Implementing the 2018 ACC/AHA Cholesterol Management Guidelines in Primary Care: The Patient and Provider Perspective

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Introduction

Quality improvement measures to promote the use of the **2018 American College of Cardiology/ American Heart Association Cholesterol Management Guidelines** for *primary prevention* of cardiovascular disease.

− ACC 10-year Atherosclerotic Cardiovascular Disease (ASCVD) Risk Estimator Plus.
− Facilitating the patient-provider ASCVD risk discussion and involve the patient in the decision-making process.

Background and Significance

Cardiovascular Disease represents a global, national, and state health problem (CDC, 2017; WHO, 2019).

• Hyperlipidemia, and thus appropriate **cholesterol management** has become a cornerstone to preventing cardiovascular events (Benjamin et al., 2019; Grundy et al., 2018).

Risk Factors (CDC, 2017; Who, 2019):
• Race: African Americans
• Socioeconomic factors, including high poverty rates

Cost: $351.2 billion, direct and indirect costs (Benjamin et al., 2019).
• Projected to reach **$1 trillion in 2035** (AHA, 2017).

Clinical **guidelines** and **statins** are *underutilized* (Bakhai et al.; 2018 Pencina et al., 2014).

Risk communications and shared decision-making are challenging for providers (Grundy et al., 2018; Turin et al., 2015).

Methodology

Setting: Primary care practice in urban community in North NJ.

Target Audience:
− Medical assistants (2)
− Physicians (2)
− Student providers (3) (1NP, 2 MD)
− 100 patients →

Patient **Inclusion Criteria for Survey and Chart Review**
• English-speaking
• Men and women
• Ages 40 to 75*
• LDL ≥ 70*

Patient **Exclusion Criteria**
• Prior history of CVD*
• LDL ≥ 190*

*Inclusion and exclusion criteria: from the 2018 ACC/AHA Cholesterol Management Guidelines parameters of "primary prevention: patients that should/not receive risk assessment

Ethics and Human Subjects Protection
− Approval Rutgers Biomedical & Health Sciences IRB
− All information de-identified and coded
− Provider and patient provided informed consents
− Participant Incentives: $10 gift card

Outcome Measures
☑ Retrospective Chart Review
☑ Swedish Improvement Questionnaire (SIMQ)
☑ COMRADE Survey
☑ Anecdotal log

Procedures
☐ Modification of EMR
☐ Training sessions (Staff & Provider)
☐ Risk communications
☐ Patient Survey (COMRADE)
☐ Provider/ Staff Survey (SIMQ)

Data Analysis
☐ Cronbach's alpha coefficients for SIMQ & COMRADE
☐ Descriptive statistics
☐ Qualitative thematic analysis

Maintenance & Security
☐ Password protected
☐ Cloud Office 365

Budget Total: $1691

Timeline: 8 weeks of implementation

Clinical Question

Following training, do providers in a primary care setting adhere to cholesterol management guidelines and utilize the risk score to discuss primary prevention of cardiovascular disease in adult patients ages 40-75 during a two-month period?

Aim #1: Promote provider adherence to the 2018 ACC/AHA Cholesterol Management Guidelines.

Providers will:
1.1. Initiate statin therapy at an appropriate level.
1.2. Modify patient's statin therapy.
1.3. Identify barriers encountered in the utilization of risk calculator.

Aim #2: Facilitate ASCVD risk communications through patient-provider shared decision-making.

2.1. Providers will utilize the risk score to facilitate the ASCVD risk discussion.
2.2. The patients will express satisfaction with communication.
2.3. The patients will express confidence in their ASCVD risk plan of care made in consultation with their provider.

Review of Literature

Databases, Rutgers Smith medical librarian, library website

Guideline Utilization
− Evidence-based guidelines only 30-40% of all implemented treatments (Fischer et al., 2016).
− Non-compliance with evidence-based guidelines is associated with overtreatment, misdiagnosis, and unnecessary diagnostic testing (Fischer et al., 2016).
− Only 1% of eligible patients have received their 10-year ASCVD risk score (Bakhai et al., 2018).
− Smaller practices often lack the organizational support needed to institute QI interventions (Shelley et al., 2018).

