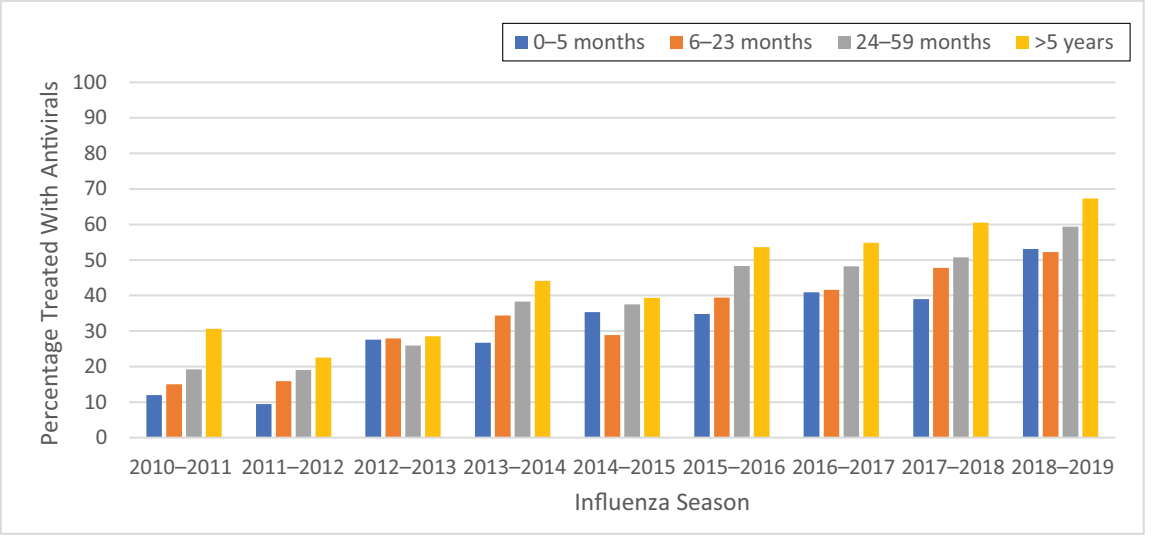
# Supplemental Information




**SUPPLEMENTAL FIGURE 5**
Cumulative proportion treated with antivirals, by day of IMPACT hospital admission, among children who received antivirals ($n$ = 3122).

**SUPPLEMENTAL TABLE 3** Factors Associated With Early Receipt of Antivirals Among Children Hospitalized for Influenza Across 12 Canadian IMPACT Pediatric Hospital Centers, 2010–2011 to 2018–2019, Among Those Who Were Treated With Antivirals ($n$ = 3122)

