

Appendix 1

Trends in influenza vaccination uptake in Switzerland: Swiss Health Survey 2007 and 2012

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Table S1: Factors associated with the temporal change (from 2007 to 2012) in self-reported influenza vaccination status in the last 12 months in Switzerland, 2007 and 2012, overall and among people aged ≥ 65 years.

| Characteristic | | All | | ≥ 65 years old | |
|---|----------------|----------------------|----------|----------------------|----------|
| | | Adjusted OR (95% CI) | p-value* | Adjusted OR (95% CI) | p-value* |
| Age groups, years | 15–19 | 0.53 (0.27–1.04) | 0.010 | – | 0.039 |
| | 20–29 | 1.02 (0.65–1.61) | | – | |
| | 30–39 | 0.68 (0.49–0.93) | | – | |
| | 40–49 | 0.76 (0.59–0.98) | | – | |
| | 50–64 | 0.84 (0.71–0.99) | | – | |
| | 65–75 | 0.56 (0.48–0.65) | | 0.57 (0.49–0.67) | |
| | >75 | 0.74 (0.61–0.90) | | 0.74 (0.62–0.90) | |
| Sex | | | 0.72 | – | 0.80 |
| Pregnancy ^{††} | No | 0.68 (0.51–0.91) | 0.017 | – | |
| | Yes | 4.48 (0.98–20.54) | | – | |
| Setting (urban/rural) | | – | 0.97 | – | 0.82 |
| Self-reported health status | | | 0.51 | | 0.29 |
| Citizenship (Swiss/non-Swiss) | | – | 0.80 | – | 0.79 |
| Education level (primary to tertiary) | Primary | 0.55 (0.43–0.71) | 0.032 | – | 0.15 |
| | Apprenticeship | 0.73 (0.64–0.82) | | – | |
| | Secondary | 1.17 (0.74–1.85) | | – | |
| | Tertiary | 0.76 (0.64–0.89) | | – | |
| Hospital stay insurance (general, semi-private/private) | | – | 0.18 | – | 0.23 |
| Language region (German, French, Italian) | | – | 0.79 | – | 0.12 |
| Use of any alternative medicine therapy | | – | 0.24 | | 0.25 |

95% CI = 95% confidence interval; OR = odds ratio
 * p-values from interaction tests
 † Current pregnancy in women aged 15 to 49 years
 †† Estimate from a separate model which included the variable pregnancy instead of sex to avoid collinearity
 Estimates derived from regression models adjusted for year of survey, age group, sex, body mass index group, setting, citizenship, language region, education level, smoking, self-reported health status, hospital stay insurance, and use of any alternative medicine therapy. An interaction with the year of survey and the variable of interest was included.

Table S2: Associations of having been vaccinated for influenza in the last 12 months with sociodemographic characteristics and health-related factors (as compared to no vaccination) in Switzerland, 2007 and 2012, overall and among people ≥ 65 years old. Unadjusted and adjusted odds ratios are presented (see also table 1 in main article).

