Improving Staff Education on Lung Cancer Screening at the Illinois Correctional Facilities for the Justice-Involved Individual

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PROBLEM INTRODUCTION

Justice-involved individuals:
- Increased smoking prevalence
- Chronic health conditions including lung cancer

Lung cancer diagnosed late stage

Risk factors smoking:
- Mental illness
- Substance use disorders
- Environmental

PROJECT METHODS

Educate staff on lung cancer screening guidelines

Educate staff on lung cancer risks for justice-involved individuals

PowerPoint presentation

Pre/post-test 10 questions

Survey monkey/links/QR codes

Instructional sheet with 3 easy steps

IMPACT ON PRACTICE

IDOC staff increased knowledge regarding lung cancer screening guidelines

This educational tool can be utilized in the future when implementing a lung cancer screening program

Long-term: improved lung cancer screening rates for justice-involved individuals

LITERATURE REVIEW

Increase for lung cancer, late dx

2014 IDOC cancer leading cause of death

IDOC increased tobacco use

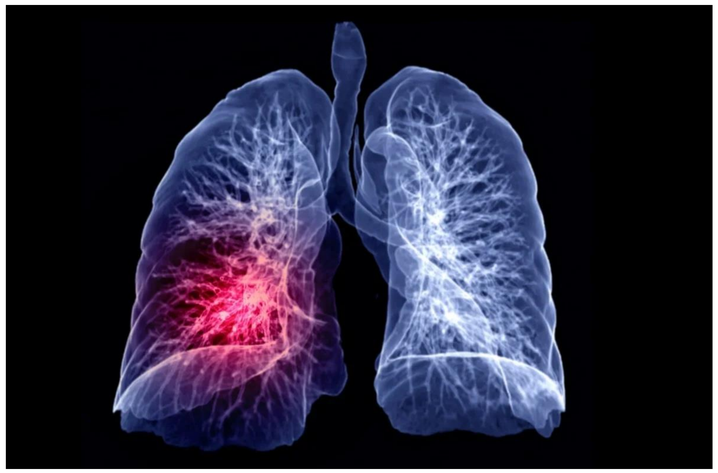
National Lung Screening Trial- decreased mortality

USPSTF/ACS lung cancer guidelines

IDOC implementation lung cancer screening/staff education

Incentives:
- Early detection, life expectancy, mortality

Barriers:
- Cost, transportation fees, radiation exposure



EVALUATION

Pre-test average 70% correct response rate

Pre-test: What age is lung cancer screening recommended, missed 54%

Post-test: confidence in USPSTF guideline use increased by 32%

Post-test: What age is lung cancer screening recommended, improved 92%, a 38% increase

Post-test
- average correct response rate 97%
- increased by 27%
- educational goal met

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CONCLUSIONS

Gap existed IDOC lung cancer screening guidelines

Educational intervention for IDOC staff

IDOC staff improved confidence and knowledge lung cancer screening

LIMITATIONS

The COVID-19 pandemic contributed to limiting the potential of this project

Unable to present in person

Staff participation was lacking

Conducting a Root Cause Analysis to Improve Intake Processes and Record Review in Home Health

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PROBLEM INTRODUCTION

- Issues: adverse events, inpatient admissions, and polypharmacy
- The home-health niche has limited access records, increasing incidence of adverse events
- 10,591 home health agencies, caring for over 5,266,931 patients.
- Projected > 50% increase of enrollment over the next 15 years (54 million to more than 80 million by the year 2030)
- Lack of new patient intake processes in a Midwestern, privately-owned, home health agency
- Root causes analysis of organizational and provider obstacles in adaption and implementation of new processes

LITERATURE REVIEW

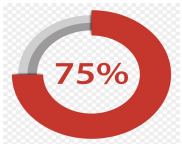
- Unregulated processes = medical errors, the 3rd cause of death in the U.S
- EMRs streamline data but, interoperability in home health is limited
- Disparities in EMR funding exist and remains fragmented and decentralized
- Institutional intake processes promote accountability and quality improvement within home health
- Population specific intake processes superior to traditional processes
- The integration of custom intake forms will bridge gaps in care amongst home health patient.

