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Implementing Evidence-Based Adult Psychiatric Inpatient Depression Assessment, Treatment, and Post-Hospitalization Referral

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IMPLEMENTING EVIDENCE-BASED ADULT PSYCHIATRIC INPATIENT

DEPRESSION ASSESSMENT, TREATMENT, AND

POST-HOSPITALIZATION REFERRAL

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ABSTRACT

Purpose: This project was designed to strengthen the quality of depression assessment with evidence-based depression assessment tools in inpatient psychiatric units.

Background: Missed diagnosis and treatment of depressive disorders contribute to the most severe outcome of depression: suicide. A crisis stabilization facility with inpatient psychiatric units had significant opportunities to improve clinical outcomes by screening for depression in adults and to monitor symptoms with evidence-based tools.

Methods: The 12-week quality improvement project included implementation of staff education sessions of evidence-based tools to screen, monitor, interpret scores, and detect risk modifiers. The design and build with Information Technology for Personal Health Questionnaire 2 (PHQ-2) daily scores in the electronic health records, adding admission score of depression assessment tool on nursing handoff reports, improved nurse-provider communication, design of PHQ-2 algorithm, design of flowchart impacting nursing workflow, and revision of the patient goals sheet replacing a numeric scale with the PHQ-2 for depression assessment daily and per shift as needed.

Results: Achieved 100% participation in staff educational sessions, established new standard in nursing with Personal Health Questionnaire 9 (PHQ-9) built into shift report sheets, patient completion of daily goals sheets with PHQ-2 increased from 0% to 52.3%, identification of risk factors in patients with Major Depressive Disorder (MDD) including 61.5% history of abuse in lifetime and 62.5% history of Post-Traumatic Stress Disorder (PTSD). Increased provider adherence to evidence-based clinical guidelines in the management and treatment of MDD with 61.7% of patients referred to psychotherapy, 56.8% of patients were prescribed clinical guideline's 1st line of treatment antidepressants selective serotonin reuptake inhibitors, and

56.4% of patients were prescribed with augmentation pharmacotherapy second generation antipsychotics. Descriptive statistics resulted in referrals to outpatient psychotherapy in 53.2% of funded patients and 46.8% of unfunded patients.

Conclusions: Expanding knowledge and use of evidence-based depression assessment tools in an inpatient setting assisted with management, treatment, and post-hospitalization referrals. Guiding the project with *DNP Essential II: Organizational and Systems Leadership for Quality Improvement and Systems Thinking* involved continuous tracking and modifying the project with feedback from different components (e.g., licensed clinical social workers (LCSWs), pharmacists, providers, nursing staff, technicians, administration) using evidence-based clinical guidelines.

Keywords: depressive disorder, major depression, patient health questionnaire, psychometrics, aftercare, referral and consultation, inpatients

Implementing Evidence-Based Adult Psychiatric Inpatient Depression Assessment, Treatment, and Post-Hospitalization Referral

Major Depressive Disorder (MDD) is within the group of depressive disorders defined by the American Psychiatric Association (APA) Diagnostic and Statistical Manual of Mental Disorders (DSM-5) as discrete episodes of depressed mood or loss of interest/pleasure occurring for at least 2 weeks duration (APA, 2013). Three additional symptoms must be present in order to accurately diagnose MDD in adults 18 years of age and older (APA, 2013). These three additional symptoms may include significant weight loss or gain without dieting; insomnia or hypersomnia nearly every day; psychomotor agitation or retardation nearly every day; fatigue or loss of energy; feelings of worthlessness or excessive guilt; diminished concentration ability or indecisiveness; or recurrent thoughts of death, suicidal ideation with or without a plan, suicide attempt, or specific plan for committing suicide (APA, 2013). Description of coexisting depressive symptoms are known to cause clinically significant impairment in physical function and cognition. The essential features of major depressive disorders are that the symptoms persist most of the day, nearly every day for a period of 2 weeks with clinically significant impairment in social, occupational, or other areas of functioning (APA, 2013).

Statement of the Problem

In an inpatient psychiatric setting, an opportunity was identified to improve the assessment of patients for the presence and severity of depressive symptoms. Prior to project implementation, the nursing staff used a number scale (1-10, 10 being severe) to assess patients for depression. These findings were reported to the providers. The number scale used by the nurses was not standardized and lacked evidence of its validity as a screening tool. Further, the scale did not provide information on whether patients were to participate in the assessment. The

number scale did not convey to providers any relevant information to accurately diagnose, assess, monitor, or treat depression. Accurate and ongoing depression screening in disease detection during hospitalizations also requires the PHQ-9 to model prediction of risk. Depression screening during hospitalization is associated with the reduction of disease progression, readmission rates, and the cost of healthcare as emphasized by Pederson et al. (2016). Research has established that depression is common among adults with chronic disease, associated with worse long-term clinical outcomes, often poorly detected, and undertreated in acute care settings (Pederson et al., 2016). Study results demonstrated 17% patients were readmitted or died within 30 days of discharge, 28% patients were readmitted or died within 90 days of discharge, and depressed patients were readmitted or died more frequently than nondepressed patients: 36% versus 25% within 90 days post discharge (Pederson et al., 2016).

Research and evidence-based guidelines support clinical redesign to use a depression assessment tool in all patient population groups and clinical settings. The PHQ-9 is a validated depression assessment tool (U.S. Department of Veterans Affairs and U.S. Department of Defense, 2016)). Prior to the project, the PHQ-9 was used in the inpatient psychiatric units upon patient admission, on day 7 of hospitalization, and upon discharge. The initial admission PHQ-9 score, however, was not referenced in nurse-to-nurse communication during incoming shift reports or during nurse to provider communication in patient rounding. Instead of using the PHQ-9 score in monitoring symptoms and symptom severity, the nursing staff used a number scale (1-10, 10 being the worst) per shift daily in patient depression assessments, handoff reporting, and in reports to providers during daily patient rounding. The number scale did not clinically or adequately identify depressive symptom severity when compared to the PHQ-9, an evidence-based depression assessment tool. The PHQ-9 uses the following severity criteria in

assessing how often the patient has been bothered by symptoms of depression in the previous 2

weeks: 0: not at all, 1: several days, 2: more than half the days, and 3: nearly every day. Each of

the nine symptoms of depression to meet criteria for a DSM-5 diagnosis are answered

accordingly and totaled into the three specifiers of mild (score 10-14), moderate (score 15-19),

and severe (score => 20) in accordance with clinical guidelines for the management of MDD

(VA/DoD, 2016). The number scale does not convey clinical judgement used when the patients

do not participate in assessment due to being withdrawn, suffering from mental decompensation,

or detoxing from alcohol or illicit substances. The clinical guidelines outlined by VA/DoD

(2016) add an extra layer of assessment with inclusion of risk modifiers such as degree of

function impairment (e.g., mild, moderate, severe), complications (e.g., co-occurring post-

traumatic stress disorder, substance use disorder, psychosis, suicide risk, mania, significant social

stressors, significant anxiety), chronicity of depression greater than 2 years despite treatment,

and treatment resistant depression with at least two adequate treatment trials with lack of full

response to each. A number scale simply does not convey such in-depth subjective and objective

data for accurate detection, treatment, and management of MDD.

Background and Significance

According to the World Health Organization (2017), depression is ranked as the single

largest contributor to global disability given that the burden of disease affects more than 300

million people worldwide (Driessen et al., 2020). Depression impacts the capacity for normal

physical function in depressed individuals resulting in an average 77.6% reduction in functioning

and the individual may further decompensate in the presence of co-occurring medical conditions

such as diabetes mellitus, advanced coronary artery disease, and hypertension (Stern et al.,

2016). In the United States, the overall economic burden of MDD is estimated to be greater than

$200 billion with annual incremental direct medical costs approximately $6,400 more for the individual impacted when compared to an individual without MDD (Johnston et al., 2019). This economic cost further emphasizes the substantial negative impact of this health-related quality of life suffering.

Depression is one of the most common mental health disorders in the United States with 6.7% of adults 18 years of age and older reporting at least one major depressive episode according to data from 2014 and is known to have a higher lifetime prevalence (Kato et al., 2018). Specific to ethnicity, an estimated 15% of Latinos residing in the U.S. will experience a depressive disorder and up to 25% of adults of all racial and ethnic groups meet the criteria for diagnosis in the primary care setting (Bridges et al., 2019). The most recent global events associated with the coronavirus pandemic resulted in 24.3% of adults reporting elevated adverse mental health conditions (e.g., anxiety, depression, suicide, substance use) during June 2020, four times greater than the 6.5% of adults reporting elevated adverse mental health conditions in entire second quarter of 2019 (Czeisler et al., 2020).

