Implementation of the Vaccines for Children Program in A Midwest, Urban Clinic Dedicated to the Underserved Population

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DNP Project Defense
April 08, 2019
Acknowledgements

Advisory

• Dianne Slager DNP, MSN, FNP-BC

Immunization Program Supervisor

• Mary M Wisinski BSN, RN

Advisory Team

• Sylvia Simons DNP, MSN, RN
• Laura VanderMolen DO
• Lynette Schreur BSN, RN
Objectives for Presentation

- Review the clinical problem
- Review the organizational assessment and literature review
- Review the evidence-based plan and models used
- Present results and sustainability plan
- Review the Results, Dissemination, and Sustainability
- Discuss implications for practice, and future plan
Vaccination almost eradicating several diseases including smallpox, rubella and mumps (Lobo 2016).

Anti-vaccination propaganda, poverty, and low levels of education have contributed to noncompliance with recommended vaccine schedules (Lobo 2016).

Michigan is ranked 29th in the US for vaccination rate.
The Problem

Issues of underserved populations include:
- inability to find health clinics
- frequent relocation
- lack of insurance (Lobo, 2018)

One of the solutions to reduce vaccination numbers is the Vaccines for Children (VFC) program (NCIRD, 2018).
Organizational Assessment
IRB Approval

DATE: October 23, 2018
TO: Dianne Stager
FROM: HRRC
STUDY TITLE: Implementing an Immunization Program at Safety Net Clinic in the Midwest.
REFERENCE #: 18-117-H
SUBMISSION TYPE: HRRC Research Determination Submission
ACTION: Not Research
EFFECTIVE DATE: October 23, 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:

This quality improvement project aims to develop a sustainable Vaccination for Children (VFC) program for Exalta health clients which will include policies and procedures that can be adapted for adult vaccinations in the future. This project is not designed to create new generalizable knowledge; it is designed to improve the healthcare of Exalta Health patients. Therefore, this project 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 (816) 331-3197 or research@gsu.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 (d)).

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

- Administration
- Stakeholders
- Medical professionals
- Non-medical staff
- The greater community, particularly those who directly use the services of SNHC.
<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
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<tbody>
<tr>
<td>- Access to care</td>
<td>- Continuous quality improvement</td>
</tr>
<tr>
<td>- Same day appointments</td>
<td>- Consistent communication</td>
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<tr>
<td>- After hours care</td>
<td>- Referral management</td>
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<tr>
<td>- Staff autonomy</td>
<td>- Medication reconciliation</td>
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<tr>
<td>- Patient centered care</td>
<td>- Defined operation procedures</td>
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<td>- Comprehensive plans of care</td>
<td>- Appointment process</td>
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<td>- Early identification and intervention</td>
<td>- Data management Tracking</td>
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<tr>
<td>- Technology</td>
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<tr>
<td>- Coordination of Care</td>
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<tr>
<td>- Safety</td>
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<tr>
<td>- Efficiency</td>
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<table>
<thead>
<tr>
<th>Opportunities</th>
<th>Threats</th>
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<tbody>
<tr>
<td>- Engage staff</td>
<td>- Financial struggles</td>
</tr>
<tr>
<td>- Process improvement</td>
<td>- Limited intake from insurances</td>
</tr>
<tr>
<td>- Improve efficiency</td>
<td>- Non-compliance with treatment plans</td>
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<tr>
<td>- System integration</td>
<td>- Social challenges</td>
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<tr>
<td>- Early intervention</td>
<td>- Weak support system</td>
</tr>
<tr>
<td>- Expand after hours services</td>
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<tr>
<td>- Patient and family engagement</td>
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<td>- Preventive services</td>
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</table>
Clinical Practice Question:

- How does the addition of a VFC program impact immunization rates among children in an underserved and refugee population?
- Is the clinic prepared for the VFC implementation in terms of resources and staffing? If not, what needs to be changed?

