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Co-located Perinatal Psychiatry Clinic: Impact of Adding a Psychologist on Clinical Quality Improvement Metrics

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Abstract

PURPOSE—To describe the impact of adding a psychologist (the intervention) to a co-located perinatal psychiatry clinic (PPC) in terms of effects on clinical quality improvement (QI) metrics.

METHODS—Six-month pre- and post-intervention study design with measurement of QI metrics: number of unique patients treated; number of new and established visits; percent no-shows for new and established visits; and mean wait time to new visit.

RESULTS—Number of unique patients treated by the psychiatrist increased by 30%, from 90 pre-intervention to 118 post-intervention ($p=0.06$). Total number of visits completed by the psychiatrist increased by 20% from 174 pre-intervention to 208 post-intervention. Mean wait time for new visits for a physician decreased from 20 days pre-intervention to 14 days post-intervention, with a mean difference of 6.4 days ($p=0.0015$). Percentage of no-shows for new visits increased slightly from 23% pre-intervention to 26% post-intervention ($p=0.72$). The percentage of no-shows for established visits decreased significantly from 22% pre-intervention to 10% post-intervention ($p<0.005$).

CONCLUSIONS—By adding a psychologist to the co-located PPC, we improved quality of perinatal mental health care by improving efficiency, timeliness, and patient-centered care. The

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DISCLAIMERS: The views expressed in the article represent the views of the authors and do not necessarily represent the official views of the Medical College of Wisconsin, Froedtert Hospital, or University of Wisconsin-Milwaukee.

COMPLIANCE WITH ETHICAL STANDARDS:

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. This project was granted exempt status for informed consent by the appropriate IRB.

psychiatrist saw a greater number of unique patients, decreased wait time to new visits, and decreased no-show rates for established visits, likely by better matching patient needs with provider services. A psychologist could be a valuable addition to a PPC, given the shortage of psychiatrists in the U.S.

Keywords

perinatal mental health; mental health; psychiatry

INTRODUCTION

Perinatal mental disorders are common and can affect the well-being of mother and baby,[1–3] including adverse effects on the mother-child relationship and child development.[4] The prevalence of psychiatric disorders in women who were pregnant in the past year or currently postpartum is about 25%.[5] Even when perinatal mental health disorders are identified, various barriers prevent optimal treatment.[6,7] Integration of obstetric and mental health care is needed to promote early detection and treatment and improve quality of care.[1,6,7]

The first co-located perinatal psychiatry clinic (PPC) in Wisconsin was started to address perinatal mental health care. It included a part-time psychiatrist and resident, but expansion was hindered by lack of availability of psychiatrists. In Wisconsin and parts of the U.S., the availability of psychiatrists is limited and represents one system level barrier to high quality perinatal mental health care.[8,9] Improving quality of care - care that is safe, effective, patient-centered, timely, efficient, and equitable - is critical.[10] As such, a full-time psychologist joined the PPC to expand services with psychotherapy and change the care delivery model— all with the intent to improve quality of care, despite a shortage of psychiatrists.

We hypothesized the psychologist could complete the majority of new visits which would serve several purposes. The demand for new visits with the psychiatrist would decrease and result in reduced wait time for new visits. The psychologist would only schedule patients interested in medications with physicians for established visits, ideally decreasing no-shows for physicians by better matching patient needs with provider services. This could allow the psychiatrist to complete more visits and see more unique patients by having fewer new (60 minutes) and more established visits (30 minutes).

The purpose of this quality improvement (QI) project is to describe how adding a psychologist to a co-located PPC impacted clinical QI metrics. We hypothesized this intervention would improve quality of perinatal mental health care by: 1) allowing the psychiatrist to see a greater number of unique patients, 2) decreasing wait time for new visits, 3) improving no-show rates for new and established patient visits, and 4) offering a broader range of desired mental health services.