The burden of cost, mortality rate, and prevalence of depressive disorders led to the 2009 and 2016 recommendations by the United States Preventive Services Task Force (USPSTF) to screen for MDD in the general adult population regardless of self-awareness or provider awareness of symptoms (Kato et al., 2018). Research was conducted to determine if recommendations were being followed and it was determined that during 2014-2015 only about 50% of U.S. adults 35 years of age and older were assessed for depression (Kato et al., 2018). Mental health services were not only underutilized, but services were also not adequately and equitably distributed. Sociodemographic characteristics associated with a lower likelihood of depression assessment included Asian non-Hispanic, Hispanic, Black non-Hispanic males,

younger (35 to 49) and oldest (75+) adults, education level less than a high school diploma,

adults with higher perceived health status, and uninsured (Kato et al., 2018). Among young

adults in the United States, prevalence rates of 24%-48% have led to premature mortality,

suicide, anxiety, and significant negative impacts when co-occurring with medical conditions or

substance use (Lilly et al., 2020).

This evidence-based quality improvement project is based on identified gaps in the use of

depression assessment tools to convey symptoms of depression and their severity amongst the

collaborative team in an inpatient psychiatric unit. The project was designed to improve patient

outcomes by increasing opportunities to screen, detect, and treat depression; increase the use of

evidence-based depression assessment tools to decrease depression-related readmission rates to

tertiary level of care settings; and promote treatment of depression in the preferred outpatient

behavioral health services setting.

Assessment

The behavioral health units for Level I and II psychiatric services are embedded within a

multi-service tertiary level of care hospital. The psychiatric service provides care to more than

2,970 adult behavioral health patients annually. Behavioral health patients are 18 years of age

and older and must be medically cleared before being admitted into the psychiatric units. The

patient population commonly served are unfunded and homeless and may be assisted to receive

charity funding or Medicaid/Medicare. The psychiatric service averages 50% unfunded patient

population spiking to 86% unfunded during project implementation. The behavioral health units

include Level I for mental decompensation due to psychosis induced by illicit substances or

absence of pharmacotherapy. Patients admitted to Level I are admitted under emergency

detentions, orders of protective custody, or due to disruptive behaviors that put themselves and

others at substantial risk of injury. Level II is reserved for stable mental health patients that have been medically cleared and deemed positive candidates to participate in treatment plans on a voluntary status despite initial status of emergency detention. Chemical Dependency patients are included in Level II after medical clearance. The entire psychiatric service provides same gender cohort rooms, and Level II has the capacity for 19 patients on the west wing unit and up to 18 patients on the east wing unit. Nursing processes established within the psychiatric services fulfill requirements of Centers for Medicare and Medicaid Services (CMS) such as documentation deadlines for initial nursing assessments using the PHQ-9 and initial provider patient evaluation within 24 hours of patient admission. The Level II patient population was selected for the project implementation to promote increased rates of patient participation in self-assessment goals sheets and stable mental status compared to Level I where treatment focused on mental decompensation, psychosis, and unstable aggressive behavior disorders

Needs Assessment

The project implementation is focused on Level II and Chemical Dependency psychiatric units for the age group 18-year-olds to 65-year-olds, excluding pregnancy and post-partum population groups. Both units are located on the same floor and the group was chosen to ensure maximum participation by patients. Most patients admitted into these units are under voluntary status, coherent, independent in completing activities of daily living, able to voice needs, participate in groups, and are medication compliant. The PHQ-9 was part of the admission packet requiring completion in order to meet unit benchmarks, but there were no clinical guidelines delineating the role of the tool. The nursing staff did not demonstrate knowledge of the PHQ-9 and its relevance to diagnosis, readmission rates, score interpretation, or relation of the tool to treatment-resistant depression.

Current clinical guidelines from the National Institute for Health and Care Excellence (NICE, 2009) emphasize a comprehensive assessment considering the degree of functional impairment and/or disability associated with the depression and duration of the episode. The guidelines further expand on symptoms to assess the course and severity of an individual's depression such as history of depression and comorbid health or physical disorders, history of mood elevation, prior treatments and response, quality of interpersonal relationships, living conditions, and social isolation (NICE, 2009). The VA/DoD clinical practice guideline for the management of MDD (2016) adds another layer of assessment by recommending the use of PHQ-2 for all patients not currently receiving treatment for depression and the use of PHQ-9 for patients with a diagnosis of MDD to obtain a quantitative measure of symptom severity in the initial treatment planning to monitor progress (VA/DoD, 2016). Both clinical guidelines demonstrated consistency in recommending the first line of treatment to include psychotherapy and pharmacotherapy without placing one treatment over the other. The clinical guidelines recommended antidepressants, specifically selective serotonin reuptake inhibitors in monotherapy, antidepressants targeting different neurotransmitters in combination therapy, and second-generation antipsychotics in augmentation pharmacotherapy contingent on tolerability of medication side effects and presence of symptom reduction (VA/DoD, 2016).

The nursing staff currently uses the PHQ-9 upon patient admission as part of the initial nursing assessment, on day 7 of hospitalization, and upon discharge from inpatient psychiatric units. The established nursing workflow uses a paper format of the PHQ-9 for the patients to complete upon admission as part of the admitting process, on day 7 of hospitalization, and on day of discharge. The information on the paper document is entered into the electronic medical record (EMR) and the document is filed in the patients' paper chart.

There is no current use of the PHQ-2. Prior to the implementation of this project the nurses used a number scale (1-10, 10 being the worst) for depression assessment in shift handoff reporting and during provider-nurse communication. The PHQ-2 assessment was included in the patient's self-assessment form, *Daily Goals Sheet (Appendix A),* which is a department form used daily and is collected by the behavioral health technicians for review by licensed personnel.

Organization's Readiness for Change

Three psychiatrists leading the providers' group verbally acknowledged the gap occurring from the failure of nursing staff to convey depressive disorder symptoms and symptom severity in a systematic process. Implementation of evidence-based depression assessment tools to both standardize the process and strengthen nurse-provider collaboration were encouraged by the providers. The psychiatric services medical director reported that the number scale previously used by nursing staff did not convey to the providers the relevant information needed to accurately diagnose, assess, monitor, or treat depression. He asserted that symptom identification is critical to tailor pharmacotherapy according to tolerability of side effects, patient preferences, patient needs to reduce the frequent readmission rates, treat detoxification from substances, and improve adherence to treatment. Treatment adherence includes outpatient referrals to psychotherapy and medication management appointments.

The lead case manager identified innumerable challenges in patient placement and referral coordination as many psychiatric patients are unfunded. Social workers and case managers rely heavily on verbal nursing reports and read nursing documentation of patient assessments including both subjective and objective data. There is no current report that can electronically create or track nursing documentation of depression symptoms and symptom severity. Nursing clinical judgements or concerns are primarily shared verbally amongst the

nursing staff, case managers, social workers, therapists, and providers. Improving the collaboration in conveying symptom severity and accurately detecting and diagnosing depressive disorders facilitates appropriate discharge planning with post-hospitalization referrals. Baker et al. (2018) emphasized the importance of coordinating and integrating care for the complex needs of patients with depression and medical comorbidities to decrease the burden of healthcare cost. In a systematic review targeting three patient population groups, adults with at least one chronic medical condition and co-occurring depression were included as complex patients defined by multimorbidity and high healthcare utilization. Of the studies reviewed for this population group, results suggested that addressing depression may be a critical component in chronic condition care management (Baker et al, 2018). Studies of primary care practices revealed that care management was used significantly less often for treating depression than other chronic illnesses. even though evidence demonstrates a three-fold improvement in mortality risk among complex patients when receiving depression care management compared to those who did not receive depression care (Baker et al., 2018). This systematic review further highlights the importance in depression screening throughout hospitalization as the identification of depression contributes to decreasing readmission rates and disease progression (Pederson et al., 2016).

Nurse leaders including unit-based nursing council leaders, charge nurses, supervisors, administrative directors, and the chief nursing officer verbally supported the project objectives. Designated nursing staff were selected to be project implementation champions promoting the screening completion and sharing patient screening results with the providers.

