VA Heart Failure Trends and Outcomes

3/10/2016

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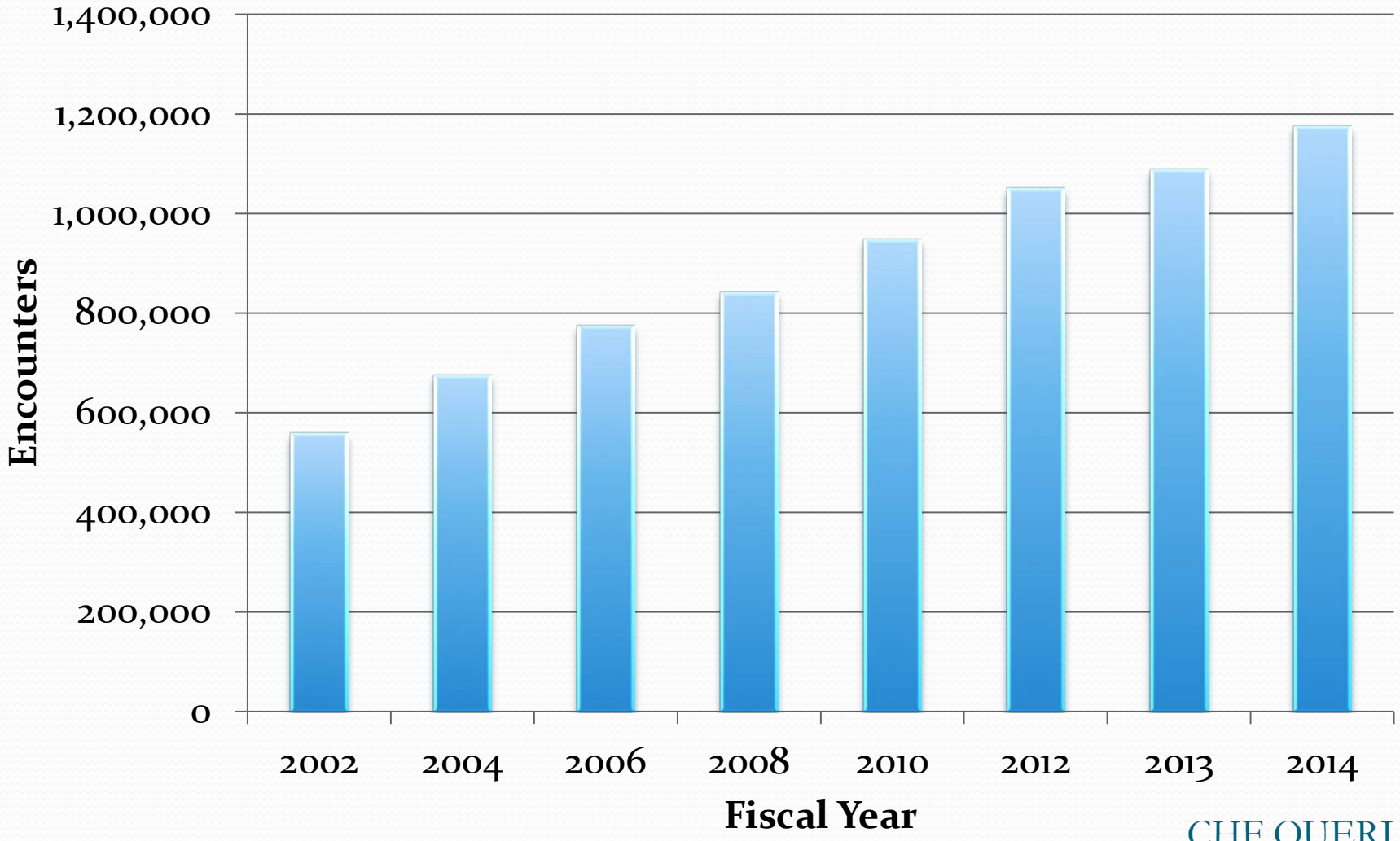
Outline

