SUPPLEMENTAL MATERIAL

Supplemental Methods. VIRGO Presenting Symptoms/Perceived Risk Interview Questions

Supplemental Table 1. Symptom Presentation by Sex and Symptom Duration

Supplemental Table 2. Symptom Presentation by Sex and Prior Coronary Artery Disease

Supplemental Table 3. Symptom Presentation by Sex and Diabetes Status

Supplemental Table 4. Patient Response to Symptoms by Sex and Symptom Duration

Supplemental Table 5. Patient Response to Symptoms by Sex and Prior Coronary Artery Disease

Supplemental Table 6. Patient Response to Symptoms by Sex and Education

Supplemental Table 7. Patient Response to Symptoms by Sex and Diabetes Status

Supplemental Methods. VIRGO Presenting Symptoms/Perceived Risk Interview Questions

1. What symptoms were you having before you came to the hospital? *[Check all that apply.]*

   ☐ Chest pain, pressure, tightness or discomfort
   ☐ Dizziness
   ☐ Indigestion or stomach pain, pressure, burning or discomfort
   ☐ Nausea
   ☐ Pain or discomfort in jaw, neck, arms or between your shoulder blades
   ☐ Palpitations
   ☐ Shortness of breath
   ☐ Sweating
   ☐ Weakness or fatigue
   ☐ Confusion
   ☐ Other symptom _____

2. Why did you decide to get help for these symptoms? *[Check all that apply.]*

   ☐ Symptoms would not go away
   ☐ Pain too bad to ignore
   ☐ Worried about heart problem
   ☐ Worried about other health problems (e.g., diabetes)
   ☐ Family / friend told me to get help
   ☐ Other _____

3. When you were first having these symptoms, did you think that something was wrong with your heart?

   O Yes   O No   O Don't Know

   [If No] What did you think was causing these symptoms? *[Check all that apply]*

   ☐ Indigestion or acid reflux
   ☐ Stomach illness or flu
   ☐ Muscle pain
   ☐ Fatigue
   ☐ Stress / anxiety
   ☐ Asthma
   ☐ Diabetes
   ☐ Other cause _____

4. Were you having any of these symptoms (or not feeling well) for more than a day prior to seeking medical care?

   O Yes   O No

   [If Yes] How long were you having these symptoms (or not feeling well)?

_ _ (days) _ _(months)

What were the reason(s) that you decided to wait before seeking medical care?
[Check all that apply.]

☐ Didn't have time to go to the doctor
☐ Symptoms did not seem bad enough for emergency care
☐ Symptoms would come and go over time (not persistent)
☐ Symptoms were different than expected for a heart problem
☐ Took medication for symptoms (e.g., antacids, over the counter meds)
☐ Transportation – waited for someone to drive me to office/hospital
☐ Health insurance concerns
☐ Embarrassment or fear
☐ Other _____
☐ Don't know

5. Did you visit your doctor for any of these symptoms before this hospitalization?

O Yes
O You never had these symptoms before
O You never visited your doctor for these symptoms
O Don't know

[If Yes] How many times have you seen your doctor for these symptoms?

_____   O Don't Know

Did you see your doctor in the week before going to the hospital for any of these symptoms?

O Yes   O No   O Don't Know

Did your doctor ever tell you that your symptoms might be related to a heart problem?

O Yes   O No   O Don't Know

[If No] What did they think caused these symptoms?

☐ Indigestion or acid reflux
☐ Stomach illness or flu
☐ Muscle pain
☐ Fatigue
☐ Stress / anxiety
☐ Asthma
☐ Diabetes
☐ Other cause _____

Were you tested for a heart problem (e.g., ECG, stress test)?

O Yes   O No   O Don't Know

[If Yes] Did the tests show that you were having a problem with your heart?

O Yes   O No   O Don't Know

6. Where did you first go for help? *[Check all that apply.]*

☐ Went directly to the Emergency Room (ER)
☐ Called 9-1-1
☐ Went to my primary health care provider
☐ Went to a walk-in clinic
☐ Other _____

7. When you first went for help, did the health care providers think that you were having a problem with your heart?

O Yes   O No

[If No] What did they think was wrong?

