IMPLEMENTATION OF AN EVIDENCE-BASED DRUG SCREENING TOOL FOR INPATIENT BEHAVIORAL HEALTH ADMISSIONS

Kurtis Kress, BSN
The University of Tennessee, Knoxville

OVERVIEW OF CLINICAL PROBLEM

- Of all psychiatric inpatient stays, 30.3% are solely related to substance abuse disorders
- Behavioral health hospitals in the United States underutilize evidence-based substance abuse screening procedures
- Behavioral health patients are more likely to suffer from substance abuse disorders
- Behavioral health patients are more likely to use multiple substances concurrently

(Owens et al., 2019; Zhu & Wu, 2020)

OVERVIEW OF CLINICAL PROBLEM

- Only 11% of those exhibiting signs of substance abuse receive effective treatment

- 47% of patients who tested positive for opiates in 2018 also tested positive for amphetamines.
  - By comparison, only 12% tested positive for both in 2014.

- Most facilities rely upon single question drug abuse screening. Current research displays that single question screening has a low evidence quality (C)

(Mahoney et al., 2021; PEA, 2010; Shapiro et al., 2013)

CLINICAL PROBLEM

Though public health initiatives argue for the routine implementation of evidence-based drug screening tools, assessments like the DAST-10 are underutilized.

- 2/3 of individuals receiving treatment for substance abuse found help through self-referrals or criminal justice systems
- Though standardized drug abuse screening tools take an average 10 minutes, the average U.S. physician only spends 17 minutes with each patient
- Routine drug abuse screening procedures are often minimal in length and depth

(Elflein, 2019; Healthy People, 2020; PEA, 2010; Shapiro et al. 2013)

PURPOSE AND GOAL

- Purpose
  - To implement an evidence-based screening tool for substance abuse among patients presenting for behavioral health inpatient treatment.

- Goal
  - To increase the identification and treatment of substance abuse disorders among individuals receiving behavioral health inpatient care.