Aim:

- The necessity of the VFC program and SHNC has ability to implement the program.
Findings: Literature Review

Six papers met the inclusion criteria
  – Three comparison studies
  – Two intervention studies
  – One survey

Analyzed amount of children vaccinated: within the framework of the studies.
  – The three comparison studies took their data from public records and compared the various factors in order to discover statistically valid interventions.
    (Davila-Payan et al., Jan 2014; Stockwell et al., Apr 2013; Clayton et al., 2014).
  – Two intervention studies did arm random feasibility trial, caregivers were offered vouchers to receive flu vaccines at the local pharmacy.
    (Buttenheim et al., Feb 2016; Beel et al., 2014).
  – Survey study asked the lack of Mexican-Americans signing up for Obamacare.
    (Malina, 2017).
Summary of Additional Evidence

Buttenheim et al (Feb 2016)- Infant caregivers have a perceived lack of personal risk.

Beel et al (2014)- Immediate offering of vaccination is the most effective since it eliminates time, effort and money barriers.

Clayton et al (2014)- More effective strategies for improving influenza vaccination rates are necessary.

Davila-Payan et al (Jan 2014)- Vaccine venues and providers positively impact vaccination rates.

Stockwell et al (Apr 2013)- Racial/ethnic differences in coverage were worrisome.

Molina (2017)- Low enrollment in the ACA by Mexican-Americans should be attributed to a hostile immigration policy.
PRISMA Figure

Identification:
Articles identified using keywords in CINAHL, PubMed, and EbHost (n=226)

Screening:
# of records screened after duplicates were removed (n=221)

Records excluded after title and abstract reviewed (n=100)

Eligibility:
Full-text articles assessed for eligibility (n=121)

Full-text articles excluded for not meeting inclusion criteria (n=115)

Included:
Studies included in this review (n=6)
Evidence for Project

Quality measures have been identified in the literature that VFC program can be effective for the administration of vaccines to children in disadvantaged and underserved populations.
Model to Examine Phenomenon:

**Donabedian Model**

**Structure:** How the project organized?
- Level of responsibility identified
- The organization mission and strategies applied
- Staffing willingness and availability assessed
- Budget and cost identified

**Process:** What is done?
- Team members selected
- Clinicians, nurses, medical staff were trained
- Right equipment selected and purchased
- VFC storage and handling toolkit developed
- The Prospects identified

**Outcome:** What happens to the community served health?
- Immunization rates will increase
- Vaccine Preventable Diseases decreases
- The organization population diversity increases
- Patient satisfaction

(Donabedian, 1988)
PROJECT PLANNING
Project Plan

Purpose: project type, design, setting, subjects, resources

Framework for implementation

Objectives & Implementation Strategies

Measures to evaluate questions

Analysis

Implementation phases
Project Purpose & Objectives

To implement a VFC program to reduce vaccination numbers in the community

– Examine cost of the Program
– Examine human resource and preparedness of the team
Design

Quality Improvement Project

- Implement evidence based literature finding into the clinic practice

Evaluate

- Whether current practice is ready to implement following evidence-based practice CDC recommendation into the organization practice
- Impact of VFC program on vaccination series rates in clinic patients
Setting & Participants

Setting

- The Safe Net
- Midwest, urban and under-insured

Participants

- Staff
  - The Medical Director
  - Staff Physician
  - Project and Quality Manager
  - Staff Nurses (RN)
  - Medical Assistants (MA)
- Patients
  - Population that receiving services from SNHC
Implementation Model

8 Step Kotter Model of Change

1. Create urgency
2. From a powerful coalition
3. Create a vision for change
4. Communicate the vision
5. Empower action
6. Create quick wins
7. Build on the change
8. Make it stick

(Adapted from Kotter, J. P, 2012)
Implementation Strategy & Element

1. Create a sense of Urgency
   Performed assessment if the SNHC were eager to implement the VFC project
   Delivered information about value of VFC program implementation on clinic revenue

2. Create a Coalition
   Formed a successful team including
   - Medical Director
   - Staff Physician
   - Project and Quality Manager
   - Staff Nurses (RN) and Medical Assistants (MA)

3. Create a Vision
   Created a vision that connects the new immunization service with long-term sustainability for the clinic.

