Potential benefits of health information technology for integrating physical and behavioral health care: perinatal depression as a case-in-point

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Abstract

Depression among pregnant and postpartum women (i.e., perinatal depression) is the number one complication of childbirth. The Allegheny County Maternal Depression Initiative aimed to bridge gaps between physical and behavioral health care and improve the capacity of local systems of care for identifying and treating women at high risk for perinatal depression. To achieve these goals, the collaborative adopted a community-based model of systems change focused on women enrolled in the local Medicaid managed care system. Although the systems change protocol included a number of strategies for enhancing communication at all levels of care, variations in health information technology (HIT) capacities and/or capabilities across initiative partners frequently prevented optimal implementation of these strategies. Here, we present an overview of the results of the initiative, share insights from the collaborative regarding how HIT could have improved those results, and offer recommendations related to ways to effectively leverage HIT to integrate physical and behavioral health care.

Keywords

Depression, Perinatal, Health information technology

INTRODUCTION

Estimated rates of depression among pregnant and postpartum women (i.e., perinatal women) range from five to 25% and are even higher for traditionally underserved populations, making depression the number one complication of child birth [1–8]. Although evidence-based treatments exist (e.g., [9]), women with perinatal depression are often not identified and/or are not effectively engaged in treatment [10–13].

There is evidence that overcoming barriers to identifying and treating women with perinatal depression requires enhanced communication and care coordination (e.g., [14]). For example, at the patient–provider level, clinicians may be unable to fit communication about depression into the clinical encounter; at the provider–provider level, care coordination across physical and behavioral health care may be impeded by sub-optimal communica-

Implications

Practice: Use HIT for behavioral health screening in physical health care settings such that the results are actionable in real time, at the clinical encounter during which the screening takes place.

Policy: Resources should be directed to improving electronic communication—both with respect to strengthening communication infrastructure and reducing communication barriers—between behavioral and physical health providers.

Research: Continued work should measure the impact of HIT on physical and behavioral health care integration and identify the roles of providers and health care consumers in using informatics tools to improve health outcomes.

tion infrastructure; and at the system level, a lack of readily available health history information may prevent a system of care from adequately meeting the needs of perinatal women.

The Allegheny County Maternal Depression Initiative (conducted by the Allegheny County Maternal and Child Health Care Collaborative between January 1, 2007 and June 30, 2010) sought to address these communication barriers [15] by bridging gaps between physical and behavioral health care and by improving the capacity of local systems of care for identifying and treating women at high risk for perinatal depression. The Initiative was designed to enhance identification of, access to, and engagement in mental health treatment for perinatal women enrolled in the HealthChoices (Medicaid) Program in Allegheny County. The collaborative targeted perinatal depression for several reasons, including the availability of local expertise in the Pittsburgh region and significant gaps between the physical and behavioral health systems of care in Allegheny County.

The collaborative adopted a community-based model of systems change and launched a 2-year demonstration project to evaluate the model in

January 2008. Although the systems change protocol included a number of strategies for enhancing communication at all levels of care, variations in health information technology (HIT) capacities and/or capabilities across initiative partners frequently prevented optimal implementation of these strategies. Here, we present an overview of the results of the initiative, share insights from the collaborative regarding how HIT could have improved those results and offer recommendations related to ways to effectively leverage HIT to integrate physical and behavioral health care.

METHODS

The initiative protocol delineated the roles and responsibilities of the initiative partners. Table 1 shows the list of partners within four stakeholder groups: physical health providers; physical health managed care organizations (MCOs); behavioral health providers; and the county's behavioral health MCO.

The protocol defined roles and responsibilities across the three main components of the initiative: *screening*, *referral*, and *engagement*. Physical health providers *screened* women in the target population for perinatal depression at agreed upon intervals using an evidence-based tool (the Edinburgh postpartum depression scale (EPDS) or the patient health questionnaire (PHQ-2), followed by the EPDS; [16, 17]). The screen was scored and interpreted by a physical health provider, and a paper record of the score was put into the patient's chart.

Physical health providers *referred* women identified as being at high risk for perinatal depression (where "high risk" was defined by a screening score set by each practice) to a care manager at their physical health MCO. Referrals from physical health providers to physical health MCO care managers were executed via fax. Care managers worked with high-risk members to identify available supports, services, and behavioral health treatment, as indicated, potentially in collaboration with Community Care. Referrals to behavioral health providers were executed by phone. Finally, all partners worked to *engage* women in sustained behavioral health treatment as appropriate.

Measures—An evaluation of the initiative, conducted by the RAND-University of Pittsburgh

Health Institute (RUPHI), tracked several outcomes including screening rate (defined as number of screens divided by estimated visit volume); the prevalence of high-risk screens; the percentage of high-risk patients who were referred to their physical health MCO; the percentage of referrals who were able to be reached by a physical health MCO care manager; and the percentage of high-risk women who received behavioral health treatment. Additionally, RUPHI measured the timing of key communication events, such as the time between when a woman was identified as being at high risk for depression and when she was contacted by a care manager to discuss treatment options. Screening and referral data were gathered from the physical health practices, referral contact data were gathered from the physical health MCOs, and engagement data were measured using Medicaid claims provided by Community Care. Finally, in March 2010, RUPHI convened a series of discussions with the initiative partners to review the results of the evaluation and discuss recommendations for continued progress.

