may play a significant role in reducing overdoses, especially in cases where a longer-acting opioid antagonist is necessary. Opiant Pharmaceuticals' trial commenced after the NIH announced their initiative; furthermore, the NIH's National Institute on Drug Abuse granted the company $7.4 million to further the investigation of this drug. We will continue to research drugs that have previously been studied for the indication of treating opioid overdose in the United States and abroad and catalog them. DISCUSSION/SIGNIFICANCE OF IMPACT: The abuse and misuse of opioids in the United States has caused an epidemic accounting for over 115 opioid-overdose deaths each day, devastating our nation, both socially and economically. The United States spends $78.5 billion annually to combat the misuse of these drugs. Due to the severity of the opioid crisis, efforts to better understand approved therapies and investigational products in development to treat opioid overdose will be of significance moving forward. This research can inform agencies who are developing strategies to reduce opioid overdoses and pharmaceutical product developers about the current opioid antagonist landscape.

Digital Health, Social Media, and AI

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Can you read me now? Clinician variations in managing and responding to secure messages from patients

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OBJECTIVES/SPECIFIC AIMS: To identify areas of variation in primary care clinician responses to secure messaging and to assess the quality of secure messages by clinicians. METHODS/STUDY POPULATION: This mixed-methods study included twenty one primary care clinicians from a Midwestern safety net hospital and Veterans Affairs medical center. Participants were presented with five short clinical vignettes and corresponding secure messages from hypothetical patients and asked to compose responses. Participants were interviewed about their cognitive approach to the responses as well as perspectives on quality of care as related to electronic communications. RESULTS/ANTICIPATED RESULTS: Every participant recalled having patients who misused secure messaging for urgent issues, suggesting the need for more patient education and the possible adverse consequences of overlooked messages. The study also uncovered key differences in several areas, include clinician timeliness, message management, the circumstances in which they would use messaging, and the content of the messages (including patient-centeredness). While participants agreed that messages about clinical issues should not be resolved via secure messaging, there was a lack of consensus regarding emotionally charged messages and messages dealing with medication adjustments. Some participants spoke of the need for more guidance in knowing when best to use secure messaging. "Sometimes," one physician said, "it feels like we're just making up [rules for secure messaging]." Although clinician responses were uniformly respectful, the patient-centeredness varied in the use of jargon and social talk, as well as clarity for patients. DISCUSSION/SIGNIFICANCE OF IMPACT: This study revealed variations in provider approaches to secure messaging, and the content of responses. These variations reflect lack of consensus about how care is delivered via secure messaging, and reveal the

need for clinician guidance. They also suggest possible negative patient consequences if secure messaging is used ineffectively. The extent to which variations are undesirable remains unknown. Future work will explore the consequences of such variations.

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Combined Eating Disorder and Weight Loss Online Guided-Self Help Intervention: A Pilot Study

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OBJECTIVES/SPECIFIC AIMS: Among college students with binge-type eating disorders who are overweight (BMI >25), does use of an online, guided self-help program for EDs combined with healthy weight-loss (WL) methods lead to reductions in ED symptoms and weight loss compared to controls referred to standard in-person treatment (Student Health Services)? Aim 1: Develop online, guided self-help program for intervention of ED psychopathology and weight reduction. Aim 2: Implement online, guided self-help program for intervention of ED psychopathology and weight reduction. Aim 3: Follow-up to track remission of ED psychopathology and symptoms and WL maintenance. METHODS/STUDY POPULATION: Up to N=60 college students who meet the criteria (clinical or sub-clinical binge-type ED and have a BMI > 25) and elect to participate will complete a baseline survey to enroll in the study, then will be randomized into a condition. Students in the intervention group (n=30) will be offered 8 weeks of online, guided self-help intervention for ED and WL. Students in the control group (n=30) will receive an email message encouraging them to seek support from Student Health Services for their WL and eating behavior concerns, along with appropriate contact information. All participants will receive follow-up 9 weeks after completing initial baseline, and a final follow-up survey 6-months after completing their baseline. RESULTS/ANTICIPATED RESULTS: Analysis of intervention and control groups will compare average Eating Disorder Examination Questionnaire (EDEQ) scores and WL (change in BMI) at the end of the intervention (9 weeks) and at 6-month follow-up. Group comparisons will be assessed via two-way mixed model ANOVA. DISCUSSION/SIGNIFICANCE OF IMPACT: Online, guided self-help interventions have been used for WL, as well as for treatment of EDs separately, but no program exists to manage these conditions together. Thus, the use of online intervention for ED psychopathology and WL in individuals with clinical and sub-clinical EDs is the next step. The goal of this study is to implement a program to reduce weight and shape concerns, reduce disordered eating symptoms, such as bingeing, and compensatory behaviors associated with binge-type EDs, while also reducing weight for individuals with EDs and comorbid overweight/obesity. This project will pilot an online, guided self-help ED intervention that offers cognitive behavioral based tools to improve ED symptoms in college students, while also teaching the healthy methods of behavioral WL, for students with clinical/sub-clinical binge-type EDs with comorbid overweight/obesity in order to examine effectiveness of the program compared to referral to Student Health Services for ED and WL concerns. Furthermore, the use of an online, guided self-help intervention is more scalable and can circumvent many of the barriers to traditional in-person treatment.