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Western Journal of Emergency Medicine: Integrating Emergency Care with Population Health

NUBE 2022 - National Update on Behavioral Emergencies

The American Association for Emergency Psychiatry (AAEP) is proud to have presented the 13th Annual National Update on Behavioral Emergencies (NUBE) Conference December 8-9, 2022 at the DoubleTree Resort by Hilton at Paradise Valley in Scottsdale, AZ. This conference was the first and only conference focused entirely on state of the art behavioral emergencies. As the care of these patients is frequently interdisciplinary emergency psychiatrists, psychologists, nurses, nurse practitioners, mental health workers, social workers, physician assistants and emergency physicians are invited participants. The conference includes two preconference programs, a scientific session, and opportunities for networking with your colleagues. For further information for next year's conference go to:

<https://www.emergencypsychiatry.org/nube-conference>.

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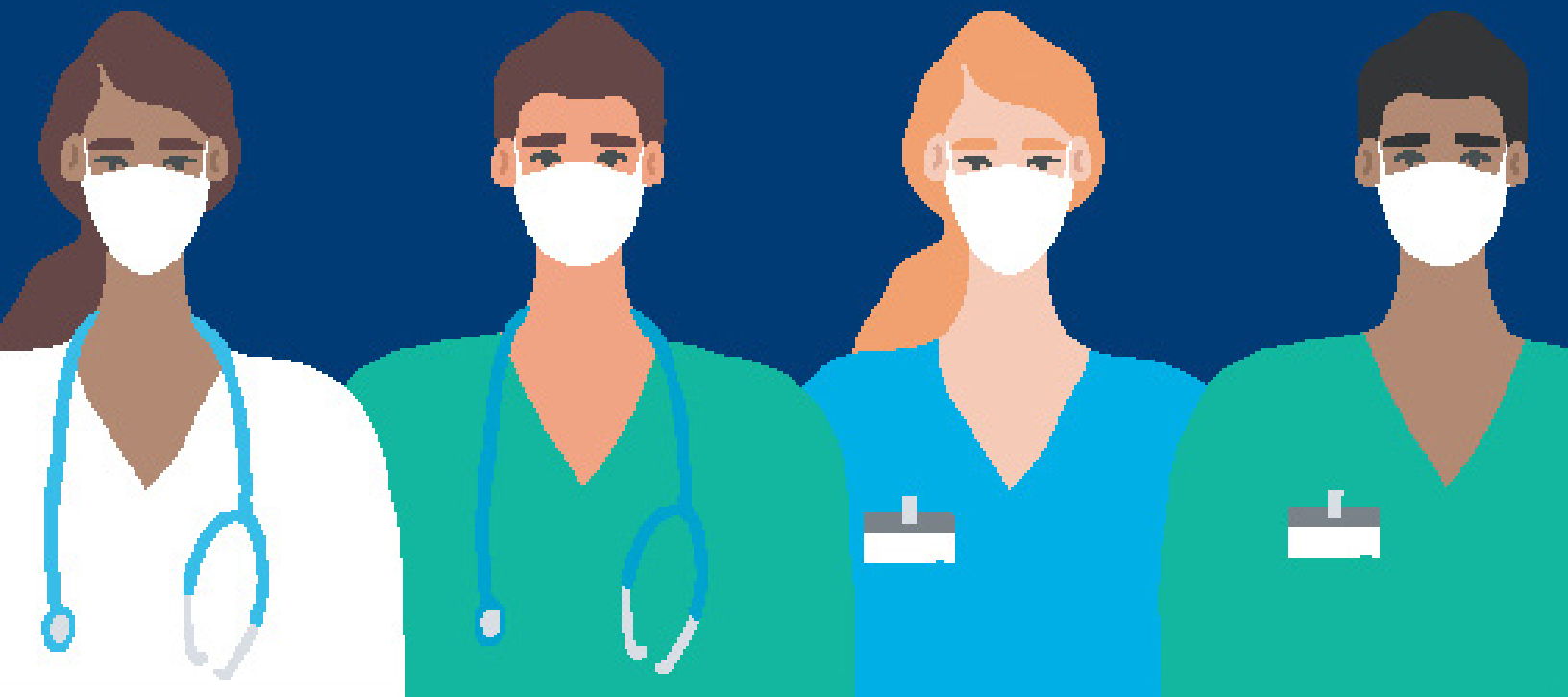


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1 Providing Comprehensive Services to Treat Patients and the Inpatient Psychiatric Bed Crisis

Anilla Del Fabbro, Natalie Cagle, Rachel Martin, Sulaimon Bakre

Objectives: A growing mental health crisis and a shortage of inpatient psychiatric beds have resulted in a surge of patients, boarded, in emergency departments awaiting acute inpatient psychiatric placement. This delays care and causes a further burden on already stressed emergency services. In June 2020, the Centers for Disease Control and Prevention (CDC) reported an increased incidence of anxiety and depressive disorders since March of 2020, in comparison to pre-pandemic data. This has further exacerbated the shortage of psychiatric beds nationwide. In addition, staff shortages at state psychiatric hospitals in the Commonwealth of Virginia led to temporary closures to admissions. State facilities in VA provide care for our most vulnerable population, including (involuntary) patients on a temporary detention order (TDO). Carilion Clinic implemented the Comprehensive Psychiatric Emergency Program (CPEP) in August 2020 with the goal of early identification and robust treatment of psychiatric patients while in the ED. Since implementation of the CPEP, providers have been able to redirect patients away from burdened state psychiatric facilities by rapid stabilization of patients in the ED. Patients were able to step down to a less restrictive environment, often no longer meeting criteria for TDO. This study aims to assess the rate of TDO releases pre- and post-implementation of the CPEP at Carilion Clinic.

