# Detecting Posttraumatic Stress Disorder in Rural Primary Care: A Quality Improvement Project

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## Author Note

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**Abstract**

**Introduction:** Screening for posttraumatic stress disorder (PTSD) in high-risk patients can help identify patients who may require further intervention. Primary care clinics do not regularly screen patients for PTSD. This quality improvement project integrated the Primary Care PTSD Screen (PC-PTSD) into primary care office visits with adults who scored ≥ 5 on the Patient Health Questionnaire-9 (PHQ9) and thus were considered high risk for PTSD.

**Aims:** No documented PTSD screening was completed pre-intervention during primary care office visits in three rural Midwestern clinics. This project aimed to screen 100% of patients for PTSD who scored ≥ 5 on the PHQ9 to identify adults at risk for PTSD who might benefit from further intervention.

**Methods:** Two in-person educational sessions and monthly reminders were provided to staff regarding the nature of PTSD and the importance of PTSD screening. Data were collected on the use of the PC-PTSD, PTSD diagnosis, and mental health referrals for 3 months pre and post education.

**Results:** Following education, the PC-PTSD was utilized in 28% of visits with patients who scored ≥ 5 on the PHQ9. PTSD listed as a visit problem increased 112% and mental health referrals with PTSD listed as a diagnosis increased 375%.

**Conclusions:** Findings demonstrate that PTSD education and implementation of PTSD screening for patients seen in rural primary care clinics can help identify patients at risk for PTSD and increase subsequent referral for mental health intervention.

**Keywords:** posttraumatic stress disorder, PC-PTSD, rural clinic, primary care, quality improvement

**Detecting Posttraumatic Stress Disorder in Rural Primary Care:**

**A Quality Improvement Project**

Adults living in rural communities often see primary care providers (PCP) for all their healthcare needs, especially if resources are lacking. If healthcare concerns are not detected by the PCP, they may go unnoticed and untreated. A psychiatric disorder, posttraumatic stress (PTSD) is not often detected in primary care visits. The prevalence of PTSD detected in primary care settings is estimated at 2%-15%; however, detection rates vary significantly between primary care settings, ranging from 0%-52.1% (Greene et al., 2016). Reasons for lack of detection of PTSD in the primary care setting include patients not seeking a diagnosis due to a lack of understanding of their symptoms, providers lacking knowledge of PTSD symptoms, presenting problems that do not look like classic PTSD symptoms, and a focus in primary care on treating physical and mental comorbidities rather than PTSD (Greene et al., 2016).

PTSD can develop after a person is exposed to a traumatic event, such as witnessing a death or injury; experiencing a life-threatening accident; being threatened with a weapon; or surviving a natural disaster, combat, or sexual abuse (Sareen, 2014). Patients with PTSD have higher rates of health service utilization, suicidal behavior, interpersonal problems, parenting difficulties, decreased income, substance use, and comorbid psychiatric and medical illness (Greene et al., 2016; Sareen, 2014). In 2016, psychiatric and substance use disorders were found to have the largest disability burden, with 18.7% of all global years lived with a disability (Rehm & Shield, 2019). PTSD is highly comorbid with major depression, with 52% of patients with PTSD also meeting criteria for major depression (Rytwinski et al., 2013). These issues can have a significant impact on health care systems, the community, and the patient. Screening patients

for PTSD can help to identify patients with the disorder, increase treatment of it, and decrease the impact that PTSD has on the patient, community, and health care system.

**Local Problem**

Welia Health is a rural health care system with three primary care clinics in an upper Midwestern state. Welia Health is located within a health professional shortage area with a need for 7.94 full time equivalent mental health practitioners (Health Resources and Services Administration, n.d.), a need that was not met. Lacking mental health practitioners, the health system utilized PCPs to screen for mental health concerns. The chief medical officer (CMO) was concerned that PTSD was underrecognized and that many patients were misdiagnosed with depression when PTSD was the more appropriate diagnosis. Prior to this project, patients were screened for depression using the PHQ-9 but may not have been queried about trauma history or consequences, which may have resulted in misdiagnosis. Moreover, PCPs at Welia Health were not screening for PTSD with a standardized instrument, which might have contributed to a failure to detect, diagnose, and treat PTSD. Lack of PTSD detection and subsequent lack of treatment can result in ongoing physical and psychiatric symptoms and persistent disruption of a patient's life. Therefore, the CMO identified a need for patients with PTSD to be appropriately diagnosed and managed.