Project Identification

A pre-intervention assessment of the facility, staff, and clients was conducted from January 5th to December 8th, 2021. The assessment revealed that the emergency room physician makes the initial patient assessment for psychiatric conditions that may require inpatient hospitalization under voluntary status or emergency detentions. A tele-psych consultation is ordered when psychiatric providers are not available for in-person consultations. The psychiatric provider, either in-person or through tele psych services, determines whether the patient needs crisis stabilization with an inpatient psychiatric admission. Medical clearance is determined by the emergency room physician before admission into the psychiatric units. If the patient is transferred from another hospital within the city, the process is a direct admission through coordination services providing physician to physician consultations. The psychiatric units are a different entity from the hospital. The in-house admission process requires a discharge order from a medical unit within the hospital before admitting the patient to a psychiatric unit. A hospitalist from the same facility can complete medical consultations as needed or provide medical management during the length of stay.

The psychiatrist or mental health nurse practitioner evaluates the patients upon admission or the next day if the patient is admitted after 6 p.m. The psychiatric providers are responsible for psychiatric initial evaluations, initiating treatment plans, accurate diagnosis, managing pharmacotherapy, and coordination of services with social workers or case managers specializing in the care of the mental health patient population. Providers initiate orders of protective custody as needed when emergency detentions expire and the patient requires additional treatment due to continued risk of harm to self. Orders of protective custody can also be initiated under patients' voluntary status.

The psychiatric nursing staff is responsible for the inpatient admission process, nursing interventions as ordered by the providers, and participating in collaborative care of the patients. Delegated duties are conducted by the behavioral health technicians who also conduct or facilitate groups throughout the day shifts. The nursing staff and behavioral health technicians collaborate to conduct fifteen-minute rounds to check on the patient's well-being, environmental rounds to prevent risk of self-harm by patients, vital signs, meals, assist with daily patient needs, encourage group attendance and participation, and respond to hospital emergency codes and behavioral health emergency needs throughout the hospital.

The psychiatric management and administrative staff are responsible for the entire psychiatric behavioral health department which is divided into five different cohorts of patients including adults Level I, adults Level II, geriatric psychiatric services, psychiatric emergency services funded by the state, and the transition unit which is embedded within the emergency room for observation of possible admissions pending medical clearance. The patients have a variety of mental health disorders including mood disorders, depression, suicidal ideation, psychotic behavior, and post-traumatic stress disorder. Some of the patients have a mood disorder diagnosis and a co-occurring addiction (Administrative Director, personal communication, February 09, 2021). Other mental health crisis stabilizations are provided for mood disorders, depression or anxiety, suicidal ideation, psychosis, Schizophrenia, post-traumatic stress disorder (PTSD), psychiatric diagnosis with secondary chemical dependence, and substance use disorders.

Case managers and LCSW collaborate with the department in managing the care of inpatient psychiatric services and coordinate care for the discharge process. Services include

referrals or housing placement into sober living homes, half-way houses, drug treatment centers, or mental health services within the patients' respective communities.

Purpose

The purpose of this project was to promote the timely assessment and communication of depression symptoms and symptom severity using evidence-based tools to facilitate best-practice provider management, treatment, and post-hospitalization referral of patients with depression following hospitalization in inpatient psychiatric units following the VA/DOD guidelines. This quality improvement project was designed to strengthen collaboration between providers, nursing staff, LCSWs, and behavioral health technicians through evidence-based tools designed to improve communication in conveying depression symptoms and symptom severity.

Objectives and Anticipated Outcomes

This quality improvement project centers on nine goals. These goals and objectives are designed to increase knowledge and use of evidence-based depression assessment tools PHQ-2 and PHQ-9; to effectively assess, communicate, and facilitate best-practice processes for patients with depression or at risk for depression (Table 1).

Summary and Strength of the Evidence

The most severe complication and outcome of major depressive disorders is suicide (Stern et al., 2016). Suicide rates vary by race/ethnicity, age, and other factors, e.g., history of child abuse, sexual violence, and/or bullying. Twelve million American adults report suicidal ideation, 3.5 million have planned a suicide attempt, and 1.4 million have attempted suicide (CDC, 2021). Surviving family and friends of individuals who die by suicide may experience shock, anger, guilt, depression, anxiety, and suicidal ideation (CDC, 2021). Failure to achieve remission in depressive disorders occurs in 20-30% of all individuals with MDD and treatment

Table 1

Objectives and Anticipated Outcomes

Objectives	Anticipated Outcomes
Educate providers (MDs and NPs), psychiatric nurses, behavioral health technicians, and LCSW in the inpatient psychiatric units regarding the evidence-based depression assessment tools and protocol.	100% of providers, psychiatric nurses, behavioral health technicians, and LCSWs are educated regarding evidence-based depression assessment tools and their effective role-specific implementation.
Design and facilitate Information Technology's build of PHQ2 documentation in the electronic health record.	100% adherence of nursing staff to project algorithm and clinical guidelines for the use and interpretation of PHQ-2.
Develop a decision tree to integrate the depression assessment tools into the processes of care to guide nursing staff in the decision making and reporting of results from the PHQ-9 and PHQ-2 to the providers	100% collaboration and adherence to written guidelines in the management of major depressive disorders.
Replace the 1-10 numeric scale currently used to gather the patients' daily self-assessment with the PHQ-2 evidence-based assessment tool.	New tool included in education process.
Build PHQ-9 admission score into Behavioral Health Report Sheets to convey severity of symptoms, relevant information regarding depression risk indicators, and clinical judgment to incoming shift and to providers during patient rounding.	Establish new standard in nurse handoff reporting established with 100% staff adherence to handoff reporting of PHQ-9 on shift report sheets.
Monitor provider and LCSW feedback regarding effectiveness of depression assessment communication weekly.	Weekly updates with lead LCSW and/or providers to review impact of depression assessment communication and barriers.
Provide patient education tools appropriate for insertion into the depression section of patient handbook expanding pharmacotherapy education with common side effects and benefits of PHQ-2 assessment.	Design and build population-specific patient education tools for common medications used in treatment and management of MDD.
Audit daily records of depression assessment for admissions and discharges to identify adherence to the depression assessment guidelines and established processes.	100% nursing staff written adherence to clinical guidelines use and interpretation of PHQ-9.
Develop written provider-nursing guidelines for the depression assessment tools implementation, documentation, and communication.	100% nursing staff and provider adherence to clinical guidelines for the management of tools for MDD.

resistant depression is associated with higher rates of relapse within 1 year of remission

exacerbating the decline in health-related quality of life (Johnston et al., 2019 & Stern et al.,

2016). Pharmacotherapy for depressive disorders has side effects that include sexual dysfunction,

weight gain, medication-induced mania, diarrhea, dry mouth, nausea, and/or hyperprolactinemia

which contributes to poor treatment adherence (Stern et al., 2016). The management of

medication dosage to reduce side effects and tapering methods to achieve maximum-effect

dosages or remove patients from medications is a delicate process to avoid adverse effects such

as hypertensive crisis, fatal serotonin syndrome, discontinuation syndrome, rhabdomyolysis, new

onset of mania, tardive dyskinesia, or extrapyramidal symptoms with antipsychotic treatment

augmentation (VA/DoD, 2016).

Clinical Guidelines

Supportive evidence-based guidelines by NICE (2009) and VA/DoD (2016) provide

recommendations in the management of major depressive disorders including psychotherapy and

pharmacotherapy. NICE (2009) emphasizes that a comprehensive assessment considering the

degree of functional impairment and/or disability associated with depression and duration of the

episode should be used to assess for depression. The guidelines further expand to designate that

it is essential to obtain information on specific indicators to assess the course and severity of an

individual's depression, e.g., history of depression, medical conditions, prior treatments and

response, quality of interpersonal relationships, living conditions, and social isolation. (NICE,

2009). Both evidence-based clinical guidelines are consistent in recommending psychotherapy

and pharmacotherapy as the first line of treatment. Monotherapy versus combination therapy is

recommended based on patients' tolerability of medication side effects and achieving symptom

reduction.

The VA/DoD (2016) adds another layer of assessment with the use of the PHQ-2 & PHQ-9 tools. The VA/DoD (2016) clinical guidelines recommend using the personal health questionnaire-2 (PHQ-2) for all patients not currently receiving treatment for depression and the PHQ-9 for patients with MDD to obtain a quantitative measure of symptom severity in the initial treatment planning to monitor progress.

The VA/DoD (2016) adds another layer of assessment with the use of the PHQ-2 & PHQ-9 tools. The VA/DoD (2016) clinical guidelines recommend using the personal health questionnaire-2 (PHQ-2) for all patients not currently receiving treatment for depression and the PHQ-9 for patients with MDD to obtain a quantitative measure of symptom severity in the initial treatment planning to monitor progress. A valid and reliable measure of depression has been established with the personal health questionnaire-9 (PHQ-9) consisting of nine questions with a severity score 0-3 for each question. The PHQ-9 with a score range of 0-27 has been found to have internal consistency and sensitivity to change. An increasing score indicates greater symptom severity of MDD. Furthermore, recent reports confirm improved quality and increased effectiveness in the routine monitoring of symptoms and reporting of outcomes (Staples et al, 2019). The PhQ-9 may be limited in proper implementation in the setting of routine care due to the extent of time required to administer the tool with patients.

