Improving Depression Screening and Follow-up in Primary Care Through Implementation of an Evidence-Based Protocol

Cheryl Fowler BSN, RN
DNP Project Final Defense
April 10, 2019
Acknowledgements

• Dianne Slager DNP, FNP-BC
• Darleen Hoffert DNP, RN, AGNP-C, QMHP
• Jamie Lamers MSN, FNP
• Margaret Kline, graduate assistant statistician
Objectives for Presentation

1. Discuss the clinical problem
2. Review the organizational assessment and literature review
3. Review project plan and theoretical models guiding plan
4. Present results and sustainability plan
5. Discuss implications for practice, DNP essentials and plan for dissemination.
Introduction

In the year 2016, over 16 million adults in the US experienced at least one depressive episode (National Institute of Mental Health, 2017)

Past Year Prevalence of Major Depressive Episode Among U.S. Adults (2016)

Data Courtesy of SAMHSA
Introduction

- Increased risk for suicide
- Decreased capacity to manage other health conditions
- Decreased quality of life for individual and family
- Economic burden
  - Lost work days
  - Medical costs
  - Decreased productivity
  (United States Preventative Services Task Force, 2016)
Introduction

The United States Preventative Services Task Force (USPSTF, 2016) recommends all adults, regardless of risk factors, should be screened for depression in the primary care setting with adequate systems in place to allow for appropriate diagnosis, treatment, and follow-up.
Assessment of Organization

• Small, university-affiliated, urban primary care health clinic
• 4 Nurse practitioners (NPs)
• Practice manager
• 2 Registered Nurses (RNs)
• No Medical assistants (MAs)
Framework: Burke & Litwin

Burke and Litwin Model for Organizational Performance and Change (Burke and Litwin, 1992)
Organizational Assessment

• Transformational Factors
  – External initiatives to improve quality of healthcare
    • Triple Aim, MACRA (Institute for Healthcare Improvement, 2018; Centers for Medicare and Medicaid Services, 2018)
  – Organization’s mission statement
  – Organization and staff’s investment in quality experiences for students

• Transactional Factors
  – Staffing
  – Practice manager and one NP new to the organization
  – There was no formal policy or protocol for depression screening
Organizational Assessment

• Previous Practice
  – RNs asked the two questions of the PHQ-2 to the patient verbally, in yes/no format, and documented in social history
  – PHQ is intended to be self-administered and include frequency of symptoms
  – Provider should then review and follow-up accordingly
  – Inconsistency in administration of PHQ for both screening and in use for depression follow-up
DATE: October 29, 2018

TO: Dianne Slager
FROM: HRRC
STUDY TITLE: Improving Depression Screening and Follow-up in Primary Care through Implementation of an Evidence-based Protocol.
REFERENCE #: 19-123-H
SUBMISSION TYPE: HRRC Research Determination Submission
ACTION: Not Research
EFFECTIVE DATE: October 29, 2018
REVIEW TYPE: Administrative Review

Thank you for your submission of materials for your planned scholarly activity. It has been determined that this project does not meet the definition of research* according to current federal regulations. The project, therefore, does not require further review and approval by the Human Research Review Committee (HRRC).

A summary of the reviewed project and determination is as follows:

The purpose of this project is to increase the proportion of visits in an urban primary care practice that include depression screening to increase recognition of depression and ensure that appropriate follow up interventions are initiated and documented accordingly. While this is a systematic investigation, it is not designed to create new generalizable knowledge. Therefore, it does not meet the federal definition of research and IRB oversight is not required.

An archived record of this determination form can be found in IRBManager from the Dashboard by clicking the "_ xForms" link under the "My Documents & Forms" menu.

If you have any questions, please contact the Office of Research Compliance and Integrity at (616) 331-3197 or rci@gvsu.edu. Please include your study title and study number in all correspondence with our office.

Sincerely,
Office of Research Compliance and Integrity

*Research is a systematic investigation, including research development, testing and evaluation, designed to develop or contribute to generalizable knowledge (45 CFR 46.102 (d)).

Human subject means a living individual about whom an investigator (whether professional or student) conducting research obtains: data through intervention or interaction with the individual, or identifiable private information (45 CFR 46.102 (f)).

