

# Cultural Perceptions of Acute Coronary Syndrome Symptoms and Time to Emergency Room Arrival

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# ACUTE CORONARY SYNDROME

- ▶ 1.1 million AMI/year
- ▶ 500,000-700,000 deaths due to AMI per year
- ▶ 50% deaths occur within 1 hour of symptom onset
- ▶ Early diagnosis and treatment of AMI: 23-50% reduction AMI mortality -  
- 1-3 hours post-onset

## Time from onset of symptoms of ACS to treatment -- "Delay"

- Pre hospital delay
  - Hospital delay
- 
- ▶ 50% patients delay 4+ hours
  - ▶ 1992 Brooklyn study: 13 hours delay

Clark L, S Ellam, A Shah, J Feldman. 1992. Analysis of prehospital delay among inner-city patients with symptoms of myocardial infarction: Implications for therapeutic intervention. Journal of the National Medical Association, 84 (11): 931-937.

# NATIONAL EDUCATION CAMPAIGNS

- ▶ American Heart Association
- ▶ American College of Cardiology
- ▶ National Heart, Lung, and Blood Institute –  
National Heart Attack Alert Program (NHAAP)

# AIM

**Goal:** To survey patients with a confirmed or presumed diagnosis of ACS entering the SUNY Downstate Medical Center University Hospital and Kings County Emergency Rooms (ER)

**Objectives:** to determine factors affecting:

1. time from the first ACS signs and symptoms to departure for emergency treatment
2. time from departure to the arrival at the ER

# METHODS

- ▶ **Study Period:** September 2006- May 2007
- ▶ **Location:** Brooklyn, NY
  - SUNY Downstate Medical Center
  - Kings County Medical Center ER
- ▶ **Study Design:** Prospective Cohort Study
  - Patient Selection
  - Interview Procedure
  - Study Instrument
- ▶ **Data Analysis**
  - Data analysis was performed with SPSS 15.0
  - Chi-Square analysis was used to analyze categorical variables
  - Analysis of variance (ANOVA) was used to analyze continuous variables
  - P value of 0.1 was used for statistical significance

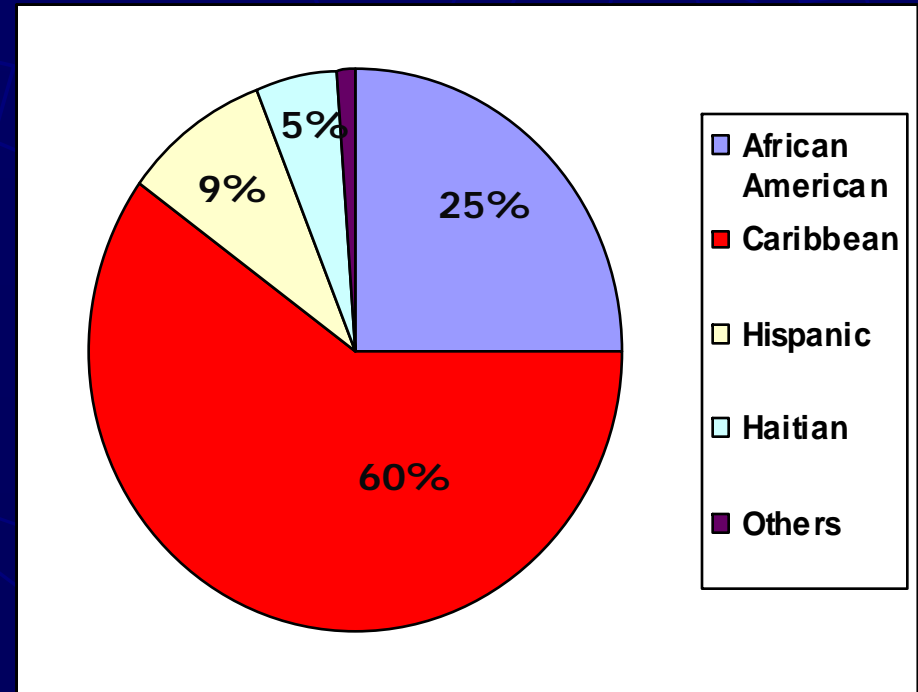
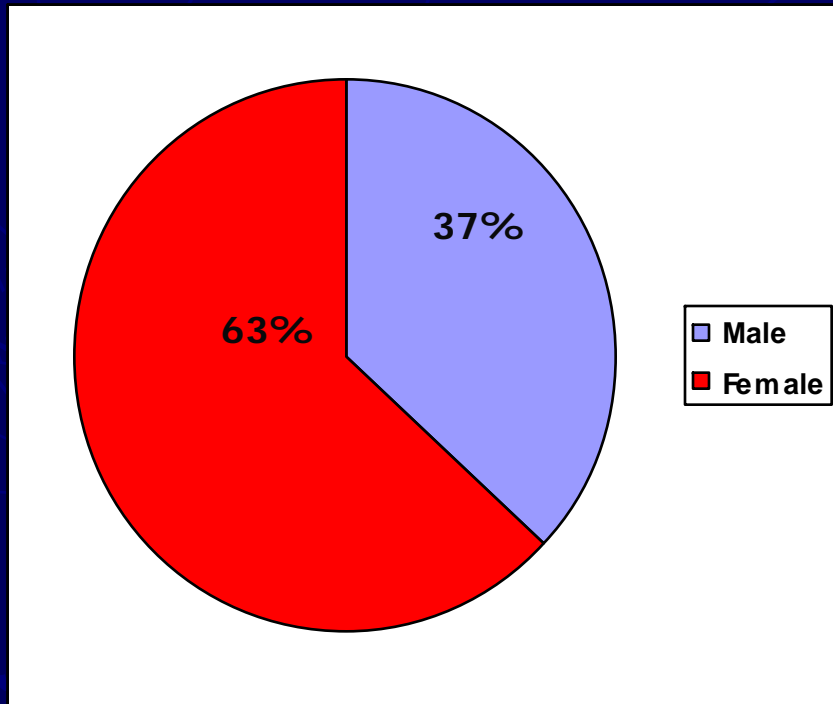
# STUDY INSTRUMENT DEVELOPMENT

