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## Adolescent Depression Management: An Inner City Federally Qualified Health Center Program Evaluation

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**Title of Manuscript:** Adolescent Depression Management: An Inner City Federally Qualified Health Center Program Evaluation

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## Abstract

**Background:** Within the state, approximately 119,000 adolescents aged 12-17 have depression, and it is estimated that 57.8% do not receive any mental health care (National Alliance on Mental Illness [NAMI], 2021).

**Objectives:** The purpose of this program evaluation is to evaluate the management of adolescent depression. This evaluation focused on adolescent depression screening rates, medication prescribing and adherence, counseling referrals and initiation, barriers to treatment, follow-up visits, and parent feedback about the care received.

**Methods:** All adolescents who did not have previously diagnosed depression or developmental delay were included in this program evaluation., A weekly manual chart review was used to collect each adolescent's age, gender, and PHQ-9 score. The parents of each adolescent with PHQ-9 score of 10 or higher were called for a follow-up to evaluate their experience.

**Results:** Only 64.4% of adolescent age 12-18 were screened for depression during their well-child visit. Of the 45 adolescents screened, three had a PHQ-9 score of 10 or above. Only one patient parent answered the follow-up call.

**Conclusions:** To be adherent with clinical practice guidelines, adolescent depression screening rates must be improved. Generalizability of project findings is limited by the participation of only one provider, a small sample size, and a short implementation timeline.

**Implications:** Providers should continue to be educated on current guidelines. Future projects should focus on implementation of routine adolescent PHQ-9 screenings among all providers at the office. Future projects can also be used to medications, counseling, and follow-up care.

**Keywords:** Adolescent depression, depression screening, depression management, pediatric primary care, program evaluation

## **Introduction**

In the project state, approximately 119,000 adolescents aged 12-17 have depression, and it is estimated that 57.8% of depressed adolescents do not receive any mental health care (National Alliance on Mental Illness [NAMI], 2021). Adolescents with depression are two times more likely to drop out of school, and as adults, they are at an increased risk for homelessness, incarceration, and suicide (NAMI, 2021). The Guidelines for Adolescent Depression in Primary Care (GLAD-PC) created by the REACH Institute and published by the American Academy of Pediatrics (AAP) recommends screening adolescents at all well-child visits with a tool such as the Patient Health Questionnaire 9 (PHQ-9) starting at age 12. These guidelines also recommend follow-up visits for adolescents who are identified to have depression every two to four weeks for at least six months. Adolescents with risk factors such as family history of mental illness, personal history of mental illness, history of trauma or abuse, substance use, chronic illness, and frequent somatic complaints should be screened for depression more frequently (Zuckerbrot, 2018). A program evaluation was completed at one inner city location of a larger Midwest federally qualified health center (FQHC) system. To better align with current guidelines, in July 2022, the participating provider switched from the PHQ-9 to the PHQ-9 screening tool during adolescent well child visits. The data collected during this program evaluation was used to assess the current PHQ-9 screening rates and obtain parent feedback about their adolescent child's depression management.

### **Current State of the Organization**

This organization was assessed using the McKinsey 7-S model to evaluate the organizations functioning and readiness for a project focusing on adolescent depression management (Figure 1). This model provides a comprehensive assessment of the organization's

structure, strategy, systems, skills, staff, style, and shared values. A SWOT analysis was also completed to identify strengths, weakness, opportunities, and threats specific to the organization and project. The presence of an onsite Spanish language interpreter is an important strength of this organization due to the large number of patients with Spanish as their preferred language. However, if a Spanish translator is not available during the visit or the patient speaks a language other than Spanish, the quality of the virtual interpreter provided is inconsistent. A majority of the patient population receives Medicaid and Medicaid's inclusion of mental health screening in their Early and Periodic Screening, Diagnostic, and Treatment (EPSDT) promoted organizational support for a project focused on depression.

### **Background**

Clinical practice guidelines for the screening and management of adolescent depression are available from the AAP, United States Preventative Services Task Force (USPSTF), National Institute for Health and Care Excellence (NICE), and American Academy for Child and Adolescent Psychiatry (AACAP). The following recommendations are provided in the guidelines from these organizations: the primary care provider (PCP) should begin screening for depression during well child visits at age 12, the PHQ-9 is a valid depression screening tool, the PHQ-9 is one of the preferred depression screening tools for adolescents, depressed adolescents should receive monthly follow-up visits for 6 months, fluoxetine and escitalopram are the only medications that are Food and Drug Administration (FDA) approved for treatment of depression in adolescents, and the PCP should screen at risk adolescents for depression more frequently (Forman-Hoffman, 2018). The State Medicaid Policy bulletin 22-50 (2022) also states that depression and suicide risk screening should be completed annually at well child visits starting at

age 12 with the PHQ-9 or PHQ-A. This policy is based on the APP periodicity schedule and the GLAD-PC toolkit.

A comprehensive literature review was completed to identify previous projects that focused on the identification and management of depression in the adolescent population. One retrospective chart review identified that depression screening only occurred during the 16-year well-child visit, and it was only completed at 75% of these visits (Farley, 2020). A separate cross-sectional survey found that only 47% of pediatric PCPs felt comfortable managing depression and only 26% were aware of clinical practice guidelines (Garbutt, 2019). The findings of this literature review demonstrate a need for improved screening and provider education.

### **Phenomenon Model**

Beck's cognitive theory of depression was used to guide this program evaluation (Figure 2). This model focuses on the cognitive errors and thought processes that lead to depression. Cognitive errors identified by Beck include catastrophizing, overgeneralizing, personalizing, and selective abstraction. This model also includes the cognitive triad which focuses on negative thoughts and feelings about the self, future, and world. The negative thoughts produced by the cognitive triad and cognitive errors lead to the development of emotional, somatic, and motivational symptoms of depression.

This project focuses on the PCP screening for and treatment of cognitive errors and the associated depressive symptoms. Provider education using the GLAD-PC clinical assessment and management flowcharts also focuses on the depressive symptoms portion of this model. The PCP prescribing of selective serotonin reuptake inhibitors (SSRIs) or other antidepressant medications also focuses on the treatment of depressive symptoms. The PCP will also refer

adolescents with identified depression to counseling services. During these counseling sessions, the therapist will use evidenced based techniques to address the adolescent's cognitive errors and depressive symptoms. Together the medications and counseling sessions will be used to reduce the patient's depressive symptoms. Through the reduction of depressive symptoms, the patient will also experience a decrease in the negative thoughts associated with the cognitive triad of depression. With a reduction of these cognitive errors the patient will also have a reduced number of dysfunctional attitudes.

### **Project Aims**

This project aimed to evaluate the congruence of current PHQ-9 screening rates at adolescent well-child visits and the management of adolescents who were identified as depressed with current clinical practice guidelines. Screening rates, medication prescribing and adherence, counseling referrals and initiation, barriers to treatment, follow-up care, and parent feedback were compared to clinical practice guidelines for inclusion in this program evaluation. The following clinical practice question was used to guide this program evaluation: for adolescents aged 12-18 who are identified to have moderate or severe depression with a PHQ-9 score of ten or higher during their well child visit, what strengths and weaknesses in the management of adolescent depression will follow-up phone calls identify?