Methods: A pilot program was launched in August 2020 at Carilion Roanoke Memorial Hospital through a collaboration of the Departments of Emergency Medicine and Psychiatry. The staff was comprised of a psychiatrist, a psychiatric nurse practitioner, and a social worker. Data was collected from May 2020 to June 2021 from the Epic electronic medical record and included all patients in the ED on a TDO, ages six and above. Patients who no longer met criteria for a TDO were released from involuntary status and either redirected as a voluntary patient to an inpatient psychiatric unit or discharged to the community. The rate of TDO releases three months prior to CPEP implementation was assessed and compared to the TDO release rate post-CPEP implementation.

Results: Prior to CPEP implementation, the TDO release rate was 7%, amounting to four patients released from a TDO per month. After implementation of CPEP, the TDO release rate increased to 19%, equating to thirteen patients released from a TDO per month during the pilot period. This led to a decrease in the number of patients that would have previously been admitted to a state psychiatric facility. Patients who benefitted from implementation of the CPEP were those with conditions in the following categories: chronic mental illness (32%),

individual/family crisis (24%), neurocognitive disorders (20%), substance use disorder (18%), autism spectrum disorders and intellectual/developmental disabilities (6%).

Conclusion/Implications: Implementation of the Comprehensive Psychiatric Emergency Program (CPEP) in Carilion Clinic, Emergency Department was successful in reducing the number of state psychiatric admissions by redirecting 11% more involuntary patients to voluntary status. The results of this study highlight the benefits of having in-house psychiatry teams dedicated to early triage, rapid treatment, and comprehensive case management for psychiatric patients in the emergency department. References- CDC, National Center for Health Statistics. Indicators of anxiety or depression based on reported frequency of symptoms during the last 7 days. Household Pulse Survey. Atlanta, GA: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2020. <https://www.cdc.gov/nchs/covid19/pulse/mental-health.htm>.

2 Impact of COVID-19 Pandemic on Pediatric Substance Abuse Related Presentations to Emergency Services Between July 2019 and March 2022

Rhoshel K. Lenroot, Chandra E. Cullen, Deirdre Hill, Anju C. Jaiswal, David Lardier, Kristina S. Sower, Kimothi N. Cain, Harry E. Snow, Mauricio Tohen

Introduction: The impact of the COVID-19 pandemic on substance use in children and adolescents is not well understood. Although lockdowns have largely ended, there is concern regarding longer time effects on development. Presentations to emergency department (ED) settings may provide an indicator of substance use associated with a relatively high level of acuity. The aim of the current study is to describe trends in pediatric (0-17yo) presentations associated with substance use diagnoses to emergency services at an academic center in a Southwestern state since onset of the COVID-19 pandemic and how these compare to rates prior to onset of COVID pandemic.

Methods: Retrospective chart review of electronic medical record data from July 2019-March 2022. Data included all visits by pediatric subjects (0-17yo) associated with a substance-use related diagnosis to acute care settings within the University of New Mexico Health Sciences Center system. Data is summarized within 3-month quarters (Jan-Mar, April-June, July-Sept, Oct-Dec) to allow comparison of numbers presenting during similar periods of year. March 2020 was when broad lockdowns were started in New Mexico. Variables included total number of visits, sex (M,F), race, ethnicity (Hispanic/Non-Hispanic), age range (0-9, 10-14, 15-17yo), insurance (private, Medicaid, other government, self-pay/other), whether seen by mental health provider, ED length

of stay (LOS) (1 hour or less, 2-5 hours, 6 hours or more), and substance-related diagnosis. Variables are compared between each quarter using a generalized linear model.

Results: There were 938 visits total during this time (467 male, 467 females, 4 missing). 598 were Hispanic, 274 non-Hispanic White, 147 Native American, 45 Black, 8 Asian, 4 NH/PI, and 146 declined or unknown. The vast majority of visits were in adolescents 15-17yrs old. The most common diagnosis was cannabis-related disorder at 306 encounters, followed by alcohol n=303. The trajectory of visits from July 2019-March 2022 showed a decline from 98 visits in July-Sept 2019 to 51 visits in April-June 2020, followed by increase to 102 visits in Jan-Mar 2022. Comparisons of equivalent quarters for each year were as follows: Q1 (2020 n=71; 2021 n=71, 2022 n=102). Q2 (2020 n=51; 2021 n=81). Q3 (2019 n=98; 2020 n=75; 2021 n=107, 2019-2021). Q4 (2019 n=90; 2020 n=57; 2021 n=111). There were fewer female visits prior to onset of COVID-19 (n=40 in females vs n=58 in males in 2019 Q3) and decreased further early in the pandemic (N=29 vs 46 in males in 2020 Q3), but then rose more rapidly than males (n=59 female, n=48 male, 2021 Q3). The proportion of visits with LOS 5 hours in Q3 initially decreased from 27.8% of visits(n=25) in 2019 to 19.3% (n=11) in 2020, then increased significantly to 35.1% in 2021 (n=39). There was not a significant effect of other variables.