GUIDING FRAMEWORK: PROCESS

IOWA Evidence-Based Practice to Promote Excellence in Health Care Model

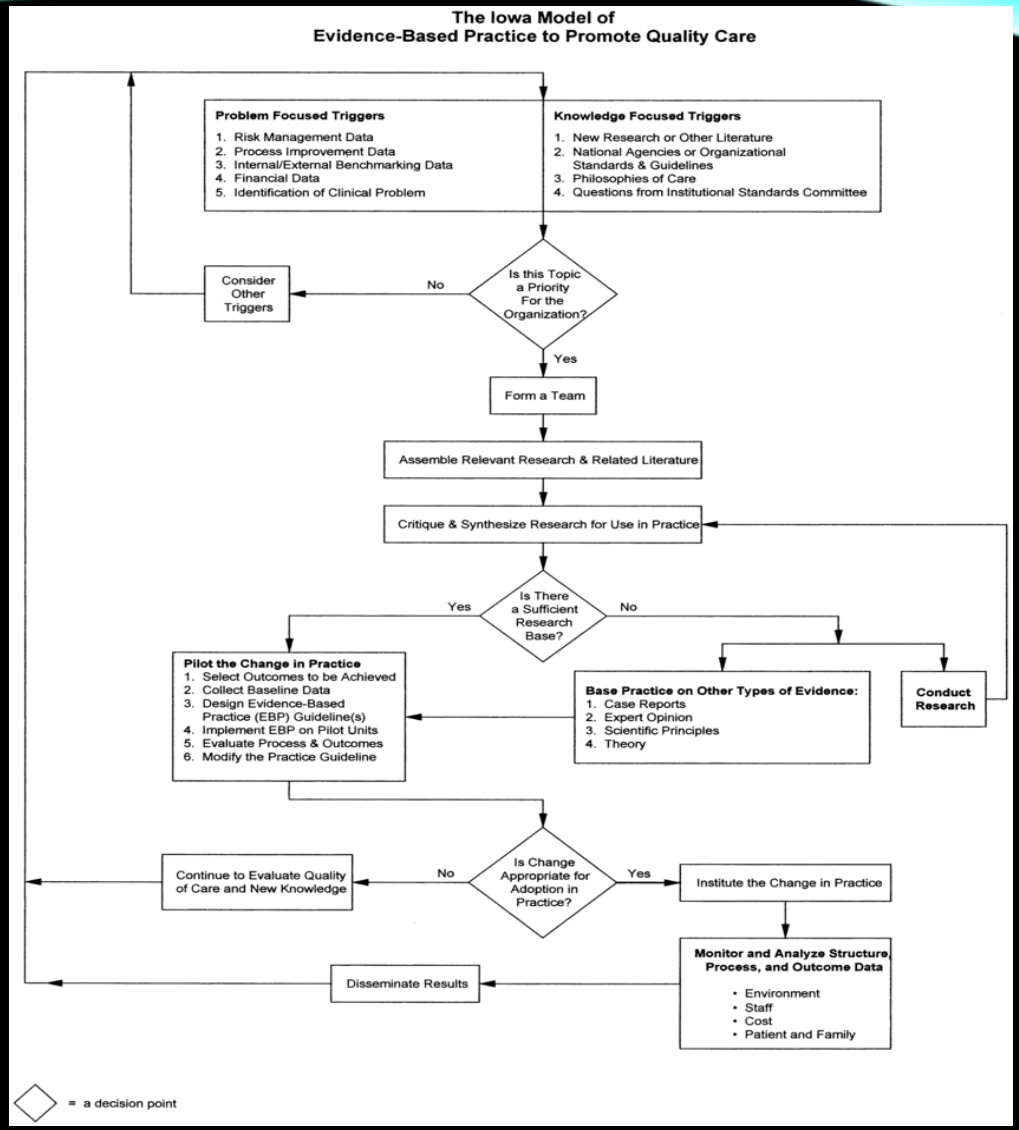


Figure 1. Iowa Model of Evidence-Based Practice to Promote Quality Care. From "Iowa Model of Evidence-Based Practice to Promote Quality Care," by Titler, M.G., Kleiber, C., Rakel, B., Budreau, G., & Everett, L.Q., 2001, *Critical Care Nursing Clinics of North America, 13,* pp. 491-509. Reprinted with permission.