### **Methods**

#### **Intervention**

All adolescents aged 12-18 were screened for depression using the PHQ-9 during their scheduled well-child visits. Data was not collected for adolescents with previously identified depression or developmental delay. The medical assistant was responsible for administering, scoring, and recording the PHQ-9 screening in the patient's chart. The PCP interpreted each

patient's PHQ-9 score and implemented the appropriate interventions. For adolescents who scored a 10 or higher on the PHQ-9, the PCP offered to start anti-depressant medication, initiate a referral for counseling services, and schedule follow-up visits as appropriate. The type of medication prescribed was at the providers discretion and not evaluated during this project.

### **Project Design**

This program evaluation was guided by the Center for Disease Control (CDC) framework for program evaluation in public health to focus on the management of adolescent depression at an inner city FQHC. The GLAD-PC clinical assessment and clinical management flowcharts were used as evidence-based practice models to compare the organizations current practice. The data collected from this program evaluation project was used to identify needs for future quality improvement projects and further program development.

### **Data Collection and Measures**

Data was collected using a weekly manual chart review for all adolescents who had a well-child visit scheduled from July 1, 2022, to February 10, 2023. For adolescents who did not have previously identified depression or developmental delay, their age, gender, and PHQ-9 score was collected (Table 1). Adolescents with a PHQ-9 score of 10 or higher who were seen in the past month were called for a follow-up. A structured interview template was used to ask patient's parents about medication adherence, therapy initiation, and quality of care. To maintain confidentiality, no patient identifiers were collected during this program evaluation and all data was stored in RedCaps for increased security. IRB approval was granted on January 6<sup>th</sup>, 2023, after this project was determined to be quality improvement and not research. Descriptive statistics were used to provide a gender ratio, age distribution, PHQ-9 screening rates, and average PHQ-9 scores. A scatter plot was used to show the distribution PHQ-9 scores.



## **Results**

During the data collection period, 51 adolescent well-child visits were scheduled. Of these adolescents, five did not attend their appointment, and one was excluded due to significant developmental delay. The remaining 45 adolescents did not have any previously identified depression and were included in this program evaluation. The average age of the adolescents was 14 with 26 males and 19 females. At the reviewed adolescent well-child visits, only 64.4% were screened for depression using the PHQ-9 and had a score recorded in their medical record. Of the adolescents who were screened for depression, PHQ-9 scores ranged from 0-13 (Figure 3). Only three adolescents had a score of 10 or above and all three were age 15. Two of the adolescents were male and one was female. Of the three depressed adolescents, one received medications and two were referred for therapy. Of these three patients, two were seen in the past month and qualified for a follow-up phone call. One patient was unable to be contacted after attempting to call on two different days. The other patient's parents completed the phone interview. This parent stated that their child has been adherent but has some difficulties remembering their medication early in the morning before school. This patient's parent denied difficulty obtaining the medication or starting therapy.

## **Discussion**

The purpose of this program evaluation was to assess the current screening and management of adolescent depression in comparison to current guidelines. Even with a small sample, the results of this program evaluation demonstrate the need to improve the use and documentation of adolescent depression screenings using the PHQ-9 during well visits. The current Medicaid policy is to screen at all well visits starting at age 12, however, this only occurred at 64.4% of visits. Although this project had a small sample size, the PHQ-9 screening

rate is consistent with previous literature. The exact cause of the low screening rates is unknown however, workflow changes that occurred when this busy practice switched from the PHQ-2 to the PHQ-9 could be a contributing factor. The occasional substitute medical assistant could also be a contributing factor. Patients at this office are also required to complete multiple pages of paperwork before each visit which could contribute to patient's choosing not to complete this screening tool. In the future, providers should verify each adolescent's PHQ-9 score before entering the patient room. Providers should also take the time to complete the PHQ-9 with patients to ensure its completion if it has not been done before. There is no difference in the screening rate based on the patient's age or gender. It is unknown whether the use of follow-up phone calls would have a high response rate. To continue improving the adolescent depression screening and management practices, the providers and their medical assistants should be aware of current guidelines.

### **Limitations**

The main limitation of this program evaluation is the very small sample size. Even though 45 adolescents well visits were included, only three of these adolescents had a PHQ-9 score of 10 or above. Of these three adolescents, only two qualified for a follow-up phone call and only one had a parent who participated in the structured interview. The sample size and overall generalizability of the project findings were also impacted by the short data collection time frame and the participation of only one provider and their medical assistant.

### **Conclusion**

Currently, only 64.4% of adolescents aged 12-18 are being screened for depression during their well visits in the observed practice setting. To be adherent with current guidelines, all adolescents should be screened for depression during their well-child visits. Unfortunately,

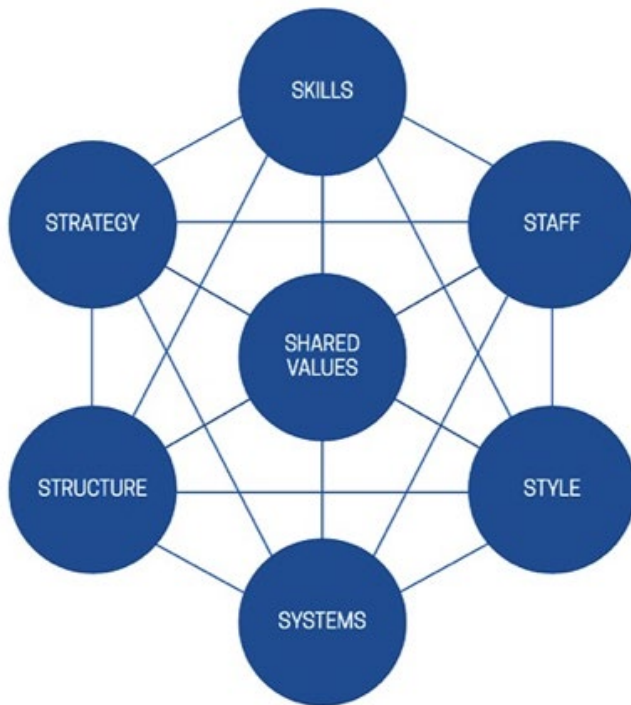
the generalizability of the project data is limited by the participation of only one provider, small sample size, and limited time for implementation. Due to the program evaluation nature of this project, there are no plans to sustain the follow-up phone calls. These phone calls were only used to collect program evaluation data and were not intended to be used to replace of in-office follow-up visits. No patient care was provided during these phone calls. Instead, that data was collected from the one successful phone call will be used to be recommendations for further projects. Future projects will be needed to accurately determine the response rate of follow-up calls and gather more information about the depression management provided including medications, counseling services, and follow-up visits.