4. Communicate the Vision
   Shared the connection between new VFC program and pediatric services
   Share updates about the availability of vaccinations, screening and ordering procedures
   Information about the VFC via multilingual posters
5. Empower Action
Classified and distracted possible project limitations
Developed a toolkit with evidence-based for VFC, MCIR training, MICR training

6. Create Quick Wins
Build awareness and momentum.
Kept the team motivated

7. Building on the change
Periodically provided education regarding VFC

8. Make it Stick
Created coalition needs to monitor the acceptance of the new service
The SNHC anchored changes within the clinic culture
Evaluation & Measures Phase One

Public Health Database Measure

Data Sources
Michigan Care Improvement Registry (MCIR)
Local Health Department (LHD)
Healthy People 2020 Goals (HP 2020)
Vaccines For Children (VFC)

Timeline
January 2017 to December 2018

Data Collection
Retrospective
Children from age 0 to 19
Specific type of vaccines
Evaluation & Measures Phase Two

Preparedness of The Staff

Data Sources
Michigan Department of Health & Human Services (MDHHS)
Centers for Disease and Prevention (CDC)

Timeline
November 2018 to January 2019

Data Collection
Pre and Post Test
15 multiple
Specifically to recommendations current VFC guidelines
Team Effectiveness Questionnaire

Team effectiveness dimensions
This questionnaire examines team effectiveness from the perspective of eight (8) dimensions.
- Purpose and goals
- Roles
- Team processes
- Team relationships
- Intergroup relations
- Problem solving
- Passion and commitment
- Skills and learning

When to use this tool
- To contribute to the assessment of the effectiveness of your team
- To identify team dimensions that need to be improved to increase team effectiveness

What to do: What you think
1. Make your own assessment of your team’s effectiveness.
   - Work through the questionnaire, recording your personal assessment of team attributes and behaviors.
2. Calculate your assessment for each of the team effectiveness dimensions.
   - Transfer your assessments to your personal score sheet.
   - Calculate averages for each dimension of team effectiveness.

What to do: What your team thinks
1. Ask each team member to assess team’s effectiveness.
   - Work through the questionnaire, recording their personal assessment of team attributes and behaviors.
2. Calculate their assessment for each of the team effectiveness dimensions.
   - Transfer assessments to individual personal score sheet.
   - Calculate averages for each dimension of team effectiveness.
3. Calculate the average for all team members.
   - Transfer average assessment scores for each dimension of team effectiveness to score sheet (not for the individual questions).
   - Calculate overall averages for each dimension of team effectiveness.

How to Use the Results
1. Using your assessments, identify the dimensions with the higher averages and those with the lower ones.
   - Try to identify the underlying factors that influenced the scores; think of specific examples.
   - Specify one or two things you can do differently to raise the lowest scores in the future.
2. Compare your perspective with those of the team.
   - Look at the differences in the average scores of your assessment and those of your team members.
   - Try to explain any significant differences between perspectives.
   - Discuss the different perspectives with the team to solicit ideas about what may have led to the different assessments.
   - Specify one or two things you can do differently to minimize the differences and raise the lowest scores in the future.

Adapted from: “Team Effectiveness Diagnostic” created by London Leadership Academy, National Health Service

Evaluation & Measures Phase Three

• Team Effectiveness
• Data Sources
   - London Leadership Academy, National Health Service.
• Timeline
   - November 2018
• Data Collection
   - Diagnostic tool
   - 65 multiple
   - 8 dimensions
   - Likert scale
We are gathering information to see if you and your family are interested in receiving pediatric care at Exalta Health.