GUIDING FRAMEWORK: THEORETICAL

Barker & Buchanan-Barker's Tidal Model of Mental Health Nursing

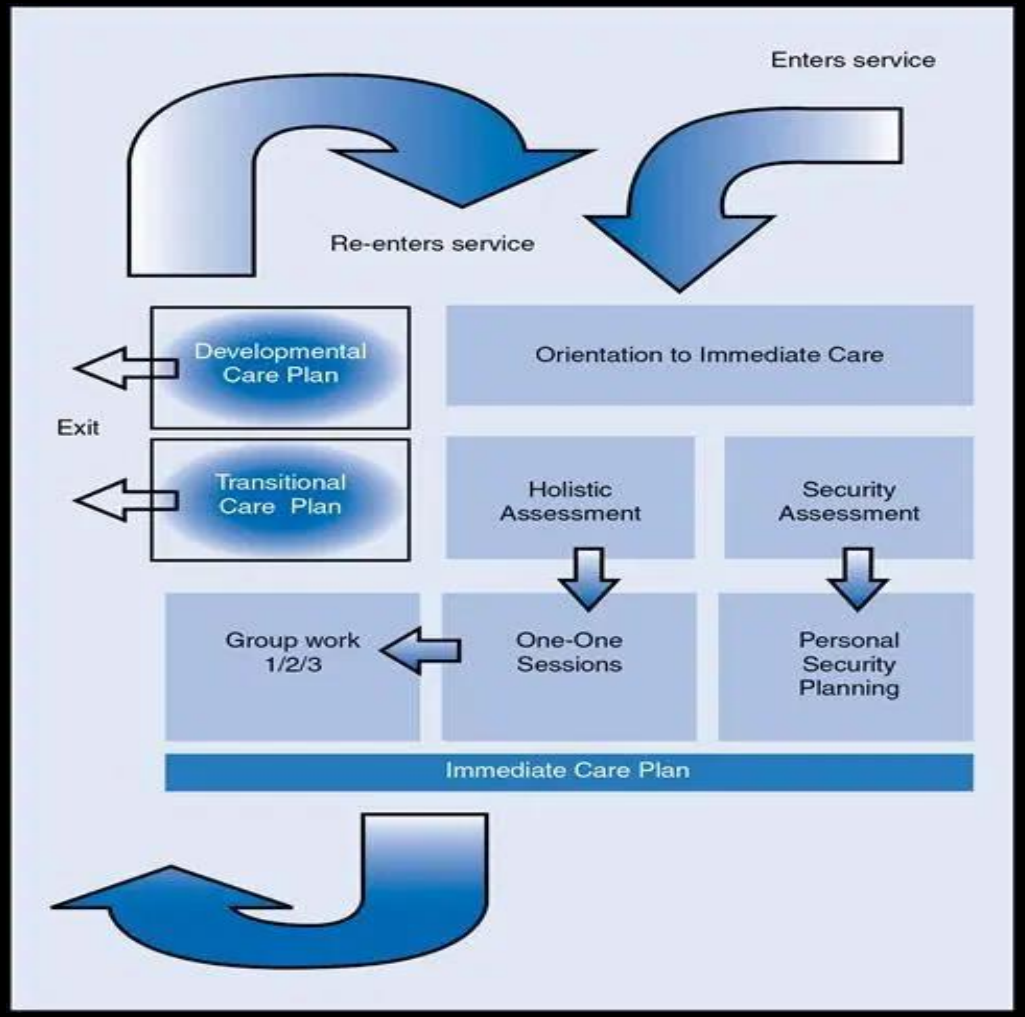
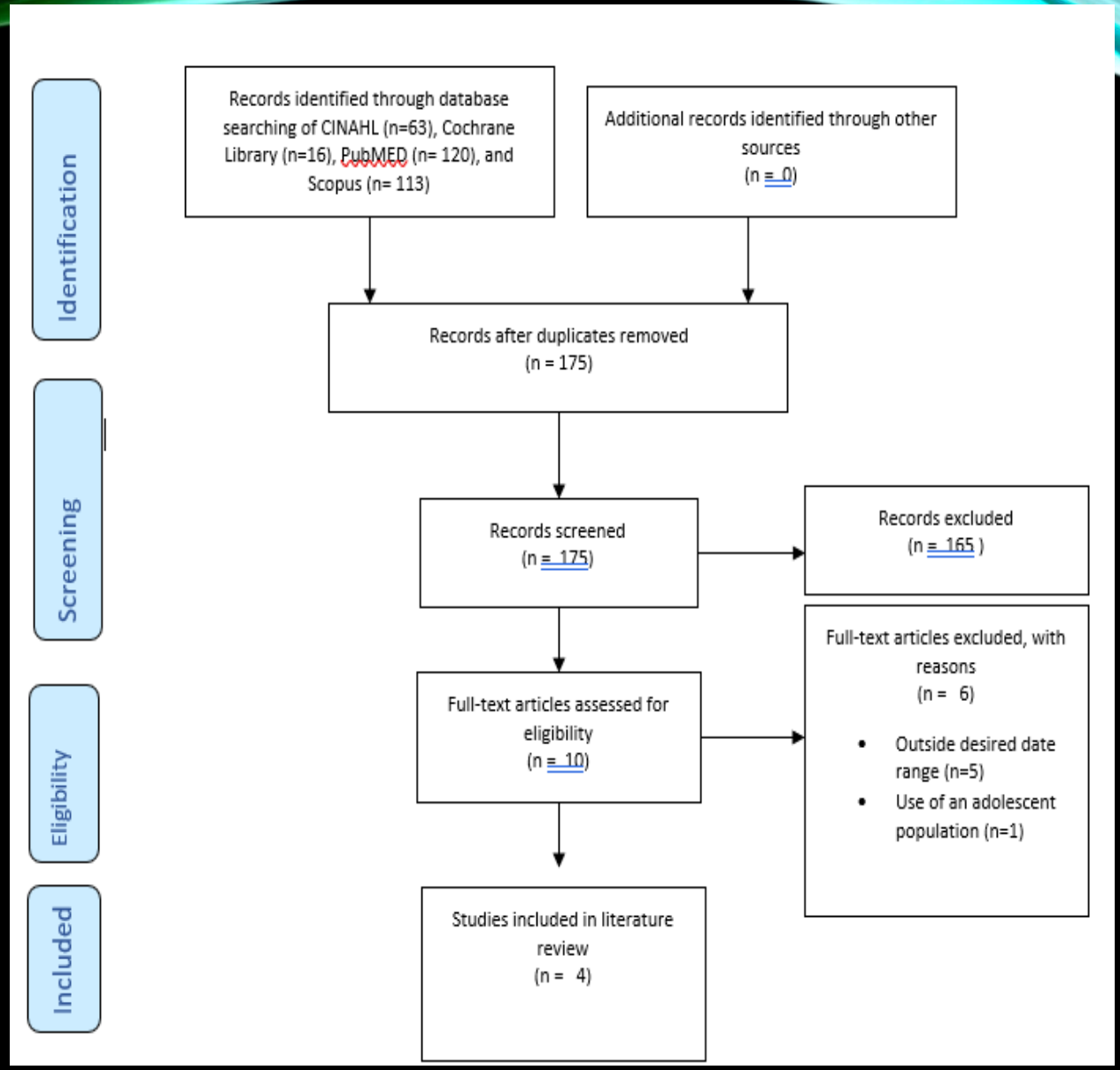