Conclusions: The COVID-19 pandemic resulted in a rapid decrease in ED substance-abuse pediatric presentations, which rebounded to levels greater than pre-COVID. Females increased more than males. Visits with longer LOS increased during later pandemic. Future work includes understanding how mental health comorbidities and other socioeconomic stressors may relate to these findings.

3 Patient-specific Characteristics that Influence a Psychiatrist, Perception of a Patient, Risk for Attempting Suicide in the Emergency Department

Adam Takatsuka, Trevor Nykamp, Wesley Speer, Savannah Benko, Jacob Bart, Paris St Clair, Kirk Harris, Kirk McCall, Pooja Agarwal, Corey Goldstein, Eitan Kimchi

Background: There is evidence that factors such as unstable housing, substance use, and past psychiatric history may elevate one, lifetime risk of suicidality. However, data is limited regarding how these factors relate to the perception of acute risk of suicidality. Thus, psychiatrists may consider the presence of known chronic risk factors when assessing a patient, acute suicide risk level. It is thus possible that chronic risk level may be conflated with acute risk level. At our institution, patients in the Emergency Department (ED) are considered to be at high risk for attempting suicide in the hospital if they score positively on a suicide screening tool or

if an ED physician assesses them as high-risk. Those who are considered high-risk are assigned a one-to-one safety assistant for constant visual observation. All patients assigned a safety assistant for suicidality are then formally evaluated by the psychiatric consultation team, who assess the patient, level of acute suicide risk and recommend whether to continue or discontinue the safety assistant. Notably, there is limited data on which patient-specific variables may influence a psychiatrist, clinical assessment of acute suicide risk in the ED.

Objective: We sought to measure how certain patient-specific variables influence a psychiatrist, assessment of acute suicide risk level. We therefore evaluated how each of these variables might affect a psychiatrist, decision to continue or discontinue an assigned safety assistant.

Method: This was a retrospective study examining 218 patient encounters for whom a one-to-one safety assistant was ordered for suicidality. We analyzed patients, 1) demographic data such as age, race, housing situation, and socioeconomic status; 2) ED workup including urine drug screen results and blood alcohol level; and 3) past psychiatric history such as prior psychiatric hospitalization(s), suicide attempt(s), and presence of outpatient mental health care. We used a multivariate logistical regression to analyze how each of these variables contributed to a psychiatrist, decision to continue or discontinue the assigned safety assistant.

Results: Female sex and positive blood alcohol levels resulted in increased likelihood that the psychiatric consultation team recommended discontinuing a safety assistant. The presence of at least one past suicide attempt resulted in increased likelihood that the psychiatric consult team recommended continuing a safety assistant.

Conclusion: The results suggest that past suicide attempt(s) were directly correlated with a psychiatrist, perception of acute suicide risk. The presence of ethanol, on the other hand, was inversely correlated with a psychiatrist, perception of acute suicide risk, contrasting existing data that supports ethanol use as a chronic risk factor for suicide. We propose several theories for this finding, including clinician distrust of an intoxicated patients, provided history and symptoms, confirmation bias favoring discharge over prolonging care via ED observation, and the disinhibitory effects of ethanol resulting in statements that may not reflect true intentions. However, further data is required to explain this discrepancy.

4 To Screen, or Not to Screen, that is Depression

Alexa Mazur, Harrison Constantino, Kathryn Dover, Prentice Tom, Michael P. Wilson, Ronald G. Thompson

Introduction: Universal mental health screening has been shown to effectively identify people with previously

undiagnosed significant depression, result in earlier diagnosis and treatment, and, subsequently, decrease morbidity, mortality, and disease burden. However, primary care settings continue to rarely screen patients for depression. Harnessing machine learning to analyze speech samples for signs of depression has been shown to identify depressed individuals. This cross-sectional study aims to evaluate the feasibility of developing a neural network to detect signs of depression from speech samples and represents one of the first attempts to understand whether voice biomarker technology might be useful in the diagnosis of patients with depression.

Methods: Both males and females 18 years in the United States and Canada, recruited via social media, provided demographics and were enrolled in a cross-sectional study to develop a machine learning model to detect signs of depression using at least 45 second voice responses to the prompt, how was your day?, and self-reported PHQ-9 scores. The PHQ-9 instrument has demonstrated both a sensitivity and specificity of 0.88 and currently, primary care physicians correctly identify patients for screening 47.3% of time. To determine the model, predictive performance, all authentic and unique completed responses that met audio quality and length requirements were included in this training and validation analysis. Preliminary performance was measured using sensitivity, specificity, and both positive predictive value (PPV) and negative predictive value (NPV) metrics with 95% confidence intervals (CI). Before inputting, responses were individually reviewed for authenticity, converted to homogeneous audio quality, transformed into numerical representations, and divided: 80% training (n= 12,947) and 20% validation (n= 3,246) without sample overlap. Prediction outputs were scaled between 0 and 1. Quantitatively, signs of depression corresponded to a value 0.573 or equal to 1 and anticipated PHQ-9 score 10. Signs of depression not detected corresponded to values equal to 0 to 0.427, and PHQ-9 score 10. Values between 0.427 and 0.573 were labeled, further evaluation recommended.

Results: Evaluating the model, ability to detect signs of depression from at least 45 seconds of free speech demonstrated a sensitivity of 0.74 (95% CI: 0.72,0.77) and specificity of 0.75 (95% CI 0.72,0.77). The PPV was 0.75 (95% CI: 0.73, 0.77) and the NPV was 0.74 (95% CI: 0.71, 0.76). A total of 653 participants were labeled, further evaluation recommended.