QI in Clinical Guideline Implementation
Barriers to Guideline Implementation (Bakhai et al., 2018; Jame et al., 2015; Fischer et al., 2016)
− Lack of confidence with guidelines
− Knowledge gap
− Risk calculator: validity, overtreatment, generalizability
− Time constraints
− EMR integration

Solutions to Common Barriers (Bakhai et al., 2018; Jame et al., 2015; Lowenstern et al., 2018)
− Training sessions, summarize guidelines for POC
− Facilitate the calculator's usage
− Streamline clinical processes and staff in workflow

Theoretical Frameworks

(Tribal Evaluation Institute, 2016)

FIG. 1. Theory of planned behavior.
(Ajzen, 1991)

Review of Literature

Quality and the Patient-Provider Relationship
The Institute of Medicine (2001) report, *Crossing the Quality Chasm: A New Health System for the 21st Century*, calls for the delivery of care that is evidence-based and patient-centered.

Clinical-patient risk discussions (Grundy et al., 2018):
1) Inform the patient about their calculated ASCVD risk score.
2) Explore the patient's risk-enhancing conditions.
3) Shared-decision making to plan healthy lifestyle modifications and statin drug therapy.

Physician communication training increased rates of *shared decision-making* (p=0.03) (Cooper et al., 2011).

Decision Aids in Risk Communication
1) Engage the patient in the clinical discussion (Stacey et al., 2017).
2) Increase the patient's knowledge of their risk, disease and prevention strategies (Sheridan et al., 2014; Stacey et al., 2017).
3) Improve their perception and intentions to follow their plan of care to reduce CVD (Sheridan et al., 2014; Stacey et al., 2017).

Implementation of 10-year risk assessment & individualized patient education sheets: increase of 32% (95% CI) in patient adherence to statin medications, *confidence* in their treatment decisions and more *satisfaction* with their risk communications (Harmsen et al., 2014).

Swedish Improvement Measurement Questionnaire

A 25 item, two-dimension questionnaire evaluating quality improvement (Andersson et al., 2013).
− Total score: 0 to 100
− High reliability: Cronbach's alpha coefficient 0.72
− Content validity was established with the use of focus groups

Improvement effectiveness outcome (n=92)	Not at all (0)	A little (1)	Some (2)	Quite a bit (3)	A lot (4)
1 Overall, how satisfied are you with the progress that has been made in the work to develop the improvement idea during the past month					

COMRADE Survey

20 items, total survey score 0-100.
− High reliability: Cronbach's alpha coefficient: 0.93 (Pérez-Revuelta et al., 2018).
− High validity: confidence in decision was correlated with enablement (p < 0.001), adherence to treatment (p < 0.01) and reduced anxiety/concern (p < 0.001) (Edwards et al., 2003).

B2. Confidence in Decision

1. Overall, I am satisfied with the information I was given.
☐1 Strongly Disagree ☐2 Disagree ☐3 Neutral ☐4 Agree ☐5 Strongly Agree

2. My doctor and I agreed about which treatment (or no treatment) was best for me.
☐1 Strongly Disagree ☐2 Disagree ☐3 Neutral ☐4 Agree ☐5 Strongly Agree

Provider Workflow Diagram

ASCVD Staff Workflow

What is ASCVD RISK? (Explain to your patient...)

• This tool is used to calculate your risk of having a heart attack or stroke in the next 10 years.
• Based on your information, your risk is (Insert patient's risk score)
• What this means is that if we put 100 people just like you, with the same risk factors for heart disease, (Insert patient's risk score) of these people will have a heart attack or stroke in the next 10 years.
• Let's talk about what we can do to prevent one of them from being you (refer to checklist and risk assessment tool to develop individualized plan)

CVD PREVENTION TOOLKIT

FOLDER FOUND IN EVERY PATIENT'S ROOM, FRONT DESK AND BACK OFFICE.
• CONTENTS:
  • 2018 ACC/AHA Cholesterol Management Guidelines (Algorithms)
  • Patient-provider checklist and script
  • Smoking cessation: tools for the provider, patient education
  • My Cholesterol Guide, for patients
  • Cardiovascular Medication (general info), for patients
  • CAC Score information, for patients