### **Implications for Practice and Further Study in the Field**

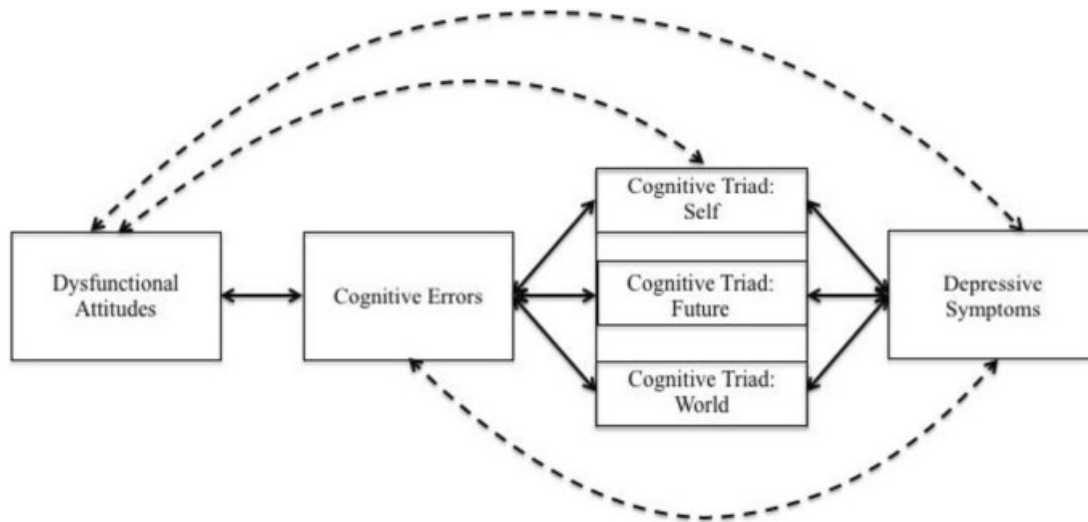
The providers at this office should continue to educate themselves on the current clinical practice guidelines for adolescent depression screening and management. Future projects should focus on the implementation of routine PHQ-9 screenings at well-child visits for all providers at the office. A future program evaluation could include all providers at the office. Although the data provided by this program evaluation is limited, valuable information has been gained to provide guidance for future project focused on adolescent depression. Additional suggestions for future program evaluations include the continued exploration of barriers to medication adherence and visit attendance along with evaluation of potential workflow barriers leading to the exclusion of PHQ-9 screening during adolescent well-child visits.

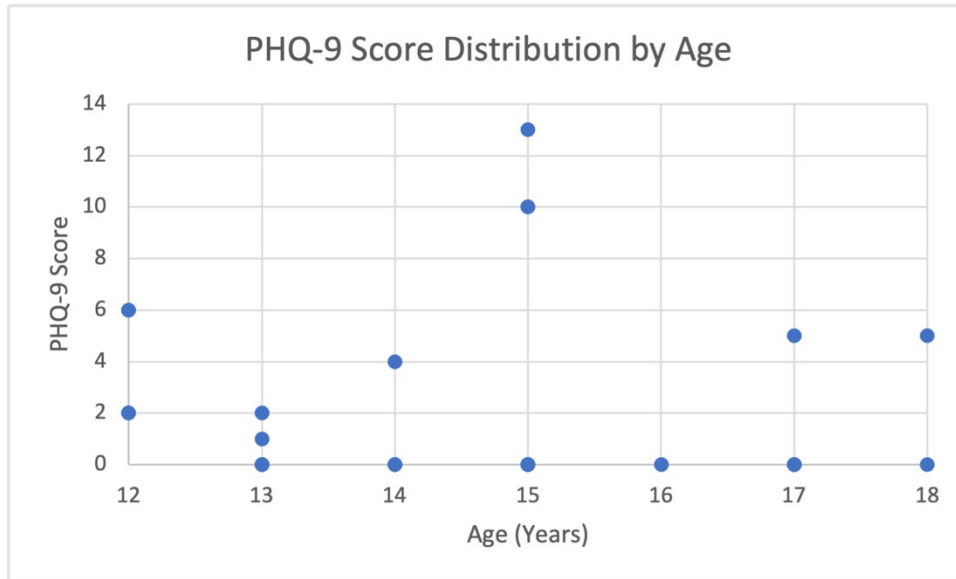
## Figures

**Figure 1. McKinsey 7-S Model**



**Figure 2. Beck's Cognitive Theory of depression**



**Figure 3. Adolescent PHQ-9 Scores**

## Tables

**Table 1. Table of Measures**

<b>Variable</b>	<b>Unit of Measurement / Data Collected</b>
Age	12-18 years
Gender	Male, Female, Other
PHQ-9 score at well- child visit	0-27
Medication adherence (From phone call)	Did patient take the prescribed medication? <ul style="list-style-type: none"> <li>• Yes, No, or N/A if not prescribed medications</li> </ul> Why did patient not take medication? <ul style="list-style-type: none"> <li>• Cost, transportation, side effects, did not want medications, feeling better, or other</li> </ul>
Therapy initiation (From phone call)	Have they been able to start therapy? <ul style="list-style-type: none"> <li>• Yes, no, or N/A if they did not want a therapy referral.</li> </ul>

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<https://doi.org/10.1542/peds.2017-4081>

# Adolescent Depression Management: An Inner City Federally Qualified Health Center Program Evaluation

Aurora Wernette BSN, RN  
DNP Final Project Defense  
April 7th, 2023



# Acknowledgements

## Faculty Advisors

- Christina Quick DNP, APRN, CPNP-AC/PC, CHSE
- Allison E. Reynolds, DNP, CPNP-AC/PC, CCRN

## Site Mentor

- Ryan Holley-Mallo, PhD, DNP, NP-C, FAANP

# Objectives for Presentation

- Explore the clinical phenomenon of adolescent depression and depression management
- Synthesize the organizational assessment, literature review findings, and project plan
- Discuss results of the adolescent depression management program evaluation

# Introduction

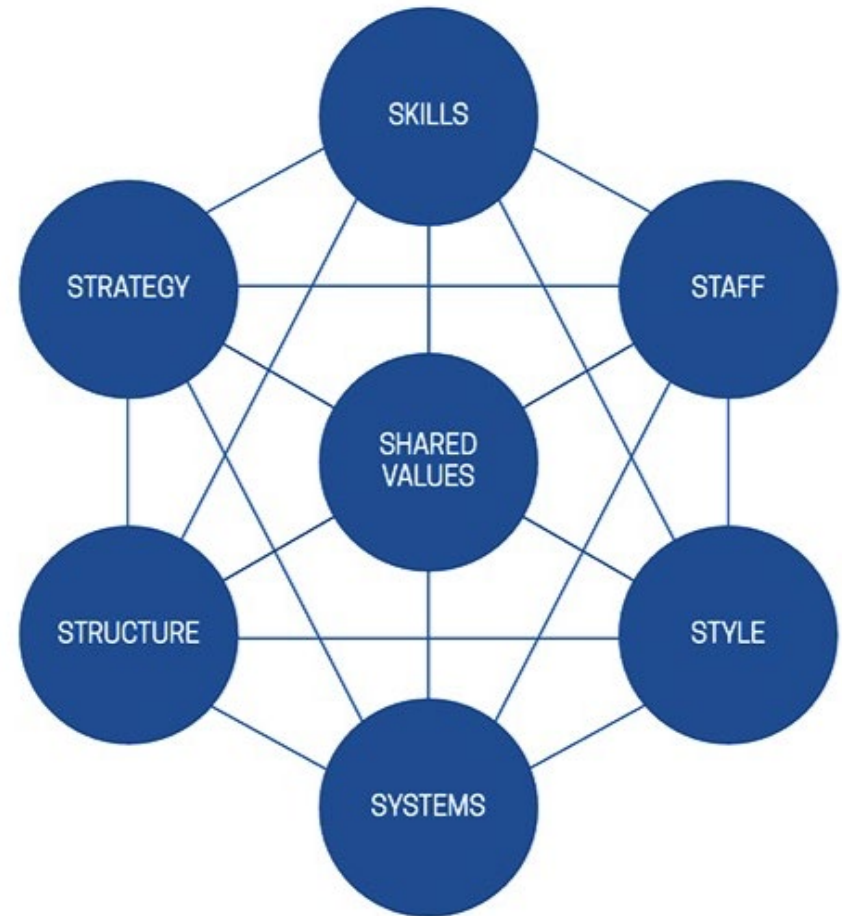
- 119,000 depressed adolescents in the state and 57.8% do not receive mental health care (NAMI, 2021)
- Untreated mental illness increases school drop out, drug use, suicide, incarceration, and homelessness
- Mental health identified as a priority for the organization and local county
- REACH institute adolescent depression guidelines for primary care (GLAD-PC) published by the American Academy of Pediatrics (AAP)
- State Medicaid Policy to screen adolescents annually starting at age 12



