Using the Rapid Assessment for Adolescent Preventive Services (RAAPS) to Screen for Risk-Taking Behaviors of 13 to 18 year-olds in a Regional Family Practice Office

Megan Carpenter
DNP Project Final Defense
April 10, 2019
Acknowledgements

• Advisory Team: Cynthia Covia, PhD, FNAP
Dianne Slager, DNP, FNP, BC &
Kim Lanning DNP, MSN, FNP-BC, APRN

• Funding: GVSU Presidential Award
• Donation: Byron Center Chick-Fil-A
Objectives for Presentation

• Review the clinical problem:
  ➢ Insufficient screening & intervention
• Review the organizational assessment & evidence-based solutions
• Discuss project plan
• Review results
• Review implications for practice
• Reflect on DNP Essentials
Introduction

• Adolescents have high rates of risk-taking behaviors (Centers for Disease Control and Prevention, 2017)
  ➢ The top three sources of mortality for 10-24 year olds: unintentional injuries, suicide, and homicide (Heron, 2017)

• The American Academy of Pediatrics ([AAP], 2017), United States Preventive Services Task Force ([USPSTF], 2016), & Centers for Medicare and Medicaid Services ([CMS], 2014) recommend adolescents receive screening for risk-taking behaviors
• An adolescent quality measure of the National Committee for Quality Assurance (NCQA) (CMS, 2014)

• The Patient Protection and Affordable Care Act of 2010 (111th Congress, 2010)

➢ BUT- screening is still not consistently completed (AAP, 2016)
Framework: Burke & Litwin
Stakeholders

- Patients
- Parents
- Providers
- Staff
- Leadership

Stakeholders Assisting with Project

- Site mentor
- Operations director
- Champions
- Previous GVSU DNP student
### SWOT

**Strengths**
- Teamwork, flexibility, compassion among staff
- Support from the operations director for RAAPS
- Congruent with organization’s mission, core values, and guiding behaviors
- Collaboration of new DNP graduate at another regional site of XXX

**Opportunities**
- Enhanced follow up for risk-taking behaviors in adolescent patients
- Support from leading national organizations
- Chance to better align with organization’s mission, core values, and guiding behaviors in regards to adolescent patients

**Weaknesses**
- Currently, little standardization related to assessment and follow up of adolescent risk-taking behaviors
- Communication between leadership & staff and different teams of staff
- Older providers with less openness to change
- Views that adolescents in this geographic & cultural area do not experience risk-taking behaviors as at high of rates as other geographic & cultural area

**Threats**
- Two vacant MA positions
- Implementation of a social determinants of health questionnaire on September 4, 2018
- Beliefs of some individuals that asking a question to a patient will ‘put that idea’ (of the topic of the question) into the patient’s head
- Two other large health systems in this region of the Midwest that compete with this health system
- New EHR on the horizon
- Time constraints
- Patient expectations of their visit

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**Support from Operations Director**

**Chance to better align with organization’s mission**

**Little standardization for assessment & follow-up of risk-taking behaviors**

**Implementation of Social Determinants of Health screening on Sept 4, 2018**
IRB Approval: QI Project

NOTICE OF CLINICAL QUALITY IMPROVEMENT MEASUREMENT DESIGNATION

To: Megan Carpenter, BSN, RN, DNP-s

Re: IRB# 18-0613-2
Using the Rapid Assessment for Adolescent Preventive Services (RAAPS) to Screen for Risk Taking Behaviors of 13 to 18 year olds in a Regional Family Practice Office

Date: 07/09/2018

This is to inform you that the Institutional Review Board (IRB) has reviewed your proposed research project entitled "Using the Rapid Assessment for Adolescent Preventive Services (RAAPS) to Screen for Risk Taking Behaviors of 13 to 18 year olds in a Regional Family Practice Office." The IRB has determined that your proposed project is not considered human subjects research. The purpose and objective of the proposed project meets the definition of a clinical quality improvement measurement. All publications referring to the proposed project should include the following statement: "This project was undertaken as a Clinical Quality Improvement Initiative at and, as such, was not formally supervised by the Regional Institutional review Board per their policies."

The IRB requests careful consideration of all future activities using the data that has been proposed to be collected and used "in order to implement the RAAPS and improve the care and follow-up of adolescent patients with risk-taking behaviors."

The IRB requests resubmission of the proposed project if there is a change in the current clinical quality improvement measurement design that includes testing hypothesis, asking a research question, following a research design or involves overriding standard clinical decision making and care.