Implementation Anecdotal Themes

Theme	Description
Facilitators	Provider familiarity with CVD risk assessments and guidelines prior to implementation.
	Provider observation of positive patient outcomes with the use of the risk calculator, guidelines, and patient education tools.
	Patients receptive to knowing their risk.
	Positive financial effects for organization: CVD risk assessment billable procedure/consult.
Barriers	Time constraints affecting the organization, staff, providers and patients.
	Need for reminders regarding tool usage, guidelines, EMR documentation.
	Hesitation to adopt new tool into practice.
	Patient concerns about potential negative effects of guideline utilization to their own health or usual care.
	ASCVD Risk Estimator Plus website malfunction, need to use alternate calculator website.
	Organizational factors: Staff shortage, clerical backlog, provider documentation behind schedule.
	Lack of knowledge about clinical guidelines, risk assessment tool and health literacy.

Results

Chart Review- Demographics
− 207 patient records met inclusion criteria.
− Mean age: 53 years (SD = 9.07).
− Majority of patients were Black/African American (n = 123, 59.4%) and female (n = 168, 81.2%).

COMRADE Demographics
− 34 eligible patients recruited, 24 completed surveys. Response rate of 71%.
− Patient mean age: 55 years (SD = 9.48)
− Majority of participants were female (n = 23, 95.8%), Non-Hispanic (n = 23, 95.8%) and African American/Black (n = 20, 83.3%)

Provider Adherence to Guidelines
− Rate of risk score calculation: 35.8% (n = 74)
− 207 patients eligible to receive a risk score
− Rate of risk discussion documented: 11.6%

Statin Utilization
− Rate of statin initiation: 9 cases (1.45%)
− Eligible for initiation: 51.7% (n = 107) of
− Rate of statin modification: (n = 3, 1.45%)
− Eligible for modification: 54.1%

SIMQ
− 7 completed surveys, 100% response rate.
− Overall satisfaction with implementation (M = 72, SD = 15.26, α = .90)

COMRADE
− High satisfaction with risk discussion (M = 43.5, SD = 9.8, α = .98)
− High confidence in plan of care (M = 44.75, SD = 9.3, α = .99)

Swedish Improvement Measurement Questionnaire Total and Subscale Scores

Dimension	Mean	SD	Possible Scores
SIMQ Total Score	72.00	15.26	0-100
Improvement Effectiveness	9.57	1.40	0-12
Internal Improvement Processes	62.43	14.99	0-88
Resource Scarcity	14.43	3.31	0-20
Group Leadership	15.43	5.8	0-20
Decision Influence	8.29	5.88	0-20

COMRADE Total Scores and Subscale Scores (N = 24)

COMRADE Dimension	Mean	SD	Possible Scores
Total Survey	88.25	18.72	20-100
Satisfaction	43.50	9.80	10-50
Confidence	44.75	9.32	10-50

Discussion and Limitations

Guidelines Implementation
• Importance of **streamlining workflow.**
• Integration of medical **support staff** to facilitate risk score.
• **Billing** for CVD Prevention.
• Barriers: Time constraints, high patient load, understaffing, access to lab values in EMR, inconsistent application of guidelines, **statin resistance**