Conclusions: This cross-sectional study to train and validate a machine learning model was feasible for detecting signs of depression utilizing at least 45 seconds of a free speech sample when compared to performance metrics for the PHQ-9 and/or clinician judgment for assessment alone. This study suggests voice biomarker technology may be a viable method to improve identification of depressed patients for screening and subsequent treatment in primary care settings. Further feasibility and acceptability studies to pilot clinical implementation of this technology are warranted.

5 Racial Disparities in Emergency Restraint Use for Agitated Patients

Daniel Stone

Background: The COVID 19 pandemic and the murder of George Floyd have prompted healthcare organizations to reexamine racial inequities in their care, challenging us to produce lasting, fundamental change. Mental health disorders, both diagnosed and undiagnosed, have increased in volume and developed new challenges for acute care practitioners during the pandemic. Additionally previous research has suggested that there are intrinsic and extrinsic biases that affect how care is delivered to patients presenting with mental health crises.

Methods: Through nominal group technique, we identified topics for equitable-care-oriented QI in the emergency department (ED) of our Level-1 Trauma center. Initial review of triage, left-without-being-seen, and fast-track data did not demonstrate significant racial disparities in standard benchmarks. We therefore focused on behavioral codes and restraint use. We prospectively collected data on all behavioral codes over a 3-month period, including demographics, visit characteristics, and certain aspects of restraint use including type of restraint, length of restraints, medication use, and re-initiation of restraints. In addition to tracking these metrics, employee perceptions of the psychiatric mental health emergencies were polled and evaluated.

Results: Our QI process identified varying levels of disparities in care. Over the study period, white, non-white, and black patients comprised 50.5%, 49.5%, and 28.7% of the ED patient population, respectively, and 50%, 50%, and 44% of the patients who were subject to behavioral codes. Of those patients who had behavioral codes called, restraints were used for 64.8% of white patients, 64.3% of non-white patients, and 67.2% of black patients. Of those arriving by ambulance or police, 20% arrived with pre-hospital restraints or handcuffs, and of those, 90.9% were placed in restraints on arrival to the ED. Of those patients who had restraints placed, 4-points were used for 34.1%, 26.1%, and 25.5% of white, non-white, and black patients, respectively, and the restraint chair was used for 30.7%, 38.6%, and 41.8% of those same groups. Medications were given to 80.7%, 88.7%, and 91.4% of white, non-white, and black patients who were placed in restraints, respectively, and to 77.4%, 80.6%, and 83.3% of those same groups of patients who were not placed in restraints. None of the differences were statistically significant. Of those patients who had restraints placed and then discontinued, 13% were re-restrained at some other point during their visit. Among other responses, nearly half of all ED employees thought that patients should ideally not be restrained during behavioral codes and that, if necessary, the restraint chair provides a better experience than 4-point restraints.

Conclusions: Continuous QI around a variety of measures can identify disparities and targets for sustained anti-racist improvements in emergency department care. This study will guide further intervention and education around inequities in care in our department and has prompted further consideration of, when restraints are deemed necessary, preferentially using less invasive measures like the restraint chair over 4-point restraints. Although decision-making around chemical and physical restraints for mental health emergencies is complex and difficult to study, EDs should carefully examine their use through continuous QI in order to optimize patient-centered outcomes.

6 Emergency Department Use of a Restraint Chair is Associated with Shorter Restraint Periods and Less Medication Use than the Use of 4-point Restraints

Kurt M. Isenberger, Bjorn C. Westgard, Joe Uzpen

Background: Physical and chemical restraints are commonly used in the emergency department, but ongoing quality improvement is needed to improve patient experience by minimizing their use and ensuring equity in their administration. Prior research in inpatient settings has suggested that restraint periods are shorter, fewer adjuvant medications are used, and staff perceptions of patient experience are improved when a restraint chair is used as compared to 4-point restraints.

Methods: We prospectively collected data for all patients who had a behavioral code called in the emergency department of our Level-1 Trauma Center over a 3-month period. We recorded their demographics, visit characteristics, and certain aspects of restraint use including type of restraint, length of restraints, and medication use. In addition to tracking these metrics, employee perceptions of the psychiatric mental health emergencies were polled and evaluated.

Results: Out of 175 behavioral codes, 35.4% of patients were not placed in restraints, 34.9% were placed in the restraint chair, and 29.7% were placed in 4-point restraints. Average time in restraints was 56.1 minutes for those in the restraint chair (IQR 30-62.5 minutes) and 91.6 minutes for those in 4-point restraints (IQR 54.5-115.5 minutes). Medications were given to 70.8% of those who were not restrained, 82.0% of those placed in the restraint chair, 90.4% of those placed in 4-point restraints. Repeat medications were given to 32.3% of those who were not restrained, 21.3% of those in the chair, and 30.8% of those in 4-point restraints. In a follow up questionnaire of all emergency department staff of varying job classifications involved in behavioral codes, 89.6% reported that the restraint chair is a better patient experience than use of 4-point restraints.