PHQ-2 consists of the first two questions of the PHQ-9: 1. Feeling down, depressed, or hopeless and 2. Little interest or pleasure in doing things. These two questions are considered core criteria to establishing a diagnosis of depressive disorders outlined in the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) (Staples et al, 2019). As a screening instrument and measure of treatment response, the PHQ2 demonstrates excellent discrimination with a threshold score of greater than or equal to 3 indicating optimal sensitivity and specificity

(0.68 and 0.85 respectively) (Staples et al, 2019). Other psychometric properties measured and analyzed include generalized estimation equations, test-retest reliability, Confidence Interval (CI 95%), internal consistency, correlation coefficients, and statistical significance sensitive to changes in symptom severity.

Overall results compared well and within acceptable ranges between the short form (PHQ-2) to the longer version (PHQ-9). The concluding findings display efficiency in using a shorter form and determined its capacity of identifying patients with depression. Measures studied have sensitivity to treatment changes. The two short form data samples from the online administration replicated findings from data when administered to patients in face-to-face treatment. The PHQ-2 showed good psychometric properties in two heterogenous samples of treatment-seeking adults. The PHQ-2 was found to be useful in both research trials and in routine care. The short form can be used alone or in combination with other measurement tools such as the Generalized Anxiety Disorder Scale-2 (GAD-2) and the Kessler Psychological Distress Scale-6 (K-6) (Staples et al, 2019).

The PHQ-2 study findings correlate with clinical guidelines established by the VA/DoD (2016). The clinical guidelines also recommend assessment and triage for acute safety risks. When using the PHQ-9, special attention is recommended to the last item on the PHQ-9: 'Thoughts that you would be better off dead or of hurting yourself in some way?'. This question has been associated with increased risk for a suicide attempt. Data collection from the PHQ-9 meets the new updated DSM-5 criteria in diagnosing MDD, ascertains a baseline for symptom severity, and measures how MDD impacts daily functioning as stated by the VA/DoD (2016). Positive screening for depressive symptoms requires clinical evaluation which should include a working diagnosis of MDD, patient-centered approach to depression education, recovery

expectations, and ascertainment of treatment preferences (VA/DoD, 2016). Research continues

to standardize the definition of treatment-resistant depression with the objective of improving

treatment and management strategies. Less than 50% of patients respond to first-line

antidepressant treatment or psychotherapy when diagnosed with MDD and the presence of

treatment resistant depression with marked functional impairment greatly increases the direct and

indirect healthcare costs (van Bronswijk et al., 2018). A meta-analysis comparing treatment as

usual with the addition of psychotherapy in treatment resistant depression demonstrated

moderate and significant size versus treatment as usual defined as a continuation of

pharmacotherapy (van Bronswijk et al., 2018). The psychotherapies analyzed included cognitive

behavioral therapy and interpersonal psychotherapy. The meta-analysis addressed three main

variables in the treatment and management of depression. These included the likelihood of

achieving remission significantly reduced for individuals requiring third or fourth line of

antidepressant treatment due to no response, majority of depressed individuals preferred

psychotherapy over pharmacotherapy, and patient preference in treatment showed better

outcomes (van Bronswijk et al., 2018). Despite patient funding status, the importance of

referring psychotherapy upon discharge as an option is a critical task providers need to

implement with nursing staff providing patient education about psychotherapy interventions and

encouraging group attendance during their length of stay in the inpatient setting.

Data collected from the U.S. Department of Health and Human Services (2009) found

that about half of 14.8 million adults with a major depressive episode were receiving a combined

treatment of pharmacotherapy and psychotherapy (Baruch & Annunziato, 2017). This

recommendation of combined treatment for patients with moderate to severe MDD was

standardized by the American Psychiatric Association (2010) guidelines (Baruch & Annunziato,

2017). The inpatient psychiatric services follow the model of combined treatment delivery with psychiatrists and psychiatric nurse practitioners performing medication management and LCSWs conducting group therapies. Outpatient services typically require a psychiatric provider to conduct medication management and a second referral is given for psychotherapy, counseling, rehabilitation services, or group home placement. Medication management appointments are not always provided at the same location in which the patient receives psychotherapy, counseling, rehabilitation services, or temporary group home placement.

Baruch & Annunziato (2017) shared relevant data to current inpatient clinical characteristics such as co-occurring psychiatric disorders of general anxiety (71%) and low mood (41%). In their evaluation, treatment modalities included cognitive behavioral therapy (47%), interpersonal psychotherapy (14%), and psychoanalysis (12%). Nearly half of the participants included in the evaluation (44%) reported visiting another health professional within the year for wellness visits, chronic illness management, or urgent care resulting in 35% of participants being referred to their psychotherapists by primary care physicians (Baruch & Annunziato, 2017). Screening for depression with evidence-based assessment tools is indicated for use in the outpatient settings or primary level of care to help prevent the burden of disease and sustain functional capacity of individuals with MDD.

Risk Modifiers

Philogene-Khalid et al. (2020) researched the medical inpatient population group with substance use disorder and found high rates of moderate to severe MDD while the medical inpatients with substance use disorders were hospitalized and within 3 months of discharge. A high-risk factor within the study sample was prior history of adverse childhood experiences (e.g., household substance use, physical abuse, and household incarceration). A systematic review by

Baker et al. (2018) emphasized the importance of coordinating and integrating care for the complex needs of patients with depression and medical comorbidities to decrease the burden of cost. The economic and humanistic burden of disease is greatly exacerbated by the presence of treatment-resistant depression. Treatment resistant depression is defined as patient non-response to two or more adequate courses of consecutive antidepressant treatment in a single major depressive episode resulting in unmet needs in the management of MDD (Johnston et al., 2019).

People who have experienced adverse childhood experiences are more susceptible to substance use disorder and depression according to the study of Philogene-Khalid et al. (2020) which examined the association it has with major depression. MDD affects approximately 24% of the substance use disorder population compared to approximately 6.6% of the general population and the substance use disorder population also tend to have limited access to medical care, lack of medical insurance, experience poverty, unemployment, and use emergency services with disproportionately high rates of hospital admissions (Philogene-Khalid et al, 2020). Patients with substance use disorder encounter multiple organ system complications (e.g., cardiovascular, pulmonary, gastrointestinal, and renal) both acute and chronic at higher rates than the general population contributing to recurring readmissions (Philogene-Khalid et al., 2020).

Medical Comorbidities

Patient complexity can be defined by different factors ranging from type of single disease to extent of functional limitations and socioeconomic challenges. Baker et al. (2018) revealed the increase in multi-morbidity in America is a major driver of high healthcare costs and spending as patients with medical comorbidities are disproportionately affected by co-occurring depression and this complex patient population group consumes a large proportion of U.S. healthcare spending based on the 2010 Medical Expenditure Panel Survey data. Baker et al. (2018) affirmed

the primary co-diagnoses with depression were diabetes and/or coronary heart disease, diabetes, and hypertension. With respect to physical function, depressed patients score an average of 77.6% of normal functional capacity with apparent decline occurring in the presence of medical comorbidities, e.g., back problems, arthritis, diabetes, and hypertension (Stern et al., 2016). Stern et al. (2016) stated the decline in functional capacity in patients with comorbidities such as hypertension ranged from 79% to 88.1%, angina 71.6%, and advanced coronary artery disease 65.8%.

Post-Hospitalization Psychotherapy Referrals

In a recent meta-analysis of the efficacy of psychotherapies and remission rates showed that psychotherapies in addition to care-as-usual for patients with MDD had significant effects at 12-month follow-up when compared to care-as-usual only (Cuijpers et al., 2021). Long term outcomes of psychotherapy interventions reporting significant efficacy at 12 months included cognitive behavioral therapy, interpersonal psychotherapy behavioral activation therapy, and problem-solving therapy when compared to care as usual (Cuijpers et al., 2021). The ranking of psychotherapies and control conditions (e.g., preference, remission) were measured and demonstrated that cognitive behavioral therapy had the highest response (64.0%) followed by remission (75.1%), and patient acceptability (48.4%) (Cuijpers et al., 2021).

