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A CTS Team Approach to Immune Signatures of PTSD Susceptibility

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OBJECTIVES/GOALS: Post-traumatic stress disorder (PTSD) develops in a subset of individuals (15-25%) exposed to trauma. We report our preliminary findings investigating underlying peripheral immune responses related to risk and resilience to PTSD. **METHODS/STUDY POPULATION:** Sprague-Dawley rats (half male) were exposed to predator scent stress in the form of the fox pheromone 2,5-dihydro-2,4,5-trimethylthiazoline (TMT) once for 10 minutes. Seven days later, rats were assessed for persistent anxiety-like behavior using the acoustic startle response task (ASR) and elevated plus maze (EPM). Tail blood was collected for later inflammation analysis at three time points: 1) prior to experiment start, 2) after TMT exposure, and 3) after ASR and EPM. Using a within-subjects design, our experiment elucidates the connection between PTSD-like symptoms and baseline immune function, inflammatory stress responses, and chronic inflammatory state after stress exposure. **RESULTS/ANTICIPATED RESULTS:** In comparison to healthy controls, humans with PTSD show elevated blood levels of inflammatory markers. Human studies also show a relationship between baseline immune dysfunction and later PTSD development. In agreement with this literature, we anticipate PTSD-like rats will have increased blood levels of inflammation markers at all three time points compared to resilient and control rats. These findings will back-translate human findings in support of the predator scent stress preclinical model of PTSD. **DISCUSSION/SIGNIFICANCE:** Our findings will elucidate the temporal aspects of proinflammatory markers and PTSD development. This study will indicate if baseline peripheral immune dysfunction, inflammatory response immediately after stress exposure, and/or chronic inflammatory state predicts PTSD-like behavior in rats.

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Implementing a hospital-based referral system to connect heart failure patients with payer disease management: approaches and lessons from a pilot study

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OBJECTIVES/GOALS: Commercial health insurance payers invest in disease management programs (DM) to coordinate care for complex patients. To overcome gaps in connecting patients hospitalized with heart failure to DM, we implemented a novel warm handoff referral between hospital providers and payer DM using the Implementation Research Logic Model (IRLM). **METHODS/STUDY POPULATION:** A research and quality improvement team collaborated with champions from one hospital and three payers to build and pilot an inpatient-based referral for hospitalized patients with heart failure who were beneficiaries of one of three payers. The standard process of payers initiating contact with patients by phone was restructured to enable inpatient teams to initiate referrals by screening eligible patients prior to discharge. Between August 2020 and October 2021, 285 patients were hospitalized and eligible

for screening. Patient registries were built to track patient referral, eligibility, and enrollment status. Monthly stakeholder meetings were used to collect referral rates and review barriers and facilitators related to implementation. **RESULTS/ANTICIPATED RESULTS:** Of the 63.6% (N=168) patients screened, 31.4% (N=83) were referred, 17.4% (N=46) declined referral, and 14.8% (N=39) were deemed ineligible by payers. Inpatient screenings were challenged by variability across five units with incomplete/missed referrals, primarily attributed to COVID-19-related staff shortages. Payers were challenged by delayed/incomplete referrals and varying access to the hospitals EHRs. Building patient registries helped inpatient champions track eligibility and referral status, and centralizing screening to one champion improved screening rates and reduced incomplete referrals. Additional challenges being addressed include clarifying each payers unique eligibility requirements, refining payers review of referral emails, and creating descriptions of DM for patients. **DISCUSSION/SIGNIFICANCE:** Implementing inpatient-based DM referrals requires patient and staff engagement, real-time data sharing, and iterative process improvement. Referrals using robust health IT systems could improve patient engagement by connecting payers, providers, and patients; and improve evaluation efforts with real-time process and outcome data.

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Identifying Barriers to and Strategies for Implementing Same-Day Discharge after Mastectomy

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OBJECTIVES/GOALS: Same-day discharge (SDS) after mastectomy without reconstruction (MwoR) is cost-effective with equivalent complications rates when compared to patients discharged the day after surgery. Despite this, facilities SDS rates after MwoR vary from <10%-80% (20% overall). We aimed to explore barriers to and strategies for implementing SDS after MwoR. **METHODS/STUDY POPULATION:** We conducted semi-structured interviews with surgeons currently performing MwoR and practicing in the state of Michigan. Recruitment was done through purposeful and snowball sampling methods. Interviews ranged from 40-60 minutes in length. The interview guide was based on the Tailored Implementation of Chronic Disease framework. Interviews were transcribed then analyzed by 3 independent reviewers. A framework matrix was created to identify common themes. **RESULTS/ANTICIPATED RESULTS:** Participants (n=15) included general surgeons, breast surgeons, surgical oncologists, and both university and non-university affiliated practices were represented. Surgeons either discharged patients the same-day or the day after MwoR. All surgeons who didn't routinely discharge patients the day of surgery (n=9) believed their facility had the resources to implement this practice and it would be safe for most patients. Identified barriers to same-day discharges included provider preoperative expectation setting, patient anxiety about managing their wound drain, and practice standards at their facility. Potential strategies for implementation included incorporating drain teachings with patients before surgery and explaining the benefits of same-day discharge with other providers at your facility. **DISCUSSION/SIGNIFICANCE:** We identified novel barriers to same-day discharge after MwoR. These barriers are potentially targetable with interventions addressing patient anxiety surrounding drain management, and education of providers across the care continuum.