A Novel Approach to Screening Women for Cardiovascular Disease – A Case Study on The OB/GYN Connection

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Barriers and What We Already Know

Low Awareness of Action Steps

- When asked what they would do if they thought they were having signs of a heart attack, 53% of women reported they would call 9-1-1. 79% said they would call if someone ELSE was having symptoms of a heart attack.

Low Awareness of Risk

- African American and Hispanic women were significantly less aware of CVD risk than white women.

High Barriers to Prevention

- Family/caretaking responsibilities
- Confusion about symptoms/presentation

Mosca. *Circ Cardiovasc Qual Outcomes* 2010;3;120-127.
WHY OB/GYN?

• More and more women are choosing to use their OB/GYN as their PCP.

• OB/GYNs deliver excellent preventive care and are doing a lot of screening already.
  – Pap smear - cervical CA screening
  – Mammograms - breast CA screening
  – Screening for HPV, chlamydia, colo-rectal cancer

• OB/GYNs instill tremendous loyalty and trust in their patients.

• Heart disease is the #1 killer of women – let’s build a bridge or partnership with the cardiology and OB/GYN community to offer optimal management of this major health care issue.

• Tremendous success of Pink Ribbon Awareness Campaign.

• Success of breast cancer model – JUST REFER!
A misperception of lower cardiovascular risk status for women remains among physicians and correlates with suboptimal application of preventive interventions.

Pilot Conception

- Idea was conceived with Dr. Roxana Mehran and Abbott Vascular in 2009.
- There was an unmet need for a screening tool that went beyond Framingham or Reynolds to include questions about the growing body of evidence linking pregnancy complications and CVD.
- Architects of the tool consisted of leaders from SCAI-WIN, Abbott, and ACOG.
- Pilot was IRB exempt.
- No remuneration provided to participating sites but patient and physician tools were made available to all sites.
## Heart Disease Screening Tool

### 1. What is your age? 

### 2. Do you smoke? 
- Yes  
- No  
- Never  
- No, quit

### 3. Is your blood pressure over 120/80? 
- Yes  
- No  
- Don't Know

### 4. What is your blood pressure? 
[Blank boxes for input]

### 5. Has your cholesterol ever been checked? 
- Yes  
- No  
- Don't Know

### 6. Is your cholesterol more than 200 mg/dL? 
- Yes  
- No  
- Don't Know

### 7. What is your good cholesterol? 
- HDL

### 8. Are you currently taking medicines for high cholesterol? 
- Yes  
- No  
- Don't Know

### 9. Which of these medicines are you currently taking for high cholesterol? 
- Statin
- Fibrates
- Niasin
- I don't know
- Other

### 10. Have your father/brother had a heart attack, stroke, or other heart problem before age 55? 
- Yes  
- No  
- Don't Know

### 11. Have your mother/sister had a heart attack, stroke, or other heart problem before age 50? 
- Yes  
- No  
- Don't Know

### 12. Have you ever had your blood sugar checked? 
- Yes  
- No  
- Don't Know

### 13. Do you have diabetes OR a fasting blood sugar of 126 mg/dL or higher? 
- Yes  
- No  
- Don't Know

### 14. Are you currently taking medicine to control blood sugar? 
- Yes  
- No  
- Don't Know

### 15. Is your BMI greater than 25? 
- Yes  
- No  
- Don't Know

### 16. Do you get less than 30 minutes of exercise on most days? 
- Yes  
- No  
- Don't Know

### Additional Questions

- Have you had a heart attack or have you been told that you have angina? 
- Yes  
- No  
- Don't Know

- Do you experience any of the following? 
  - Chest, jaw, shoulder or neck discomfort w/ activity  
  - Palpitations  
  - Chest, jaw, shoulder or neck discomfort at rest  
  - Fatigue  
  - Shortness of breath  
  - Leg Pain w/ walking  
  - Paining without explanation  
  - Stroke or mini-stroke

- Are you currently pregnant? 
- Yes  
- No  
- Don't Know

- Did you have high blood sugar during your pregnancy (gestational diabetes)? 
- Yes  
- No  
- Don't Know  
- Not Applicable

- Did you have high blood pressure during your pregnancy? 
- Yes  
- No  
- Don't Know  
- Not Applicable

- Did you have pre-eclampsia during your pregnancy? 
- Yes  
- No  
- Don't Know  
- Not Applicable

- Are you menopausal? 
- Yes  
- No  
- Don't Know

- If so, at what age? 

- Was your uterus removed? 
- Yes  
- No  
- Don't Know

- If so, at what age? 

- Were your ovaries removed? 
- Yes  
- No  
- Don't Know

- Are you on hormone replacement treatment? 
- Yes  
- No  
- Don't Know

- If so, for how long in years? 

- Is this your primary care physician/provider? 
- Yes  
- No

- Do you have a primary care physician/provider? 
- Yes  
- No

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### Patient Information

- Enter the patient's BP, Cholesterol and HDL if incomplete.
- Was referral recommended? 
- Yes  
- No
- If yes, referred to whom? 
- PCP  
- Cardiologist  
- Endocrinologist  
- NP  
- PA  
- Other

### Referral Date: 
[Blank box for input]
Methods

• Target audience was women age ≥ 40.

• Sample size determined to be 3000.

• Abbott worked with cardiology champions at institutions that expressed an interest to Abbott in building a more robust CVD program in women.

• Site champions identified willing OB/GYN partners for participation and began the dialogue.

• Abbott provided funding for dinners to bring the two specialties together to determine the threshold of risk requiring a referral.

• 16 sites contributed patient questionnaires.

• Hershey Technologies scanned all forms into a database which was then provided to Dr. Mehran at Mount Sinai for analysis.
“Because of its unique cardiovascular and metabolic stress, pregnancy provides a unique opportunity to estimate a woman’s lifetime risk. For example, preeclampsia may be an early indicator of CVD risk. A recent large meta-analysis found that women with a history of preeclampsia have approximately double the risk for subsequent ischemic heart disease, stroke, and venous thromboembolic events over the 5 to 15 years after pregnancy. In these patients, the physiological “metabolic syndrome of pregnancy” may provoke pregnancy complications. The latter could be considered a “failed stress test,” possibly unmasking early or preexisting endothelial dysfunction and vascular or metabolic disease.”

Mosca, Circulation 2011;123
“Therefore, appropriate referral postpartum by the obstetrician to a primary care physician or cardiologist should occur so that in the years after pregnancy, risk factors can be carefully maintained and controlled.”

Mosca, *Circulation* 2011;123
Results

• Amongst middle aged women screened in this pilot, multicenter program in community OB/GYN clinics, the prevalence of cardiovascular risk factors and symptoms were common (87% and 42% respectively).

• 25.2% of patients screened were subsequently referred to another health care provider (e.g. cardiologist, endocrinologist).

• 32.4% of PIC women were referred vs 23.5% with no PIC ($P<0.001$).

• Cardiovascular assessment in the setting of community based OB/GYN clinics may enhance the delivery of primary CV prevention and education to female patients.

Moderated Poster ACC, 2012, J. Yu
Oral Presentation AHA, 2012, J. Yu
Conclusions
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• Non-specialists may be unaware of the burden of disease in their population, but can be motivated by data.

• Education and engaging primary care providers and their patients about medical research and clinical trials has the potential to provide future willing and aware participants and referring providers.

• PCPs and OB/GYNs may be an underutilized resource to identify women at risk for CVD and who may be willing to participate in clinical trials.

• The creation of multi-specialty teams to advance women’s health may also be a way to share research opportunities.