participants through electronic health records, while 84% reported some level of fatigue on surveys. In multivariable analysis, factors significantly associated with greater fatigue included younger age (OR: 0.98, 95% CI: 0.98–0.99, p<0.001), female sex (OR: 1.38, 95% CI: 1.21–1.57, p<0.001), current smoking (OR: 1.19, 95% CI: 1.05–1.36, p=0.008), diabetes mellitus (OR: 1.34, 95% CI: 1.1–-1.54, p<0.001), chronic obstructive pulmonary disease (OR: 1.37, 95% CI: 1.16–1.62, p<0.001), and mood disorders (OR: 1.96, 95% CI: 1.72–2.23, p<0.001). DISCUSSION/SIGNIFICANCE OF IMPACT: This is among the first studies to examine PSF using large, representative datasets. With 84% reporting symptoms, findings reveal under recognition in clinical settings and identify modifiable risk factors to guide targeted, evidence-based interventions.

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Immunopathogenesis of Avian Influenza in the mammalian mammary gland

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OBJECTIVES/GOALS: Our aim is to determine the pathogenesis of intramammary infection of H5N1. First, we must induce lactation, and our aim was to create a protocol to induce lactation without impregnating mice. We hypothesize that the immunological milieu of a lactating mammary gland is highly conducive for influenza viral infection. METHODS/STUDY POPULATION: Nine 10-week-old female mice of unidentified strain were placed in cohorts of lactating versus non-lactating versus control (undeveloped mammary glands) groups. Animals were co-housed within their group. Lactogenic hormones were used to induce mammary development and lactation, including estradiol, progesterone, oxytocin, and prolactin. Mice were inoculated with a comparative strain to H5N1, H1N1, due to its increased availability and safety standards. Immunopathology of mammary tissues and lungs will be assessed by histology, viral titration, and flow cytometry, and data analysis is pending. RESULTS/ANTICIPATED RESULTS: All seven mice that were chosen to be injected with lactogenic hormones developed mammary tissue beyond the pubertal stage and into the reproductive stage, as expected if they were pregnant. Of those seven mice, the three that were given prolactin and oxytocin for milk production and let down were able to lactate. Plaque assays of mammary and lung tissue revealed no viral titers. Flow cytometry of innate surface markers showed varying results and were deemed inconclusive. Based on the preliminary data, it is inconclusive whether the mammary tissue was able to support H1N1 virus replication. DISCUSSION/SIGNIFICANCE OF IMPACT: Better understanding of the immunopathology of the mammary gland and how it contributes to disease and disease transmission of influenza in mammalian species will be essential for the development of measures to control disease outbreak and minimize economic loss, especially in species such as cattle and goats.

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Can we identify the ideal sexual violence prevention program for each student? Leveraging implementation science to reimagine how we deliver prevention programming

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OBJECTIVES/GOALS: Analyze risk factors among college students and their likelihood of experiencing or perpetrating sexual violence. Critique the process to develop a screening tool to match students to existing programming. Examine principles of implementation science in overcoming barriers to connect each student to the most appropriate prevention programming. METHODS/STUDY POPULATION: Research questions: What needs to be in a screening tool to gauge each incoming college student's risk factors and likelihood for future sexual violence victimization and perpetration? How can the tool be designed using principles of implementation science with end-user feasibility in mind? For this protocol, I will initiate a participatory research process to guide the development of a screening tool for incoming college students in a mid-western sample of the USA to assess risk factors for sexual violence victimization and perpetration. I will assemble a Technical Expert Panel to develop the screening tool using existing standardized measures. I aim to recruit a diverse panel of researchers and practitioners in sexual violence prevention, including sexual assault survivors and peer educators. RESULTS/ANTICIPATED RESULTS: The anticipated result will be a screening tool to predict the likelihood of victimization and perpetration for each incoming college student over one academic year. Next steps would be to pilot-test the screening tool to determine its effectiveness. The long-term goal would be to match each student to the most appropriate evidence-based prevention program based on individualized screening results. This could include existing evidence-based programs that prevent or decrease severity of victimization, revictimization, alcohol-facilitated victimization, perpetration, perpetration among high-risk students, and perpetration among fraternity members. Considering barriers and stakeholder engagement from the onset of the project aims to increase the feasibility of implementation in practice. DISCUSSION/SIGNIFICANCE OF IMPACT: Quantifying an approximation of how many students would benefit from which types of programming can help colleges determine where to invest their time and resources to best prevent sexual violence. Guiding each incoming student to the most appropriate evidence-based prevention program could decrease rates of campus sexual violence.