- VA HF Quality Measures
- Angiotensin-Neprilysin Inhibition

Current Status of VA HF Care: Increasing Outpatient Encounters

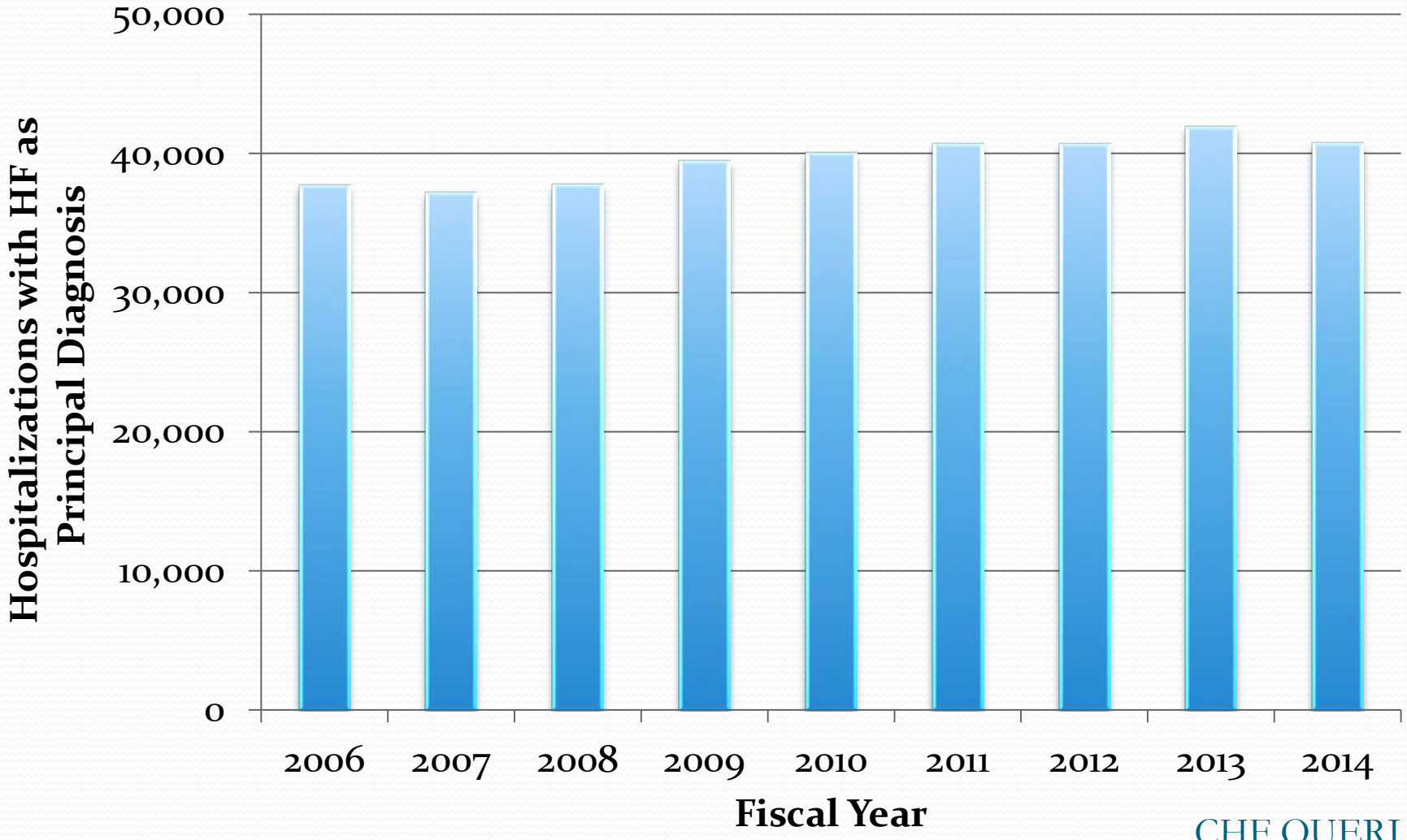


CHF QUERI

VA Heart Failure Hospitalizations

- 2.1% Female
- 23% Black
- 6% Hispanic

HF Hospitalizations (Principal Diagnosis)