Please feel free to contact me if you have any questions regarding this matter.

DATE: July 13, 2018
TO: Cynthia Coviak
FROM: HRRC
STUDY TITLE: Using the Rapid Assessment for Adolescent Preventive Services (RAAPS) to Screen for Risk Taking Behaviors of 13 to 18 year olds in a Primary Care Office
REFERENCE #: 19-016-H
SUBMISSION TYPE: HRRC Research Determination Submission
ACTION: Not Research
EFFECTIVE DATE: July 13, 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 quality improvement project is to implement routine adolescent risk and health behavior screening at a local primary care practice and evaluate the subsequent frequency of intervention by providers at the practice. While this is a systematic investigation, it is not designed to create new generalizable knowledge. 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 (616) 331-3197 or croi@gvsu.edu. Please include your study title and study number in all correspondence with our office.

Sincerely,
Office of Research Compliance and Integrity
State of the Site Pre-Implementation
Percentage of 13 to 18 year old patients asked about RAAPS topics at wellness visits over 13 week pre-implementation period (June 11-September 7 2018)
Clinical Practice Questions

1. Does screening adolescents for risk-taking behaviors increase identification of adolescents with risk-taking behaviors?

2. Is it reasonable for providers to use results from a screening tool about risk-taking behaviors to guide interventions?

3. Does identification of adolescents with risk-taking behaviors increase provider intervention for those risk-taking behaviors?
Literature Review - Purpose & Aim

- National organizations recommend screening for risk-taking behaviors in adolescents

✓ Purpose & Aim: Evaluate if these screenings are effective in identifying & then lead to intervention by providers
Review Method

• Systematic review
• 1,019 articles found
• CINAHL: 447
• Cochrane Library: 72
• PubMed: 503
Literature Review-Results

- Motivational Interviewing: more effective than the alternative intervention in 2 studies

- Longitudinal studies: more comprehensive interventions led to better patient outcomes

✧ Patients that were screened received more services
## Summary of Table

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Riese, Mello, Baird, Steele, &amp; Rainey (2015)</td>
<td>Using a screening tool during well visits can increase provider discussion about youth violence risks.</td>
</tr>
<tr>
<td>Saulsberry et al. (2013)</td>
<td>MI and BA can both be effective interventions for adolescents who screen positive for risks of depression.</td>
</tr>
<tr>
<td>Aalsma et al. (2018)</td>
<td>Clinical decision support systems can effectively identify adolescent patients with depression and provide options for providers to assist them in treating these patients.</td>
</tr>
<tr>
<td>Etter et al. (2017)</td>
<td>Screening tool completed prior to visit led to referrals made for suicidal ideation.</td>
</tr>
<tr>
<td>King, Gibson, Horwitz, &amp; Opperman (2015)</td>
<td>A special program can be helpful for teens who come to the ER for a medical problem &amp; screen positive for suicidality, by decreasing rates of depression.</td>
</tr>
<tr>
<td>Author(s)</td>
<td>Summary</td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Jonovich &amp; Alpert-Gillis (2014)</td>
<td>Screening tools for <strong>mental health concerns</strong> &amp; follow-up of responses by providers can possibly increase rates of referral to mental health services &amp; attendance of referral appointments</td>
</tr>
<tr>
<td>Webb, Kauer, Ozer, Haller, &amp; Sanci (2016)</td>
<td>Screening for <strong>risk taking behaviors &amp; mental health disorders</strong> and follow-up of results by providers has the potential to enhance patient care</td>
</tr>
<tr>
<td>Hacker et al. (2014)</td>
<td>Using a screening tool can help to recognize adolescents with <strong>mental health concerns</strong> and can increase follow up measures; Referral for mental health services may not translate into patients attending mental health visits</td>
</tr>
<tr>
<td>Louis-Jacques, Knight, Sherritt, &amp; Van Hook (2014)</td>
<td>Screening for peer risk of <strong>alcohol</strong> w/ provider brief advice can increase rates of alcohol cessation for adolescents with peer risk</td>
</tr>
</tbody>
</table>
Evidence for Project

• Screening for risk-taking behaviors can be beneficial
  – Knowing who is at risk
  – Knowing what interventions are applicable

• Providers utilized + screening results of patients with risk-taking behaviors & intervened appropriately for many of the adolescent patients
Model to Examine Phenomenon