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Implementing depression screening services in appointment-based pharmacies: A qualitative observational feasibility study

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OBJECTIVES/GOALS: This study aimed to explore the feasibility of implementing sustainable depression screening services within an appointment-based pharmacy. METHODS/STUDY POPULATION: A qualitative observational study was conducted at a rural, appointment-based community pharmacy. Following staff consent, unstructured interviews and workflow observations were performed over a 1-week period to characterize existing processes and identify potential integration points for screening. Field notes from observations and interviews were supplemented with an anonymous Qualtrics survey assessing perceived barriers and facilitators to depression screening implementation. RESULTS/ANTICIPATED RESULTS: The pharmacy filled approximately 200 prescriptions daily and employed one pharmacist and two to four bilingual technicians serving a predominantly Hispanic population. Both the pharmacist and staff were supportive of implementing depression screening and viewed it as compatible with their MedSync workflow. Reported barriers included the lack of a private counseling area and concerns regarding patient comfort discussing mental health due to stigma. DISCUSSION/SIGNIFICANCE OF IMPACT: Appointment-based pharmacies are well suited to integrate depression screening into existing workflows. Future implementation efforts should address structural and stigma-related barriers to optimize feasibility and sustainability.

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Opt-in or Opt-out? Evaluating policies and best practices in patient engagement for research

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OBJECTIVES/GOALS: This poster overviews the national landscape of policies related to patient engagement for research known as opt-in or opt-out policies. The evaluation compares policy types, changes to those policies, managing institutional hurdles, the resources used to support patient engagement for research, and shares best practices. METHODS/STUDY POPULATION: We identified peer academic medical institutions with active CTSA funding from public records and invited the contact PI of 37 institutions to speak about their patient engagement policies. We connected with 26 of these institutions in 30–60 minute discussions with members of CUIMC, WCM, and NYP. Each participant consented to being recorded for note-taking purposes before sharing an open-ended narrative about their patient engagement policies. Questions were completed throughout this process to address policy specifics, institutional resources, ethical considerations, and patient engagement. RESULTS/ANTICIPATED RESULTS: In speaking with 26 peer institutions, we identified 50% have continuously operated under an opt-out policy with an additional 25% of institutions having previously switched from opt-in policies to opt-out. Those having undergone a policy switch commonly did so in alignment with an institutional implementation of an EHR system. The majority of opt-out institutions had special populations that were excluded from this policy for a multiple of ethical and practical considerations. Institutional decisions on policy type often centered on patient needs and experience, weighing patient autonomy versus patient privacy. DISCUSSION/SIGNIFICANCE OF IMPACT: There has been a national shift toward opt-out patient engagement policies, frequently aligning with the launch of an EHR system. Those switching to opt-out policies often cited patient autonomy as their guiding ethical principle and chose to engage with patient advocacy groups following the policy implementation for operational optimization.

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Amplifying community voices: Enhancing CE Studios through facilitator-led power sharing in translational research

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OBJECTIVES/GOALS: 1. Explore how to increase shared leadership of CE Studio by leveraging the expertise of community facilitators. 2. Understand processes implemented to enhance power sharing between community and academic partners participating in CE Studios. METHODS/STUDY POPULATION: In partnership with a community co-investigator, community members (N= 35) were recruited to serve as facilitators for the Northeast Ohio CTSC Community Engagement (CE) Studios starting in October 2024. A four-phase innovation method was conducted to onboard community facilitators and solicit feedback to increase power sharing during our CE Studios – Phase 1: Developing Facilitator Pipeline, Phase 2: Engaged Training and Development, and Phase 3: Enhancing Expert Experience. A selection of facilitators participated in virtual or in-person CE Studio (N= 4) to pilot Phase 4: Team Integration. Together, these innovations enhanced community expert recruitment and shared leadership of the CE Studio while strengthening the value of the CE Studio for investigators seeking community input. RESULTS/ANTICIPATED RESULTS: We anticipate enhanced CE Studio outcomes by implementing community facilitator guidance and innovation throughout the CE Studio framework. DISCUSSION/SIGNIFICANCE OF IMPACT: Empowering facilitators to provide their expertise throughout the full scope of the CE Studio framework through coaching, expert recruitment, training, investigator preparation, and reporting enhances the CE Studio experience. This power sharing increases trust and quality of the CE Studio experience and enhances academic partnerships.

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Effects of culinary-focused nutrition education on psychological health and well-being: An Exploratory analysis of the SPICE UP MyPlate Pilot Study

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OBJECTIVES/GOALS: Although diet quality is known to influence psychological health, this is under-explored in studies designed to improve diet quality. This secondary analysis aims to investigate the effects of culinary-focused nutrition education relative to

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