The ACC Risk Estimator Plus
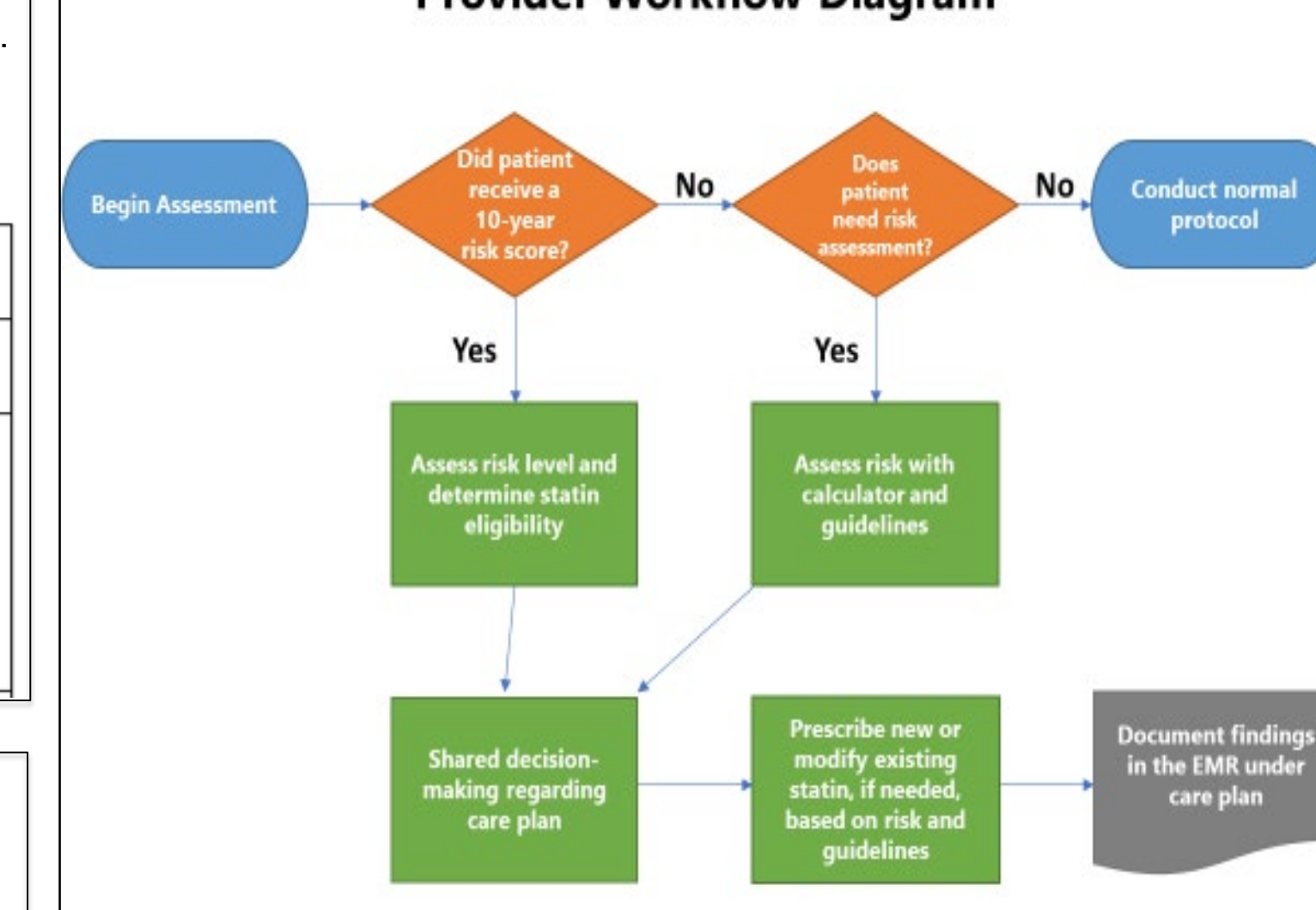• Good for **patient engagement**
• Risk discussion **well-received**