METHODS

We conducted this QI project in a single PPC co-located in an OBGYN clinic in an academic medical center in southeastern Wisconsin, which draws patients with a broad range of demographics. The PPC addresses mental health for pre-conception, pregnant, or up to 6-months postpartum women, who are referred by themselves or any healthcare provider, typically OBGYNs. The clinics share physical space, centralized scheduling, electronic health record (EHR), and social worker. The OBGYN clinic conducts universal depression screening via the Edinburgh Postnatal Depression Scale. PPC services include evaluation and diagnosis of mental health conditions; medication management; and referrals for psychotherapy, community resources, or higher level of care.

We utilized a six-month pre-intervention (July 2015 through December 2015) and post-intervention (January 2016 through June 2016) study design to examine the impact of adding a psychologist (intervention) to a co-located PPC on clinical QI metrics collected in the EHR, including number of unique patients treated; number of new and established visits; mean wait time to new visits; and percentage no-shows for new and established visits.

Pre-intervention, the clinic included a psychiatrist with 0.3 full-time equivalents (FTE; 40-hour work week) and a resident with 0.1 FTE. Residents rotate in the clinic for 12 months, starting in July. Post-intervention, psychiatrist and resident FTE remained stable and we added a psychologist with 0.8 FTE.

A new visit was a patient's first visit to the PPC, regardless of initial provider. An established visit was any subsequent visit to the PPC, regardless of provider. Pre- and post-intervention, the psychiatrist used 60 minutes for new visits and 30 minutes for established visits; the resident used 90 minutes for patients new to the resident, even if already seen by another PPC provider and 30 minutes for subsequent visits. The psychologist used 60 minutes for new and established visits.

For the 12-month study period, we included data for completed visits and no-show visits (patient didn't present for scheduled visit). Cancelled visits (scheduled visit was removed from provider's schedule) were excluded. To determine unique patients treated, we included data for completed visits over the study period and excluded data from no-show or cancelled visits.

For statistical analysis, we utilized the uniformly most powerful unbiased test on the difference in ratio of the number of unique patients seen by the psychiatrist pre- and post-intervention.[11] We used the Chi-square test to assess differences in the percentage of no-show visits. To assess the difference in mean wait time for new visits, we used linear regression with adjustment for providers.

The QI project was approved by the appropriate IRB.

RESULTS

The number of unique patients treated by the psychiatrist increased by 30%, from 90 pre-intervention to 118 post-intervention ($p=0.06$)(Table 1). Post-intervention, of 193 unique patients, 45 (23%) saw a physician and psychologist and 54 (27%) saw only the psychologist.

Pre-intervention, the psychiatrist completed 174 visits, of which 26% were new. Post-intervention, the psychiatrist completed 208 visits, of which 18% were new. Pre-intervention, the resident completed 39 visits, of which 54% were new. Post-intervention, the resident completed 51 visits, of which 20% were new (Table II).

The mean wait time for new visits with a physician decreased from 20 days pre-intervention to 14 days post-intervention, with a mean difference of 6.4 days ($p=0.0015$). The mean wait time for a new visit with the psychologist was 5 days.

The percentage of no-shows for new visits for all providers increased slightly from 23% pre-intervention to 26% post-intervention ($p=0.72$). The percentage of no-shows for established visits for all providers decreased significantly from 22% pre-intervention to 10% post-intervention ($p<0.005$)(Figure 1).

DISCUSSION

The total number of unique patients served and number of new and established visits increased post-intervention, which was expected by adding a psychologist to the PPC. Despite stable psychiatrist FTE pre- and post-intervention, the psychiatrist saw 30% more unique patients and completed 20% more total visits - representing more efficient use of this limited resource. While not statistically significant, this increase was likely clinically significant for the patient population. By shifting many new visits to the psychologist, post-intervention the psychiatrist had a greater percentage of established visits, requiring only 30 minutes. Also, only patients interested in medication management were scheduled with a physician, better matching patient needs with provider services. This likely contributed to decreasing the no-show rate for established visits with physicians.

