

two multi-page booklets, and two pamphlets. The overall mean understandability score of the print materials was 68.9% \pm 11.3 with a range of 47% to 80%. Five materials scored above the recommended 70% in understandability. The overall mean actionability score of the print materials was much higher at 81.3% \pm 21.6 with a range of 67% to 100%. Five materials scored above 70% in actionability. However, only three of the eight materials scored above the recommended 70% in both understandability and actionability. **DISCUSSION/SIGNIFICANCE OF FINDINGS:** Limited breast cancer survivorship print materials exist as both understandable and actionable. Personalized instruction provided by oncology team members may be indicated to supplement the material. This additional teaching may help ensure survivors comprehend messages and act upon specific tasks as indicated in survivorship print material.

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Symptom Dynamics and Biomarkers of Disease Progression in Older Adult Patient-Caregiver Dyads During Care Transitions after Heart Failure

Hospitalization: Study Design and Anticipated Results

Julie T. Bidwell^{1,2}, Emilio Ferrer², Christopher S. Lee³, Martin Cadeiras⁴, Karen S. Lyons³, Heather M. Young^{1,2} and Ladson Hinton²
¹Betty Irene Moore School of Nursing; ²University of California Davis; ³Connell School of Nursing, Boston College; ⁴UC Davis Health

ABSTRACT IMPACT: This study is designed to address a critical gap in our understanding of how aging patients and caregivers recognize and respond to clinically important changes in heart failure symptoms during vulnerable transitions. **OBJECTIVES/GOALS:** Research on family involvement in heart failure (HF) symptom response is limited. Our objective is to examine HF symptom monitoring processes in couples after HF hospitalization, and quantify how coupled symptom assessments predict symptom response, patient clinical events, care strain, and dyad health during the high-risk post-discharge period. **METHODS/STUDY POPULATION:** This is an ongoing T2 translational study that employs an intensive longitudinal design. Adults aged ≥ 65 years hospitalized for HF and their caregiving spouse/partner are enrolled. The target n is 48 dyads. Over 5 weeks of follow-up, dyads complete daily diaries assessing patient HF symptoms. Clinical biomarkers of HF severity (NTproBNP, ST2) are also collected. Primary study endpoints are dyads' HF symptom response behaviors and caregiver strain; secondary endpoints are dyads' health status and patient clinical events. Dyadic dynamics of symptom assessment will first be characterized using dyadic autoregressive time series models. Subsequently, we will extract cross-partner effect parameters from the time series models and test whether dyadic effects predict the trajectories of each of our endpoints. **RESULTS/ANTICIPATED RESULTS:** This study is currently underway. In line with our study hypotheses, we anticipate that couples who assess patient symptoms similarly (dyadic agreement), and whose symptom assessments accurately reflect clinical severity, will be more likely to respond to symptoms appropriately with lower stress to the caregiving partner, and have better trajectories of health (self-reported and clinical). Characterizing dyadic symptom dynamics will provide important insight into the day-to-day process of symptom recognition in couples. Further, quantifying dyadic symptom dynamics in relation to our endpoints will provide information on the clinical value of dyadic symptom agreement, and whether it might be a target for future interventions to support better symptom response and health outcomes for both dyad members. **DISCUSSION/SIGNIFICANCE OF FINDINGS:** This project innovates on existing paradigms by applying family-level

theory and techniques to better understand and support interventions for couples during post-discharge HF transitions - a vulnerable period for older adults that has traditionally been studied almost exclusively at the patient-level, with marginal success.

Evaluation

29791

Bird-delivered ivermectin as a novel urban West Nile virus prevention strategy

Karen M Holcomb¹, Chilingh Nguyen², Nicholas Komar³, Brian D Foy² and Christopher M Barker¹

¹University of California Davis; ²Colorado State University; ³Centers for Disease Control and Prevention Division of Vector-Borne Infectious Diseases

ABSTRACT IMPACT: Successful implementation of this control strategy will result in a commercially available ivermectin-treated birdfeed that the public can use to protect themselves from infection with West Nile virus (WNV) by reducing mosquito survival and thereby suppressing WNV transmission around their homes. **OBJECTIVES/GOALS:** We assessed the efficacy and feasibility of ivermectin (IVM)-treated birds as a mosquito control strategy for local reduction of West Nile virus (WNV) transmission. We conducted a randomized field trial in backyard chickens and developed a mathematical model informed by field data to predict the impact of treated wild birds on transmission. **METHODS/STUDY POPULATION:** We placed 48 chickens in four treated and four untreated control flocks in backyards coops across Davis, CA and administered IVM daily in feed to treated flocks (Jul-Sep 2019). We assessed entomological indices weekly (i.e. Culex mosquito abundance, WNV infection prevalence, and parity rate) around each coop, monitored serum IVM levels in treated chickens, and tested for WNV antibodies in all chickens. Shifting our focus to wild birds, we developed a spatially-implicit mathematical model of WNV transmission near IVM-treated birdfeeders. Model parameters for bird movement were based on our telemetry of 27 birds in Fort Collins, CO (Aug-Sep 2020). Using the model, we predicted optimal deployment of treated feeders to provide local WNV control. **RESULTS/ANTICIPATED RESULTS:** WNV seroconversions were reduced in treated vs. untreated flocks, indicating a reduction in WNV transmission intensity at treated coops ($P = 0.03$). A sustained, but insignificant reduction in number of infected mosquitoes was observed near treated coops ($P = 0.59$); small sample sizes and below normal WNV prevalence in the study area limited our power. We anticipate that optimal spacing and number of IVM-treated birdfeeders required for effective WNV control in neighborhoods will depend on feeder usage rates by common bird species irrespective of WNV competence; broad availability of IVM-treated bloodmeals to mosquitoes will be more effective in reducing transmission than targeting the few species responsible for viral amplification. **DISCUSSION/SIGNIFICANCE OF FINDINGS:** IVM is a novel method for controlling zoonotic pathogens in the US and has the potential for targeted mosquito control to reduce pesticide usage. Evaluating spatial deployment of IVM-treated bird feed for local reduction in WNV transmission is a stepping stone to commercial deployment of this WNV control strategy.