**Aim**

The aim of this project was to increase PTSD screening to 100% during primary care visits for adults determined to be at high risk for PTSD. Since PTSD is highly comorbid with major depression, patients determined to be at high risk for this project were those who scored ≥ 5 on the PHQ-9, which was routinely administered during primary care visits. To achieve that aim, this project implemented two short educational sessions and monthly email reminders that

identified which patients should be screened for PTSD, how PTSD can impact a patient, and what resources were available for questions or concerns.

## Method

### Ethical Issues

The institutional review board of the project's academic affiliate determined that the project was quality improvement rather than research. The risks and discomforts of participating in this project were minimal and no greater than those that might be experienced by staff as a consequence of routine workflow. Patients might have experienced minor frustration as a consequence of having to complete a short questionnaire regarding PTSD symptoms during their primary care appointment. The American Nurses Association *Code of Ethics for Nurses* and the Health Insurance Portability and Accountability Act (HIPAA) were followed. PC-PTSD screening results became a part of the patient's confidential medical record.

### Setting

This project was implemented at Welia Health, a rural health care organization in an upper Midwestern state that included three primary care clinics, urgency services, an inpatient hospital, and an emergency department. Welia Health offered a variety of services, including primary care, rehabilitation services, and specialty care in psychology, dietetics, diabetes education, cardiology, sleep medicine, sports medicine, orthopedics, dermatology, otolaryngology, nephrology, and neurology. At the time of the project, Welia Health did not have any psychiatric nurse practitioners or psychiatrists who offered medication management. The project was implemented within all three Welia Health primary care clinics as PCPs rotated between the three locations. Primary care clinic staff included 17 PCPs, 19 registered nurses (RN), and 45 licensed practical nurses (LPN). PCPs saw a variety of patients from infants to

geriatric patients with a broad range of concerns. Education regarding PTSD screening was targeted to primary care staff who would be involved in screening patients for PTSD.

**Intervention**

The PC-PTSD is an evidence-based, psychometrically sound, easy-to-administer, 4-item PTSD screening instrument that was available within the Welia Health electronic health record (EHR) and easy to access (Prins et al., 2003). The instrument queries patients about exposure to any event so frightening, horrible, or upsetting that it caused them to experience any of the following symptoms within the last month: nightmares or intrusive thoughts about the experience; avoidance of situations that reminded them of the experience; watchfulness or startle response; and numbness or detachment from others, activities, or their surroundings. With a score ≥ 2, the PC-PTSD has a sensitivity rate of 0.91 and a specificity rate of 0.72; thus, it is psychometrically sound for PTSD screening (Prins et al., 2003). Because the PC-PTSD is easy to administer and does not take a significant amount of time, it was ideal for utilization in rural primary care clinics.

Patients included in the project were males or females, 18 years of age or older, who had a PHQ-9 score of ≥ 5, which would make them high risk for PTSD. Since PTSD is highly comorbid with depression, and this project aimed for earlier detection of PTSD in primary care, a PHQ-9 score ≥ 5 triggered additional screening for PTSD. The PHQ-9 was utilized already within Welia Health for depression screening of all patients seen by a PCP. Utilizing patient reports in the EHR, baseline data were collected on the patient population for three months prior to the staff education sessions. Baseline data included the rate of PTSD diagnosis listed as a primary care visit problem, PC-PTSD screening rates, and mental health referral rates for adults with PTSD listed as a diagnosis.

After a 3-month period of baseline data collection, the staff received two in-person educational sessions. The first session was for PCPs, and the second session was for nursing staff. A PowerPoint presentation as well as handouts were provided to staff with information regarding the prevalence of PTSD, the criteria a patient must meet to be diagnosed with PTSD, and the difficulties patients experience due to the illness. Education regarding the PC-PTSD also was provided, including the sensitivity and specificity of the instrument, how to administer the screening, how to score the screening, and how to input the information into the EHR. Staff were informed that the tool was to be used for screening purposes and that a positive score did not diagnose a patient with PTSD. A score of 2 or higher would trigger a need for further investigation regarding the possibility of a PTSD diagnosis.

