Practical and Detail Oriented Quality Improvement Intervention Model for Cardiovascular Disease

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Founder- Access Hypertension and Cardiovascular Diseases Prevention Clinic at Access Healthcare-a COSEHC Cardiovascular Center of Excellence
The Problem
1. Access Health Care
2. Bahamas Heart Center
3. Baton Rouge Clinic
4. Cardiology Specialists of the Carolinas
5. Cary Healthcare Associates, PA
6. Bland Clinic
7. Clearwater Cardiovascular and Interventional Consultants
8. Contemporary Medicine Specialists
9. Georgia Heart Specialists
10. Hattiesburg Clinic
11. Holston Medical Group
12. Hypertension Institute
13. Internal Medicine Specialists
14. Jacksonville Heart Center
15. John A. Martin Primary Health Care
16. Lifedoc/CentroSalud Clinic
17. Medical University of SC/Ralph H. Johnson VA Medical Center
18. Morehouse School of Medicine
19. Palmetto Primary Care
20. Pee Dee Healthcare
21. Spartanburg Regional Healthcare System
22. Self Regional Healthcare
23. Tapion Hospital
24. Tulane University School of Medicine
25. University of Georgia School of Public Health
26. University of Maryland
27. York Clinical Research
28. University of West Indies Cave Hill Barbados
29. University of West Indies Mona Jamaica
30. Wake Forest University School of Medicine
31. Wright State University School of Medicine
32. Presbyterian Novant Health and Wellness
STRATEGIES

- Academic-Clinical Partnerships
- Primary Care Focus
- COSEHC Database (1 million patients)
- CME; Performance Improvement CME
- Cardiovascular Metabolic Best Practices (CDC)
- Public Health/Corporate Private Partnerships
- Population Health
PI CME Program

• Aggressively Treating Global Cardiometabolic Risk Factors to Reduce Cardiovascular Events (ATGOAL)

  • A performance improvement continuing medical education (PI CME) initiative to evaluate the impact of patient-focused CME on physician performance to achieve consensus therapeutic target goals in patients with cardiovascular metabolic risk factors.

Physicians completing the AT GOAL program receive 20 CME credits (AMA or AAFP)

AT GOAL has been approved as an alternative option for Maintenance of Certification Part IV by the American Boards of both Family Medicine and Internal Medicine
• 8,298 Patients
  • 2,956 Diabetes Patients
  • 4,561 Females
  • 3,685 Males
  • 3,034 > 65 years
  • 1,851 African Americans
• 27 SE Primary Care Practices
• Represents Only Practices with Manual Abstraction
• 300 Randomly Selected Pts/Practice
• Followed for 24 months
COSEHC Continuous Performance Improvement Process

Baseline: Pacolet Family Medicine

Baseline Patient Outcomes Assessment → Identify Professional Gaps in Patient Outcomes → CME Intervention → 3 Month Clinical Data Assessment

ACT

Sir Francis Bacon (Novum Organum, 1620)

www.cosehc.org
ATGOAL Model

Baseline data collected from EHR or Manual

Baseline Performance Dashboard and Webinar
Identify Performance Gaps

On-site Education session and Improvement Plan

FUP 1
Performance Dashboards sent to Practice

90-180 Days after education complete, FUP 1 data exported

Webinars with practice after each performance report to review reports & update intervention plans

FUP 2
90 to 180 days after FUP 1
Data Export and Performance Reports to Practice

FUP 3
Data collection and reports

4th FUP Data collection And wrap-up

FUP=Follow-up Period
The percent of patients reaching therapeutic target goals at *Baseline*

<table>
<thead>
<tr>
<th></th>
<th>All</th>
<th>Diabetic</th>
<th>African American</th>
<th>&gt; 65 Years</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Systolic BP</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 140 mm Hg</td>
<td>68%</td>
<td>50%</td>
<td>50%</td>
<td>63%</td>
<td>71%</td>
</tr>
<tr>
<td>&lt; 130 mm Hg (diabetic)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Diastolic BP</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 90 mm Hg</td>
<td>80%</td>
<td>66%</td>
<td>57%</td>
<td>89%</td>
<td>86%</td>
</tr>
<tr>
<td>&lt; 80 mm Hg (diabetic)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Systolic and diastolic BP</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 140/90 mm Hg</td>
<td>62%</td>
<td>41%</td>
<td>40%</td>
<td>60%</td>
<td>69%</td>
</tr>
<tr>
<td>&lt; 130/80 mm Hg (diabetic)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>LDL</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 100 mg/dL</td>
<td>45%</td>
<td>62%</td>
<td>26%</td>
<td>59%</td>
<td>38%</td>
</tr>
<tr>
<td><strong>Non-HDL</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 130 mg/dL</td>
<td>45%</td>
<td>54%</td>
<td>50%</td>
<td>59%</td>
<td>40%</td>
</tr>
<tr>
<td><strong>HbA1c</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 7.0% (diabetic)</td>
<td>---</td>
<td>46%</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
</tbody>
</table>
Both Systolic and Diastolic blood pressure control rates among COSEHC ATGOAL practices in the Southeast US at **Baseline**