Conclusions: This quality-improvement project at our Level-1 Trauma Center suggests that the use of a restraint chair

during behavioral codes is associated with shorter times in restraints for patients than when standard 4-point restraints are used. Patients who are placed in the restraint chair also required less initial and repeated medication than those who are placed in 4-point restraints. In addition, the impression of a majority of emergency department staff involved in behavioral codes is that that patient experience is better in with use of the restraint chair than 4-point restraints. This project did not account for confounders of patient presentation that may influence care providers, decisions to use restraints or medications in behavioral codes or to call them in the first place.

7 Virtual Schooling and Pediatric Mental Health During the COVID-19 Pandemic

Thomas Leith, Reni Forer, Leah Rappaport, Nasuh Malas, Harlan McCaffery, Julie Sturza, Kristen Kullgren, Alana Otto, Kimberly Monroe

Introduction: The first six months of the COVID-19 pandemic saw a nearly 50% increase in pediatric mental health emergencies. Specific factors contributing to this rise remain poorly characterized. One frequently cited contributor is pandemic-related interruptions of in-person schooling. Early studies indicate that students have experienced significantly greater psychological distress during such disruptions. We set out to investigate what correlation, if any, exists between school modality (ranging from exclusively virtual to exclusively in-person) and pediatric mental health status.

Methods: This is a retrospective, descriptive study combining patient chart review and parental telephone survey, exploring the prevalence and severity of mental illness among inpatients at a single urban, academic, midwestern tertiary care center. The study population included all patients ages 6-18 admitted to the study site during the 2015-19 and 2020-21 school years who received Psychiatry and/or Psychology consults and/or were admitted to the inpatient psychiatry unit. Parents/guardians of participants from 2020-21 were surveyed regarding their child, educational experiences. We describe and compare participants between school years prior to and during the pandemic using descriptive demographic data and clinical data highlighting monthly admission rates and proxies for illness severity. We then assess for any correlation between these measures and recent virtual schooling.

Results: Total mental health-related admissions rose from an average of 1070 during pre-pandemic school years to 1111 in 2020-21. Patients admitted in 2020-21 were more likely to be female, non-white, and from ZIP codes with higher median income. Primary diagnosis was more likely to be a mood or eating disorder. Patients were less likely to present primarily for suicidal ideation or self-harm. Proxies of illness severity, including utilization of PRN antipsychotics/benzodiazepines and readmission rates, rose in 2020-21. 255 of 800 (31.9%)

families responded to the telephone survey. Respondents were more likely to have a child who was female and slightly younger compared to non-respondents. 98% of respondents reported some virtual schooling for their child, with 77% reporting virtual schooling for the majority of the three months prior to their child, first hospital admission. 61% indicated their child was exclusively in virtual school. No significant relationships were observed between virtual schooling and any outcome measures relating to mental health.

Conclusions: Pediatric mental health emergencies and hospitalizations have grown and evolved since the start of the COVID-19 pandemic. This study characterizes some of the changes in patient demographics and experience with virtual schooling prior to and following the pandemic. Our results do not support any correlation between virtual schooling and mental illness requiring emergent care or hospitalization. However, this study has many significant limitations. Respondents were not representative of all admitted patients, and survey data were gathered for only one-third of families whose children were admitted at one site. Very few respondents remained in school in person throughout the pandemic, complicating efforts to make meaningful comparisons. Future work should attempt to capture a broader subject pool and obtain prospective data regarding the effects of school modality on mental health.

8 The Utility of the Columbia-Suicide Severity Rating Scale in Determining a Patient, Imminent Risk for Suicide in the Emergency Department

Adam Takatsuka, Trevor Nykamp, Wesley Speer, Savannah Benko, Jacob Bart, Paris St Clair, Kirk Harris, Kirk McCall, Pooja Agarwal, Corey Goldstein, Eitan Kimchi

Background: In response to a 2019 Joint Commission report highlighting new suicide screening requirements, many hospitals have initiated universal screens for suicidal ideation for all patients. A common algorithm is to screen patients upon their entrance to a hospital with a tool such as the Columbia-Suicide Severity Rating Scale (C-SSRS). When a patient enters our institution, Emergency Department (ED), they are screened by a Registered Nurse (RN), who is either a psychiatric RN or a non-psychiatric ED RN, with the C-SSRS to assess their level of imminent risk for suicide. Patients scoring a 4 or 5 on the C-SSRS are considered high-risk, and one-to-one constant visual observation via a safety assistant is automatically assigned. All of these patients must then be formally assessed by the psychiatric consultation team, who then recommend whether to continue or discontinue the safety assistant. Existing literature on the C-SSRS measures either chronic risk over time (six months) or evaluates patients already admitted to an inpatient psychiatric unit, thereby selecting for an already

known high-risk population. There is limited data on the validity of the C-SSRS in determining a patient, imminent risk for suicide upon presentation to the ED. Assignments of safety assistants may impose a psychological toll upon patients due to the resulting infringement upon the patient, independence and privacy, and this toll may sometimes result in further acute psychiatric decompensation. In addition, safety assistants are a limited resource, and their overutilization may present a financial and personnel concern for hospitals. It is thus pertinent for hospitals to assign safety assistants judiciously.

Objective: To evaluate the utility of the C-SSRS in assessing a patient, imminent risk for suicide compared to a psychiatrist, evaluation, and to determine whether the C-SSRS more accurately assesses imminent risk for suicide when administered by a psychiatric RN as opposed to a non-psychiatric ED RN.