1. How many children do you have?

2. What are their ages?

3. Are you children’s immunizations up to date? Please circle
   - Yes.
   - No.
   - I am not certain

4. Would you like your children to receive pediatric care at Exalta Health? Please circle
   - Yes
   - No
   - Maybe in the future

5. May I schedule an appointment for your children? - registration appointment first. Please circle
   - Yes
   - No
   - Not at this moment

Evaluation & Measures
Phase Four
Patients interest in pediatric and VFC service

Data Sources
A Midwest, Urban Clinic
28 patients

Timeline
February 2019

Data Collection
Patient survey
5 questions
English and Spanish
Spreadsheet
Analysis Plan

Descriptive statistics
– staff preparedness
– pre and post training scenarios
– Patient survey

Retrospective statistics
– pre and post test
– overall statistics for office (de-identified)
– Frequency and percentage statistics
– Data displayed using tables, pie charts, and columns
<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Medical Grade Refrigerator</strong></td>
<td>Helmer Scientific - iLR120 Laboratory Refrigerator 20CF (572 Liters).</td>
<td>$ 5,867.48</td>
</tr>
<tr>
<td><strong>Medical Grade Freezer</strong></td>
<td>Helmer Scientific - iLF120 single door i.Series® Laboratory Freezer 20CF (572 Liters)</td>
<td>$ 8,100.38</td>
</tr>
<tr>
<td><strong>Thermometers and Notification Equipment</strong></td>
<td>It is essential to monitor temperatures in order to maintain the viability of the vaccines. In order to properly perform this tasks, the study needs thermometers and notification equipment.</td>
<td>$ 1,136</td>
</tr>
<tr>
<td><strong>Quantity. 2</strong></td>
<td></td>
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<tr>
<td><strong>3 Ring Binders (6)</strong></td>
<td>Will be used to include project implementation protocol. Binders will be provided to manager, supervisor, and also placed on unit for nurses and nurse tech to review.</td>
<td>$ 2.99 each for a total of $ 17.94</td>
</tr>
<tr>
<td><strong>Laminated Page Holders for 3 Ring Binders:</strong></td>
<td>packet of 50 (6)</td>
<td>$ 5.99 each for a total of $ 35.94</td>
</tr>
<tr>
<td><strong>Travel Expenses to and from Facility</strong></td>
<td>Per the IRS, mileage reimbursement for business use of a personal vehicle is a rate of 54.5 cents per mile in 2018. The Organization is 3.3 miles from the student home. The student plans to drive to and from the SNHC 16 times for a total of 138.6 miles</td>
<td>$ 75.5</td>
</tr>
<tr>
<td><strong>SNHC staff member to attend trainings</strong></td>
<td>An essential part of the project will be training staff members. 3 to 5 hours long training sessions, food and training materials for at least 3 medical assistants, one RN and two physicians</td>
<td>$ 375</td>
</tr>
<tr>
<td><strong>DNP student Time</strong></td>
<td>200 hours In-kind donation</td>
<td>$ 5800</td>
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</tbody>
</table>
| **University pens, hand sanitizer, coffee mugs.** | Items will be used to encourage and thank staff members to attend meetings about VFC guidelines. | GVSU Mug $ 7.95 X 27= $ 214.65  
GVSU Pen $1.95X 27= $ 52.65  
GVSU hand sanitizer $ 3.49 X 27= $ 94.23. Total of $ 361.53 |            |
<p>| <strong>Grand Total:</strong>                    |                                                                             | $ 21,769.77 |</p>
<table>
<thead>
<tr>
<th>Task</th>
<th>Date</th>
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<tbody>
<tr>
<td>Perform Organizational assessment and literature review to guide the design of the formal quality improvement program</td>
<td>September 20, 2018</td>
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<tr>
<td>Submit Institution Review Board application</td>
<td>October 25, 2018</td>
</tr>
<tr>
<td>Present DNP project proposal to DNP project team in oral and written form</td>
<td>November 7, 2018</td>
</tr>
<tr>
<td>Obtain IRB approval from human research review committee</td>
<td>December 30, 2018</td>
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<tr>
<td>Data collection period concurrent with implementation</td>
<td>February 6, 2019</td>
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<tr>
<td>Develop formal quality improvement program components, consisting of policy and procedure manual, volunteer educational materials and a clinical dashboard</td>
<td>February 10, 2019</td>
</tr>
<tr>
<td>Implement quality improvement program components in organization – policy manual, volunteer education material, clinical dashboard</td>
<td>February 26, 2019</td>
</tr>
<tr>
<td>Export pre- and post-implementation data report from electronic health records. Import to Microsoft Excel</td>
<td>March 14, 2019</td>
</tr>
<tr>
<td>Compare pre and post implementation data seeking significant differences in documented compliance of designated outcome measures.</td>
<td>March 14, 2019</td>
</tr>
<tr>
<td>Generate a control chart for one outcome measure</td>
<td>March 19, 2019</td>
</tr>
<tr>
<td>Disseminate findings via oral defense presentation</td>
<td>April 08, 2019</td>
</tr>
<tr>
<td>Submit final DNP project to Scholar Works and University Graduate Studies Office</td>
<td>April 21, 2019</td>
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Results