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**Key:**
- Green: Your practice
- Yellow: Average of all practices
- Purple: Individual practices

**National Hypertension Control Rate = 50.1%**
Egan et al., JAMA, 2010; 303(20): 2043-2050

Control Rate: < 140/90 mm Hg non-diabetic; < 130/80 mm Hg diabetic

Baseline: Practice X

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**Average of all practices**

Baseline: Practice X
GOAL Attainment
AA Patients Uncontrolled at Baseline

<table>
<thead>
<tr>
<th>Metric</th>
<th>SBP 408</th>
<th>LDL ≤ 100 737</th>
<th>LDL ≤ 130 312</th>
<th>non-HDL 556</th>
<th>HbA1c 229</th>
</tr>
</thead>
<tbody>
<tr>
<td>Controlled</td>
<td>64%</td>
<td>52%</td>
<td>32%</td>
<td>68%</td>
<td>20%</td>
</tr>
<tr>
<td>Uncontrolled</td>
<td>36%</td>
<td>48%</td>
<td>68%</td>
<td>80%</td>
<td>80%</td>
</tr>
</tbody>
</table>

N:
GOAL Attainment
> 65 years Patients Uncontrolled at Baseline

<table>
<thead>
<tr>
<th>Metric</th>
<th>Controlled</th>
<th>Uncontrolled</th>
</tr>
</thead>
<tbody>
<tr>
<td>SBP</td>
<td>64%</td>
<td>36%</td>
</tr>
<tr>
<td>LDL ≤ 100</td>
<td>29%</td>
<td>71%</td>
</tr>
<tr>
<td>LDL ≤ 130</td>
<td>52%</td>
<td>48%</td>
</tr>
<tr>
<td>non-HDL</td>
<td>32%</td>
<td>68%</td>
</tr>
<tr>
<td>HbA1c</td>
<td>20%</td>
<td>80%</td>
</tr>
</tbody>
</table>

N: SBP 768, LDL ≤ 100 927, LDL ≤ 130 323, non-HDL 751, HbA1c 237.
Goal Attainment - Uncontrolled at Baseline

**FEMALE**

- **SBP**
  - Controlled: 64%
  - Uncontrolled: 36%

- **LDL < 100**
  - Controlled: 71%
  - Uncontrolled: 29%

- **LDL < 130**
  - Controlled: 51%
  - Uncontrolled: 49%

- **non-HDL**
  - Controlled: 69%
  - Uncontrolled: 31%

- **HbA1c**
  - Controlled: 74%
  - Uncontrolled: 26%

**MALE**

- **SBP**
  - Controlled: 65%
  - Uncontrolled: 35%

- **LDL < 100**
  - Controlled: 65%
  - Uncontrolled: 35%

- **LDL < 130**
  - Controlled: 42%
  - Uncontrolled: 58%

- **non-HDL**
  - Controlled: 65%
  - Uncontrolled: 35%

- **HbA1c**
  - Controlled: 75%
  - Uncontrolled: 25%

**N:**

- **FEMALE**
  - N: 720, 1,229, 444, 1,039, 362

- **MALE**
  - N: 1,003, 1,788, 738, 1,488, 397
GOAL Attainment
Diabetes Patients Uncontrolled at Baseline

<table>
<thead>
<tr>
<th>Goal</th>
<th>N</th>
<th>Controlled</th>
<th>Uncontrolled</th>
</tr>
</thead>
<tbody>
<tr>
<td>SBP</td>
<td>700</td>
<td>61%</td>
<td>39%</td>
</tr>
<tr>
<td>LDL &lt;= 100</td>
<td>828</td>
<td>38%</td>
<td>62%</td>
</tr>
<tr>
<td>LDL &lt;= 130</td>
<td>288</td>
<td>59%</td>
<td>41%</td>
</tr>
<tr>
<td>non-HDL</td>
<td>713</td>
<td>39%</td>
<td>61%</td>
</tr>
<tr>
<td>HbA1c</td>
<td>760</td>
<td>25%</td>
<td>75%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Goal</th>
<th>N</th>
<th>Controlled</th>
<th>Uncontrolled</th>
</tr>
</thead>
<tbody>
<tr>
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<tr>
<td>non-HDL</td>
<td>713</td>
<td>25%</td>
<td>75%</td>
</tr>
<tr>
<td>HbA1c</td>
<td>760</td>
<td>39%</td>
<td>61%</td>
</tr>
</tbody>
</table>
Life Style Changes:

