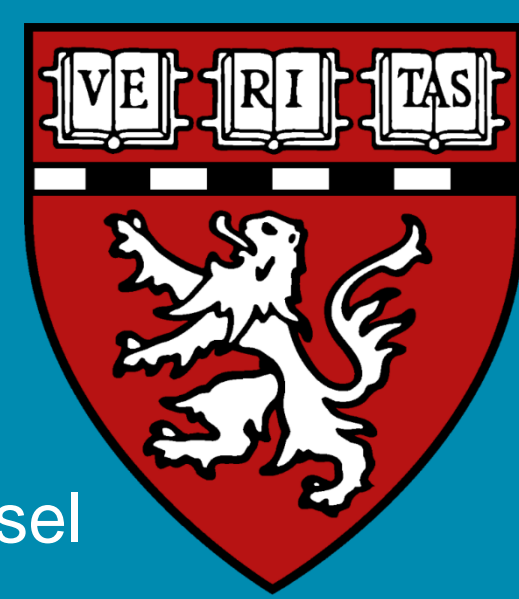




Trends in the Care of Patients with Homelessness on an Urban Med-Psych Unit: A 2021 B.I.A.S. Project Report



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INTRODUCTION

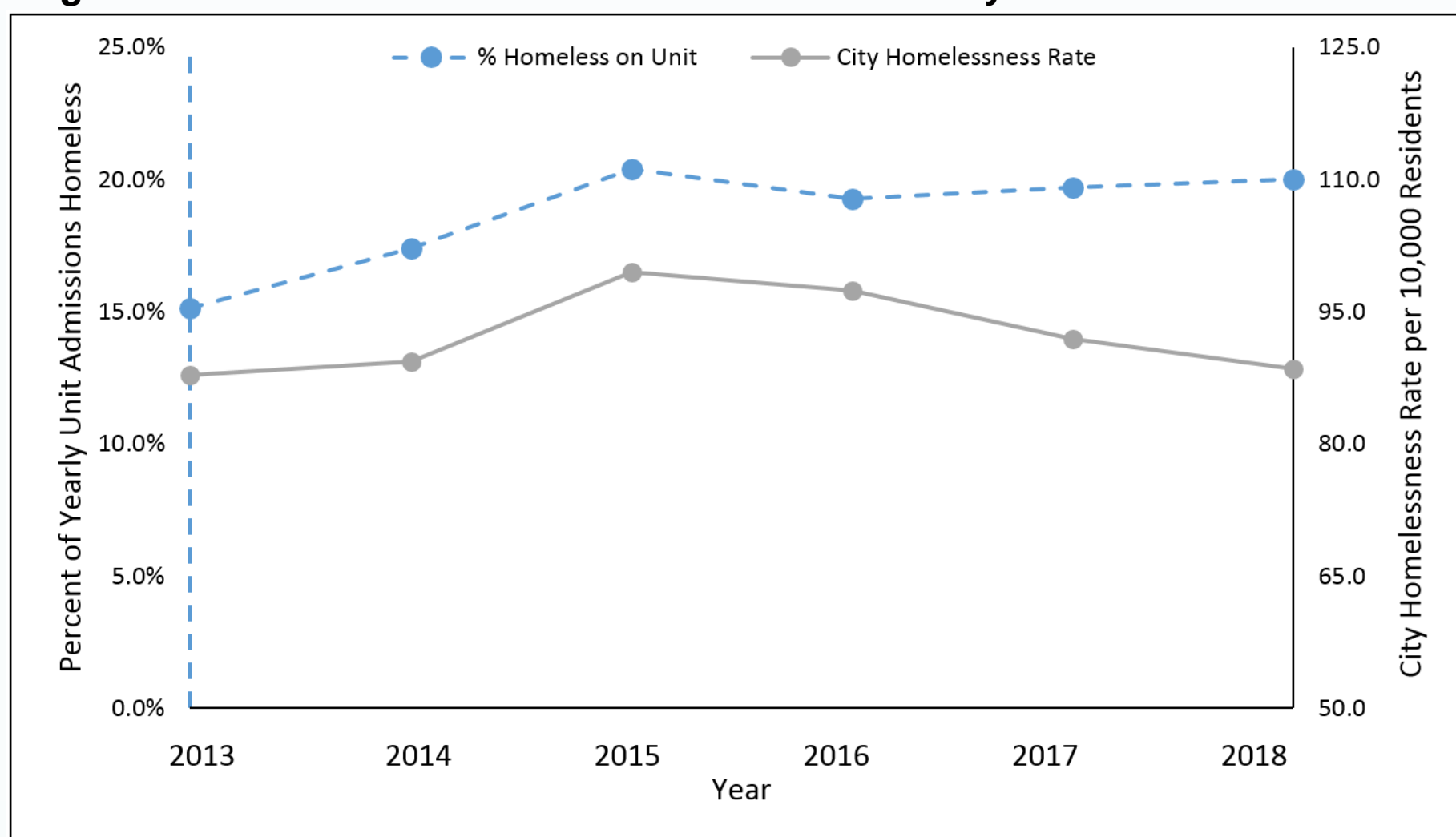
Prior studies demonstrate a high burden of mental illness among homeless populations, which are also more likely to access care through acute services (1-3). The determinants of service utilization in this population remain largely understudied (4,5). Although it is widely believed that this population accesses ED and hospital services more frequently during periods of extreme weather, two prior studies on this topic were unable to find a significant direct correlation between temperature and ED visits (6,7). The 2021 Bias In Acute Services (BIAS) project uses data collected prospectively over a six year period on all psychiatric admissions to a large general hospital in downtown Boston. This cohort is especially suited to probe trends in the psychiatric care of homeless populations and the determinants of their behavior as it covers a period of significant national healthcare policy changes and fluctuations in regional weather patterns.