# Organizational Assessment

# Current State of the Organization

- Organizational assessment with McKinsey 7-S Model
  - Macro and micro level assessment
- Midwest Federally Qualified Health Center (FQHC)
  - One inner city location
- Strengths and weaknesses identified



McKinsey 7-S Model (MBA Management Models, 2021)

# Organizational assessment with McKinsey 7-S Model

- **Structure:** Organizational mission, provider support
- **Strategy:** Staff emails, in-office bulletins
- **Systems:** 20 locations provide a variety of services
- **Skills:** Functional EHR, knowledgeable staff
- **Staff:** Providers, medical assistants, care managers
- **Style:** Weekly updates, community involvement
- **Shared values:** Organization and provider support

# SWOT Analysis

Strengths	Weaknesses
<ul style="list-style-type: none"> <li>• Federally qualified health center (FQHC) status</li> <li>• <b>PHQ-9 available in many languages</b></li> <li>• <b>Onsite Spanish interpreter</b></li> <li>• Onsite counseling services</li> <li>• <b>Organizational strategic plan focused on mental health</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Patient transportation barriers</b></li> <li>• High medication non-adherence</li> <li>• Language barriers</li> <li>• <b>Busy practice</b></li> <li>• <b>Potential workflow changes</b></li> </ul>
Opportunities	Threats
<ul style="list-style-type: none"> <li>• <b>Mental health identified as a need and a strategic priority</b></li> <li>• Medicaid's early and periodic screening, diagnostic, and treatment (EPSDT) includes mental health screening for all youth (Medicaid, n.d.)</li> </ul>	<ul style="list-style-type: none"> <li>• Competing organizations</li> <li>• Long wait times for counseling services</li> <li>• <b>Limited implementation time</b></li> <li>• Limited mental health care providers available</li> </ul>



# Clinical Practice Question

For adolescents aged 12-18 who are identified to have moderate or severe depression with a Patient Health Questionnaire 9 (PHQ-9) score of ten or higher during their well child visit, what strengths and weakness in the management of adolescent depression will follow-up phone calls identify?

# Literature Review

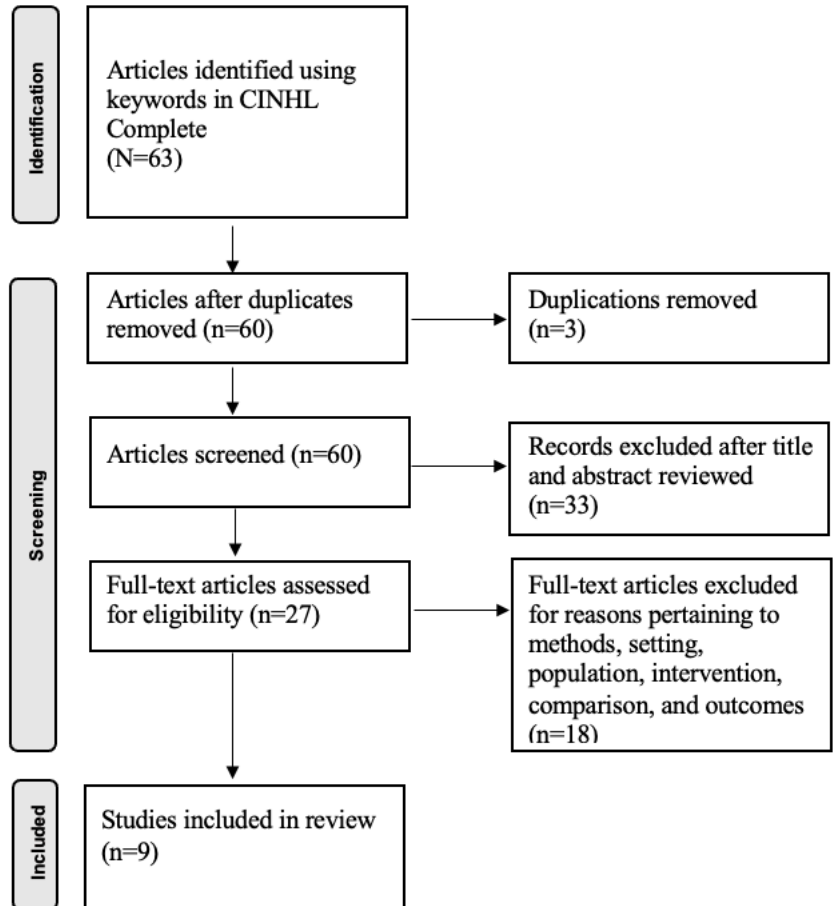
# Literature Review Aims

- What is the preferred adolescent depression screening tool and depression follow-up visit frequency?
- What do evidence-based clinical practice guidelines recommend for the identification and management of adolescent depression?
- What were the findings of previous research studies and quality improvement projects that focused on primary care identification and management of adolescent depression?



# PRISMA Figure

Adapted from “Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement,” by D. Moher, A. Liberati, J. Tetzlaff, D. Altman, and PRISMA Group. Copyright 2009 by PLoS Medicine.