Methods

The project tracked 222 Level II patient records. Patient records included a variety of mental health diagnosis such as depressive disorders, substance use disorders, bipolar disorders, and schizoaffective disorders. Patient completion of revised daily goals sheets were audited for score interpretation and RN initial indicating review by a licensed staff as outlined in the project algorithm objectives. From the 222 total patient records audited demographics included gender,

age groups by classification (e.g., young adult 19-years old to 34-year-olds, middle-aged adults

35-year-olds to 49-year-olds, late middle-aged adults 50-year-olds to 65-year-olds, and older

adults 65-year-olds and greater). The patient population included 120 male patients and 102

females. The highest number of age group was male young adults (50) followed by female young

adults (47). From the total number of patients (222) 19.4% reported homelessness with a higher

rate in males (22.7%). Other variables analyzed included co-occurring psychiatric illnesses, co-

occurring medical conditions, pharmacotherapy selection by providers, history of abuse in

patients' lifetime, funded status, admission PHQ-9 scores, discharge PHQ-9 scores, discharge

referrals, providers involved in patients' psychiatric care, reason for admission, and urine drug

screen positive results.

It was determined that there exists a gap in identifying patients by ethnicity by the

admissions department. When the patient arrives either by emergency detention or voluntary

status, the patient is classified by race primarily and patient ethnicity was not found in electronic

or paper charts. All admission paperwork was in English language only. Patients admitted into

the psychiatric units have enhanced confidentiality and the organization has appropriate security

measures in place to ensure patient privacy, security, and confidentiality. Data collected from

self-assessment sheets are entered into the EMR and the form is filed in the patients' chart

secured in the enclosed nurses' station. The self-assessment sheets are identified with the

patients' name and filed accordingly. Upon discharge, all forms in the patients' chart are bundled

for medical records staff to collect and archive. Processes to run reports and gather information

in measuring outcomes (e.g., race, ethnicity, age, gender, diagnosis, PHQ scores) do not include

patient identifiers. Substance Abuse and Mental Health Administration (SAMHSA) enforces 42

CFR Part 2 to protect patients receiving substance abuse treatment in federally funded facility

against possible discrimination; a specific requirement is that consent must be obtained before sharing patient data with other healthcare providers (McBride & Tietze, 2019).

The project did not meet federal regulatory requirements for human subject research and did not require approval via the Institutional Review Board of the University of the Incarnate Word. The project was not funded.

Education and Project Intervention

Education sessions for nursing staff and providers initiated the project implementation process providing evidence-based clinical guideline recommendations, use of two validated assessment tools: PHQ-9 and PHQ-2, and DSM-5 criteria for MDD. An educational project poster was created and placed on the inpatient psychiatric unit to reinforce adherence to guidelines. A Provider-Nursing Algorithm was designed and integrated into the nursing workflow guiding nursing staff in the decision-making and reporting of PHQ-9 results to providers. A second algorithm was designed and integrated for the interpretation of results and reporting of PHQ-2 results. Measures and indicators included audit of the weekly records of PHQ-9 documentation to identify adherence to the depression assessment guidelines, monitoring provider and LMSW feedback regarding effectiveness of depression assessment communication weekly. weekly audit of patient self-assessment daily goals sheets for completion and nursing staff initials indicating acknowledgment of data, and weekly updates to collaborative team structure for project revisions, staff feedback, and continued education sessions as needed (Table 2). The educational sessions included role-specific depression screening processes and educational tools (e.g., medication side effect sheet and updated patient handbook segment for depression) designed to improve quality in the monitoring of depressive disorders with evidence-based depression assessment tools PHQ-9 and its shorter version PHQ-2.

Within the current environment, the PHQ-9 is part of the admission intake process for newly admitted patients into the psychiatric units. Once the patient has been admitted into the Level II units by psychiatrists' orders and medical clearance by emergency room physician, the psychiatric nurse begins the admission intake process which includes a body search, itemization of personal belongings for safe or bin storage, initial nursing assessment gathering objective and subjective data from patient, and a discussion of the admission packet with the patient in order to obtain consents (e.g., confidentiality and disclosure consent, psychotropic medication treatment, and unit rules). The admission packet includes the PHQ-9 and is acknowledged and signed by the patient. The patient is to complete or request clarification from the psychiatric nurse. Results from the PHQ-9 are required by department policy to be entered into the electronic health record as the initial depression assessment score and the form is filed in the patient's paper chart. Prior to this project, the PHQ-9 score was not further reviewed or shared during nursing hand off reporting for the duration of the patients' length of stay. Instead, during shift change nurses report a numeric scale number when handing off report of patients' depression. For, example the nurses would hand off report stating the patient reports depression is 8/10 without conveying symptom, symptom severity, or clinical judgement.

Application of Validated Tools

The project intervention included improving depression assessment and monitoring of symptoms with an additional step of printing the admission PHQ-9 score on the nurse's handoff reports for morning and night shifts. Once the admission PHQ-9 score was entered into the EMR, daily shift reports were able to display the results. With guidance from clinical guidelines, the nursing staff helped identify depressive disorders and could advocate for the patients' safety and plan of care. If the patient scored 10 or greater, symptom severity could be conveyed to

Table 2

Strategies, Interventions, and Responsible Persons

Implementation Strategies	Intervention	Responsible Persons
1. Develop & Provide education	Educate providers [physicians (MDs) and nurse practitioners (NPs)], registered nurses (RNs), behavioral health technicians, and LCSWs in the inpatient psychiatric units regarding the evidence-based depression assessment tools and protocol for communicating depression symptoms and symptom severity.	Project Leader
2. Continued Education & Reinforcement of Project Objectives	Educational poster was designed and placed in staff breakroom for Level II units for continuous learning opportunities, safety huddle meetings conducted every shift change, open display for LCSWs and providers to review, and 1:1 for staff that did not attend initial education sessions or new hire staff.	Project Leader
3. Design PHQ-2 Algorithm	Encourage unit champions behavioral health technicians and RNs in gathering daily goals sheets ensuring patient completion with RN initial for review and maintaining supply of daily goals sheets.	Project Champions
4. Design Provider-Nursing Algorithm for PHQ-9 & PHQ-2	Provide laminated Provider-Nursing Algorithm: PHQ-9 & PHQ-2 at nurse's station, education portfolios, and staff breakroom for quick reference in the project workflow depression screening, notification, and monitoring.	Project Leader, Administrative Director, Project Champions
5. Conduct weekly updates	Brief updates with LCSW leader, Medical Director, & Administrative Director for project revisions, staff feedback, and continued education sessions as needed.	Project Leader
6. Audit weekly records of PHQ-9	Identify adherence to clinical guidelines in the management, treatment, and referral of MDD patients.	Project Leader

providers according to established clinical guidelines outlining parameters for severity level, number of symptoms according to the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), and functional impairment according to the recommended clinical guidelines from the Department of Veteran's Affairs/Department of Defense (VA/DOD, 2016) (Table 3).

Table 3

PHQ-9 Interpration According to the VA/DOD (2016).

Severity of MDD symptoms	Total Score	# of symptoms per DSM-5	Severity of functional impairment
Mild	10-14	2	Mild
Moderate	15-19	3	Moderate
Severe	20 or >	4 or 5	Severe

Modifiers	Criteria
Complications	Co-occurring psychiatric illnesses (e.g., PTSD, SUD, psychosis, suicide risk, mania, significant social stressors, significant anxiety.
Chronicity	>2 years of symptoms despite treatment
Presence of Treatment resistant depression	2 or > adequate treatment trials with lack of full response to each.

Note: PHQ-9 = Personal Health Questionnaire-9, DSM-5 = Diagnostic and Statistical Manual of Mental Disorders Fifth Edition, MDD = Major Depressive Disorder, PTSD = post-traumatic stress disorder, SUD = substance use disorder.

Impairment may range from mild to severe. In the mild level, symptoms are not detected during interactions in comparison to the severe level which can include complete incapacity where the individual is unable to attend to basic self-care needs (e.g., hygiene and feedings) or becomes mute or catatonic (Stern et al., 2016). Evidence-based depression assessment tools and knowledge of score interpretation replaced the current Likert number scale (1-10, 10 being the worst) that was not conveying symptoms and symptom severity to clinicians appropriately. A numeric scale to assess symptoms of depression and symptom severity was not found to be established in recommended clinical guidelines in the management and treatment of MDD in adults.