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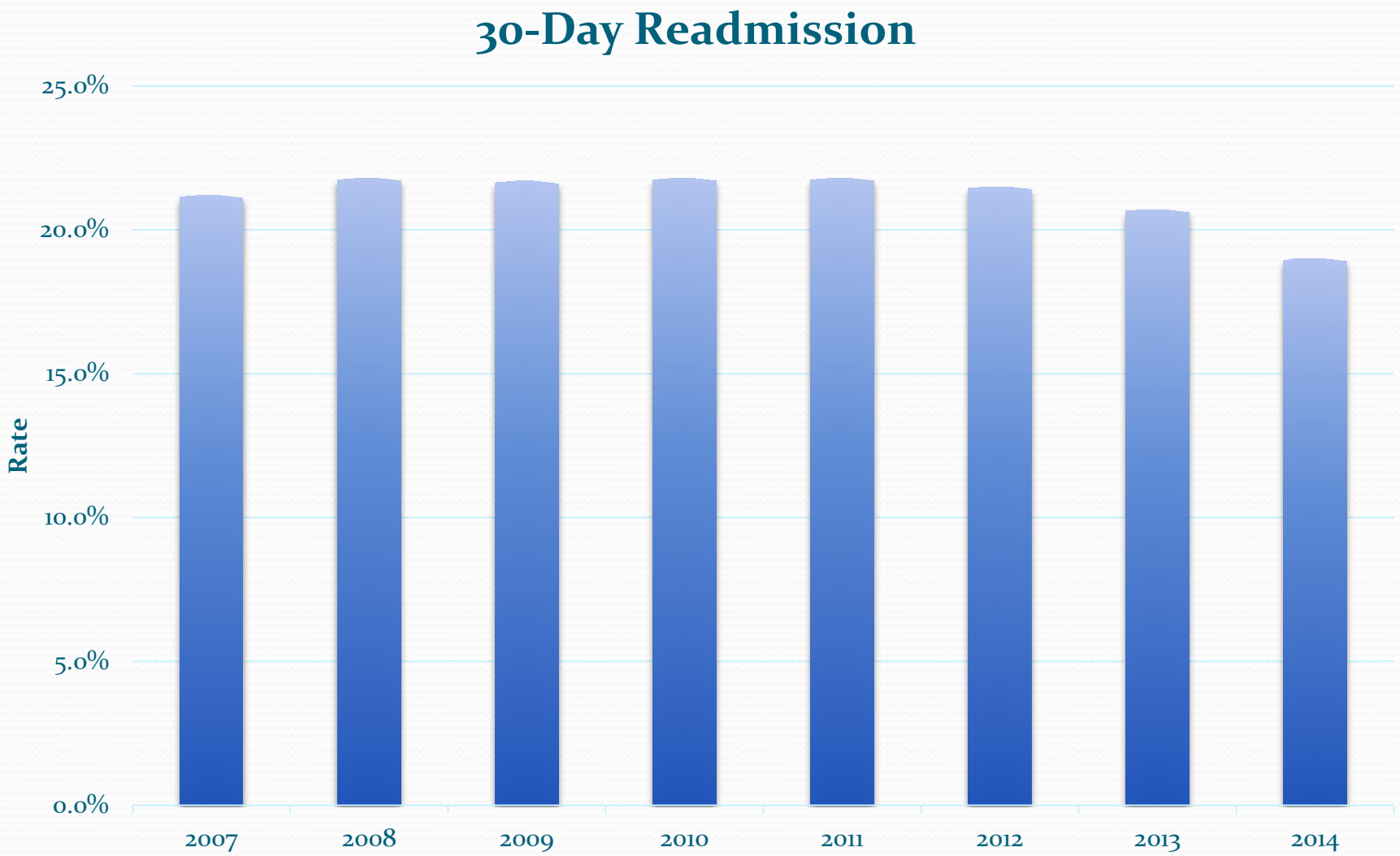