PROJECT METHODS

- Quantitative Design
- 5-step root cause analysis approach
- Proposal of evidence-based interventions via leadership presentation
- Pre and post Qualtrics surveys
- IRB Exempt

EVALUATION

- 75% improvement
- -knowledge
- -readiness to change



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IMPACT ON PRACTICE

- Increased confidence and knowledge
- Demonstrated readiness for change
- Predicted long-term support initiatives
  -streamline intake processes
  -decrease adverse patient events

CONCLUSIONS

Root Cause Analysis resulted in:

- Productive planning
- Action to improve intake process
- Utilization of evidence-based research
- Stakeholder / staff motivation
- Dissemination to advanced practice nurse entrepreneurs

Implementation of PrEP Protocol in Primary Care

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Problem Introduction

- HIV is an incurable condition
- 38 million individuals are infected worldwide
- Pre-exposure prophylaxis (PrEP) is a medication for patients at high risk for HIV
- 1.2 million Americans eligible for PrEP & only 90,000 individuals were prescribed it
- At the project site all patients were being referred for PrEP initiation

Literature Review

Aim — Optimize PrEP uptake by providers in primary care settings

High-risk Groups — Men who have sex with men (MSM), intravenous drug users, and/or sex workers

Guidelines — The current CDC guidelines were used to create PrEP protocol

Barriers — Cost, lack of specialized training, and lack of comfort prescribing PrEP

Project Methods

- Pre-intervention surveys October 2021
- Educational meeting via Webex including PrEP protocol, & patient brochures October 2021
- Post-intervention surveys December 2021

PrEP Protocol

1. The provider needs to establish that patient is candidate for PrEP

High-Risk Populations:

MSM, PWID, Serodiscordant couples for HIV

2. Labs to obtain before initiating PrEP:

CBC, CMP (GFR <60), Pregnancy Test, HBsAg and HBcAb Total, Hepatitis C Antibody, HIV Screen, RPR Titer, Urine GC/Chlamydia

(IF HIV screen (-) and GFR <60 GO TO STEP 3 AND INITIATE PREP)

3. Starting PrEP

Truvada *or* Descovy

(One tablet by mouth daily)

4. Monitoring the patient while on PrEP after initiation (One-month follow-up):

- Evaluate and support PrEP medication adherence, side effects and acute HIV symptoms
- Review HIV/STI risk reduction
- Perform or schedule laboratory tests

5. Three-month monitoring after starting PrEP:

CBC, CMP, Pregnancy Test, HIV Screen, Urine GC/Chlamydia

(REPEAT EVERY THREE-MONTHS WITH A FOLLOW-UP)

Evaluation

- Based on providers' responses, there is a possibility that the number of referrals to infectious disease may have decreased.
- Provider scores results indicated that the educational meeting about PrEP and protocol did have a positive effect
- Further education regarding when to discontinue PrEP treatment may be necessary.

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Impact on Practice

PrEP Protocol Implementation

- Increases Access to Preventative Services for High-Risk Populations
- Decreases Delay in Prophylactic Treatment
- Reduces New HIV Cases
- Designated Clinic Day for PrEP Patients

Conclusions

- PrEP is **a** key factor in combatting new infections of HIV
- Education of providers and development of protocol had a positive effect in the primary care practice
- Plans to develop a clinic solely for PrEP patients.

Acknowledgement

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Physician Use of the RAPID3 to Guide Rheumatology Follow-Up: A Retrospective Examination

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PROBLEM INTRODUCTION

Problem defined as long wait times for next available rheumatology appointment

Problem identified through Lean Six Sigma method by the clinic's quality improvement team

Rheumatologists will need to prioritize patient visits to improve outcomes

The American College of Rheumatology (ACR) recommends disease assessment tools and a treat-to-target approach to determine follow-up intervals and improve patient outcomes.

Each provider used a different tool and utilization at time of appointment was and inconsistent

The RAPID3 is being examined because of its ability guide patient follow-up decisions and monitor disease progression

LITERATURE REVIEW

Treat-to-target means:

Measuring a patient's disease activity every 1-3 months with an approved assessment tool until the desired outcome is reached, then measuring every 3-6 months to monitor for changes.