Weight Reduction for Excessive Body Weight

Low Salt Diet & South Beach Diet / DASH
Reduced Alcohol Intake
Increased Physical Activity
Smoking Cessation

Approach to CV Disease

<table>
<thead>
<tr>
<th>Hypertension</th>
<th>Hyperlipidemia</th>
<th>Hyperglycemia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>ACE/ARB</td>
<td>Statins</td>
</tr>
<tr>
<td>Step 2</td>
<td>CCB</td>
<td>Fibrates</td>
</tr>
<tr>
<td>Step 3</td>
<td>Thiazide</td>
<td></td>
</tr>
</tbody>
</table>

TARGET GOALS

• Systolic Blood Pressure: < 140 mm Hg
• Blood Pressure: < 140/90 mm Hg
• LDL Cholesterol: < 100 mg/dL
• Non-HDL Cholesterol: < 130 mg/dL
• Hemoglobin A1c: < 7.0%
Lifestyle Interventions
Diet: Restrict fat intake to 25-30% of calories and reduce saturated fats to 7-10%; eliminate trans-fats. For patients with insulin resistance, utilize the glycemic index to identify healthier carbohydrate choices – more complex carbohydrates and fewer simple sugars and starches. Limit alcohol to 0.5 oz. for women, 1 oz. for men. Encourage lean meats, low fat dairy, seafood (especially fish rich in omega-3 fish oils), fruits, and vegetables. If overweight, calorie restriction is necessary to achieve weight loss.
Activity: No tobacco products. Aerobic physical activity: 150 min/week or more, resistance training 2-3 times/week. Patients should be encouraged to get adequate sleep. Stress reduction.

Education Outline -- Guiding Management Principles

**A**
ASPIRIN (or other anti-platelet)
If no contraindication

**B**
BLOOD PRESSURE (Goal <140/90)
ACE/ARB
DHP CCB
Thiazide
Aldosterone Antagonist
(if beta-blocker needed: nebivolol or carvedilol)

**C**
CHOLESTEROL (Goal LDL-C <100 for most; <70 if established vascular disease)
STATIN
LIPID LOWERING AGENTS

**D**
DIABETES (Goal: If pre-DM, prevention of diabetes: DM goal A1c <7.0 unless advanced age, short life expectancy, severe CV disease)
METFORMIN
GLP-1 agonist (or DPP-4 inhibitor)
Basal insulin
Improving Control Rates through PI CME

• Patient data analysis coupled with tailored CME opportunities
• Practices measured and benchmarked at quarterly intervals
• Practices receive PDF Clinical Dashboard Reports illustrating their improvement trends
Practical Statin Therapy

• Differences Between Statins
  – Relative Potency

  Rosuvastatin > Atorvastatin > Simvastatin > Lovastatin > Pravastatin > Fluvastatin

Reduce All Serum Lipids to Prolong the Fun
Opportunities for Improvement

Measuring LDL/HDL in all patients

Use fixed dose Combination therapy initially in most patients to get their blood pressure to goal sooner

In diabetics go to metformin early and max out if tolerated—consider adding basal insulin

Hemoglobin A1c:
Measure every 6 months for diabetic patients treated to goal with oral medications and diet restrictions. Measure every 3 months for diabetic patients not a goal.

Use higher potency statins in combination with “additive” agents to get LDL to goal

Look for barriers to compliance that the practice can actually help like patient assistance programs for compliance

www.cosehc.org
<table>
<thead>
<tr>
<th></th>
<th># of Patients Uncontrolled at Baseline</th>
<th>% with a ≥ 5% Improvement</th>
<th>% with a ≥ 10% Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Systolic BP</strong></td>
<td>1,728</td>
<td>71%</td>
<td>53%</td>
</tr>
<tr>
<td><strong>LDL &lt; 100 mg/dL</strong></td>
<td>3,024</td>
<td>57%</td>
<td>47%</td>
</tr>
<tr>
<td><strong>LDL &lt; 130 mg/dL</strong></td>
<td>1,182</td>
<td>66%</td>
<td>57%</td>
</tr>
<tr>
<td><strong>Non-HDL</strong></td>
<td>2,536</td>
<td>55%</td>
<td>45%</td>
</tr>
<tr>
<td><strong>HbA1c</strong></td>
<td>760</td>
<td>47%</td>
<td>29%</td>
</tr>
</tbody>
</table>

**Reduction in CV Risk after AT GOAL**

**% of Patients with Improved CV risk factors**
• 2013-2014 Initiatives
  – At Goal Project concluding
  – COSMIC Research published
  – BCBS of LA and SC sponsored
  – CDC Best Practices – ongoing interviews and collaboration
  – Database comparable in size to Geisinger