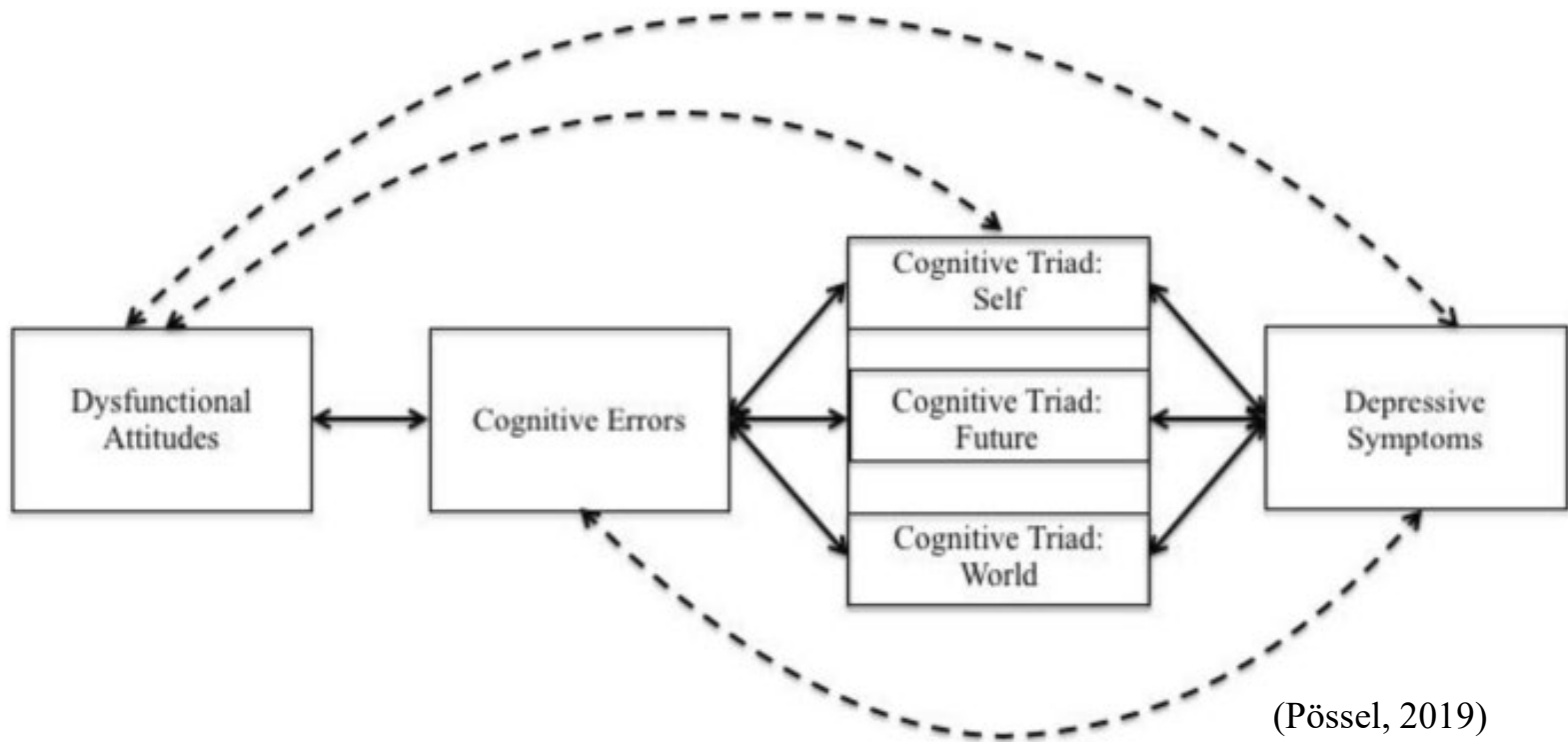


# Available Knowledge

- Clinical practice guidelines available from AAP, NICE, AACAP, and USPSTF
- Previous quality improvement projects implemented PHQ-9 screenings and monthly follow-up visits
- Cross sectional surveys identified providers need more education on the management of depression in the adolescent population
- Retrospective chart reviews found low rates of depression screening and follow-up care

# Conceptual Model for Phenomenon

## Beck's Cognitive Theory of Depression



# Project Plan

# Project Purpose and Objectives

**Project Purpose:** Evaluate adolescent depression management at an inner city FQHC

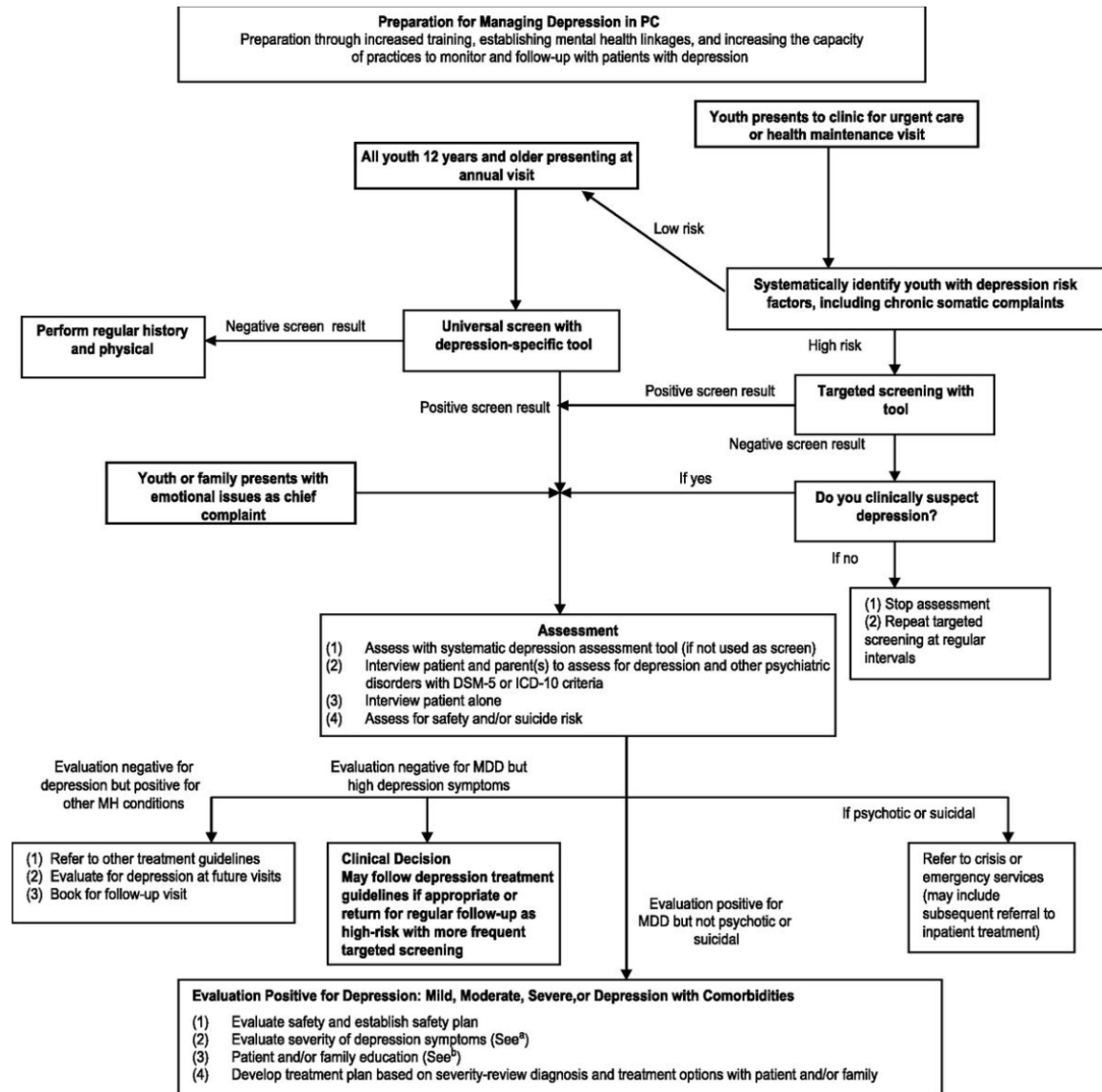
## **Project Objectives:**

1. Educate providers on evidence based adolescent depression screening and management guidelines
2. Initiate follow-up phone calls to assess medication adherence, therapy initiation, and quality of care
3. Identify the most common reasons for medication non-adherence and refusal in this population
4. Evaluate the rate of counseling services initiation the most common reasons for counseling refusal