Method: We examined patient encounters for which a safety assistant was ordered for suicidality based on a C-SSRS score of 4 or 5 (n = 164). For each encounter, we recorded the psychiatry team, recommendation for continuation or discontinuation of the safety assistant, title of the RN who administered the C-SSRS, and total duration of the safety assistant assignment. Data was analyzed via a multivariate logistic regression analysis.

Results: The psychiatry team aligned with the C-SSRS in assessing a patient as high-risk for imminent suicide in the ED 22.6% of the time. Administration of the C-SSRS by a psychiatric RN was not associated with increased C-SSRS accuracy in capturing high-risk patients compared to administration by a non-psychiatric ED RN. The average duration of unnecessary safety assistant assignments was 6.8 hours.

Conclusion: The data supports that the C-SSRS is of limited utility when determining a patient to be of high-risk for imminent suicide in the ED and may result in prolonged care due to unnecessary assignments of safety assistants. We propose that the C-SSRS should not be relied upon as the sole method for assessment of risk for imminent suicide in the ED.

9 Rare Disease Masked Behind Common Presentation: Toxic Leukoencephalopathy Up Close

Benjamin T. McMahon, Nicole Dumont

Toxic leukoencephalopathy refers to a structural alteration of the white matter, generally affecting myelinated structures. It is caused by environmental toxins, substance use, or chemotherapeutic agents. The clinical presentation is extremely variable, ranging from minor cognitive impairment to severe neurologic dysfunction, and is often mistaken for primary psychiatric illness. A 51-year-old man presented involuntarily to the ED for bizarre behavior and disordered mentation. His initial cognitive evaluation showed orientation to person but neither place nor time. He was unable to state how he arrived

at the hospital and where he was earlier in the day. After initial evaluation it became clear he had no recollection of the past 3 months. On chart review, the patient previously presented to a separate hospital two weeks prior with admission for sepsis, rhabdomyolysis, acute renal failure requiring HD, and brachial plexus injury. Prior to that admission, he was found down at home after ingesting cocaine and MDMA. Notably, staff at that facility reported he was in clear mentation and had no signs of memory loss or confusion prior to discharge. Further discussion at the current ED visit resulted in a staff member stating the patient recognized the term schizophrenia and the patient agreed that he had been previously diagnosed. He was admitted to the inpatient psychiatric unit for further evaluation of an acute schizophrenia exacerbation. He was unable to provide collateral nor did he have any recollection of prior hospitalizations, including the recent admission two weeks prior. His MoCA on admission was 8/30. Upon discussion over the next few days, the patient expressed frustration at his memory loss but was able to say his last well-formed memory was finding some cocaine in a house I was cleaning and using it. Initial CT without contrast showed no evidence of acute territorial infarct, intracranial hemorrhage, or mass lesion. MRI showed diffuse and heterogenous hyperintensities throughout the white matter in both cerebral hemispheres. This finding raised suspicion for a toxic component to the patient's memory loss. He received an extensive medical workup evaluating metabolic and clinical manifestations of toxic leukoencephalopathy. Over the course of one week, he showed slight improvement in memory and cognition. His MoCA improved to and peaked at 14/30. As mentation improved, he denied any previous psychiatric illness and did not recall stating he has schizophrenia. At this time, he is continuing to be evaluated for mild clinical improvement and counseled on a new baseline for memory retention and cognition in the setting of delayed toxic leukoencephalopathy due to substance use. This case illustrates the benefit in an expanded differential diagnosis in the setting of confusion and bizarre behavior. Although toxic leukoencephalopathy is rare and the understanding of pathophysiology is incomplete, its prominence is expanding in a society with increasing access to severely leukotoxic agents.

10 Risk Assessment Clinical Pathway

Amber Pastusek, Sylvia Muzquiz, Luming Li

A comprehensive risk assessment should encompass suicide and violence risk factors, protective factors, and mitigating factors to help determine the level of risk and subsequently drive clinical care to arrive at a safe treatment plan. The psychiatric emergency setting requires a thoughtful suicide and violence risk assessment by the clinical team. Using a variety of published resources coupled with input from the clinical team (psychiatrists,

nurses, social services), a suicide and violence risk assessment tool was created in the Electronic Health Record (EHR) for implementation across all treatment settings to be used by any clinically trained staff (psychiatrists, nurses, social services). Depending on the risk assessment findings, clinical staff is then able to determine the next steps in the clinical pathway to best support the patient, treatment plan with specific focus on least restrictive interventions. There are several benefits to establishing a risk assessment clinical care pathway. First and foremost, the patient is not subjected to unnecessary hospitalization(s) that can be traumatic and overall damaging to his/her treatment. The risk assessment accounts for all contributing factors along with protective and mitigating factors to provide the best care for that patient at that moment in time. Next steps involve assessing the level of acute and chronic risk (ie. Low, moderate, high) to determine the clinical care formulation. High risk levels and/or Red flags require an enhanced response that may involve considering emergency evaluation for psychiatric hospitalization. However, the risk formulation for low and moderate results may involve performing safety plans, psychoeducation, outpatient therapy, and/or more intensive monitoring with Intensive Outpatient Programs (IOP) or Partial Hospitalization options. The risk assessment yielding chronic risk levels focuses on long term treatment options to work on suicide focused strategies, engage the patient in treatment, and providing a variety of resources to support that patient. Moreover, a standardized risk assessment tool and clinical care pathway can trigger a therapeutic and individualized response to patients presenting in crisis focusing on the recovery model. By making this tool and clinical pathway available to all clinical team members (ie. Psychiatrists, nurses, social services), more patients can be served with appropriate determinations on the next level of care. In addition, standardizing the risk assessment and clinical care pathway provides consistent reliable care that aligns with Safe, Timely, Effective, Efficient, Equitable, Patient-centered (STEEEP) principles. While the psychiatric emergency setting is one touchpoint along the continuum of care, the risk assessment and clinical pathway is applicable to any clinical setting (ie. Primary care, OB/Gyn, etc.) when indicated. Lastly, evaluation of the systems of care available at the community level opens up a vast array of resources available for patients that can have a positive impact on patient outcomes, population health, and reduction in healthcare costs.