☐ Acid reflux
☐ Stomach illness or flu
☐ Asthma
☐ Other chronic condition (i.e. diabetes)
☐ Other _____

8. When you got to the hospital, did you think you waited a long time before you were seen by a doctor?

O Yes   O No

[If Yes] Roughly how long did you wait? _____ hours _____ minutes

What were the reasons you waited? *[Check all that apply.]*

☐ Triage nurse / care provider did not think symptoms were urgent
☐ The emergency room was crowded
☐ Other people were seen ahead of me
☐ Waited for tests or results
☐ There were not any beds – waited to be transferred to a floor in the hospital
☐ Other _____

9. Did you take aspirin before seeking medical attention?

         O Yes   O No   O Don't Remember   O Don't Know

      [If No] Why didn't you take aspirin?

         ☐ Aspirin was not available at the time
         ☐ Allergic to aspirin
         ☐ Did not know that I should take aspirin
         ☐ Other (specify) _____
         ☐ Don't know

10. Prior to your recent hospital stay, did you consider yourself at risk for heart disease or a heart problem?

         O Yes   O No

11. Prior to your recent hospital stay, did any of your healthcare providers ever tell you that you were at risk for heart disease or a heart problem?

         O Yes   O No   O Don't Know

12. Did a doctor ever talk to you about heart disease and talk about things that you could do to take care of your heart?

         O Yes   O No   O Don't Know

Supplemental Table 1. Symptom Presentation by Sex and Symptom Duration

	Among Patients with Symptom Duration >1 Day			Among Patients with Symptom Duration ≤1 Day		
	Women (n=1099)	Men (n=477)	p*	Women (n=910)	Men (n=499)	p*
Individual Symptoms, %						
Chest pain, pressure, tightness, or discomfort	87.3	89.3	1	86.7	89.8	0.550
Dizziness	29.4	28.1	1	26.3	24.5	1
Epigastric: indigestion, nausea, or stomach pain, pressure, burning, or discomfort	62.8	50.3	<0.001	60.0	50.1	0.003
Pain/discomfort in jaw, neck, arms, or between shoulder blades	67.8	59.5	0.013	61.5	56.6	0.524
Palpitations	20.4	14.7	0.053	16.6	10.4	0.013
Shortness of breath	56.6	50.5	0.157	48.3	44.8	0.826
Sweating	51.0	52.2	1	56.1	58.6	1
Weakness or fatigue	48.2	45.1	1	41.5	36.9	0.550
Confusion	13.4	11.5	1	10.6	10.8	1
Number of Associated, Non-Chest Pain Symptoms						
Mean (SD)	3.5 (2.0)	3.1 (1.9)	<0.001	3.2 (2.0)	2.9 (1.9)	0.009
Median (IQR)	3 (2-5)	3 (2-4)	<0.001	3 (2-5)	3 (2-4)	0.009
0 symptoms	3.9	6.1	0.009	7.7	7.2	0.006

1-2 symptoms	31.8	37.1	33.2	39.9
3-4 symptoms	33.5	32.9	32.3	33.9
>4 symptoms	30.8	23.9	26.8	19.0

Abbreviations: IQR, interquartile range; SD, standard deviation.

*The stepdown Bonferroni method was used to adjust the p values for multiple pairwise comparisons.