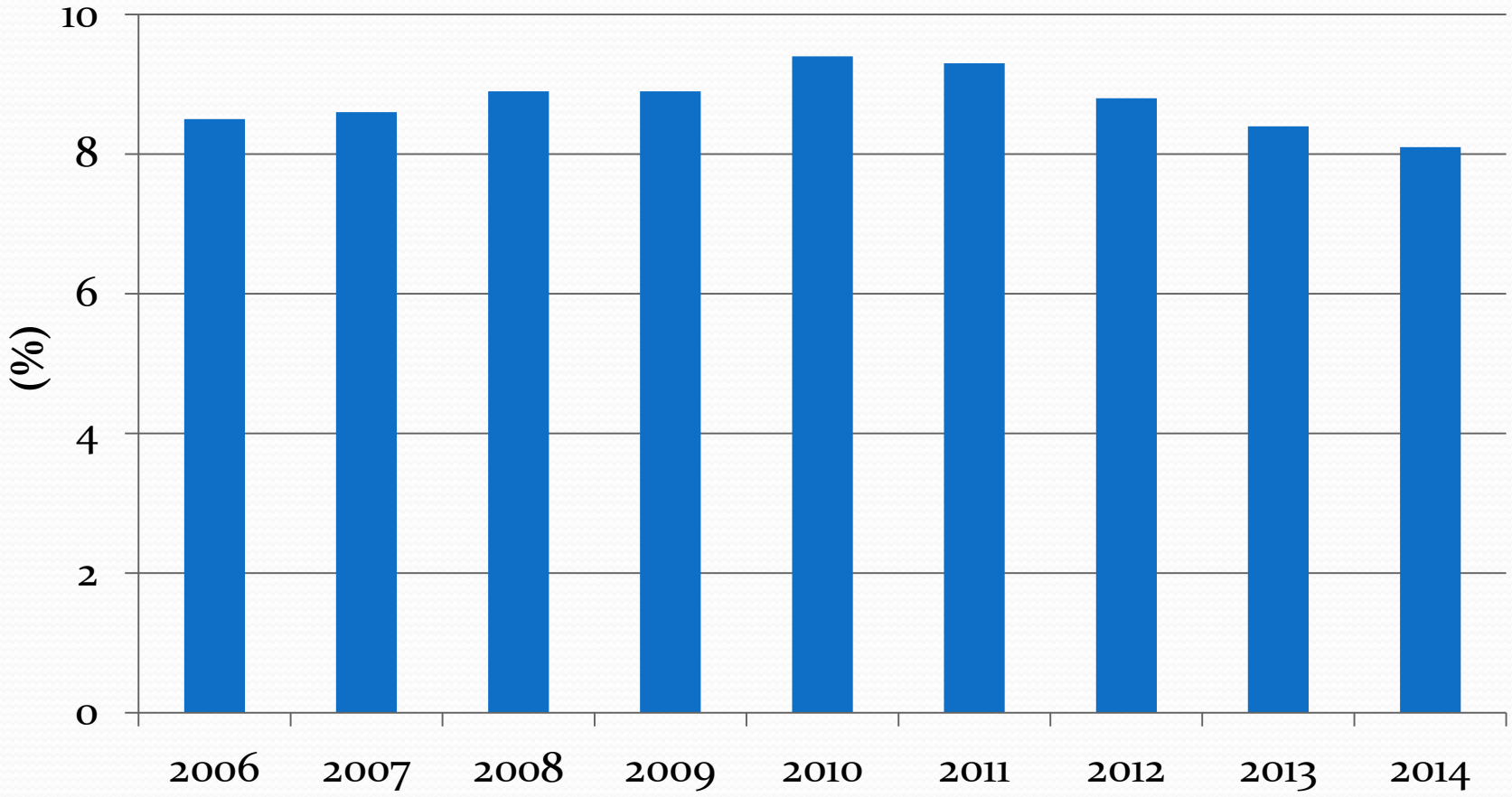
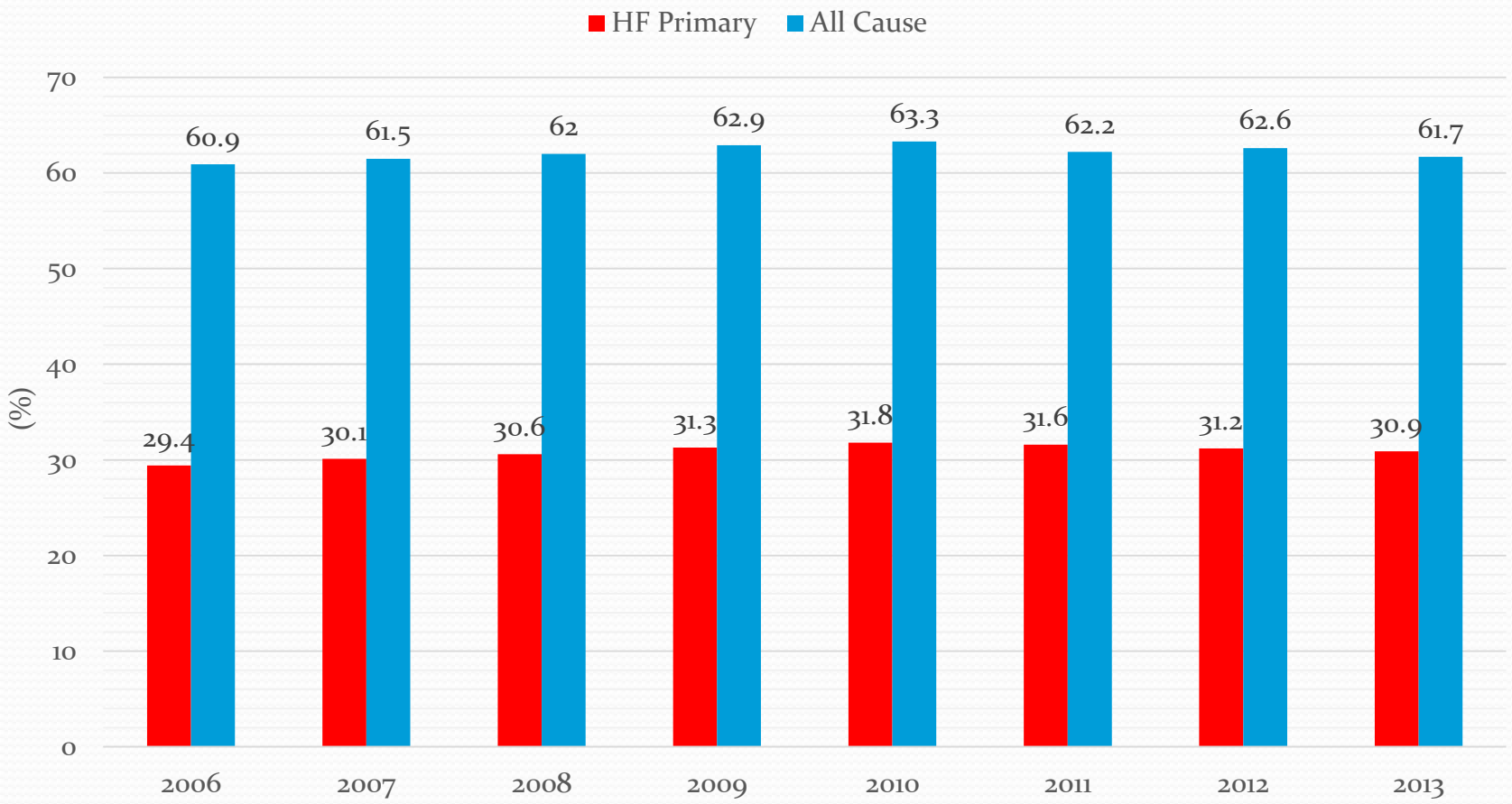
Trends in 30-Day All-Cause Readmission Following a HF Admission