Shared Decision-Making
• Explanation of risk score
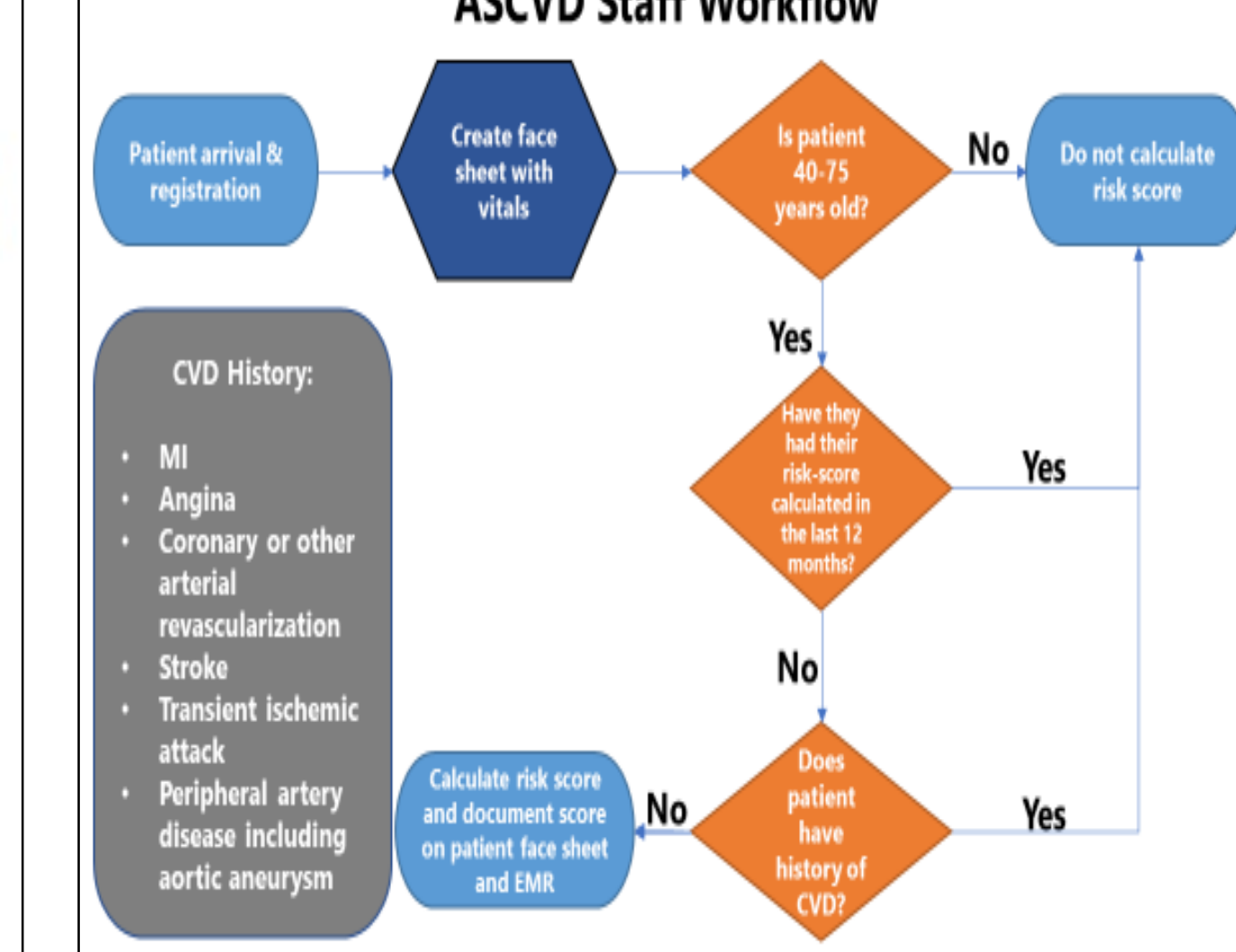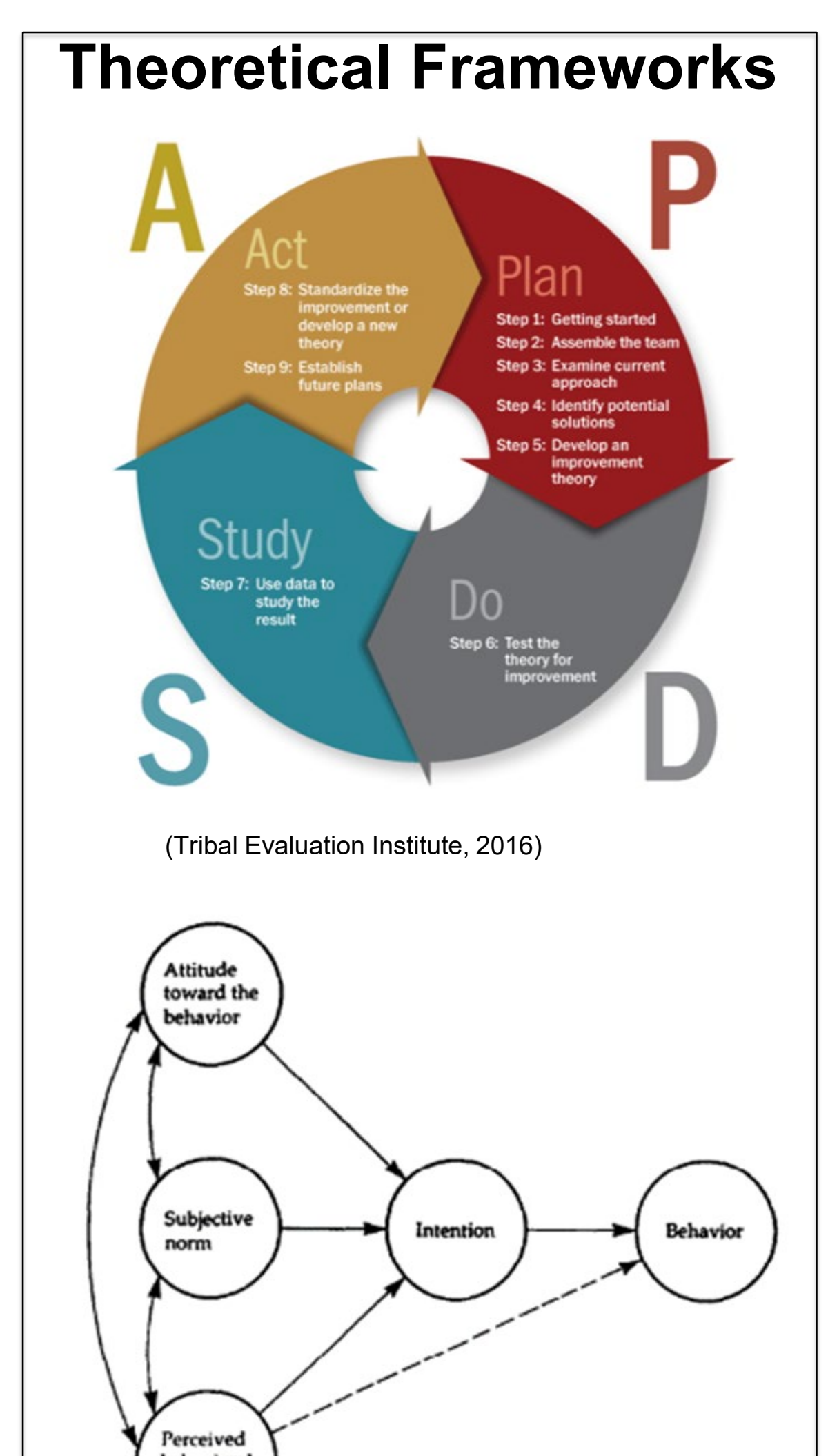• Importance of patient **empowerment**

