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# Mental Health Referral in Primary Care:

## Influence of a Screening Instrument and a Brief Educational Intervention

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A dissertation

presented to

the faculty of the Department of Psychology

East Tennessee State University

In partial fulfillment

of the requirements for the degree

Doctor of Philosophy in Psychology with a concentration in Clinical Psychology

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by

Michael T. Miesner

August 2014

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Jon Webb, Ph.D.

Keywords: Integrated Primary Care, Mood Disorder, Screening Instrument, Referral Criteria,

Anxiety, Depression, Effect of Training

# ABSTRACT

## Mental Health Referral in Primary Care:
## Influence of a Screening Instrument and a Brief Educational Intervention

by

Michael Miesner

Although less than half of all patients with mental disorders seek mental health treatment per se, approximately 80% of all people will visit their primary care physician (PCPs) within a year (Strosahl, 1998). However, it is not well understood how to best handle patients presenting with mental health issues in primary care practices. The purpose of this project was to implement an intervention involving a screening measure for anxiety and mood disorders in a primary care setting to increase the volume of anxiety and mood disorder screening, to increase the accuracy of disorder detection, and to also enhance PCPs patterns of referral to mental health professionals (MHPs). Though starting with a quantitative design, difficulties encountered throughout the project eventually led to a largely qualitative analysis, which did yield useful information.

A pilot project demonstrated anxiety and mood disorders were commonly noted in patients' medical charts (46%), but also found referrals were rarely made for mental health services (7%), despite colocation of a licensed psychologist and licensed clinical social worker within the practice. This indicated that services available to provide comprehensive integrated total health care may not be have been used to their full potential.

In the main project, 59 participants from a family medicine clinic and 20 PCPs from that clinic participated. The My Mood Monitor (M3) was administered to the patients and became part of their Electronic Medical Records (EMR). The M3 screens for anxiety, depression, and bipolar disorders within primary care settings. In 2 separate noon conferences, PCPs were trained on diagnostic criteria for anxiety disorders and mood disorders, interpretation of M3 results, and the internal Mental Health Professional referral process.

The project was hampered by a full-scale switch from paper-based medical records to an EMR and accompanying lack of user experience with EMR functions, lack of efficient transfer of M3 results into the EMR, and an unforeseen switch of psychologists mid-way through the study. However, results were obtained that showed relatively low levels of PCP review of M3 results, potentially high rates of anxiety disorders and mood disorders within the setting, relatively high levels of PCP knowledge of diagnostic criteria for anxiety and mood disorders, and that patients may not prefer a 'warm handoff' model of mental health referral. These findings are couched within a number of important caveats, but future directions for research were clearly implied.

# DEDICATION

This work is dedicated to my parents Tim and Sue Miesner. Before I was even aware of their influence, they pushed me to learn to achieve, think analytically, and to persevere. These life lessons paired with their sustained encouragement were most instrumental in helping me reach this point in life. I cannot begin to express my gratitude for support such as this.

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Additionally, I'd like to acknowledge Michael Byer and M3 Information for volunteering hardware, software, and funding to allow this project to use a promising metric that was paperless and able to be integrated into the existing Electronic Medical Record.

Thanks also to Dr. Michael Floyd for allowing me to observe, learn, and research through his office and to investigate my research areas of interest in the growing field of primary care psychology. And finally, I want to thank Dr. Ginni Blackhart and Dr. Jon Webb, whose guidance and support as committee members are greatly appreciated.

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# CHAPTER 1

# INTRODUCTION

## *Purpose*

In the United States approximately 80% of people will visit their primary care physician (PCP) within a year (Strosahl, 1998). Often these visits entail treatment for somatic symptoms (e.g., racing heart rate) that stem from psychological issues (e.g., anxiety, depression). In fact, up to 70% of diagnosed mental health cases are treated only within primary care settings, which, as a result has been called the de facto mental health system (Campbell et al., 2000). However, it has been estimated that “more than 25% of primary care patients have a diagnosable mental health disorder, most of which are never detected or treated” (p.305).

Moreover, more than half of all those diagnosed with mental disorders never seek mental health treatment beyond their PCP, and many PCPs may be less than ideally equipped to provide adequate treatment for mental health disorders (Muntingh et al., 2009; Strosahl, 1998). This failure to use professionals specifically trained to treat psychological issues is especially problematic for anxiety and mood disorders given that between 10%-30% of patients present to their PCP with symptoms contributing to such diagnoses as outlined in the American Psychiatric Association’s (APA, 2000) Diagnostic and Statistical Manual – IV - Text Revision (DSM-IV-TR) (Kessler, Chiu, Demler, & Walters, 2005; Kroenke, Spitzer, Williams, Monahan, & Lo, 2007).

Unfortunately, researchers have not systematically identified the most appropriate means to detect and treat mental health disorders in primary care settings. Further, such issues speak to the need for an integrated primary care model in which PCPs and mental health professionals work within the same location in order to collaboratively treat patients’ physical and psychological concerns. Few such arrangements exist presently and those that do need to be validated to assess their overall effectiveness in diagnostic and treatment processes. A pilot project at a local primary care clinic with colocated mental health services demonstrated that this process was somewhat inefficient and as such lessened overall effectiveness (Miesner & Floyd, 2010). Thus, the purpose of the current project was to implement an intervention to increase the volume of anxiety and mood disorder screening, to increase the accuracy of disorder detection, and to also enhance PCPs' patterns of referral to mental health services.

It is important to note that since this research project concluded its data collection phase, the publication of the DSM-V has occurred, which changed the diagnostic category of Obsessive Compulsive Disorder and Post Traumatic Stress Disorder, which were formerly Anxiety Disorders, and moved them to different categories, specifically Obsessive Compulsive and Related Disorders and Trauma and Stress Related Disorders, respectively (APA, 2013). The category of Mood Disorders also changed between these publications. In the DSM-V, the categories of Bipolar and Related Disorders and Depressive Disorders were created and Mood Disorders was discontinued as a category (APA, 2013). However, as this study was conducted when the DSM-IV-TR was in operation and all definitions and measurements were consistent with that edition, the current project is described within the context of the DSM-IV-TR.

### *Anxiety Disorders*

Anxiety comprises physiological, behavioral, and cognitive/affective reactions (Bourne, 1990). Anxiety is a natural adaptive reaction in situations when a "fight or flight" response to an actual threat is necessary; it may also serve as a warning response in an unfamiliar or unsafe situation. However, when excessive and uncontrollable, anxiety may become a pathological disorder. About 18% of the U.S. adult population has an anxiety disorder in any given year (Kessler et al., 2005).

Symptoms common to many anxiety disorders include subjective feelings of distress such as worry or fear, physiological symptoms (e.g. increased perspiration or heart or respiratory rate) and accompanying disturbances of sleep, concentration, and social or occupational functioning (APA, 2000). The DSM-IV identifies several types of anxiety disorders.

Generalized Anxiety Disorder (GAD) is characterized by excessive and uncontrolled worry that can present with tension, fatigue, and inability to concentrate. Panic Disorder (PD) is characterized by recurrent panic attacks, which are defined as sudden onset of fear or discomfort that occurs within 10 minutes with symptoms such as palpitations, sweating, trembling or shaking, fear of losing control, chest pain, and dizziness. PD may be diagnosed as being with or without Agoraphobia.

Specific Phobias have the hallmark of extreme avoidance of a particular situation or a stimulus. Obsessive Compulsive Disorder (OCD) has persistent uncontrollable repetitive thoughts and compulsive behaviors as a unique feature. Posttraumatic Stress Disorder (PTSD) has symptoms that develop after a person has been exposed to traumatic events that involved real or imagined harm and where reaction to the event was characterized by fear, helplessness, or horror. There are several other types of Anxiety Disorders, including Social Phobia, Acute Stress Disorder, Agoraphobia without History of Panic Attack, Anxiety Disorder Due to a General Medical Condition, and Anxiety Disorder Not Otherwise Specified (APA, 2000).

Data from a National Comorbidity Study (Kessler et al., 2005) demonstrated women present with anxiety disorders more often than men (30% vs. 19%). It was also reported that Hispanics had slightly higher rates of anxiety disorders than did non-Hispanics. Additionally, those with less education and lower socioeconomic status also reported more anxiety (Kessler, 1994; Kessler et al., 2005).

### *Mood Disorders*

Mood disorders include a range of affective experiences where emotions are typically characterized by extreme levels, prolonged states, and/or maladaptive effects. At the broadest level, this class of disorders is divided into Depressive Disorders and Bipolar Disorders (APA, 2000). These are further subdivided by specific criteria. The National Comorbidity Study (NCS-R) estimated a 20.8% lifetime prevalence for any DSM mood disorder and 9.5% 12-month prevalence rate (Kessler et al., 2005).

Depression is relatively prevalent both nationally and internationally (Demyttenaere, 2004). Major Depressive Disorder is the leading cause of disability in the U.S. for individuals aged 15-44 (World Health Organization, 2004). Depressive and bipolar disorders are both associated with substantial numbers of lost work days (27 and 65 days, respectively) per affected person per year (Kessler et al., 2006). Depression, now considered a prevalent psychological disorder among the general population, is also a debilitating disorder (Paykel, Brugha, & Fryers, 2005). The WHO estimates that by 2030 it will be one of the leading causes of worldwide disability (Mathers & Loncar, 2006). Because of this and its comorbidity with other physical and mental health problems (see below), depression should be considered an important public health problem and adequate detection, diagnosis, and treatment are imperative (Fernández et al., 2006).

Depression is characterized by sad mood, diminished interest in pleasurable activities, significant weight change, sleep disturbances (hypersomnia or insomnia), psychomotor agitation, fatigue, feelings of worthlessness, inability to concentrate or make decisions, and/or recurrent thoughts of death for at least a 2-week period (*APA*, 2000). Five or more symptoms must be present in this period to make a diagnosis of depression, and this profile constitutes a Major Depressive Episode. Major Depressive Disorder is categorized as either Single Episode or Recurrent, and each category has specfiers that can include severity (mild, moderate, severe), whether or not psychotic features are present, and whether the disorder is active or in full or partial remission. Depressive Disorders also include Dysthymic Disorder when a person experiences very long periods of depression when full criteria for a Major Depressive Episode are not completely met.

Bipolar Disorders (Bipolar I, Bipolar II, Cyclothymic Disorder, and Bipolar NOS) are all characterized as having mood disorder features such as some type of depressive episode as well as either a manic or hypomanic episode. Though Bipolar I is often given the most attention, the lifetime prevalence of Bipolar I is approximately 1%. However, all Bipolar Spectrum Disorders taken together have a lifetime prevalence of approximately 2% to 6%, which is comparable to anxiety and depressive disorders (Hirschfield et al., 2000).

A diagnosis of Bipolar I requires that a person have met criteria for a Manic Episode. This includes having a distinctly abnormal and persistently elevated, expansive, or irritable mood with at least three (four if mood is only irritable) other symptoms that occur across at least a 1-week period unless a person is hospitalized. Symptoms include grandiosity, reduced need for sleep, becoming more talkative or feeling pressure to talk, racing thoughts or flight of ideas, distractibility, agitation or increased goal-directed activity, and/or excessive engagement in pleasurable activities with likelihood for painful or negative consequences (APA, 2000). Manic Episodes can also be classified as mild, moderate, severe, or severe with psychotic features, or in full or partial remission. Mixed Episodes are also possible, where criteria are met for Manic and Depressive Episodes.

Bipolar II is diagnosed when full criteria are not met for a Manic Episode but where significant manic symptoms are experienced, known as a Hypomanic Episode. In this case, the disturbance in mood is observable by others but is not of sufficient severity to cause serious impairment in social or occupational functioning or to require hospitalization, and there are no psychotic features (APA, 2000).

Unfortunately for those who suffer from Mood Disorders, it has been noted in the literature that such disorders are commonly missed typically due to a lack of healthcare provider education about the disorders and the wide range of varying symptoms (Lish, Dime-Meenan, Whybrow, Price, & Hirschfield, 1994). One potential way to amend such common diagnostic difficulties is to use a measure such as the Mood Disorder Questionnaire (MDQ), which was created to help ensure mood disorders are properly discovered when present and diagnosed appropriately (Hirschfield, Williams, & Spitzer, 2000). A more efficient intervention for misdiagnosis of bipolar spectrum and mood disorders may be a screening measure to accurately assess the presence of such disorders combined with education of health professionals whose patients may present with this mood disorder.

### *Comorbidity of Anxiety*

Anxiety disorders have a high rate of comorbidity with one another as well as other disorders (Katon & Roy-Byrne, 2007). For example, in a study of patients at 15 primary care facilities overlap occurred in over 50% of cases where anxiety, depression, or somatization was found (Löwe et al., 2008). Each of these groups of disorders was found to independently have prevalence rates of approximately 10% in primary care. And, researchers found that functional impairment was also related to anxious, depressive, and somatic disorders in primary care (Löwe et al., 2008).

In another study of comorbidity of anxiety disorders in a primary care setting GAD, PD, and OCD were all found to have comorbidity amongst themselves and with other depressive and somatic symptoms (Kroenke et al., 2007). Of the 188 (19.5%) patients found to have at least one anxiety disorder out of a total sample of 965 patients, 124 (66%) had only one anxiety disorder, 42 (22.3%) had two anxiety disorders, 14 (7.4%) had three anxiety disorders, and 8 (4.3%) had four anxiety disorders. Using the Patient Health Questionnaire (PHQ-8), patients diagnosed with each anxiety disorder were found to have moderate comorbidity with depressive and somatic symptoms (Spitzer, Kroenke, & Williams, 1999).Using the mean scores on the PHQ-8, the authors concluded that these anxiety disorder levels were indicative of comorbidity with nonpsychiatric disorders as well, indicating that patients diagnosed with anxiety were more likely than nonanxious patients to have both medical and psychiatric diagnoses (Kroenke et al., 2007).

Roy-Byrne and colleagues (2008) also found that anxiety disorders tend to be comorbid with medical disorders such as irritable bowel syndrome and cardiovascular disease. The DSM-IV-TR (APA, 2000) lists a variety of medical conditions that can cause anxiety symptoms, including hyperthyroidism, cardiac conditions, chronic obstructive pulmonary disease, pneumonia, metabolic conditions, B12 deficiencies, and neurological conditions.

*Comorbidity of Mood Disorders*

Mood disorders have complex comorbidities with other mental health disorders. One of the most common set of disorder corelationships is within the mood disorders and anxiety disorders (Mineka, Watson, & Clark, 1998). Researching comorbid panic disorder and depression in primary care, DeVeaugh-Geiss and colleagues (2010) found greater levels of severity in baseline panic experiences increased the likelihood of greater depression severity. Further, the presence of comorbid panic symptoms was posited to hinder successful outcomes in treatment of depression.

In fact, researchers have noted that the most common mental health comorbidity seems to be between anxiety and depression. De Graaf, Bijl, Smit, Vollebergh, and Spikjer (2002) reported that mood disorders occurred comorbidly more often than they occurred “pure” (e.g. on their own) in a large epidemiological study. These authors found that the 12-month “pure” prevalence was 39% for mood disorders, 59% for anxiety disorders, and 75% for substance abuse disorders. Other large studies have found high rates of comorbidities between mood disorders, anxiety disorders, and substance abuse disorders (e.g., Grant et al., 2006).

Mood disorders are also related to physical health problems. For example, depression has been found to be associated with an increase in the likelihood of heart attack, and mood disorders often complicate medical issues in stroke, diabetes, and cancer patients. Of note, the high rates of comorbidity between anxiety and mood disorders amongst themselves and with medical and other psychological disorders leads to overuseof health care services (CDC, 2007).

### *Overuse of Medical Services*

Mental health disorders are related to excessive and inappropriate health care use; this is in part due to psychiatric patients consulting with their PCP and other medical specialists before seeking the services of a mental health professional (Costa e Silva, 1998). For instance, due to the overlap between symptoms of anxiety disorders and medical disorders (e.g., palpitations, nausea, sweating), many patients assume they are experiencing medical disorders when anxiety develops or worsens. This is reflected at emergency rooms that report high use by patients with anxiety disorders (Mancuso et al., 2004). Patients with undiagnosed mental health disorders who overuse healthcare may continue this behavior through a “revolving door” system, continually seeking consultation with PCPs who act as gatekeepers until anxiety disorders are more appropriately diagnosed and treated (Brawman-Mintzer & Lydiard, 1996).

Patients with panic attacks present to family medicine clinics significantly more than patients suffering from other anxiety disorders (Kennedy & Schwab, 1997). The pattern of overuse does not stop with primary care for patients with anxiety disorders but continues on to specialists. GAD patients were found to use more gastroenterologists, whereas those with panic disorder were found to use significantly more visits with neurologists than controls (Kennedy & Schwab, 1997). In addition to using specialists more, the mean cost of specialist use was higher for those with panic disorder than for a control group (Kennedy & Schwab, 1997). Rees and colleagues (1998) found those with social phobia used more psychological and psychiatric specialty services as well.

Using data from the National Comorbidity Survey, it was noted that respondents with anxiety disorders also reported relatively high use of family practitioners, psychiatrists, psychologists, hospitals, medical specialists, counselors, social workers, and nurses (Greenberg et al., 1999). Furthermore, individuals with mental health disorders also have higher than usual rates of using social services such as disability, welfare, and unemployment (Leon, Portera, & Weissman, 1995). The broad use of all these services suggests individuals with mental health disorders are overusing the system in multiple aspects; and such high rates of use may be due in part to their psychological symptoms not being adequately addressed. Undiagnosed or untreated mental health patients who overuse the health care system place both time and financial constraints on primary care clinics ( Hemmings, 2000; Levant, House, May, & Smith, 2006; Mancuso, Nordlund, & Felver, 2004).

Patients with anxiety are not the only patients with mental health diagnosis who may potentially overuse medical services. In 2000, disability cost estimates related to depression neared $83 billion dollars in the US. Collaborative care models are targeted towards both increasing access and efficiency to mental health services and decreasing cost within healthcare. Such models have shown efficacy and cost effectiveness in depression and bipolar disorders (Angstman, Pietruszewski, & Rasmussen, 2012). Because cost, burden on society, and prevalence are so high, it has been suggested that using a collaborative care model targeted towards mood and anxiety disorders is an ideal starting point (Angstman et al., 2012).

### *Anxiety in Primary Care*

Anxiety in primary care has been referred to as the “neglected stepchild of primary care based mental health” (Katon & Roy-Byrne, 2007, p. 390). The rationale for this claim comes from the National Comorbidity Survey that cites anxiety disorders as being the most frequent disorder in the general population. Comorbid depression significantly hinders the recovery of medical patients (Brenes, 2007; Cully, 2009; Löwe et al., 2008; Rozanksi & Blumethal, 2005) and anxiety may have an equally detrimental effect on medical functioning (Roy-Byrne et al., 2008).

Physicians may be more likely to detect and treat depression than anxiety in primary care settings because of the emphasis on the interaction between depression and medical illness. As such, many anxiety disorders go unnoticed in primary care settings. These may lead to referrals to specialists who are unaware of the effects of undiagnosed anxiety disorders (Fleet, 1996). This could lead to a pattern in which patients with anxiety disorders are frequently mistakenly referred for specialist services while treatment of their anxiety is excluded. Deacon et al. (2008) reported that it is important to understand where patients with anxiety disorders present for assistance and how to detect anxiety disorders.

Interest in treating anxiety and depression in primary care in an integrated approach is increasing (e.g., Katon et al., 1999; Seekles, van Straten, Beekman, van Marjwijk, & Cuikpers, 2009; van't Veer-Tazelaar et al., 2009). Offering psychological services prior to a referral to a nonmental health specialist may reduce inappropriate referral and overuse of the healthcare services among anxiety disordered patients. Some authors believe screening for anxiety can have a huge potential impact for patients who suffer, in terms of routing them to appropriate care quickly and as screening measures can be implemented by lay persons, such screenings are cost effective (Angstman et al.; Batelaan et al. (2012).

### *Mood Disorders in Primary Care*

Katon (1987) noted that more patients are treated for depression by PCPs than are treated by mental health specialists. Though only 10% of the patients in primary care may be diagnosed with Major Depressive Disorder (MDD), up to 35% of the patients who present in primary care may be diagnosed with some other form of depression (Reiger et al., 1993). Similarly, these authors noted that up to 70% of the patients in primary care show some symptoms of depression, underscoring the importance of appropriately detecting and treating these patients.

Other research has indicated that whereas only one third of patients in primary care are properly diagnosed as depressed, up to 50% of the potentially depressed patients may be incorrectly diagnosed (Budman & Butler, 1997; Munoz, Hollon, McGrath, Rhen, & VandenBos, 1994). In primary care, it may be difficult for PCPs to detect depression, as it can present with many somatic aspects such as fatigue, sleep problems, back or chest pain, or appetite problems

(Sharp, Martin, & Lipsky, 2002). Kop (2001) noted other reasons for mood disorder misdiagnoses in medical settings could include physician underassessment of effects of depression on medical conditions, time constraints on PCPs, and lack of awareness of treatment options. Recent research indicates that PCPs treat depression differently within primary care dependent on what additional symptoms are also present with depression. This research indicates that PCPs are more likely to use SSRIs as a treatment when depression presents comorbidly with pain or changes in level of functioning, whereas psychotherapy is prescribed more often when depression is comorbid with anxiety and sadness (Malhi et al., 2014).

Within primary care it is understood that mental health problems not only commonly exist, but often go unseen, untreated, or are inadequately treated (Pirl, Beck, Safren, & Kim, 2001; Wang, Demler, & Kessler, 2002). In addition to traditional mental health problems, behavioral complications such as lifestyle modification and adherence often surround chronic diseases that result in suboptimal treatment success for comorbid mood depression (Mokdad, Marks, Stroup, & Gerberding, 2004).

Bortolotti, Menchetti, Bellini, Montaguti, and Berardi (2008) commented that though depressive disorders are prevalent worldwide, most patients with these disorders are treated in primary care with very few of them being referred to mental health services. Further, these same authors noted that though depression is disabling in many facets of life, the management of these depressive disorders are often met with suboptimal treatment methods in primary care. However, efficacious treatments are available, if underused. For example, in a primary care study where Cognitive-Behavioral Therapy was used with treatment resistant depressive patients who were already prescribed an antidepressant, depression symptoms decreased significantly (Wiles, 2012). Yet, in order to direct a patient to proper treatment, detection of disorders must occur.

