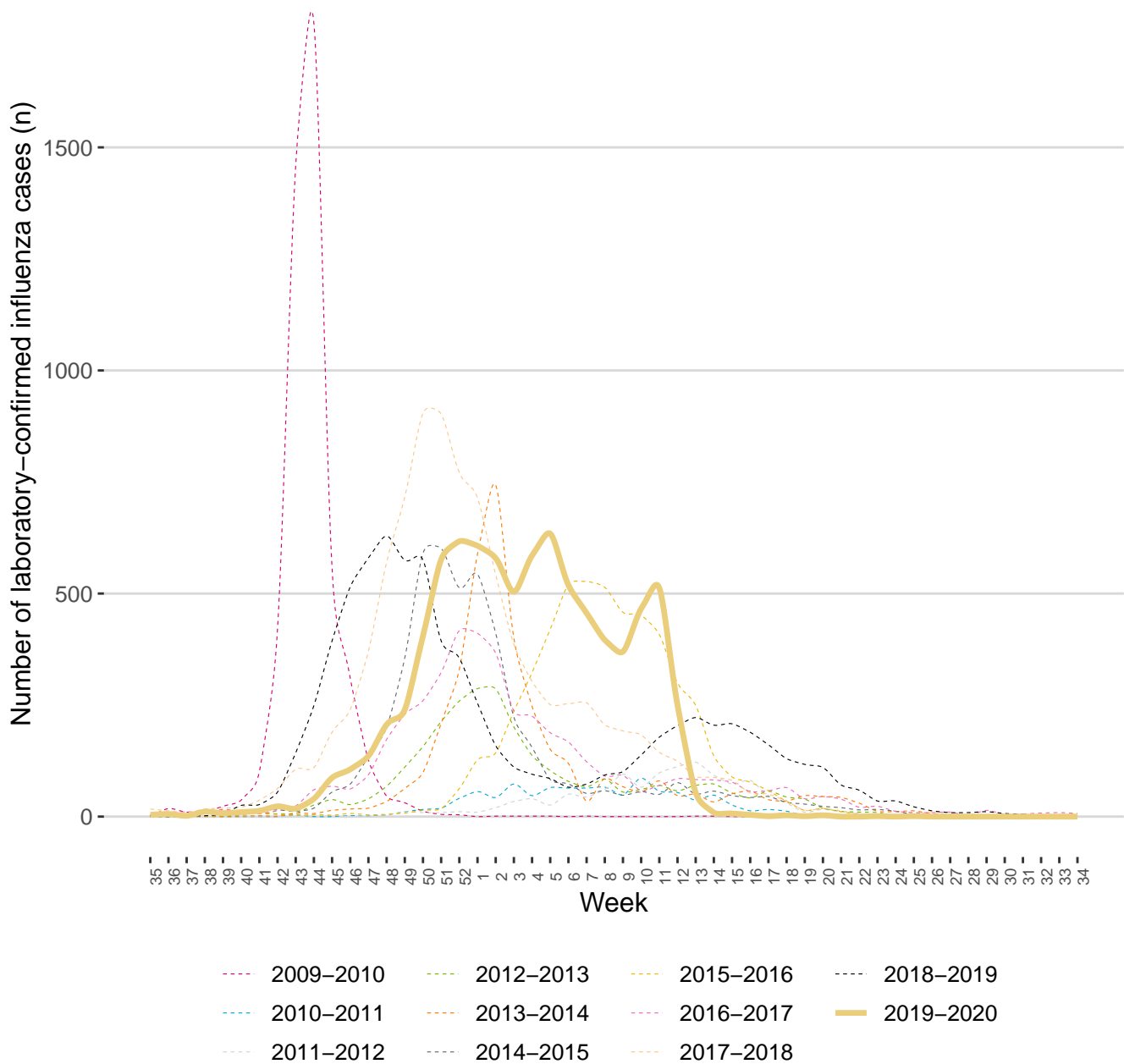


Figure 2. Laboratory-confirmed influenza cases by week and season

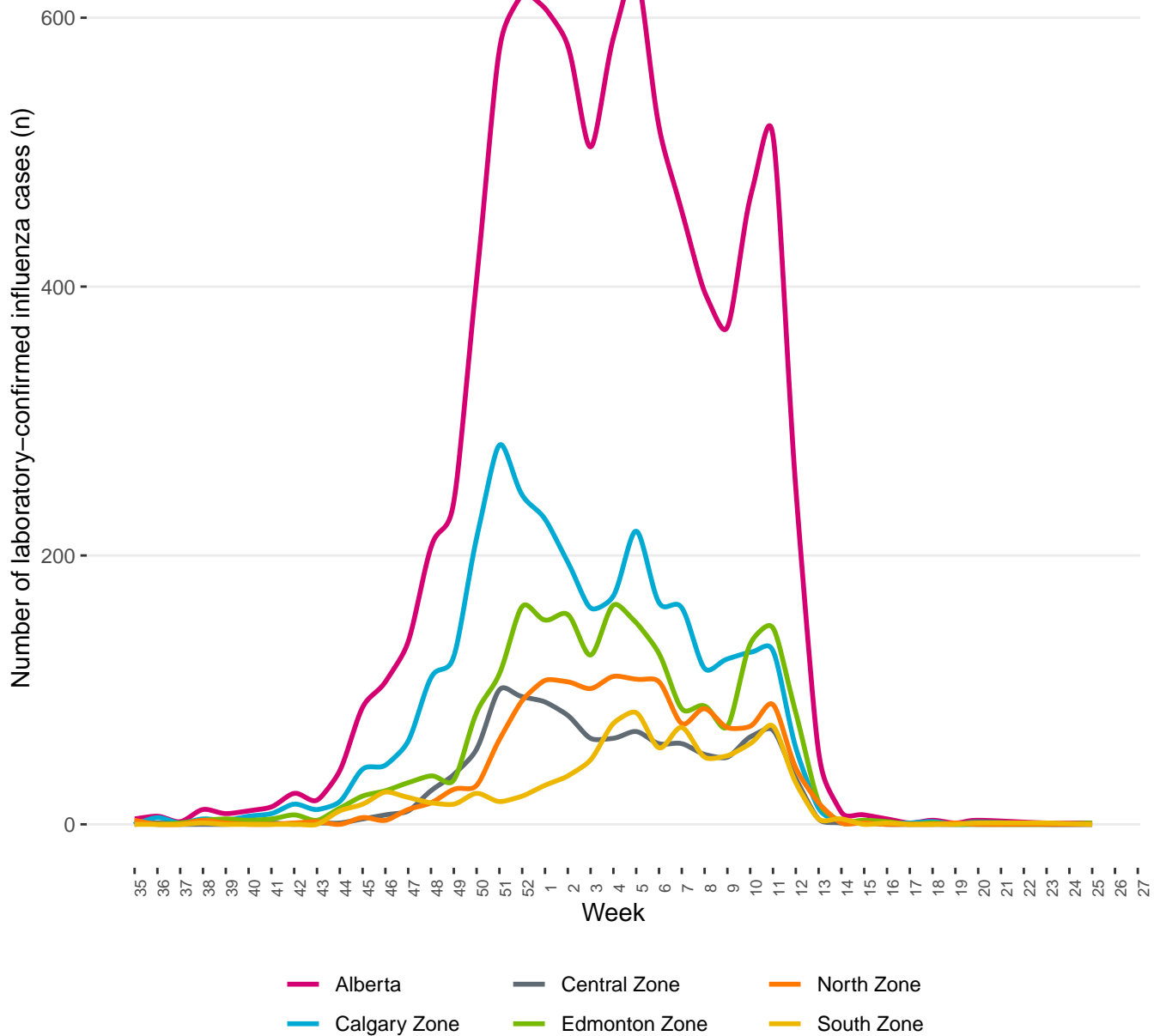
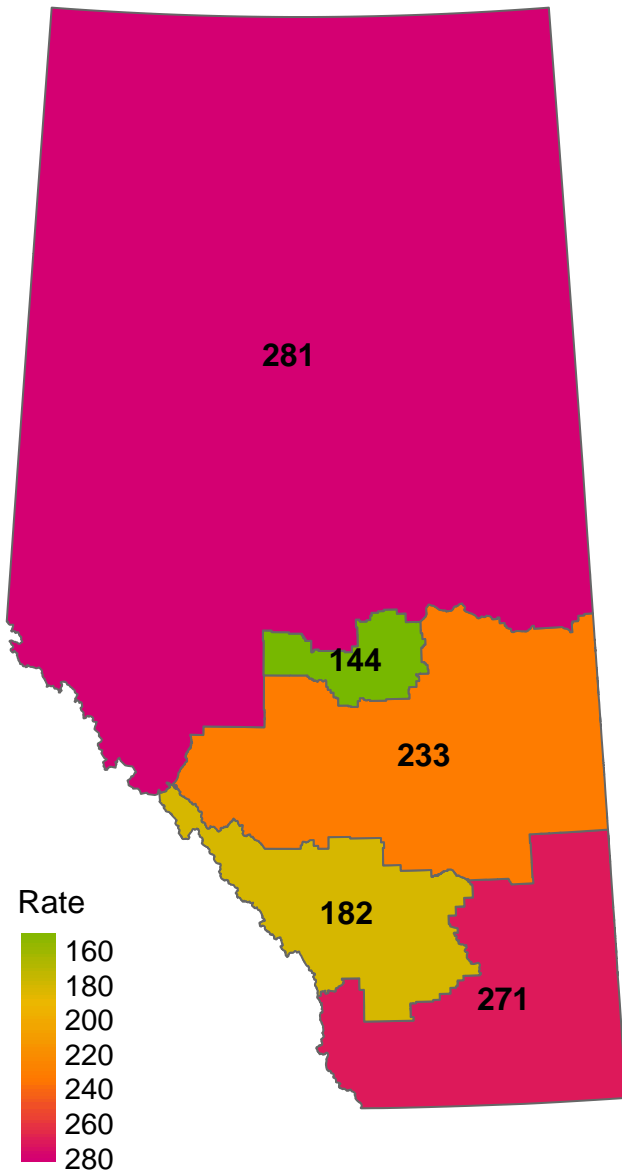


Figure 3. Numbers of laboratory-confirmed influenza cases by week and Alberta Health Services Zone, 2019-2020

(b)



(c)

