Table 1. Estimated and Observed Influenza-Attributable Deaths in Los Angeles County (LAC) for the 2013-14 through 2017-18 Influenza Seasons

Season	Model estimate (95% CI)		Reported to LACDPH*	Underlying respiratory or circulatory COD	Population **
2013-14	1,045	(629-2,258)	112	25,828	10,019,362
2014-15	1,502	(929-2,514)	56	26,716	10,069,036
2015-16	1,478	(823-2,613)	81	28,080	10,192,376
2016-17	1,392	(823-2,613)	80	27,455	10,227,450
2017-18	1,905	(1,075-3,269)	288	28,732	10,272,648

* Excludes deaths in residents of the cities of Long Beach and Pasadena

** July 1 Population Estimates for 2013, 2014, 2015, 2016 and 2017, prepared by Hedderson Demographic Services for Los Angeles County Internal Services Department, 2014-2018.

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2318. Prevalence of Influenza-like Illness in Sheltered Homeless Populations: A Cross-Sectional Study in Seattle, WA

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Background. Individuals experiencing homelessness are at an increased risk of respiratory illness due to high prevalence of underlying chronic conditions, inadequate ventilation and crowding in shelters, and difficulty accessing health services. Few studies have investigated the prevalence and transmission of viral respiratory infections within shelters. We sought to determine the prevalence and risk factors for influenza-like illness (ILI) at two homeless shelters in Seattle, WA.

Methods. Between January and April 2019, we conducted a cross-sectional study of adults experiencing homelessness who identified their primary residence as one of the two shelters in Seattle. Participants voluntarily enrolled if they self-reported at least two symptoms of acute respiratory illness in the past week. Demographic, clinical, and behavioral data were ascertained via questionnaire, and a mid-nasal swab was collected. ILI was defined as fever with cough or sore throat. Chronic lung disease was defined as chronic obstructive pulmonary disease, asthma, and/or chronic bronchitis.

Results. Among the 480 participants enrolled in the study, 204 (42.5%) reported ILI symptoms. Of those enrolled, 144 (30.0%) had chronic lung disease. The prevalence of ILI was higher among individuals with chronic lung disease (53.5% vs. 42.5%, $P = 0.001$). A total of 422 (87.9%) had health insurance; the prevalence of ILI was lower among those with health insurance (42.4% vs. 57.8%, $P = 0.66$). 216 (45.0%) of participants received flu vaccine; the prevalence of ILI was similar among those who received the vaccine than those that did not (42.6% vs. 42.4%, $P = 1.00$). 129 (30.6%) of those with health insurance sought care for their reported symptoms; ILI was more prevalent in those that sought care than those that did not throughout the observation period (33.8% vs. 21.7%, $P = 0.002$). Of those with ILI that sought care, 46 (54.8%, $P = 0.42$) received antivirals or antibiotics. Laboratory results for the corresponding mid-nasal swabs are pending.

Conclusion. A large proportion of our study population self-reported ILI and chronic lung disease. Despite high insurance coverage, a low proportion of homeless enrolled sought care for their symptoms or received treatment.

Figure 1. Proportion of homeless participants self-reporting influenza-like illness symptoms in Seattle, WA compared to the proportion of flu-positive clinical tests reported to CDC in Washington State from January to April 2019.
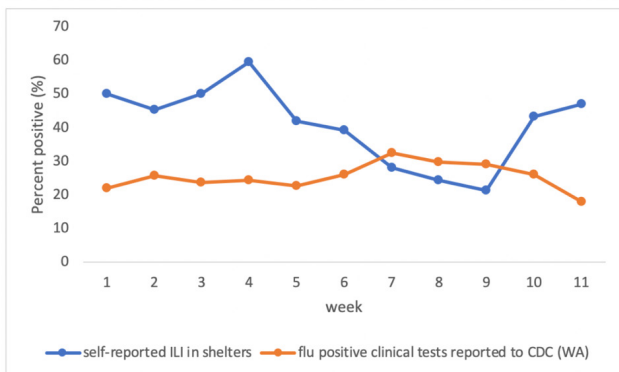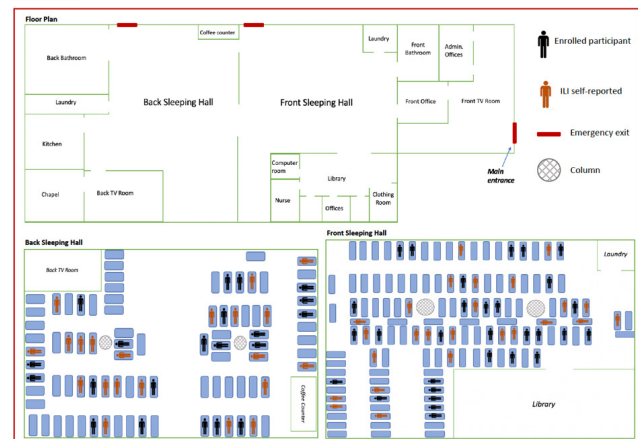