11 Comparison of Emergency Department 14-Day Recidivism Rates in Emergency Behavioral Health Patients: EmPath Versus Standard ED Care

Austin MacKenzie, Craig Bilbrey, Stephanie Mullennix

Introduction: Emergency Psychiatric Assessment, Treatment, and Healing (EmPATH) units are an emerging and

innovative care model designed to treat patients with psychiatric emergencies in an acute hospital setting while prioritizing rapid stabilization of the acute crisis in a calm, dignified, and safe environment. They have been found to reduce the cost of care, patient boarding, and psychiatric admissions. Another potential quality marker to evaluate the impact of EmPATH units and improve processes for implementing EmPATH care in Emergency Department (ED) settings is the rate of patient return to the ED, known as ED recidivism. This study analyzes the difference in 14-day ED recidivism rates for ED patients with an EmPATH Sensitive Primary Diagnosis (ESPD) ICD 10 code who were dispositioned after standard care in the ED versus those who were dispositioned after treatment in the EmPATH unit. We hypothesize that patients admitted to the EmPATH unit will have a lower recidivism rate than patients dispositioned following ED management.

Methods: For this project, an ESPD includes Adjustment Disorders, Anxiety Disorders, Attention Deficit/Conduct Disorders, Impulse Control Disorders, Mood [Affective] Disorders, Nervousness, Personality Disorders, Schizophrenia and Other Psychosis, Suicide, and Intentional Self-Injury. This study retrospectively analyzes 14-day recidivism rates for adult patients in two relevant ED populations: all ED patients with an ESPD admitted to the EmPATH unit and those not admitted to the EmPATH unit. The 4-bed EmPATH unit of the single study site is adjacent to an adult ED of an urban tertiary care center with an annual patient volume of 105,000 visits. Analytics were processed from data securely stored within d2i, a third-party database that uses the business objects platform. Statistical analysis of recidivism rates was performed using a two-proportion Z-test. Visits primarily related to alcohol use disorder were excluded. 13 months of data were analyzed from July 2021 through July 2022.

Results: During this period, 622 patients with an ESPD were dispositioned from the EmPATH unit, and 2447 patients with an ESPD were dispositioned from the ED directly. 100 patients were dispositioned from the EmPATH unit and 526 were dispositioned following emergency department management and returned to the emergency department within 14 days. Patients dispositioned from the EmPATH unit had a 14-day ED recidivism rate of 16.08% and ED patients with an ESPD not admitted to the EmPATH unit had a 14-day ED recidivism rate of 21.50%, 95% CIs [13.19%, 18.96%] and [19.87%, 23.12%]. Patients dispositioned from the EmPATH unit during this period had a statistically significantly lower 14-day ED recidivism rate than patients dispositioned following emergency department management, $z = 2.94$, $p = 0.003$.

Conclusion: ED patients admitted to the EmPATH unit had lower ED recidivism rates than those not admitted to the EmPATH unit. These findings suggest an additional metric that may be useful in quality improvement processes related to management of EmPATH units. It also suggests an additional benefit of implementation of EmPATH units with respect to cost

and patient-centered outcomes. However, additional research in this area is needed.

12 Acute Agitation Management in Patients with Schizophrenia or Bipolar Disorder in Emergency Departments in the United States - A Retrospective Chart Review

Mae Kwong, Sonja Hokett, Marc Martel, Rebecca C. Rossom, Gary Vilke, Michael P. Wilson

Introduction: Access to behavioral health care can be limited, leaving patients with mental illness few options. Oftentimes, patients must seek care at medical emergency departments (ED) which may not be ideally designed to manage the needs of patients with mental illness. Over half of psychiatric ED visits are associated with agitation and nearly 50% of patients need medication. Therefore, appropriate management of uncontrolled agitation is important to avoid further escalation. When de-escalation techniques are unsuccessful, medication is typically used to acutely manage agitation. The objective of this study was to understand how patients with schizophrenia or bipolar disorder with agitation are managed in the ED setting.

Methods: Using best practices for retrospective reviews, adult patients (aged 18-75) with schizophrenia and related disorders or bipolar disorders who presented to the ED with acute agitation were identified using EPIC electronic health records across four US hospitals. Qualifying records were identified for visits between January 2019 and December 2020, and segregated into two cohorts: individuals with schizophrenia, individuals with bipolar disorder. Data abstracted included medications used to acutely manage agitation, including route of administration; time to certain care points from admission through discharge disposition; psychiatric consultation if requested; and physical restraint use. Descriptive statistics were utilized.