Provider Nurse Collaboration

During the admission intake process, the psychiatric nurse conducts the initial nursing assessment in which the patient is interviewed, and an extensive amount of data is gathered in accordance with the patients' ability to disclose as a primary historian. Within the additional data complications are identified (e.g., post-traumatic stress disorder (PTSD), substance use disorders (SUD), psychosis, suicide risk, and significant anxiety), risk factors (e.g., adverse childhood experiences and family history), chronicity of symptoms (i.e., in the past 30 days, in the past 6 months, or lifetime occurrence of symptoms), and prior treatments or hospitalizations. The completion of PHQ-9 relies on patient self-reporting and the nurse conducting the admission intake process gathering subjective and objective data according to the VA/DOD (2016) clinical guidelines.

Therefore, definitive diagnosis and review of symptom severity must be verified by a clinician taking all relevant information into consideration (VA/DoD, 2016). Together with the admission PHQ-9 score, relevant information, and clinical judgment by nursing staff will be reported to clinicians during patient rounding. The medical director of psychiatric services stated that the group of providers had established processes in the management and treatment of MDD, ensuring 100% support of project objectives.

Following completion of the admission intake process, the clinician may not see the patient until the next morning during patient rounding if, for example, the patient arrives on the unit during the night shift. The psychiatric nurse admitting the patient plays a crucial role in ensuring completion of the PHQ-9 and in adding clinical judgment when there is suspicion of depressive symptoms when a patient does not participate in the initial nursing assessment. In patients with major depressive disorder (MDD), the PHQ-9 is recommended as a quantitative

measure of depression severity in the initial treatment planning and in monitoring treatment progress or response (VA/DoD, 2016). The clinical guidelines further state monitoring of the PHQ-9 score after medication is initiated or adjusted, as well as when changes in patient status occur, is required. Given that antidepressant medications do not demonstrate relief of depressive symptoms until 4-6 weeks following initiation, identifying depressive disorders early presents the opportunity to setup referrals upon discharge. Psychotherapy in combination with antidepressant medications may facilitate remission of symptoms or symptom reduction for the patient to return to a functioning capacity. In a systematic review and meta-analysis of participant data, evidence-base support was demonstrated in adding short term psychodynamic psychotherapy to psychotropic medication treatment. The combined treatment was significantly more efficacious in terms of depressive symptom levels at post-treatment (Cohen's d = 0.26, SE = 0.10, p = 0.01) and in follow-up (Cohen's d = 0.50, SE = 0.10, p < .001) (Driessen et al., 2020). The goal to reduce depression symptoms in combination treatment plans can contribute to decreased readmission rates and increased client enrollment in outpatient behavioral health services. A well-designed case-controlled study provided supportive data in a high-risk patient population for MDD. The inpatient medical population with substance use disorder (SUD) studied was seen to require extensive resources and monitoring of depression symptoms. Inpatient medical hospitalization presented an opportunity to engage SUD patients in multidisciplinary treatment and screen frequently with PHQ-9 (Philogene-Khalid et al., 2020). The results of the research supported improved communication in patient presentation of depressive symptoms and PHQ-9 scores to LCSW involved in the patients' care. The LCSW in this process was updated accordingly to begin discharge planning with appropriate referrals to outpatient services as needed.

The next step is divided into two parts contingents on clinician assessment of PHQ-9

score and relevant information. First, if depressive disorders are ruled out then the nursing staff

can continue to monitor symptom severity per shift daily with the PHQ-2 embedded on the

'Daily Goals/Self-Assessment' sheet. This was an objective of the project; to add the PHQ-2 into

the self-assessment sheet, creating an effective and evidence-based assessment tool for the

nursing staff to monitor, evaluate, and report to clinicians (Table 4). The clinical guidelines and

USPSTF provide supportive research and recommendations in the general adult assessment of

MDD. The interpretation of PHQ-2 scores was presented in the initial education sessions with an

algorithm to guide the BHTs and RNs collaboration ensuring all adult inpatient Level II were

assessed for MDD appropriately.

Secondly, if a depressive disorder is confirmed and diagnosed the nursing staff should

continue monitoring symptom severity per shift daily with the PHQ-9 score greater than 10 and

compared to baseline score. The implemented educational sessions for a role-specific depression

screening process outlines the workflow. The Provider-Nursing Algorithm: PHQ-9 and

Table 4

PHQ-2 Interpration (VA/DOD, 2016)

| Score	Probability of MDD (%)	Probability of any depressive disorder (%)
1	15.4	36.9
2	21.1	48.3
3	38.4	75.0
4	45.5	81.2
5	56.4	84.6
6	78.6	92.9

Note: PHQ-2 = Personal Health Questionnaire-2, MDD = Major Depressive Disorder

PHQ-2 (Figure 1) outlines the project workflow in 1.) depression screening with admission PHQ-9, initial nursing assessment capturing risk modifiers and relevant information (e.g., adverse childhood experiences, trauma, medical history), 2.) notification of PHQ-9 admission assessment into electronic health record and to providers, 3.) monitoring of initial presentation of depression symptoms by nursing staff and providers, 4.) establishing accurate diagnosis, treatment, planning, and referrals by providers, case managers, and nursing staff.

When there is no clinical suspicion of depressive disorders or patient does not participate initially during the admission intake, the PHQ-2 will be available to capture any possible attempt of the patient to communicate symptoms. The PHQ-2 scores from self-assessment sheets will be documented electronically in the EHR for nurses to review and further evaluate based on their clinical judgement of patient status (Appendix A). A new intervention will be created to add the scores in the electronic health record. The PHQ-2 will be embedded onto the self-assessment sheets for morning shift and night shift review. Nursing groups conducted during the day shift will provide an opportunity to educate patients about completing the PHQ-2 per shift daily for monitoring of symptoms. Depression with medical comorbidities magnifies the impact on healthcare utilization. Data from a systematic review emphasizes the importance of coordinating and integrating care for complex needs of patients with depression and medical comorbidities to decrease the burden of cost (Baker et al., 2018). Benefits from depression screening in all adult patients regardless of history of depression is vital during hospital stay and upon discharge to coordinate appropriate referrals. The cohort study demonstrated the importance in depression screening to reduce disease progression, increase detection, decrease readmission rates and burden of healthcare cost (Baker et al, 2018). The current environment had established frequency

Figure 1

Provider-Nursing Workflow Algorithm: PHQ-9 & PHQ-2
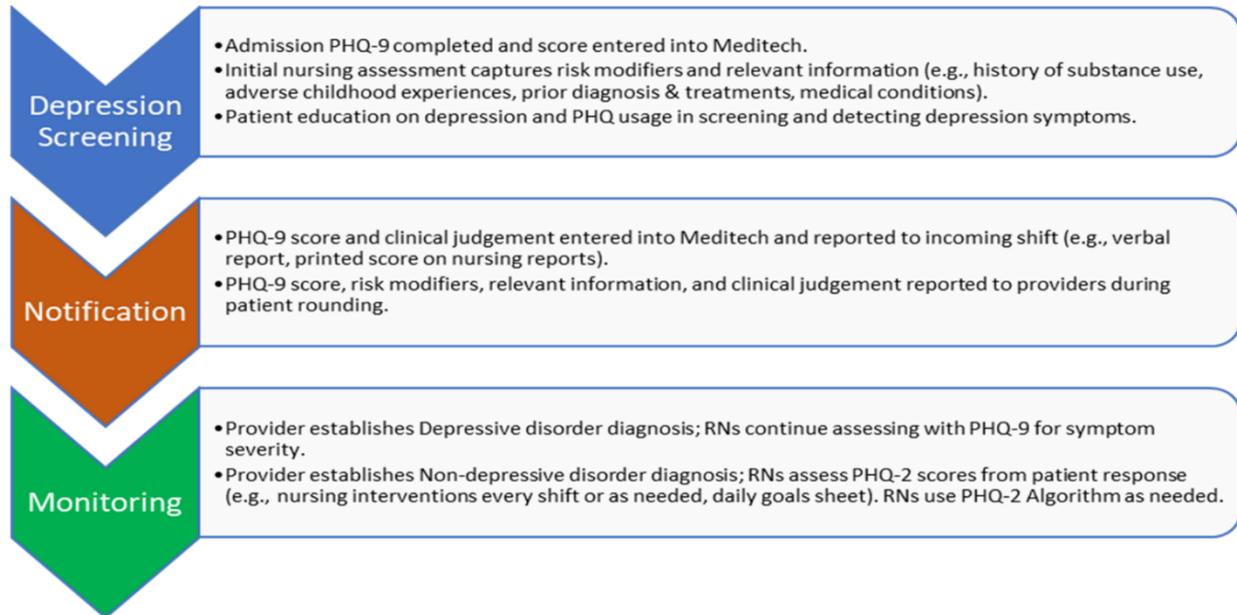
of monitoring with the PHQ-9 at admission, at day 7 of hospitalization, and at discharge. Patients' typical length of stay is 5 days dependent on clinical presentation or severity of mental status. There is not current discussion at report sessions between nursing staff and clinicians regarding PHQ-9 scores. The comparison to baseline of PHQ-9 and the implementation of the PHQ-2 on self-assessment sheets will increase and improve the quality of depression monitoring and assessment of symptoms.