A protocol was developed regarding PTSD screening and was provided to staff at the educational sessions. The PTSD protocol stated that the nurse rooming the patient for a PCP would utilize the PC-PTSD to screen all adult patients who scored ≥ 5 on the PHQ-9. The nurse would score the PC-PTSD, input the information into the EHR, and report the score to the PCP. A score ≥ 2 would require further PCP evaluation of the possibility of a PTSD diagnosis. The PCP would assess the patient, provide education, refer the patient to mental health services if needed, and document the intervention. Following the initial education, monthly emails were sent to staff with reminders regarding the importance of PTSD screening and the population of patients who should be screened.

Post-intervention, an EHR report was obtained to collect data on PCP visits that utilized the PC-PTSD on patients 18 and older who had a score of ≥ 5 on the PHQ-9. Those data were examined to determine the number of those patients who had PTSD listed as an office visit diagnosis and the number of patients who received a mental health referral with PTSD listed as

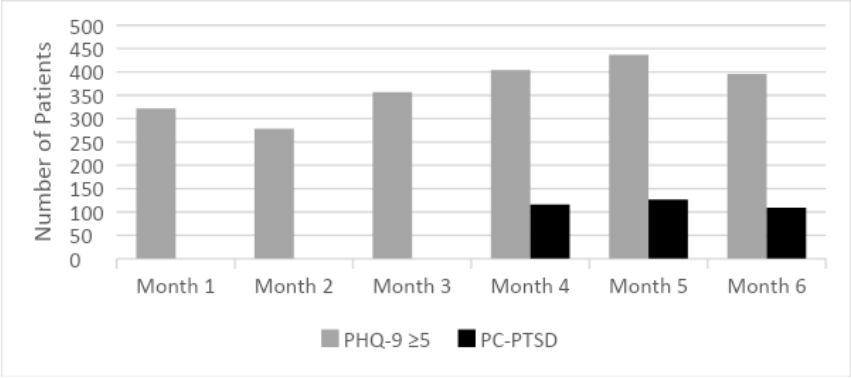
the diagnosis. Data were compared to pre-intervention data to determine if there was an increase in PTSD screening, PTSD diagnosis, and mental health referrals with PTSD listed as a diagnosis.

## Results

Pre-intervention, 957 adult patients who saw a PCP had a PHQ-9 score ≥ 5. None of these patients were screened for PTSD using the PC-PTSD. Data obtained following the intervention showed that 1,237 adult patients had a PHQ-9 score ≥ 5 over the 3-month post-intervention period, and 352 (28%) of those patients were screened for PTSD using the PC-PTSD (see Figure 1).

**Figure 1**

*Rate of PC-PTSD Screening During 3-month Pre- and Post-Intervention Time Periods*



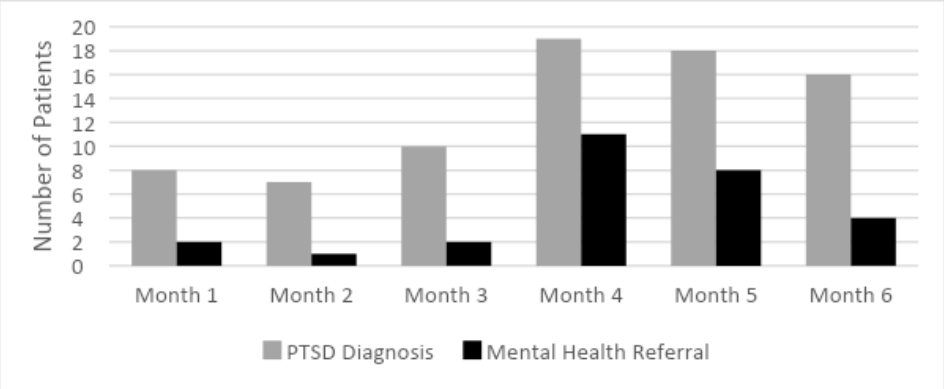

*Note:* Pre-intervention, the PC-PTSD was not utilized on any patients. Post-intervention, an average of 28% of patients with a PHQ-9 ≥ 5 were screened with the PC-PTSD.

Pre-intervention, among adults with a PHQ-9 ≥ 5 ($n$ = 957), 2.6% had PTSD listed as their primary care visit diagnosis. Post-intervention, the rate of PTSD diagnosis increased to 4.3% in adults with a PHQ-9 ≥ 5 ($n$ = 1237). The PTSD diagnosis rate increased from an average of 8.3 per month to 17.6 per month (see Figure 2) for an increase in diagnosis rate of 112%. Mental health referrals with an associated diagnosis of PTSD also increased. Pre-intervention, 0.5% of the patients had a mental health referral with PTSD listed as the associated diagnosis

(see Figure 2). Post-intervention, 1.9% of adult patients with an elevated PHQ-9 score received a mental health referral with PTSD listed as the diagnosis. Mental health referrals for this patient population increased from an average of 1.6 per month to 7.6 per month for an increase in referral rate of 375%.