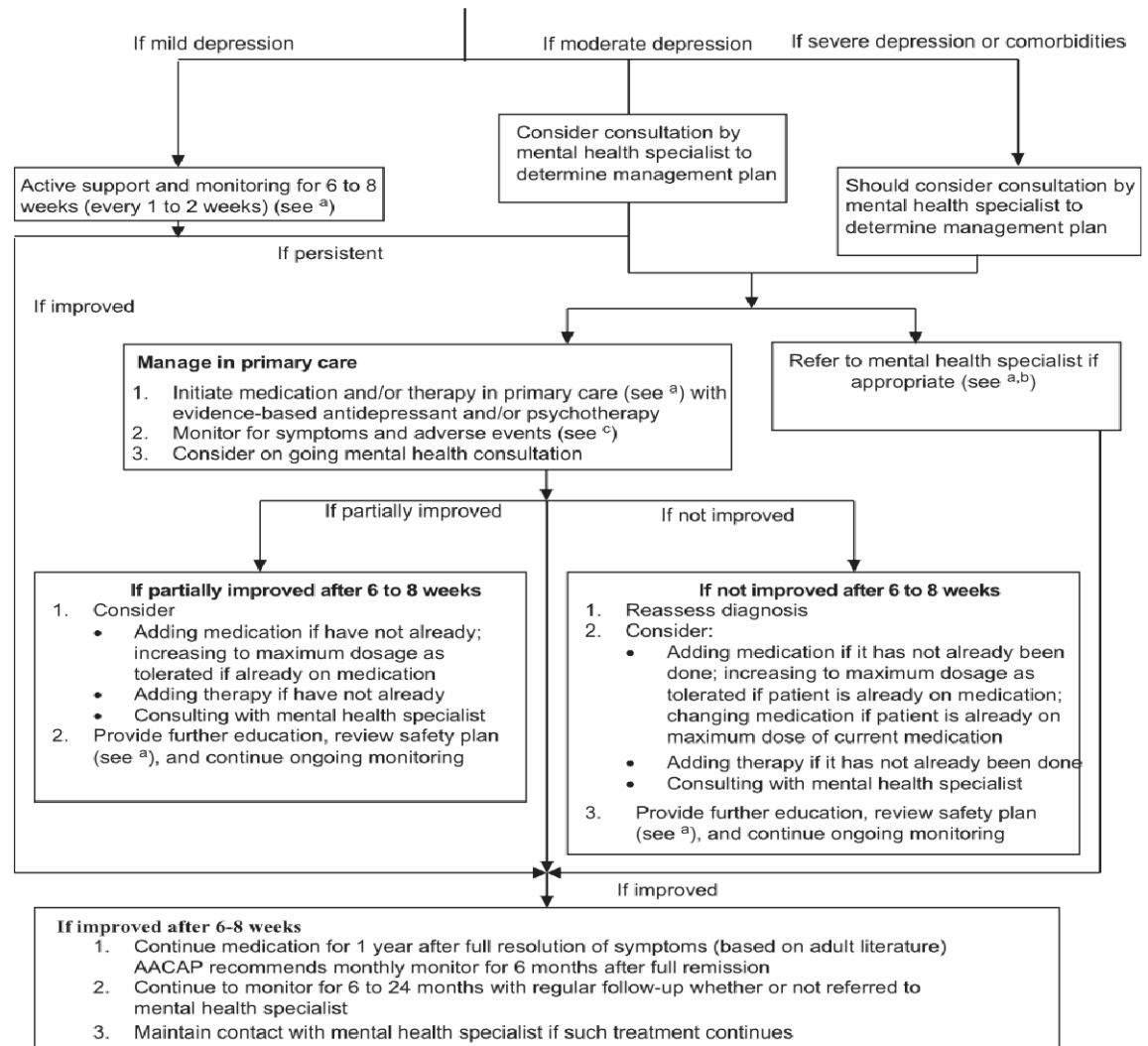
# Project Design

- Program evaluation project focused on adolescent depression management at an inner city FQHC
- Comparison of current management for depressed adolescents to evidence-based guidelines
- Aim to provide safe and effective patient-centered care for depressed adolescents
- Aim to improve health outcomes for depressed adolescents
- Identify needs for future quality improvement projects and further program development

# Clinical Assessment Flowchart



# Clinical Management Flowchart





# Intervention

- Educate providers with GLAD-PC screening and management flowcharts
- Screen all adolescents aged 12-18 using the PHQ-9 during well visits
- Refer to counseling and/or start medications for PHQ-9 scores 10 or higher
- Schedule a follow-up visit
- Follow-up phone call using a structured interview template

PATIENT HEALTH QUESTIONNAIRE-9 (PHQ-9)				
Over the last 2 weeks, how often have you been bothered by any of the following problems? (Use "✓" to indicate your answer)	Not at all	Several days	More than half the days	Nearly every day
1. Little interest or pleasure in doing things	0	1	2	3
2. Feeling down, depressed, or hopeless	0	1	2	3
3. Trouble falling or staying asleep, or sleeping too much	0	1	2	3
4. Feeling tired or having little energy	0	1	2	3
5. Poor appetite or overeating	0	1	2	3
6. Feeling bad about yourself — or that you are a failure or have let yourself or your family down	0	1	2	3
7. Trouble concentrating on things, such as reading the newspaper or watching television	0	1	2	3
8. Moving or speaking so slowly that other people could have noticed? Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual	0	1	2	3
9. Thoughts that you would be better off dead or of hurting yourself in some way	0	1	2	3

FOR OFFICE CODING   0   +      +      +       
=Total Score:     

If you checked off **any** problems, how **difficult** have these problems made it for you to do your work, take care of things at home, or get along with other people?

Not difficult at all	Somewhat difficult	Very difficult	Extremely difficult
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

PHQ-9 (American Psychological Association, n.d.)

# Data Collection

- Weekly manual chart audit and follow-up phone call using structured interview template
  - Demographic data
  - PHQ-9 score
  - Follow-up visit
  - Medication adherence
  - Initiation of counseling

# Table of Measures and Sample Data Collection Table

Variable	Unit of Measurement / Data Collected
Age	12-18 years
Gender	Male, Female, Other
PHQ-9 Score at Well child visit	0-27
Medication Adherence (From survey)	Did patient take the prescribed medication? Yes, No, or N/A if they were not prescribed medications Why did patient not take medication? Cost, transportation, side effects, did not want medications, feeling better, or other
Therapy initiation (From survey)	they been able to start therapy at one month follow-up? Yes, no, or N/A if they did not want a therapy referral.