Supplemental Table 2. Symptom Presentation by Sex and Prior Coronary Artery Disease*

	Among Patients with Prior CAD			Among Patients with No Prior CAD		
	Women (n=625)	Men (n=294)	$p^†$	Women (n=1384)	Men (n=682)	$p^†$
Individual Symptoms, %						
Chest pain, pressure, tightness, or discomfort	87.8	90.1	1	86.6	89.3	0.426
Dizziness	31.8	27.6	1	26.2	25.7	1
Epigastric: indigestion, nausea, or stomach pain, pressure, burning, or discomfort	63.0	56.8	0.494	60.8	47.4	<0.001
Pain/discomfort in jaw, neck, arms, or between shoulder blades	66.6	63.1	1	64.2	55.9	0.002
Palpitations	22.9	16.7	0.260	16.8	10.7	0.002
Shortness of breath	61.9	50.5	0.010	48.7	46.3	1
Sweating	53.6	55.3	1	53.1	55.6	1
Weakness or fatigue	47.5	44.7	1	44.1	39.3	0.225
Confusion	14.6	11.9	1	11.0	10.9	1
Number of Associated, Non-Chest Pain Symptoms						
Mean (SD)	3.6 (2.1)	3.3 (1.9)	0.013	3.2 (1.9)	2.9 (1.9)	<0.001
Median (IQR)	4 (2-5)	3 (2-4)	0.011	3 (2-5)	3 (1-4)	<0.001
0 symptoms	5.6	4.4	0.005	5.6	7.6	0.004

1-2 symptoms	27.8	37.8	34.5	38.9
3-4 symptoms	32.2	33.0	33.3	33.6
>4 symptoms	34.4	24.8	26.5	19.9

Abbreviations: CAD, coronary artery disease; IQR, interquartile range; SD, standard deviation.

*Coronary artery disease includes a history of myocardial infarction, percutaneous coronary intervention, coronary artery bypass grafting, or angina.

[†]The stepdown Bonferroni method was used to adjust the p values for multiple pairwise comparisons.

Supplemental Table 3. Symptom Presentation by Sex and Diabetes Status

	Among Patients with Diabetes			Among Patients Without Diabetes		
	Women (n=699)	Men (n=206)	*p**	Women (n=1310)	Men (n=770)	*p**
Individual Symptoms, %						
Chest pain, pressure, tightness, or discomfort	85.3	85.9	1	87.9	90.5	0.282
Dizziness	26.4	24.4	1	28.9	26.8	0.665
Epigastric: indigestion, nausea, or stomach pain, pressure, burning, or discomfort	60.9	48.5	0.014	61.8	50.6	<0.001
Pain/discomfort in jaw, neck, arms, or between shoulder blades	62.5	62.4	1	66.3	56.9	<0.001
Palpitations	18.1	12.7	0.567	19.0	12.5	<0.001
Shortness of breath	54.9	54.1	1	51.8	45.8	0.055
Sweating	50.0	46.8	1	55.0	57.8	0.665
Weakness or fatigue	44.8	44.9	1	45.3	39.9	0.075
Confusion	13.3	11.2	1	11.5	11.2	0.845
Number of Associated, Non-Chest Pain Symptoms						
Mean (SD)	3.3 (2.0)	3.0 (1.9)	0.088	3.4 (2.0)	3.0 (1.9)	<0.001
Median (IQR)	3 (2-5)	3 (2-4)	0.094	3 (2-5)	3 (2-4)	<0.001
0 symptoms	4.9	6.8	0.317	6.0	6.6	<0.001

1-2 symptoms	34.3	35.9	31.5	39.2
3-4 symptoms	34.2	36.4	32.3	32.6
>4 symptoms	26.6	20.9	30.2	21.6

Abbreviations: IQR, interquartile range; SD, standard deviation.

*The stepdown Bonferroni method was used to adjust the p values for multiple pairwise comparisons.

Supplemental Table 4. Patient Response to Symptoms by Sex and Symptom Duration

	Among Patients with Symptom Duration >1 Day			Among Patients with Symptom Duration ≤1 Day		
	Women (n=1099)	Men (n=477)	*p**	Women (n=910)	Men (n=499)	*p**
Patient did not perceive cause of symptoms to be heart related, %	57.1	55.1	0.130	51.8	49.5	0.815
Perceived reason						
Indigestion or acid reflux	44.3	50.2	0.457	40.8	48.6	0.224
Muscle pain	16.4	23.2	0.119	14.0	19.0	0.239
Stress / anxiety	22.6	12.9	0.007	18.7	10.5	0.036
Stomach illness or flu	12.3	8.4	0.457	10.6	11.3	1
Asthma	14.3	9.5	0.300	5.9	6.5	1
Fatigue	8.1	5.3	0.457	3.0	6.1	0.224
Diabetes	4.5	2.7	0.457	4.5	1.2	0.130
Other cause	4.9	4.6	0.812	14.2	8.1	0.118
Decision to seek medical care, %						
Symptoms would not go away	67.5	64.8	0.866	60.7	60.1	1