### *Mental Health Screening in Primary Care*

Das and colleagues (2005) conducted research on screening for bipolar disorder within primary care. Using a sample of 1,157 patients, they found the lifetime prevalence of screening positively for bipolar disorder was 9.8%, which did not differ by age, sex, or race. Though many (72%) of the positive screening measures sought professional help for the symptoms of bipolar disorder, only 9 of these patients (8%) were actually diagnosed with bipolar disorder. The authors noted that perhaps the reason that many of the patients who had screened positive but did not have the diagnosis could be due to poor communication. Though the patients had not been told they had such a disorder, many reported that they had previously sought treatment for bipolar symptoms. More recently, Cerimele, Chawastiak, Dodson, and Katon (2014) found that psychiatric interviews in primary care resulted in a measured incidence level of 0.5%-4.3% of the population, compared to screening measures used, which indicated a range of 7.6% to 9.8% of the population in primary care being diagnosed as having a bipolar disorder.

Due to the large number of patients presenting with anxiety and mood disorders in primary care, screening for mental health issues is vital. Primary care screening is complicated by the comorbidity between psychological disorders and medical disorders and by the fact that psychological symptoms may overlap with physical symptoms, and in turn may be mistakenly attributed solely to medical disorders. Furthermore, time and energy constraints are barriers to accurately detecting mental health disorders. Healthcare workers in primary care settings respond to multiple demands and do not have time or appropriate training to conduct comprehensive psychological evaluations.

Also, patients often come to primary care clinics physically sick  and may not feel up to filling out exhaustive psychological screening measures. Because of the demands on time and energy, many primary care screening measures for common mental disorders are concise. For example, the Mood Disorder Questionnaire (MDQ) was developed so that it could be easily administered and scored by a nurse, office staff, or a physician, and it is only one page in length (Hirschfield et al., 2000). Moreover, the time and energy constraints in traditional primary care settings make it difficult to address psychological concerns in addition to physical health concerns.

In the past screening has typically targeted depression. Because of the complex relationship between anxiety and depression, such a practice allows for the screening to miss up to half of patients with anxiety disorders. Because of the additional adverse effects of anxiety on quality of life and to treatment responsiveness, screeners should focus on depression and anxiety at a minimum (Kroenke, 2012). As Thombs and colleagues (2011) pointed out, screening is only successful when it identifies conditions that were previously not recognized and treated. Therefore, assessing for multiple mental health disorders together in a brief metric is ideal as it allows patients to avoid burden of time and frustration and allows for PCPs to more accurately assess and treat patients' needs. The integrated model of primary care was designed to address the issue of comprehensive quality care, taking patient needs, time and cost factors, and differential provider expertise into account, to provide better overall health care in terms of addressing physical and mental health concerns.

### *Primary Care Psychology – An Integrated Model*

The integrated primary care model is based on the concept of integrating services to better serve patients through collaboration and caring for both the medical and psychological needs of the client. Such models operate under the premise that mental health professionals (MHPs, though they are often called "behavioral health consultants" in primary care settings) can work with PCPs to help identify patients having mental health needs and to provide much more comprehensive care (Blount, 2003).

The inclusion of psychologists and other MHPs in the primary care system may help reduce the cycle of often unnecessary medical specialist referrals and overuse of the health care system. More importantly, it could provide more adequate treatment for anxiety, mood disorders, and other mental health issues. This type of approach led to the development of primary care psychology, where the goal is the full integration of medical and psychological services. Integration makes it possible for psychologists and other MHPs to treat patients with mental health needs concurrently when they see their PCP. This approach allows for the whole person to be treated in a manner that maximizes convenience and expediency for patients.

Several challenges exist with the integration of services. One of these is the appropriate modality of care. Diagnosing anxiety and mood disorders can be complicated by the fact that these patients may often present with physical health complaints as their primary concern, as well as by the fact that these disorders are often accompanied by co-occurring psychological conditions (Blount, 1993; Karlsson, Lehtinen, & Joukamaa, 1994). Traditional psychotherapy often consists of 50-minute sessions in which the MHP first spends significant time gathering thorough background information before treating the presenting problems, and then spends as many sessions as are needed (or to which patients will come or for which they can afford) to work with patients on issues. There is somewhat of a cultural “disconnect” between the two professions in that PCPs and MHPs often spend widely different amounts of time with patients. However, MHPs in the primary care setting often adjust the time they spend with patients, focusing on differential diagnostics and using shorter (than traditional models) sessions to engage in symptom reduction and specific problem-focused work. With the focus on mental health care, MHPs spend more time with patients when warranted or refer to more intensive mental health services if comprehensive care is outside the scope of primary care practice.

Another challenge to integration includes potential “turf wars” in terms of who is seen as being “in charge” of patient care, or PCPs feeling comfortable referring patients to MHPs. Yet, in the integrated model of primary care psychology, a collaborative approach is fostered between PCPs and MHPs. To avoid such “turf wars” Videl and colleagues (2012) explained that the role of the MHP in this scenario is to help PCPs understand that the training and expertise MHPs have can be used to improve integrated primary care settings and that a more integrated environment with an improved professional relationship will benefit patients as well as PCPs. This approach helps patients feel more comfortable about the MHP referral and strengthens the support they feel from their PCP (Blount, 2003). With mental health services provided in-house, the PCP remains clearly “in charge” of overall patient care, reducing turf ambiguity.

Before any major advances are likely to occur in treatment of anxiety and mood disorders within primary care, it is essential to clearly examine how anxiety and mood disorders in primary care are currently detected and treated. To accomplish this, it is necessary to understand aspects of how a patient is treated within the system. Recent research advances have been based on using different models to determine what may work best in different practices. Davis et al. (2013) advocated having time slots of 30 to 40 minutes allocated for behavioral health visits (for PCPs to refer patients if needed), and giving patients appointment slips when MHPs are not present for a “warm handoff”. This latter term is common jargon for a PCP bringing in a MHP during a patient appointment to facilitate a referral. Though this model seemed successful, best practices for integrated primary care are still in need of empirical support.

### *Referral Preference to Mental Health*

When patients need mental health service referrals from PCPs, the typical method in nonintegrated primary care clinics is for the physician to give the patient the contact information of a MHP (e.g., psychologist, counselor, clinical social worker, psychiatrist) with whom they are professionally acquainted. This is referred to as the *coordinated care model*. In the *colocated model* behavioral specialists operate typically within the same office or building and may share office space or staff members, but do not typically work together in an integrated fashion, though they communicate with each other. In such a model a patient may be referred from a PCP to a mental health specialist, but likely no information about the visit to the mental health specialist will be communicated back to the PCP (Blount, 2003).

Within the *integrated care model*, the PCPs and the MHPs use the same medical charts, frequently meet face-to-face with each other, and are able to pass information back and forth, all of which is believed to lead to overall better mental and physical healthcare. Within such a model it is not yet known how the average patient prefers to be referred to an MHP (Blount, 2003). Where in colocated models a PCP gives the patient information for how to contact a MHP, in the integrated care model a PCP may use a "warm handoff" by meeting with the MHP and patient together at first. This theoretically helps the patient to feel comfortable with the MHP (being introduced in person by the PCP) and promotes open communication between the patient, the PCP, and the MHP. While this method of referral is recommended in the primary care psychology literature, no research to date has examined patient preferences regarding method of referral to mental health care.

Recently a new model, referred to as eReferral, has emerged as use of electronic medical records (EMRs) are more common, as using electronic means to refer a patient can be most convenient for a physician. In this approach the EMR software automatically populates most of the referral for the physician, who adds additional information and electronically sends this to another specialty provider. Chen, Murphy, and Yee (2013) indicated that initially this was pioneered for gastroenterology services. In this model a physician can refer a patient to a specialist, who can in real time then review the referral to determine whether the referral is appropriate prior to an appointment being scheduled. If an appointment is scheduled, the communication between the PCP and the specialist is available during the appointment with the client, allowing increased communication and flexibility between specialties. The authors make the case that the eReferral system is an improved form of the "curbside consult", which has been the de facto referral system for medicine previously. However, this approach has not been extensively evaluated in the literature at this point.

### *Primary Care Psychology – Rural Care Issues*

Primary care psychology and the integrated movement have potential benefits that may be especially important in rural communities. Using the integrated primary care model provides many benefits to the patient including the reduction of stigma, efficient and effective care, and care in geographical locations underrepresented by mental health care facilities. Jameson and Blank (2007) noted that rural residents can be considered a vulnerable population due to their having higher risks of being impoverished, lacking healthcare, and of chronic health conditions. Often individuals who need psychological care in rural settings turn to informal sources of such services such as family, neighbors, and spiritual or religious leaders.

Aside from a shortage of healthcare service providers, a large problem in rural areas is a lack of communication and collaboration among PCPs and MHPs that are present (Jameson & Blank, 2007). Research suggests that rural PCPs play more active roles in treatment of depression than do their urban counterparts (Hartley, Korsen, Bird, & Agger, 1998). Additionally, Kee, Johnson, and Hunt (2002) noted that MHPs working with rural populations experienced greater burnout compared to those practicing with nonrural populations. Patients in rural settings are less likely to be able to see a MHP, which in turn places more pressure on PCPs who become responsible for attending to both physical and mental health care (Bray, Enright, & Easling, 2003). Thus, a bringing together of PCPs and MHPs within the same facility may help provide greater access to care for patients, increase appropriate professional division of labor, and thus provide greater quality care and satisfaction for patients and providers.

In fact, a need for evidence-based psychological interventions may be the most extreme where relevant training for PCPs may be most lacking (Craske et al., 2009). Hodgins, Judd, Davis, and Fahey, (2007) sought to evaluate a mental health training program for general practitioners in a rural setting. A 6-hour workshop yielded higher use by PCPs of psychological education with their patients. The authors noted that the need for this type of education for PCPs was necessary due to the rural location. This differs from an urban setting, where PCPs have the ability to refer patients to many more outside resources, and thus do not feel as great a burden to provide mental health care. The authors concluded that in rural settings the best method to approach and treat mental health care issues is to work with PCPs through educational seminars. Thus, a pilot study was used to assess needs for an educational intervention in primary care for patients who suffer from mental health disorders, particularly anxiety and mood disorders.

Due to the previously mentioned lack of collaboration in rural areas and need for treatment of mood disorders and anxiety within primary care, this pilot project was focused on identifying needs within a *colocated model* clinic, which though situated in a town of roughly 60,000, also serves many rural residents from outside the city. To effectively collaborate within primary care, it is important to understand where communication deficits and knowledge limitations exist so as to create an intervention to resolve such issues.

## *Pilot Study*

### *Pilot Study Procedure*

This pilot study focused only on anxiety issues, where the main study described below focused more broadly on additional mental health issues. A medical chart review was conducted at an integrated primary care clinic in a moderate sized town (population = 63,141, U.S. Census Bureau, 2009) which also serves the surrounding rural community in a southern Appalachian area. Eight undergraduate research associates were trained to review medical charts in the practice. Data were gathered to describe the population as well as help understand processes pertaining to diagnosis, referral, and treatment of anxiety and mood disorders in this facility.

Using clinic records, it was determined the clinic has an active caseload of approximately 1,000 patients, and of these 100 were randomly chosen for inclusion in the present study. When conducting chart reviews, a typical standard is to randomly review 10% of the charts (Gearing, Mian, Barber, & Ickowicz, 2006). The only patient criteria for inclusion were being over the age of 18 years and having been seen at the clinic within the last 6 months.

Of the 100 participants, age ranged from 18-90 years with *M* = 49.84, *SD* = 17.87. Income data was available for 56 participants and ranged from $0 to $75,000 (where $75,000 and above was the highest category listed on the existing demographic questionnaire the clinic used). The categorical income groupings with the number of participants that reported income in that range were used were $0-$15,000 (25 participants/44.6% of those for whom data were available), $15,001-$25,000 (10 participants/17.9%), $25,001-$40,000 (10 participants/17.9%), $40,001- $50,000 (4 participants/7.1%), $50,001-$75,000 (5 participants/8.9%), and $75,000 and above (2 participants/3.6%). Seventy-eight participants were female and 22 were male. Forty-five of the patient's were married, 45 were not married, and 10 charts were missing data on marital status. Anxiety was noted in 37 charts and was not noted in 63 of the charts (Miesner, Dula, Floyd, & Floyd, 2010). Demographic results from the pilot study are available in Table 1.

### *Pilot Study Results*

It was hypothesized that anxiety would be noted in at least 20% of the charts of the patients in the primary care clinic; in fact, anxiety was noted in 37% of the total number of charts (Table 2). While women had a higher prevalence of anxiety (31 of 78, 39.7%) than men (6 of 22, 27.3%), this difference was not significant, which was likely due to the relatively small sample size for males.

Table 3 indicates the referral pattern for patients with anxiety noted versus those without anxiety noted. Of the 63 patients without anxiety noted, they collectively had four (6.3%) referrals to a MHP, with only one internal referral (within the colocated office). As the main clinical variable of interest was anxiety issues, it was not noted what types of issues led to these referrals. Of the 37 patients with anxiety noted in their charts, the referral pattern was quite different. Of these, there were eight (21.6%) total referrals to a MHP, with seven internal and one external. Though they had more total referrals for a smaller percentage of clients, this left 29 (78.4%) who were apparently not referred to a MHP. This is not an ideal referral pattern for a colocated clinic.

Table 1. *Demographic Variables for Pilot Study*

| | Mean | SD | N |
|---|---|---|---|
| Income | $17,643 | $17,751 | 56 |
| Age | 49.84 | 17.87 | 100 |
| Number of Children | 1.44 | 1.10 | 68 |

Table 2. *Proportion of Males and Females with Anxiety Issues Noted in Medical Chart*

| | Males | Females | p-value |
|---|---|---|---|
| Anxiety Noted In Chart | 6 | 31 | .11 |
| Anxiety Not Noted In Chart | 16 | 47 | |

Note. p-value shown is for Chi Square test with 1 df, 2-tailed test

Table 3. *Referral Variables from Pilot Study*

| | Patients without Anxiety noted (n = 63) | Patients with Anxiety noted in charts (n = 37) |
|---|---|---|
| Referrals (Total) | 46 | 36 |
| Resident PCP | 17 | 19 |
| Faculty PCP | 29 | 17 |
| Mental Health Referral (Internal) | 1 | 7 |
| Mental Health Referral (Total) | 4 | 8 |

### *Pilot Study Discussion*

The results suggested that while mental health symptoms were often noted by PCPS, they often may not be acted upon as few MHP referrals were noted in the charts reflecting issues with anxiety (37). Reasons for a lack of MHP referrals may be have been a lack of PCP time or lack of knowledge about mental health treatment options or the MHP referral process or a belief that medication, if used, was a sufficient treatment protocol.

## *Main Study*

As pilot study results were consistent with prior research (Hodgins et al., 2007), a follow-up study was deemed appropriate, and it was focused on implementing objective mental health assessments and educating PCPs on mental health diagnostic issues and on appropriate MHP referral mechanisms. The pilot study findings influenced the main research in terms of seeking to determine the mention of a broader array of mental disorder symptoms in charts, whether disorders were diagnosed, and how they were handled.

While it was impossible to draw definitive conclusions from the pilot study regarding exactly how effectively mental health disorders were treated in the primary care clinic, it was possible to conclude that more systematic interventions would likely help PCPs to better detect mental health disorders and treat them more effectively. Thus, several intervention components were designed to facilitate detection of mental health disorders and referral to MHPs.

However, unanticipated problems arose during the implementation phases of the study and these are described in detail below. Thus, the study methods were revised on an ad hoc basis. Many of the original planned analyses were subsequently rendered impossible. The hypotheses for the main study were converted to relevant research questions that did not lend themselves to hypothesis testing. The original methods and hypotheses are contained in Appendix A.

Nonetheless, descriptive data did emerge that addressed the research questions and that provided useful information.

# CHAPTER 2

# METHOD

Due to the timing of the data collection and the development of the M3, use of the M3 measure was chosen in lieu of using the measures originally chosen (PHQ-9, MDQ, and OASIS). Part of this decision was made as the clinic's medical records were becoming electronically based and it was believed that having an electronic, validated screening instrument such as the M3 would have benefits such as ease of use for patients and research assistants alike. Though the method of data collection changed, the overall design of the study did not change significantly.

## *Revised Methods*

Similar to the original design, the current study used a multi-stage method to enhance PCP's ability to diagnose depression, bipolar, and anxiety disorders and facilitate MHP referrals. Four phases of data collection took place, each lasting 1 month.

Appendix B provides a copy of information given to the front office staff to help them understand the role of the research assistants. In a similar manner, nurses were also made aware of the Research Assistants (see Appendix C for information given to nurses). Research assistants were trained (see Appendix D) to work alongside front office staff so as not to interrupt the workflow of the office. Research assistants were also given instructions for how to interact with medical staff (see Appendix D) as well as a script instructing them on how to approach patients (see Appendix E). The primary investigator conducted this training, which involved an instructional seminar, then spending 1 day with each of the two head research assistants in the primary care clinic explaining procedures, answering questions, and collecting data. These two research assistants then helped coordinate and train the remainder of the eight research assistants involved in this study.

*Phase I Procedure*

In this phase of the project, data regarding the number and reasons for mental health referrals within the clinic were gathered for a 1-month period. Data also included previous mental health treatment (if noted in the chart) and method of making referrals. Information on the referring PCP was obtained as well, including status of the PCP in the clinic (faculty or resident) and type of medical training (M.D. vs. D.O.). Residents are referred to by their years of training within their specialty, such as that a PGY-1 is a first year resident in family medicine. residents in this clinic were PGY-1s, PGY-2s, or PGY-3s.

*Phase II Procedure (Baseline)*

For participant selection it was planned that a convenience sample of every other scheduled patient above the age of 18 would be approached to participate in the research project. When patients volunteered, trained research assistants then administered the My Mood Monitor (M3; see Appendix G and H; also described in detail below) screening measure via an iPad either before or after they were seen by their primary care physician (PCP), where the results of the screening were supposed to have been electronically integrated instantly into the Electronic Health Record (EMR) (see Appendix I for the original letter to ETSU faculty from the M3 developers; though the plans for integration were not included in this document).

Prior to administration of any materials to patients, informed consent was explained by the research assistants to each patient (Appendix F includes informed consent text conversation that research assistants covered). For each patient participant, the M3 was administered and a question was asked related to preference regarding mental health referral method. Also assessed were the number of screening measures administered, number of patients in the range of clinically significant impairment for each screening measure, number of mental health referrals made for patients meeting clinically significant criteria, and, number of patients who followed through with a mental health referral.

In Phase II, though the M3 results were supposed to be automatically transferred to the EMR, the PCPs were not going to be formally trained on the M3 screener. This was to assess natural uptake of the M3 by PCPs and provide a baseline for comparison to detect any usage increase after formal training.

A major unforeseen problem was that although M3 summary measure results were supposed to appear instantly in EMR, the M3 product was never electronically integrated into the EMR. As the M3 developer never succeeded in integrating the electronic M3 results into the EMR, M3 results had to be printed out by research assistants and then manually scanned into the EMR by a staff member, whenever she had extra time. This staff member was diligent and worked with the team to do this as quickly as possible, but she was not a member of the research team and had many other duties, and sometimes scanning delays were considerable and patients completed their visits before the M3 information made it into the EMR. Because of variability of getting results to the staff member, not knowing when they were entered into the EMR, and not knowing the length of patient visits, it was impossible to determine how often results made it into the EMR prior to the physician initially looking at the patient's EMR.

Research assistants invited patient volunteers to participate in the study after nursing staff finished preliminary work and while patients were waiting to see their PCP. In some cases there was no wait to see the physician, and patients were asked to participate *after* seeing the PCP.

Initially, study protocol called for screening patients *between* when nurses and PCPs saw their patients. However, this turned out to be far more complicated than was initially planned.

A major goal was to avoid intruding on the workflow of the clinic, and sometimes it was not possible to speak to potential participants between the time the nurse and PCP made contact with the patient. Thus, it was decided after consultation with the research chair and another on-site committee member that it was acceptable to gather data even if the physician had already seen the patient. Because it typically took at least 5 to 15 minutes to print the M3 results and having them scanned into the EMR, often PCPs had no opportunity to see the results before meeting with patients. As PCPs often follow up with patients about lab results or visit-related information, it was possible that they could have viewed this information after the patients left the encounter and before a follow-up with the patient at a later time. However, as it was not possible to track how long it took before the results were obtained and when they were put into the EMR, it is unknown which patients' M3 results were in the EMR prior to the end of each visit. This was not coded for because it was not foreseen —it was believed all data would be recorded prior to PCP seeing the patient. Yet, later assessment indicated that no matter when they were entered into the EMR, most PCPs did *not* view the M3 results across the entire duration of the study.

After filling out informed consent documents, patients were given the option of completing the M3 on their own or to have the research assistant to go through the measure with them. This option was offered to all patients so as to make it less likely that patients who may have not been comfortable with technology or who had issues with literacy would simply not participate or be made to feel uncomfortable. After M3 administration, scores were automatically interpreted by computer and printed to be inserted into the patient's EMR as a scanned PDF (portable document file). Thus, PCPs were able to view M3 results just as easily as any other part of the medical record. This M3 summary became an official part of the EMR, and interpretation statements were included in each summary.

### *Phase III Procedure*

Following the implementation of the M3 for 1 month, an intervention was conducted in the form of an educational noon conference seminar for PCPs working in the clinic. Before any educational material had been presented, PCPs were given an Assessment of Psychological Treatment in Primary Care (APT-PC; Appendix J; also described in detail below) to establish a baseline of mood disorder diagnostic knowledge, and a Physician Demographic Questionnaire (PDQ; Appendix K; also described in detail below)

The APT-PC measure was used to gauge learning of the seminar material pertaining to diagnostic information. An identity code was generated based on the location in which the PCP was born and part of their birth date, so that the code could easily be replicated with accuracy and APT-PC data could be linked between Noon Conferences I and II. The code also helped ensure their APT-PC responses were kept confidential. The PDQ was used to measure physician information such as gender, type of medical degree, training stage, as well as ratings of their perception of importance and confidence in their ability to treat psychological disorders within primary care.