METHODS

- Administrative staff used a standardized form to prospectively collect data on every admission to a 24 bed general med-psych unit between 8/1/2012 and 12/31/2018 (5,832 total admissions; 4,489 initial admissions; 4,393 unique individuals with known race).
- The prevalence of homelessness in Boston was estimated using the city's annual one night census (retrospectively adjusted to give more consistent counts due to changes in methodology over time). Yearly estimates of the city's population from the US Census Bureau were used to calculate the adjusted population homelessness rate.
- Meteorological data was obtained from a National Oceanic and Atmospheric Administration (NOAA) weather monitoring station at a nearby airport (2.5 miles away, station USW00014739).
- Data on the uninsured rate in Massachusetts was obtained from the Kaiser Family Foundation which uses the US Census Bureau's American Community Survey (ACS).
- Statistical analyses were conducted in R and Microsoft Excel. The table displays descriptive statistics with tests of independence (2-sample t-test for age and chi-squared tests for categorical variables).

RESULTS

Figure 1 Prevalence of Homelessness on Unit vs City Over Time



CONCLUSIONS

- We replicate previously documented demographic, insurance coverage, and diagnostic inequities in the homeless population.
- The unit is increasingly serving a safety net function with a rising prevalence of homelessness compared to the city at large.
- Months with extreme temperature are inversely correlated with the admission of homeless patients.
- Next steps include studying the ED referral pathway and emergency summer and winter shelter hours which may partially explain the unexpected temperature correlation.

RESULTS

| Table | Housed | | Homeless | | p-value |
|--------------------------|--------|--------|----------|--------|---------|
| | N | % | N | % | |
| Total | 3609 | 82.2% | 784 | 17.8% | |
| Age (Mean, SD) | (43.9) | (17.7) | (40.9) | (13.2) | <0.001 |
| Male | 1765 | 48.9% | 523 | 66.7% | <0.001 |
| Female | 1839 | 51.0% | 256 | 32.7% | |
| Other/Unknown | 5 | 0.1% | 5 | 0.6% | |
| White | 2661 | 73.7% | 526 | 67.1% | <0.001 |
| Black | 327 | 9.1% | 159 | 20.3% | |
| Hispanic/Latinx | 378 | 10.5% | 52 | 6.6% | |
| Asian | 142 | 3.9% | 17 | 2.2% | |
| Other | 101 | 2.8% | 30 | 3.8% | |
| From ED | 2661 | 73.7% | 644 | 82.1% | <0.001 |
| From Medicine | 766 | 21.2% | 135 | 17.2% | |
| Direct Admit | 99 | 2.7% | 1 | 0.1% | |
| OSH Transfer | 76 | 2.1% | 4 | 0.5% | |
| Other | 1 | 0.0% | 0 | 0.0% | |
| Unknown | 6 | 0.2% | 0 | 0.0% | |
| Insurance Commercial | 1361 | 37.7% | 109 | 13.9% | <0.001 |
| Insurance Public | 1776 | 49.2% | 461 | 58.8% | |
| Insurance Dual Eligible | 50 | 1.4% | 14 | 1.8% | |
| Uninsured | 405 | 11.2% | 195 | 24.9% | |
| Insurance Status Unknown | 17 | 0.5% | 5 | 0.6% | |
| Any Psychotic Disorder | 1077 | 29.8% | 301 | 38.4% | <0.001 |
| Any Substance Disorder | 841 | 23.3% | 354 | 45.2% | <0.001 |
| Any Trauma Disorder | 295 | 8.2% | 101 | 12.9% | <0.001 |
| Any Personality Disorder | 135 | 3.7% | 39 | 5.0% | 0.108 |

