Developing a Care Pathway for Cardiovascular Disease (CVD)

June 7, 2018
Overview of Our Time Together

1. Check-in on progress you’ve made to date on your Care Pathways

2. Review what works for treating cardiovascular disease (CVD) in populations of adults with serious mental illness (SMI) and children with serious emotional disturbance (SED)

3. Review of care pathway development steps for the treatment of CVD

4. Discussion
Agency Updates!

- What are some breakthroughs you’ve experienced in developing this or other Care Pathways?

- What are barriers you are running into?

- Areas you want to make sure we cover today?

- Who has started working on or finished a CVD Care Pathway?
What is Cardio Vascular Disease?

Cardio Vascular disease is a general term for a group of problems that affect your blood vessels, such as those that move blood through your heart and brain. People who have cardio vascular disease may have health problems such as:

- Coronary Artery Disease (CAD)
- Heart Attack/Myocardial Infarction
- Stroke
- Hypertension/High Blood Pressure
What Are the Risk Factors for Heart Disease?

- Risk factors are conditions or habits that make a person more likely to develop a disease. Important risk factors for heart disease that you can do something about are:
  - High blood pressure
  - High blood cholesterol
  - Diabetes and prediabetes
  - Smoking
  - Being overweight or obese
  - Being physically inactive
  - Having a family history of early heart disease
  - Having a history of preeclampsia during pregnancy
  - Unhealthy diet
  - Age (55 or older for women)

Source: American Health Association
Cardio Vascular Disease: Coronary Artery Disease (CAD)

- Caused by a thickening of the inside walls of the coronary arteries. This thickening is called **atherosclerosis**.
- A fatty substance called **plaque** builds up inside the thickened walls of the arteries, blocking or slowing the flow of blood.
- If your heart muscle doesn't get enough blood to work properly, you may have angina or a heart attack. **Angina** is a squeezing pain or pressing feeling in your chest.
Heart Disease: Cholesterol

- Cholesterol is a waxy substance that your body makes and uses to protect nerves, make cell tissues and produce hormones. It's also present in meat and dairy foods you eat.

- Low-density lipoproteins, LDL cholesterol is called "bad" cholesterol because it can build up on the inside of your arteries, causing them to become narrow from plaque.

- High-density lipoproteins, HDL is called "good" cholesterol because it protects your arteries from plaque buildup.
Co-Morbid Conditions: Diabetes, Dyslipidemia & Obesity

- Dyslipidemia is an imbalance of the amount of lipids in the blood, often as a result of diet and/or lifestyle choices.
- Dyslipidemia may be caused by long-term elevation of insulin levels.
- If a child has Polycystic Ovary Syndrome or dyslipidemia, it is important to follow-up regularly with a health care team.
- Diabetes & Obesity are both significant risk factors for the development of CVD.
- Metabolic Syndrome is the presence of CVD, Diabetes & Obesity.
Blood Pressure

Definition: Pressure of blood in arteries produced by contraction of heart muscle

- Systolic - Measured after heart contracts
- Diastolic - Measured before heart contracts
- Sphygmomanometer - Blood pressure measuring device

National Heart, Lung, and Blood Institute
National High Blood Pressure Education Program
Primary Hypertension & Evaluation for Co-Morbidities

- Primary hypertension is identifiable in children, adolescents & adults.
- Hypertension and pre-hypertension are significant health issues in the young due to the marked increase in the prevalence of overweight children.
- The evaluation of hypertensive children should include assessment for additional risk factors.
Measurement of Blood Pressure in Children

- Children over 3 years old should have their BP measured
- Auscultation (measured by stethoscope) is the preferred method of BP measurement
- Correct measurement requires a cuff that is appropriate to the size of the child’s upper arm
- Elevated BP must be confirmed on repeated measurement


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Conditions Under Which Children Under 3 Years Old Should Have BP Measured

- History of prematurity, very low birth weight, or other neonatal complication requiring intensive care
- Congenital heart disease
- Recurrent urinary tract infections
- Known renal disease or urologic malformations
- Family history of congenital renal or cardiac disease
- Solid organ transplant
- Malignancy or bone marrow transplant
- Treatment with drugs known to raise BP
- Other systemic illnesses associated with hypertension
- Evidence of elevated intracranial pressure

National Heart, Lung, and Blood Institute
National High Blood Pressure Education Program
## Pediatric Blood Pressures