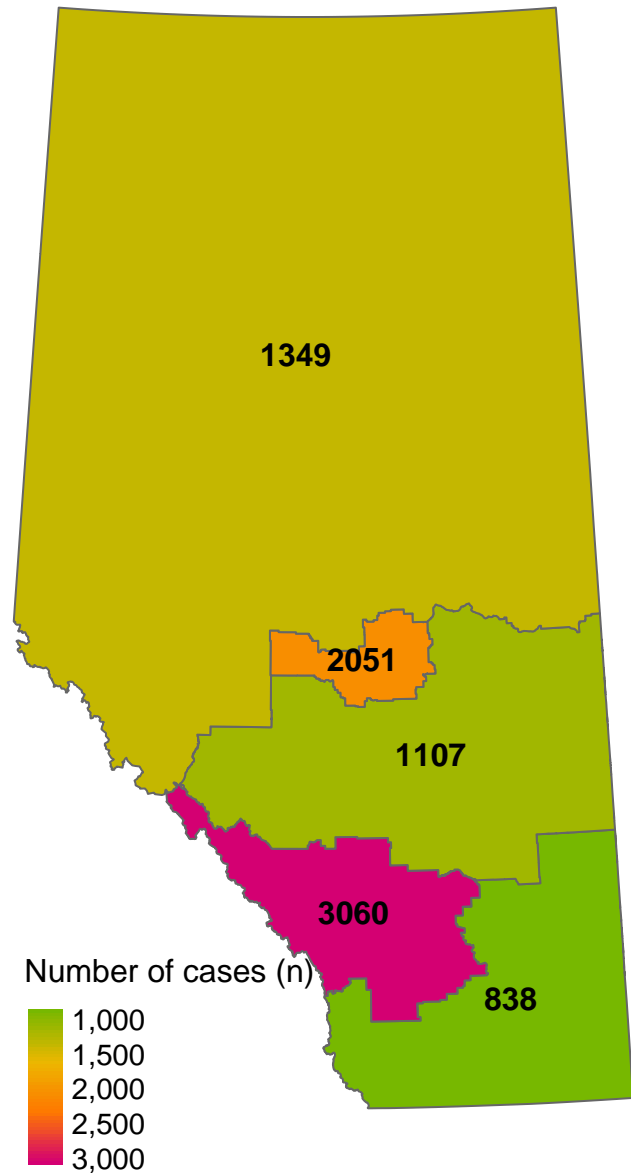


Figure 4. (a) Alberta Health Services Zone legend, (b) rate (per 100,000 population) and (c) numbers of laboratory-confirmed influenza cases by Alberta Health Services Zone

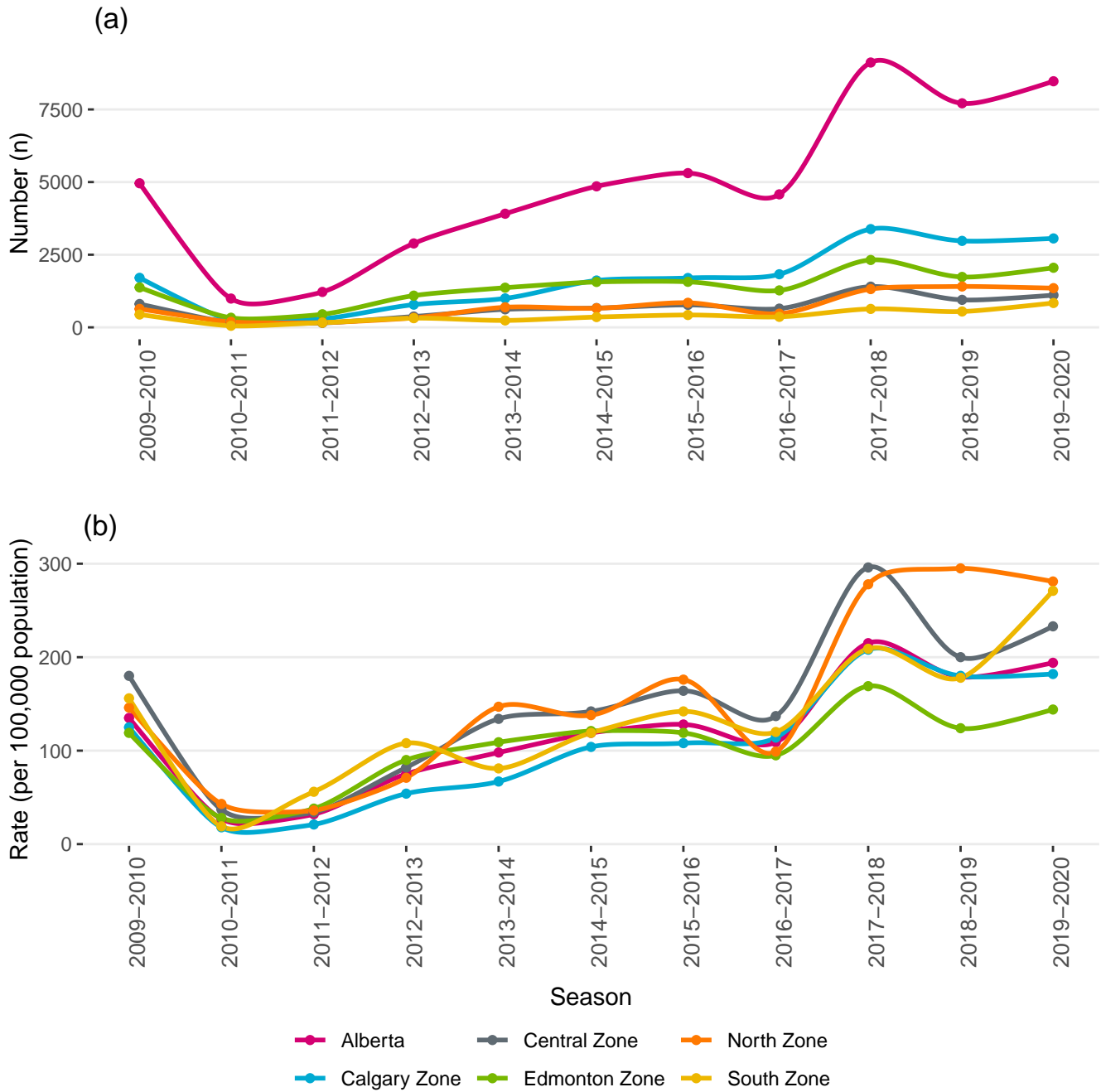


Figure 5. (a) Number and (a) rate (per 100,000 population) of laboratory-confirmed influenza cases by Alberta Health Services Zone and season

Age

This season, the highest number of laboratory-confirmed influenza cases was among the 20-49 year age group (n=3,177), and the highest rate of laboratory-confirmed influenza cases was among the 0-4 year age group (405 cases per 100,000 population) (Table 2a, Figures 6-7).

By age group, those aged 5-9 years had the highest rate of laboratory-confirmed Influenza B (Table 2b). Influenza B was the predominant strain in cases aged less than 50 years old. Among those aged 50-64, Influenza A (H1N1) was the dominant strain while Influenza A (H3N2) was the dominant strain among those aged 65+.

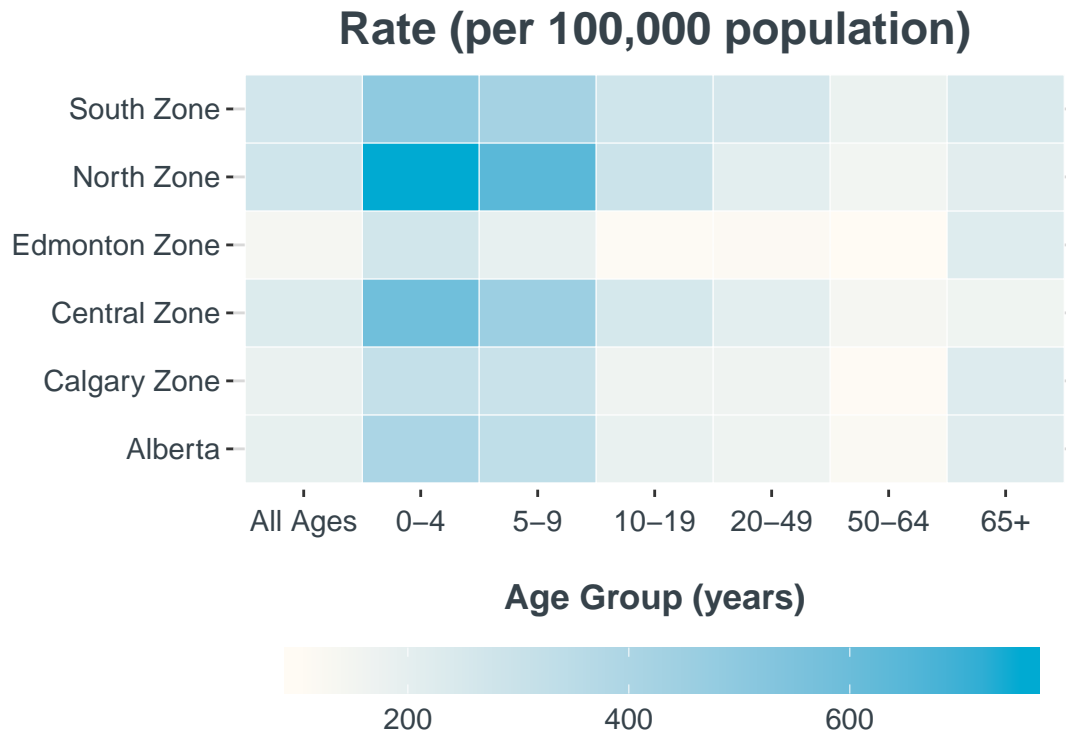
Table 2a. Number and rate (per 100,000 population) of laboratory-confirmed influenza cases by age group and season

| Season | Age Group | | | | | | | | | | | |
|-----------|-----------|------|-------|------|-------|------|-------|------|-------|------|-------|------|
| | 0-4 | | 5-9 | | 10-19 | | 20-49 | | 50-64 | | 65+ | |
| | Count | Rate | Count | Rate | Count | Rate | Count | Rate | Count | Rate | Count | Rate |
| 2009-2010 | 535 | 226 | 634 | 297 | 1,227 | 258 | 1,881 | 110 | 526 | 80 | 151 | 39 |
| 2010-2011 | 249 | 102 | 68 | 31 | 84 | 18 | 319 | 19 | 95 | 14 | 176 | 45 |
| 2011-2012 | 249 | 99 | 92 | 42 | 81 | 17 | 321 | 19 | 142 | 20 | 334 | 82 |
| 2012-2013 | 589 | 229 | 243 | 105 | 217 | 46 | 772 | 44 | 401 | 55 | 666 | 156 |
| 2013-2014 | 677 | 258 | 194 | 79 | 224 | 47 | 1,557 | 87 | 765 | 101 | 494 | 111 |
| 2014-2015 | 527 | 197 | 318 | 125 | 342 | 71 | 1,040 | 56 | 593 | 76 | 2,033 | 438 |
| 2015-2016 | 839 | 309 | 481 | 182 | 412 | 85 | 1,924 | 104 | 942 | 119 | 709 | 147 |
| 2016-2017 | 393 | 143 | 214 | 78 | 357 | 73 | 1,115 | 60 | 714 | 90 | 1,782 | 355 |
| 2017-2018 | 754 | 275 | 571 | 207 | 660 | 132 | 2,363 | 127 | 1,524 | 190 | 3,241 | 617 |
| 2018-2019 | 1,356 | 495 | 1,028 | 372 | 623 | 122 | 2,294 | 122 | 1,107 | 137 | 1,303 | 237 |
| 2019-2020 | 1,110 | 405 | 935 | 337 | 976 | 187 | 3,177 | 167 | 989 | 122 | 1,283 | 221 |