Organizational Barriers and Facilitators

A fraction of patients admitted into Level II psychiatric units are under emergency detention and created barriers to meeting the project objectives. Patients under emergency detention would be apprehensive during initial nursing assessment inhibiting communication of depression symptoms and symptom severity. Patients admitted during late hours of nightshift or under the influence of illicit substances prohibited participation in the admission PHQ-9 resulting

in scores of zero due to patient refusing to participate in the initial nursing assessment. Patients

arrived in the acute phase of substance detoxification and refused to participate or interact with

the nursing staff, hindering collection of relevant information or accurate completion of PHQs

and self-assessment sheets. Acute mental crisis patients in the midst of detoxification or

behavioral outbursts prevented nursing staff from adhering to the project's flow chart in using

evidence-based depression assessment tools. During periods of low nurse/patient staffing, (e.g.,

night shift), heavy admission periods of Thursdays through Saturdays, and patient preference to

sleep during the hours 11 p.m. to 5 a.m., the nursing staff reported challenges in being able to

adhere to the project's flow chart due to the inability to collect a thorough nursing assessment of

subjective and objective data. Current work process is stated that if the patient refuses to

participate or complete the PHQ-9 the score is automatically entered as a 0 due to the time

sensitivity in which it must be entered into the electronic health record. Daily discussion of

baseline scores implemented into the nursing hand off report sheets and daily self-assessment

tools implemented into the daily goals sheets helped to ensure that every patient is screened

appropriately or reevaluated due to missed opportunity upon arrival to the unit.

The surge of covid positive patients in the facility led to transitioning the progressive care

unit into a covid unit and the Critical Decision Unit into a temporary unit for covid positive

psychiatric patients. The staff verbalized great concern for safety risks due to the glass enclosed

rooms, non-negative pressure rooms, sharing the unit with covid positive patients with medical,

rather than psychiatric, needs, and access to windows through which one psychiatric patient had

previously attempted to elope. System leaders agreed to increase staff to place Level I

psychiatric patients with a 1:1 ratio for continuous monitoring until discharged. The nurse's

station was also open compared to the enclosed stations at the psychiatric units. The staff had

been extremely short due to having two additional units open for covid positive psychiatric

patients. Covid has created many barriers in nursing and pose a higher risk in missed

opportunities of screening and detecting depressive symptoms. A tenured daytime nurse stated

that the numeric scale was a tool a prior psychiatrist encouraged. It had been implemented by a

previous group of providers. It had been about 5 years since the change in provider group and

despite the implementation of the PHQ-9 in the admission process, the staff had reverted to what

they were accustomed to; the numeric scale of 1-10 for monitoring of depression symptoms. The

fact that she engaged in the presentation and was agreeable to the purpose, objectives, and

outcomes of the project also raised my hopes in reaching sustainability with collaborative efforts.

Nurses are deescalating agitated patients, administering medications as scheduled or as needed,

reporting to providers and social workers. Compared to the nighttime shift, the level of activity

diminishes greatly due to nighttime medications for insomnia, day rooms are closed and locked

at 10:30pm Sundays through Thursdays and at 11:30pm on Fridays and Saturdays. The hours are

set due to maintaining a therapeutic milieu, low stimuli, to provide an adequate sleep

environment. Over the course of the weekend the fourth-floor older adult psychiatric unit flooded

when a construction worker accidently broke a fire sprinkler during the daytime hours. Patients

were moved to the 6E unit rooms that were pending completion of construction. This further

exacerbated staffing morale negatively. Besides being short staffed, the increase in patients

required greater demands from the 6E nurses and technicians. Although the older adult unit

nurses and technicians were moved along with their patients, the activity in the milieu increased

as well as the elopement risks. Nurse practitioners had encountered staff resistance in conveying

depression symptoms as outlined in the project implementation and another provider has

explained how he uses the number scale to further probe the patient instead of "dealing with"

staff lack of participation on improving communication. There continues to be inconsistent adherence to project objectives in conveying depression symptoms and severity. Each nurse in daytime and night-time shifts have their unique style in handoff reporting. The shift in clinical hours allowed opportunities to observe handoff reporting and follow-up with patients not completing daily goals sheets. A decline in completion of self-assessment sheets was reported to be from the use of crayons as the only instrument deemed safe for patients to use. This was a result of a patient stabbing himself on the hand with a mercury thermometer taken from an unlocked unit refrigerator. The injury required an urgent medical consult and surgery per nurse report. Patients reported not being able to write what they want to express with a crayon, "I'm not a child to be writing with crayons," or "I cannot write as much as I want." Assisting in collecting nighttime daily goals sheet was appreciated by the staff. There are no groups after 4 p.m. daily. Patients interact within the milieu in television rooms, pace the hallways, sleep, or use available courtesy phones to communicate with family and friends.

Plan for Project Evaluation

The nursing staff was anticipated to participate 100% in an educational sessions outlining role-specific depression screening process outlined in project algorithms The anticipated start of education sessions in January 2022 staff meeting was canceled and revised sessions were created with approval by the Administrative Director of psychiatric services. A brief version (2-3 minutes) was provided to staff unable to attend the staff education sessions guided by a project poster in the staff breakroom. The shorter education sessions were conducted meetings in a one-to-one session as needed LCSWs or Case Managers, and providers were given an overview of project objectives regarding the implementation of evidence-based depression screening tools

PHQ-2 and frequency of using PHQ-9 scores. An attendance sheet for the psychiatric department was obtained for tracking purposes to ensure staff participation and feedback.

Nursing staff providing PHQ scores with clinical judgment and relevant information to providers was anticipated to increase up to 80% based on weekly audits of provider documentation Admission PHQ scores and self-assessment sheets with PHQ-2 scores were tracked through reports drawn from the EMR on a weekly basis and manual audits of nursing intervention documentations electronic charting of nursing notes were audited to track usage of PHQ scores weekly instead of the numeric scale

The design and build of an EMR intervention to add the PHQ-2 scores from self-assessment sheets was anticipated to reach 100% documentation completion with collaboration by Information Technology team. The admission PHQ-9 score was electronically added by the Information Technology team on nurse's handoff reports. The PHQ-9 at admission will reach 100% completion in a timely manner and missed opportunities were tracked to provide supportive educational sessions in project objectives.

Education tools were created in collaboration with the in-house pharmacist. A medication side effect sheet discussing antidepressants commonly prescribed by the providers was readily available to present during morning nursing rounds or as needed if changes in pharmacotherapy were made *(Appendix B)*. The medication side effect sheet was placed in the medication consent binder for day and night shift to use a reference and education opportunity with patients. Especially during bedtime administration of medications for the night staff to review. Nursing summary notes were audited weekly to track usage of educational tools with patients.

The effectiveness of screening and treatment (e.g., psychotherapy, antidepressant medications) were reinforced from a systematic review conducted by the USPSTF to update the

2009 recommendations. The results support clinical decisions to use evidence-based depression screening tools in identifying and detecting depression in adults. Remission and response rates varied according to treatment plans (i.e., monotherapy, pharmacotherapy, psychotherapy, or combinations of treatments), however, the evidence-based recommendations demonstrated the effectiveness of screening (i.e., various forms of PHQ) and treatment (Siu & USPSFT, 2016). Benefits from depression screening in all adult patients regardless of history of depression is vital during hospital stay and upon discharge in order to coordinate appropriate referrals. A cohort study demonstrated the importance in depression screening to reduce disease progression, increase detection, decrease readmission rates and burden of healthcare cost (Pederson et al., 2016).

Results

The project achieved 100% staff attendance at educational sessions supplemented by one-to-one sessions, poster display in staff breakroom, and safety huddles. The project established a new standard in handoff reporting for the entire psychiatric services department to include PHQ-9 admission score on nursing handoff reporting sheets. Nursing staff & BHT review of patient completion of PHQ-2 increased from 0% to 52.3%. Risk factors were identified in 222 patients diagnosed w/MDD: 61.5% had history of abuse and 62.5% had history of PTSD. A number scale without scientific validity was replaced with the PHQ-2 assessment tool in the patients' self-assessment daily goals sheets. Referrals to therapeutic programs increased including psychotherapy (53.2% funded vs. 46.8% unfunded), internal PHP/IOP programs (72.7% funded vs. 27.3% unfunded), and programs including rehabilitation or group homes (61.3% funded vs. 38.9% unfunded). Project facilitators were 100% engaged including the department pharmacist providing feedback and approval of Daily Goals Sheet revisions, medication side effects information sheet for patients, and medication fact sheet for nursing staff in medication consent

binder. The project identified adherence to evidence-based clinical guidelines by providers in the management and treatment of MDD: 61.7% referred to psychotherapy, 56.8% patients prescribed first-line of treatment antidepressants selective serotonin reuptake inhibitors, and 56.4% augmentation pharmacotherapy with second-generation antipsychotics.