Information was presented related to the importance of identifying anxiety and mood disorders in primary care settings (emphasizing the importance of PCPs as “gatekeepers” in mental health) and the diagnostic criteria for various anxiety and mood disorders were discussed. At the end of the noon conference session, the APT-PC was administered again as a “posttest”, followed by a review of the correct answers to the APT-PC. Additionally, information was given about the M3, its interpretation, the summary sheet and how it could be used to inform diagnostic and referral decisions. At this time PCPs were also trained on how to use different types of referrals to help patients access appropriate mental health services. See Appendix L for all presentation slides for this seminar.

### *Phase IV Procedure*

A month later a second noon conference seminar was held, designed to increase PCP motivation to increase mental health disorder detection and referral of patients to MHPs. Similar to the first seminar, the PDQ and APT-PC were given to PCPs before and after the conference began. The responses and scores of PCPs were kept confidential, and the same identifying codes were used to compare the data to the first noon conference results. See Appendix M for all presentation slides for this seminar.

Another unforeseen issue was related to staff psychologist turnover where MHP referral data were unable to be quantified for the second and third phases of data collection. Originally, it was hypothesized that the number of patients who were referred to a MHP who meet diagnostic criteria on the screening measure for an anxiety or mood disorder would be significantly higher after the first noon conference than before. However, the new psychologist was unable to obtain these data, likely due to the overwhelming amount of work he needed to do to get requisite local training, attend to his own duties, and adjust to his new position.

Yet, one more major issue was that just as data collection was scheduled to begin, the clinic was actively phase moving from paper-based records to EMRs. PCPs and staff were in the initial stages of basic training and becoming accustomed to the EMR and thus did not have advanced skills or comfort with regard to fluid use of the EMR. This likely affected some of the outcomes of this study, especially with regard to accessing M3 results.

### *Patient Participants*

The first phase did not have participants as it was prebaseline phase, with the intended purpose of determining how many patients are referred to a mental health specialist colocated within the family medicine practice. In the second phase 28 participants were screened. The third and fourth phases had 18 and 13 patients. Demographic information such as race and socioeconomic status were not collected, as they were not available in the EMR.

Participants included patients who used the services of an integrated primary care clinic in rural Eastern Tennessee from January of 2012 to May of 2012. Participation was entirely voluntary and patients had to provide informed consent before any screening measures were administered. In this study, the total number of patients to whom screening measures were administered and put into the Electronic Medical Record (EMR) was 59. The number of female participants was 43 (72.9%) and male participants were 16 (27.1%). Unfortunately, data on the number of potential participants who refused to participate were not collected, so the refusal rate could not be calculated.

### *PCP Participants*

Of the 20 PCPs who participated, 2 faculty members and 2 PGY-2 residents completed only the last administration of the measure. Scores from these latter four participants were eliminated from pre-post analyses so as to not skew the data. The remaining 16 participants all completed each section of the APT-PC measurement before and after each of the two noon conference seminars. These included 4 faculty members, 6 PGY-3s, 3 PGY-2s, and 3 PGY-1s residents. All PCPs were M.D s except for one PGY-1, who reported a D.O. degree. Seven female and nine male PCPs used in data collection reported their gender.

### *Measures*

The My Mood Monitor (M3) was a relatively new measure that had limited research, but validity which is based on the author's research. In the only published study on the M3 results indicated this 27-item measure was an ideal fit for primary care research (Gaynes et al., 2010). Gaynes and colleagues administered the M3 to participants visiting their PCP. Within 30 days of the visit and administration of the M3, the Mini International Neuropsychological Interview was administered to 639 participants via telephone and analysis was conducted using a split level technique to establish diagnostic levels for the M3. As it relates to the development of the M3, sensitivity reflects the ability of the screening measure to rule out a disorder, whereas specificity is a measure of the confidence in the validity of the screening measure's diagnostic abilities. Using this technique researchers were able to determine the M3 had a depression sensitivity of .84 and a specificity of .80, the bipolar module had a sensitivity of .88 and a specificity of .70, the anxiety module had a sensitivity of .82 and specificity of .78, the PTSD module had a specificity of .76 and a sensitivity of .88. Further, 63% of patients reported that the M3 helped them in talking to their PCP regarding their feelings and moods. No item reliability analyses were reported in this study.

### *Development of the APT-PC*

To assess physician's knowledge of mental health treatment in primary care, a new self-report measure was created. This measure, called the Assessment of Psychological Treatment in Primary Care (APT-PC), consisted of 20 items pertaining to knowledge deemed to be related to a PCP's ability to detect and treat anxiety and mood disorders. This measure presented items that were based strictly on DSM-IV-TR criteria for diagnoses. The first 18 items were straightforward multiple-choice questions with one correct answer of four choices. The last two items were vignettes with more complex case information and one correct answer from 11 disorders listed. Overall, the measure assessed knowledge of diagnostic criteria covering the following disorders: A) Bipolar I Disorder; B) Bipolar II Disorder; C) Cyclothymic Disorder; D) Dysthymic Disorder; E) Generalized Anxiety Disorder; F) Major Depressive Disorder; G) Obsessive-Compulsive Disorder; H) Panic Disorder; I) Posttraumatic Stress Disorder; J) Social Phobia/Social Anxiety Disorder; and, K) Specific Phobia.

A total of 204 undergraduate participants took the measure to obtain initial data for a basic reliability analysis. The APT-PC was determined to have a Cronbach's alpha of .66 in this particular sample, which is generally considered minimally acceptable for a research measure. A Cronbach's alpha of between .70 and .80 is generally acceptable for applied uses (Kline, 1999). The average score on the APT-PC with the undergraduate pilot sample was 8.91, with *SD* = 3.12, with the total correct possible being 20.

This measure was then used to measure change of physician's knowledge as a pre-post measure for each of the two noon conferences. For each APT-PC administration to the PCPs as part of the noon conference, a Cronbach's alpha was calculated. Cronbach's alpha for the first administration was .80. For the second administration in the first noon conference, the alpha was .96. For the third and fourth administration, in the second noon conference, the alphas were .97, and .98, respectively for administration. This likely reflects a homogeneity of responses as the results indicated PCPs had very high APT-PC scores at all administrations.

### *Referral Preference*

No previous research was found that directly asked patients about referral preferences, and thus a referral preference question was developed. Search terms such as "primary care referral preference," "PCP referral preference," and "warm handoff preference" were used in

PsycINFO, Google Scholar, and PubMed databases and no valid results were discovered. The most recent search for these terms was conducted in March 2014.The question developed for this research was “How would you prefer to be referred to mental health professionals, if such services are desired/recommended?” The two possible responses were: a) I would prefer the physician and the mental health specialist be in the room together to talk with me on the same day as my visit with my physician, or b) I would prefer the mental health specialist be given my phone number and call me.

# CHAPTER 3

# RESULTS

## *Research Questions*

Much of the data needed to address the original hypotheses were not collected for reasons stated above and the need to modify methods during the actual study. Please see Appendix A for all original methods and hypotheses. Thus, hypotheses were revised to form research questions, which were less formal and not amenable to statistical hypothesis testing. However, these initial questions did yield valuable and useful information. For all revised research questions, appropriate statistical analyses are presented below.

*Research Question 1a*: Based on previous research (Reiger, 1993; Seekles, 2009;Teluin, Brouwers, van Marwijk, Verhaak, & van Der Horst, 2009 ), it was believed that over 10% of the patients seen in the family medicine clinic would screen positively for an anxiety disorder as indicated by the M3. A positive screen on the anxiety module is calculated by reaching a cutoff score of greater than 3 out of 11 questions on the measure (Gaynes et al., 2010). This was found to be the case as 36 participants (61%) screened positively for anxiety. These very high levels of positive screenings likely reflect a self-selection bias of patients who volunteered because the description of the research resonated with their own issues. This limitation is expounded upon further in the limitations section below.

*Research Question 1b*: Based on previous research (Reiger, 1993; Seekles, 2009; Teluin et al., 2009), it was thought that over 10% of the patients seen in the family medicine clinic would screen positive for depression as indicated by the M3. Using cutoff scores from Gaynes and colleagues (2010) scoring a “5” on the 7 questions related to depression on the M3 indicated a positive screen of depressive symptoms. This was found to be the case as 32 participants

(54.2%) screened positively for depression. Again, high levels of positive screenings likely reflect a self-selection bias discussed in detail in the limitations section below.

*Research Question 1c*: Based on previous research (Das et al., 2005), it was believed that over 10% of the patients seen in the family medicine clinic would screen positively for a bipolar spectrum disorder as indicated by the M3. A positive screen on the Bipolar module would be obtained by a score of “2” or greater from the 3 questions related to bipolar disorder found on the M3.(Gaynes et al., 2010). Likewise, this turned out to be the case as 24 patients (40%) screened positively for bipolar disorder. A self-selection bias was again likely in operation here, as noted above, and as discussed in the limitations section below.

*Research Question 2* Based on an article from the integrated primary care literature (Blount, 2003) a question was developed asking about how patients preferred to receive referrals to a mental health professional within primary care: How would you prefer to be referred to mental health professionals, if such services are desired/recommended? a) I would prefer the physician and the mental health specialist be in the room together to talk with me on the same day as my visit with my physician, or b) I would prefer the mental health specialist be given my phone number and call me. A tabulation of participants’ responses are listed in Table 4.

Table 4.

*Referral Preference of Patients in Phases 2, 3, & 4*

| Option | umber | Percentage |
|---|---|---|
| Physician & Mental Health Specialist “Warm Handoff” | 11 | 30.6 |
| Mental Health Specialist my phone number and call me | 25 | 69.4 |

*Research Question 3*: It was considered that after the second noon conference, PCPs would have a greater understanding of diagnostic criteria for anxiety and mood disorders as indicated by higher scores on the APT-PC. Two dependent *t*-tests were conducted to determine whether PCPs' scores changed significantly from the beginning to the end of the two noon conferences. This was done by assessing scores before and after each noon conference. Though physician's scores increased from each preconference score to postconference score, these changes were not significant. This is likely due to the high scores achieved on each pretest, where increased posttest scores reflected either minor refinement of knowledge as a result of the materials presented or fatigue effects in the cases of decreased performance.

In the first noon conference, the scores increased (out of 20 possible correct) from an average of 16.29 (*SD* =1.10) to 16.64 (*SD* = 2.03), but this was not significant. In the second noon conference, the scores similarly increased from 16.33 (*SD* = 1.83) to 17.33 (*SD* = 1.44), but this change was also not statistically significant. When viewing the PCPs scores on the APT-PC as percentages, scores in the first noon conference ranged from 70% to 95% preintervention and 65% to 100% in the postassessment. In the second noon conference, scores ranged from 60% to 95% preintervention and 65% to 100% in the postassessment. Comparing overall percentages, an average score increase was seen from the first noon conference preintervention score (81.5%) to an average of 86.7% at the conclusion of the second noon conference. Due to the small sample size of PCPs (16) completing both sets of measures, the difference in these scores are best understood using Cohen's *D*, which showed a relatively large effect size, *d* =.81.

The lowest ACT-PC average for PCPs, 16.29, was significantly higher than the average score of 8.91 for the pilot sample of undergraduates, with $t(219) = 9.69$, $p < .001$. This is not surprising given that the PCPs had greatly superior levels of education in relevant content areas.

But, this predictable result can be taken as tentative preliminary evidence of the validity of the measure. As PCPs scored so high on the pre- and posttest administrations of the APT- PC, there was no merit in examining correlations between items on the demographic questionnaire and scores on the APT-PC. See Figure 1 for pre-post-conference score differences by group.

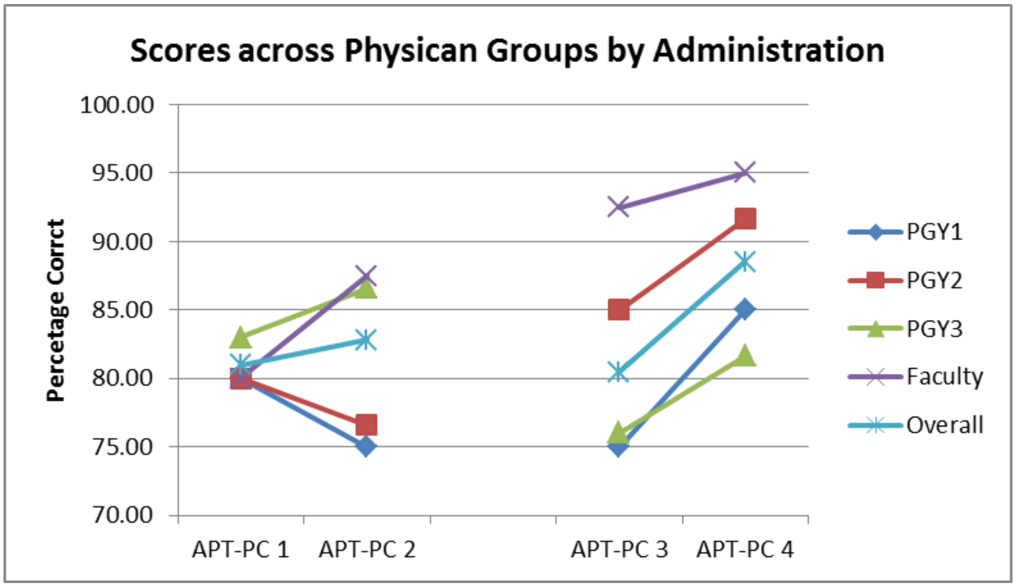

Figure 1. APT-PC mean scores by training level across four administrations

*Data Gathered from Electronic Medical Record*

The research clinic site used the Allscripts Enterprise Electronic Medical Record. This software allows administrators to access expansive amounts of data, including which PCPs have viewed a client’s medical record, and which parts of the record specifically. Using this technique, EMR administrators were able to gather and report information on use of M3 screening measure results. A log was generated of which physicians viewed the M3. This was gathered by the EMR administrator’s ability to track the physicians logged into the EMR software. The primary investigator then used this log for data analysis after coding PCPs by status (Faculty, PGY-1, PGY-2, PGY-3).

Fifty-nine screening measures were administered and electronically saved into the EMR. Of these, one resulted in the patient getting a referral to an outside psychologist, and five other times a patient was given an appointment to see the on-site psychologist. Of the 59 M3 results saved into the EMR, 39 (66.1%) were never viewed. Of the 20 (33.9 %) M3 results reviewed, 8 (40%) were viewed by residents, 9 (45%) were viewed by faculty, and 2 (10%) were viewed by residents and faculty. Of the eight viewed by residents, one (12.5%) resulted in a referral to an off-site MHP and one (12.5%) resulted in an appointment with the on-site psychologist. Of the nine viewed by faculty members, two (22.2 %) resulted in an appointment with the on-site psychologist. Of the two viewed by both residents and faculty, neither resulted in MHP referral. Three referrals were made to the on-site psychologist without a viewing of M3 results. Again, not only were there problems getting the M3 results into the EMR in a timely fashion, but PCPs and staff were in the midst of a transition from paper-based medical records to the EMR system. This lack of fluency with EMR may have negatively affected the accessing of M3 results. See Table 5 for a breakdown of the data with regard to the inclusion of the M3 results into the EMR.

Table 5.

*Results of M3 Integration Into EMR by Viewership*

| Chart Results | Number | Percentage of Total | Resulting Referrals |
|---|---|---|---|
| Total Not Viewed | 39 | 66.1% | 0 |
| Total Viewed | 20 | 33.9% | 3 (15.7%) |
| Viewed by Resident | 8 | 13.5% | 1 (12.5%) |
| Viewed by Faculty | 9 | 15.3% | 2 (22.3%) |
| Viewed by both | 2 | 3.4% | 0 |

In addition to the number of PCPs who viewed the M3 results, the M3 results were further analyzed for action taken. In the noon conference intervention, PCPs were taught how to read the screening results and how to take action. M3 results were flagged if they were “out of range” for anxiety, depression, and bipolar disorder, and total scores that were significantly high (i.e., a score above 22; Gaines, 2010). Results of viewership by screening measure average scores are displayed in Table 6. The two times that a chart was viewed and a referral was made directly afterwards, M3 scores were 62 and 42. These patients had positive M3 scores for anxiety, depression, PTSD, and Bipolar disorder, indicating a referral would be merited.

Of the M3 screening measures that were completed and put into the medical record, 20 M3 results were viewed whereas 39 were not viewed. Because the mean score differed, an additional Independent *t* test analysis was conducted to test for significant differences. Though those viewed had a mean score that was higher (*M*= 33.65, *SD* =20.41) than screeners that were not viewed (*M* = 30.15, *SD*=19.88), the difference was not significant, *t*(57) = -.634, *p* = .72.

Table 6.

*M3 Score Averages, by Viewership*

| Chart | N | | Anxiety | Depression | Bipolar | Total score | Action |
|---|---|---|---|---|---|---|---|
| Viewed | 20 | Mean | 7.35 | 5.65 | 1.80 | 33.65 | 2 referrals |
| | | Median | 6 | 7 | 2 | 38.50 | |
| | | Mode | 0 | 3 | 0 | 47 | |
| | | Range | 0-20 | 0-12 | 0-5 | 0-62 | |
| Not Viewed | 39 | Mean | 6.26 | 5.08 | 1.36 | 30.15 | 0 referrals |
| | | Median | 4 | 5 | 1 | 24 | |
| | | Mode | 0 | 1 | 0 | 16 | |
| | | Range | 0-23 | 0-13 | 0-6 | 0-70 | |

### *Additional Data Gathered from Noon Conferences*

Two PDQ items asked PCPs how important they felt that mental health diagnosis was within primary care and how confident they were in their ability to assess and treat mental health issues within primary care (Appendix K, items 5 and 6). Likert scale responses included: Not Important, Slightly Important, Moderately Important, Very Important, and Extremely Important.

Of the 16 PCPs whose data were analyzed, 1 (6%) rated the item related to mental health importance in primary care as “Moderately Important,” whereas 5 (31%) rated this is “Very Important,” and 10 (63%) rated it as “Extremely Important.” When responding to the item related to their level of confidence in their abilities to diagnose and treat psychological disorders in primary care, 12 PCPs (75%) responded as “Moderately Confident”, whereas 3 (19%) considered themselves “Very Confident” and 1 (6%) reported being “Extremely Confident.”

# CHAPTER 4

## DISCUSSION

Though this project was rendered relatively ineffective on several fronts, a number of very noteworthy points were derived from this research project. A retasking of this project as a qualitative and descriptive analysis was helpful in generating useful information that may inform and shape future research initiatives. While the limitations are substantial and are dealt with systematically below, the valuable information generated with a relatively low number of caveats are covered presently.

One unique and positive finding was that PCPs in this sample reported at a high level that they did care about patients with psychological disorders in their practice. With regard to the item on how important it is to “detect and appropriately treat psychological disorders” almost all PCPs (94%) rated this issue as “Very” or “Extremely Important,” with only one marking it as “Moderately Important.” This is a refreshing finding, though not surprising given that PCPs have intense careers based on helping patients, It nonetheless indicates there is reason to hope PCPs would be, on the whole, open to interventions designed to enhance accurate detection and appropriate treatment of psychological disorders.

Another promising finding was that the *Assessment of Psychological Treatment in Primary Care* (APT-PC) appears to have been useful in determining that PCPs generally knew the major diagnostic information for mood and anxiety disorders. Prior to this research, PCP knowledge of criteria used to diagnose mood and anxiety disorders had not been specifically assessed in the literature. When searching for research related to this topic, PubMed, PsycINFO, and Google Scholar were searched for articles. Search parameters used “PCP knowledge of DSM,” “primary care knowledge of mood disorders,” and “primary care diagnostic criteria mental health." These were most recently searched for in March 2014. The search returned only one valid result (Zimmerman & Galione, 2010) that indicated nonpsychiatrists do not seem to use DSM-IV-TR criteria when diagnosing mental health disorders. No other relevant information was found and no assessments exist that currently test PCP knowledge of diagnostic criteria.

Contrary to the implications of Zimmerman and Galione (2010), PCPs did quite well on the APT-PC across administrations and thus would theoretically be able to diagnose mood-related mental health issues accurately. The fact that the undergraduate sample scores were significantly lower than the PCPs, lends support to the notion that the APT-PC is a reasonably valid measure. This was further reflected when Cronbach's alpha levels rose to from a barely acceptable level (.66) within the large undergraduate sample, to very high levels (.80-.98) with small samples of PCPs answering largely correctly.

This leads to another key finding which is that despite a seemingly excellent general knowledge base, many potential diagnoses were apparently missed. While the M3 results were rarely looked at, they indicated a great deal of potential patient suffering in the realms of mood and anxiety disorders. Yet, in the cases examined where the potential was that nearly half of all patients in the screened sample might well prove to have had a diagnosable disorder, mental health provider (MHP) referrals were infrequent.

Moreover, the fact that the M3 results were not looked at in 66% of the charts in which they were provided is an unsettling issue in and of itself. The majority of the PCPs failed to look at them even after two specific trainings on the use of the M3 and its potential use in helping PCPs diagnose and refer patients, elements that were emphasized. Again, it is important to note that many of the M3 results may not have been scanned into the EMRs until after the medical visits were concluded. However, of the 39 participants whose screening measures were not viewed, 24 (61.5%) returned to the same primary care clinic within 6 months of the initiation of data collection, and their M3 results were still not reviewed.

Though it is unknown why this is, a few hypotheses are plausible as to why most PCPs failed to look at the M3 results. First, they may have felt they had a good working knowledge of mood and anxiety disorder criteria and thus did not feel the need to review it. In fact, their high scores on the ACP-PT may have further bolstered confidence in their abilities to diagnose and treat mental health disorders. As noted above with regard to PCPs' confidence, almost all rated themselves as "Moderately" or "Very Confident" in their abilities to "detect and appropriately refer patients for treatment of psychological disorders," with one PCP self-rating as "Extremely" confident. Thus, it's plausible in believing they were excellent at detecting mental health issues, and taking a test which demonstrated that fact, that PCPs may have been more inclined to rely on their own clinical judgment rather than the M3 results.