<table>
<thead>
<tr>
<th>Age</th>
<th>Systolic Pressure</th>
<th>Diastolic Pressure</th>
<th>Systolic Hypotension</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birth (12 h, &lt;1000 g)</td>
<td>39-59</td>
<td>16-36</td>
<td>&lt;40-50</td>
</tr>
<tr>
<td>Birth (12 h, 3 kg)</td>
<td>60-76</td>
<td>31-45</td>
<td>&lt;50</td>
</tr>
<tr>
<td>Neonate (96 h)</td>
<td>67-84</td>
<td>35-53</td>
<td>&lt;60</td>
</tr>
<tr>
<td>Infant (1-12 mo)</td>
<td>72-104</td>
<td>37-56</td>
<td>&lt;70</td>
</tr>
<tr>
<td>Toddler (1-2 y)</td>
<td>86-106</td>
<td>42-63</td>
<td>&lt;70 + (age in years x 2)</td>
</tr>
<tr>
<td>Preschooler (3-5 y)</td>
<td>89-112</td>
<td>46-72</td>
<td>&lt;70 + (age in years x 2)</td>
</tr>
<tr>
<td>School-age (6-9 y)</td>
<td>97-115</td>
<td>57-76</td>
<td>&lt;70 + (age in years x 2)</td>
</tr>
<tr>
<td>Preadolescent (10-11 y)</td>
<td>102-120</td>
<td>61-80</td>
<td>&lt;90</td>
</tr>
<tr>
<td>Adolescent (12-15 y)</td>
<td>110-131</td>
<td>64-83</td>
<td>&lt;90</td>
</tr>
</tbody>
</table>

Source: http://www.pedscases.com/pediatric-vital-signs-reference-chart
Measurement of Blood Pressure in Adults

• The number of Americans who have high blood pressure has increased dramatically
• nearly 1,000 people die each day in the United States as a result of high blood pressure-related illnesses.
• The latest data show that nearly 1 in 3 American adults—approximately 70 million—have high blood pressure. About half of those with high blood pressure don’t have it under control, even though many have insurance, are being treated with medicine, and have seen a doctor at least twice in the past year.
# Adult Blood Pressures

<table>
<thead>
<tr>
<th>BLOOD PRESSURE CATEGORY</th>
<th>SYSTOLIC mm Hg (upper number)</th>
<th>DIASTOLIC mm Hg (lower number)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NORMAL</td>
<td>LESS THAN 120</td>
<td>LESS THAN 80</td>
</tr>
<tr>
<td>ELEVATED</td>
<td>120 – 129</td>
<td>LESS THAN 80</td>
</tr>
<tr>
<td>HIGH BLOOD PRESSURE (HYPERTENSION) STAGE 1</td>
<td>130 – 139</td>
<td>80 – 89</td>
</tr>
<tr>
<td>HIGH BLOOD PRESSURE (HYPERTENSION) STAGE 2</td>
<td>140 OR HIGHER</td>
<td>90 OR HIGHER</td>
</tr>
<tr>
<td>HYPERTENSIVE CRISIS</td>
<td>HIGHER THAN 180</td>
<td>HIGHER THAN 120</td>
</tr>
</tbody>
</table>

Source: American Health Association
Treatment Plan for Elevated Blood Pressure

- Repeat measurement
- Referral
- Cardiac Work-up
- Lifestyle changes
- Medication treatment
## Therapeutic Lifestyle Changes

<table>
<thead>
<tr>
<th>Stage of Hypertension</th>
<th>Recommended Lifestyle Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>Encourage healthy diet, sleep, and physical activity.</td>
</tr>
<tr>
<td>Prehypertension</td>
<td>Recommend weight management counseling if overweight; introduce physical activity and diet management.</td>
</tr>
<tr>
<td>Stage 1 hypertension</td>
<td>Recommend weight management counseling if overweight; introduce physical activity and diet management.</td>
</tr>
<tr>
<td>Stage 2 hypertension</td>
<td>Recommend weight management counseling if overweight; introduce physical activity and diet management.</td>
</tr>
</tbody>
</table>

*National Heart, Lung, and Blood Institute; National High Blood Pressure Education Program*
Practical Interventions for Improving Cardiovascular Disease

Lifestyle changes

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Therapeutic Lifestyle Changes

- Weight reduction is the primary therapy for obesity-related hypertension. Prevention of excess weight gain can limit future increases in BP.

- Physical activity can improve efforts at weight management and may prevent future increase in BP.

- Dietary modification should be strongly encouraged in children and adolescents with prehypertension, as well as those with hypertension.

- Family-based intervention improves success.