Discussion

Patients admitted into the psychiatric units have enhanced confidentiality and the organization has appropriate security measures in place to ensure patient privacy, security, and confidentiality. Data collected from self-assessment sheets are entered into the EMR and the form is filed in the patients' chart secured in the enclosed nurses' station. The self-assessment sheets are identified with the patients' name and filed accordingly. Upon discharge, all forms in the patients' chart are bundled for medical records staff to collect and archive. Processes to run reports and gather information in measuring outcomes (e.g., race, ethnicity, age, gender, diagnosis, PHQ scores) do not include patient identifiers. Substance Abuse and Mental Health Administration (SAMHSA) enforces 42 CFR Part 2 to protect patients receiving substance abuse treatment in federally funded facility against possible discrimination; a specific requirement is that consent must be obtained before sharing patient data with other healthcare providers (McBride & Tietze, 2019).

The project was found to not meet federal regulatory requirements for human subject research and does not require approval via the Institutional Review Board of the University of the Incarnate Word. Please use the IRB number NRR [21-022] when inquiring about or referencing this determination. Furthermore, the manuscript has not been submitted for simultaneous consideration to other journals or previously published. No funding was acquired during the quality improvement project.

Limitations

When the patient arrives either by emergency detention or voluntary status, the patient identifies their race only, not ethnicity, in the hospital admission forms. All hospital and psychiatric services admission paperwork are in English language only. Further improvement can be done by providing PHQ-9 in patients' preferred language for them to accurately express depression symptoms according to their culture and language preferences.

Project champions were limited to the shifts they worked. When the project champion was not at work, there were no other staff taking the lead in ensuring the right assessment sheets were distributed to patients,

Recommendations

Barriers encountered throughout project implementation including Covid positive patients, unit flooding, and unit construction magnified negative resistance to change. Patients admitted to Covid positive unit were under the primary care of medical teams followed by psychiatric consult. Once the patient reached day 5 of Covid symptoms onset, then they could be transferred into the psychiatric services units. Such patients need initial depression screening despite being Covid positive and should be reassessed upon admission into the psychiatric services. A new protocol is needed for future admissions of airborne precautions psychiatric patients. To achieve continued improvement in the knowledge and use of PHQ to convey depression symptoms and severity beyond the project timeframe, a learning module was discussed with the department educator to provide sustainability. A department educator is vital to the growth and development of staff and in the implementation of quality improvement objectives. The department educator accepted the value of the project's purpose to improve in

conveying depression symptoms by enhancing knowledge of evidence-based tools and accepted the need to integrate the tools into new hire orientation sessions.

Implications for Practice

The use of clinical guidelines supporting the project objectives created a lasting impression upon the staff well tenured in psychiatric services and new graduate nurses, equally. The education poster and algorithms for care processes assisted in reinforcing project objectives by sharing advanced knowledge to improve patient outcomes during inpatient hospitalization and reduce readmissions by appropriate referrals to resources within their respective communities. The doctoral-prepared Nurse Practitioner's role is essential in the development of interventions with the potential to improve patient outcomes. The DNP can assess microsystems for collaborative efforts designed to meet the needs of underserved patient populations. The *DNP Essential II: Organizational and Systems Leadership for Quality Improvement and Systems Thinking* guided the project purpose and objectives in order to achieve collaboration and gain support of facilitators such as the Chief Nursing Officer, Administrative Director, Psychiatric Medical Director, and all other staffing components of the Level II units (e.g., pharmacist, LCSWs, nursing staff). The Level II unit staff from both day and night shift provided valuable feedback & guidance for the project. They were the first set of eyes and hands on work processes and direct patient care. The DNP leads by example in the application of the *DNP Essential VII: Clinical Prevention and Population Health for Improving the Nation's Health.* The doctoral-prepared NP has the capacity to disseminate information and knowledge of evidence-based depression assessment tools in vulnerable, underserved populations. The DNP improves health outcomes by designing interventions through a wider lens in order to achieve long-term health goals and sustainability in mental health status.

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Appendix A

Daily Goals/Self-Assessment

Daily Goals/Self-Assessment

(This is to be filled out by patient, Staff to assist only if needed)

Date: _____

Name: _____   7a-3p/7A-7P Group

Facilitator:_____

Today's Goal (related to your treatment issues and recovery):

_____

_____

Are you having thoughts of hurting yourself or others? (Circle one):   · Yes   · No

Explain:_____

When was the last time you had thoughts of hurting yourself or others?_____

Explain: _____

Are you experiencing any of the following? (Circle all that apply): ·headache ·diarrhea ·nausea ·sweats ·runny nose ·chills ·fatigue ·tremors ·body aches ·feel unsafe ·stomach cramps ·mouth sores ·auditory hallucinations ·visual hallucinations ·skin rash

Patient Health Questionnaire -2 (PHQ-2):

Question Number	Over the past two weeks, how often have you been bothered by any of the following problems?	Not at all	Several Days	More than half the days	Nearly every day
1	Little interest or pleasure in doing things	0	1	2	3
2	Feeling down, depressed, or hopeless	0	1	2	3

Rate the following on a scale of 0-10 (0 = none, 10 = worst):

Anxiety: 0 1 2 3 4 5 6 7 8 9 10   · Pain: 0 1 2 3 4 5 6 7 8 9 10

What group did you attend yesterday? _____

What insight did you gain, or what did you learn from the groups? _____

_____

Approximately how many hours of sleep did you get last night? _____

RN initials: _____ Date: _____

Appendix B

Patient Education Medication Handout

Major Depressive Disorder Pharmacotherapy: Drug Categories & Side Effects

Alpha 2 Antagonist

mirtazapine (Remeron)
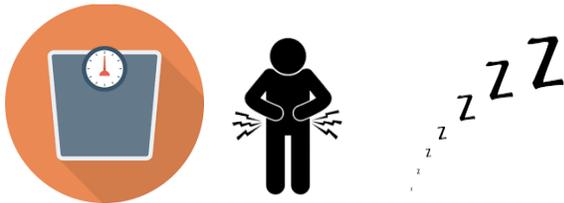
Norepinephrine/Dopamine reuptake Inhibitors

bupropion (Wellbutrin SR, XL)
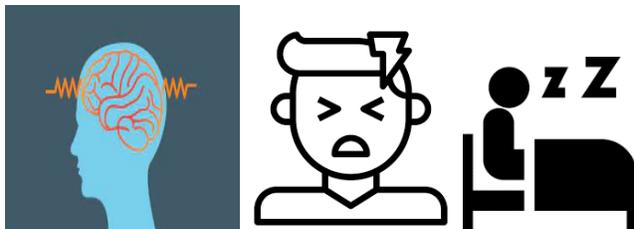
Serotonin Norepinephrine Reuptake Inhibitors – Do not stop abruptly!

Duloxetine (Cymbalta), venlafaxine (Effexor, Effexor XR)

Selective Serotonin Reuptake Inhibitors – Do not stop abruptly!

fluoxetine (Prozac), escitalopram (Lexapro), paroxetine (Paxil), sertraline (Zoloft)
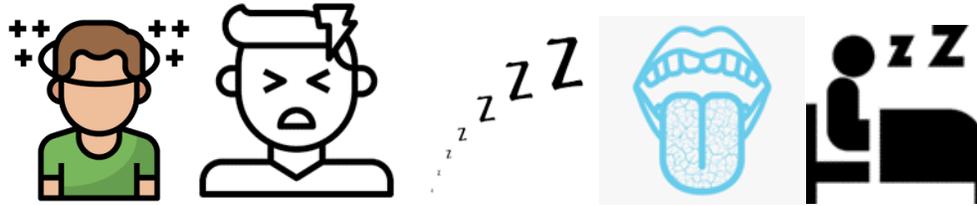
Serotonin Reuptake Inhibitor

desyrel (Trazodone) …………………………

2nd Generation Antipsychotic – Augmentation to Antidepressants

aripiprazole (Abilify), quetiapine (Seroquel), olanzapine (Zyprexa), risperidone (Risperdal)