Using the treat-to target approach and assessment tools, research shows nearly 60% of patients achieved remission or low disease state within a year.

Assessment tools aid in decisions for the timing of follow-up appointments, reducing unneeded visits for those doing well, and increasing availability for those who are not yet at target.

The RAPID3 is used to measure disease activity in rheumatology patients by having them score pain, functional impairment, and the patient's overall estimate of how they are doing.

Increased score = Decreased quality of life

The RAPID3 received the highest possible rating from the ACR for content validity, structural validity, hypothesis testing, and feasibility despite taking less than 2 minutes to complete and score.

Some providers and researchers believe the RAPID3 relies too heavily on subjective symptoms that could be due to comorbidities, not just rheumatological conditions.

PROJECT METHODS

American College of Rheumatology RAPID3 Scoring and Recommended Follow-up

RAPID3 Score	Disease Activity	ACR Guidelines for Follow-up
>12	High	1-2 Months
6.1-12	Moderate	3 Months
3.1-6	Low	4 Months
3.0 -0	Remission	6 Months

Sample of 30 New Rheumatology Patients Between June 2020 to September 2021

Initial Visit
Date
RAPID3 Score

Follow-up Visit
Date
RAPID3 Score

Analyzed
Interval Between Initial Visit and Follow-up Visit
Initial RAPID3 Score and Follow-up RAPID3 Score Change
How Did Interval Compare to ACR Recommendation for Follow up

EVALUATION

Adherence to ACR Recommendations
- 80% (24/30) were seen outside the recommended timeframe.
  - 43% (13/30) were seen early
  - 37% (11/30) were seen late

Scores at Follow-up
- 53% (16/30) of all patients had a decreased score
- 37% (3/8) of those seen on time had a decreased score
- 79% (11/14) of those with higher scores were not seen within the time frame recommended by the ACR
- 72% (8/11) of those with higher scores (and not seen inside the timeframe) were seen early

Interpretation
- Provider knowledge of RAPID3 score at time of appointment did not standardize follow-up timing
- More frequent follow-up does not improve scores

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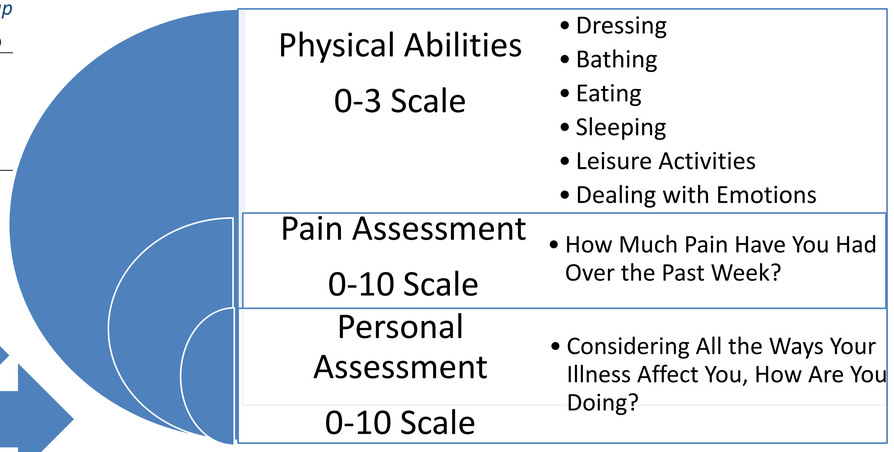
THE RAPID3



IMPACT ON PRACTICE

Education is needed to increase use of RAPID3 acceptance and use

- Presentation disseminated to providers expediated the electronic collection and use of the RAPDI3 tool

Standardization of the completion and collection process would simplify use

- A method for electronic completion by patients that populated automatically to the EHR was facilitated

Adopting a protocol based on ACR guidelines would assist in alignment with evidence-based practice

- ACR protocol for follow-up adoption submitted and is being reviewed by the practitioners.

CONCLUSIONS

The ACR recommends the use of disease assessment tools but less than 35% of rheumatologists use them.