Table 2b. Number and rate (per 100,000 population) of laboratory-confirmed influenza cases by age group and strain, current season

| Strain | Age Group | | | | | | | | | | | |
|-----------------------|-----------|------|-------|------|-------|------|-------|------|-------|------|-------|------|
| | 0-4 | | 5-9 | | 10-19 | | 20-49 | | 50-64 | | 65+ | |
| | Count | Rate | Count | Rate | Count | Rate | Count | Rate | Count | Rate | Count | Rate |
| Influenza A (H1N1) | 248 | 90 | 121 | 44 | 73 | 14 | 676 | 35 | 336 | 41 | 312 | 54 |
| Influenza A (H3N2) | 131 | 48 | 70 | 25 | 107 | 20 | 288 | 15 | 179 | 22 | 528 | 91 |
| Influenza A (Untyped) | 173 | 63 | 110 | 40 | 142 | 27 | 693 | 36 | 273 | 34 | 249 | 43 |
| Influenza B | 558 | 203 | 634 | 229 | 654 | 125 | 1,520 | 80 | 201 | 25 | 194 | 33 |

(a)



(b)

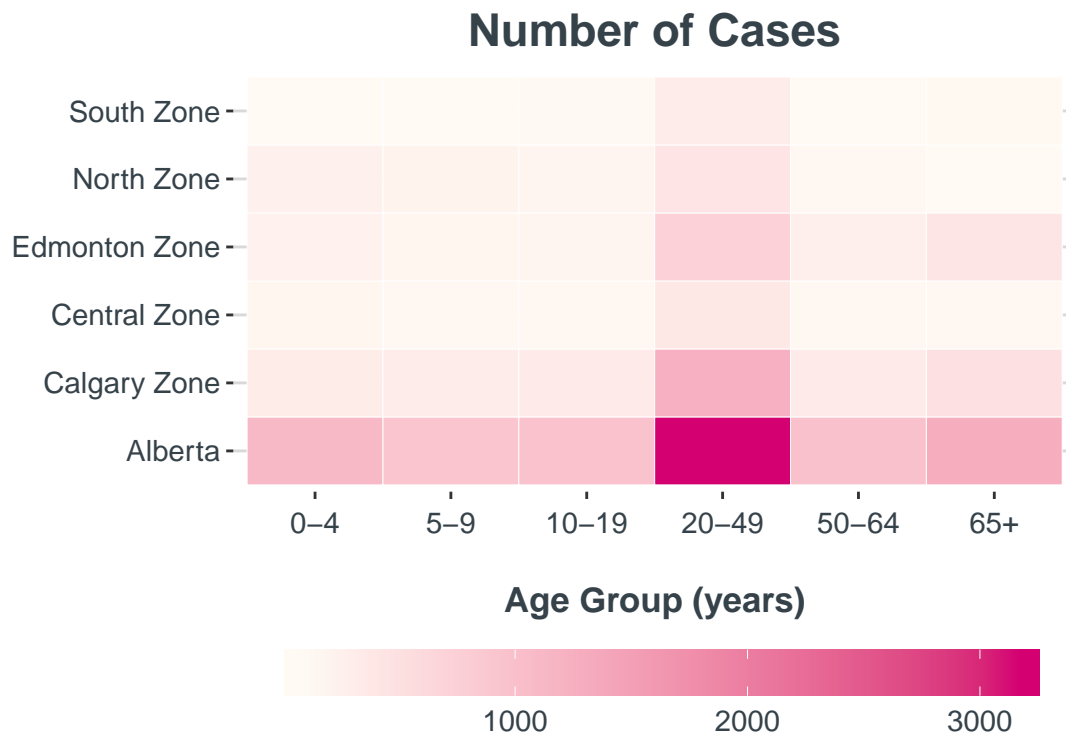


Figure 6. (a) Rate (per 100,000 population) and (b) number of laboratory-confirmed influenza cases by Alberta Health Services zone and age group, 2019-2020

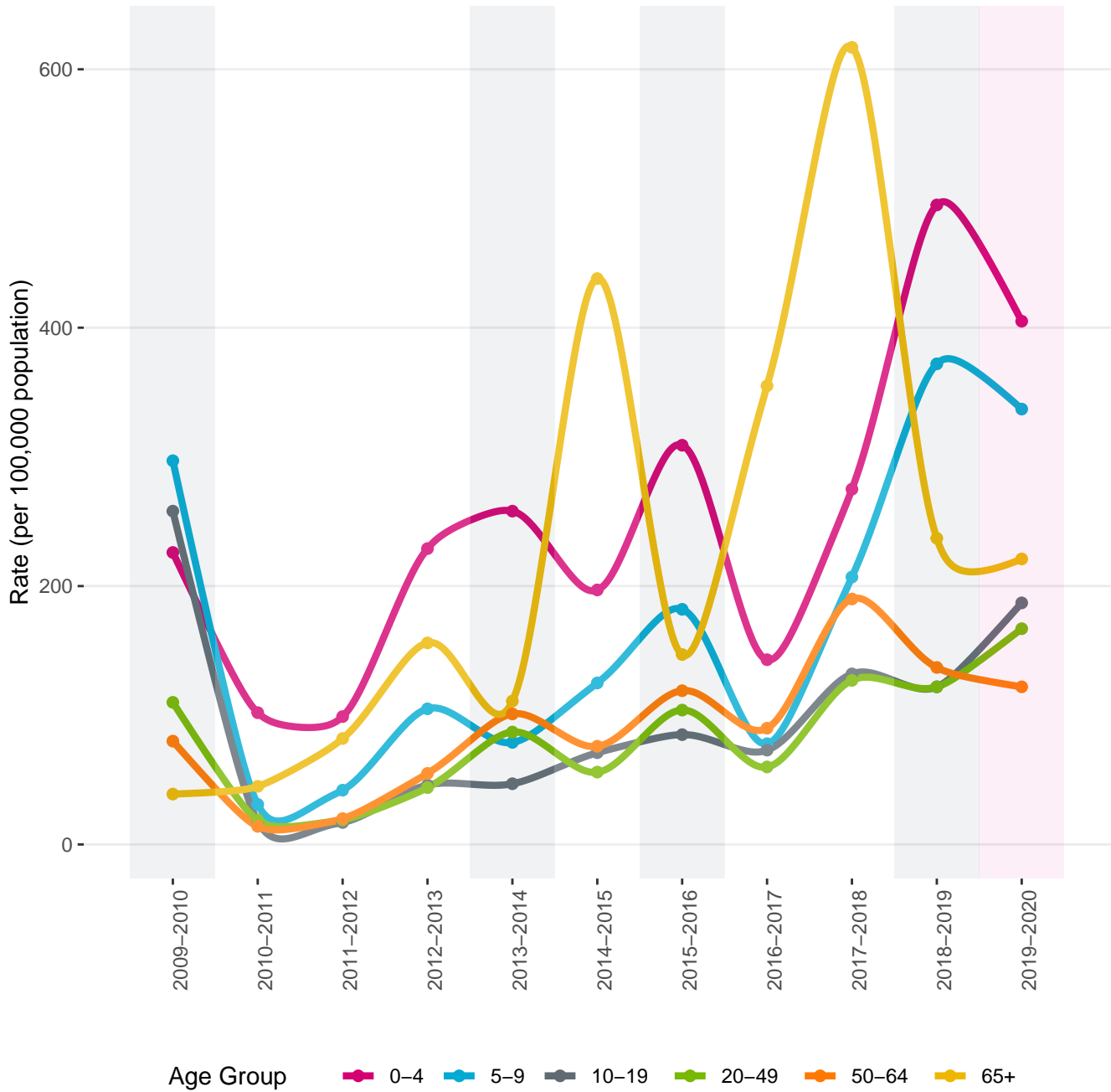


Figure 7. Rate (per 100,000 population) of laboratory-confirmed influenza cases by age group and season. The shaded grey boxes indicate seasons where Influenza A (H1N1) was the predominant circulating strain. The shaded pink boxes indicate seasons where Influenza B was the predominant circulating strain.

Antiviral Dispensation and Health Services Utilization

This season community pharmacies dispensed 9,860 influenza antivirals (Tamiflu or Relenza) (Figure 8). This represents a 10.5 per cent drop from the previous season when there were 11,018 antivirals dispensed. There were 18,454 visits to the emergency department and 26,014 visits to general practitioners due to influenza-like illness (ILI) (Figure 8). Both emergency department (ED) and general practitioner (GP) visits due to ILI this season were higher than last season (15,430 and 23,851, respectively).