Also, some PCPs may have not felt they had sufficient time to spend reviewing the M3 results, as primary care is an extremely busy work environment. The number of patients seen on a daily basis could potentially be overwhelming and certainly must tax one's time management resources. Given that most patients come in with specific issues, many if not most of which are not detected by the M3, PCPs likely tended to focus on the presenting problem to the exclusion of the additional information provided by the M3. And again, in many cases, the M3 results were not in the EMR before patients left, and only a relatively small number of patients would have had any M3 results. Likely, many PCPs simply forgot to go back to look for possible M3 results because it simply was not a common practice to do so, and it did not become a habit during this intervention. It is possible that further intervention research is warranted, aiming at helping PCPs develop a habit of viewing and acting on screeners within primary care. As the scope of PCPs' work is already so wide, it will likely be difficult to create this behavior change until policies require PCPs to attend to mental health screeners.

The lack of use of the M3 screening measure is troubling from a psychologist's perspective. Psychologists routinely use screening measures to help determine whether additional action is needed. If PCPs are not collectively convinced of the utility of these measures, this may not only hold back research in integrated primary care psychology but also potentially thwart the efforts to further integrate care. However, it is important to note that recently a published article proposed a very thorough three-step model (individual assessment, contextual assessment, physical examination) for psychiatric interviews within primary care, which did not use any type of screening measure (Draper & Smith, 2014). However, such a model relies heavily on the physician to be extremely thorough, which may not always be realistic given typical constraints on their time. Finding a means to encourage the use of mental health screening measures by PCPs, and to motivate them to follow up on positive results with MHP referrals, would thus likely be ideal for enhancing patient care. Unfortunately, the results of the present study indicate the need for an intervention that goes well beyond simply adding screening measure results to patient charts. In this instance the meaningfulness of having a M3 screening measure in the patient's chart appears to be limited due to the limited likelihood of being viewed. However , in a PCP practice that incorporates such a measure and makes use of it, such a measure could be invaluable, potentially detecting and treating mental health concerns before they lead to larger, more difficult to change life patterns.

It also appears that there may be a perceived lack of need for mental health interventions within primary care. Indeed, many primary care practices do not have a MHP as a staff member. In primary care teaching facilities such as the one in this study, MHPs are typically viewed by faculty as a beneficial teaching resource. However, in nonteaching primary care practices, it is rare to find a colocated MHP. Yet, within this teaching facility, while PCPs reported feeling that it was important to detect and treat psychological disorders, most seemingly ignored guidelines given during noon conferences and rarely viewed the M3 results put into the EMR.

Another interesting and novel issue discovered within this research project was the referral preference of patients. Surprisingly, many patients (69.4% in this sample) appear to prefer having a MHP call them to set up an appointment, rather than take advantage of having a MHP and PCP in the same room discussing mental health treatment together. Though this may be largely related to stigma, and as the question was posed in the hypothetical rather than after having experienced one or the other or both methods, it is certainly important to address this issue with MHPs in the integrated primary care field. As some patients may be somewhat intimidated by PCPs, it is possible the addition of another professional discussing their mental health needs could be more intimidating. It is also possible many of those who participated just happened not to prefer the "warm handoff" option as presented in the item.

As noted, this question was put forward in a very basic manner, without explaining the concept of how such a meeting between the PCP, MHP, and patient might be beneficial to the patient. So, one possible future intervention would be to provide patients with education about how integrated primary care would be beneficial in order to increase patient awareness of the concept and facilitate buy-in. One possible means to test this issue further would be to randomly assign patients with positive results on screening measures (assuming the information was given to the PCP prior to the patient visit) to receive either a "warm handoff" or a follow-up phone call referral, and then assess and compare their perceptions of the experiences. It is also possible that the wording of the referral question may have been a factor as well. It is recommended that future attempts to study referral preference pilot multiple wording prior to use in an intervention. Such wording changes could include an additional option to have an appointment automatically set up or use of the term “behavioral health consultant” instead of “mental health professional”.

### *Limitations*

One major limitation of this research was an unforeseen change in the staff psychologist used in the data collection. The initial psychologist was a valuable resource, who documented presenting problems, methods of referral, and the physician who referred the patient. Unfortunately, this psychologist took a different position between the first and second phases of this research, and during the search for his replacement and the subsequent hiring of a new psychologist who had to acclimate to the new job and engage in a great deal of orientation, training, etc., there was no one available to obtain critical data during those phases of this research project. As a result, vital pieces of information were unavailable and could not be included, as noted above. Without the necessary data from the second, third, and fourth data collection phases, this research project lost a great deal of important information, and several hypotheses went untested.

Another major issue was that as data collection was scheduled to begin, the clinic was in the active phase of moving from paper-based records to EMRs and data collection was to be electronic in nature. PCPs and staff were only just getting basic training and becoming accustomed to the EMR and thus did not have advanced skills or comfort with regard to fluid use of the EMR. Thus, a search for the M3 results when they were in the record may have been difficult for some who were just learning how to access what was absolutely essential for the carrying out of their professional roles and responsibilities. It was noted from the on-site psychologist that many of the barriers to data collection noted in this research were fixed within

6 months of data collection ending. Thus, in terms of replication of this study, timing the intervention after software has been in place for a set amount of time may prove helpful.

Yet, another critical shortcoming was that while it was planned that M3 results would be automatically imported into the EMR, this did not come to pass. Instead, an already busy staff person was asked to scan the M3 records into the patient's EMR at whatever point she could squeeze this task into her normal duties. Despite this staff person's good intentions and diligence, this process frequently produced time lags between acquiring M3 results and them being imported into the EMR. Thus, this could have easily accounted for many PCPs potentially not looking at the M3 scores on the day of the patient visit, and with a great many other tasks to accomplish, it would be easy enough for them to forget to look for the results later.

Because both PCPs and patients in the clinic were measured, another unforeseen roadblock was clearing the full procedure with the university Internal Review Board (IRB), who scheduled multiple meetings with the primary investigator. They were concerned with PCPs being involved in the research and worried there might be some undue influence in terms of coercion of patient participants, though this was never a possibility as the intervention was of an educational basis and there was no pressure or reason for PCPs to coerce patients into the study. As the researcher always sought to be in compliance with Health Insurance Portability and Accountability Act of 1996, careful procedures were used to select patients to approach for recruitment and patients were administered the M3 without exposing Protected Personal Information (PPI) which by law cannot be disclosed.

Ultimately it was determined that patients had to be located and approached after they left the waiting room, making it much more difficult to track them. There were a great many exam rooms and no clear indications as to which patients were in which rooms –this information had to be obtained by talking with nurses who were at all times quite busy. During some of these times, research assistants had to wait for front office staff to help them find patients. As the clinic did not have much lag time between when patients saw nurses and PCPs, many times research assistants reported that they had to wait until the PCP was done seeing the patient before giving the M3, thus limiting the usefulness of the process. Thapar et al. (2014) indicated that depression screening in primary care often takes 3-5 minutes, which is half the time of a typical visit. The M3 was 27 items, and perhaps shorter questionnaires or quicker methods to integrate screening measure results into the EMR are necessary to enhance the success of such interventions.

The rates of positive M3 screenings appeared to be very high. The M3 is considered to be quite good in terms of its specificity and sensitivity. Screening measures are not intended to be completely diagnostic but instead are intended to alert PCPs to follow up with at-risk patients who screen positively. However, patients who volunteered to participate may have done so because the description of the research resonated with issues they were currently having, which were then reflected in the screening numbers. While the informed consent and study introduction was brief, it included the sentence: “It is voluntary and could potentially help you and your doctor attend to your mental health needs.” Thus, the mention of “mental health needs” and having them potentially addressed likely skewed acceptances toward those with existing mental health concerns and thus likely substantially forced the positive screening percentages upward. If this were not the case, a screening measure that yielded numbers as high as 61% for anxiety, 54% for depression, and 40% for bipolar, would be generating far too many false-positives to be of any value at all.

Unfortunately, data related to which patients refused to participate was not gathered consistently and thus there is no way to determine what overall percentage was willing to participate in this study. Though this was planned and was a part of their training for the project, not all of the Assistants collected these data, which was likely due to the quick pace of the setting. Indeed this setting was very large and many research assistants oftentimes expressed difficulty in not being able to find patients once they had checked into the front office for their visit. It is estimated that the research assistants only recorded acceptances and no-shows/appointment changes with a third of the patients selected from the schedule.

In the records of patients selected from the schedule, only 24% were willing to participate, whereas 23% declined to participate. The remaining estimated 53% were either unable to be approached due to the potential for interruption of workflow, did not show to their appointment, or changed their appointment. Based on data that were obtained with regard to acceptance rates, and given that 59 patients accepted (representing 24% of the estimated total of patients approached, which was believed to be 246), it is estimated that 56 (23% of the estimated total) would likely have refused, and that at least 131 (53% of the estimated total) would have not shown for their appointment, cancelled or rescheduled, or have been unapproachable for some reason. However, this is only an estimate and the refusal and nonapproached rates cannot be known for certain.  Of the 23% that declined to participate, it is unknown why they chose to do so. One potential reason for this may have been the wording of the informed consent. In the future, phrasing the informed consent to be more focused on potential health benefits instead of being initially introduced as a “research study”, which could potentially scare patients away from becoming involved. However, it is important to not cross a boundary where desiring to get patients involved in research can be considered coercion to participate.

One disappointing limitation in this research also produced one of the stronger findings, which had to do with the lack of usefulness of the APT-PC measure in measuring knowledge gain from noon conferences. As constraints did not allow for two separate piloting phases of this measure before use, it was unanticipated that PCPs would score as well as they did. Thus, the APT-PC did not have the ability to discriminate between what might have been fine gradations of learning that possibly occurred. However, this limitation can also be viewed as a strength, as it suggests that a knowledge based intervention for PCPs may not be necessary in the future, at least on the topic of differential diagnosis for mood and anxiety disorders.

Yet, a revision of the APT-PC measure to allow for measurement of other potentially helpful factors, such as health psychology and primary care psychology topics, might also be beneficial. Certainly, discovering that PCPs were excellent at differential diagnosis was a good thing. However, as noted, it also suggests that there was a major gap between knowledge and relevant MHP referrals. Yet, it also demonstrated that assessment of PCP knowledge is feasible in a busy practice setting.

For the present research one of the more frustrating limitations was the inability to clearly document which PCP made the few MHP referrals that occurred and in what modality the referral was made (e.g., warm handoff, phone number, appointment made with psychologist). Having a clearer understanding of how this process proceeded and how patients responded to these approaches would likely be quite helpful to PCPs and psychologists and other MHPs who operate within an integrated primary care setting. The finding that patients did not seem to prefer a warm handoff was not expected and may indicate a need for patient education.

### *Future Directions*

Areas that need to be addressed in future research include understanding how to change PCPs and patients perceptions of MHPs, enhancing proper diagnosis and referral of patients with mental health concerns, and enhancing the ability of PCPs and psychologists and other MHPs to work collaboratively to enhance patient care. One area of interest is already beginning to be addressed in the literature is the need for EMRs who are more focused on ensuring that PCPs see necessary results. Singh et al. (2014) recently published research assessing the Veteran's Affairs EMR, which has a striking resemblance to that used in this study. The survey used invited 5,001 PCPs within the Veteran's Affairs system, of which 2,590 (51.8%) responded. The majority of respondents, 55.5%, believed the method used by EMRs to notify patients of their test results was inadequate. Many PCPs said they counted on support staff to notify the clients of the test results. Another interesting response from this survey was that 45.7% reported that the training they received to use the EMR was inadequate and that they spent extra time (weekends, nights) responding to notifications. Thus, it appears that though some advances have been made by using EMRs and integrating practices, there is still a need to improve the technology so PCPs can better serve their patients.

With regard to the APT-PC, it seems it might be revised to tap other areas of knowledge. The internal consistency was relatively high when used with PCPs, such that potential future revisions could prove useful in similar research. A reliable measure of specific PCP knowledge pertaining to mental health care practice issues would be very helpful for future research looking to overcome obstacles in integrated primary care by ensuring that a knowledge-based intervention is not first necessary. Further, investigations could also be conducted to find the referral methods that are most preferred by patients by actually testing the alternative methods with actual patients rather than relying on professional opinion or hypothetical questioning of patients.

Many professionals both in mental health and medicine agree in principle that integrated care is needed but may disagree about how and when this should be implemented. Changing how professionals engage in mental health care provision is a difficult issue to address. Attitudes towards mental health care, MHP's perceived job duties, and relevance of training as it relates to treatment may need to be addressed to enhance the integrated work environment. It is clear that mental health is important for PCPs, but it appears there is much more that needs to be done to facillitate efficient, consistent, and accurate diagnoses and MHP referrals.

Were a similar study attempted in the future with the goal of exploring the original hypotheses, changes in methodology should be made at the outset. First, a greater focus on training research assistants, especially as it relates to familiarity with the primary care practice would be beneficial. And, greater supervision of research assistants is clearly warranted to ensure protocol adherence. It would also be very helpful if the primary investigator was an actual staff member at the practice to facilitate improved design and implementation. Also, more time should be allowed for data collection to generate sufficient sample sizes. Additionally, it would be important to have an existing means to track patient demographics and to closely track which patients were approached and which accepted or declined to participate. Further, it would be critical to have a screening system that is more fully integrated into the EMR and clearly alerts PCPs about positive results. Finally, qualitative and/or experimental research with patients related to preference for referrals and their reasons for wanting certain types of MHP referrals, as well as relevant educational interventions with patients, would also be quite useful.

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# APPENDIXES

## Appendix A

## Original Methods

### *Original Hypotheses*

For all hypotheses, the a priori significance level was set at $p$ <.05. The following hypotheses were originally planned to be tested:

*H1a*: Based on previous research (Reiger, 1993; Seekles, 2009;Teluin, Brouwers, van Marwijk, Verhaak, & van Der Horst, 2009 ), it is hypothesized that over 10% of the patients seen in the family medicine clinic will screen positively for an anxiety disorder as indicated by the OASIS. A positive screen on the OASIS is obtained by a score greater than 8 (Campbell-Sills & Norman, 2009).

*H1b*: Based on previous research (Reiger, 1993; Seekles, 2009;Teluin, Brouwers, van Marwijk, Verhaak, & van Der Horst, 2009 ), it is hypothesized that over 10% of the patients seen in the family medicine clinic will screen positive for depression as indicated by the PHQ-9. Using cutoff scores from Kroenke, Spitzer, Williams (2001), scoring a “10” on the PHQ-9 will indicate a “moderate” level of depressive symptoms.

*H1c*: Based on previous research (Das et. al, 2005), it is hypothesized that over 10% of the patients seen in the family medicine clinic will screen positively for a bipolar spectrum disorder as indicated by the MDQ. A positive screen on the MDQ will be obtained by a score of 7 or greater (Hirschfield, 2007).

*H2*: The number of patients being referred to mental health who meet diagnostic criteria on the screening measure will be significantly higher *after* the first noon conference than:

a) patients who are referred to mental health before the screening measure is implemented

b) those patients meeting criteria for an anxiety or mood disorder on the screening measure and receiving a mental health referral *before* the first noon conference, the time of the first intervention.

*H3*: Based on the integrated primary care literature (Blount, 2003) more patients in family medicine will prefer to have the warm handoff method of referral to mental health over the phone method of referral.

*H4*: After the second noon conference physicians will have a greater understanding of diagnostic criteria for anxiety and mood disorders as indicated by higher scores on the brief evaluation.

## Power Analyses

Power analyses were conducted using the statistical software program, G*Power (version 3.1; Faul, Erdfelder, Lang, & Buchner, 2009). For each hypothesis (except *H1* due to simple frequencies being calculated), a power analysis was conducted:

*H2*: With 80% power and alpha set at .05, 132 participants will be needed to detect a medium effect ($f^2 = .15$). This was calculated using G*Power 3.1, with the chosen statistical test of between subjects repeated measures ANOVA. A medium effect size was chosen based on a study by Rost et al. (2001) which examined an intervention to teach physicians to better detect and treat depression, the effect sizes relevant to *H2* and *H4* of the present study ranging from *Cohen's d* = .43 (for patients who were being treated for the first time) to *Cohen's d* = .83 (for patients who were accepting of antidepressant interventions). These are considered medium to large effect sizes (Cohen, 1992); therefore a medium effect size was chosen for H2 and H4 to be conservative.

*H3*: With 80% power and alpha set at .05, 100 participants will be needed to detect a medium effect ($f^2$ = .15). This was calculated using G*Power 3.1, with the chosen statistical test of chi square analysis. This hypothesis is exploratory in nature as no previous research has examined this.

*H4*: With 80% power and alpha set at .05, 20 participants will be needed to detect a medium effect ($f^2$ = .15). This was calculated using G*Power 3.1, with the chosen statistical test of dependent t test.

## Statistical Analyses

In *H1a, H1b, and H1c*, frequencies of patients meeting criteria for anxiety, depression and bipolar disorder based on the screening measures will be calculated to determine the percentage of the sample positively screened for one of these mental health disorders.

In *H2*, the number of mental health referrals during a two month period will be quantified before any intervention takes place, this will be compared with the number of referrals to mental health once the screening measure has been implemented for one month and to the number of mental health referrals for two months after the first noon conference using a repeated measures ANOVA (Analysis of Variance) to measure the differences in numbers of mental health referrals before any intervention, after the implementation of the screening measures, and after the first noon conference.

In *H3*, a chi square analysis will be used to determine if there is a significant difference between patient preference for mental health referral method (“warm handoff” vs. telephone).

In *H4*, a dependent t test will be used to compare physician's scores on the brief evaluation at each noon conference to determine if physician's knowledge of diagnostic criteria for mood and anxiety disorders increased following the first noon conference intervention.

### *Original Procedure*

Four phases of data collection will take place, each will last 2 months. Demographic information will be collected at each phase and includes the age, income, educational status, and gender of each patient as well as their medical chart number. In the first phase, data will be collected to determine the typical number of referrals received by the clinical psychologist in this primary care clinic. At this time, Research Assistants will also be trained for the second phase of data collection. In the second phase, these trained undergraduate Research Assistants will administer screening measures of anxiety, depression, and bipolar disorders to patients. In the third phase, PCPs at the clinic will be trained on interpretation of the screening measure and how to detect mental health disorders in a "noon conference" setting. At this time, PCPs will also be trained on how to use different types of referrals to get patients to mental health services. The fourth phase will include a second "noon conference" in which results of the research to that point will be given, and a focus will be on motivating the PCPs to further detect and refer mental health disorders. The brief evaluation responses and scores of PCPs participating in phases II and III will be kept confidential, using identifying codes generated based on the state they were born in and their birth date. Thus, they will easily be able to remember their code and it can be linked to their brief evaluation scores at Noon Conference I and II, however, the code will help ensure their brief evaluation responses are kept confidential as it will be difficult for the Research Assistants to link the code to specific PCP participants. At each noon conference pre-test and post-test PCPs will also be asked to rate how important they feel it is to be able to identify psychiatric diagnoses and rate their confidence in their ability to detect such diagnoses.

### Phase I Procedure (Pre-baseline)

In this phase of the project, data will be gathered for a 2 month period regarding the number of and reason for mental health referrals within the Family Medicine clinic. Data obtained will include number of and reason for mental health referrals, patient demographic information from their medical chart, medical chart number of the patient referred, whether they have previously had mental health treatment anywhere else, and method of obtaining referrals. Research Assistants will note whether the screening measure was read to the patient, or if the patient filled in the information without assistance. Information on the referring PCP will be obtained as well, including the years of training the physician has had, years of practicing thus far, and type of medical training (M.D. and D.O.). On a weekly basis, study coordinators will present at Family Medicine and record this information.  This phase of the project will take place during August and September of 2011.

### Phase II Procedure (Baseline)

The first step in this phase of the project is to implement three mental health screening measures in Family Medicine, and subsequently measure the effect of this intervention on the number of mental health referrals for a two month period following implementation. Trained undergraduate Research Assistants will invite patients in the waiting area to participate in the study as they complete standard paperwork for the family medicine practice, if they choose to participate they will be escorted to an office visit room to complete the screening measures. After filling out informed consent documents, patients will be given the option of completing the screening measures on their own or asked if they would like the undergraduate Research

Assistants to go through the screening measures with them, as reading proficiency is known to be low in the population served in this clinic. The undergraduate Research Assistants will record which method the screening measure was administered by for each participant. Because the setting is very busy, undergraduate Research Assistants will exchange a “ticket” with the front office support staff to alert them that the patient is currently participating in the study and will indicate where the patient is located if they are needed. The process of screening the patient is expected to take between 10-15 minutes. After administration of the screening measures, undergraduates will complete a summary sheet of the screening measures including the scores, their diagnostic relevance, and a copy of the summary sheet will be placed in the patient’s medical chart on an orange piece of paper, which will alert doctors to the screening measure results. This screening measure summary would become part of the medical record, and interpretation statements would be included in the summary for PCPs. This screening measure packet will consist of the PHQ-9, MDQ, and OASIS as well as a question related to preference regarding mental health referral method. Participants will also complete a demographic questionnaire and will answer a question asking if they are currently receiving or have previously received treatment from a mental health professional. The summary of the screening measures will function much in the same way as a carbon copy- one copy stays in the medical record, and the other copy is given to the study coordinator. To track the patient, and the care they receive, the undergraduate Research Assistants will print the patient’s medical chart number on the copy of the screening measure. The number of patients approached, the number of patients declining participation, the number of screening measures administered, the number of patients who score within the range of clinically significant impairment for each screening measure, the number of mental health referrals made for patients meeting clinically significant criteria, the number of patients who followed through with a mental health referral, and the method in which they indicated they preferred to be referred on the screening measure will all be assessed. Data in this phase will be collected from October of 2011, though the implementation of the screening measures and will continue for the duration of the research. Data collected during this phase will include the total number of patients referred to the psychologist, the number of referrals based on type (phone, warm handoff, referral sheet), reasons for referral, referring physician, and demographic information of the patient and physician as listed above.