Results: Data on 202 patients were extracted, including 121 (60%) individuals with schizophrenia and 81 (40%) individuals with bipolar disorder. The median patient age was 38 years, and most were male (58%). Diagnosis at the time of presentation to the ED included schizophrenia and related disorders (38%), bipolar disorder (27%), other diagnosis (17%), and 18% had a missing diagnosis. The accompanying conditions were agitation (54%), agitation including intoxication (19%), or other (13%). For both cohorts, the most commonly administered medications were lorazepam intramuscular (IM) injection (20%), haloperidol lactate IM injection (17%), olanzapine IM injection (17%), lorazepam oral tablet (16%), and olanzapine oral disintegrating tablet (15%). The differences in elapsed times from presentation to ED to certain care points between the schizophrenia and the bipolar disorder cohort were not clinically meaningful. Overall, the median time that elapsed between presentation

of the patient to the ED and first round of medication(s) administered was 53 minutes, request for psychiatry consultation 102 minutes, first evaluation by the consulting psychiatrist or psychiatric resident 172 minutes, and discharge of the patient 427 minutes with 60% of patients discharged home. Physical restraints were used for 55 patients (27%) and security personnel were involved in nearly 40% of cases.

Conclusion: These results can improve understanding of the management of acute agitation for patients with schizophrenia or bipolar disorder. With the increase in boarding for patients with psychiatric diagnoses in the ED, appropriate management and throughput of patients with agitation and schizophrenia or bipolar disorder are important. Additional strategies to manage acute agitation for patients with schizophrenia or bipolar disorder may reduce the need for IM injections or physical restraints and could expedite care in the ED setting. Bioxcel Therapeutics sponsored the study. No Bioxcel product was used during the data capture as product was not FDA approved.

13 Effect of Alcohol Intoxication in the Emergency Department on Suicide Mortality

Kevin Skoblenick, Esther Yang, Michael P Wilson, Brian Rowe

Introduction: Suicide represents a significant worldwide disease burden disproportionately affecting younger patients in their prime working years. Mortality by suicide remains within the five leading causes of death up to the age of 60. Compounding this, alcohol use disorder (AUD) is known to be a risk factor for death by suicide and has been on the rise over the last 20 years, particularly during the COVID-19 pandemic. The emergency department (ED) is often the first point of health care contact for those patients that have suicidal thoughts or behaviours and understanding their acute risk of death by suicide when presenting intoxicated with alcohol remains a challenge for ED physicians. While the chronic disease of AUD elevates their lifetime risk for death by suicide, it has not been established how a presentation for suicidality accompanied by acute alcohol intoxication affects this risk.

Methods: This was a retrospective cohort study using population-based linked health administrative data for adult patients aged 18 or above who presented to Alberta (ED) between 2011 and 2021 for suicidal attempt or self-harm behavior. Patients who were acutely intoxicated with alcohol were identified and analyses compared patients with and without alcohol intoxication. The primary outcome was six-month death by suicide. Categorical variables were summarized using proportions, whereas continuous variables were summarized using means and standard deviations (SD) or medians and interquartile ranges (IQR), as appropriate. Competing risk analysis was performed to explore the cumulative incidence of death by suicide within 180 days after

their index ED visit and examine the association between death by suicide and alcohol intoxication.

Results: Patients presenting to the ED for suicide attempt or self-harm behaviour were intoxicated with alcohol in 30% of cases as determined by diagnostic coding and blood alcohol measurements. Intoxicated patients were more likely to be placed under involuntary mental health hold (26% vs 16%) and had on average a longer length of stay in the ED (411 min vs 277 min) but were less frequently admitted (10.8% vs 15.4%). As a departure from previous literature, those intoxicated with alcohol were more likely to be consulted to psychiatry (15.8% vs 12.6%). Mortality due to suicide in the 6 months following the patient, index ED visit were similar between the intoxicated and non-intoxicated groups (0.3% vs 0.3%) however there was a significant increase in all-cause mortality at 6 months in the non-intoxicated group (1.5% vs 2.1%).

Discussion: This study examined the patient and ED treatment characteristics of patients presenting to the ED with suicide attempt or self-harm behaviour. It found that the 6-month risk of death by suicide was no different in those who presented with acute alcohol intoxication vs those without. While these results differ from other studies discussing how alcohol use disorder confers a chronically increased risk of death by suicide, they provide new evidence for the emergency department providers to consider when assessing the patient who presents with suicidal behaviours while intoxicated.

14 The Effectiveness of Team Approach Physical Restraint (TAPR) in Reducing Patient and Staff injuries: A Retrospective Review

Jonathan Garcia, Stephanie LaBuz, Maureen Ramos, William David, Hannah Butler, Brigit Hines, Brian Menard, Haley Matejowsky, Daniel Alanis, Donaldson Betts, Brooke Thawley

Hospitals nationwide have been dealing with an increase in violence to health care workers and one Houston safety hospital is no different. Year to date Harris Health has had over 700+ alerts for crisis intervention/security with some of those interactions leading to staff injuries. The Team Approach to Physical Restraint or TAPR is a role based effective way of using closed loop communication to reduce the likely hood of injury to staff, the patients all while maintaining a safe airway. The goal of this research study is to illustrate how addressing the patient at all of the three levels of disruption up to and including the last stage of imminent threat to self and others can be safely managed with reduced risk to everyone involved. Patient safety is paramount in all interactions but never more so in a situation where all other means of de-escalation have been attempted. In using TAPR and proper body mechanics, both patient safety and protecting the patient's airway at all times are addressed in this study.

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