1. Tested survey instruments from prior studies
2. Tailored survey to our population
3. Piloting of study instrument

- Klingler D, R Green-Weir, D Nerenz, et al. 2002. Perceptions of chest pain differ by race. *American Heart Journal*, 144(1): 51-59.
- Burnett RE, JA Blumenthal, DB. Mark, et al 1995. Distinguishing between early and late responders to symptoms of acute myocardial infarction. *American Journal of Cardiology*, 75(15): 1019-22.
- Dracup K, DK Moser 1997. Beyond sociodemographics: Factors influencing the decision to seek treatment for symptoms of acute myocardial infarction. *Heart and Lung*, 26(4): 253-61.

# PATIENTS INTERVIEWED: SEX AND ETHNICITY

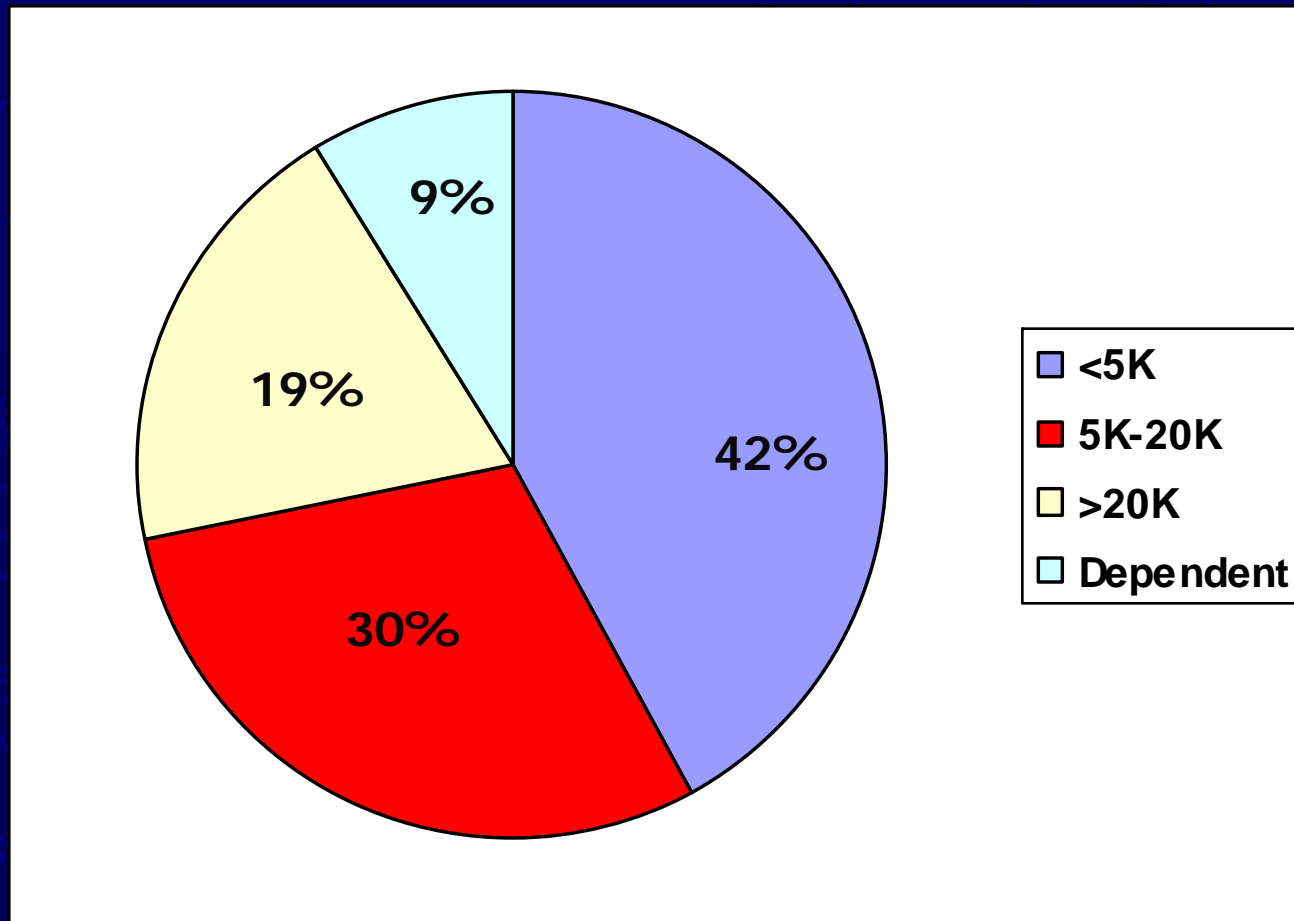
N=391





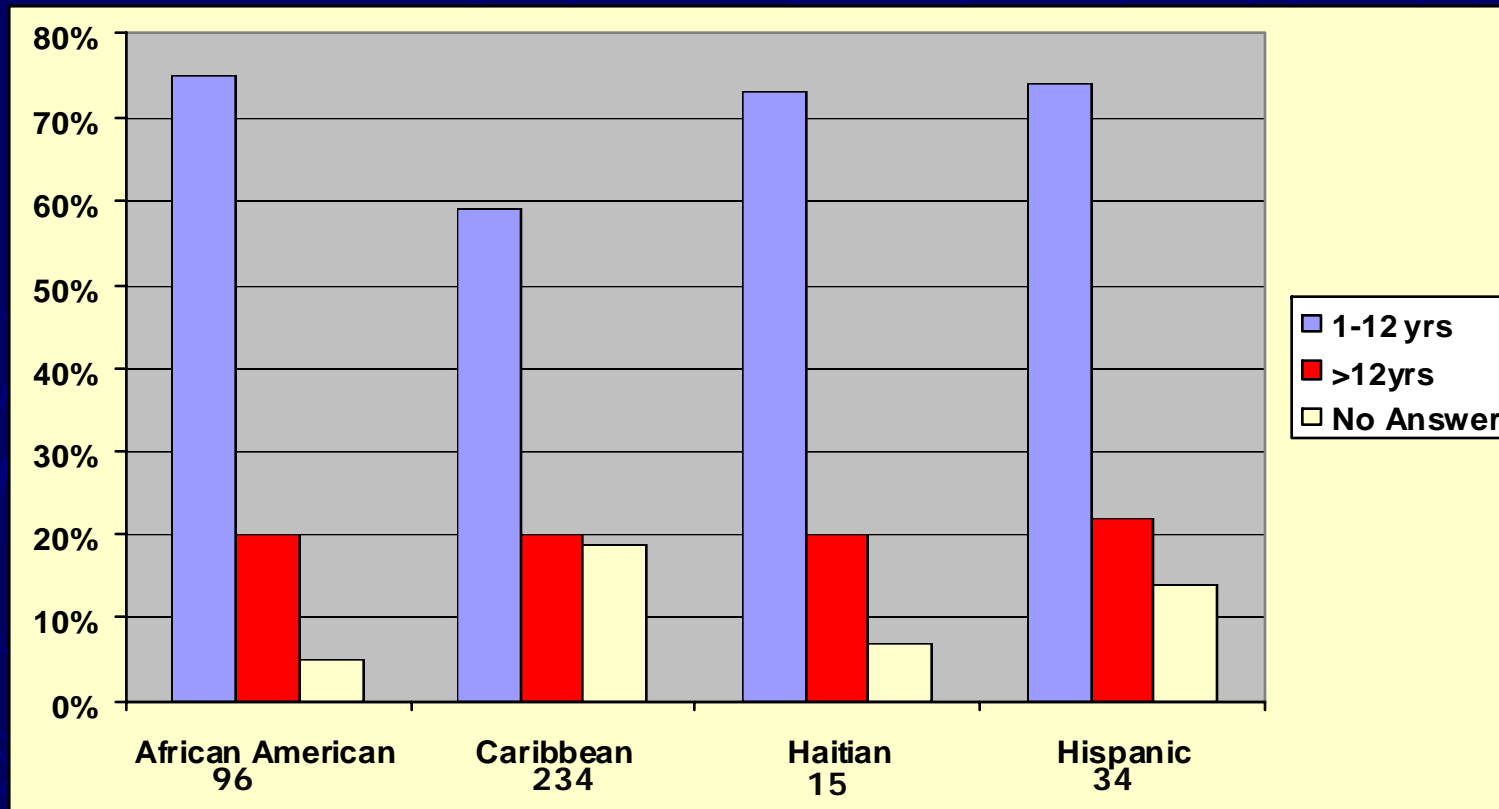
# PATIENTS INTERVIEWED: INCOME

N=391



# PATIENTS INTERVIEWED: EDUCATION STATUS

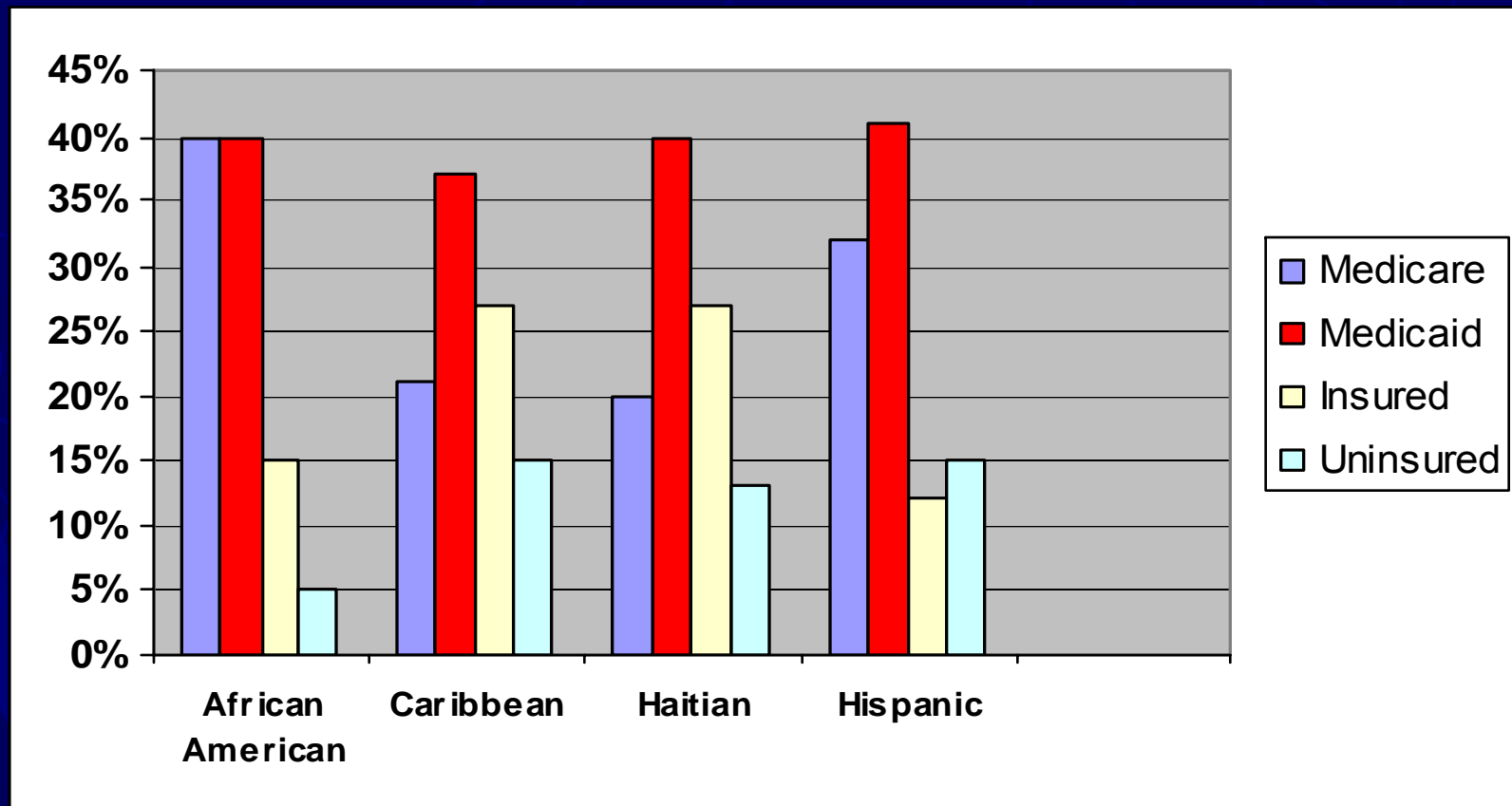
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(P value: 0.210)