Figure 2 Homeless Admissions vs Mean Temperature (R² = 0.47, p = 0.014)

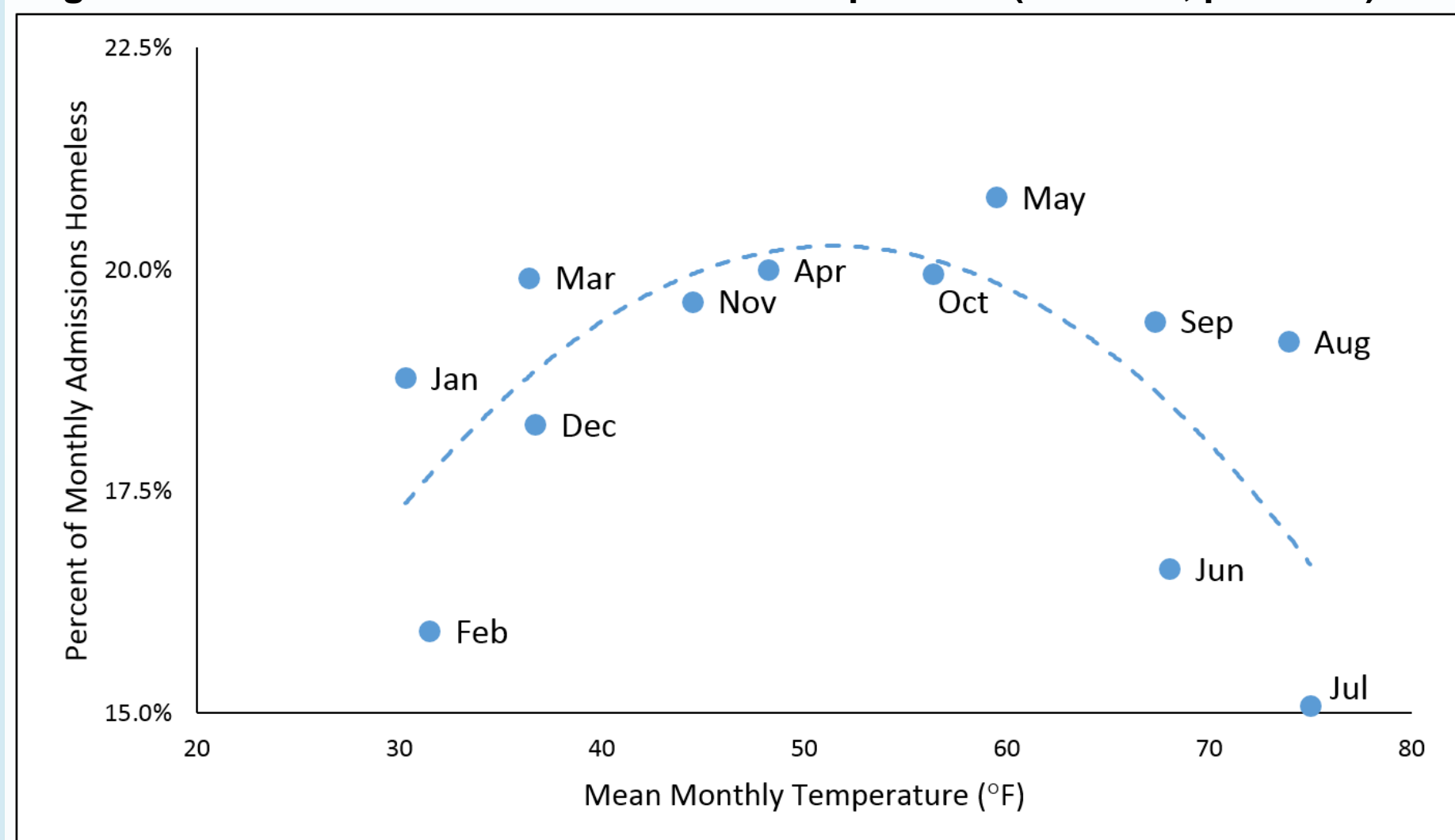
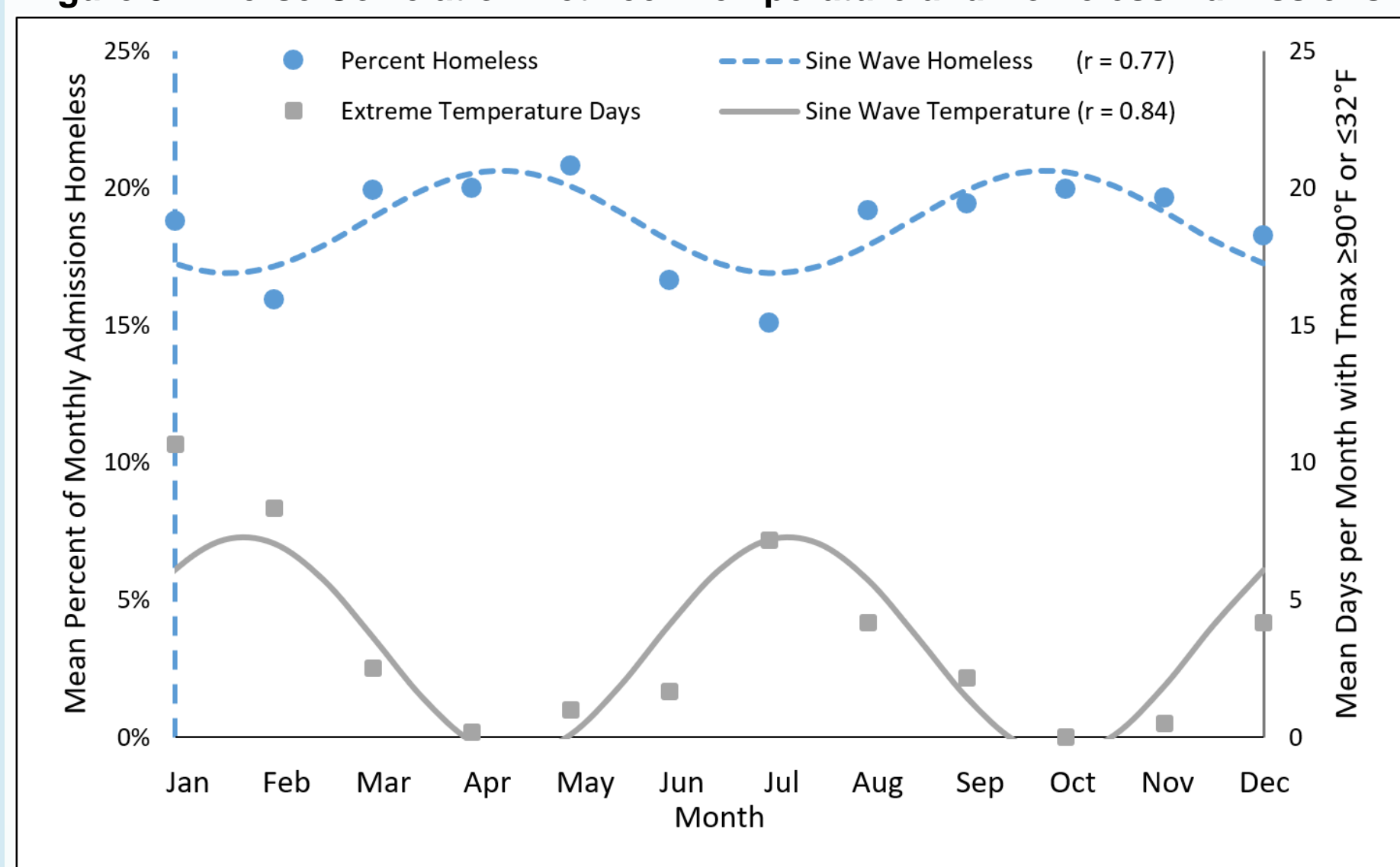