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Take Home Messages for Care Managers

- Must understand the causes, identification, and treatment of CVD
- Support/ensure primary care management
- Support/ensure therapeutic lifestyle changes
The Good News:
Reducing Risks of Cardiovascular Disease

- Maintenance of ideal body weight (BMI = 18.5-25)
  - 35%-55% ↓ in CVD
- Maintenance of active lifestyle (~30-min walk daily)
  - 35%-55% ↓ in CVD
- Cigarette smoking cessation
  - ~ 50% ↓ in CVD

What is the Role of a HH Provider?

- HH Clinical staff training on the identification/screening, referral, care coordination, and monitoring of CVD

- Care Pathway that includes screening for CVD and associated comorbid conditions (e.g., obesity & diabetes), lifestyle/wellness programming, ongoing seamless care coordination with primary care.

- Data capture, aggregation, and monitoring using population health management and risk stratification protocols.
WHERE DO I....
START?

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FOR BEHAVIORAL HEALTH
MENTAL HEALTH FIRST AID

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Remember this!? 

1. Choose a clinical condition or social determinant need
2. Define the patient population
3. Convene an inter-disciplinary team
4. Define the target outcome(s)
5. Review the evidence base
6. Map the care pathway
7. Develop clinical & administrative protocols
8. Pilot the care pathway
9. Evaluate the efficiency & effectiveness of the care pathway
10. Ongoing monitoring of the care pathway metric specifications

Step 4. Treat to Target Metrics

**Number of Clients Screened**
- Screening including Blood Pressure & Lipids for all consumers at least annually
  
  Numerator = # clients screened
  
  Denominator = all clients served – excluded clients

**Clients that Screen Positive for Hypertension Receive Follow-up Care**
- For those that screen positive #/% that receive treatment
  
  Numerator = # clients attending f/u appt w/ Primary Care or Emergency Dept
  
  Denominator = # clients screening positive for Hypertension

**Clients with Hypertension Improve**
- For those that screen positive #/% that have improved over three month period?
  
  Numerator = # clients with BP improvement after three months
  
  Denominator = # clients screening positive receiving Follow-up Care
Step 5. Review of the Evidence/Choosing an Approach

• Like with ALL Care Pathways your Medical Director must approve the chosen intervention.

• For physical health conditions your Primary Care consultant must be involved in the decision making process.
Lipids

Check FLP per lab monitoring guidelines

LDL <130
HDL ≥ 40
Triglycerides < 200

Applaud health and offer prevention strategies

LDL ≥130
HDL < 40
Triglycerides ≥ 200
or on meds for HLD

Refer to PCP

Provide education

Offer lifestyle interventions

Has Recovery Specialist?

RS notified of diagnosis

NO

Review progress at intervals

Offer education and interventions to support treatment adherence

YES

Diagnosis added to DI

Provider
Nursing
Recovery Specialist
Blood Pressure

Check BP at provider appointment

- BP < 140/90
  - Applaud health and offer prevention strategies
- BP ≥ 140/90 or on meds for HTN
  - Refer to PCP
    - Provide education
      - Offer lifestyle interventions

Has Recovery Specialist?
- No
  - Review progress at intervals
  - Offer education and interventions to support treatment adherence
- Yes
  - RS notified of diagnosis
    - Diagnosis added to DI

△ Provider
☆ Nursing
○ Recovery Specialist
Step 7. Protocol Development

What will Protocol Development look like for a CVD Care Pathway?

• Detail the work flow procedures/behaviors staff will engage in when addressing a certain health care condition/social determinant need.
• Lays the procedures out in sequence describing how each discipline will do both the clinical and administrative work flow behaviors.
• Provides standard operating procedures for the team to work from to make sure clinical care is provide based on the evidence-based standard of care AND that administrative procedures are followed so data are collected reliably and services are documented/billed correctly.
• Protocols can be detailed written documents and/or visual diagrams.
Common Issues When Implementing CVD Care Pathway

- Who can/must do blood pressures?
- How to include Primary Care?
- Which staff need training?
- We don’t have the space or equipment?
- Which blood labs should we collect?
Resources

Resource for Care Pathways
National Institute for Health & Care Excellence:
• https://pathways.nice.org.uk/

Resource for Protocols
Agency for Healthcare Research & Quality National Guideline Clearing House:
• https://www.guideline.gov/search?q=obesity
Resources

American Heart Association CVD Guidelines: http://professional.heart.org/professional/GuidelinesStatements/UCM_316885_Guidelines-Statements.jsp