The RAPID3 is validated and takes less than 2 minutes to complete.

By opening a dialogue with providers and providing education about the RAPID3:

I facilitated the creation of an electronic format and systematize completion and entry into the EHR for physician reference.

Recommend a protocol to standardize follow-up, improve patient outcomes, and increase patient satisfaction

T2DM Management through Use of a Personal Health Coach

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PROBLEM INTRODUCTION

Type 2 diabetes mellitus (T2DM) affects over 30 million Americans and is increasing every year (Center for Disease Control and Prevention [CDC], 2019a).

Diabetes mellitus (DM) was the seventh leading cause of death in 2016 (World Health Organization [WHO], 2020).

The increasing prevalence of this disease is due to the increasing amount of obesity, lack of exercise, and increasing stress in everyday lives (CDC, 2019d).

When diabetic patients have additional education regarding lifestyle modifications and individualized training sessions to further their understanding of how to manage their T2DM, many aspects of diabetes improve (Garcia-Molina et al., 2020).

Personal health coaching (PHC) is an additional service that helps improve knowledge, self-efficacy, adherence to treatment, behavioral changes, health outcomes, and utilization of healthcare resources (Ruffin, 2017).

LITERATURE REVIEW

Benefits to glycemic control

- T2DM can result in multiple comorbidities. It is a major cause of blindness, kidney failure, strokes, myocardial infarctions, and lower-limb amputations (WHO, 2020).
- The vast comorbidities generate a heavy burden on the affected patient, further decreasing quality of life, limiting physical function, decreasing mental health, and causing more financial burden (CDC, 2019c).
- T2DM had a financial cost of $327 billion in 2017 that included medical costs, disability, and mortality (ADA, n.d.).

Lifestyle Modification

- Results from a systematic review showed that nutritional modification had the highest value regarding glycemic control. In addition, when patients were able to lower their body mass index (BMI) by 5%, engage in furthering diabetic education, and partake in group and individual support sessions, glycemic control was greater achieved (Garcia-Molina et al., 2020).
- Diabetic self-management will increase the health and knowledge of T2DM, save medical and prescription costs, better problem solving on how to prevent diabetic complications, help prevent or delay secondary health complications related to T2DM, and improve overall health (CDC, 2020c).

Non-Pharmacological Management

- Pharmacological therapy is effective but can have undesirable side effects. Therefore, the use of non-pharmacological interventions alone or alongside pharmacological intervention has shown success in glycemic management (Ruffin, 2017).
- The most widely utilized non-pharmacological intervention identified was the use of a personal health coach (PHC). A PHC is a member of a diabetic care team that aids in improving a patient's diabetic self-management through empowerment, motivation, action planning, goal setting, and communication (Cinar et al., 2018).

PROJECT METHODS

Project Design

- The overall purpose was to evaluate the implementation of a PHC for the management of T2DM in adult patients in a federally-funded clinic.
- Adult patients ranging in age from 21 to 75 years with a current diagnosis of T2DM who have a hemoglobin a1c level > seven were included.
- IRB approval was obtained from Southern Illinois University at Edwardsville and Chestnut Health Systems.

Implementation

- Patients completed a pre-and post-survey and their pre-and post-hemoglobin a1c levels were obtained from their charts.
- A three-month appointment to reevaluate compliance and self-management skills was required.
- A signed informed consent form and a contact information sheet obtained.
- Utilized the Diabetes Management Self-Efficacy Scale (DMSES) (Bilj et al., 1999; Jiyeon et al., 2020).

Assessment

- After the three-month implementation period, the patients completed the post-survey and their post hgb a1c levels were obtained from their health care provider.
- The results of their post-hgb a1c and the post-survey were used to evaluate their readiness to manage the disease and their compliance to the management regimen.

EVALUATION

A total of seven patients were recruited for this project, with three participating through completion

Statistical analysis using a paired t-test was performed on the data to obtain the mean hgb a1c and numerical answers for the DMSES pre- and post-intervention.

The difference in these means was then calculated to assess if the intervention had an overall improvement or detriment to these values.

The patients' hgb a1c decreased by an average of 0.93% in three months.