### Phase III Procedure

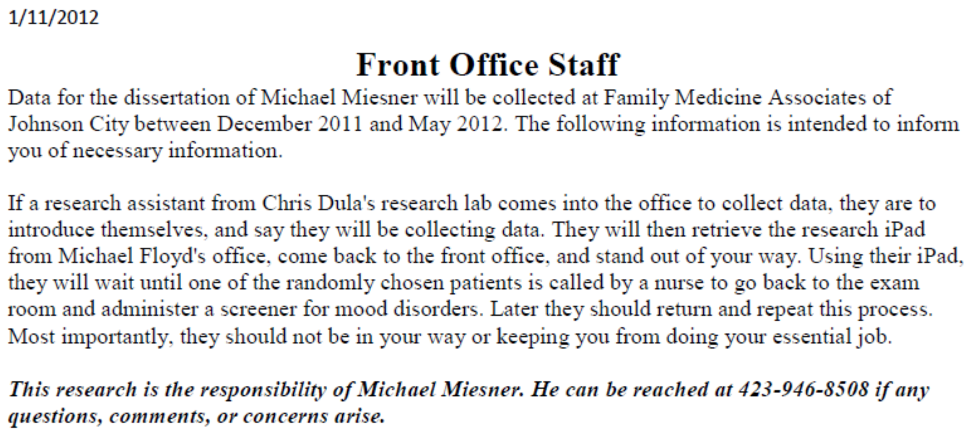
Following the implementation of the screening measures for 2 months, an intervention will be conducted in the form of a "noon conference" educational seminar. In this seminar, a brief evaluation will be given as a "pre-test", to assess PCP's knowledge of anxiety and mood disorders. Next, brief findings from the preliminary project will be presented in a motivational fashion which presents the rationale for interventions for anxiety and depression. Then information related to the importance of anxiety and depression being identified in the primary care setting (i.e. – importance of the PCPs as "gatekeepers" in mental health) will be presented and the diagnostic criteria for anxiety and mood disorders will be discussed. Next, the brief evaluation will be administered again as a "post-test", then a review of the correct answers for the "brief evaluation" will be given, and identification of these disorders in primary care will be discussed. Additionally, information about the mental health screening measures being used, their interpretation, the summary sheet and how they can be used to inform diagnostic and referral decisions will be provided to PCP's. This phase will take place during December of 2011 and January of 2012. Data collected during the two months that follow the noon conference in this phase will include the total number of patients referred to the psychologist, the number of referrals based on type (phone, warm handoff, referral sheet), reasons for referral, referring physician, and demographic information of the patient and physician as listed above.

Phase IV Procedure

Two months later, a second noon conference will be held. Similar to the first noon conference, the "brief evaluation" will be given to PCP's before the noon conference begins (as a repeated measures "pre-test", and following the educational part of the second noon conference as a repeated measures "post-test"). At this noon conference, some preliminary statistics on change in the last two months within the family medicine practice will be presented, to motivate the PCPs towards further behavior change as it relates to referrals of patients with mental health disorders. Such motivation will include helping PCPs understand the impact of their referrals to mental health specialists, the health factors related to such referrals, and how these referrals affect their ability to practice (e.g. reduce stress of physician and patient). Physicians will also be given feedback pertaining to referral input that patients have given, and at this point, training on types of referrals to mental health will be given.  This phase will last 2 months as well, and will take place during February and March of 2012. Data collected during the two months that follow the noon conference in this phase will include the total number of patients referred to the psychologist, the number of referrals based on type (phone, warm handoff, referral sheet), reasons for referral, referring physician, and demographic information of the patient and physician as listed above. Collecting the same information following the second Noon Conference will help ascertain if the motivational intervention of the Noon Conference II was effective in regards to the referring practices of the PCPs.

# Appendix B

## Instructions for Front Office Staff



1/11/2012

### Front Office Staff

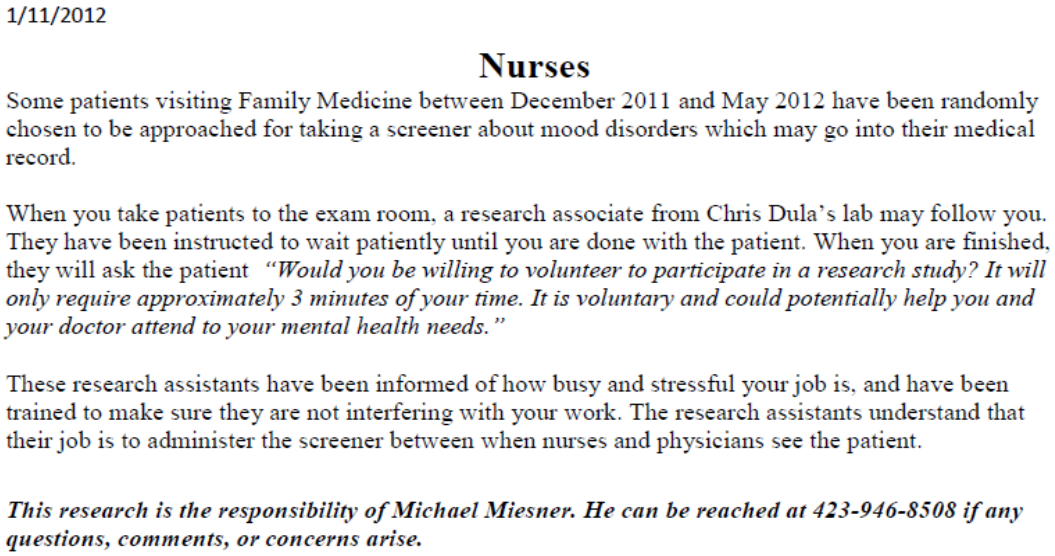
Data for the dissertation of Michael Miesner will be collected at Family Medicine Associates of Johnson City between December 2011 and May 2012. The following information is intended to inform you of necessary information.

If a research assistant from Chris Dula's research lab comes into the office to collect data, they are to introduce themselves, and say they will be collecting data. They will then retrieve the research iPad from Michael Floyd's office, come back to the front office, and stand out of your way. Using their iPad, they will wait until one of the randomly chosen patients is called by a nurse to go back to the exam room and administer a screener for mood disorders. Later they should return and repeat this process. Most importantly, they should not be in your way or keeping you from doing your essential job.

***This research is the responsibility of Michael Miesner. He can be reached at 423-946-8508 if any questions, comments, or concerns arise.***

# Appendix C

## Instructions for Nurses



1/11/2012

### Nurses

Some patients visiting Family Medicine between December 2011 and May 2012 have been randomly chosen to be approached for taking a screener about mood disorders which may go into their medical record.

When you take patients to the exam room, a research associate from Chris Dula's lab may follow you. They have been instructed to wait patiently until you are done with the patient. When you are finished, they will ask the patient *"Would you be willing to volunteer to participate in a research study? It will only require approximately 3 minutes of your time. It is voluntary and could potentially help you and your doctor attend to your mental health needs."*

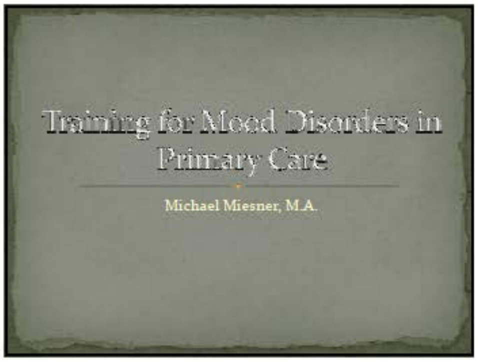
These research assistants have been informed of how busy and stressful your job is, and have been trained to make sure they are not interfering with your work. The research assistants understand that their job is to administer the screener between when nurses and physicians see the patient.

***This research is the responsibility of Michael Miesner. He can be reached at 423-946-8508 if any questions, comments, or concerns arise.***

للاستشارات المنارة

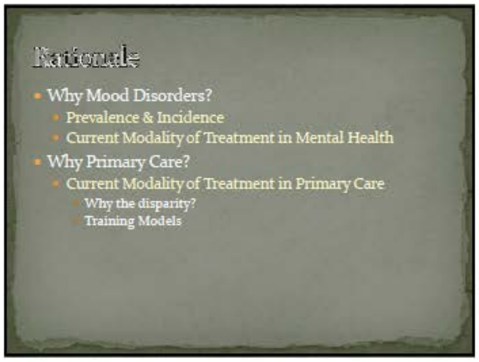
# Appendix D

## Research Assistant Training



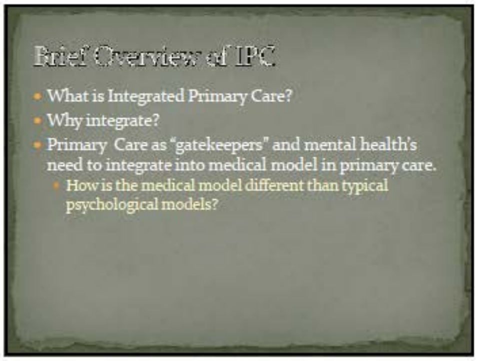
### Training for Mood Disorders in Primary Care

Michael Miesner, M.A.



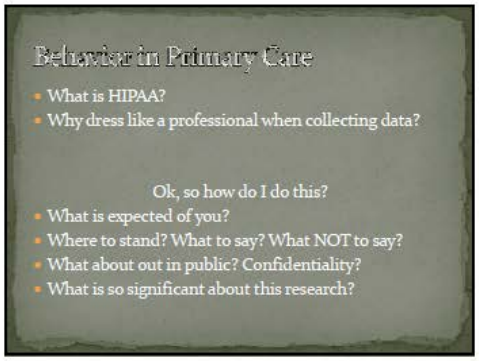
### Rationale

- Why Mood Disorders?
  - Prevalence & Incidence
  - Current Modality of Treatment in Mental Health
- Why Primary Care?
  - Current Modality of Treatment in Primary Care
    - Why the disparity?
    - Training Models



### Brief Overview of IPC

- What is Integrated Primary Care?
- Why integrate?
- Primary Care as "gatekeepers" and mental health's need to integrate into medical model in primary care.
  - How is the medical model different than typical psychological models?

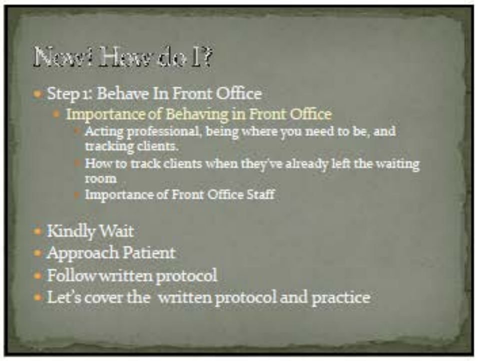


### Behavior in Primary Care

- What is HIPAA?
- Why dress like a professional when collecting data?

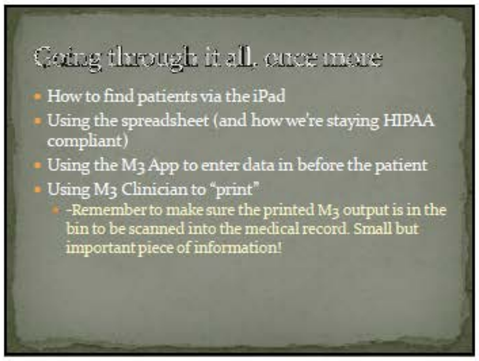
Ok, so how do I do this?

- What is expected of you?
- Where to stand? What to say? What NOT to say?
- What about out in public? Confidentiality?
- What is so significant about this research?



### Now! How do I?

- Step 1: Behave In Front Office
  - Importance of Behaving in Front Office
    - Acting professional, being where you need to be, and tracking clients.
    - How to track clients when they've already left the waiting room
    - Importance of Front Office Staff
- Kindly Wait
- Approach Patient
- Follow written protocol
- Let's cover the written protocol and practice

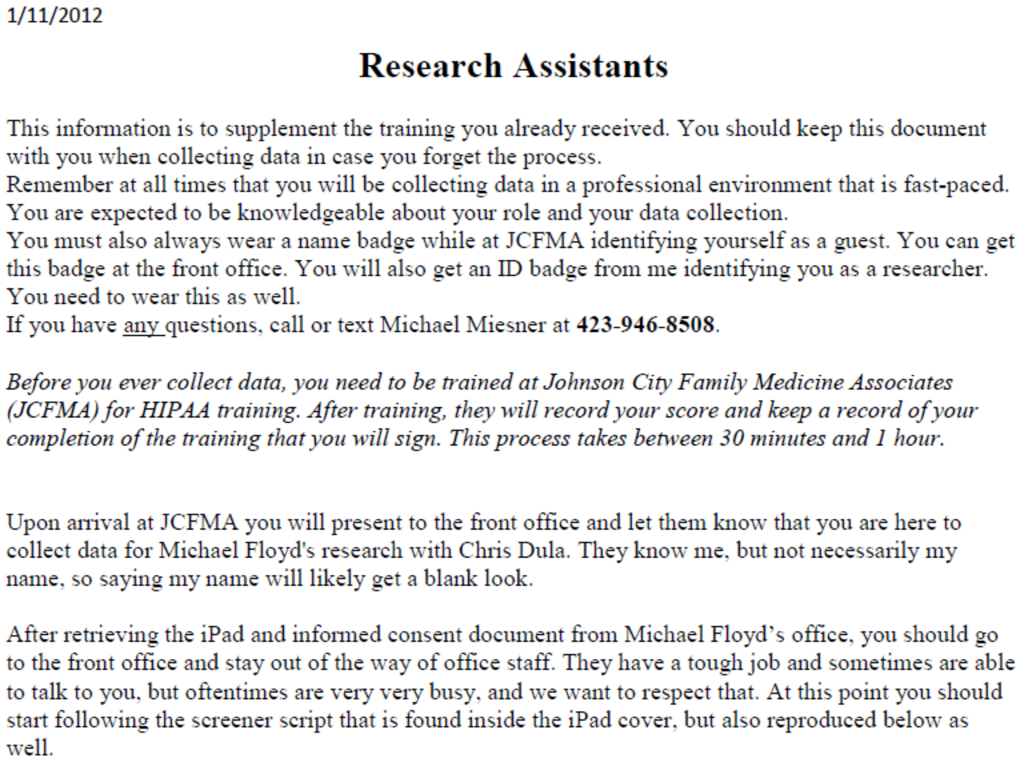


### Going through it all, once more

- How to find patients via the iPad
- Using the spreadsheet (and how we're staying HIPAA compliant)
- Using the M3 App to enter data in before the patient
- Using M3 Clinician to "print"
  - -Remember to make sure the printed M3 output is in the bin to be scanned into the medical record. Small but important piece of information!

# Appendix E

## Instructions for Research Assistants



1/11/2012

### Research Assistants

This information is to supplement the training you already received. You should keep this document with you when collecting data in case you forget the process.
Remember at all times that you will be collecting data in a professional environment that is fast-paced. You are expected to be knowledgeable about your role and your data collection.
You must also always wear a name badge while at JCFMA identifying yourself as a guest. You can get this badge at the front office. You will also get an ID badge from me identifying you as a researcher. You need to wear this as well.
If you have any questions, call or text Michael Miesner at **423-946-8508**.

*Before you ever collect data, you need to be trained at Johnson City Family Medicine Associates (JCFMA) for HIPAA training. After training, they will record your score and keep a record of your completion of the training that you will sign. This process takes between 30 minutes and 1 hour.*

Upon arrival at JCFMA you will present to the front office and let them know that you are here to collect data for Michael Floyd's research with Chris Dula. They know me, but not necessarily my name, so saying my name will likely get a blank look.

After retrieving the iPad and informed consent document from Michael Floyd's office, you should go to the front office and stay out of the way of office staff. They have a tough job and sometimes are able to talk to you, but oftentimes are very very busy, and we want to respect that. At this point you should start following the screener script that is found inside the iPad cover, but also reproduced below as well.

# Appendix F

## Screening Measure Script

*When at the front office*

First, introduce yourself to the FOS and ALWAYS be pleasant and courteous. ALWAYS**!**

**IT IS VERY IMPORTANT THAT WE KEEP THE FOS HAPPY. THEY ARE VERY IMPORTANT AND BUSY.**

You will have a list of patients for the time that you are present that day. Be attentive to who is checking in and when someone on that list checks in, follow the nurse and that patient to their waiting room. Let the nurse know that you'd like to collect data from the patient whenever possible. Be flexible, and communicate to everyone there that you are flexible, and that you understand they are doing their job. When you get a chance (preferably between the patient seeing the nurse and seeing the physician, ask):

"Would you be willing to volunteer to participate in a research study? It will only require approximately 3 minutes of your time. It is voluntary and could potentially help you and your doctor attend to your mental health needs."

*When in the exam room, with the patient*

"Thank you for being willing to participate in this study. You were chosen for this study randomly, based only on criteria of being above the age of 18." "Before we go through the screening measure, we will need your informed consent. This means that you understand that you have the right at any point to decline in this study. If you consent to being involved in this study, please read over this document **(give informed consent document)** and sign at the bottom."

*After informed consent is complete*

"Now that we are finished with the informed consent, I'll need your Date of Birth, and last name." *You'll also need to look up their code that I will electronically send to the ipad.*

"Since participants in this study will have a broad range of educational levels, if at any point you need help with reading any or all of these, I am ready to provide you assistance. It is very important that you understand what you are answering. Whenever you are finished with each page, please hand it to me."

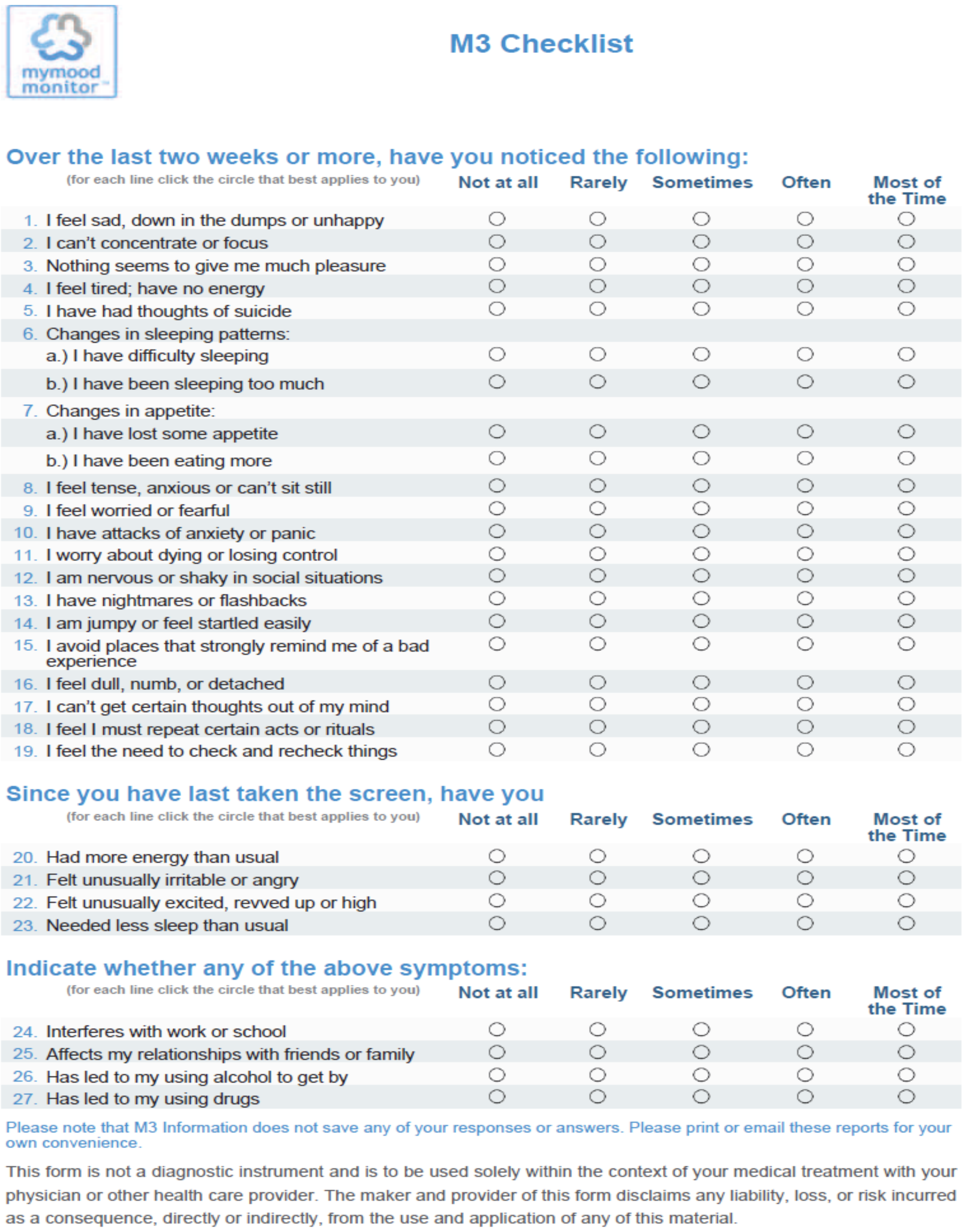
*After filling out the M3 measure*

"Thank you for participating. If at any point you have questions or concerns, feel free to contact the study coordinator, Michael Miesner, who is listed on the informed consent document. Have a great day."

When done with the patient, go into the M3 clinician portal via safari, log in (username:MDPC, password: mdpc) and pull up the screener you just administered. Click print.