• The PARiHS Framework
  – Evidence
  – Context
  – Facilitation

Kitson et al. (1998)
Rycroft-Malone (2014)
Facilitation

Kitson et al. (1998)
Rycroft-Malone (2014)
Project Plan: Purpose, Type, Design, Resources

• **Purpose:** Acknowledge practice issue & correct issue by implementing the RAAPS

• **Type & Design:** Quality Improvement

• **Resources:** Technology, People, Materials
Project Plan: Setting & Participants

• **Where:** Regional family practice office in West Michigan

• **Who:**
  – 11 Providers (8 Physicians, 2 NPs, 1 PA)
  – 24 Staff (LPNs, MAs, BOCs)
  – Patients (13-18 year olds presenting for any type of visit)
  – Parents of patients (must verbally consent)
Implementation Model: The PARiHS Framework

$SI = f(E, C, F)$

Successful Implementation is a function of evidence, context, and facilitation

Kitson et al. (1998)
Project Plan: Objectives

• Assess whether screening
  – ↑s identification
  – ↑s interventions

• Provider Packet
Implementation Strategy & Elements-ERIC

- **Educate staff & providers about QI project & incorporate feedback into flow of the QI project by October 31, 2018**
  - Met w/each provider, LPN, MA & several BOCs to review the RAAPS & their feedback about flow through office (May-Oct)
  - Provider meetings Sept 12 & Oct 17

- **Build a coalition prior to implementation by November 12, 2018**
  - Operations director & site mentor (Jan-Nov)
  - Champions

(Kitson et al., 1998; Powell et al., 2015)
RAAPS Question Examples

6. During the past month have you been threatened, teased, or hurt by someone (on the internet, by text, or in person) causing you to feel sad, unsafe, or afraid?

10. In the past 12 months, have you driven a car while texting, drunk, or high, or ridden in a car with a driver who was?
Sample of Educational Flier

Rapid Assessment for Adolescent Preventive Services (RAAPS)

➢ Survey to screen for risk-taking that impacts the wellness of teens

Why are we using RAAPS?

➢ Between the ages of 10-24, leading causes of death include
  * unintentional injuries, *suicide, *homicide, *heart disease,
  *diabetes & *stroke

➢ MHPP consistently screens for diet, exercise & depression but not other risk behaviors
  ➢ Ex. of RAAPS question: Have you ever carried a weapon (gun, knife, club, other) to protect yourself?

Who can we use RAAPS with?

- 13-18 yr olds
- Average estimated payment is about $5 per screening
- Est. Time: 5 minutes in patient room
- Nov 12 - Jan 31

➢ Megan Carpenter, NP student is available on site at times each week. Can contact at dickenme@mail.gvsu.edu for questions, comments, or concerns.
  Kim Lanning, NP is also available Tuesdays & Thursdays.
Implementation Strategy & Elements

• Complete weekly audits: determine uptake of implementation & provide feedback
  – Identify rates of individual provider compliance

• Prepare & disseminate report
Evaluation & Measures

• Pre- and post- implementation chart reviews
• Measuring the change in
  – # of RAAPS topics discussions
  – # of follow up appointments discussed
  – # of referrals discussed
  – 96160 codes billed

For risk-taking behaviors in adolescent patients
## Objectives & Measures

**Operational Definitions**

<table>
<thead>
<tr>
<th>Implementation strategies</th>
<th>Concept measured</th>
<th>How measured (tool, survey, variable)</th>
<th>When measured</th>
<th>Who measures</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coalition Building: Operations director, office manager, lead physician, subset of providers, BOCs, MAs, and LPNs</td>
<td>How much positive feedback to RAAPS are received</td>
<td>By November 12, 2018</td>
<td>DNP student</td>
</tr>
<tr>
<td></td>
<td>Education to providers and staff about QI project</td>
<td>Understanding relayed through feedback</td>
<td>By October 31, 2018</td>
<td>DNP Student</td>
</tr>
<tr>
<td></td>
<td>Implementation of RAAPS</td>
<td>Chart review of whether RAAPS is being completed, documented, and billed</td>
<td>Weekly during implementation</td>
<td>DNP student</td>
</tr>
</tbody>
</table>

| Patient outcomes          | Increase in discussions about risk-taking behaviors | Chart review of documentation of risk-taking behaviors occurring | Weekly during implementation | DNP student |
|                           | Increase in follow-up appointments about risk-taking behaviors | Chart review of documentation of risk-taking behaviors occurring | Weekly during implementation | DNP student |
|                           | Increase in referrals appointments about risk-taking behaviors | Chart review of documentation of risk-taking behaviors occurring | Weekly during implementation | DNP student |
Analysis Plan