**Figure 2**

*Rates of PTSD Diagnosis and Mental Health Referrals from Pre- to Post-Intervention*




*Note:* Adults with PTSD listed as a visit diagnosis increased from an average of 8.3 per month to 7.6 per month (112% increase) and mental health referrals for patients with PTSD listed as the referral diagnosis increased from an average of 1.6 per month to 7.6 per month (375% increase).

## Discussion

PTSD can cause significant impairment in a person's life, including higher rates of health service utilization, suicidal behavior, interpersonal problems, parenting difficulties, decreased income, substance use, and comorbid psychiatric and medical illness (Greene et al., 2016; Sareen, 2014). Screening patients for PTSD within primary care clinics is limited, with screening rates ranging between 0%-52.1% (Greene et al., 2016). An educational intervention on PTSD and the PC-PTSD had a positive impact on improving the rates of PTSD screening and treatment referrals. Following the educational intervention and monthly email reminders, 28% of adults with an elevated PHQ-9 were screened for PTSD using the PC-PTSD from a baseline of 0, at

which point the PC-PTSD had not yet been implemented. The rate of PTSD listed as a visit diagnosis increased by 112% and mental health referrals for PTSD increased 375%.

Simmons et al. (2022) conducted a similar study aiming to increase the rate of depression and PTSD screening in patients with burns. Again, no screening process was in place pre-implementation. Following staff education on PTSD and PTSD screening, all patients were to be screened by front desk staff—or the provider if front desk staff did not provide the screening (Simmons et al., 2022). Post-implementation 55% of patients were screened for PTSD and mental health referrals increased (Simmons et al., 2022). Although the goal was to screen 100% of patients for PTSD, this study also had difficulty reaching that goal. Simmons et al. (2022) suggested that having the screening tool within the EHR and empowering the staff would help to increase the screening rate.

Bertelson et al. (2017) also aimed to increase PTSD screening, using the PTSD checklist for trauma patients at an adult trauma center. Here, one person administered the PTSD screening to all patients, which resulted in consistent screening. Once screened, patients received referrals from clinical staff to mental health services as needed. The addition of PTSD screening resulted in an increase in PTSD identification and referrals (Bertelson et al., 2017). This study demonstrated the benefits of having one person complete the screening and showed that an increase in screening resulted in an increase in referrals.

**Limitations**

While the PC-PTSD can be a useful tool to identify PTSD, it is only a screening instrument, and a more in-depth evaluation for PTSD must be completed. The goal was to screen 100% of patients with a PHQ-9 $\geq 5$ for PTSD. Unfortunately, only 28% of these patients received PTSD screening. Time constraints and multiple screenings during the rooming process

may limit nurses' follow through. Without close, ongoing project supervision, and where nurses must complete several tasks during the rooming process, old habits may recur. Nurses also may feel reluctant to complete a mental health screening on patients who are seen for physical complaints. At times, patients refuse to complete mental health screenings when the reason for their visit is unrelated.

### Implications for Practice

The need to increase the rate of PTSD screening in primary care settings remains. Simmons et al. (2022) had front desk staff provide patients with the screening instrument and placed a note within the EHR screening section to remind providers to administer it, achieving moderately higher rates of screening. Screening all patients for PTSD and not just high-risk patients also might increase PTSD screening; staff would not have to take the extra step of determining which patients should receive the screening. Obtaining input from staff into what would help them remember to utilize the PTSD screening process prior to project implementation is important; and formative evaluation throughout the implementation would contribute to understanding what was going well and what the staff perceived needed change. Further investigation is needed to determine whether consistent utilization of the PC-PTSD has an impact on health outcomes of patients who screen positively.

## Conclusion

The PC-PTSD is an effective screening tool to identify patients who may benefit from further assessment and referral to treatment for PTSD. This project used the PC-PTSD to increase screening in rural primary care and supports the use of an educational intervention to promote PTSD screening of high-risk patients. Rates of PTSD diagnosis and mental health referrals increased with increased rates of PTSD screening.

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