# PATIENTS INTERVIEWED: INSURANCE STATUS

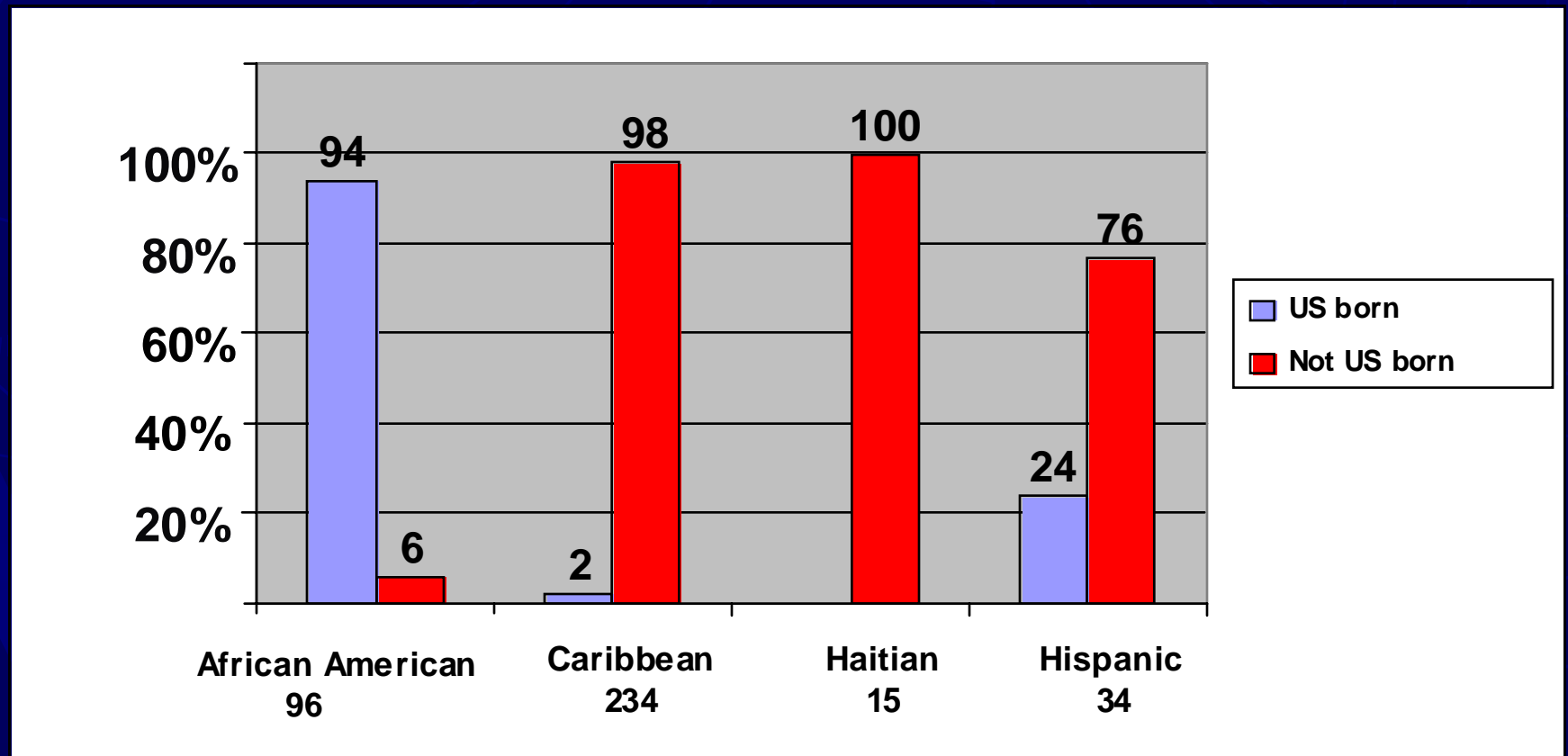
N=391



(P value: 0.04)

# PATIENT INTERVIEWED : IMMIGRATION STATUS

N= 385



P value <.0001

# PATIENT INTERVIEWED: HEALTH STATUS

Hypertension	71%
Hyperlipidemia	55%
Diabetes	40%
Active smoker	30%
Angina	18%
Coronary Heart Disease	15%
Previous Heart Attack	10%
Coronary Artery Bypass Surgery	8%
Angioplasty	6%

# PERCEPTION OF ACS SYMPTOMS: ETHNICITY

N=391

Symptom Perception	Ethnicity			
	African American N=96 %	Caribbean N=234 %	Haitian N=15 %	Hispanic N=34 %
Heart	51	42	20	41
Gas Pain	15	24	46	12
Fatigue/stress	7	18	0	17
Indigestion	4	5	13	6