Objective One

- Complete a vaccination statistical rate for the state and county.
- Outcome measures from 205069 for the county and 933304 for the state were obtained through table chart audits and data reports that were generated by statistician.
Results

Two age cohorts data were reported

- aged 19 to 35 months
- 13 to 17 years

Vaccination completion rates for 19 to 36 month old’s

- 58-66% of the DTaP, polio, MMR, Hib, Hepatitis B, Varicella, PCV, and Hepatitis A

NP2020 goal

- 85% for DTaP, polio, MMR, Hib, Hepatitis B, Varicella, PCV, and Hepatitis A

WHO goal even higher

- 95% for DTaP, polio, MMR, Hib, Hepatitis B, Varicella, PCV, and Hepatitis A

Cohort data

- Was not available
43133142* Vaccination Series Coverage, December 2018
children 19 through 35 months by zip code

4 DTaP,
3 Polio,
1 MMR,
3 Hib,
3 HepB,
1 Varicella,
4 PCV,
2 HepA

Prepared by the Michigan Department of Health and Human Services Immunization Division using data from the Michigan Care Improvement Registry (MCIR).
Vaccination Series Coverage, December 2018 adolescents 13 through 17 years of age by zip code

1 Tdap,
3 Polio,
2 MMR,
3 HepB,
2 Var,
1 MenACWY,
2 or 3 HPV

Prepared by the Michigan Department of Health and Human Services Immunization Division using data from the Michigan Care Improvement Registry (MCIR).
Objective Two

- Complete a provider pre/post competency test outcome measures from 5 providers, two Physicians, two Register Nurses and one Medical Assistant (MA).

Nominal Measurement

- **Pre training test**
  - 82.6% Knowledge question scores

- **Post training test**
  - 93.3% Knowledge question score

- **In addition**
  - The nurses and MA have not worked with pediatric patient population
  - VFC storage and handling toolkit provided for continuous education
Pre Test

Average 82.6 %
Post Test

Average 93.3 %
**Objective three:** Complete a provider survey outcome measures from 5 providers, two Physicians, two Register Nurses and one Medical Assistant (MA).

<table>
<thead>
<tr>
<th>Nominal Measurement 8 dimensions</th>
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<tbody>
<tr>
<td>87.4% Problem solving</td>
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<tr>
<td>87.1% Roles</td>
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<tr>
<td>86.8% Purpose and goals</td>
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<tr>
<td>86.6% Team relationships</td>
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<tr>
<td>86.6% Team processes</td>
<td></td>
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<tr>
<td>86.2% Intergroup relations</td>
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<tr>
<td>86.3% Passion and commitment</td>
<td></td>
</tr>
<tr>
<td>86.3% Skills and learning</td>
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</tbody>
</table>
Objective Four
Patient survey outcome measures from 28 patients
- 2 Caucasian, 26 Hispanic
- 54 children under the age of 18

