

final LE prediction equation. In 1,263,595 VA patients, the mean age was 68 years and the majority were male (94%) and white (87%). During 12 years of follow-up, 602,576 (47.7%) died. Of 930 predictors from the EHR, 99 were included in the LE prediction equation. Harrell's C-statistic was 0.7705 (95%CI: 0.7693, 0.7718). The model estimated 10-year life expectancy with sensitivity of 81.6% (81.4%, 81.8%) and specificity of 68.8% (68.5%, 69.1%). In conclusion, we developed an LE prediction equation from hundreds of predictors in the VA EHR with good discrimination and calibration that may help clinicians weigh the potential benefit of long-term preventative treatments.

#### SLEEP QUALITY AMONG OLDER WOMEN AND MEN IN THE UNITED STATES BY SEXUAL ORIENTATION

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Sleep problems may increase the risk for, and result from, other health problems and negatively impact quality of life. Lesbian, gay, and bisexual older adults report more sleep problems compared to their straight counterparts when such problems are measured in the aggregate (e.g. "one or more of four specific sleep problems"). However, scant national research has examined if specific types of sleep problems vary by sexual orientation among older adults. Using 2015-2018 National Health Interview Survey (NHIS) data, we used logistic regression to separately model five sleep problems among women 50+ and men 50+ (lesbian/gay women: n=377, bisexual women: n=142, straight women: n=33,216; gay men: n=508, bisexual men: n=115, straight men: n=25,998) as functions of sexual orientation, controlling for age, race, education, and income. Sexual minority older adults were more likely than their straight counterparts to have taken sleep medication in the past week (women AOR=2.04, 95% CI:1.55, 2.67; men AOR=1.81, 95% CI:1.36, 2.40). The only other difference by sexual orientation found for men was bisexual older men's greater likelihood, compared to straight men, of having difficulty falling asleep (AOR=2.02, 95% CI: 1.08, 3.79). Older women did not differ by sexual orientation in difficulty falling asleep, difficulty staying asleep, or waking up not feeling rested for four or more days in the past week, or meeting National Sleep Foundation recommendations for hours of sleep per night, whether lesbian/gay and bisexual women were examined together or disaggregated. Future research may examine why sleep quality only sometimes varies by sexual orientation.

#### USING BIG DATA FOR CLINICAL DECISION MAKING

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The current workforce is ill prepared for the rise in Americans 65 and older from 46.3 million in 2010 to 98.2 million by 2050, a national increase of 112.2 % accompanied by increasing chronic conditions. The increase in older Americans, the prevalence of those with dementia, accompanied by behavioral symptoms of dementia (BSD) is

increasing. Innovative technology may alert health providers to early signs of decline in frail older adults with multiple chronic conditions. Remote monitoring in the home and community living spaces can address complex care needs for older adults. Monitoring may identify and predict deviations in a person's daily routine that herald a change in a chronic condition. We present two examples that can potentially assist in clinical decision making. The first exemplar used 24/7 sensor data to identify changes, potentially clinically significant, such that early intervention may prevent hospitalizations; the second exemplar presents the use of pattern recognition software (THEME TM) for temporal pattern analysis, to identify and quantify behavior patterns with regard to intensity, frequency and complexity, such that interventions may be individually tailored and timed. Clinical researchers and technology developers need to collaborate early in the process to consider the sources and frequency of clinical measures for meaningful predictions. One major challenge lies in the interpretation of the vast amounts of within individual data. Our insights strive to improve future interdisciplinary development of monitoring systems to support aging in place and support clinical decisions for timely and effective care for frail older adults.

#### VALIDATING OLDER ADULT MORBIDITY TRAJECTORIES USING MULTIPLE COMORBIDITY INDICES

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Many older adults lead healthy lives while aging, with little or no morbidity. This group has been identified as "Escapers", for escaping the 10 most common lethal diseases in older adults. "Morbidity Trajectories" (MOTRs) are a metric based on the temporal patterning of comorbidity, which is used to characterize changes in disease status as a person ages. While these trajectories have been used to identify Escapers in various populations, they are sensitive to the choice of the disease metric. This study seeks to describe the differences in MOTR scale by alternative comorbidity indices. Understanding these differences is important because of the need to validate the potential end-point in health trajectory risk scores that may be used in a clinical setting. We found that 15-19 percent of a Medicare utilizing population (n=321722) aged  $\geq 65$  between 1992 and 2012 fall into the Escaper category, where there is a consistent Quan modification Charlson Comorbidity Index (CCI) score of 0 during the entire study period. Using the vanWalraven (vW) Elixhauser Comorbidity Index modification, we found that about a third (35.2%) of the study population have a vW Elixhauser score of 0 over the span, a significantly higher portion than the CCI estimate. We will discuss this difference and the resulting varying trajectories from each of these indices. Future work includes further validation of the MOTR scale using unsupervised machine learning clustering methods, and using supervised machine learning models to identify clinical factors and early life conditions that may influence MOTR membership.