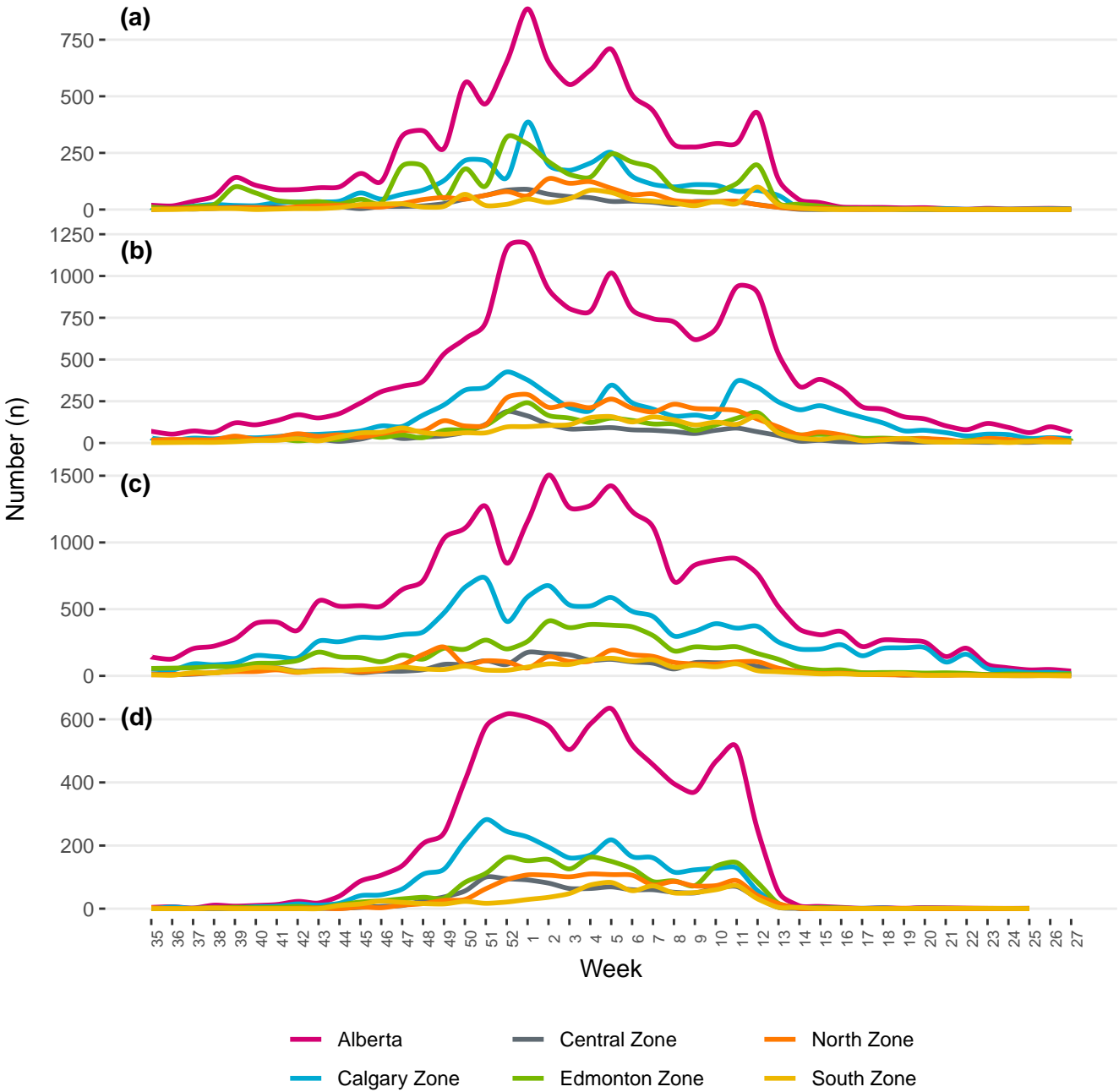


Figure 8. (a) Dispensation events by community pharmacists for influenza antiviral medication, (b) emergency department (ED) visits for influenza-like illness (ILI), (c) general practitioner (GP) office visits for ILI, and (d) laboratory-confirmed influenza cases by Alberta Health Services zone and week, 2019-2020

Severe Outcomes

This season there were 1,605 hospitalizations among laboratory-confirmed influenza cases (36.7 hospitalizations per 100,000 population) (Table 3 and Figures 9-10). For every 100 cases of laboratory-confirmed influenza, there were 18.9 hospitalizations which was lower than other seasons (Table 3 and Figure 9). Influenza B led to a high rate of hospitalizations among those aged 0-4 years (37.9 hospitalizations per 100,000 population) and Influenza A (H3N2) led to a high rate of hospitalizations among those aged 65+ years (55 hospitalizations per 100,000 population) (Figure 10). Influenza A (H1N1) had a higher hospitalization rate among those aged 0-4 and 65+ years (24.1 and 30.5 hospitalizations per 100,000 population, respectively).

There were 161 ICU admissions among laboratory-confirmed influenza cases this season (3.7 ICU admissions per 100,000 population) (Table 3 and Figures 9-10). The population rate (per 100,000 population) and case rate (per 100 laboratory-confirmed influenza cases) of ICU admissions were similar to the previous season (Table 3 and Figure 9). The rate of ICU admissions was highest among those aged 0-4 years (7.3 per 100,000 population), 5-9 years (5.4 per 100,000 population), and 65+ years (7.8 per 100,000 population)(Figure 10). There were 41 deaths (in hospital) during the season: one among those 10-19 years, nine among those 20-49 years, three among those 50-64 years, and twenty eight among those 65+ years. There were no deaths in hospital reported among those aged nine and younger this season. Overall, there were 11 fewer deaths this season when compared to last season. This was true for those aged 50-64 (twelve fewer deaths) and 65+ (three fewer deaths) years old. There was an increase in deaths compared to last season among those aged 10-19 and 20-14 years old (one and three additional deaths, respectively).

Table 3. Number, population rate (per 100,000 population), and case rate (per 100 laboratory-confirmed influenza cases) of hospitalizations, ICU admissions and deaths (in hospital) among those with laboratory-confirmed influenza

| Season | Severe Outcome | | | | | | | | |
|-----------|------------------|-----------|-----------|----------------|-----------|-----------|----------------------|-----------|-----------|
| | Hospitalizations | | | ICU Admissions | | | Deaths (in hospital) | | |
| | Count | Pop. Rate | Case Rate | Count | Pop. Rate | Case Rate | Count | Pop. Rate | Case Rate |
| 2009-2010 | 1,175 | 31.9 | 23.7 | 213 | 5.8 | 4.3 | 18 | 0.5 | 0.4 |
| 2010-2011 | 416 | 11.1 | 42.0 | 76 | 2.0 | 7.7 | 31 | 0.8 | 3.1 |
| 2011-2012 | 426 | 11.2 | 34.9 | 46 | 1.2 | 3.8 | 37 | 1.0 | 3.0 |
| 2012-2013 | 973 | 25.1 | 33.7 | 150 | 3.9 | 5.2 | 45 | 1.2 | 1.6 |
| 2013-2014 | 1,222 | 30.7 | 31.2 | 222 | 5.6 | 5.7 | 39 | 1.0 | 1.0 |
| 2014-2015 | 1,938 | 47.5 | 39.9 | 168 | 4.1 | 3.5 | 114 | 2.8 | 2.3 |
| 2015-2016 | 1,760 | 42.5 | 33.2 | 274 | 6.6 | 5.2 | 63 | 1.5 | 1.2 |
| 2016-2017 | 1,721 | 41.0 | 37.6 | 119 | 2.8 | 2.6 | 65 | 1.5 | 1.4 |
| 2017-2018 | 3,097 | 73.0 | 34.0 | 249 | 5.9 | 2.7 | 93 | 2.2 | 1.0 |
| 2018-2019 | 1,985 | 46.2 | 25.7 | 228 | 5.3 | 3.0 | 53 | 1.2 | 0.7 |
| 2019-2020 | 1,605 | 36.7 | 18.9 | 161 | 3.7 | 1.9 | 41 | 0.9 | 0.5 |

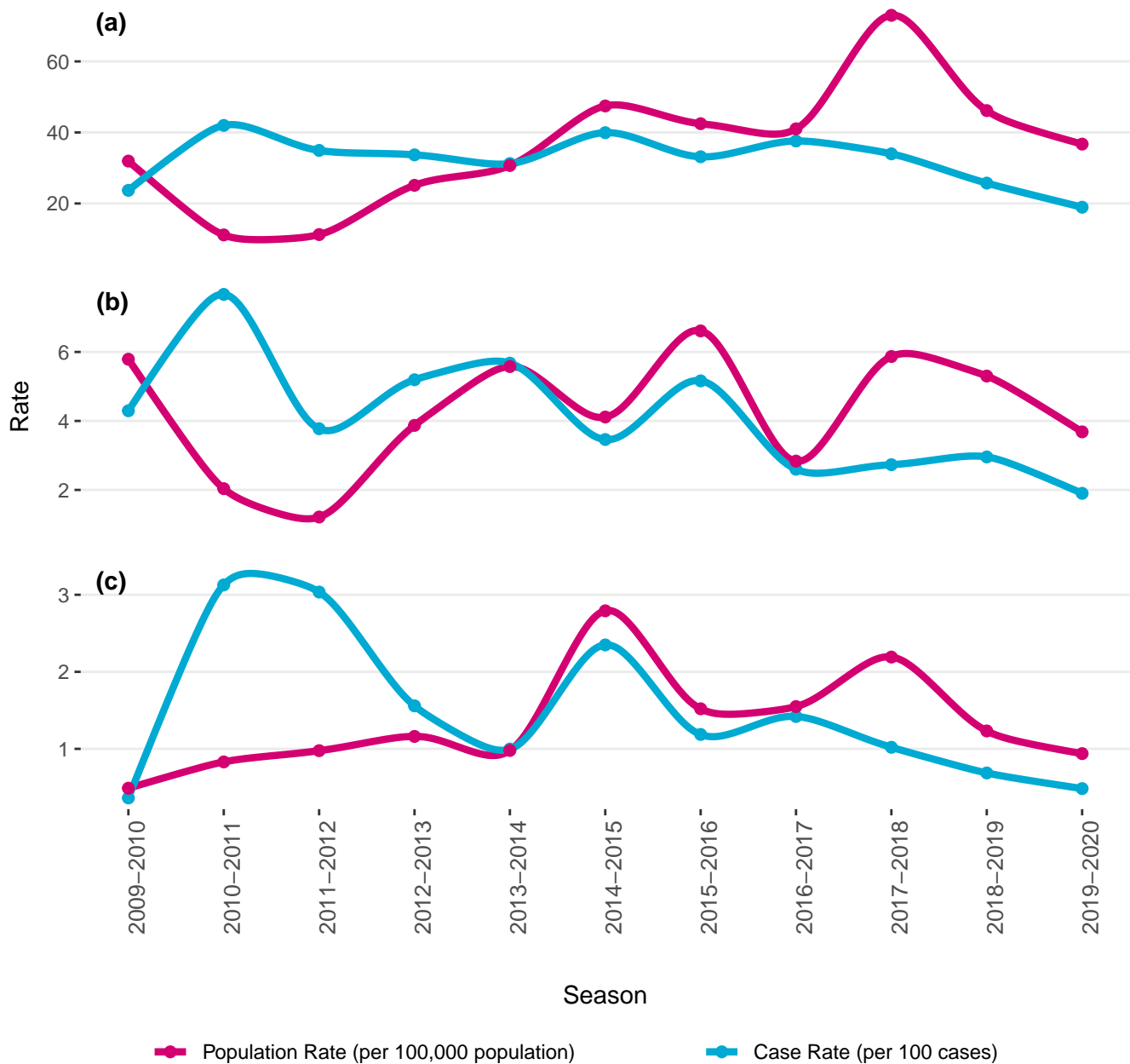


Figure 9. Population rate (per 100,000 population) and case rate (per 100 laboratory-confirmed influenza cases) of (a) hospitalization, (b) ICU admissions, and (c) deaths (in hospital) of those with laboratory-confirmed influenza by season