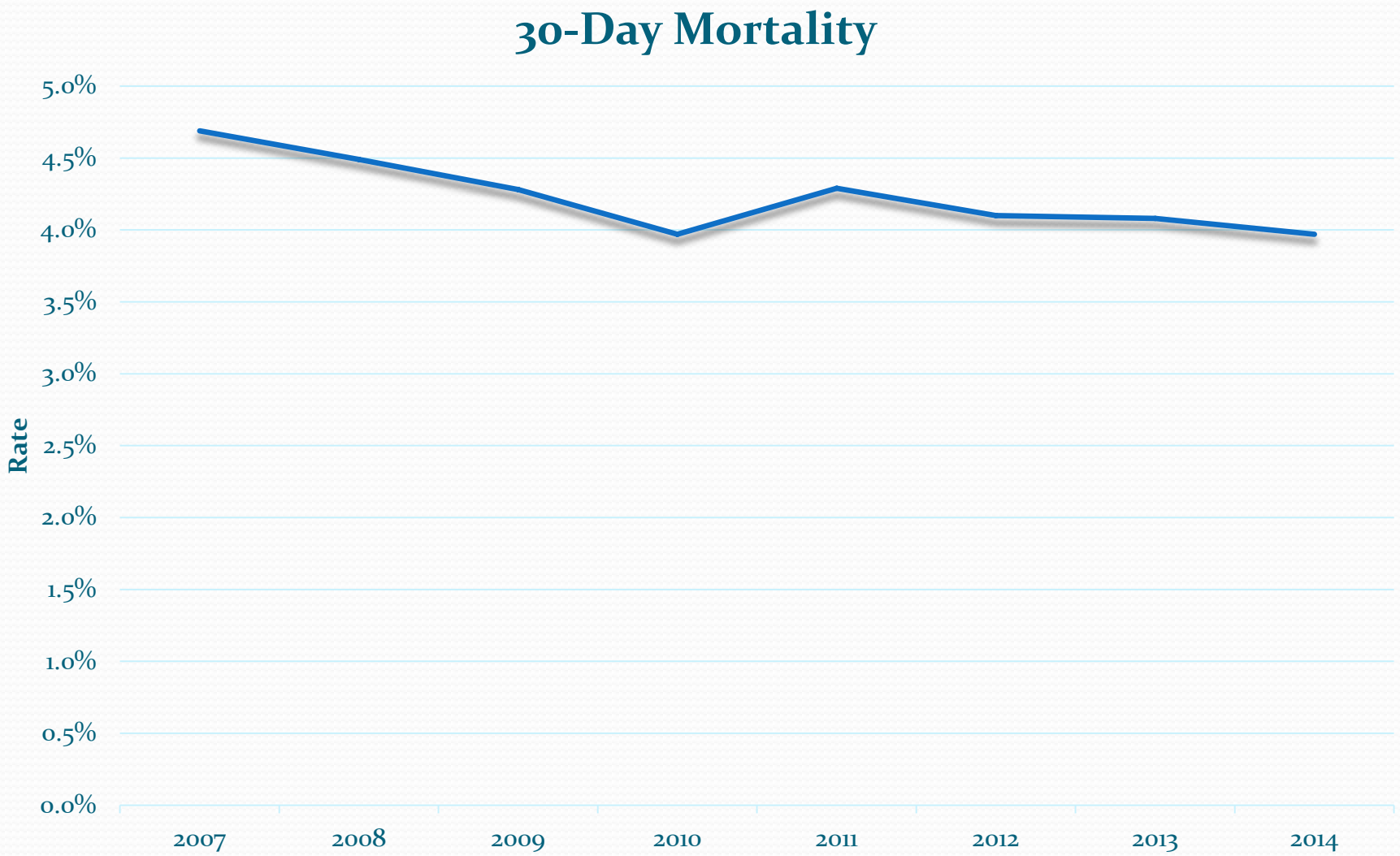
30-Day Readmission (Heart Failure as Principal Diagnosis)