RESULTS

Table 2 shows the overall results of the initiative with respect to screening, referral, and engagement.

Two steps in the systems change protocol were associated with engagement: being reached by a care manager and how long it took to be reached. Specifically, 37% of the women reached by an MCO care manager received behavioral health treatment compared to 27% of those who were not reached. On average, it took physical health MCO care managers about 25 days to reach their high-risk members. However, 44% of the women reached within 1 week became engaged in behavioral health treatment, compared to 29% of those reached after 1 week.

Initiative partners repeatedly identified increased use of HIT as a practice change that could have improved the initiative's results. The potential benefits of HIT proposed by the initiative partners are shown in Table 3 in relationship to the missed opportunities identified in Table 2. For example, initiative partners recommended integrating the screening tool into an electronic medical record (EMR) and enabling electronic referrals from physical health care providers to

Table 1 | Partners of the Allegheny County maternal depression initiative by key stakeholder group

Physical health practices/providers	Ten practice sites in the local Medicaid physical health care network, including pediatrics, obstetrics/gynecology, and family medicine and their affiliated physicians, nurses, and social work staff
Physical health MCOs	UPMC for You, Gateway Health Plan, Unison Health Plan
Behavioral health practices/providers	A range of practices in the local Medicaid behavioral health care network and their affiliated psychiatrists, psychologists, and masters' level psychological health providers and/or counselors
Behavioral health MCO	Community Care Behavioral Health Organization

Table 2 | Initiative results

	Overall results
Screening	
Estimated number of physical health provider visits	15,692
Screening rate (no. of screens/estimated visits)	54%
Percentage of screens indicating high-risk status	25%
Referral	
Referral rate (no. of referrals/no. of high-risk screens)	57%
Percentage of women referred contacted by a care manager	53%
Engagement	
Engagement rate (no. of women with a behavioral health claim/no. of women referred)	43%

the high-risk member's physical health MCO, to her behavioral health MCO, or to a preferred behavioral health practice/provider. The initiative's target population is a difficult group to reach by phone due to changes in residence, lack of landline telephones, and frequent changes in cellular telephone numbers among these traditionally underserved. Using the EMR to improve the timing and frequency of referral rates might then positively affect the timeliness of contact between the high-risk patient and her physical health MCO care manager, her behavioral health care manager, and/or her provider of choice, which in turn might improve engagement rates in behavioral health treatment.

DISCUSSION

In discussions with the initiative partners about these results, a general conclusion was that the initiative protocol was effective when it was executed as intended. However, full execution of the protocol did not happen often enough: nearly half of the target population was never screened, nearly half of those with high-risk status were never referred, nearly half of those referred to their MCO were never reached by a care manager, and nearly half of those referred never engaged in behavioral health treatment.

CONCLUSION

Leveraging HIT to increase frequency and ease of communication between physical and behavioral health providers is one way to promote much needed integration of care, particularly for patients dealing with conditions (like perinatal depression) where this integration is critical. Although initiative partners identified limitations related to the use of HIT as a factor preventing the collaborative from achieving its full range of goals, it is important to note that the results presented here do not provide evidence that use of HIT improved the integration of physical and behavioral health care for perinatal women. Rather, we offer evidence that providers at multiple levels of the health care system see HIT as having great potential to improve coordination of physical and behavioral health care. Continued research will be needed to measure the impact—including anticipated benefits and unanticipated negative consequences—of HIT on integrating health services across systems of care.

Recent policy actions aim to accelerate the use of HIT across the health care landscape. Improving the quality of care, enhancing patient engagement, and increasing care coordination are among the criteria that the Office of the National Coordinator for Health Information Technology has established for the meaningful use of HIT [18]. Most recently, new

Table 3 | Initiative results with identified potential benefit of hit

Result	Potential HIT benefit
15,692 perinatal health care visits	
Missed screening opportunity 46% of the time	Embed screening prompt and screening tool with automatic scoring in the EMR
57% of high-risk patients are referred	
Missed referral opportunity 43% of the time	Enable electronic referral from the physical health care provider to the MCO care manager via the EMR at the time of screening
53% of women reached by a care manager	
Missed contact opportunity 47% of the time	Use electronic referral system to transmit more accurate and timely patient contact information to the MCO care manager
43% of women engaged in behavioral health treatment	
Missed engagement opportunity 57% of the time	Use the EMR to prompt physical health care providers to inquire about engagement in behavioral health care during the next clinical encounter for women previously identified as being at high risk; enable electronic referral from the physical health care provider and/or the MCO care manager to the behavioral health MCO care manager

legislation, such as the Health Information Technology for Behavioral Health Services Act of 2010 (H.R. 5040), would extend access to resources for purchasing EMRs, training staff, and improving information sharing and collaboration to behavioral health providers. In the case of perinatal depression, increased adoption of HIT may enable more efficient tracking and measurement of depression screening rates, referrals, and engagement rates, thus positioning these indicators as candidates for inclusion in the perinatal core measure set within the Joint Commission National Quality Measures. Through these efforts and others, we look forward to a time when more health care providers across multiple systems of care will be able to effectively collaborate to ensure that all patients are receiving the best care possible.

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