There is substantial interest in screening for depression in primary care. Depression is common, affecting 5%–13% of all adults, has estimated annual costs of $80 billion, is underdiagnosed by at least 30%, and has effective treatments available including medications and psychotherapy. However, the challenge for depression screening programs has been engaging patients in treatment. Data from the Healthcare Effectiveness Data and Information Set (HEDIS), developed by the National Committee for Quality Assurance (NCQA), shows that in the first 3 months of treatment, 75% of patients fail to have the HEDIS-recommended three follow-up visits, and 40%–67% of patients discontinue medication. Nonetheless, depression screening in primary care is increasingly required and incentivized by private payers and is becoming widespread.

BACKGROUND AND OBJECTIVES: Screening for depression in primary care can be effective, but ensuring that appropriate care is available and engaging patients in treatment are major challenges. Even when follow-up care is available, patient engagement often relies on the primary care provider initiating care. In this study we wanted to assess the effectiveness of a depression screening program in an academic family practice.

RESULTS: Depression screening occurred in 98.4% of all adult encounters (n=3,341). Of these patients, 7.3% screened positive for depression and were not presenting for mood problems. Only 33.7% of patients with positive screens had their results addressed. Patients who had their results addressed were twice as likely to return for follow-up as those who did not (34.1% versus 17.4%). Patients with severe depression were more likely to follow-up than patients with mild depression (53% versus 15%).

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CONCLUSIONS: Depression screening can be efficiently incorporated into primary care practice, but engaging providers and patients in diagnosis and treatment is challenging. We recommend a systems-based approach that emphasizes immediate access to treatment when implementing depression screening in a primary care practice.

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From Aurora Health Care, Elkhorn, WI (Dr Tiemstra); and University of Illinois at Chicago College of Medicine (Ms Fang).
In October 2013 our academic family medicine practice implemented depression screening. The process was motivated by payer quality incentives as well as the desire to provide better care. The practice had the capacity to provide expanded depression care, and referral resources were available within the system. The practice consists of two clinics with 15 faculty physicians (most with limited clinical time), three nurse practitioners, 20 residents, and regularly rotating medical students and nurse practitioner students. The Patient Health Questionnaire-2 (PHQ-2) and the Patient Health Questionnaire-9 (PHQ-9), validated depression screens, were chosen as the screening tools.3,4 Medical assistants were trained to administer the PHQ-2 at check-in for all adult clinic visits. Patients scoring 2 or higher would then have the PHQ-9 administered by the medical assistant. Results were entered in the EMR flow sheet with the other vital signs. Management of the result was left to the clinician. One year after implementation we wanted to assess the effectiveness of this program. In this study we asked two questions: (1) How often was a positive PHQ-9 addressed? and (2) How often did patients engage in follow-up?

**Methods**

For this retrospective study we reviewed all PHQ-2/9 results and their management over a 3-month time period. We chose the first quarter of 2015, 15 months after screening implementation, to assess the effectiveness of the program after it had become part of usual clinic routine. We reviewed all adult encounters for a PHQ-2 score, a PHQ-9 score if done, and if the reason for the visit included mood complaints. For patients not coming in for mood complaints who had a positive PHQ-9 score (5 or higher), we reviewed whether and how the clinician addressed the screen by reviewing the

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Figure 1: Screening Results

| 3341 | Total Unique Adult Patients |
| 393 (11.8%) | Patients with PHQ-9 ≥ 5 |
| 243 (61.8%) (7.3% of Total) | Patients without Mood Complaints |
| 161 (66.3%) | PHQ-9 Not Addressed |
| 82 (33.7%) | PHQ-9 Addressed |
| 28 (17.4%) | Had Follow-Up |
| 28 (34.1%)* | Had Follow-Up |

* P=0.0034 for patients who had follow-up for PHQ-9 addressed versus not addressed.
Results
The systemization of screening in the clinics was excellent. For 4,436 total encounters (3,341 unique patients) during the time frame, 98.4% had a PHQ-2 score. We found 442 positive PHQ-2 scores and 459 PHQ-9 scores done, indicating that follow-up testing was occurring routinely on positive PHQ-2 scores and that clinicians were performing the PHQ-9 score in some cases even without a positive PHQ-2.

Figure 1 shows our results for the 3,341 unique patients screened. Of the 393 patients with positive PHQ-9s, only 38.2% were presenting with mood complaints. Overall, 243 (7.3%) patients who had not presented with mood complaints screened positive for at least mild depression. Of these patients, only 33.7% had their depression addressed in any fashion. Addressing the PHQ-9 result in any fashion doubled the likelihood of patient follow-up ($P=.0034$), but even when the PHQ-9 was addressed only 34.1% of patients had at least one follow-up visit.

For patients who had their PHQ-9 addressed, Figure 2 shows follow-up rates stratified by the intensity of the intervention. Even when the PHQ-9 was addressed, only 26% of patients had at least one follow-up visit. Differences not statistically significant

Discussion
Depression screening can be effectively implemented in primary care and can identify many patients who are not actively seeking treatment. Immediately addressing a positive screen and implementing a

Differences not statistically significant
treatment plan during the screening encounter improves the likelihood of patient follow-up, but adding this to the visit when it is not on the patient’s agenda is challenging for clinicians and unreliable. Many collaborative care models for depression management are being implemented and can provide improvements in depression treatment outcomes by engaging a team of providers responsible for various aspects of patient engagement, education, and management. However, these models vary in how patients are identified, screened, and initially engaged in care. Based on our experience, primary care practices implementing depression screening should develop a care model that can immediately route screen-positive patients into evaluation and treatment. Flexible systems might create a mechanism whereby the primary care provider can provide this treatment, or refer the patient into an “immediate care” collaborative depression management program. Follow-up care should include proactive outreach to keep patients engaged in treatment. Novel clinic scheduling systems, as well as diversely trained clinical care teams, will be needed to optimize the success of depression screening in primary care.

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CORRESPONDING AUTHOR: Address correspondence to Dr Tiemstra, Aurora Lakeland Medical Center, W3985 County Road NN, Elkhorn, WI 53121. 262-741-2000. Fax: 262-741-2104. jeffrey.tiemstra@aurora.org.

Table 1: Patient Follow-Up by Severity of Depression

<table>
<thead>
<tr>
<th>Depression Severity (PHQ-9 score)</th>
<th>Total</th>
<th>Followed Up</th>
<th>Score Addressed by Provider</th>
<th>Followed Up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mild (5–9)</td>
<td>106</td>
<td>44%</td>
<td>16 15%</td>
<td>7 22%</td>
</tr>
<tr>
<td>Moderate (10–15)</td>
<td>71</td>
<td>29%</td>
<td>17 24%</td>
<td>8 35%</td>
</tr>
<tr>
<td>Moderate-severe (15–19)</td>
<td>47</td>
<td>19%</td>
<td>13 18%</td>
<td>6 35%</td>
</tr>
<tr>
<td>Severe (20–27)</td>
<td>19</td>
<td>8%</td>
<td>10 53%*</td>
<td>7 70%*</td>
</tr>
</tbody>
</table>

* P<.01 for severe versus mild

References