Pain too bad to ignore	62.6	59.1	0.766	56.3	53.5	1
Worried about heart problem	42.5	47.8	0.257	40.5	51.7	0.002
Family / friend told me to get help	26.8	29.4	0.866	24.6	23.6	1
Worried about other health problems (e.g., diabetes)	18.3	11.3	0.004	14.2	12.2	1
Other	1.3	0.8	0.866	0.9	0.2	1
Time to hospital presentation, %						
≤2 hours	25.5	27.0	0.113	41.9	48.7	0.002
>2-6 hours	12.0	14.7		19.1	22.2	
>6 hours	52.0	45.7		22.7	18.4	
Median time (IQR), hours	8.7 (1.0-46.4)	5.5 (1.0-36.0)	0.070	1.7 (0.5-7.9)	1.6 (0.6-4.8)	0.286

Abbreviations: CAD, coronary artery disease; IQR, interquartile range.

*The stepdown Bonferroni method was used to adjust the p values for multiple pairwise comparisons.

Supplemental Table 5. Patient Response to Symptoms by Sex and Prior Coronary Artery Disease*

	Among Patients with Prior CAD			Among Patients with No Prior CAD		
	Women (n=625)	Men (n=294)	$p^\dagger$	Women (n=1384)	Men (n=682)	$p^\dagger$
Patient did not perceive cause of symptoms to be heart related, %	39.7	36.7	0.417	61.5	58.9	0.417
Perceived reason						
Indigestion or acid reflux	39.1	50.9	0.268	43.8	49.0	0.430
Muscle pain	14.1	18.5	1	15.7	21.9	0.049
Stress / anxiety	23.4	10.2	0.030	20.2	12.2	0.004
Stomach illness or flu	13.7	7.4	0.541	10.9	10.4	1
Asthma	9.7	6.5	1	11.0	8.5	0.632
Fatigue	6.9	6.5	1	5.6	5.5	1
Diabetes	5.6	4.6	1	4.1	1.2	0.049
Other cause	8.5	4.6	1	9.0	6.7	0.632
Decision to seek medical care, %						
Symptoms would not go away	64.2	62.6	0.748	64.5	62.3	1

Pain too bad to ignore	60.5	57.5	0.748	59.4	55.7	0.854
Worried about heart problem	54.2	63.9	0.037	35.9	43.7	0.014
Family / friend told me to get help	22.7	23.8	0.748	27.2	27.6	1
Worried about other health problems (e.g., diabetes)	17.6	10.9	0.058	15.9	12.2	0.306
Other	1.1	0.0	0.265	1.1	0.7	1
Time to hospital presentation, %						
≤2 hours	33.8	36.1	0.0498	32.5	39.0	<0.001
>2-6 hours	17.1	20.4		14.4	17.7	
>6 hours	36.8	27.9		39.6	33.4	
Median time (IQR), hours	2.6 (0.7-19.1)	2.4 (0.7-11.5)	0.323	3.6 (0.8-22.2)	2.4 (0.7-13.7)	0.004

Abbreviations: CAD, coronary artery disease; IQR, interquartile range.

*Coronary artery disease includes a history of myocardial infarction, percutaneous coronary intervention, coronary artery bypass grafting, or angina.

†The stepdown Bonferroni method was used to adjust the p values for multiple pairwise comparisons.