• After implementation, data examined using:
  – Chi-square
  – Fishers Exact Test
  – Descriptive statistics

• $p$-value of .05 used for determination of statistical significance

➢ Results were assessed to measure change
Results: Patient Participant Characteristics

Number of Patients Between the Ages of 13-18 Seen Post-Implementation for Wellness Visits Compared to Non-Wellness Visits (n=61)
### Results: Patient Participant Characteristics

#### Gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>Pre-Implementation (n=98)</th>
<th>Post-Implementation (n=40)</th>
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<tbody>
<tr>
<td>Females</td>
<td>15 (37.5%)</td>
<td>45 (45.9%)</td>
</tr>
<tr>
<td>Males</td>
<td>25 (62.5%)</td>
<td>53 (54.1%)</td>
</tr>
</tbody>
</table>
Results: Patient Participant Characteristics

Age

• Pre-Implementation:
  – Largest subgroup of ages were 14 year-olds (24.5%)

• Post-Implementation:
  - Largest subgroup of ages were 13 year-olds (32.5%)
Q1. Does screening adolescents for risk-taking behaviors increase identification of adolescents with risk-taking behaviors?

• RAAPS #5: “Do you always wear a helmet when you do any of these activities: ride a bike, rollerblade, skateboard; ride a motorcycle, snowmobile or ATV; ski or snowboard?”

• Pre-implementation: 24 of 98 (24.49%)
• Post-implementation: 23 of 40 (57.50%)

$$\chi^2 = 13.7823, p = 0.0002$$
Q2. Is it reasonable for providers to use results from a screening tool about risk-taking behaviors to guide interventions?

- RAAPS # 20: “Do you have at least one adult in your life that you can talk to about any problems or worries?”
- Pre-implementation: 15 of 98 (15.31%)
- Post-implementation: 16 of 40 (40%)

$$\chi^2 = 9.9449, \ p = 0.0016$$
Q3. Does identification of adolescents with risk-taking behaviors increase provider interventions for those risk-taking behaviors?

- # of discussed Referrals
- Pre-Implementation: 5 of 98 (5.10%)
- Post-Implementation: 11 of 40 (27.5%)

FET $p = 0.0005$
• RAAPS # 19: “In the past 12 months, have you seriously thought about killing yourself, tried to kill yourself, or have purposely cut, burned, or otherwise hurt yourself?”
  – Significant for prompting a referral discussion

• Out of the 4 participants who answered ‘yes’
  100% of them discussed a referral
  FET p = 0.0036
Decreases Post vs. Pre

- RAAPS #7: “Has anyone ever physically injured you (by hitting, slapping, kicking) or forced you to have sex or be involved in sexual practices when you didn’t want to?”

- Pre-implementation: 49 (50%)
- Post-implementation: 8 (20%)
  \[ \chi^2 = 10.5450, p = 0.0012 \]

- Follow-Up Appointments Discussed
  Pre-Implementation: 3 (3.05%)
  Post-implementation: 3 (7.50%)
  FET p = 0.1749
Billing

- 18 RAAPS were billed for (45%)
- 17 RAAPS not billed for (42.5%)
- 4 RAAPS unknown (12.5%)

- Ave reimbursement = $4.73 → $85.14
Results: Implementation Strategy

• Evidence-base of RAAPS assisted project’s credibility

• Context of providers: Saw RAAPS as tool that:
  – Could help them better serve patients

  ▪ Facilitation: Most supportive component of success

  (PARiHS>High>Success)
## Resources & Cost

### Revenue
- Project Manager Time (in-kind donation) 6258.90
- Consultations
  - Statistician (10 hours) 337.90
- Cost mitigation
  - Insurance Reimbursement ($4.73 per RAAPS) for 18 patients 85.14
- GVSU Presidential Grant (in-kind) 1,020.48

**TOTAL INCOME** 7,702.42

### Expenses
- Project Manager Time (in-kind donation) 6258.90
- Team Member Time:
  - Office Manager Time for 30 minutes (two-time cost occurrence) 47.29
  - Educate 8 physicians for 30 minutes (two-time cost occurrence) 764.40
  - Educate 1 PA for 30 minutes (two-time cost occurrence) 50.41
  - Educate 2 NPs for 30 minutes (two-time cost occurrence) 99.88
- Consultations
  - Statistician (10 hours) 202.74
- Cost of RAAPS licensing agreement for 1 year 360.00
- Cost of provider guide 131.12
- Cost of support staff guides 26.46
- Cost of printing thank you sign 7.56
- Cost of printing parent guide 59.00
- Cost of Screening tool 59.00
- Printing costs of Info Sheet 25.12