Figure 2. Tidal Model of Mental Health Recovery. From "The tidal model of mental health recovery" by Brooks, N., 2017, *NurseKey*. Reprinted with permission.

PICOT Question

“Among adult populations receiving care from an east TN behavioral health inpatient facility, how does routine administration of DAST-10 during patient admission affect the identification and treatment of substance use disorders over a 3 month period?”

Literature Search



From: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). *P*referred *R*eporting *I*tems for *S*ystematic Reviews and *M*eta-*A*nalyses: The PRISMA Statement. PloS Med 6(7): e1000097. Doi:10.1371/journal.pmed1000097

Figure 3: Adapted PRISMA Diagram

Synthesis

- Four different applications of the Drug Abuse Screening Test (DAST) were addressed across the refenced studies
  - The use of DAST-2
  - The use of DAST among emergent psych patients
  - The use of DAST in outpatient populations
  - The use of DAST-10

- All studies displayed clinically and statistically significant results concerning the use of DAST to identify substance use disorders

- The DAST is a clinically significant ($P<.001$) drug abuse screen for emergent populations

- The DAST-10 is a clinically significant ($P<.001$) substance abuse screen for patients exhibiting signs of psychosis

(Cassidy et al., 2008; Giguère et al., 2017; Tiet et al., 2017; Yudko et al., 2007)

RECOMMENDATIONS FOR PRACTICE

- Psychiatric inpatients should be screened with DAST during admission to promote the identification of comorbid substance abuse disorders and potential for withdrawal (strong, consistent)

- DAST- 10 should be used instead of longer DAST tools to reduce patient/ provider burden and increase compliance (strong, consistent)

IMPLEMENTATION TIMELINE

- May- September 2021: PDSA cycles
- October- December 2021: Implement Intervention
- January- February 2022: Evaluate EBP Process/ Outcomes
- February- May 2022: Dissemination of Findings & Institute Practical Change

DAST – 10 SCREENING

In the past 12 months…		Circle	
1.	Have you used drugs other than those required for medical reasons?	Yes	No
2.	Do you abuse more than one drug at a time?	Yes	No
3.	Are you unable to stop abusing drugs when you want to?	Yes	No
4.	Have you ever had blackouts or flashbacks as a result of drug use?	Yes	No
5.	Do you ever feel bad or guilty about your drug use?	Yes	No
6.	Does your spouse (or parents) ever complain about your involvement with drugs?	Yes	No
7.	Have you neglected your family because of your use of drugs?	Yes	No
8.	Have you engaged in illegal activities in order to obtain drugs?	Yes	No
9.	Have you ever experienced withdrawal symptoms (felt sick) when you stopped taking drugs?	Yes	No
10.	Have you had medical problems as a result of your drug use (e.g. memory loss, hepatitis, convulsions, bleeding)?	Yes	No
Scoring: Score 1 point for each question answered "Yes," except for question 3 for which a "No" receives 1 point.		**Score:**	

Adapted from (Skinner, 1982)

DAST-10 SCORING

Interpretation of Score		
Score	**Degree of Problems Related to Drug Abuse**	**Suggested Action**
0	No problems reported	None at this time
1-2	Low level	Monitor, re-assess at a later date
3-5	Moderate level	Further investigation
6-8	Substantial level	Intensive assessment
9-10	Severe level	Intensive assessment

Adapted from (Skinner, 1982)

EVALUATION OF INTERVENTION

Outcome Measures

- Orders for subsequent screening protocols (Clinical Opiate Withdrawal Scale- COWS, Clinical Institute Withdrawal Scale- CIWA)

- Orders for medication- assisted treatment (MAT) protocols

Significance

- Determined via retrospective chart review
  - Adult inpatients from October to December, 2020

RESULTS

DEMOGRAPHIC CHARACTERISTICS

- Mean age was 43.32 for the study group and 41.11 for the retrospective group. There was no significant difference between patient age between groups($p<0.225$).
- Among the study group, 61.8%of the sample identified as male, while 38.2% identified as female. Among the retrospective group, 60.9% identified as male, while 39.1% identified as female. There was no significant difference between groups by gender ($p<0.890$).