Supplemental Table 6. Patient Response to Symptoms by Sex and Education

	Among Patients with >High School Education			Among Patients with High School Education or Below		
	Women (n=1132)	Men (n=547)	p*	Women (n=877)	Men (n=429)	p*
Patient did not perceive cause of symptoms to be heart related, %	55.8	52.7	0.417	53.2	51.7	0.550
Perceived reason						
Indigestion or acid reflux	41.1	46.5	0.502	45.0	53.2	0.266
Muscle pain	16.9	24.3	0.055	13.3	17.1	0.724
Stress / anxiety	21.0	12.5	0.015	20.8	10.8	0.010
Stomach illness or flu	12.8	12.8	1	9.9	5.9	0.400
Asthma	10.9	7.3	0.430	10.5	9.0	1
Fatigue	6.2	6.6	1	5.6	4.5	1
Diabetes	4.3	2.4	0.509	4.7	1.4	0.193
Other cause	9.7	4.5	0.055	7.9	8.6	1
Decision to seek medical care, %						

Symptoms would not go away	65.5	64.9	1	62.9	59.2	0.819
Pain too bad to ignore	58.7	54.1	0.494	61.1	59.0	0.819
Worried about heart problem	42.8	53.0	0.002	40.1	45.7	0.326
Family / friend told me to get help	25.3	24.9	1	26.5	28.4	0.819
Worried about other health problems (e.g., diabetes)	16.9	10.4	0.009	15.8	13.5	0.819
Other	1.1	0.2	0.494	1.1	0.9	0.819
Time to hospital presentation, %						
≤2 hours	35.0	39.3	0.039	30.2	36.6	0.006
>2-6 hours	15.0	18.1		15.5	19.1	
>6 hours	37.1	31.8		40.8	31.7	
Median time (IQR), hours	2.7 (0.7-19.7)	2.3 (0.7-12.0)	0.064	3.9 (0.8-23.7)	2.6 (0.8-14.0)	0.020

Abbreviations: IQR, interquartile range.

*The stepdown Bonferroni method was used to adjust the p values for multiple pairwise comparisons.

Supplemental Table 7. Patient Response to Symptoms by Sex and Diabetes Status

	Among Patients with Diabetes			Among Patients Without Diabetes		
	Women (n=699)	Men (n=206)	*p**	Women (n=1310)	Men (n=770)	*p**
Patient did not perceive cause of symptoms to be heart related, %	57.5	53.4	0.604	53.2	51.9	0.519
Perceived reason						
Indigestion or acid reflux	40.3	52.7	0.137	44.2	48.5	0.671
Muscle pain	12.2	15.5	1	17.2	22.8	0.176
Stress / anxiety	18.9	8.2	0.059	22.1	12.8	<0.001
Stomach illness or flu	12.7	10.9	1	10.9	9.5	1
Asthma	11.2	10.9	1	10.5	7.3	0.384
Fatigue	5.5	6.4	1	6.2	5.5	1
Diabetes	10.9	7.3	1	0.7	0.5	1
Other cause	9.0	8.2	1	8.9	5.8	0.364
Decision to seek medical care, %						
Symptoms would not go away	63.2	65.5	1	65.0	61.6	0.444
Pain too bad to ignore	59.1	56.3	1	60.1	56.2	0.429

Worried about heart problem	42.2	49.0	0.678	41.3	50.0	<0.001
Family / friend told me to get help	26.3	22.8	1	25.5	27.4	0.467
Worried about other health problems (e.g., diabetes)	22.2	12.6	0.045	13.4	11.6	0.467
Other	0.9	0.5	1	1.2	0.5	0.444
Time to hospital presentation, %						
≤2 hours	28.2	28.6	0.931	35.4	40.6	<0.001
>2-6 hours	15.6	16.0		15.0	19.2	
>6 hours	44.9	42.7		35.4	28.8	
Median time (IQR), hours	4.9 (1.0-25.7)	4.8 (0.9-34.2)	0.935	2.6 (0.7-18.1)	2.1 (0.7-10.0)	0.016

Abbreviations: IQR, interquartile range.

*The stepdown Bonferroni method was used to adjust the p values for multiple pairwise comparisons.