| Characteristic | | All | | | | ≥ 65 years old | | | |
|----------------------|------------------|------------------------|---------|------------------------|---------|------------------------|---------|----------------------|---------|
| | | Unadjusted OR (95% CI) | p-value | Adjusted OR (95% CI) | p-value | Unadjusted OR (95% CI) | p-value | Adjusted OR (95% CI) | p-value |
| Year of survey | 2007 | 1 | <0.001 | 1 | <0.001 | 1 | <0.001 | 1 | <0.001 |
| | 2012 | 0.84 (0.78–0.91) | | 0.74 (0.66–0.84) | | 0.68 (0.61–0.77) | | 0.64 (0.54–0.74) | |
| Age group, years | 15–19 | 1.30 (0.92–1.84) | <0.001 | 1.14 (0.60–2.14) | <0.001 | – | <0.001 | – | <0.001 |
| | 20–29 | 1 | | 1 | | – | | – | |
| | 30–39 | 1.13 (0.88–1.46) | | 1.25 (0.81–1.93) | | – | | – | |
| | 40–49 | 1.52 (1.20–1.93) | | 1.56 (1.05–2.34) | | – | | – | |
| | 50–64 | 2.92 (2.35–3.63) | | 2.81 (1.92–4.10) | | – | | – | |
| | 65–75 | 9.77 (7.87–12.13) | | 8.24 (5.61–12.12) | | 1 | | 1 | |
| | >75 | 19.58 (15.66–24.48) | | 15.67 (10.50–23.39) | | 2.00 (1.78–2.26) | | 1.92 (1.64–2.25) | |
| Sex | Male | 1 | 0.022 | 1 | 0.32 | 1 | 0.69 | 1 | 0.34 |
| | Female | 1.10 (1.01–1.18) | | 0.94 (0.82–1.07) | | 0.98 (0.87–1.10) | | 1.09 (0.91–1.30) | |
| Pregnancy (current)* | Yes | 0.83 (0.46–1.49) | 0.53 | na | | – | | – | |
| | No | 1 | | na | | – | | – | |
| BMI group | Underweight | 1 | <0.001 | 1 | 0.99 | 1 | 0.79 | 1 | 0.98 |
| | Normal | 0.98 (0.77–1.23) | | 1.02 (0.71–1.47) | | 0.88 (0.59–1.29) | | 0.98 (0.55–1.74) | |
| | Overweight | 1.45 (1.15–1.84) | | 1.01 (0.70–1.47) | | 0.92 (0.62–1.36) | | 1.00 (0.56–1.79) | |
| | Obese | 1.66 (1.29–2.13) | | 1.05 (0.71–1.54) | | 0.93 (0.62–1.41) | | 1.03 (0.57–1.88) | |
| Language region | German-speaking | 1 | <0.001 | 1 | 0.003 | 1 | <0.001 | 1 | 0.13 |
| | French-speaking | 1.22 (1.12–1.32) | | 1.22 (1.09–1.38) | | 1.24 (1.09–1.40) | | 1.16 (0.99–1.37) | |
| | Italian-speaking | 0.98 (0.84–1.14) | | 1.00 (0.80–1.24) | | 0.88 (0.70–1.11) | | 0.93 (0.69–1.25) | |
| Setting | Urban | 1.34 (1.22–1.47) | <0.001 | 1.20 (1.04–1.38) | 0.011 | 1.21 (1.04–1.40) | 0.013 | 1.18 (0.97–1.45) | 0.099 |
| | Rural | 1 | | 1 | | 1 | | 1 | |
| Citizenship | Swiss | 1 | <0.001 | 1 | 0.49 | 1 | 0.50 | 1 | 0.73 |
| | Non-Swiss | 0.69 (0.61–0.78) | | 1.07 (0.88–1.30) | | 0.92 (0.73–1.16) | | 0.95 (0.70–1.28) | |
| Education level | Primary | 1 | <0.001 | 1 | 0.09 | 1 | 0.027 | 1 | 0.055 |
| | Apprenticeship | 0.77 (0.68–0.86) | | 1.06 (0.88–1.27) | | 1.19 (1.02–1.39) | | 1.28 (1.02–1.59) | |
| | Secondary | 0.63 (0.52–0.76) | | 1.19 (0.89–1.59) | | 1.33 (0.99–1.78) | | 1.37 (0.95–1.96) | |
| | Tertiary | 0.76 | | 1.24 | | 1.30 | | 1.44 | |