Table 1. Patients by Age and Gender

Category	Group	Mean		*p*
Age	Study	43.32		< 0.225
	Retrospective	41.11		
Category	Group	Gender	%	*p*
Gender	Study	Male	61.8	< 0.890
		Female	38.2	
	Retrospective	Male	60.9	
		Female	39.1	

PRIMARY DIAGNOSES

- There was a significant difference between the study group and the retrospective group concerning primary diagnoses. ($p<0.002$)

- Two primary diagnoses changed noticably:
  - (1) "Schizoaffective Disorder"- 12 patients in the study group vs. 1 patient in the retrospective group.
  - (2) "Psychosis-unspecified"- 6 patients in the study group vs. 24 patients in the retrospective group.
- These rates are addressed later in this presentation.

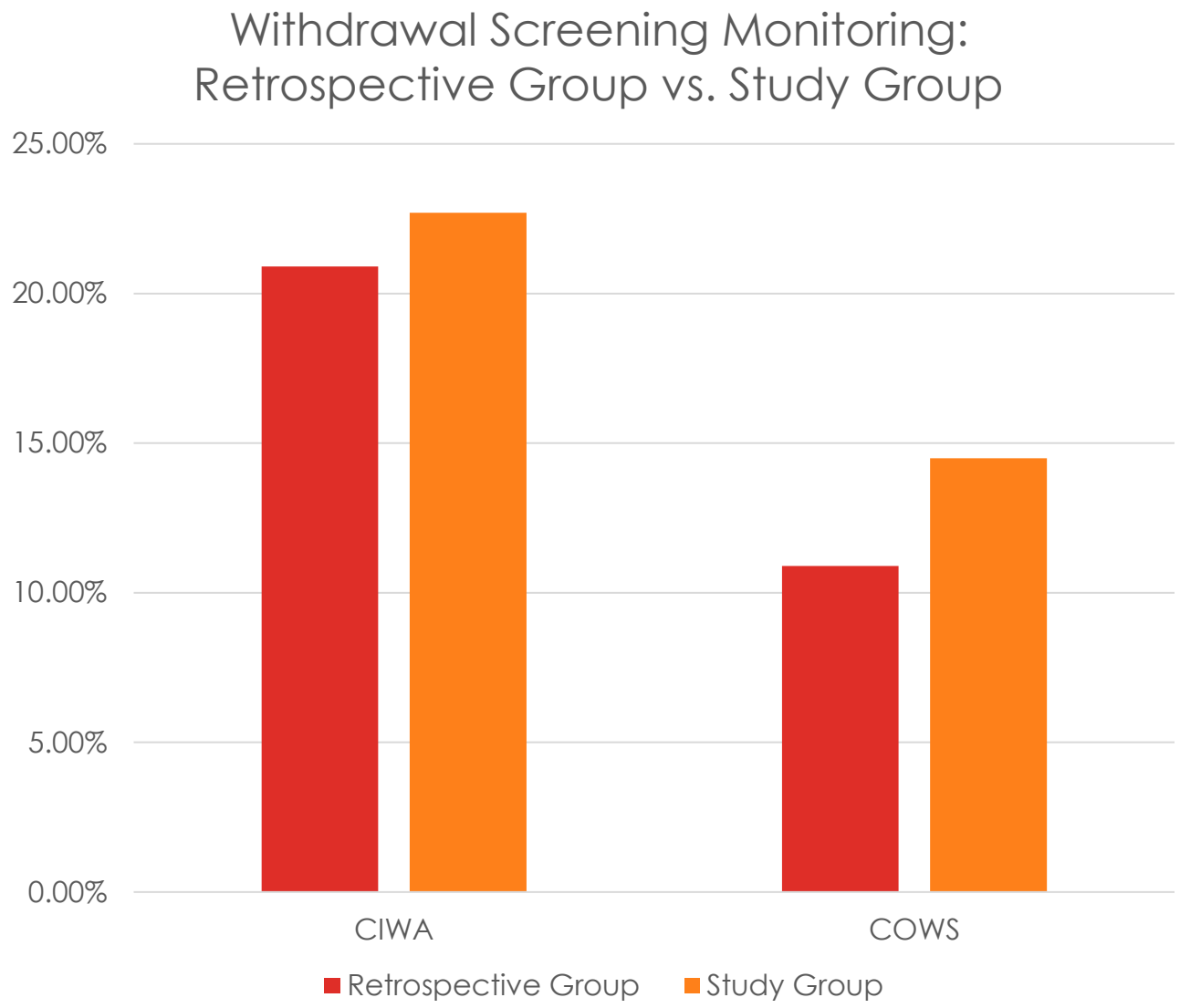
Table 2. Participants by Primary Diagnosis