# Appendix G

## M3 Screening Measure



### M3 Checklist

**Over the last two weeks or more, have you noticed the following:**

| (for each line click the circle that best applies to you) | Not at all | Rarely | Sometimes | Often | Most of the Time |
|---|---|---|---|---|---|
| 1. I feel sad, down in the dumps or unhappy | ○ | ○ | ○ | ○ | ○ |
| 2. I can't concentrate or focus | ○ | ○ | ○ | ○ | ○ |
| 3. Nothing seems to give me much pleasure | ○ | ○ | ○ | ○ | ○ |
| 4. I feel tired; have no energy | ○ | ○ | ○ | ○ | ○ |
| 5. I have had thoughts of suicide | ○ | ○ | ○ | ○ | ○ |
| 6. Changes in sleeping patterns: | | | | | |
| a.) I have difficulty sleeping | ○ | ○ | ○ | ○ | ○ |
| b.) I have been sleeping too much | ○ | ○ | ○ | ○ | ○ |
| 7. Changes in appetite: | | | | | |
| a.) I have lost some appetite | ○ | ○ | ○ | ○ | ○ |
| b.) I have been eating more | ○ | ○ | ○ | ○ | ○ |
| 8. I feel tense, anxious or can't sit still | ○ | ○ | ○ | ○ | ○ |
| 9. I feel worried or fearful | ○ | ○ | ○ | ○ | ○ |
| 10. I have attacks of anxiety or panic | ○ | ○ | ○ | ○ | ○ |
| 11. I worry about dying or losing control | ○ | ○ | ○ | ○ | ○ |
| 12. I am nervous or shaky in social situations | ○ | ○ | ○ | ○ | ○ |
| 13. I have nightmares or flashbacks | ○ | ○ | ○ | ○ | ○ |
| 14. I am jumpy or feel startled easily | ○ | ○ | ○ | ○ | ○ |
| 15. I avoid places that strongly remind me of a bad experience | ○ | ○ | ○ | ○ | ○ |
| 16. I feel dull, numb, or detached | ○ | ○ | ○ | ○ | ○ |
| 17. I can't get certain thoughts out of my mind | ○ | ○ | ○ | ○ | ○ |
| 18. I feel I must repeat certain acts or rituals | ○ | ○ | ○ | ○ | ○ |
| 19. I feel the need to check and recheck things | ○ | ○ | ○ | ○ | ○ |

**Since you have last taken the screen, have you**

| (for each line click the circle that best applies to you) | Not at all | Rarely | Sometimes | Often | Most of the Time |
|---|---|---|---|---|---|
| 20. Had more energy than usual | ○ | ○ | ○ | ○ | ○ |
| 21. Felt unusually irritable or angry | ○ | ○ | ○ | ○ | ○ |
| 22. Felt unusually excited, revved up or high | ○ | ○ | ○ | ○ | ○ |
| 23. Needed less sleep than usual | ○ | ○ | ○ | ○ | ○ |

**Indicate whether any of the above symptoms:**

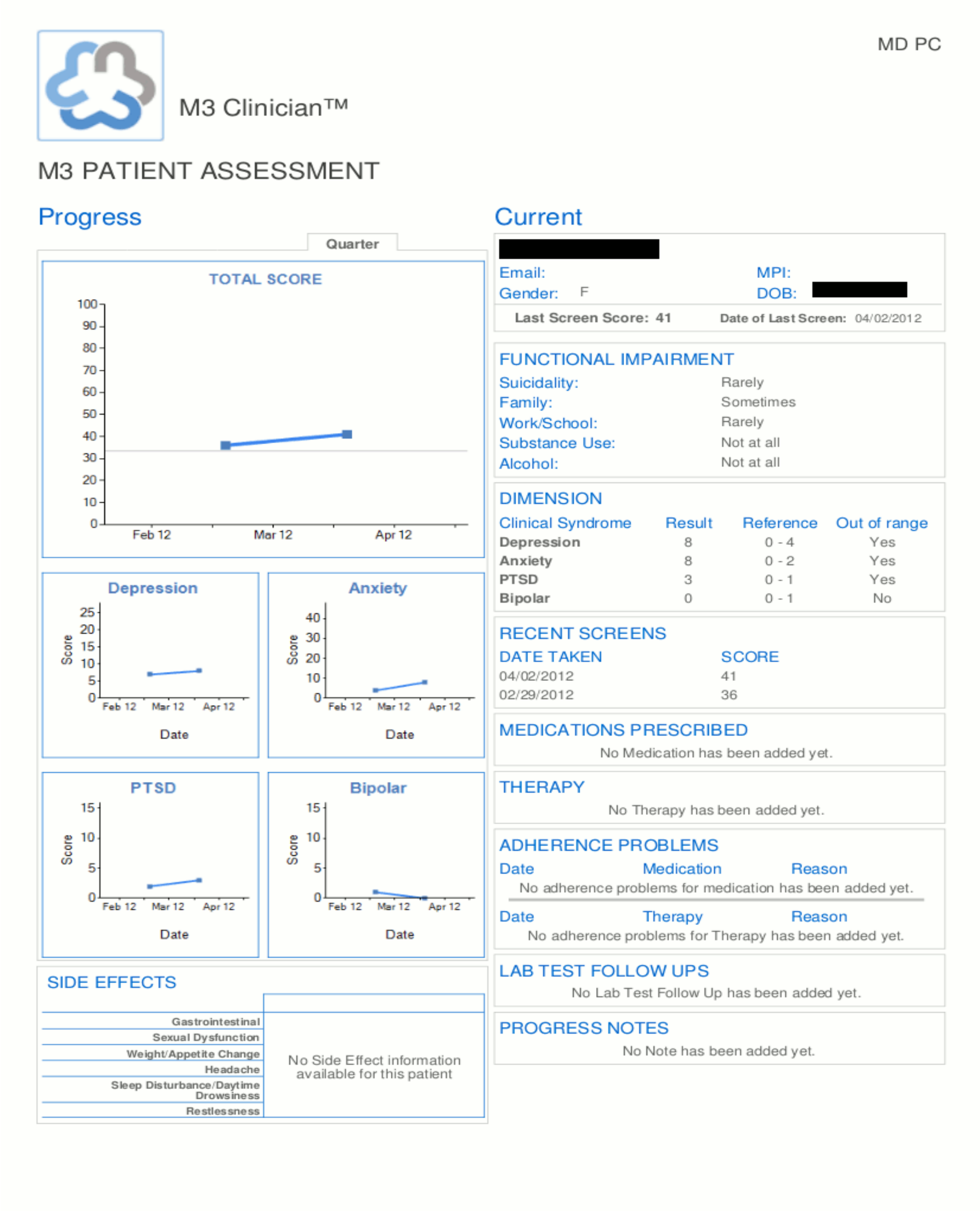
| (for each line click the circle that best applies to you) | Not at all | Rarely | Sometimes | Often | Most of the Time |
|---|---|---|---|---|---|
| 24. Interferes with work or school | ○ | ○ | ○ | ○ | ○ |
| 25. Affects my relationships with friends or family | ○ | ○ | ○ | ○ | ○ |
| 26. Has led to my using alcohol to get by | ○ | ○ | ○ | ○ | ○ |
| 27. Has led to my using drugs | ○ | ○ | ○ | ○ | ○ |

Please note that M3 Information does not save any of your responses or answers. Please print or email these reports for your own convenience.

This form is not a diagnostic instrument and is to be used solely within the context of your medical treatment with your physician or other health care provider. The maker and provider of this form disclaims any liability, loss, or risk incurred as a consequence, directly or indirectly, from the use and application of any of this material.

# Appendix H

## M3 Patient Assessment in Medical Record


Progress
Quarter
TOTAL SCORE
100
90
80
70
60
50
40
30
20
10
0
Feb 12
Mar 12
Apr 12
Depression
Score
25
20
15
10
5
0
Feb 12
Mar 12
Apr 12
Date
Anxiety
Score
40
30
20
10
0
Feb 12
Mar 12
Apr 12
Date
PTSD
Score
15
10
5
0
Feb 12
Mar 12
Apr 12
Date
Bipolar
Score
15
10
5
0
Feb 12
Mar 12
Apr 12
Date

MD PC

M3 Clinician™

M3 PATIENT ASSESSMENT

SIDE EFFECTS

| | |
|---|---|
| Gastrointestinal<br>Sexual Dysfunction<br>Weight/Appetite Change<br>Headache<br>Sleep Disturbance/Daytime Drowsiness<br>Restlessness | No Side Effect information available for this patient |

Current

[redacted]

Email:

MPI:

Gender: F

DOB: [redacted]

**Last Screen Score: 41**

**Date of Last Screen:** 04/02/2012

FUNCTIONAL IMPAIRMENT

| | |
|---|---|
| Suicidality: | Rarely |
| Family: | Sometimes |
| Work/School: | Rarely |
| Substance Use: | Not at all |
| Alcohol: | Not at all |

DIMENSION

| Clinical Syndrome | Result | Reference | Out of range |
|---|---|---|---|
| **Depression** | 8 | 0 - 4 | Yes |
| **Anxiety** | 8 | 0 - 2 | Yes |
| **PTSD** | 3 | 0 - 1 | Yes |
| **Bipolar** | 0 | 0 - 1 | No |

RECENT SCREENS

| DATE TAKEN | SCORE |
|---|---|
| 04/02/2012 | 41 |
| 02/29/2012 | 36 |

MEDICATIONS PRESCRIBED

No Medication has been added yet.

THERAPY

No Therapy has been added yet.

ADHERENCE PROBLEMS

| Date | Medication | Reason |
|---|---|---|

No adherence problems for medication has been added yet.

| Date | Therapy | Reason |
|---|---|---|

No adherence problems for Therapy has been added yet.

LAB TEST FOLLOW UPS

No Lab Test Follow Up has been added yet.

PROGRESS NOTES

No Note has been added yet.

# Appendix I

## M3 Letter to University Faculty

November 8, 2011

To University Faculty,

We congratulate you for choosing such ambitious and curious students as Mr. Miesner. M3 looks forward to working within your leading primary care practice to install this easy to use and powerful screen to facilitate detection and to monitor for mood and anxiety disorders. M3 is the only patient rated multidimensional screen for depression, anxiety bipolar disorder and PTSD that is cloud based and commences longitudinal monitoring.

We grant a license without charge to ETSU to conduct research under Miesner's dissertation. ETSU accepts the Terms and Conditions on the M3Clinician site and takes responsibility for all care, management and legal liability associated with care.

M3’s first hope is to facilitate the recognition of a person who may have bipolar disorder and help prevent that person from receiving a depression based protocol. M3 is sensitive to many important areas in Behavioral Health including suicidal ideation, sleep, alcohol, substance, family or work impairment.

We look forward to learning and sharing observations that result from this wonderful research.

Best,

Michael Byer

November 8, 2011

# Appendix J

## Assessment of Psychological Treatment in Primary Care

Instructions: Please complete the following questions to the best of your ability, so as to reflect your knowledge of detection of affective disorders when they present in your primary care office.

1. Having manic symptoms that are not psychotic in nature, or severe enough to impair functioning or require hospitalization, should suggest which disorder?
   A) Borderline Personality Disorder
   B) Bipolar Disorder II
   C) Major Depressive Disorder
   D) Bipolar Disorder I

2. To constitute a Major Depressive Episode symptom criteria must have been present for at least:
   A) 3 days
   B) 1 week
   C) 2 weeks
   D) 1 months

3. To be diagnosed as having Generalized Anxiety Disorder (GAD), symptom criteria must have been present more days than not for at least:
   A) 1 week
   B) 1 month
   C) 2 months
   D) 6 months

4. Patients who present with symptoms lasting over a month following exposure to a traumatic event wherein they persistently re-experience, attempt to avoid, situations associated with the trauma and which causes disturbance in sleep, and derealization or depersonalization is :
   A) Depersonalization Disorder
   B) Posttraumatic Stress Disorder2 weeks
   C) Substance Induced Anxiety Disorder
   D) Acute Stress Disorder

5. Which one of these is NOT a symptom of Major Depressive Disorder?
   A) Impulsivity or extreme cautiousness
   B) Insomnia
   C) Feelings of worthlessness or excessive guilt
   D) Psychomotor agitation or retardation

6. If an adult patient experiences depressed mood more days than not for at least two years, but the symptom criteria are never met for a Major Depressive Episode, this suggests which disorder?
   A) Cyclothymic Disorder
   B) Dysthymic Disorder
   C) Conversion Disorder
   D) Mood Disorder Not Otherwise Specified

7. Patients who develop anxiety symptoms as a result of abusing alcohol would be most appropriately diagnosed with:
   A) Posttraumatic Stress Disorder
   B) Adjustment Disorder with Anxiety
   C) Substance Induced Anxiety Disorder
   D) Wernicke-Korsakoff Syndrome

8. When patients present to primary care with __________, physicians should be alert to assess for _____________, as these two disorders have high comorbidity.
   A) Schizoaffective Disorder, Bipolar Disorder
   B) Panic Disorder, Borderline Personality Disorder
   C) Major Depressive Disorder, Generalized Anxiety Disorder
   D) Social Phobia, Attention-Deficit/Hyperactivity Disorder

9. The disorder in which people typically think intrusive thoughts excessively and perform repetitive behaviors to reduce associated anxiety is:
   A) Compulsive Thought Disorder
   B) Impulse-Control Disorder
   C) Attention-Deficit/Hyperactivity Disorder
   D) Obsessive Compulsive Disorder

10. Obsessive-Compulsive Disorder Symptoms including a significant change in weight, preoccupation with thoughts of death, difficulty concentrating, sleep disturbance, and fatigue best describe which disorder?
   A) Bipolar I Disorder
   B) Bipolar II Disorder
   C) Major Depressive Disorder
   D) Seasonal Affective Disorder

11. A patient who reports a persistently elevated mood, along with extreme increases in self-esteem, pressured speech with rapidly fluctuating thoughts/ideas, and distractibility, lasting at least a week, would be best diagnosed as:
   A) Bipolar I Disorder
   B) Hypomanic Episode
   C) Mixed Episode Disorder
   D) Cyclothymic Disorder

12. A patient who reports experiencing an event that was life threatening, which six months later results in intrusive thoughts, nightmares, distress, and attempts to avoid situations associated with the event, would most likely be diagnosed with:
    A) Histrionic Personality Disorder
    B) Schizoaffective Disorder
    C) Borderline Personality Disorder
    D) Posttraumatic Stress Disorder

13. Currently, what is the ideal treatment for Generalized Anxiety Disorder?
    A) Selective Serotonin Reuptake Inhibitors
    B) Combination of Psychotherapy and Selective Serotonin Reuptake Inhibitors
    C) Combination of Atypical Antipsychotics and Selective Serotonin Reuptake Inhibitors
    D) Benzodiazepines

14. Currently, what is the best long-term treatment for Panic Disorder?
    A) Cognitive Behavioral Therapy
    B) Selective Serotonin Reuptake Inhibitors
    C) Benzodiazepines
    D) Eye Movement Desensitization and Reprocessing Therapy

15. Currently, what is the ideal treatment for Bipolar I Disorder?
    A) Selective Serotonin Reuptake Inhibitors
    B) Combination of Mood Stabilizer Medications and Cognitive Behavior Therapy
    C) Combination of Lithium Carbonate and Relaxation Training
    D) Combination of Atypical Antipsychotics and Selective Serotonin Reuptake Inhibitors

16. Currently, what is the ideal treatment for Bipolar II Disorder?
    A) Selective Serotonin Reuptake Inhibitors
    B) Combination of Mood Stabilizer Medications and Cognitive Behavior Therapy
    C) Combination of Lithium Carbonate and Relaxation Training
    D) Combination of Atypical Antipsychotics and Selective Serotonin Reuptake Inhibitors

17. Currently, what is the best long-term treatment for Major Depressive Disorder?
    A) Selective Serotonin Reuptake Inhibitors
    B) Combination of Atypical Antipsychotics and Selective Serotonin Reuptake Inhibitors
    C) Combination of Lithium Carbonate and Relaxation Training
    D) Combination of Psychotherapy and Selective Serotonin Reuptake Inhibitors

18. Currently, what is the best long-term treatment for Post Traumatic Stress Disorder?
    A) Short-Term Intensive Inpatient Treatment Program
    B) Tricyclic Antidepresants and Eye Movement Desensitization and Reprocessing Therapy
    C) Cognitive Behavior Therapy With An Emphasis On Exposure Therapy
    D) Benzodiazepines And/Or Other Anxiolytic Medications

19. Sharon had always considered herself to be a “worrier,” but when she took a position as a bank teller she felt for the first time that her anxiety was really interfering with her life. Sharon felt tense most of the time that she was at work because she was worried she'd be caught in a bank robbery. When she wasn’t at work, Sharon worried that she would be mugged or that someone would hack into the bank's computers and drain her personal accounts. She also constantly worried that her aging mother would experience a stroke or a heart attack and be unable to call for help. Sharon worried so much that even when she was tired, it took hours for her to fall asleep because she would lie in bed ruminating about her financial security, her mother's health, or her own future. After beginning her job at the bank, Sharon began to experience painful tension headaches that made it difficult for her to concentrate and cause her to miss several days of work. Not surprisingly she became worried that she would be fired because of her absences. These concerns only increased her anxiety and contributed to more frequent headaches. Given this symptom profile, what is the diagnosis?
    A) Bipolar I Disorder
    B) Bipolar II Disorder
    C) Cyclothymic Disorder
    D) Dysthymic Disorder
    E) Generalized Anxiety Disorder
    F) Major Depressive Disorder
    G) Obsessive-Compulsive Disorder
    H) Panic Disorder
    I) Posttraumatic Stress Disorder
    J) Social Phobia/Social Anxiety Disorder
    K) Specific Phobia

20. A female accounting clerk began to have experiences of intense anxiety that seemed to come ‘out of the blue’. In one instance, she was so upset she felt she was forced to leave the restaurant where she and her husband were eating. The second time occurred while she and her husband were traveling. Her fear, anxiety, and heart palpitations, became overwhelming. The fear she experienced was so intense that she begged her husband to pull off to the side of the road. She said the symptoms were so bad that, "I felt like I was going to die." She began to fear that these episodes would continue to happen and that she wouldn’t know what to do to make them stop. Thus, she started to avoid situations from which escape would be difficult or embarrassing. Given this symptom profile, what is the most appropriate diagnosis?
    A) Bipolar I Disorder
    B) Bipolar II Disorder
    C) Cyclothymic Disorder
    D) Dysthymic Disorder
    E) Generalized Anxiety Disorder
    F) Major Depressive Disorder
    G) Obsessive-Compulsive Disorder
    H) Panic Disorder
    I) Posttraumatic Stress Disorder

J) Social Phobia/Social Anxiety Disorder
K) Specific Phobia

## Appendix K

## Physician Demographic Questionnaire

Code #_____________

1.What is your medical degree? (M.D. or D.O.)
O M.D.
O D.O.

2.What is your gender?
O Male
O Female

3.How many years have you been practicing?

4.Are you a faculty member, a PGY1, PGY2, or PGY3?
O PGY 1
O PGY 2
O PGY 3
O Faculty

5. As a physician, how important is it to you to detect and appropriately treat psychological disorders?

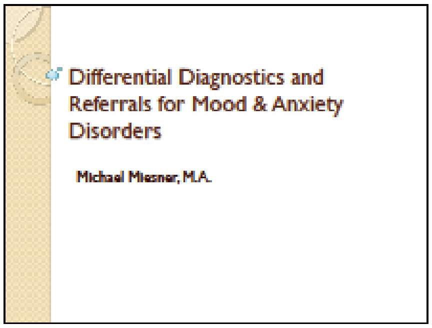
| **Not Important (1)** | **Slightly Important (2)** | **Moderately Important (3)** | **Very Important (4)** | **Extremely Important (5)** |
|---|---|---|---|---|
| O | O | O | O | O |

6. As a physician, how confident do you feel about your ability to detect and appropriately refer patients for treatment of psychological disorders?

| **Not Confident (1)** | **Slightly Confident (2)** | **Moderately Confident (3)** | **Very Confident (4)** | **Extremely Confident (5)** |
|---|---|---|---|---|
| O | O | O | O | O |

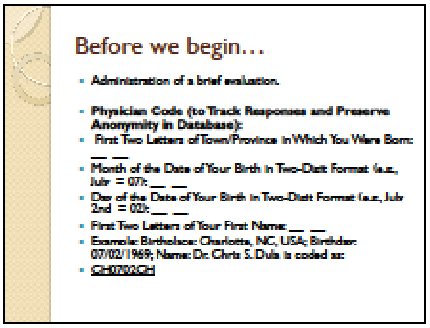
# Appendix L

## Noon Conference I Slides (*Note: date is for image creation, not presentation delivery*)



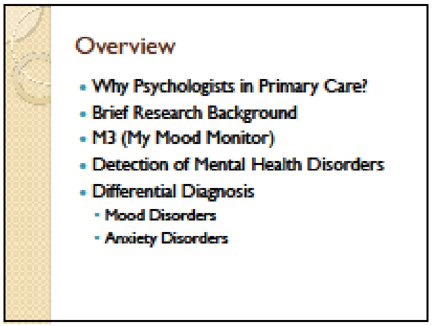
### Differential Diagnostics and Referrals for Mood & Anxiety Disorders

Michael Miesner, M.A.



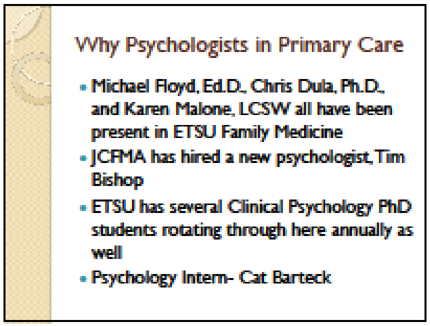
### Before we begin…

- Administration of a brief evaluation.
- **Physician Code (to Track Responses and Preserve Anonymity in Database):**
- First Two Letters of Town/Province in Which You Were Born: __ __
- Month of the Date of Your Birth in Two-Digit Format (e.g., July = 07): __ __
- Day of the Date of Your Birth in Two-Digit Format (e.g., July 2nd = 02): __ __
- First Two Letters of Your First Name: __ __
- Example: Birthplace: Charlotte, NC, USA; Birthday: 07/02/1969; Name: Dr. Chris S. Dula is coded as:
- CH0702CH



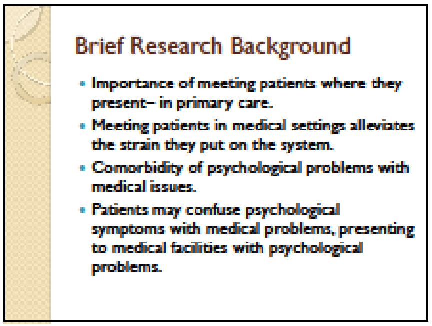
### Overview

- Why Psychologists in Primary Care?
- Brief Research Background
- M3 (My Mood Monitor)
- Detection of Mental Health Disorders
- Differential Diagnosis
  - Mood Disorders
  - Anxiety Disorders



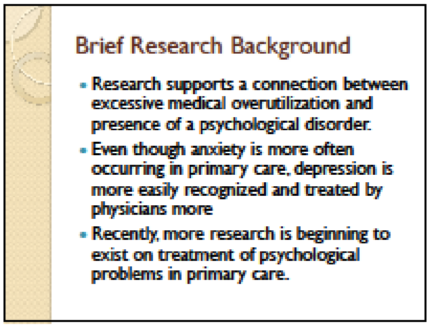
### Why Psychologists in Primary Care

- Michael Floyd, Ed.D., Chris Dula, Ph.D., and Karen Malone, LCSW all have been present in ETSU Family Medicine
- JCFMA has hired a new psychologist, Tim Bishop
- ETSU has several Clinical Psychology PhD students rotating through here annually as well
- Psychology Intern- Cat Barteck



### Brief Research Background

- Importance of meeting patients where they present– in primary care.
- Meeting patients in medical settings alleviates the strain they put on the system.
- Comorbidity of psychological problems with medical issues.
- Patients may confuse psychological symptoms with medical problems, presenting to medical facilities with psychological problems.