| Exposure Variable | Early Receipt (First 2 d of Hospital Admission) ($n$ = 2551), $n$ (%) | Late Receipt (>2 d After Hospital Admission) ($n$ = 571), $n$ (%) | OR (95% CI) | aOR[a] (95% CI) |
|---|---|---|---|---|
| Demographic data | | | | |
| Age,[b] y | | | | |
| Mean ± SD | 4.92 ± 4.39 | 5.16 ± 3.83 | $P$ = .04 | 1.01 (0.98–1.03) |
| Median (IQR) | 3.58 (1.41–7.41) | 3.91 (1.66–7.41) | | |
| Sex | | | | |
| Male | 1469 (82.3) | 314 (17.7) | 1.11 (0.92–1.33) | 1.02 (0.82–1.26) |
| Influenza season | | | | |
| 2010–2011 | 93 (73.3) | 34 (26.7) | Reference | Reference |
| 2011–2012 | 76 (74.5) | 26 (25.5) | 1.06 (0.59–1.93) | 1.12 (0.56–2.27) |
| 2012–2013 | 164 (71.3) | 66 (28.7) | 0.90 (0.55–1.47) | 0.76 (0.43–1.34) |
| 2013–2014 | 204 (81.9) | 45 (18.1) | 1.65 (0.99–2.75) | 1.95 (1.05–3.59) |
| 2014–2015 | 200 (81.3) | 46 (18.7) | 1.58 (0.95–2.63) | 1.30 (0.72–2.35) |
| 2015–2016 | 505 (84.5) | 92 (15.5) | 2.00 (1.27–3.15) | 2.08 (1.17–3.69) |
| 2016–2017 | 224 (82.6) | 47 (17.4) | 1.74 (1.05–2.88) | 1.63 (0.87–3.07) |
| 2017–2018 | 437 (81.8) | 97 (18.2) | 1.64 (1.04–2.58) | 1.85 (1.04–3.28) |
| 2018–2019 | 648 (84.5) | 118 (15.5) | 2.00 (1.29–3.11) | 2.89 (1.63–5.12) |
| Timing of admission within influenza season | | | | |
| Admitted during "peak" season[c] | 1870 (83.1) | 379 (16.9) | 1.39 (1.14–1.68) | 1.12 (0.87–1.44) |
| Availability of a local influenza antiviral treatment guideline[d] | | | | |
| Treatment guideline available | 1709 (81.4) | 388 (18.6) | 0.95 (0.78–1.16) | 0.67 (0.42–1.06) |
| Laboratory data | | | | |
| Influenza virus type | | | | |
| A | 1955 (82.7) | 408 (17.3) | Reference | Reference |
| B | 584 (78.2) | 162 (21.8) | 0.75 (0.61–0.92) | 0.83 (0.64–1.08) |
| Both A and B | 12 (92.3) | 1 (7.7) | 2.5 (0.32–19.28) | 3.14 (0.32–30.67) |
| Timing of availability of report of laboratory confirmation of influenza infection | | | | |
| Result available before IMPACT center admission | 275 (93.2) | 20 (6.8) | 62.98 (34.65–114.47) | 93.45 (49.60–176.05) |
| Result available on first day of admission | 1747 (88.5) | 225 (11.5) | 35.56 (23.54–53.73) | 46.90 (30.10–73.08) |
| Result available within second day of admission | 498 (73.0) | 184 (27.0) | 12.39 (8.11–18.93) | 13.19 (8.45–20.57) |
| Result available after second day of admission | 31 (17.9) | 142 (82.1) | Reference | Reference |
| Clinical data | | | | |
| Presence of underlying chronic health condition | | | | |
| Any | 1448 (80.0) | 362 (20.0) | 0.75 (0.62–0.91) | 0.85 (0.68–1.06) |
| Chronic heart disorders | 161 (78.5) | 44 (21.5) | 0.80 (0.57–1.14) | NI[e] |
| Chronic lung disorders | 585 (82.5) | 124 (17.5) | 1.07 (0.86–1.33) | NI[e] |
| Diabetes mellitus or other metabolic disorders | 98 (80.9) | 23 (19.1) | 0.95 (0.59–1.51) | NI[e] |
| Cancer | 135 (68.5) | 62 (31.5) | 0.45 (0.33–0.62) | NI[f] |
| Immunodeficiency | 146 (78.4) | 40 (21.6) | 0.80 (0.56–1.15) | NI[e] |
| Immunosuppression | 165 (77.8) | 47 (22.2) | 0.77 (0.55–1.08) | NI[e] |
| Chronic renal disease | 82 (81.1) | 19 (18.9) | 0.96 (0.58–1.60) | NI[e] |
| Chronic anemia | 39 (78.0) | 11 (22.0) | 0.79 (0.40–1.55) | NI[e] |
| Hemoglobinopathy | 115 (79.5) | 32 (20.5) | 0.79 (0.53–1.18) | NI[e] |
| Chronic acetylsalicylic acid therapy | 2 (66.7) | 1 (33.3) | 0.44 (0.04–4.94) | NI[e] |
| Residence in institutional setting and other chronic care facilities | 16 (94.1) | 1 (5.9) | 3.59 (0.47–27.18) | NI[e] |
| Neurologic or neurodevelopment disorders | 403 (83.6) | 79 (16.4) | 1.16 (0.90–1.51) | NI[e] |