Diagnosis	Group	N	%
SUD	Study	12	10.9%
	Retrospective	9	8.2%
MDD	Study	32	29.1%
	Retrospective	37	33.6%
GAD	Study	1	0.9%
	Retrospective	0	0%
BPD	Study	31	28.2%
	Retrospective	24	21.8%
Schizophrenia	Study	13	11.8%
	Retrospective	10	9.1%
Schizoaffective Disorder	Study	12	10.9%
	Retrospective	1	0.9%
Psychosis (*unspecified*)	Study	6	5.5%
	Retrospective	24	21.8%
Mood Disorder (*unspecified*)	Study	0	0%
	Retrospective	1	0.9%
PTSD	Study	3	2.7%
	Retrospective	4	3.6%

SUD= substance use disorder; MDD= major depressive disorder, GAD= generalized anxiety disorder, BPD= bipolar disorder; PTSD = post-traumatic stress disorder

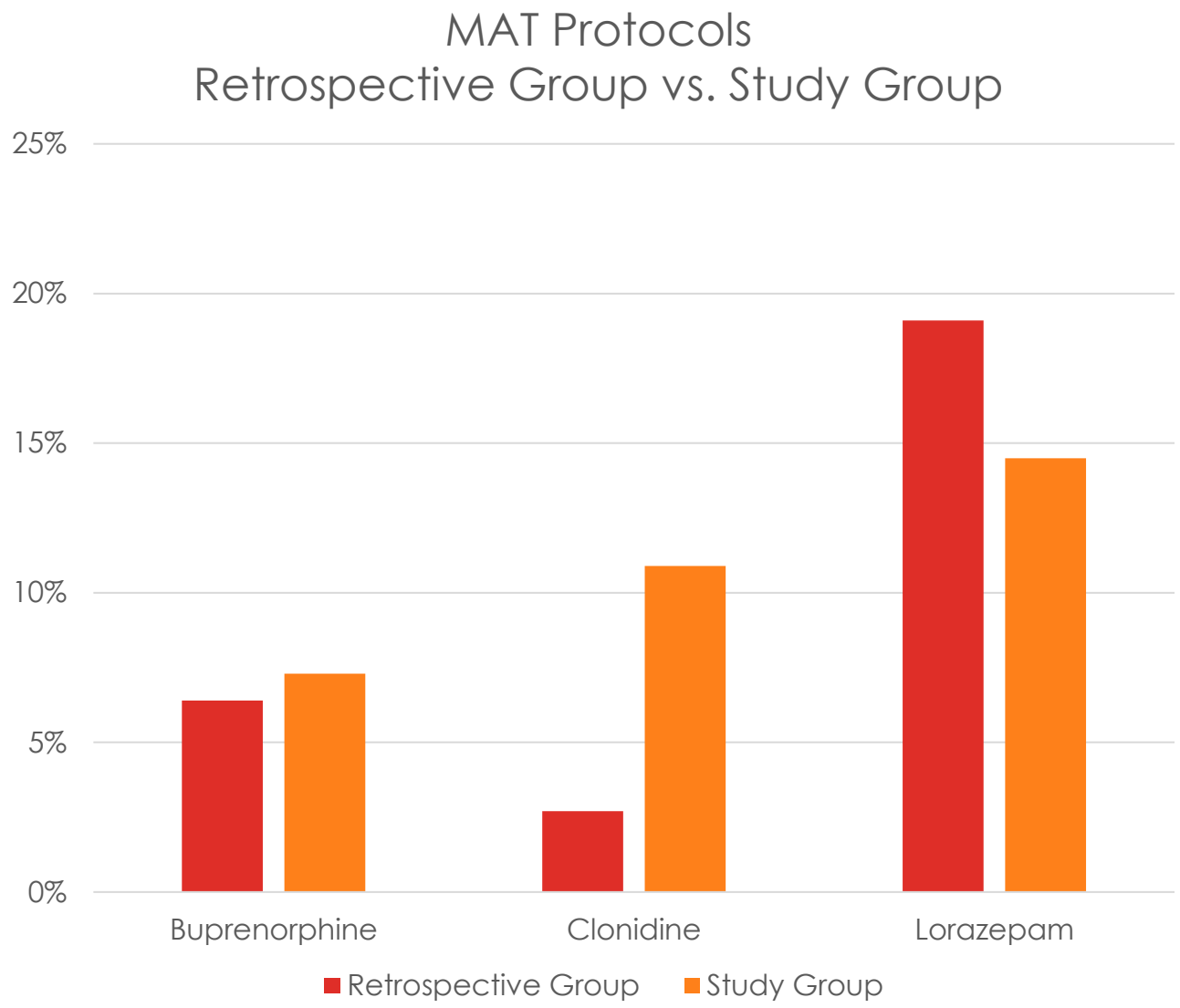
SCREENING PROTOCOLS

- There was a slight increase concerning the number of CIWAS and COWS administered between the groups.
- There was no significant difference between the rates. ($p<0.669$)



MEDICATION ASSISTED TREATMENT (MAT) PROTOCOLS

- There appeared to be a slight shift towards the use of opiate MAT protocols.
- Clonidine use increased by 300%.
- There was no significant difference between the rates. ($p<0.055$)



PROJECT IMPLICATIONS

- The Drug Abuse Screening Test- 10 question screening may be administered with minimal provider burden but was not determined to be significantly effective for routine implementation.
- The use of a standardized screening tool may be difficult with psychotic and/or violent patients, and sampling by convenience may result in the targeted selection [and avoidance] of certain patient groups.
- While there appeared to be a slight increase in the number of CIWAs and COWS administered, these results were not significant.
- While the number of opiate MAT protocols increased, the results were not significant.

MOVING FORWARD: RECOMMENDATIONS

- It is recommended that this study should be repeated with a larger sample
- It is recommended that this study be repeated with a randomly sampled study group
- It is recommended that the retrospective and study groups should be assessed by the same admissions team

LIMITATIONS

- Sample Size
- Sampling Method