Improvements were noted in DMSES scores for ability to check and correct blood sugars, perform foot exams, adjust meals based on dietary needs and blood glucose levels, follow a healthy meal plan and take medication appropriately. There was a mean decrease or no change for questions which examined weight and exercise.

Based on these results, there is support for the use of a PHC in the management of T2DM..

This project had many limitations such as small sample size, time limitation, Public health restrictions for Covid-19, facility location, and the dissolution of the PHC position.

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IMPACT ON PRACTICE

The use of a PHC has been supported by the literature and from the outcomes of this project to improve patients' hgb a1c values and promote self-efficacy of their T2DM management.

T2DM is largely a disease produced by poor lifestyle choices (CDC, 2019d).

Improving the self-efficacy of patients by providing them with a PHC can provide a personalized healthcare plan and give them a resource to seek advice from to help improve the long-term management of their T2DM.

The long-term impact of this project is to encourage the utilization of a PHC in the routine management of patients who have T2DM.

CONCLUSIONS

The implementation of a PHC in the care of T2DM has shown to improve hgb a1c values and promote a more self-efficacious patient (Cinar et al, 2018; Pirbaglou et al., 2018; Ruffin, 2017; Sharma et al., 2016; Sherifali et al., 2016; Sherifali et al., 2020).

Results from this project were similar as participants experienced improved hgb a1c levels and improvements in their DMSES scores, indicating an increase in self-efficacy.

Despite the small number of participants in this project, it is our hope that health care facilities will realize the value of including a PHC in their care of diabetic patients.

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Controlling Hypertension: Benefits of Home Blood Pressure Monitoring with Cointerventions

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PROBLEM INTRODUCTION

- Hypertension is one of the most common diseases worldwide
- Nearly half of U.S adults (45%) have hypertension
- Only about one quarter of adults with hypertension (24%) are adequately controlled
- Hypertension can lead to highly morbid complications such as heart disease, stroke, and heart failure
- HBPM = home blood pressure monitoring
- HBPM is recommended in the management of hypertension

LITERATURE REVIEW

Databases: CINAHL, PubMed, Academic Search Complete, Google Scholar, and Cochrane Database Keywords: "self-blood pressure monitoring," "blood pressure monitoring," "home blood pressure monitoring," "home blood pressure monitor," "nurse," "education," "program," "intervention," and "coaching"

Self-measured blood pressure (BP) monitoring is associated with a reduction in blood pressure as well as improved blood pressure control

HBPM alone without cointerventions such as one-to-one counseling, remote telemonitoring, and educational classes is associated with lower BP at 6 months, but not at 12 months

When cointerventions are performed in conjunction with self-measured blood pressure monitoring, the benefits are shown to be greater compared to HBPM alone

Cointerventions may include lifestyle changes, increased medication adherence, or increased prescription of medications

Adults that own BP cuffs and check their BP at home often lack proper technique and knowledge needed to accurately obtain a BP, and are at least partially due to insufficient training

Weaknesses with HBPM include appropriate positioning, frequency of readings, timing of measurements, proper cuff size and placement, voiding and resting prior to measurement, and refraining from other activities while obtaining BP

PROJECT METHODS

- Obtained baseline BMI and in-office blood pressure
- Provided blood pressure cuffs to 50% of patients
- Obtained baseline Morisky Medication Adherence and Personal Well-Being scores
- Called and educated all patients weekly for 4 weeks then biweekly for 8 weeks
- Obtained 4-week blood pressure in office
- Collected Morisky Medication Adherence and Person Well-Being scores again at study completion
- Obtained BMI and in-office blood pressure at study completion

EVALUATION

- Only 4 out of 18 patients completed the entirety of the study
- Average systolic and diastolic BP measurements decreased in both groups at 4 weeks
- Control group average BP increased at 12-weeks while intervention group's decreased

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IMPACT ON PRACTICE

- Providers found it easy to recognize patients with uncontrolled hypertension
- Because this was a student-led intervention, there was not a significant burden for the providers
- The practice is currently continuing the study to obtain a more significant sample size
- If results show significant blood pressure reduction, funding may be granted for home blood pressure cuffs