Figure 3 Inverse Correlation Between Temperature and Homeless Admissions



REFERENCES

- Baggett, Travis P., et al. "The unmet health care needs of homeless adults: a national study." *American Journal of Public Health* 100.7 (2010): 1326-1333.
- Kushel, Margot B., Eric Vittinghoff, and Jennifer S. Haas. "Factors associated with the health care utilization of homeless persons." *JAMA* 285.2 (2001): 200-206.
- Folsom, David P., et al. "Prevalence and risk factors for homelessness and utilization of mental health services among 10,340 patients with serious mental illness in a large public mental health system." *American Journal of Psychiatry* 162.2 (2005): 370-376.
- Koh, Katherine A. "Psychiatry on the Streets—Caring for Homeless Patients." *JAMA Psychiatry* (2020): Online First.
- Cusack, Lynette, et al. "Extreme weather-related health needs of people who are homeless." *Australian Journal of Primary Health* 19.3 (2013): 250-255.
- Rodriguez, Robert M., et al. "Food, shelter and safety needs motivating homeless persons' visits to an urban emergency department." *Annals of Emergency Medicine* 53.5 (2009): 598-602.
- Brown, Alexander J., Steve W. Goodacre, and Sue Cross. "Do emergency department attendances by homeless people increase in cold weather?" *Emergency Medicine Journal* 27.7 (2010): 526-529.