Nominal Measurement 5 questions
- 41-Immunization up-to-date
- 7- Immunization not up to date
- 6-Immunization uncertain

Desire to receive pediatric care
- 8- Yes
- 13-No
- 33-Maybe

Appointment today
- 2-Yes
- 8 - Maybe
- 44-No
Patient survey

54 children under age 18

- Immunized: 27%
- Immunization, uncertain: 4%
- Interested receiving pediatric care: 5%
- Not Interested receiving pediatric care: 9%
- Appointment, Yes: 22%
- Appointment, No: 29%
- Unimmunized: 2%
- Immunization, uncertain: 4%
Discussion

The VFC program is a program that will increase vaccination rates and ensure herd immunity in a vulnerable population.

The study determined the intervention of implementing a VFC program to be cost-effective.

Many of the patients coming into the clinic had requested a pediatric center for their children and this fact points to a successful outcome for the VFC implementation.
Limitations

Equipment difficulties prevented full implementation and evaluation of the implementation by the DNP student.

Staff were given clear tools to facilitate implementation, once equipment problems are remedied.
All vaccines can be provided by VFC program

Financially the VFC program will be self-sustaining.

Continued necessary staff trainings for the VFC program will be covered by State of Michigan Department of Health

The Quality Manager has agreed to take responsibility to run VFC program at the SNHC
The VFC toolkit provided (2/10/2019)

The VFC implementation program under-resourced clinical practices

Final Project Defense (4/08/2019)

Scholar Works publication (4/26/2019)
Implications for Practice

The VFC program can be successfully implemented and will improve the vaccination rates of clients served.

Further assessment will be required to ascertain the success of the VFC program when the program is fully in place.

The project will serve as a contribution to the body of material.
VFC program in a major improvement project was a necessary study

A quality improvement project was planned based on the SNHC to implement the VFC program needs and identified during the organizational assessment

A literature review helped identified current evidence-based practice measures

A data analysis was completed through table audits and data reports

The toolkit was created to meet the needs of the VFC program

Communication and collaboration activities with the team and city officials took place during the project
DNP Essentials

Essential I: Scientific Underpinnings
- Research on evidence-based care for immunization
- Used of conceptual frameworks and theories from nursing and non-nursing disciplines

Essential II: Organizational and Systems Leadership
- Develop and evaluate care delivery
- Communication with key stakeholders
- Budget was developed for the clinic
Essential III: Clinical Scholarship and Analytical Methods for EBP
• Peer-reviewed articles were analyzed
• Design and implement the best available process
• Evaluation of results

Essential IV: Information Technology
• The EMR was evaluated for input
• Worked closely with IT personnel to obtain data reports
• Appropriate software and hardware were used
  • E-mail communication
  • Excel
DNP Essentials

Essential V: Healthcare Advocacy
- Analyzed current VFC policies local, state, federal.
- Worked with Immunization Supervisor to create tool-kit that will be used in the formation of organizational policy

Essential VI: Inter-professional Collaboration
- Clinic administration,
- Staff
- County health personal
- Providers
- Medical Assistants
- Office Manager
- Statistician
Essential VII: Clinical Prevention and Population Health

- The current crisis in vaccination rates that has been promulgated by anti-vaccination extremists and social media
- Anti-vaccination conspiracy theories addressed to health promotion within the population
- VFC program addresses disease prevention within this population

Essential VIII: Advanced Nursing Practice

- Development and implementation of a quality improvement project
- Developed inter-professional partnerships
- Analytical skills were used to educate and guide individuals
References


http://www.who.int/bulletin/volumes/86/2/07-040089/en/

https://www.mlive.com/kentwood/index.ssf/2017/01/health_services_christian_orga.html


http://dx.doi.org/10.1016/j.vaccine.2015.11.068

References


References


https://swz.salary.com/SalaryWizard/Staff-Nurse-RN-II-Medical-Management-Salary-


https://doi.org/10.1016/j.vaccine.2011.03.062