Limitations
• Unable to measure long-term patient outcomes (medication, cholesterol levels)
• Characteristics of the risk discussion.
• Small sample size, results not generalizable.
• Further research is needed focusing on CVD prevention for African American/Black men.

Implications

Clinical Practice
• Implementation efforts moderately increased 1) risk calculation, 2) statin utilization, 3) risk discussion.
• Importance of EMR integration and alerts, reminders for staff (Bakhai et al., 2018).
• Importance of risk discussion for patient satisfaction and statin initiation (Jame et al., 2015).

Education
• Continual evidence-based guideline training for providers (IOM, 2012).
• Role of professional societies and higher education institutions in continuous education (IOM, 2012).
• Incorporation of decision aids in patient education (Stacey et al., 2017).

Health Policy
• Unique challenges of small practices to implement QI (Shelley et al., 2018).
• External support is essential- Healthy Hearts for Oklahoma (H2O) (Chou et al., 2018).

Quality and Safety
• **Goal:** Reduce CVD events and deaths (Office of Disease Prevention and Health Promotion, 2019; U.S. Department of Health and Human Services, 2017).
• QI to facilitate use of clinical guidelines, decrease missed opportunities.
• Shared-decision making to promote statin adherence and reduce CVD risk (Turin et al., 2015).

Economic Benefits
• Primary prevention strategies, can save our healthcare system more than $36 billion every year (Heller et al., 2017)
• Providers can bill for CVD screening and counseling

Organizational
• Common barriers: lack of knowledge regarding QI measures, lack of time, and lack of specialized support (Balasubramanian et al., 2018)
• QI Champions--Educational materials provided for future training

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