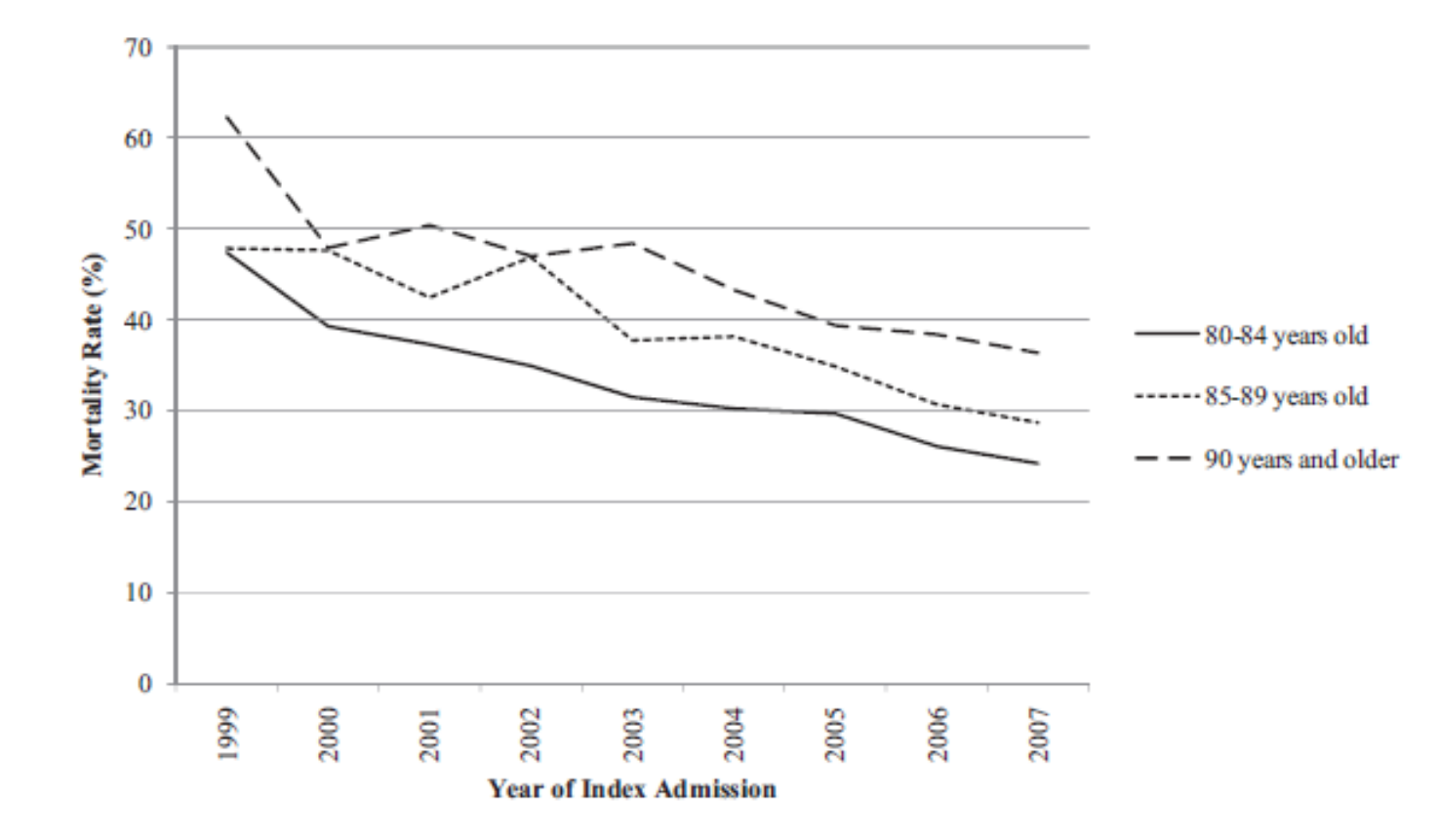
1-Year Readmission



Trends in Mortality Following a HF Admission