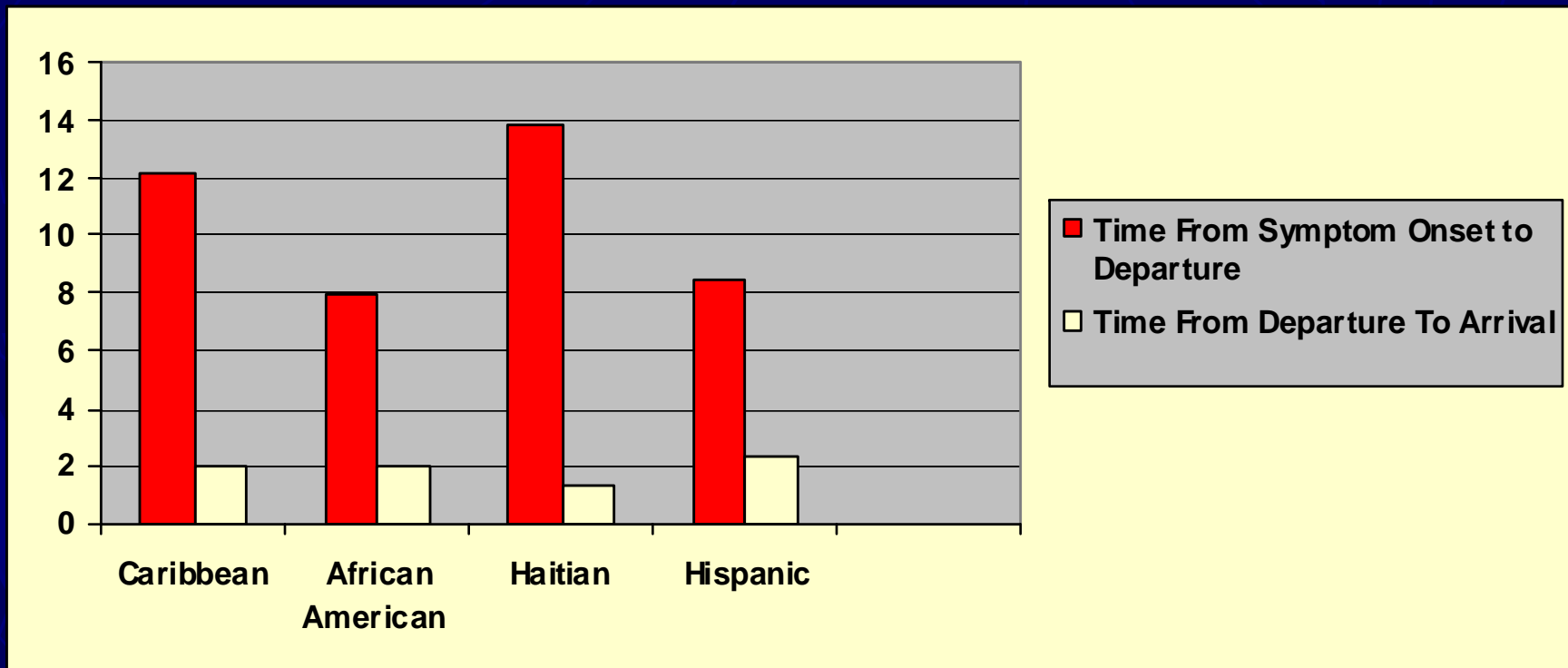
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# IMMEDIATE ACTIONS TAKEN BY PATIENTS AFTER ONSET OF SYMPTOMS

Actions	Percentage (N=391)
Called For Help; Discussed Symptoms Friends/FM/Neighbors/ Co-workers	19
Tried To Relax	17
Took Prescribed medicine	12
Drank herbal tea/ginger tea	10
Took Aspirin	9
Waited To See If Symptoms Would Go Away	5
Called 911/Ambulance	5
OTC Pain Medicine	4
Wished or Prayed that Symptoms would go away	4
Lay Down and Took Rest	4
Drank Water/Juice/Coffee	3
Ignored Symptoms and Went on My Day	2
Rubbed Something On The Chest	1

# TIME INTERVALS

## Mean Time Intervals in Hours



(P values: 0.816, 0.328)



# MODE OF TRANSPORTATION TO ER

N = 391

Ethnicity	Percentage			
	Private Vehicle	Ambulance	Public Transport	Walk
African American N=96	35	50	9	6
Caribbean N=234	42	31	19	8
Haitian N=15	46	33	8	13
Hispanic N=34	51	30	13	6

(P value:0.223)

# FINAL DISCHARGE DIAGNOSIS

Ethnicity	Final Diagnosis	
	Cardiac	Non Cardiac
African American N=96	52%	48%
Caribbean N=234	61%	39%
Haitian N=15	50%	50%
Hispanic N=34	35%	65%

# CONCLUSIONS

- ▶ Cultural perceptions play an important role in:
  - ACS symptom perception
  - appropriate emergency actions, and
  - time to arrival at the ED

# FUTURE DIRECTIONS

- Expand the study
- Initiate culturally-appropriate educational campaigns in Brooklyn

# SPECIAL APPRECIATION

- ▶ Mentor: Judie LaRosa, PhD, RN
- ▶ Advisory Committee
  - Clinton Brown, MD
  - Luther Clark, MD
  - Pascal James Imperato, MD, MPH & TM
  - Michael A. Joseph, PhD, MPH
  - E.S. Malka, MPH
  - Samy McFarlane, MD, MPH
  - Steven Rinnert, MD