The impact of the psychologist on QI metrics for the resident is less clear. The resident was establishing a patient panel during the study period; so, a natural decrease in the percentage of new visits pre- vs. post-intervention was expected. The shift of new visits to the psychologist may have decreased new visits for the resident, but did not affect resident time spent with a patient that was new to her. To optimize the learning and staffing experience, any patient new to the resident utilized a 90-minute appointment, even if the patient had already seen another PPC provider. Thus, these patients were categorized as established visits, but utilized 90 minutes. We suspect this influenced the stable number of unique patients seen by the resident pre- and post-intervention.

We improved timeliness of care by significantly reducing mean wait times for new visits with physicians from 20 to 14 days, while offering new visits with the psychologist in 5 days. We suspect the psychologist reduced demand for new visits with physicians and

contributed to the decreased wait time. This decrease may benefit perceived satisfaction of patients and referring providers, which is an area for future research.

We hoped a decrease in mean wait time for new visits would help decrease the no-show rate for new visits. However, this increased slightly from 23% pre- to 26% post-intervention. This highlights the numerous barriers to establishing care in the PPC, beyond initial wait time, such as transportation, insurance, and stigma of mental illness.[6,7]

The psychologist provided a desired service, as evidenced by exclusively seeing 27% of unique patients and completing 479 established visits. Further, 23% of patients utilized both psychologist and physician services. By broadening mental health services offered alone and in combination, the intervention fulfilled patients' needs within their perinatal medical home.

Our study had several limitations, including lack of data on mental health and birth outcomes; patient and referring provider satisfaction; and cost-effectiveness. The project was conducted in a single PPC in one academic medical center, which could limit generalizability. Additionally, the psychologist's anticipated start date was 01/01/ 2016, but administrative factors delayed the date to 01/16/2016. This resulted in misclassification of data from the first two weeks of January 2016 as post-intervention data. We considered shifting our pre- and post-intervention time periods to revolve around 01/16/16. However, new resident providers started in the clinic on 07/01/2016, which would have introduced additional confounders. This misclassification error likely resulted in an underestimation of differences in the pre- and post-intervention QI metrics. One confounding factor is the time of year inherent in the 6-month pre- and post-intervention design. We considered a 12-month pre- and post-intervention design. Again, this would have introduced additional resident providers as confounders. Lastly, we excluded cancelled visits, some of which may have been cancelled the same day of the visit. This would have decreased no-show rates, but not necessarily allowed for another patient to be scheduled.

CONCLUSIONS

By adding a psychologist to the co-located PPC, we improved quality of perinatal mental health care by improving efficiency, timeliness, and patient-centered care. The psychiatrist saw a greater number of unique patients, decreased wait time to new visits, and decreased no-show rates for established visits, likely by better matching patient needs with provider services. Further, the psychologist broadened services via psychotherapy, which was desired by patients. A psychologist could be a valuable addition to a PPC, given the shortage of psychiatrists in the U.S.

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CONFLICT OF INTEREST DECLARATION:

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Figure I.
Percentage no-shows for new and established visits, by provider, pre- and post-intervention

Table I

Number of unique patients seen by provider, pre- and post-intervention

Provider	Pre-intervention	Post-intervention
Psychiatrist *	90	118
Resident	22	23
Psychologist	-	99
All providers	110 ^a	193 ^b

*
p=0.06^aTwo patients were seen by both psychiatrist and resident^bOne patient was seen by both psychiatrist and resident; one patient was seen by all providers, and 44 patients were seen by a psychiatrist or resident and psychologist

Table II

Number of visits by provider and visit type, pre- and post-intervention

	Pre-Intervention			Post-Intervention		
	New visits (%)	Established visits (%)	Total visits	New visits (%)	Established visits (%)	Total visits (%)
Psychiatrist	45 (26%)	129 (74%)	174	37 (18%)	171 (82%)	208
Resident	21 (54%)	18 (46%)	39	10 (20%)	41 (80%)	51
Psychologist	-	-	-	89 (25%)	267 (75%)	356
Total visits	66 (31%)	147 (69%)	213	136 (22%)	479 (78%)	615