Scholarly activities that are not covered under the Code of Federal Regulations should not be described or referred to as research in materials to participants, sponsors or in dissemination of findings.
Stakeholders

• University
• Practice Manager
• Providers
• RNs
• Clerical staff
• Patients
## SWOT Analysis

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small Practice</td>
<td>Limited staff and financial resources</td>
</tr>
<tr>
<td>Quality improvement focus</td>
<td>Student staff</td>
</tr>
<tr>
<td>Team-based approach</td>
<td>Current initiatives in place</td>
</tr>
<tr>
<td>Encouraging and supportive of students</td>
<td>New leadership</td>
</tr>
<tr>
<td>Evidence-based practice</td>
<td></td>
</tr>
<tr>
<td>Support of phenomenon of interest</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Opportunities</th>
<th>Threats</th>
</tr>
</thead>
<tbody>
<tr>
<td>MACRA</td>
<td>Limited community mental health resources for Medicaid recipients</td>
</tr>
<tr>
<td>MIPS</td>
<td>Stigma surrounding mental health diagnoses</td>
</tr>
<tr>
<td>Incentive programs</td>
<td></td>
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<tr>
<td>Low SES community</td>
<td></td>
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</tbody>
</table>
Clinical Practice Question

Does the implementation of a protocol for depression screening improve the rate of depression screening and follow-up management of applicable adults in this primary care setting?
Literature Review

• Purpose: to identify evidence-based approaches to improve the rate of depression screening and follow-up of adults in the primary care setting
• Systematic Review
• PsycInfo, Cochrane Reviews
• Keywords: depression, major depression, screening/screening tools, improvement, recognition, and diagnosis.
Records identified through database searching (n = 54)

Records after duplicates removed (n = 54)

Records excluded (n = 45)

Full-text articles assessed for eligibility (n = 9)

Full-text articles excluded (n = 6)

Studies included in Review (n = 3)

(In Moher et al., 2009)
Summary of Table

• Archer et al. (2012): Collaborative Care (utilizing providers and support staff ie RNs MAs) improved follow up care for depression

• Badamgavarav et al. (2003): Disease Management approaches vs standard care, showed increased screening rates, improved detection of depression and treatment

• Wissow et al. (2013): Screening can be completed with provider or support staff, educating providers on proper use of screening tools is essential, patients have better outlook on screening when framed as universal
Evidence for Project

- Screening should be framed as universal
- Systematic, formal approach to screening should take place
- Educate providers on appropriate use of and follow up for screening tools
Model to Examine Phenomenon

Health Promotion Model
(Pender, Murdaugh, & Parsons, 2015)
Project Plan: Purpose

• Purpose: Facilitate use of a screening protocol to improve the detection and management of depression in the primary care setting in order to improve patient outcomes based upon guidelines from the USPSTF (2016), American Academy of Family Physicians (Maurer, Raymond, & Davis, 2018), and American Psychiatric Association (2010).
Project Plan: Objectives

- increasing the frequency of depression screening at annual wellness and new patient visits using the PHQ2/PHQ-9 depression screening tool,
- increasing the frequency of measurement of depressive symptoms in all patients with new and existing diagnoses of depression utilizing the PHQ-9 screening tool
- increasing the accurate identification of depression with the use of the PHQ2/PHQ-9
- improving the development of depression management plans for patients with depression and,
- improving billing for the provided service of the depression screening.
Design

• Quality Improvement
  – an intentional change in systems and processes of care that takes place in a methodical, reflective, and iterative manner as a means to improve patient care and outcomes (Katakam & Suresh, 2017).
Setting & Participants

• Where: urban, university affiliated primary care clinic with nearly 3,500 patients, accounting for approximately 6,000 patient visits annually. Primarily Medicaid population. (xxx, personal communication, March 12, 2018)

• Who: Review of all provider documentation from annual wellness, new patient, and depression follow-up visits during the determined timeframe both prior to and after the implementation of the project.
Implementation Model

LEWIN’S CHANGE MODEL
Lewin’s Three Stage Change Process – Practical Steps

Unfreeze
- Determines what needs to change
- Ensure there is strong support from management
- Create the need for change
- Manage and understand the doubts and concerns

Change
- Communicate often
- Dispel rumors
- Empower action
- Involve people in the process

Refreeze
- Anchor the changes into the culture
- Develop ways to sustain the change
- Provide support and training
- Celebrate successes

(Burnes, 2004)
Implementation Steps

Unfreezing:
– Step 1. Drafted protocol and collaborated with organization staff to tailor to practice needs.
– Step 2. Educational was meeting held.
– Step 3. Incorporated order set and text macras into EHR.
– Step 4. Linked correct billing code to screening tool and order sets in EHR
Implementation Steps

Change:
- Step 5. Incorporated staff feedback into finalized protocol and presented to staff prior to implementation in practice.
- Step 7. Data collected from implementation period and combined with pre-implementation data to be analyzed with assistance from graduate assistant statistician.