- Patient Population

CONCLUSION

DISSEMINATION PLAN

(1) Presentation of results to stakeholders- (April 2022)

(2) Recording of scholarly project presentation for social media upload- (April 2022)

(3) Manuscript Submission- Journal of the American Psychiatric Nurses Association (JAPNA)- (May 2022)

QUESTIONS?

REFERENCES

Barker P. (2001). The Tidal Model: Developing a person-centered approach to psychiatric and mental health nursing. *Perspectives in Psychiatric Care*, *37*(3), 79–87.

Buckwalter, K. C., Cullen, L., Hanrahan, K., Kleiber, C., McCarthy, A. M., Rakel, B., Steelman, V., Tripp-Reimer, T., & Tucker, S. (2017). Iowa model of evidence-based practice: Revisions and validation. *Worldviews on Evidence-Based Nursing*, *14*(3), 175–182.

Cassidy, C. M., Schmitz, N., & Malla, A. (2008). Validation of the alcohol use disorders identification test and the drug abuse screening test in first episode psychosis. *Canadian Journal of Psychiatry*, *53*(1), 26–33. https://doiorg.proxy.lib.utk.edu/10.1177/070674370805300105

Center for Medicare and Medicaid Services. (March 1, 2020). *Screening, brief intervention, and referral to treatment (SBIRT) services*. https://www.cms.gov/Outreach-and-Education/Medicare-Learning-NetworkMLN/MLNProducts/downloads/sbirt_factsheet_icn904084.pdf

Connor, J. P., Gullo, M. J., White, A., & Kelly, A. B.. (2014). Polysubstance use: Diagnostic challenges, patterns of use and health. *Current Opinion in Psychiatry*, *27*(4), 269–275. doi: 10.1097/YCO.0000000000000069

Current Nursing. (2012, January 27). *Nursing theories.* http://currentnursing.com/nursing_theory/Tidal_Model.html#:~:text=In%20the%20Tidal%20Model%2C%20the,%2C%20perceptions%2C%20thoughts%20and%20actions.

REFERENCES- CONTINUED

Elflein, J. (2019, August 9). *Time U.S. physicians spent with each patient 2018.* Statista. https://www.statista.com/statistics/250219/us-physicians-opinion-about-theircompensation/#:~:text=Time%20U.S.%20physicians%20spent%20with%20each%20patient%202018&text=About%2033%20percent%20of%20U.S.,impact%20on%20patient%2 0care%20outcomes.