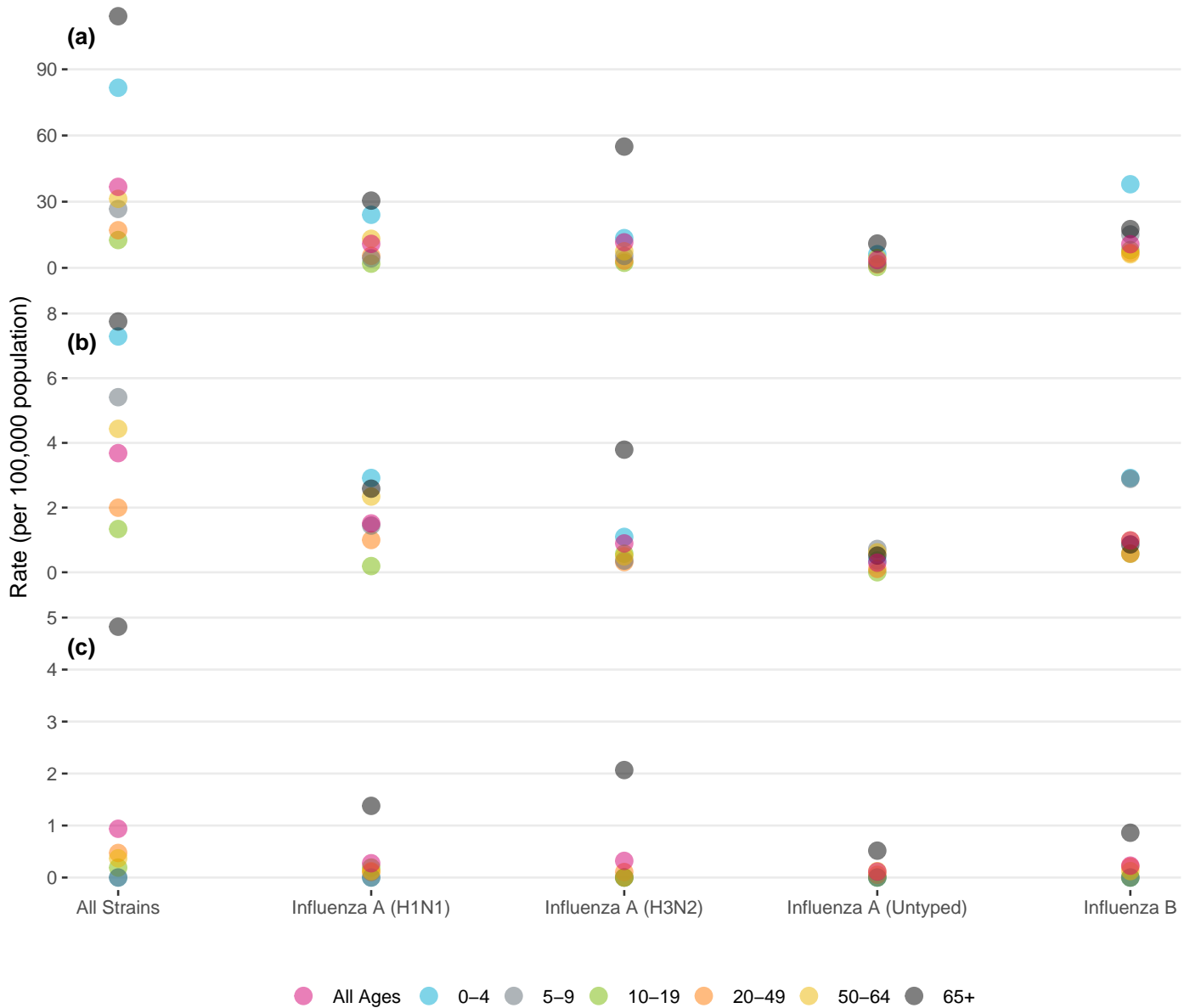


Figure 10. Rate (per 100,000 population) of (a) hospitalizations, (b) ICU admissions, and (c) deaths (in hospital) among those with laboratory-confirmed influenza by age group and strain type, 2019-2020

Outbreaks

During the 2019-2020 season there were 129 laboratory-confirmed influenza outbreaks (Table 4, Figure 11). There were 55 outbreaks due to Influenza A (H3N2), 34 outbreaks due to Influenza A (H1N1), 14 outbreaks due to Influenza A (Untyped), 22 outbreaks due to Influenza B, and 4 mixed influenza outbreaks. Influenza A (H3N2) accounted for 43 per cent of outbreaks this season.

Although it was predominantly an Influenza B season, most of the outbreaks were due to Influenza A (H3N2). These occurred predominantly in supportive living/home living sites and long-term care facilities. These outbreaks characterized the season, especially early on: by week 11 there were no more reported outbreaks due to this strain. Most of the outbreaks later in the season were due to Influenza A (H1N1). This coincides with the late wave of this strain that was observed. Again, these outbreaks were mostly confined to supportive living/home living sites and long-term care facilities. While there was not a large number of outbreaks attributed to Influenza B, they appear to have been evenly distributed throughout this season. These outbreaks occurred in a variety of settings: four in schools, one in a child care facility, three in correctional facilities, three in long-term care facilities, and nine in supportive living/home living sites.

The highest number of outbreaks occurred in the Calgary Zone (n=47), which accounted for 36 per cent of outbreaks in Alberta. Among all zones, the Central Zone was the only one where a single strain (Influenza A (H3N2)) dominated the outbreak count (Figure 12). In the Edmonton Zone, Influenza B was associated with most of the outbreaks whereas Influenza A (H1N1) was predominant in the North Zone. The other two zones had a more even distribution of outbreaks by Influenza A (H1N1), Influenza A (H3N2), and Influenza B. In each zone, supportive living/home living sites and long-term care facilities combined were the main sites in which influenza outbreaks occurred (Figure 13).

This season there was a slight increase in the number of confirmed outbreaks compared to the 2018-2019 season, although outbreak counts were down from the two seasons prior. This rise from the previous season maybe be due to an increase in outbreaks attributed to Influenza B (Figure 14). This season there was a higher proportion of outbreaks in supportive living/home living sites compared to 2018-2019 (Figure 15). Conversely, there was a smaller proportion of total outbreaks in schools and child care facilities this season.

Table 4. Influenza outbreaks by Alberta Health Services Zone and season

| Season | Zone | | | | | | | | | | | |
|-----------|---------|---------|---------|---------|---------|---------|----------|---------|-------|---------|-------|---------|
| | Alberta | | Calgary | | Central | | Edmonton | | North | | South | |
| | Count | Percent | Count | Percent | Count | Percent | Count | Percent | Count | Percent | Count | Percent |
| 2009-2010 | 48 | 100 | 8 | 17 | 8 | 17 | 17 | 35 | 12 | 25 | 3 | 6 |
| 2010-2011 | 43 | 100 | 12 | 28 | 9 | 21 | 17 | 40 | 5 | 12 | 0 | 0 |
| 2011-2012 | 69 | 100 | 25 | 36 | 5 | 7 | 21 | 30 | 10 | 14 | 8 | 12 |
| 2012-2013 | 100 | 100 | 25 | 25 | 8 | 8 | 42 | 42 | 13 | 13 | 12 | 12 |
| 2013-2014 | 52 | 100 | 15 | 29 | 5 | 10 | 22 | 42 | 7 | 13 | 3 | 6 |
| 2014-2015 | 246 | 100 | 65 | 26 | 36 | 15 | 81 | 33 | 35 | 14 | 29 | 12 |
| 2015-2016 | 58 | 100 | 18 | 31 | 6 | 10 | 26 | 45 | 2 | 3 | 6 | 10 |
| 2016-2017 | 193 | 100 | 72 | 37 | 22 | 11 | 64 | 33 | 15 | 8 | 20 | 10 |
| 2017-2018 | 278 | 100 | 101 | 36 | 33 | 12 | 87 | 31 | 31 | 11 | 26 | 9 |
| 2018-2019 | 120 | 100 | 50 | 42 | 11 | 9 | 26 | 22 | 19 | 16 | 14 | 12 |
| 2019-2020 | 129 | 100 | 47 | 36 | 13 | 10 | 41 | 32 | 12 | 9 | 16 | 12 |

Note:

Unknown zone included in Alberta total

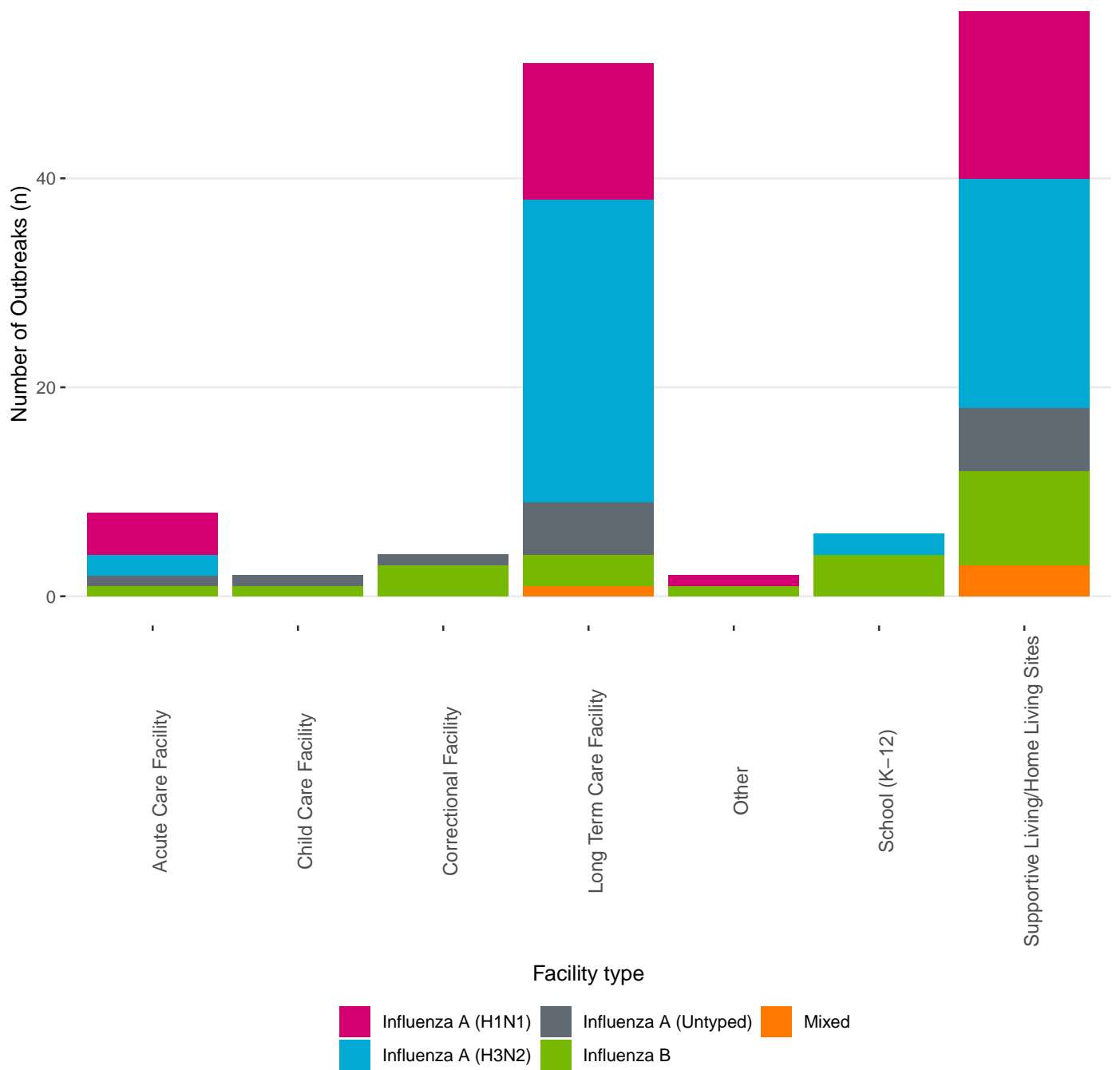


Figure 11. Number of laboratory-confirmed influenza outbreaks by facility type and strain type, 2019-2020

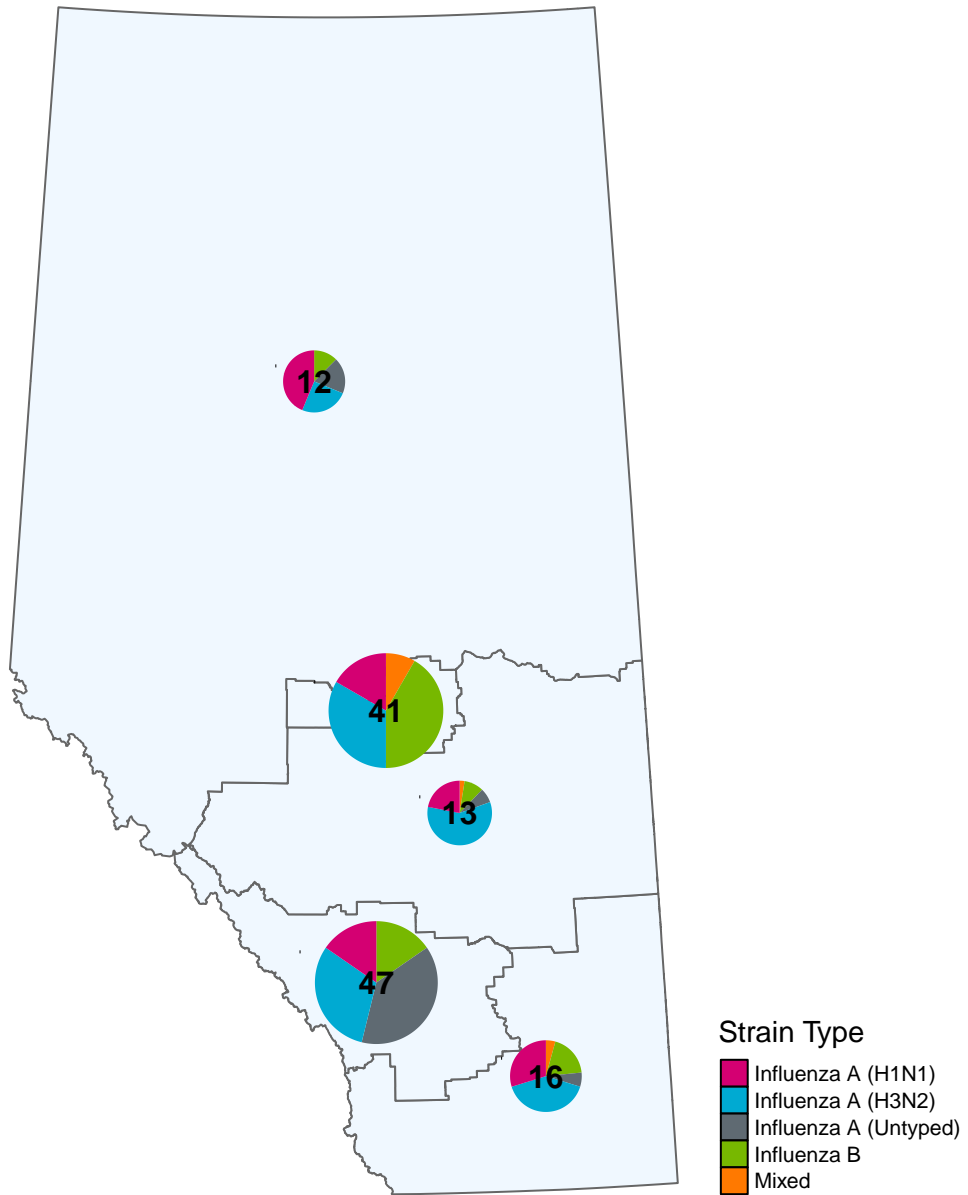


Figure 12. Map of the number of influenza outbreaks by Alberta Health Services Zone and strain type, 2019-2020

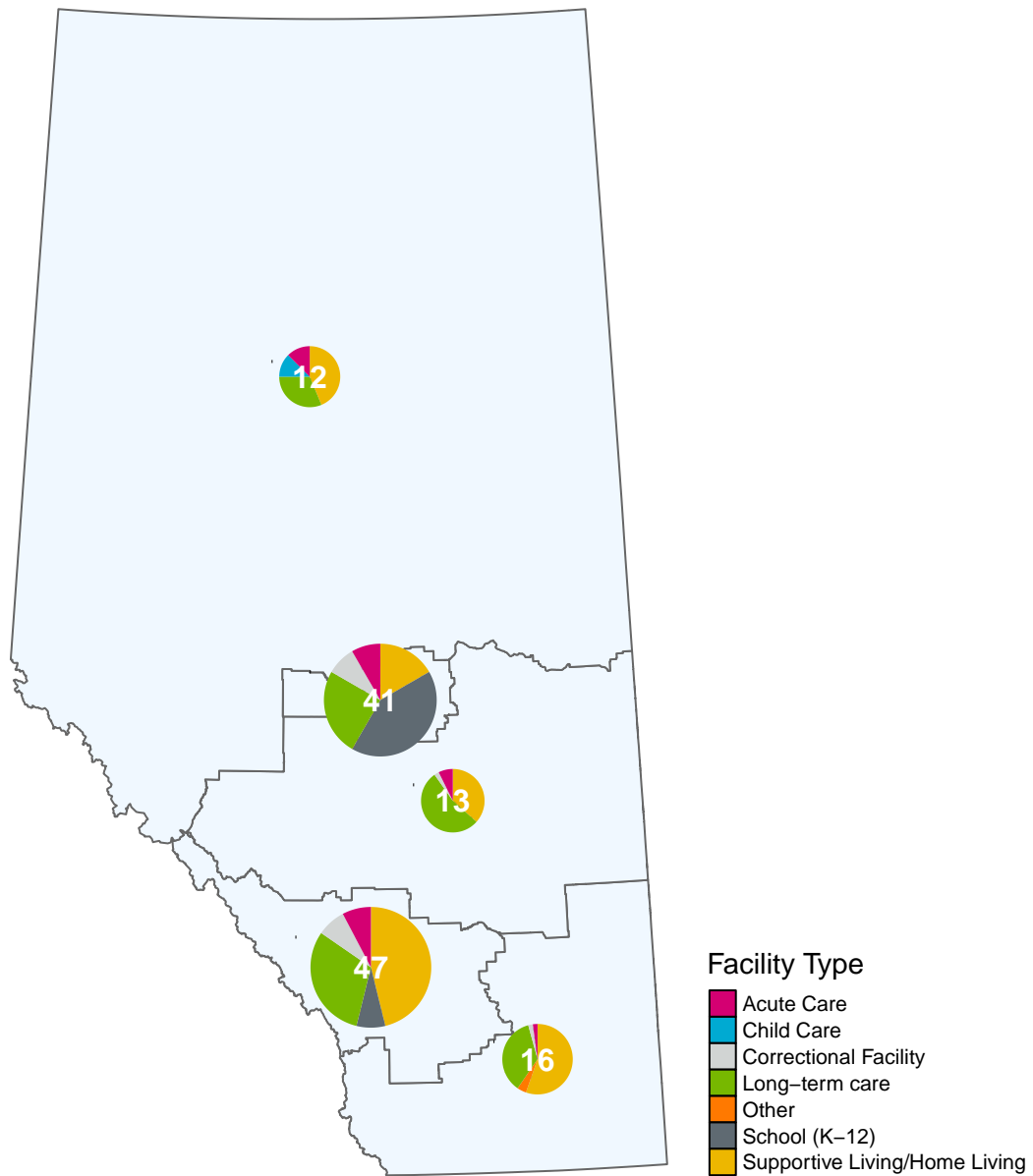


Figure 13. Map of the number of influenza outbreaks by Alberta Health Services Zone and facility type, 2019-2020