**SUPPLEMENTAL TABLE 3** Continued

| Exposure Variable | Early Receipt (First 2 d of Hospital Admission) ($n$ = 2551), $n$ (%) | Late Receipt (>2 d After Hospital Admission) ($n$ = 571), $n$ (%) | OR (95% CI) | aOR[a] (95% CI) |
|---|---|---|---|---|
| Pregnancy | 1 (100.0) | 0 (0) | — | — |
| Obesity | 13 (76.4) | 4 (23.6) | 0.72 (0.23–2.23) | NI[e] |
| Prematurity (if <1 y old) | 48 (77.4) | 14 (22.6) | 0.76 (0.41–1.39) | NI[e] |
| Duration of symptoms before admission at IMPACT hospital,[b] d | | | | |
| Mean ± SD | 3.37 ± 3.01 | 3.23 ± 3.19 | $P$ = .16 | 0.97 (0.93–1.00) |
| Median (IQR) | 3 (1–5) | 3 (1–4.5) | $P$ = .16 | 0.97 (0.93–1.00) |
| Presence of radiographically confirmed pneumonia | 876 (81.5) | 198 (19.5) | 0.98 (0.81–1.19) | 1.19 (0.94–1.51) |
| Presence of a laboratory-confirmed bacterial infection | 175 (76.7) | 53 (23.3) | 0.71 (0.52–0.99) | 0.92 (0.62–1.37) |
| Coreceipt of antibiotic therapy | 1941 (80.4) | 472 (19.6) | 0.66 (0.52–0.84) | 0.89 (0.66–1.19) |
| Need for intensive care | 692 (79.7) | 176 (20.3) | 0.83 (0.68–1.01) | NI[e] |
| Need for respiratory support[g] | 443 (79.2) | 116 (20.8) | 0.82 (0.65–1.03) | NI[e] |
| Hospital LoS,[b] d | | | | |
| Mean ± SD | 5.78 ± 8.95 | 8.93 ± 11.91 | $P$ < .05 | NI[h] |
| Median (IQR) | 3 (2–6) | 6 (4–10) | $P$ < .05 | NI[h] |
| Outcome at hospital discharge | | | | |
| Survived | 2528 (81.7) | 565 (18.3) | Reference | NI[h] |
| Died of reported influenza infection | 28 (82.3) | 6 (17.7) | 0.85 (0.34–2.11) | NI[h] |
| Died of other cause | 0 (0.0) | 0 (0.0) | — | NI[h] |

Data are $n$ (row %) unless otherwise indicated.

[a] Multivariable logistic regression model included age, sex, influenza season, IMPACT center, timing of admission relative to peak influenza activity within season, availability of local guideline, presence of underlying chronic health conditions, influenza virus type, timing of availability of influenza laboratory test result relative to hospital admission, duration of symptoms before admission, presence of radiographically confirmed pneumonia, presence of a laboratory confirmed bacterial infection and coreceipt of antibiotic therapy. Odds ratios for IMPACT center not shown in the table above.

[b] Medians compared using Wilcoxon rank test.

[c] Admitted when the national testing positivity rate was at least 15%, as reported by the Public Health Agency of Canada.

[d] Availability of a local guideline at the admitting IMPACT center for the season of the admission.

[e] Not included in the multivariable model because not significantly associated in univariable analysis.

[f] Not included in the multivariable model since including the composite variable "presence of any underlying chronic health condition" led to better model fit.

[g] Includes CPAP, BiPAP, conventional and high-frequency ventilation and ECMO.

[h] Not included in the multivariable model because these variables necessarily occurred after antiviral treatment decisions (ie, at the end of the hospitalization).