Refreezing:
- Step 8. Final project documents prepared and defense completed. Final data communicated to organization to celebrate successes and identify ongoing opportunities.
Measures & Analysis

• Comparison of Pre- and Post-implementation data:
  – Rate of depression screening (PHQ-2/PHQ-9) at annual wellness and new patient visits,
  – Rate of PHQ-9 use for all patients at routine visits with an existing depression diagnosis,
  – Occurrence of depression management plan correlating to current practice guidelines and
  – Occurrence of billing for PHQ administration
Resources & Cost

• Time
  – DNP student time
  – Organization staff time: primarily limited to scheduled staff meetings to minimize cost to organization

• Cost of copies of the PHQ-9, pens/markers, etc.

• Benefit of billable service of about $6 per screening (Priority Health, 2018).
### Doctor of Nursing Practice Project Financial Operating Plan

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
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<tbody>
<tr>
<td><strong>Improving Depression Screening and Follow-up in Primary Care through Implementation of an Evidence-Based Protocol</strong></td>
<td></td>
</tr>
<tr>
<td>Revenue</td>
<td></td>
</tr>
<tr>
<td>Student Project Manager Time (in-kind donation)</td>
<td>$9,000.00</td>
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<tr>
<td>Consultations</td>
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<tr>
<td>Statistician (in-kind donation)</td>
<td>$100.00</td>
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<tr>
<td>Revenue Source: Reimbursement for depression screening tool ($6/screen @ 57 screens)</td>
<td>$342.00</td>
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<tr>
<td>TOTAL INCOME</td>
<td>$9,442.00</td>
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<td>Expenses</td>
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<tr>
<td>Team Member Time:</td>
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<tr>
<td>Nurse Practitioner (Site Mentor)</td>
<td>$4,500.00</td>
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<tr>
<td>Consultations</td>
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<tr>
<td>Meeting with Practice Manager and DNP provider</td>
<td>$100.00</td>
</tr>
<tr>
<td>Cost of printing, pens, etc.</td>
<td>$10.00</td>
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<tr>
<td>TOTAL EXPENSES</td>
<td>$4,610.00</td>
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<tr>
<td>Net Operating Plan</td>
<td>$4832.00</td>
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Timeline

- **December 2018**: Collected Pre-implementation Data, Provider Education, Presented Draft protocol
- **January 2019**: Incorporated Org. Feedback and Finalized Protocol
- **February and March 2019**: Began Protocol, Data analysis
- **April 2019**: Project Defense
## Results: Participant Characteristics

<table>
<thead>
<tr>
<th>group</th>
<th>N Obs</th>
<th>N</th>
<th>N Miss</th>
<th>Mean</th>
<th>Std Dev</th>
<th>Lower Quartile</th>
<th>Median</th>
<th>Upper Quartile</th>
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<tbody>
<tr>
<td>Pre-Intervention</td>
<td>60</td>
<td>60</td>
<td>0</td>
<td>37.7</td>
<td>16.4</td>
<td>24.0</td>
<td>33.5</td>
<td>47.0</td>
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<tr>
<td>Post-Intervention</td>
<td>94</td>
<td>94</td>
<td>0</td>
<td>35.1</td>
<td>13.8</td>
<td>24.0</td>
<td>32.0</td>
<td>44.0</td>
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</tbody>
</table>
Results: Pre/Post Protocol PHQ Use

Cumulative PHQ rates for both Screening and Follow-up Measurement

- Chi Square test, $X^2 = 7.3$, df = 1, p = 0.0069

- Odds of receiving a PHQ post-implementation 2.48 times that of pre-implementation (95% CI: 1.27, 4.82)

Statistically significant improvement
Results: Depression Screening

PHQ use at annual wellness and new patient visits

Chi Square test, $X^2 = 5.718$, df = 1, p = 0.017

Statistically significant improvement
Results: Depression Follow-up

Chi Square test, $X^2 = 5.25$, df = 1, $p = 0.0219$

The odds of getting screened post implementation with the PHQ in patients with known depression diagnosis were 3.09 times (95% CI: 1.16, 8.23) the odds of getting screened pre-implementation.