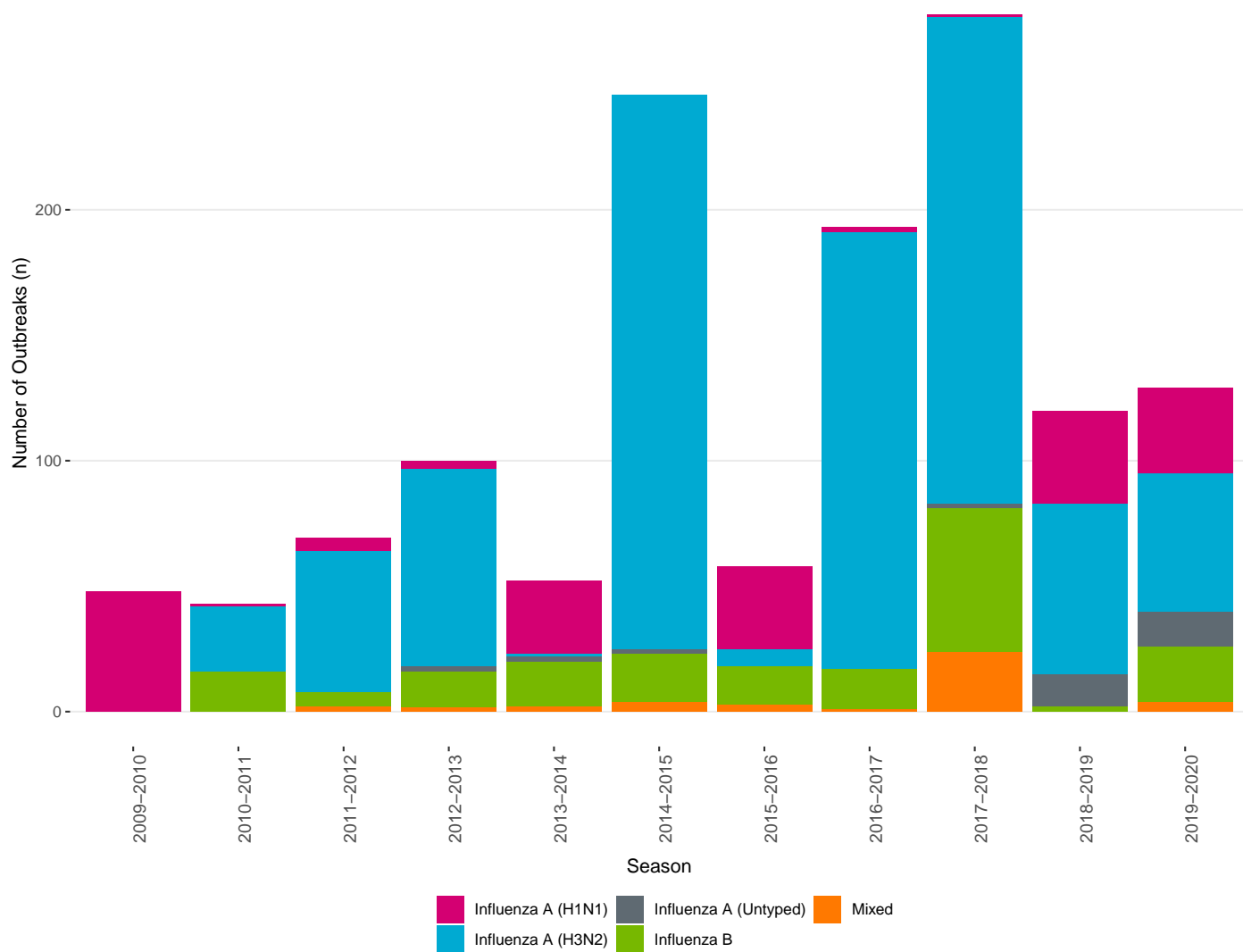


Figure 14. Number of laboratory-confirmed influenza outbreaks by strain type and season

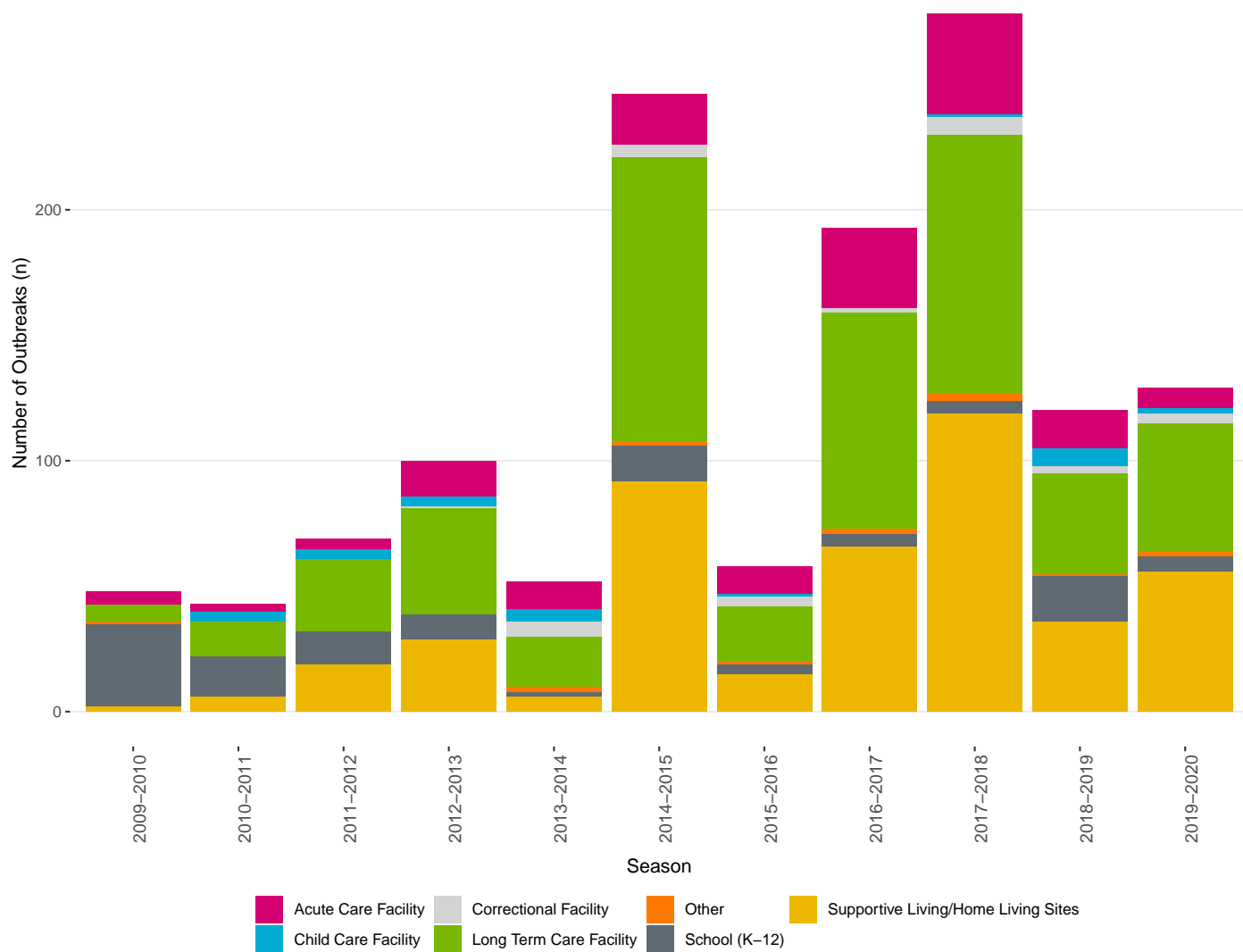


Figure 15. Number of laboratory-confirmed influenza outbreaks by facility type and season

Influenza Immunization

The seasonal influenza vaccine program in Alberta is universal and offered to all residents six months of age and older. This season there were 1,438,866 influenza doses administered and vaccine coverage was 33 per cent (Table 5, Figure 16). Influenza vaccine coverage increased 2 percentage points from the previous season and is the highest recorded coverage in Alberta since 2010. Pharmacists administered 878,820 doses and accounted for 61 per cent of doses administered (Table 5, Figure 17). The number and per cent of doses provided by pharmacists increased again over last season, following an increasing trend over the past decade. This season was also the second time that pharmacists could administer vaccine to children aged 5-9 years. Public Health administered 22 per cent of doses and other providers administered 17 per cent of doses (Figure 17).

Table 5. Influenza vaccine doses administered and vaccine coverage by season

| Season | Public Health | Pharmacy | Other Provider | Total Doses | Coverage (%) |
|-----------|---------------|----------|----------------|-------------|--------------|
| 2010-2011 | 529,350 | 45,353 | 179,327 | 754,030 | 20 |
| 2011-2012 | 548,567 | 89,854 | 235,624 | 874,045 | 23 |
| 2012-2013 | 545,076 | 170,359 | 203,912 | 919,347 | 24 |
| 2013-2014 | 614,966 | 329,548 | 213,035 | 1,157,549 | 29 |
| 2014-2015 | 522,380 | 485,669 | 246,900 | 1,254,949 | 31 |
| 2015-2016 | 444,107 | 475,331 | 227,130 | 1,146,568 | 28 |
| 2016-2017 | 408,663 | 533,053 | 230,108 | 1,171,824 | 28 |
| 2017-2018 | 384,984 | 616,625 | 227,741 | 1,229,350 | 29 |
| 2018-2019 | 359,718 | 723,986 | 233,955 | 1,317,659 | 31 |
| 2019-2020 | 314,343 | 878,820 | 245,703 | 1,438,866 | 33 |