**TOTAL EXPENSES** 8091.88

Net Operating Plan -389.46
2018-2019 DNP Project Timeline

- Met with staff and various stakeholders at regional healthcare organization to complete Organizational Assessment and SWOT analysis
- Wrote Organizational Assessment of regional family practice office
- Identify Champions of QI Project
- Met with operations director & site manager to review current practice & indication for QI
- Pre-implementation auditing of charts for current practice related to screening and management
- Perform and wrote Literature Review on Provider Interventions as a Result of Screening
- Ongoing auditing of charts for practice related to screening and management of risk-taking behaviors in adolescent patients
- Attend provider meeting and educate providers on RAAPS implementation
- Defend Proposal Nov 7 Implement Project Nov 12
- With the help of research assistant, examine data By Feb 11
- Create guides for providers and staff about RAAPS implementation; create laminated reminder sheets for providers and staff about RAAPS flow
- Disseminate findings at GVSU’s Three Minute Thesis Competition
- Disseminate findings at regional family practice office April 8
- Present Defense at GVSU April 10
- Disseminate findings at Michigan NAPNAP Conference April 12
- Upload final project to ScholarWorks By April 25
Discussion

• Wellness visits-opportunity

• Baseline behavior
Limitations

• Intrarater reliability

• Time of year RAAPS was implemented

✧ Efforts to minimize limitations: DNP student’s facilitation
  – Presence & availability
  – Engagement
Implications for Practice

• Having a supportive adult in adolescence is **protective** against:
  – **Self-harm** (Claes, Luyckx, Van de Ven, & Witteman, 2015; Klemera, Brooks, Chester, Magnusson, & Spencer, 2017)
  – **Involvement in violence** (Ttofi, Bowes, Farrington, & Losel, 2014; Vassallo, Edwards, & Forrest, 2016)

• **Helmets** **protective** against:
  – **Injury** (Hoye, 2018)
  – **Death** (Hoye, 2018)

• Opportunities for future study:
  – Follow-up with each participant
Conclusions

• RAAPS was implemented & discussions increased significantly r/t:
  – Helmet use
  – Having an adult to talk to
  – Referrals

✔ RAAPS was reasonable for providers

✔ RAAPS increased identification & intervention
Sustainability Plan

• 3 physicians at the site plan to continue utilization of RAAPS

• RAAPS screening tool available for remainder of the licensing agreement

• Dissemination
Dissemination

• GVSU’s 3 Minute Thesis Competition
• National Association of Pediatric Nurse Practitioners (NAPNAP)
  – National conference
  – MI conference
• Defense presentation
• ScholarWorks submission
DNP Essentials Reflection

1. Scientific Underpinnings for Practice
   • The PARiHS Framework: change; implementation
   • Provider Packets: evidence-based interventions
   ❖ Area for Future Development: Integrating scientific frameworks & EBP in PNP role

2. Organizational and Systems Leadership for Quality Improvement and Systems Thinking
   • Burke & Litwin Model (1992) & SWOT Analysis
   • Communicated among all levels of the organizational structure
   ❖ Area for Future Development: QI project as PNP
3. Clinical Scholarship & Analytical Methods for Evidence-Based Practice

- Evaluation of literature
- Analysis consultant

4. Information Systems Technology

- Identification of patients in EHR
- In congruences in provider documentation
- Area for Future Development: Incorporate RAAPS into EHR
5. Health Care Policy for Advocacy in Health Care

- By using RAAPS: Advocated for adherence to national recommendations
  - Area for Future Development: Examine if discrepancies exist between different racial groups & socioeconomic groups

6. Interprofessional Collaboration for Improving Patient & Population Health Outcomes

- Consultation with operations director
- Worked with whole team-each group has different priorities
  - Area for Future Development: Increase interprofessional collaboration between 2 offices
DNP Essentials Reflection

7. Clinical Prevention and Population Health for Improving the Nation’s Health
   • Local & national data
   • Goal to decrease morbidity & mortality
    Area for Future Development: Assessment of sustainability

8. Advanced Nursing Practice
   • RAAPS: Facilitate communication & education
   • Confidential conversations
   • Prioritization
References

• See Handout
Thank You!

Questions?