CONCLUSIONS

- Hypertension management education is essential to reduce and maintain a patient's long term blood pressure control
- Providing nurse-led coaching aids in decreasing blood pressure
- Providing a home-blood pressure cuff **alone** does not have a significant effect on blood pressure
- Larger sample size is needed to determine effectiveness of trial

Establishing Guidelines to Promote Best Practice for Common Ailments in School-Based Health Clinics (SBHCs)

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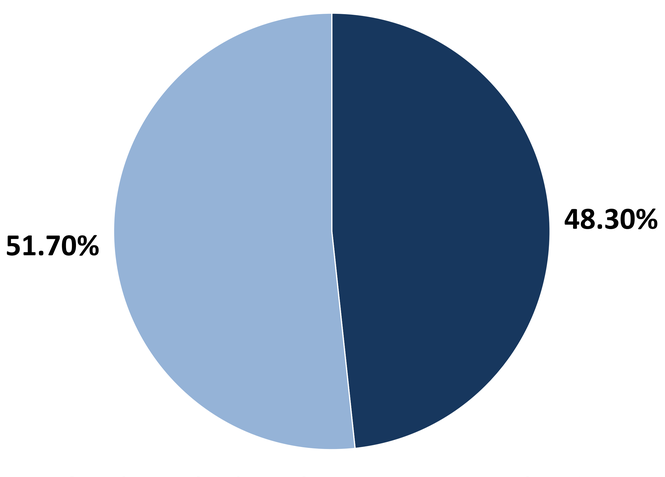
PROBLEM INTRODUCTION



LITERATURE REVIEW

- CDC recommends implementation and maintenance of SBHCs in low-income communities based on sufficient evidence of effectiveness in improving both educational and health outcomes (Community Preventative Services Task Force, 2016)
- SBHCs can increase school-aged children's access to comprehensive health assessments and improve preventative health care across all age groups
- Added benefits of SBHCs include immunization compliance and access to dental care and mental health care (Keeton et al., 2012)
- SBHCs are able to provide vaccines to under-insured or uninsured children who often have the lowest rates of vaccine compliance (Daley et al., 2009)
- Estimates suggest 20% of students meet diagnostic criteria for a mental health disorder with severe impairment, yet 70% of these children and adolescents do not receive mental health services, Lower SES youths and minorities disproportionately do not receive treatment (Larson et al., 2017)

PROJECT METHODS

- Team meeting at which need for patient care algorithms expressed
- Documents and testimony from an NP at an established SBHC and discussion with local FQHC representatives, identified common ailments for which algorithms would be useful
- Algorithms created based on published research and peer-reviewed articles
- Algorithms presented to and evaluated by FQHC representatives and collaborators

Goal: to establish patient care guidelines for use in SBHCs in several southern Illinois public schools

EVALUATION

Evaluation Tool Questions	Strongly Disagree	Somewhat disagree	Neither Agree nor Disagree	Somewhat Agree	Strongly Agree
Guidelines were relevant to SBHC work					100%
Guidelines were legible and easy to interpret				80%	20%
Guidelines adhere to evidence-based practice					100%
Guidelines serve as a helpful quick-reference tool				80%	20%
Guidelines will likely be used once SBHCs are operational					100%

Number of survey participants represented as N=5

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IMPACT ON PRACTICE

- Desired impact on practice is for all clinicians in SBHCs to be able to use guidelines as reference materials, reducing time needed looking up treatment protocols while maintaining positive outcomes
- FQHC has not yet opened its local SBHCs, therefore, impact on practice is theoretical at this time
- Based on feedback from FQHC Operations Director and collaborating physician, guidelines will be useful in SBHCs and will be adapted as reference materials

CONCLUSIONS

- This DNP project resulted in eight patient care guidelines created for use as evidence-based practice reference tools for common ailments in SBHCs
- Algorithms have the potential to enhance efficiency and streamline patient care
- Several limitations were faced including changing guidance around COVID-19 protocols and FQHC remaining in the building and development phase of local clinics
- Overall, project was successful and has the potential to be continued in future projects

REFERENCES

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