Patient	Age	Gender	PHQ-9 Well Child Visit	Medications prescribed?	Referred for counseling?	Medication Adherence?	Medication difficulties?	Reason for counseling refusal	Reason for medication refusal	Reason for non-adherence	Scheduled counseling?	Counseling scheduling difficulties?	Follow Up Scheduled?	Other comments
A	14	M	12	No	Yes	N/A	None	N/A	Beliefs	N/A	No	None	Yes 12/2	None
B	15	M	11	No	Yes	N/A	None	N/A	Beliefs	N/A	Yes 12/10	Language	Yes 12/4	None
C	17	F	15	Yes	Yes	Yes	None	N/A	N/A	N/A	Yes 1/3	None	Yes 12/15	None
D	15	F	12	No	Yes	N/A	None	N/A	Patient	N/A	No	None	Yes 1/5	None
E	16	F	14	Yes	Yes	No	None	N/A	N/A	Cost	No	None	Yes 12/30	None
F	16	M	17	Yes	Yes	Yes	None	N/A	N/A	N/A	Yes 12/22	None	Yes 12/21	None
G	17	M	15	Yes	No	Yes	None	Beliefs	N/A	N/A	N/A	None	Yes 1/3	None
H	15	M	17	Yes	Yes	No	None	N/A	N/A	Side effect	Yes 12/13	Transport	Yes 12/10	None
I	16	F	13	No	Yes	N/A	None	N/A	Side effects	N/A	Yes 12/15	None	Yes 12/20	None
J	13	F	14	Yes	Yes	No	None	N/A	N/A	Felt better	No	Language	Yes 12/16	None

# Ethical Considerations

- No patient identifiers will be collected
- RedCaps program will be used for data security
- Adolescents are a protected population in research
- Individuals who are mentally ill and economically disadvantaged individuals are vulnerable populations for research
- IRB approval obtained

# IRB Approval



Date: January 06, 2023

To: Christina Quick  
From: Office of Research Compliance & Integrity  
Project Title: Adolescent Depression Management: An Inner City Federally Qualified Health Center Program Evaluation  
Project Number: 23-141-H  
Submission Type: IRB Research Determination Submission

Action: Not Research  
Effective Date: January 06, 2023  
Review Type: Administrative Review

# Project Summary

- Provider education using GLAD-PC clinical assessment and clinical management flowcharts
- Evaluate rate of PHQ-9 screenings for adolescents at well child visits
- Follow-up structured phone interview for patients with a PHQ-9 score 10 or above
- Analyze PHQ-9 scores and information obtained from interviews

# Methods, Setting, and Participants

- Inner city FQHC pilot project
- Program evaluation using the CDC Program Evaluation Framework
- Pilot project with one PCP and their medical assistant
- Adolescents aged 12-18 presenting for well child visits
- Provider education guided by GLAD-PC clinical assessment and clinical management flowcharts
- Weekly manual retrospective chart review and structured interview follow-up phone call

# Implementation Framework

- Framework for Program Evaluation in Public Health
  - Six stages of implementation
  - Four standards of evaluation



Framework for Program Evaluation in  
Public Health (Centers for Disease  
Control and Prevention, 1999)



# Implementation Strategies & Elements

- Assess for readiness, identify barriers and facilitators
- Conduct an educational meeting
- Audit and provide feedback
- Involve patient and family members

(Powell, 2015)

# Evaluation & Measures

Topic	Concept	How Measured	When Measured	Who Measures
<b>Patient outcomes</b>	Adolescent PHQ-9 scores	EHR audit	Post implementation	Student
	Therapy initiation	Interview	Post implementation	Student
	Medication adherence	Interview	Post implementation	Student
<b>System Outcomes</b>	Use of PHQ-9 at adolescent well visits	EHR audit	Post implementation	Student

# Data Analysis Plan

- Descriptive statistics of demographic data, PHQ-9 screening rates, and PHQ-9 scores
- Pie charts and bar graphs for visual representation of patient demographics, therapy initiation, and medication adherence
- Thematic analysis of interview responses
- Statistical analysis not appropriate for this data

# Budget & Potential Revenue Gain

Potential Revenue Gain	
1 patient attends a follow-up visit • Billing CPT codes 96127 and 99213	\$56.20
10 patients attend a follow-up visit	\$562

Expenses for Implementation of Project	
None	

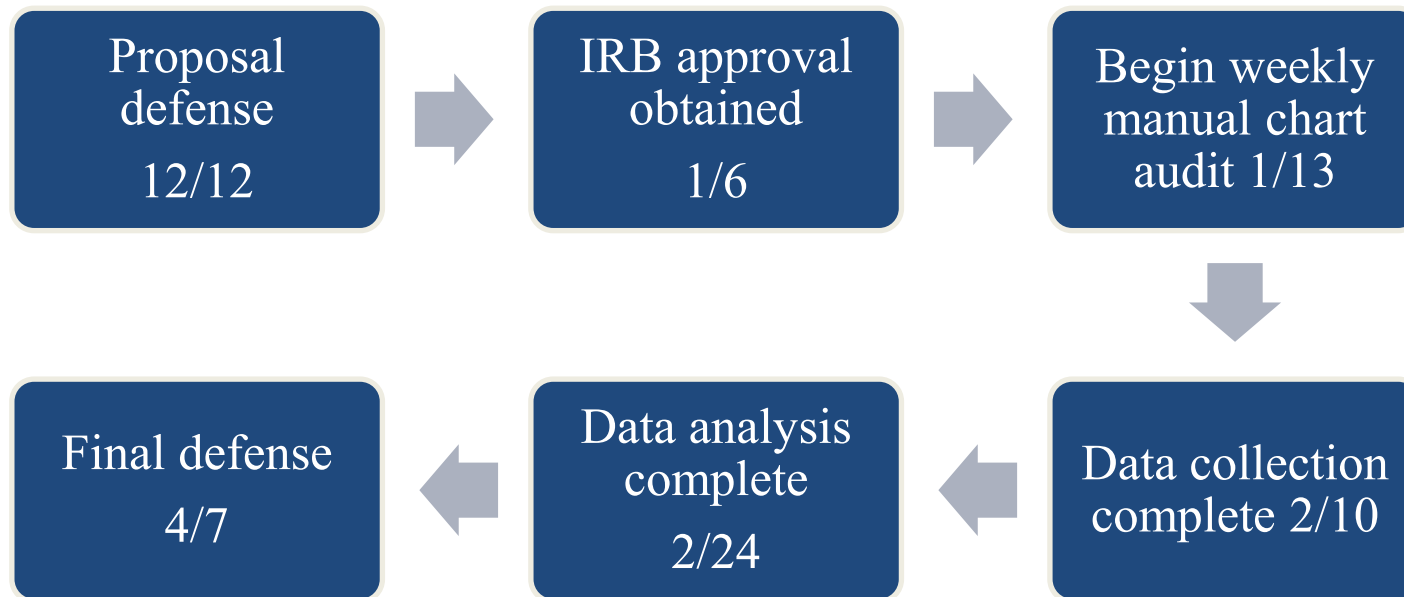
  

Donated Expenses for Implementation of Project	
DNP Student work (200 hours at \$30 per hour)	\$6000
Nurse practitioner mentors (20 hours at \$50 per hour)	\$1000