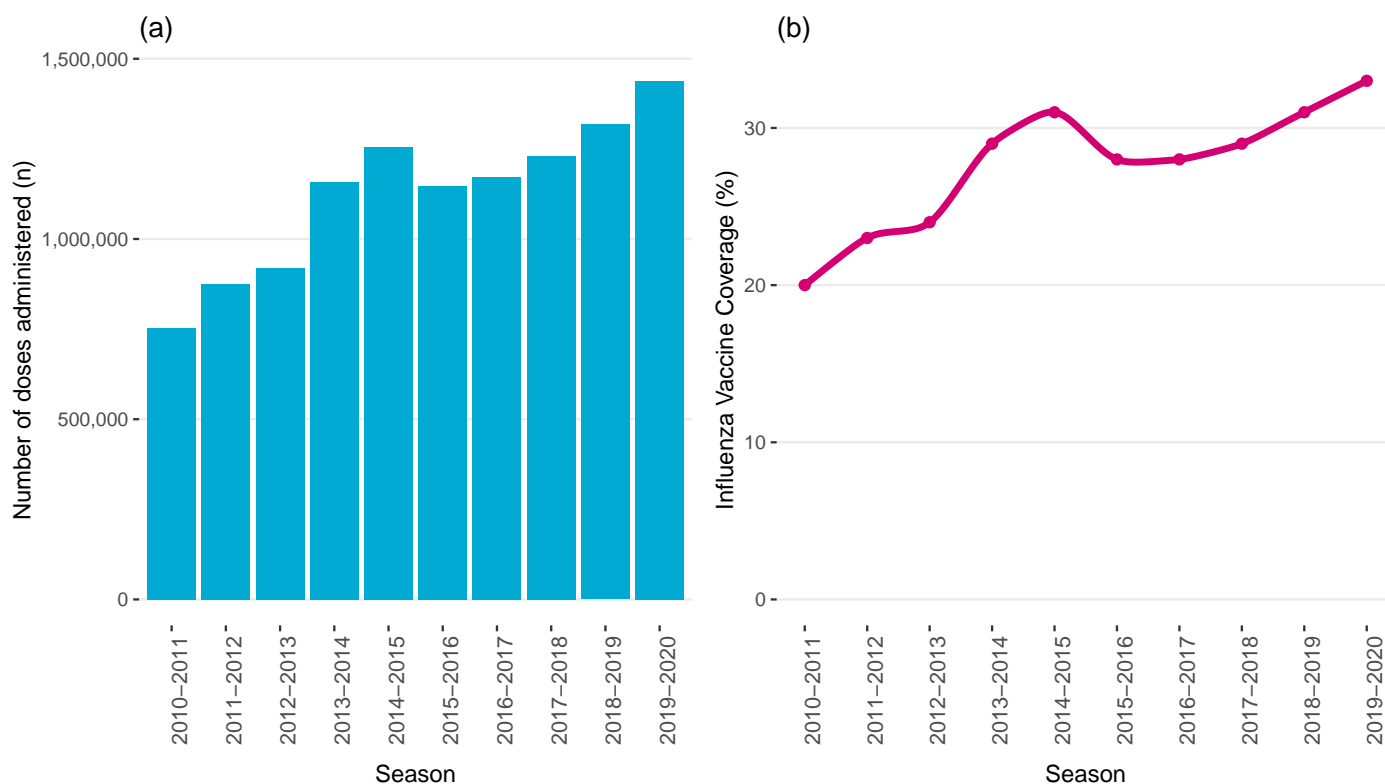


Figure 16. Influenza vaccine (a) doses administered and (b) coverage by season

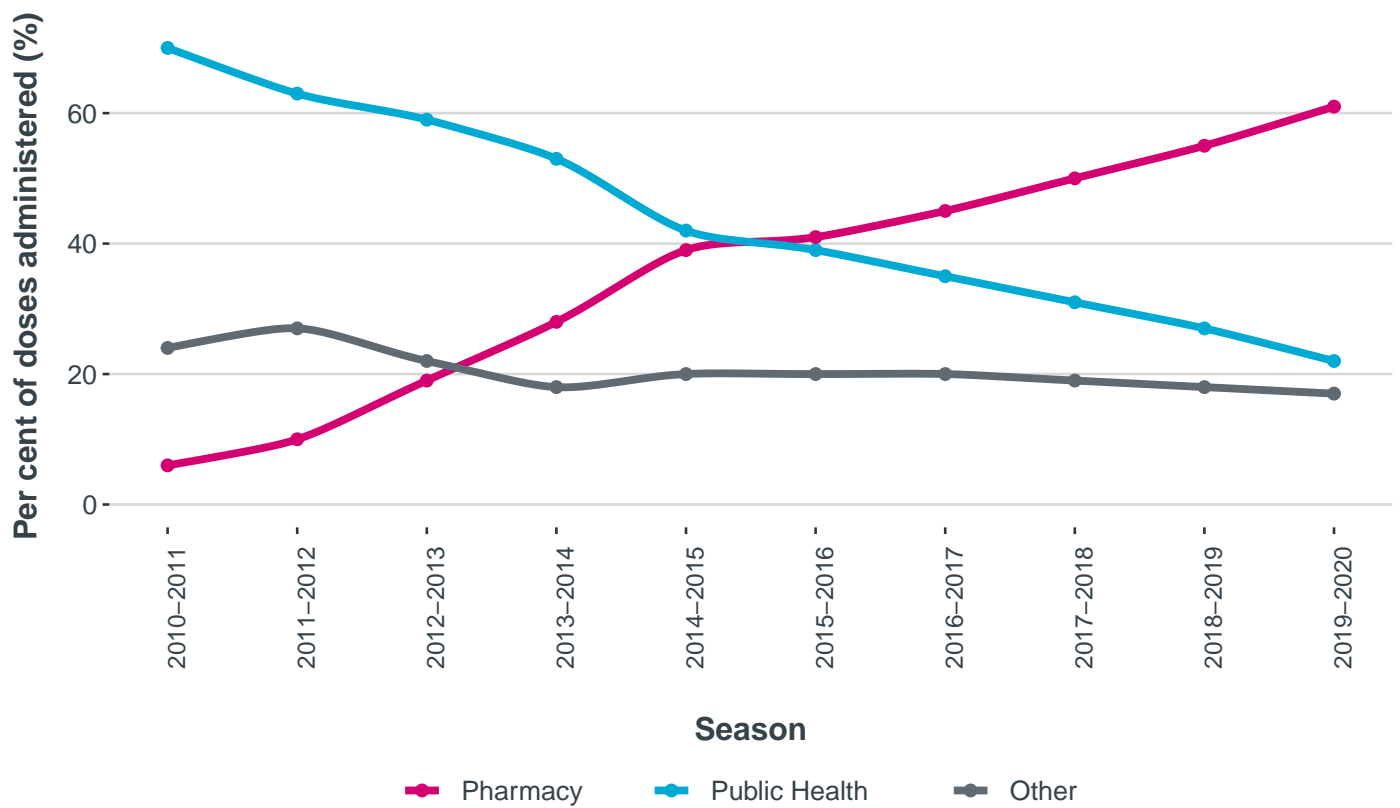


Figure 17. Per cent of influenza vaccine doses administered by provider type and season

Acknowledgements

We would like to thank our partners from Alberta Health Services (AHS), the Alberta Precision Laboratories (APL), First Nations Inuit Health Branch (FNIHB), Alberta Blue Cross, TARRANT Viral Watch sentinel physician system, and the Canadian National Microbiology Laboratory (NML) for their partnership in influenza surveillance in Alberta.

Supplementary Alberta Health Publications

- Alberta Seasonal Influenza
<https://open.alberta.ca/publications/2561-3154>
- Alberta Notifiable Disease Guidelines
<https://www.alberta.ca/notifiable-disease-guidelines.aspx>
- Alberta Notifiable Disease Summary
<https://open.alberta.ca/publications/alberta-notifiable-disease-summary>
- Alberta STIs and HIV
<https://open.alberta.ca/publications/9781460145449>
- Alberta Tick Surveillance
<https://open.alberta.ca/publications/2369-0690>
- Historical Trends of Selected Notifiable Communicable Diseases in Alberta, 1919 to 2014
<https://open.alberta.ca/publications/9781460125618>

Appendix

Data

The 2019–2020 influenza season report includes data from August 25, 2019 (calendar week 35) to July 4, 2020 (calendar week 27).

Data Sources

- Communicable Disease Reporting System (CDRS), Alberta Health
- Provincial Surveillance Information (PSI), Alberta Health
- Alberta Health Care Insurance Plan (AHCIP) Quarterly Population Registry, Alberta Health
- Immunization/Adverse Reactions to Immunization (Imm/ARI), Alberta Health
- Supplemental Enhanced Service Event (Physician Claims), Alberta Health
- Pharmaceutical Information Network (PIN), Alberta Health
- Alberta Blue Cross

Defining Thresholds for Laboratory-Confirmed Influenza Surveillance

Estimating the timing and magnitude of the influenza season is an important aspect of influenza surveillance. The [World Health Organization \(WHO\)](#) recommends creating two thresholds from the average epidemic curve of the previous seasons; one to determine when the influenza season has begun (seasonal threshold) and one to determine the point when influenza activity is unusually high (alert threshold).

Seasonal Threshold

The seasonal threshold was calculated as the average number of cases reported per week, in weeks considered outside of the influenza season (i.e. pre-season weeks). The start of the influenza season, using this method, was defined as the third consecutive week where the number of laboratory-confirmed cases exceeded the seasonal threshold; the end of the influenza season was defined as the third consecutive week where the number of laboratory-confirmed cases was below the seasonal threshold.

Average Seasonal Epidemic Curve and Alert Threshold

The average seasonal epidemic curve of laboratory-confirmed influenza surveillance was estimated using data collected from the previous five seasons. The peaks of each season were aligned, and the average number of cases reported per aligned week was calculated to obtain a 90 per cent confidence limit. The upper 90 per cent confidence limit defines the alert threshold. If the number of cases reported in a week exceed the alert threshold then the season is considered to be unusually high.

Defining Laboratory-Confirmed Influenza Outbreaks

Influenza outbreaks that occur in group settings such as hospitals, residential institutions, schools, and child care facilities are reported to Alberta Health. Outbreaks are defined as the occurrence of a communicable disease in a community, region, or setting where the number of cases is more than would be expected for a defined period of time. Influenza outbreaks in hospitals, residential institutions, and other closed communities are defined as two or more cases of influenza-like illness, with at least one laboratory-confirmed case. School influenza outbreaks require greater than 10 per cent absenteeism or absenteeism that is 10 per cent higher than baseline levels. Please see the [Public Health Disease Management Guidelines: Influenza, Seasonal](#) and [Public Health Disease Management Guidelines: Epidemics](#) for more information.