| | | | | | | | | | |
|--|--------------------------|---------------------|--------|---------------------|--------|---------------------|--------|---------------------|--------|
| | | (0.67–0.86) | | (1.01–1.53) | | (1.09–1.56) | | (1.10–1.88) | |
| Smoking | Never smoked | 1 | <0.001 | 1 | 0.045 | 1 | 0.016 | 1 | 0.11 |
| | Former smoker | 1.51 (1.38–1.65) | | 1.15 (1.01–1.32) | | 1.16 (1.02–1.32) | | 1.21 (1.01–1.44) | |
| | Current smoker | 0.63 (0.57–0.70) | | 0.97 (0.83–1.13) | | 0.90 (0.75–1.08) | | 1.06 (0.84–1.34) | |
| Self-reported health status | Very good | 1 | <0.001 | 1 | <0.001 | 1 | <0.001 | 1 | <0.001 |
| | Good | 1.66 (1.49–1.84) | | 1.19 (1.00–1.41) | | 1.63 (1.38–1.93) | | 1.36 (1.07–1.72) | |
| | Moderate | 3.93 (3.47–4.46) | | 1.54 (1.27–1.88) | | 2.40 (1.98–2.90) | | 1.71 (1.30–2.24) | |
| | Bad | 5.47 (4.42–6.78) | | 2.44 (1.81–3.30) | | 3.30 (2.35–4.63) | | 2.18 (1.41–3.36) | |
| | Very bad | 5.35 (3.28–8.72) | | 2.18 (1.12–4.21) | | 3.12 (1.43–6.78) | | 2.02 (0.85–4.80) | |
| Hospital stay insurance | Basic | 1 | <0.001 | 1 | <0.001 | 1 | <0.001 | 1 | <0.001 |
| | Semiprivate | 1.71 (1.56–1.88) | | 1.40 (1.22–1.60) | | 1.29 (1.12–1.48) | | 1.39 (1.15–1.67) | |
| | Private | 2.55 (2.27–2.86) | | 1.81 (1.53–2.14) | | 1.71 (1.44–2.03) | | 1.89 (1.51–2.37) | |
| | Other | 1.10 (0.77–1.57) | | 1.30 (0.77–2.18) | | 0.94 (0.49–1.84) | | 1.04 (0.50–2.14) | |
| Use of any alternative medicine therapy[†] | Yes | 0.89 (0.81–0.97) | 0.006 | 0.79 (0.69–0.89) | <0.001 | 0.84 (0.73–0.95) | 0.008 | 0.70 (0.58–0.83) | <0.001 |
| | No | 1 | | 1 | | 1 | | 1 | |
| Chronic diseases[‡] | Diabetes | 3.97 (3.45–4.57) | <0.001 | 1.62 (1.34–1.96) | <0.001 | 1.68 (1.40–2.02) | | 1.46 (1.16–1.82) | 0.001 |
| | Lung disease | 3.36 (2.69–4.20) | <0.001 | 2.43 (1.69–3.49) | <0.001 | 1.84 (1.34–2.52) | <0.001 | 1.88 (1.18–3.00) | 0.008 |
| | Cerebro-vascular disease | 4.66 (3.58–6.07) | <0.001 | 1.17 (0.83–1.64) | 0.38 | 1.72 (1.25–2.38) | 0.001 | 1.06 (0.73–1.54) | 0.75 |
| | Cardio-vascular disease | 3.61 (3.20–4.07) | <0.001 | 1.49 (1.28–1.74) | <0.001 | 1.65 (1.42–1.93) | <0.001 | 1.43 (1.20–1.71) | <0.001 |
| | Kidney disease | 1.80 (1.52–2.14) | <0.001 | 1.01 (0.80–1.28) | 0.91 | 1.24 (0.97–1.60) | 0.090 | 0.90 (0.66–1.22) | 0.48 |
| | Cancer | 2.67 (2.30–3.11) | <0.001 | 1.26 (1.41–2.09) | 0.030 | 1.33 (1.08–1.64) | 0.007 | 1.11 (0.86–1.43) | 0.44 |
| Healthcare profession[§] | | 1.12 (0.99–1.26) | 0.069 | 1.71 (1.41–2.09) | <0.001 | – | | – | |

95% CI = 95% confidence interval; BM = body mass index; na = not available (collinearity); OR = odds ratio

Model adjusted for all variables included in the table.

* Current pregnancy in women aged 15 to 49 years

† Use of any alternative therapy in the past 12 months (including acupuncture, traditional Chinese medicine, homeopathy, osteopathy)

‡ Current chronic disease versus no chronic disease (reference); lung diseases: bronchial asthma, chronic bronchitis and emphysema vs no lung disease (reference); diabetes: use of any diabetic drug vs no diabetes (reference); cardiovascular disease: use of any heart medication vs no cardiovascular disease (reference); all other diseases: self-reported disease vs no disease (reference)

§ Any profession in the healthcare system (in the 2007 survey, the veterinary professions were also included in this category) vs any other profession (reference)