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while those with higher proportions of females and greater RNHRPPD had increasing AP use pre- and post-ARI.

Conclusion/Discussion: This study demonstrates that there are modifiable NH characteristics associated with changes in AP use pre- and post-ARI. Previously identified factors (i.e., higher survey rating, presence of NP/PA, greater prevalence of females, and higher RNHRPPD) showed increasing trends of AP use post-ARI in our study. Factors associated with higher AP use in prior literature (e.g., for-profit status, higher acuity index, proportion with psychosis or dementia) were associated with lower AP use post-ARI in our study. Findings may indicate changes in facility practices and question documentation accuracy post-ARI. Further research is needed to examine declines in AP use post-ARI in facilities with higher proportions of psychosis and dementia to better understand the impact of ARI in these NH.

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Prediction of Deterioration from COVID-19 in Patients in Skilled Nursing Facilities Using Wearable Devices: A Feasibility Study



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Introduction/Objective: 35% of all COVID-19 deaths occurred in Skilled Nursing Facilities (SNFs). In a healthy general population, wearables have shown promise in providing early alerts for actionable interventions during the pandemic. We tested this promise in a cohort of SNFs patients diagnosed with COVID-19 and admitted for post-acute care under quarantine. We tested if 1) deployment of wearables is feasible in the setting of SNFs and 2) they can provide early and actionable insights into deterioration.

Design/Methodology: This prospective clinical trial has been approved by the WIRB (HSA-001) and registered on clinicaltrials.gov (NCT04548895). We deployed two commercially available devices – both detecting continuously every 2-3 minutes heart rate (HR), HR variability, respiratory rate (RR) and – uniquely – providing the following biometrics: 1) the wrist-worn bracelet (wearable) yielded continuous oxygen saturation (O2Sat), 2) the under-mattress ballistocardiography (BCG) sensor tracked in-bed activity, tossing, and sleep disturbances. Patients also underwent routine monitoring by staff every 2-4 h. For death outcomes, cases are reported due to the small sample size. For palliative care versus at-home discharges, we report mean±SD at $p < 0.05$.

Results: From 12/2020 – 03/2021, we approached 26 PCR-confirmed SARS-CoV2-positive patients at two SNFs: 5 declined, 21 were enrolled into monitoring by both sensors (female=13, male=8; age 77.2 ± 9.1). We recorded outcomes as discharged to home (8, 38%), palliative care (9, 43%) or death (4, 19%). The O2Sat threshold of 91% alerted for intervention. The wearable captured hypoxic events below 91% nine times as often as the routine intermittent pulse oximetry. In the patient deceased, two weeks prior we observed a wide range of O2Sat values (65-95%) captured by the wearable and not noticeable with the routine vital sign spot checks. In this patient, the BCG sensor yielded a markedly reduced RR (7/min) in contrast to 18/min from two routine spot checks performed in the same period of observation as well as compared to the seven patients discharged home over a total of 86 days of monitoring (RR 19 ± 4). Among the patients discharged to palliative care, a total of 76 days were monitored, HR did not differ compared to the patients discharged home (68 ± 8 vs 70 ± 7 bpm). However, we observed a statistically significant reduction of RR at 16 ± 4 /min vs 19 ± 4 /min as well as the variances in RR and activity of palliative care patients vs patients discharged home.

Conclusion/Discussion: We demonstrate that wearables and under-mattress sensors can be integrated successfully into the SNF workflows and are well tolerated by the patients. Moreover, specific early changes of oxygen saturation fluctuations and other biometrics herald deterioration from COVID-19 two weeks in advance and evaded detection without the device. Wearable devices and under-mattress sensors in SNFs hold significant potential for early

disease detection.

Disclosures: Health Stream Analytics co-designed and conducted the study with in-kind device support from Emfit and Biostrap.

Strategies to Promote Staff and Resident Flu and COVID-19 Vaccination in Skilled Nursing Facilities



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Introduction/Objective: Influenza (flu) and COVID-19 vaccination of both residents and staff are critical components of infection prevention in skilled nursing facilities (SNFs). Our study sought to identify and characterize strategies that SNF staff are using to promote vaccination.

Design/Methodology: Twenty-six semi-structured, qualitative interviews were conducted with administrators, directors of nursing, infection preventionists, and Minimum Data Set (MDS) coordinators at 13 SNFs across the country. Interview transcripts were analyzed using a content analysis approach and a detailed audit trail was maintained.

Results: Skilled nursing facility staff described varying approaches to promote flu vaccination in their facilities. These ranged from small-scale efforts, such as displaying informational posters and providing candy at flu clinics, to more hands-on strategies including holding health fairs and educational question and answer sessions and having one-on-one discussions. A few facilities reported having a formal “vaccine champion,” usually the infection preventionist, who was responsible for influenza vaccine promotion and education efforts. Use of incentives to promote flu vaccination also varied across facilities prior to the COVID-19 pandemic. Some used no incentives, while others provided bonuses to staff who were vaccinated or allowed staff who had received the flu vaccine to avoid wearing a face mask for the duration of the flu season. While many strategies and incentives had been in place prior to COVID-19 and did not change as a result of the pandemic, participants described concerns about the continued effectiveness of the masking incentive strategy, given that masks are expected to be a requirement of SNF staff for the foreseeable future. Participants reported similar approaches to educate about and promote COVID-19 vaccination for residents and staff. With regard to education, staff discussed both widespread, general education strategies as well as targeted, individual approaches. Where COVID-19 vaccination was not mandatory, it was incentivized for staff by reduced testing requirements and for residents by reduced restrictions on activities and visitation.

Conclusion/Discussion: A wide range of strategies to promote flu and COVID-19 vaccination were reported. Future efforts to promote vaccination, informed in part by our findings here, will be critical to avoid the potential burden of influenza and COVID-19 co-circulation.

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The Effects of the 2020 COVID-19 Visitor Ban on Mood, Behavior, and Social and Cognitive Functioning in Older Long-Term Care Residents



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Introduction/Objective: In order to prevent the spread of COVID-19 the Dutch government imposed a visitor ban on long term care facilities