Fazel, S., Wolf, A., Palm, C., & Lichtenstein, P. (2014). Violent crime, suicide, and premature mortality in patients with schizophrenia and related disorders: A 38-year total population study in Sweden. *The Lancet- Psychiatry*, *1*(1), 44–54. https://doi.org/10.1016/S2215-0366(14)70223-8

Giguère, C. É., Potvin, S., & Signature Consortium (2017). The Drug Abuse Screening Test preserves its excellent psychometric properties in psychiatric patients evaluated in an emergency setting. *Addictive Behaviors*, *64*, 165–170. https://doiorg.proxy.lib.utk.edu/10.1016/j.addbeh.2016.08.042

Healthy People 2020. (2020). *Topics and objectives- Substance abuse.* US Department of Health and Human Services. https://www.healthypeople.gov/2020/topicsobjectives/topic/substance-abuse/object

Kelly, T.M., & Daley, D.C. (2013) Integrated treatment of substance use and psychiatric disorders. *Social Work public Health*, 28. doi:10.1080/19371918.2013.774673

REFERENCES- CONTINUED

Knight, E., & Lappalainen, L. (2017). Clinical institute withdrawal assessment for alcohol-revised might be an unreliable tool in the management of alcohol withdrawal. *Canadian Family Physician, 63*(9), 691–695.

Mahoney, J. J., Winstanley, E. L., Lander, L. R., Berry, J. H., Marshalek, P. J., Haut, M. W., Marton, J. L., Kimble, W. D., Armistead, M., Wen, S., Cai, Y., & Hodder, S. L. (2021). High prevalence of co-occurring substance use in individuals with opioid use disorder. *Addictive behaviors, 114,* 106752. https://doi.org/10.1016/j.addbeh.2020.106752

Owens, P.L., Fingar, K.R., McDermott, K.W., Muhuri, P.K., & Heslin, K.C. (2019, March 01). *Inpatient stays involving mental and substance use disorders in 2016.* Retrieved from https://www.hcup-us.ahrq.gov/reports/statbriefs/sb249-Mental-Substance-Use-DisorderHospital-Stays-2016.jsp

Partnership to End Addiction (PEA). (2010, September 28). *New data shows millions of americans with alcohol and drug addiction could benefit from health care reform*. DrugFree. https://drugfree.org/learn/drug-and-alcohol-news/new-data-show-millions-ofamericans-with-alcohol-and-drug-addiction-could-benefit-from-health-care-reform/

Reif, S., Acevedo, A., Garnick, D. W., & Fullerton, C. A. (2017). Reducing behavioral health inpatient readmissions for people with substance use disorders: Do follow-up services matter?. *Psychiatric Services (Washington, D.C.), 68*(8), 810–818. https://doi.org/10.1176/appi.ps.201600339

Shapiro, B., Coffa, D., & McCance-Katz, E. F. (2013). A primary care approach to substance misuse. *American Family Physician, 88*(2), 113–121.

REFERENCES- CONTINUED

Skinner, H.A. (1982). The Drug Abuse Screening Test. *Addictive Behavior, 7* (4), 363-371.

Tiet, Q. Q., Leyva, Y. E., Moos, R. H., & Smith, B. (2017). Diagnostic accuracy of a two-item Drug Abuse Screening Test (DAST-2). *Addictive Behaviors, 74*, 112–117. https://doiorg.proxy.lib.utk.edu/10.1016/j.addbeh.2017.06

University of Missouri. (2021, April 14). *SBIRT clinician tools*. https://www.sbirt.care/tools.aspx

Wesson, D. R., & Ling, W. (2003). The clinical opiate withdrawal scale (COWS). *Journal of Psychoactive Drugs*, *35*(2), 253–259. https://doi.org/10.1080/02791072.2003.10400007

Yudko, E., Lozhkina, O., & Fouts, A. (2007). A comprehensive review of the psychometric properties of the Drug Abuse Screening Test. *Journal of Substance Abuse Treatment*, *32*(2), 189–198. https://doi-org.proxy.lib.utk.edu/10.1016/j.jsat.2006.08.002

Zhu, H., & Wu, L. T. (2020). Multiple drug use disorder diagnoses among drug-involved hospitalizations in the United States: Results from the 2016 National Inpatient Sample. *Drug and Alcohol Dependence, 213*, 108-113.