Figure 2. Floor plan and bed assignment location of enrolled participants based on ILI vs. non-ILI status reported at Shelter A.

*Due to multiple participants being assigned the same bed number over the course of the study period, only the first participant encounter recorded for each bed is indicated in the above maps.

Figure 3. Floor plan and bed assignment location of enrolled participants based on ILI vs. non-ILI status reported at Shelter B.
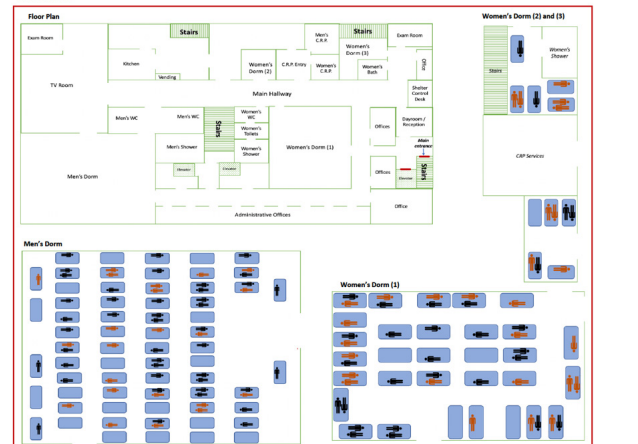
* Due to multiple participants being assigned the same bed number over the course of the study period, only the first participant encounter recorded for each bed is indicated in the above maps.
** All bed assignments at Shelter B are bunk beds; CRP = Crisis Response Program

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2319. Clinical Predictors of Influenza and Hospitalization of Children with Influenza in an Emergent Care Setting

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Background. Objective measures utilizing early vital sign data show promise in predicting more severe outcomes among adults with influenza, but data are sparse in children. The objectives of this study were to determine the value of vital signs in predicting influenza infection or hospitalization due to influenza infection among children evaluated in an emergency department (ED) or urgent care (UC) setting in Colorado.

Methods. We evaluated vital signs obtained from a prospective cohort study of children aged 6 months to 8 years of age with influenza like illness evaluated at an ED/UC site in Aurora, CO from 2016–2018, and who underwent influenza testing by PCR. We collected the first set of vital signs, peak heart rate and temperature, and converted heart rate (HR) and respiratory rate (RR) to z-scores by age. HR z scores were further adjusted for temperature. Bivariable analyses for each vital sign as a predictor of influenza-related hospitalization and influenza infection as main outcomes were conducted. Predictors with $P < 0.2$ were entered into a multivariable logistic regression model to determine odds ratios (OR) and 95% CI; model performance was assessed using the Brier score and discriminative ability with the C statistic.

Results. Among 1478 children, 411 were positive for influenza, of which 28 were hospitalized. In multivariable analyses, among children with influenza infection, lower initial oxygen saturation (OR 0.87, 95% CI 0.78–0.98, $P = 0.026$) and higher adjusted respiratory rate (OR 2.09, 95% CI 1.21–3.61, $P = 0.0085$) were significant predictors of hospitalization (Figure 1). Among children with ILI, higher peak temperature (OR