<b>Cost Mitigation of Care for 10 Adolescents</b>	<b>\$562</b>
Actual Cost Mitigation (1 Adolescent)	\$56.20

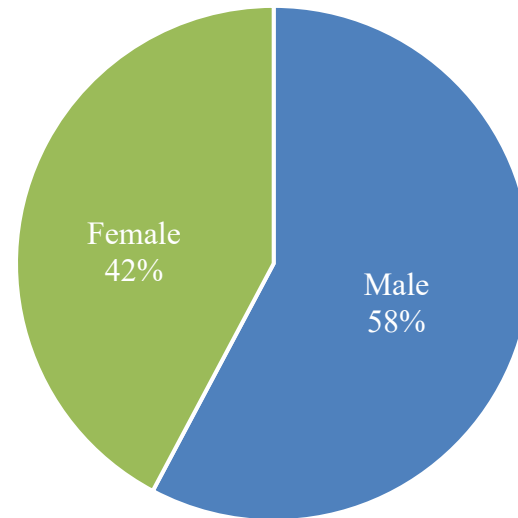
# Project Timeline



# Results

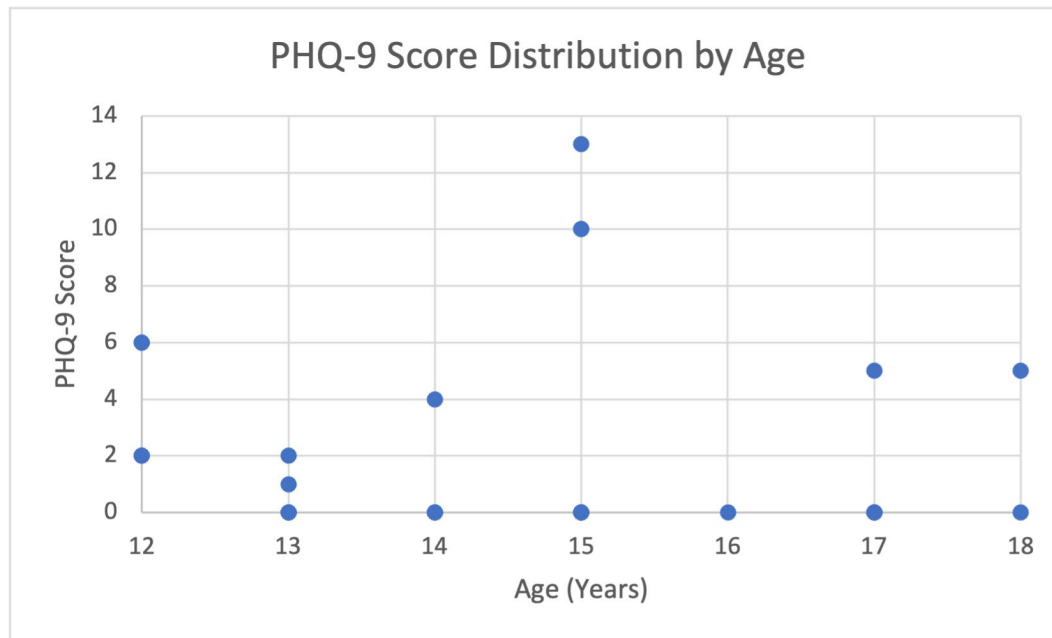
# Results: Participant Characteristics

- Adolescent well visits identified: 51
- Adolescents qualified: 45
- Average age: 14 years
- Males: 26
- Females: 19



# Results: Patient Outcomes

- Adolescents screened for depression: 64.4%
- Adolescents with a PHQ-9 of 10 or higher: 3
- Adolescent parents interviewed: 1





# Results: Patient Outcomes

- Depressed adolescents who received counseling: 2
- Depressed adolescents who started medications: 1
- One parent completed the interview
  - Medication adherent, some difficulty remembering
  - No difficulty obtaining medication or counseling

# Discussion

- Need to improve use and documentation of adolescent depression screenings using the PHQ-9
  - Current Medicaid policy is to screen at all well visits starting at age 12
- Unknown if phone calls would have a high response rate for follow-up
- Providers and their medical assistants should be aware of current depression screening guidelines

# Limitations

- Small sample size
  - Only 3 adolescents with a PHQ-9 of 10 or higher
  - Only 1 parent answered the follow-up phone call
- Short data collection time frame
- Only one participating provider and medical assistant team

# Implications for Practice

- Unknown effectiveness of phone follow-up calls
- Depression screening rates using the PHQ-9 still need to be improved
- Continue education on current guidelines
- Future QI and program evaluation projects
  - Include more providers and other offices
  - Barriers to medication adherence and visit attendance
  - Evaluation of workflow to identify reason PHQ-9 is not completed or documented

# Conclusions

- Small sample size and short time frame limit data analysis
- Adolescent depression screening rate using the PHQ-9 needs to be improved
  - Providers are continuing to use the PHQ-9
- Program evaluation will not be sustained
  - Recommendations for further projects
  - Providers should continue screening and managing based on current guidelines
- Program evaluation represents a DNP project and utilized all DNP essentials

# Dissemination

- Poster presentation of original project proposal at the Fall MI NAPNAP Conference
- Participating provider will receive a copy of the project manuscript
- Project manuscript will be submitted to GVSU Scholarworks for scholarly and public dissemination

# DNP Essentials Reflection

DNP Essential	Reflection
I. Scientific Underpinnings for Practice Literature Review Analysis of current adherence promoting interventions	<ul style="list-style-type: none"><li>• Literature Review</li></ul>
II. Organizational and Systems Leadership for Quality Improvement and Systems Thinking	<ul style="list-style-type: none"><li>• Collaboration with site and faculty mentors</li><li>• Project planning, proposal, implementation</li></ul>
III. Clinical Scholarship and Analytical Methods for Evidence-Based Practice	<ul style="list-style-type: none"><li>• Identification of evidence-based guidelines</li><li>• Use of implementation and conceptual models</li></ul>

# DNP Essentials Reflection

DNP Essential	Reflection
IV. Information Systems/Technology and Patient Care Technology for the Improvement and Transformation of Health Care	<ul style="list-style-type: none"><li>• Manual chart audit</li></ul>
V. Health Care Policy for Advocacy in Health Care	<ul style="list-style-type: none"><li>• Researching mental health policy</li></ul>
VI. Interprofessional Collaboration for Improving Patient and Population Health Outcomes	<ul style="list-style-type: none"><li>• Project planning, proposing and implementation</li></ul>
VII. Clinical Prevention and Population Health for Improving the Nation's Health Prevention	<ul style="list-style-type: none"><li>• Disseminating of findings</li><li>• Fall 2022 MI NAPNAP Conference</li></ul>
VIII. Advanced Nursing Practice	<ul style="list-style-type: none"><li>• Evaluation of patient outcomes</li></ul>



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