Statistically significant improvement
Results: Management Plan

• All patients with new or existing diagnosis of depression had management plans consistent with American Psychiatric Association (2010) guidelines both pre- and post-implementation, thus no change was found. However, there was an increased diversity in management plans.
## Results: Management Interventions

<table>
<thead>
<tr>
<th>In tn</th>
<th>Frequency</th>
<th>Percent</th>
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</thead>
<tbody>
<tr>
<td>Non-pharma</td>
<td>2</td>
<td>5.88</td>
</tr>
<tr>
<td>Non-pharma and medication</td>
<td>2</td>
<td>4.76</td>
</tr>
<tr>
<td>Non-pharma, medication and counseling/referral</td>
<td>1</td>
<td>2.38</td>
</tr>
<tr>
<td>Medication</td>
<td>17</td>
<td>50.00</td>
</tr>
<tr>
<td>Medication and counseling/referral</td>
<td>11</td>
<td>32.35</td>
</tr>
<tr>
<td>Counseling/referral</td>
<td>2</td>
<td>5.88</td>
</tr>
</tbody>
</table>

Pre-Implementation

<table>
<thead>
<tr>
<th>In tn</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-pharma</td>
<td>6</td>
<td>14.29</td>
</tr>
<tr>
<td>Non-pharma and medication</td>
<td>2</td>
<td>4.76</td>
</tr>
<tr>
<td>Non-pharma, medication and counseling/referral</td>
<td>1</td>
<td>2.38</td>
</tr>
<tr>
<td>Medication</td>
<td>9</td>
<td>21.43</td>
</tr>
<tr>
<td>Medication and counseling/referral</td>
<td>12</td>
<td>28.57</td>
</tr>
<tr>
<td>Counseling/referral</td>
<td>3</td>
<td>7.14</td>
</tr>
<tr>
<td>Follow up visit/call</td>
<td>1</td>
<td>2.38</td>
</tr>
</tbody>
</table>

Post-Implementation
Results: Billing

Fisher’s Exact test, $p = 0.0437$

A higher proportion of PHQ screens were billed post implementation (51/57 = 89.5%) than pre implementation (16/23 = 69.6%).

Statistically Significant Improvement
Discussion

• Formal protocol improved rates of screening in this primary care clinic, consistent with the literature.

• Significant improvement in rates of screening with PHQ, use of PHQ to monitor symptoms for patients with known depression, and rate of billing for the service.

• The NPs described perceived value in recognizing possible depression in patients who may not have been screened using their previous workflow.
Limitations

• Short implementation period
• Limited formal, in-person education
• Data collection limited in-depth dive into factors impacting use of PHQs
Implications for Practice

• Protocol well received
• Bridged gap between prior practice and standards of care
• Quality measures and provider incentives: next step adolescents
Conclusions

• Depression is a common disorder that impacts patient quality of life and health outcomes
• Screening leads to earlier detection, allowing for improved outcomes
• The protocol implemented in this organization led to improved rates of PHQ use for screening and measurement of depressive symptoms at follow-up visits as well as rates of billing for the service.
Sustainability Plan

• Project requested by the organization
• Evidence-based, in-line with current practice guidelines
• Designed to reduce burden on workflow and unnecessary cost to the practice
• Continued quality measure tracking on practice white board
Dissemination

• Project Defense April 10, 2019
• Results shared with organization at staff meeting April 16, 2019
• Scholarworks submission upon approval from advisory team.
DNP Essentials Reflection

• I: Scientific Underpinnings for Practice
  – Theoretical framework guidance
  – Literature review

• II: Organizational and Systems Leadership
  – Organizational assessment
  – Development and planning of protocol
  – Communication with staff and facilitation of implementation
DNP Essentials Reflection

• III: Clinical Scholarship and Analytical Methods for Evidence-based Care
  – Literature review
  – Analysis of outcomes

• IV: Information/Systems Technology
  – Utilization of EHR’s PHQ tool
  – Email
  – Order sets/text macras

• V: Healthcare Policy for Advocacy in Healthcare
  – While no formal policy change, advocacy for individuals suffering from depression
DNP Essentials Reflection

• VI: Interprofessional Collaboration for Improving Patient and Population Health
  – Communication with nursing and non-nursing staff
  – Effective communication and utilization of staff feedback led to successful implementation

• VII: Clinical Prevention and Population Health
  – Low socio-economic status population served
  – Increased risk for mental health issues (depression)
  – Early detection and improved monitoring

• VIII: Advanced Nursing Practice
  – Assessment and systems thinking
  – Therapeutic relationships with organization staff
References

Please see handout