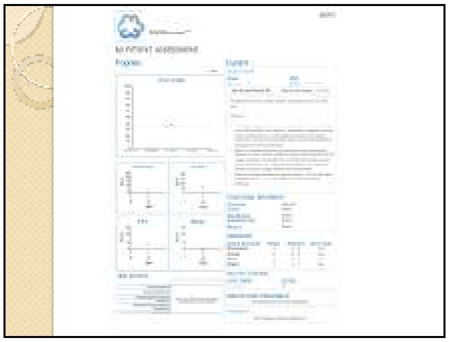


### Brief Research Background

- Research supports a connection between excessive medical overutilization and presence of a psychological disorder.
- Even though anxiety is more often occurring in primary care, depression is more easily recognized and treated by physicians more
- Recently, more research is beginning to exist on treatment of psychological problems in primary care.

## My Mood Monitor (M3)

- Developed recently (2010) at UNC Family Medicine
- It's a 27 item multiple choice questionnaire administered several ways. Here, we're administering it on an iPad.
- The M3 is a screener for anxiety, bipolar, and depressive disorders.
- Excellent reliability and validity- comparable to gold standard screeners in primary care.



## Referral Question

- How would you prefer to be referred to mental health professionals, if such services are desired/recommended?
- A) I would prefer the physician and the mental health specialist be in the room together to talk with me on the same day as my visit with my physician.
- B) I would prefer the mental health specialist be given my phone number and call me.
- C) Give my number to the mental health professional.

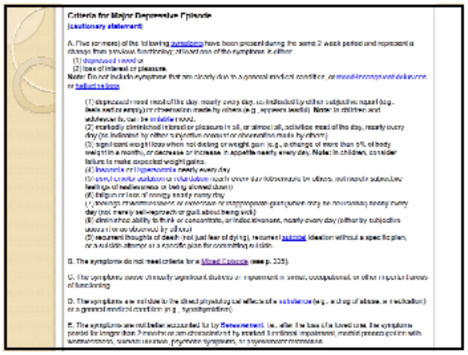
## Detection of Mental Health Disorders

- 3 components- Pt History, Open ended questions, and M3 (if available) or other screener
- Relationship/rapport with the client

## Differential Diagnosis of Mood Disorders

## Differential Diagnosis-Major Depressive Episode

- An overview of episodes versus disorders in APA terms
- What is required to meet criteria for a Major Depressive Episode?
- Timeframe is important– 2 weeks!



**Criteria for Major Depressive Episode**

(cautionary statement)

A. Five (or more) of the following symptoms have been present during the same 2-week period and represent a change from previous functioning; at least one of the symptoms is either

(1) depressed mood or

(2) loss of interest or pleasure.

(4) insomnia or hypersomnia nearly every day

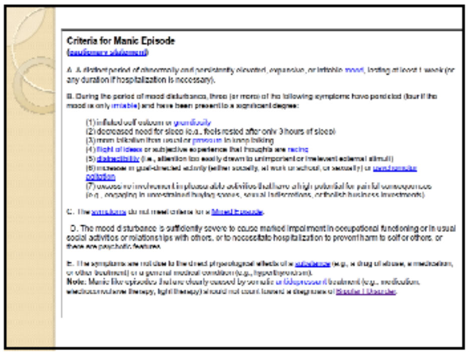
B. The symptoms do not meet criteria for a Mixed Episode (see p. 335).

## A SAD FACES:

- Appetite, weight changes
- Sleep changes
- Anhedonia (not experiencing pleasure)
- Dysphoria (low mood)
- Fatigue
- Agitation (psychomotor)
- Concentration
- Esteem
- Suicide

## Manic Episode

- Manic episodes can be difficult to diagnose, and this is largely predicated on understanding mania.
- NOT simply talking too quickly, or just being excited or having high self esteem
- Very important to consider these things relatively.
- Examples of mania.



**Criteria for Manic Episode**

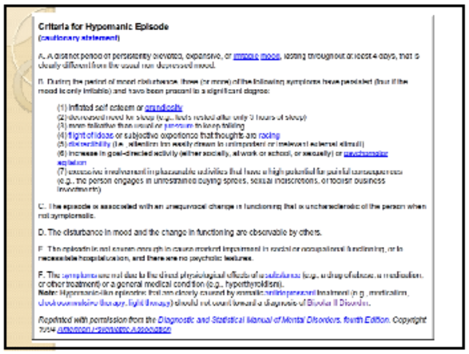
(cautionary statement)

(2) decreased need for sleep (e.g., feels rested after only 3 hours of sleep)

D. The mood disturbance is sufficiently severe to cause marked impairment in occupational functioning or in usual social activities or relationships with others, or to necessitate hospitalization to prevent harm to self or others, or there are psychotic features.

## Hypomanic Episode

- Nearly same criteria as manic episode, so relatively easy to understand
- Different duration
- Only 3 mania symptoms necessary
- Severity is different



**Criteria for Hypomanic Episode**

(cautionary statement)

(1) inflated self esteem or grandiosity

(4) flight of ideas or subjective experience that thoughts are racing

D. The disturbance in mood and the change in functioning are observable by others.

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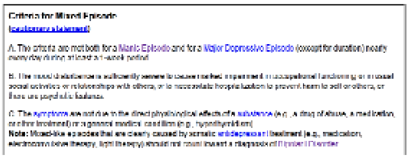
## Mixed Episode

- Relatively easy to understand.
- Patients must meet all criteria for depressive and manic episode, but in a one week time frame.



**Criteria for Mixed Episode**

(cautionary statement)

A. The criteria are met both for a Manic Episode and for a Major Depressive Episode (except for duration) nearly every day during at least a 1-week period.

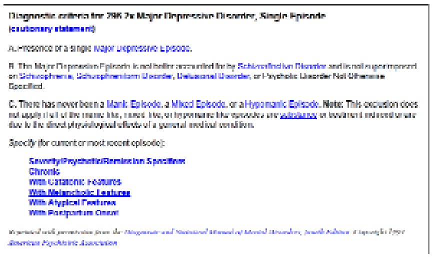
B. [illegible]

C. [illegible]

**Note:** [illegible]

## Major Depressive Disorder

- Major Depressive Disorder is much easier to understand, now that we understand MDE
- Types of detection errors with MDD
- "Rule outs" are very important since depression is commonly mislabeled.



**Diagnostic criteria for 296.2x Major Depressive Disorder, Single Episode**

(cautionary statement)

A. Presence of a single Major Depressive Episode.

B. [illegible]

C. There has never been a Manic Episode, a Mixed Episode, or a Hypomanic Episode. **Note:** This exclusion does [illegible]

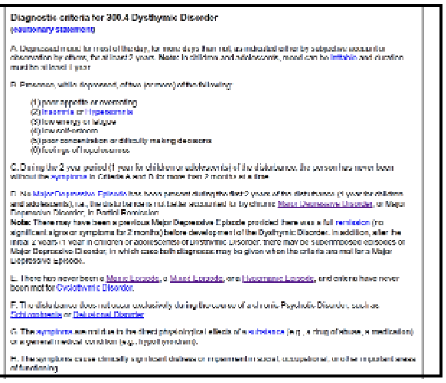
*Specify* (for current or most recent episode):

Severity/Psychotic/Remission Specifiers
Chronic
With Catatonic Features
With Melancholic Features
With Atypical Features
With Postpartum Onset

*[illegible] Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition. [illegible] American Psychiatric Association*

## Dysthymic Disorder

- Patients who are always "down" but never meet the full criteria for MDD may actually have Dysthymic Disorder.
- Present for 2 years for adults
- Present for 1 year for children



**Diagnostic criteria for 300.4 Dysthymic Disorder**

(cautionary statement)

A. [illegible]

B. Presence, while depressed, of two (or more) of the following:

(1) poor appetite or overeating
(2) insomnia or hypersomnia
(3) low energy or fatigue
(4) low self-esteem
(5) poor concentration or difficulty making decisions
(6) feelings of hopelessness

C. [illegible]

D. [illegible]

**Note:** [illegible]

E. There has never been a Manic Episode, a Mixed Episode, or a Hypomanic Episode, and criteria have never been met for Cyclothymic Disorder.

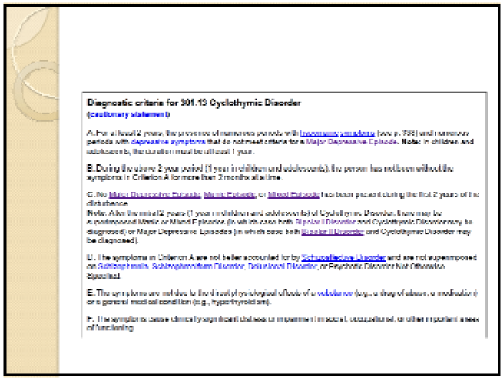
F. The disturbance does not occur exclusively during the course of a chronic Psychotic Disorder, such as Schizophrenia or Delusional Disorder.

G. [illegible]

H. [illegible]

## Cyclothymic Disorder

- Essential feature is chronic fluctuation of mood
- Must include hypomanic symptoms but not meet criteria for hypomanic episode



**Diagnostic criteria for 301.13 Cyclothymic Disorder**
(cautionary statement)

A. For at least 2 years, the presence of numerous periods with hypomanic symptoms (see p. 335) and numerous periods with depressive symptoms that do not meet criteria for a Major Depressive Episode. **Note:** In children and adolescents, the duration must be at least 1 year.

B. During the above 2-year period (1 year in children and adolescents), the person has not been without the symptoms in Criterion A for more than 2 months at a time.

C. No Major Depressive Episode, Manic Episode, or Mixed Episode has been present during the first 2 years of the disturbance.
Note: After the initial 2 years (1 year in children and adolescents) of Cyclothymic Disorder, there may be superimposed Manic or Mixed Episodes (in which case both Bipolar I Disorder and Cyclothymic Disorder may be diagnosed) or Major Depressive Episodes (in which case both Bipolar II Disorder and Cyclothymic Disorder may be diagnosed).

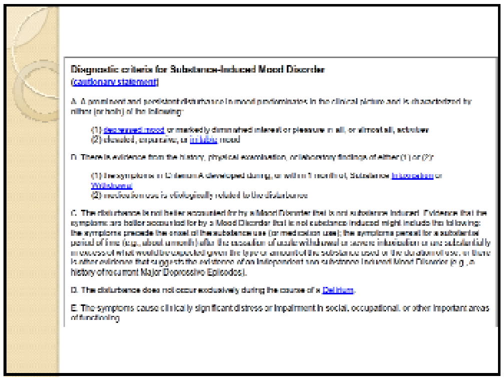
D. The symptoms in Criterion A are not better accounted for by Schizoaffective Disorder and are not superimposed on Schizophrenia, Schizophreniform Disorder, Delusional Disorder, or Psychotic Disorder Not Otherwise Specified.

E. The symptoms are not due to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or a general medical condition (e.g., hyperthyroidism).

F. The symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.

## Substance Induced Mood Disorder

- Essential feature is prominent and persistent disturbance in mood
- Needs to be judged to be from direct physiological effects of a substance
- 2 main "rule outs"- mood disorder & substance intoxication



**Diagnostic criteria for Substance-Induced Mood Disorder**
(cautionary statement)

A. A prominent and persistent disturbance in mood predominates in the clinical picture and is characterized by either (or both) of the following:

(1) depressed mood or markedly diminished interest or pleasure in all, or almost all, activities
(2) elevated, expansive, or irritable mood

B. There is evidence from the history, physical examination, or laboratory findings of either (1) or (2):

(1) the symptoms in Criterion A developed during, or within 1 month of, Substance Intoxication or Withdrawal
(2) medication use is etiologically related to the disturbance

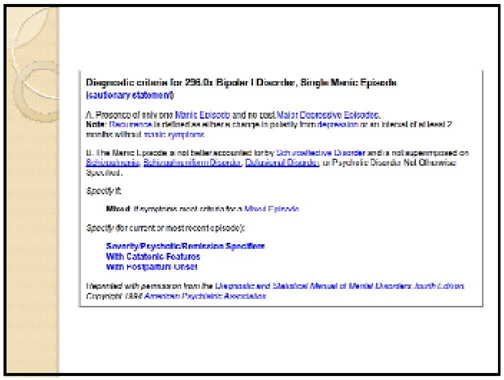
C. The disturbance is not better accounted for by a Mood Disorder that is not substance induced. Evidence that the symptoms are better accounted for by a Mood Disorder that is not substance induced might include the following: the symptoms precede the onset of the substance use (or medication use); the symptoms persist for a substantial period of time (e.g., about a month) after the cessation of acute withdrawal or severe intoxication or are substantially in excess of what would be expected given the type or amount of the substance used or the duration of use; or there is other evidence that suggests the existence of an independent non-substance-induced Mood Disorder (e.g., a history of recurrent Major Depressive Episodes).

D. The disturbance does not occur exclusively during the course of a Delirium.

E. The symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.

## Bipolar I Disorder

- Essential feature is mania, or presence of a manic episode.
- Oftentimes Major Depressive Episode present as well.
- Difficult differential diagnosis due to mania potentially appearing like a psychotic episode.



**Diagnostic criteria for 296.0x Bipolar I Disorder, Single Manic Episode**
(cautionary statement)

A. Presence of only one Manic Episode and no past Major Depressive Episodes.
**Note:** Recurrence is defined as either a change in polarity from depression or an interval of at least 2 months without manic symptoms.

B. The Manic Episode is not better accounted for by Schizoaffective Disorder and is not superimposed on Schizophrenia, Schizophreniform Disorder, Delusional Disorder, or Psychotic Disorder Not Otherwise Specified.

*Specify* if:

**Mixed:** if symptoms meet criteria for a Mixed Episode

*Specify* (for current or most recent episode):

**Severity/Psychotic/Remission Specifiers**
**With Catatonic Features**
**With Postpartum Onset**

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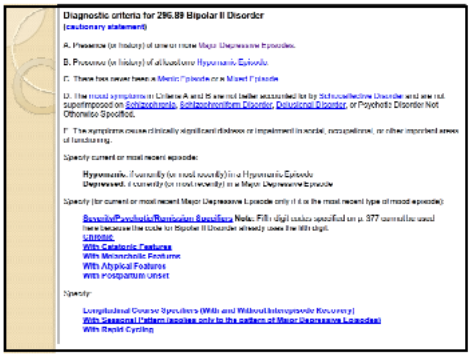
## Bipolar II Disorder

- One or more Major Depressive Episodes accompanied by at least one hypomanic episode.
- It is important that a hypomanic episode not be confused with several days of euthymia following remission of depressive episode.
- Community prevalence of Bipolar II disorder is approximately 0.5%.



**Diagnostic criteria for 296.89 Bipolar II Disorder**
(cautionary statement)

A. Presence (or history) of one or more Major Depressive Episodes.

B. Presence (or history) of at least one Hypomanic Episode.

C. There has never been a Manic Episode or a Mixed Episode.

D. The mood symptoms in Criteria A and B are not better accounted for by Schizoaffective Disorder and are not superimposed on Schizophrenia, Schizophreniform Disorder, Delusional Disorder, or Psychotic Disorder Not Otherwise Specified.

E. The symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.

Specify current or most recent episode:

**Hypomanic:** if currently (or most recently) in a Hypomanic Episode
**Depressed:** if currently (or most recently) in a Major Depressive Episode

Specify (for current or most recent Major Depressive Episode only if it is the most recent type of mood episode):

Severity/Psychotic/Remission Specifiers **Note:** Fifth-digit codes specified on p. 377 cannot be used here because the code for Bipolar II Disorder already uses the fifth digit.
Chronic
With Catatonic Features
With Melancholic Features
With Atypical Features
With Postpartum Onset

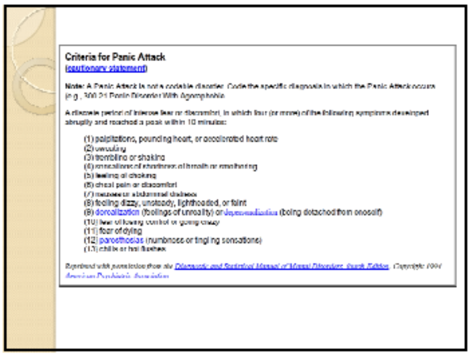
Specify:

Longitudinal Course Specifiers (With and Without Interepisode Recovery)
With Seasonal Pattern (applies only to the pattern of Major Depressive Episodes)
With Rapid Cycling

## Differential Diagnosis of Anxiety Disorders

## Panic Attack

- An experience lasting minutes that can include palpations, sweating, trembling, shaking, shortness of breath, choking
- Note that a panic attack is not codeable. It is one of the criteria of panic disorder.
- Panic Disorder presents with or without Agoraphobia.
- Note that many patients who are having panic attacks may confuse these with heart attacks



**Criteria for Panic Attack**
(cautionary statement)

**Note:** A Panic Attack is not a codable disorder. Code the specific diagnosis in which the Panic Attack occurs (e.g., 300.21 Panic Disorder With Agoraphobia).

A discrete period of intense fear or discomfort, in which four (or more) of the following symptoms developed abruptly and reached a peak within 10 minutes:

(1) palpitations, pounding heart, or accelerated heart rate
(2) sweating
(3) trembling or shaking
(4) sensations of shortness of breath or smothering
(5) feeling of choking
(6) chest pain or discomfort
(7) nausea or abdominal distress
(8) feeling dizzy, unsteady, lightheaded, or faint
(9) derealization (feelings of unreality) or depersonalization (being detached from oneself)
(10) fear of losing control or going crazy
(11) fear of dying
(12) paresthesias (numbness or tingling sensations)
(13) chills or hot flushes

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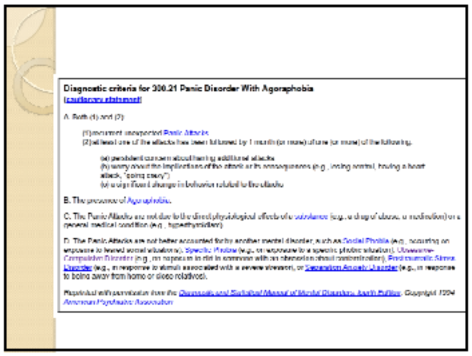

**Diagnostic criteria for 300.21 Panic Disorder With Agoraphobia**
(cautionary statement)

A. Both (1) and (2):

(1) recurrent unexpected Panic Attacks
(2) at least one of the attacks has been followed by 1 month (or more) of one (or more) of the following:

(a) persistent concern about having additional attacks
(b) worry about the implications of the attack or its consequences (e.g., losing control, having a heart attack, "going crazy")
(c) a significant change in behavior related to the attacks

B. The presence of Agoraphobia.

C. The Panic Attacks are not due to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or a general medical condition (e.g., hyperthyroidism).

D. The Panic Attacks are not better accounted for by another mental disorder, such as Social Phobia (e.g., occurring on exposure to feared social situations), Specific Phobia (e.g., on exposure to a specific phobic situation), Obsessive-Compulsive Disorder (e.g., on exposure to dirt in someone with an obsession about contamination), Posttraumatic Stress Disorder (e.g., in response to stimuli associated with a severe stressor), or Separation Anxiety Disorder (e.g., in response to being away from home or close relatives).

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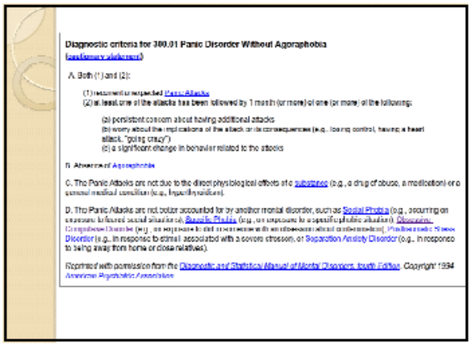

**Diagnostic criteria for 300.01 Panic Disorder Without Agoraphobia**
(cautionary statement)

A. Both (1) and (2):

(1) recurrent unexpected Panic Attacks
(2) at least one of the attacks has been followed by 1 month (or more) of one (or more) of the following:

(a) persistent concern about having additional attacks
(b) worry about the implications of the attack or its consequences (e.g., losing control, having a heart attack, "going crazy")
(c) a significant change in behavior related to the attacks

B. Absence of Agoraphobia

C. The Panic Attacks are not due to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or a general medical condition (e.g., hyperthyroidism).

D. The Panic Attacks are not better accounted for by another mental disorder, such as Social Phobia (e.g., occurring on exposure to feared social situations), Specific Phobia (e.g., on exposure to a specific phobic situation), Obsessive-Compulsive Disorder (e.g., on exposure to dirt in someone with an obsession about contamination), Posttraumatic Stress Disorder (e.g., in response to stimuli associated with a severe stressor), or Separation Anxiety Disorder (e.g., in response to being away from home or close relatives).

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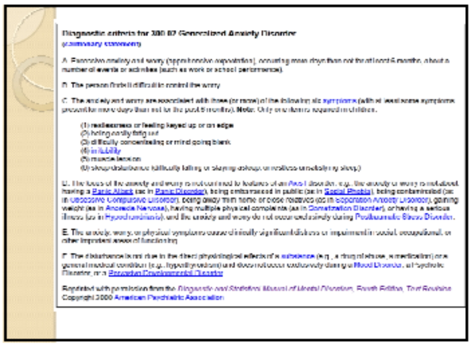
## Generalized Anxiety Disorder

- Generalized Anxiety Disorder is characterized by excessive anxiety and worry, persisting over a 6 month period.
- Patients with GAD tend to find it difficult to control their worry, restlessness, and fear.
- Differential diagnosis is mostly with other anxiety disorders, though they may also be comorbid.



**Diagnostic criteria for 300.02 Generalized Anxiety Disorder**
(cautionary statement)

A. Excessive anxiety and worry (apprehensive expectation), occurring more days than not for at least 6 months, about a number of events or activities (such as work or school performance).

B. The person finds it difficult to control the worry.

C. The anxiety and worry are associated with three (or more) of the following six symptoms (with at least some symptoms present for more days than not for the past 6 months). **Note:** Only one item is required in children.

(1) restlessness or feeling keyed up or on edge
(2) being easily fatigued
(3) difficulty concentrating or mind going blank
(4) irritability
(5) muscle tension
(6) sleep disturbance (difficulty falling or staying asleep, or restless unsatisfying sleep)

D. The focus of the anxiety and worry is not confined to features of an Axis I disorder, e.g., the anxiety or worry is not about having a Panic Attack (as in Panic Disorder), being embarrassed in public (as in Social Phobia), being contaminated (as in Obsessive-Compulsive Disorder), being away from home or close relatives (as in Separation Anxiety Disorder), gaining weight (as in Anorexia Nervosa), having multiple physical complaints (as in Somatization Disorder), or having a serious illness (as in Hypochondriasis), and the anxiety and worry do not occur exclusively during Posttraumatic Stress Disorder.

E. The anxiety, worry, or physical symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.

F. The disturbance is not due to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or a general medical condition (e.g., hyperthyroidism) and does not occur exclusively during a Mood Disorder, a Psychotic Disorder, or a Pervasive Developmental Disorder.

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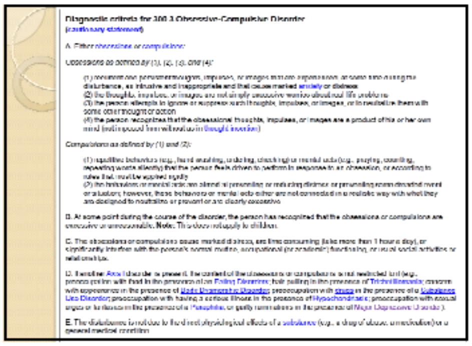
## Obsessive Compulsive Disorder

- Detection of OCD is oftentimes not difficult, and differential diagnosis is typically straightforward.
- Obsessions are intrusive, recurrent, and persistent thoughts
- Compulsions are repetitive behaviors the person feels driven to perform in response to obsessions.



**Diagnostic criteria for 300.3 Obsessive-Compulsive Disorder**
(cautionary statement)

A. Either *obsessions or compulsions:*

*Obsessions as defined by (1), (2), (3), and (4):*

(1) recurrent and persistent thoughts, impulses, or images that are experienced, at some time during the disturbance, as intrusive and inappropriate and that cause marked anxiety or distress
(2) the thoughts, impulses, or images are not simply excessive worries about real-life problems
(3) the person attempts to ignore or suppress such thoughts, impulses, or images, or to neutralize them with some other thought or action
(4) the person recognizes that the obsessional thoughts, impulses, or images are a product of his or her own mind (not imposed from without as in thought insertion)

*Compulsions as defined by (1) and (2):*

(1) repetitive behaviors (e.g., hand washing, ordering, checking) or mental acts (e.g., praying, counting, repeating words silently) that the person feels driven to perform in response to an obsession, or according to rules that must be applied rigidly
(2) the behaviors or mental acts are aimed at preventing or reducing distress or preventing some dreaded event or situation; however, these behaviors or mental acts either are not connected in a realistic way with what they are designed to neutralize or prevent or are clearly excessive

B. At some point during the course of the disorder, the person has recognized that the obsessions or compulsions are excessive or unreasonable. **Note:** This does not apply to children.

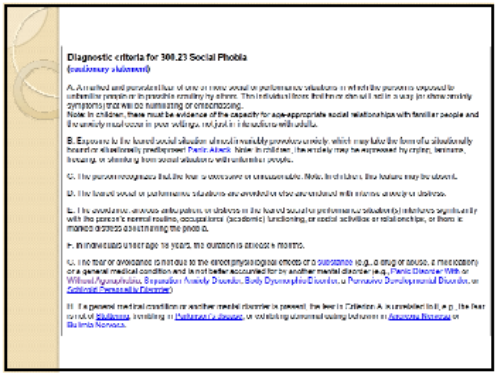
C. The obsessions or compulsions cause marked distress, are time consuming (take more than 1 hour a day), or significantly interfere with the person's normal routine, occupational (or academic) functioning, or usual social activities or relationships.

D. If another Axis I disorder is present, the content of the obsessions or compulsions is not restricted to it (e.g., preoccupation with food in the presence of an Eating Disorder; hair pulling in the presence of Trichotillomania; concern with appearance in the presence of Body Dysmorphic Disorder; preoccupation with drugs in the presence of a Substance Use Disorder; preoccupation with having a serious illness in the presence of Hypochondriasis; preoccupation with sexual urges or fantasies in the presence of a Paraphilia; or guilty ruminations in the presence of Major Depressive Disorder).

E. The disturbance is not due to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or a general medical condition.

## Social Phobia

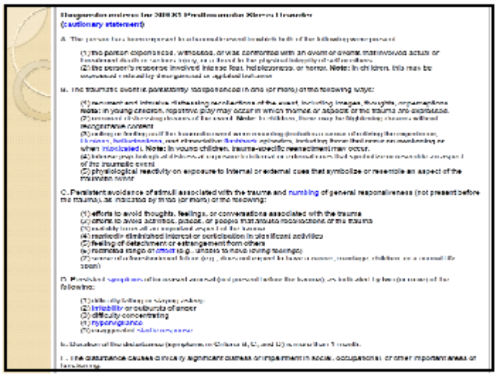
- Pretty straightforward: persistent and marked fear of one or more social/performance situations.
- Underlying fear is scrutiny by others
- The prevalence in the community samples has ranged from 3-13%.



Diagnostic criteria for 300.23 Social Phobia
(cautionary statement)

## Post Traumatic Stress Disorder

- Anxiety disorder that develops in response to exposure of a stressful or distressing event.
- These symptoms include recurrent and intrusive distressing recollections of the event, including images, thoughts, or perceptions.
- Prevalence is approximately 8% in community samples.



(cautionary statement)

## Referral to Mental Health

- Remember the referral question up above?
- “Warm Handoff”
- Who to refer to in Family Medicine?
- “Behavioral Health Consultant”

## Before we end…

- Administration of a brief evaluation.
- **Physician Code (to Track Responses and Preserve Anonymity in Database):**
- First Two Letters of Town/Province in Which You Were Born: __ __
- Month of the Date of Your Birth in Two-Digit Format (e.g., July = 07): __ __
- Day of the Date of Your Birth in Two-Digit Format (e.g., July 2nd = 02): __ __
- First Two Letters of Your First Name: __ __
- Example: Birthplace: Charlotte, NC, USA; Birthday: 07/02/1969; Name: Dr. Chris S. Dula is coded as:
- CH0702CH

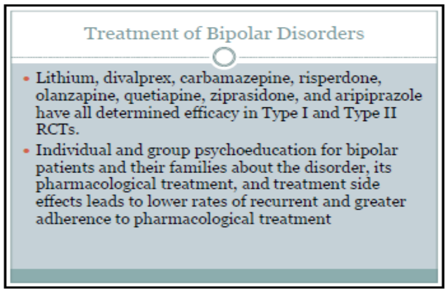
## Acknowledgements

- Thanks to Drs. Chris Dula, Ph.D. ,and Michael Floyd, Ed.D, for their guidance.
- Thanks to Michael Byer and M3 Information, LLC
- Thanks to very hard working research assistants from Dr Chris Dula’s Applied Psychology Lab.

للاستشارات المنارة

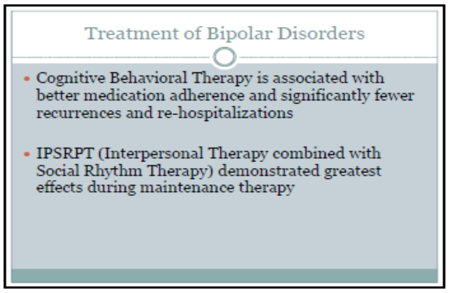
Appendix M

Noon Conference II Slides (*Note: date is for image creation, not presentation delivery*)



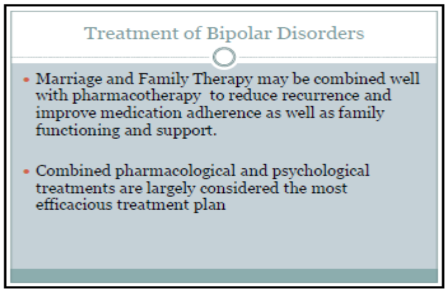
### Treatment of Bipolar Disorders

- Lithium, divalprex, carbamazepine, risperdone, olanzapine, quetiapine, ziprasidone, and aripiprazole have all determined efficacy in Type I and Type II RCTs.
- Individual and group psychoeducation for bipolar patients and their families about the disorder, its pharmacological treatment, and treatment side effects leads to lower rates of recurrent and greater adherence to pharmacological treatment



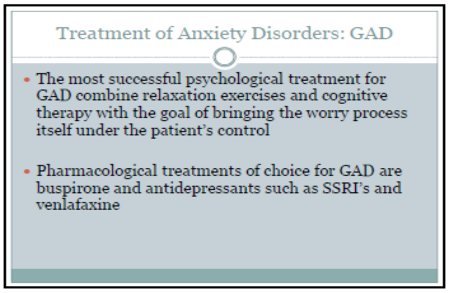
### Treatment of Bipolar Disorders

- Cognitive Behavioral Therapy is associated with better medication adherence and significantly fewer recurrences and re-hospitalizations
- IPSRPT (Interpersonal Therapy combined with Social Rhythm Therapy) demonstrated greatest effects during maintenance therapy



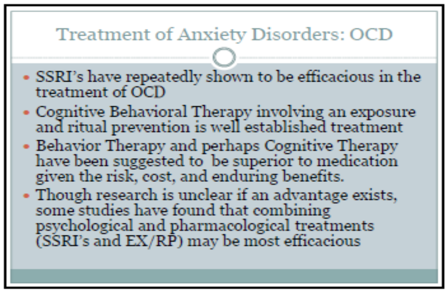
### Treatment of Bipolar Disorders

- Marriage and Family Therapy may be combined well with pharmacotherapy to reduce recurrence and improve medication adherence as well as family functioning and support.
- Combined pharmacological and psychological treatments are largely considered the most efficacious treatment plan



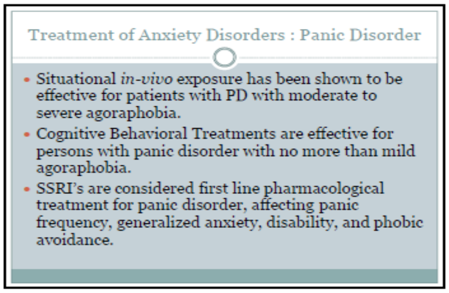
### Treatment of Anxiety Disorders: GAD

- The most successful psychological treatment for GAD combine relaxation exercises and cognitive therapy with the goal of bringing the worry process itself under the patient's control
- Pharmacological treatments of choice for GAD are buspirone and antidepressants such as SSRI's and venlafaxine



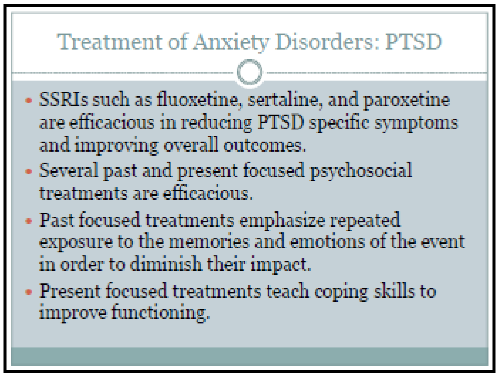
### Treatment of Anxiety Disorders: OCD

- SSRI's have repeatedly shown to be efficacious in the treatment of OCD
- Cognitive Behavioral Therapy involving an exposure and ritual prevention is well established treatment
- Behavior Therapy and perhaps Cognitive Therapy have been suggested to be superior to medication given the risk, cost, and enduring benefits.
- Though research is unclear if an advantage exists, some studies have found that combining psychological and pharmacological treatments (SSRI's and EX/RP) may be most efficacious



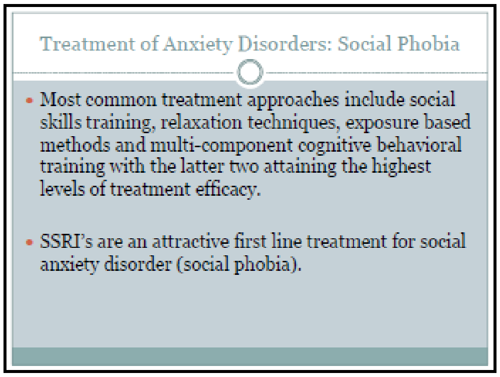
### Treatment of Anxiety Disorders : Panic Disorder

- Situational *in-vivo* exposure has been shown to be effective for patients with PD with moderate to severe agoraphobia.
- Cognitive Behavioral Treatments are effective for persons with panic disorder with no more than mild agoraphobia.
- SSRI's are considered first line pharmacological treatment for panic disorder, affecting panic frequency, generalized anxiety, disability, and phobic avoidance.



## Treatment of Anxiety Disorders: PTSD

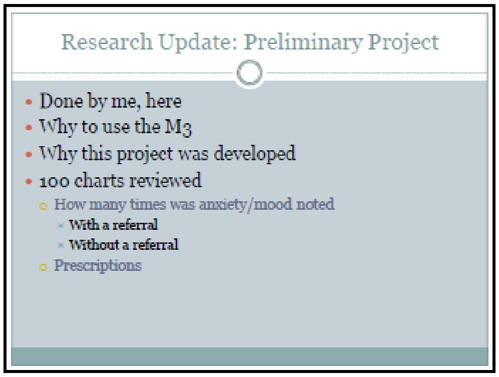
- SSRIs such as fluoxetine, sertaline, and paroxetine are efficacious in reducing PTSD specific symptoms and improving overall outcomes.
- Several past and present focused psychosocial treatments are efficacious.
- Past focused treatments emphasize repeated exposure to the memories and emotions of the event in order to diminish their impact.
- Present focused treatments teach coping skills to improve functioning.



## Treatment of Anxiety Disorders: Social Phobia

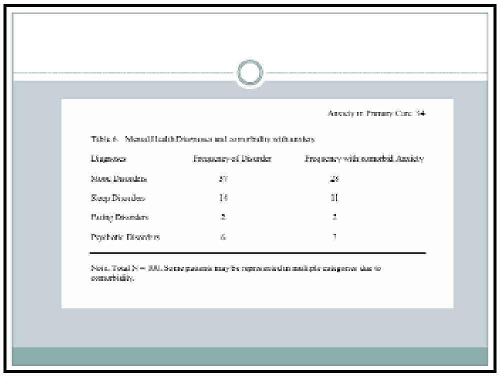
- Most common treatment approaches include social skills training, relaxation techniques, exposure based methods and multi-component cognitive behavioral training with the latter two attaining the highest levels of treatment efficacy.

- SSRI's are an attractive first line treatment for social anxiety disorder (social phobia).



## Research Update: Preliminary Project

- Done by me, here
- Why to use the M3
- Why this project was developed
- 100 charts reviewed
  - How many times was anxiety/mood noted
    - With a referral
    - Without a referral
  - Prescriptions



Anxiety in Primary Care 54

Table 6. Mental Health Diagnoses and comorbidity with anxiety

| Diagnoses | Frequency of Disorder | Frequency with comorbid Anxiety |
|---|---|---|
| Mood Disorders | 37 | 23 |
| Sleep Disorders | 14 | 11 |
| Eating Disorders | 2 | 2 |
| Psychotic Disorders | 6 | 3 |

Note. Total N = 100. Some patients may be represented in multiple categories due to comorbidity.

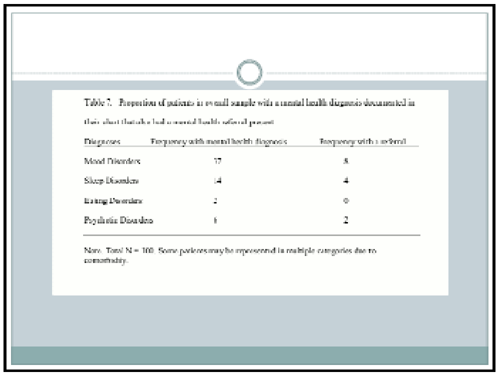
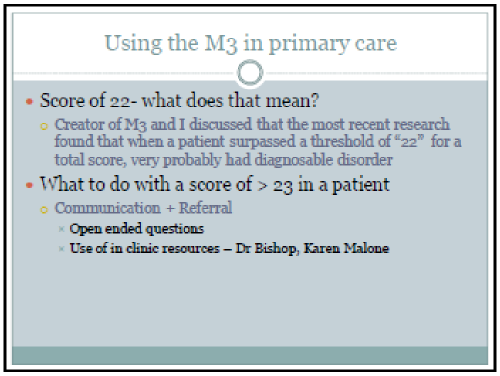


Table 7. Proportion of patients in overall sample with a mental health diagnosis documented in their chart that also had a mental health referral present

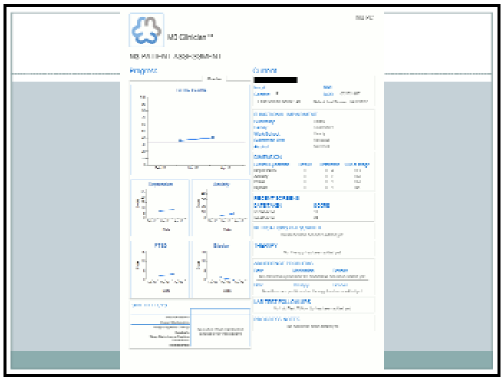
| Diagnoses | Frequency with mental health diagnosis | Frequency with a referral |
|---|---|---|
| Mood Disorders | 37 | 8 |
| Sleep Disorders | 14 | 4 |
| Eating Disorders | 2 | 0 |
| Psychotic Disorders | 6 | 2 |

Note. Total N = 100. Some patients may be represented in multiple categories due to comorbidity.

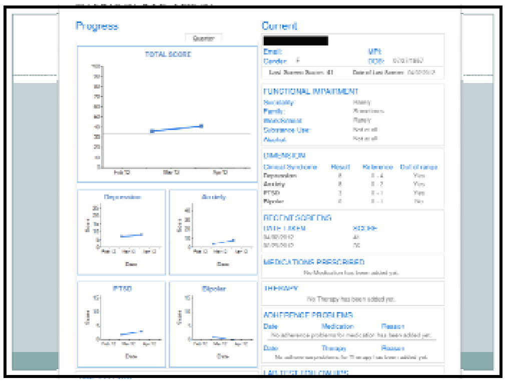


## Using the M3 in primary care

- Score of 22- what does that mean?
  - Creator of M3 and I discussed that the most recent research found that when a patient surpassed a threshold of "22" for a total score, very probably had diagnosable disorder
- What to do with a score of > 23 in a patient
  - Communication + Referral
    - Open ended questions
    - Use of in clinic resources – Dr Bishop, Karen Malone


M3 Clinician™
Progress
Current

[redacted]


Progress
Quarter
TOTAL SCORE
Feb '12
Mar '12
Apr '12
Depression
Anxiety
PTSD
Bipolar
Score
Date
Current
Email:
MR:
Gender: F
DOB:
FUNCTIONAL IMPAIRMENT
Sociability
Family
Work/School
Substance Use
Alcohol
DIMENSION
Clinical Syndrome
Result
Reference
Out of range
RECENT SCREENING
DATE TAKEN
SCORE
MEDICATIONS PRESCRIBED
THERAPY
No Therapy has been added yet.
ADHERENCE PROBLEMS
Date
Medication
Reason
Therapy

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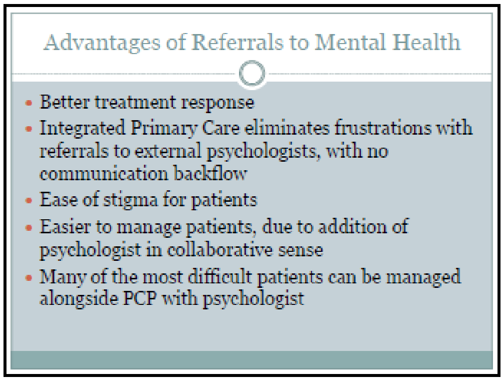
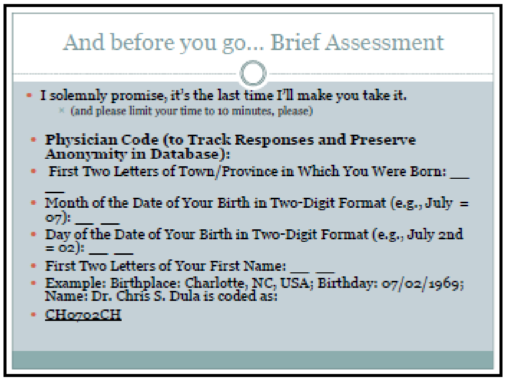


## Advantages of Referrals to Mental Health

- Better treatment response
- Integrated Primary Care eliminates frustrations with referrals to external psychologists, with no communication backflow
- Ease of stigma for patients
- Easier to manage patients, due to addition of psychologist in collaborative sense
- Many of the most difficult patients can be managed alongside PCP with psychologist



## And before you go… Brief Assessment

- I solemnly promise, it's the last time I'll make you take it.
  - (and please limit your time to 10 minutes, please)
- **Physician Code (to Track Responses and Preserve Anonymity in Database):**
- First Two Letters of Town/Province in Which You Were Born: __ __
- Month of the Date of Your Birth in Two-Digit Format (e.g., July = 07): __ __
- Day of the Date of Your Birth in Two-Digit Format (e.g., July 2nd = 02): __ __
- First Two Letters of Your First Name: __ __
- Example: Birthplace: Charlotte, NC, USA; Birthday: 07/02/1969; Name: Dr. Chris S. Dula is coded as:
- CH0702CH

# VITA

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Dula, C.S.,Adams C.L., **Miesner, M.T.**, & Leonard, R. L. (2010). Examining relationships between anxiety and dangerous driving. *Accident Analysis and Prevention, 42(6)*, 2050-2056.

Anshel, M.H., Kang, M., & **Miesner, M.T.** (2010). The approach-avoidance framework for identifying athletes coping style as a function of gender and race. *Scandinavian Journal of Psychology*, *51*, 341-349

**Miesner, M.T,** & Maki, R.H. Test anxiety, test format, and performance prediction. (2007). *European Journal of Cognitive Psychology*. *19*, 650-670.