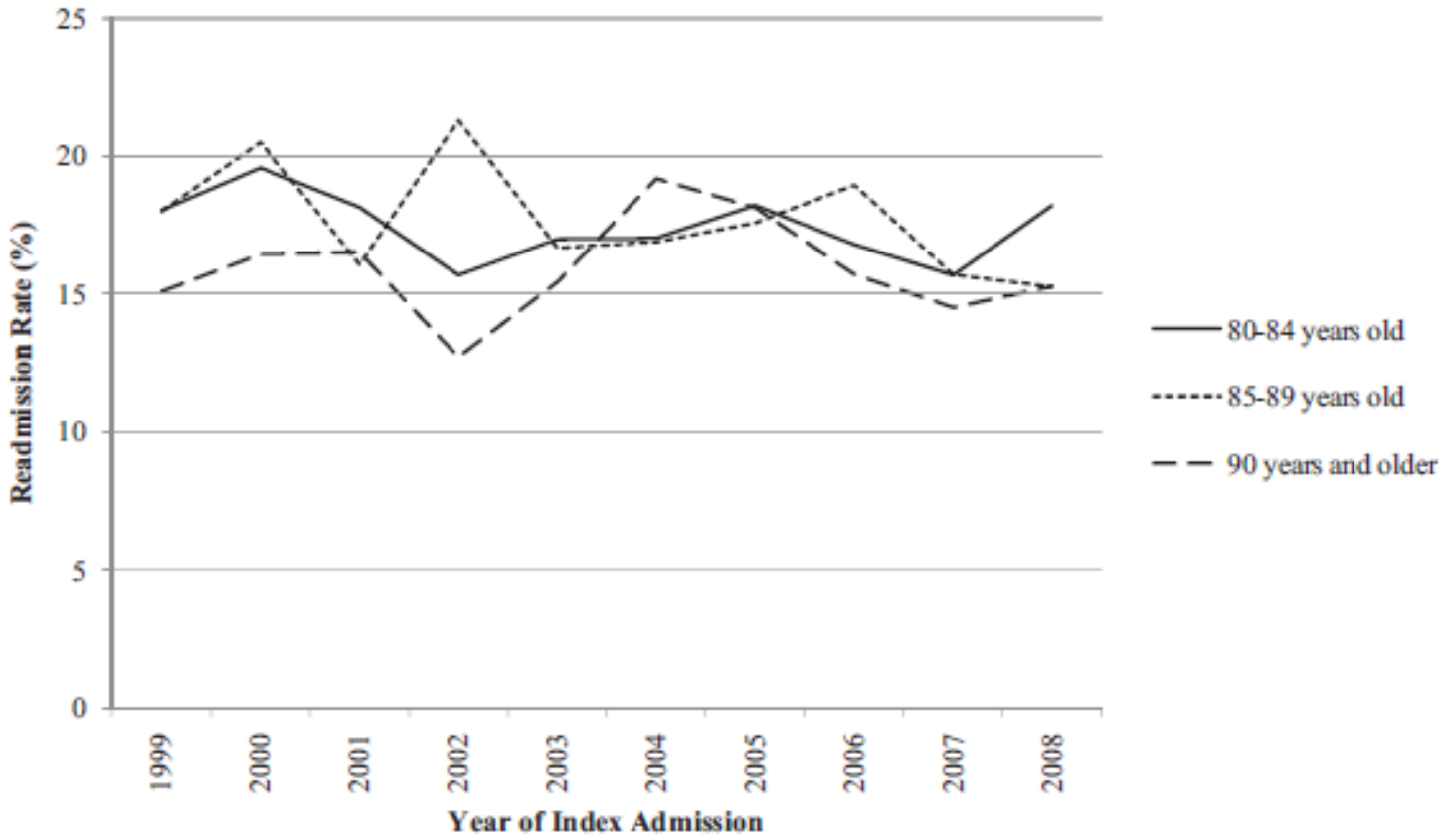


Mortality Trends for the Oldest Veterans with Heart Failure



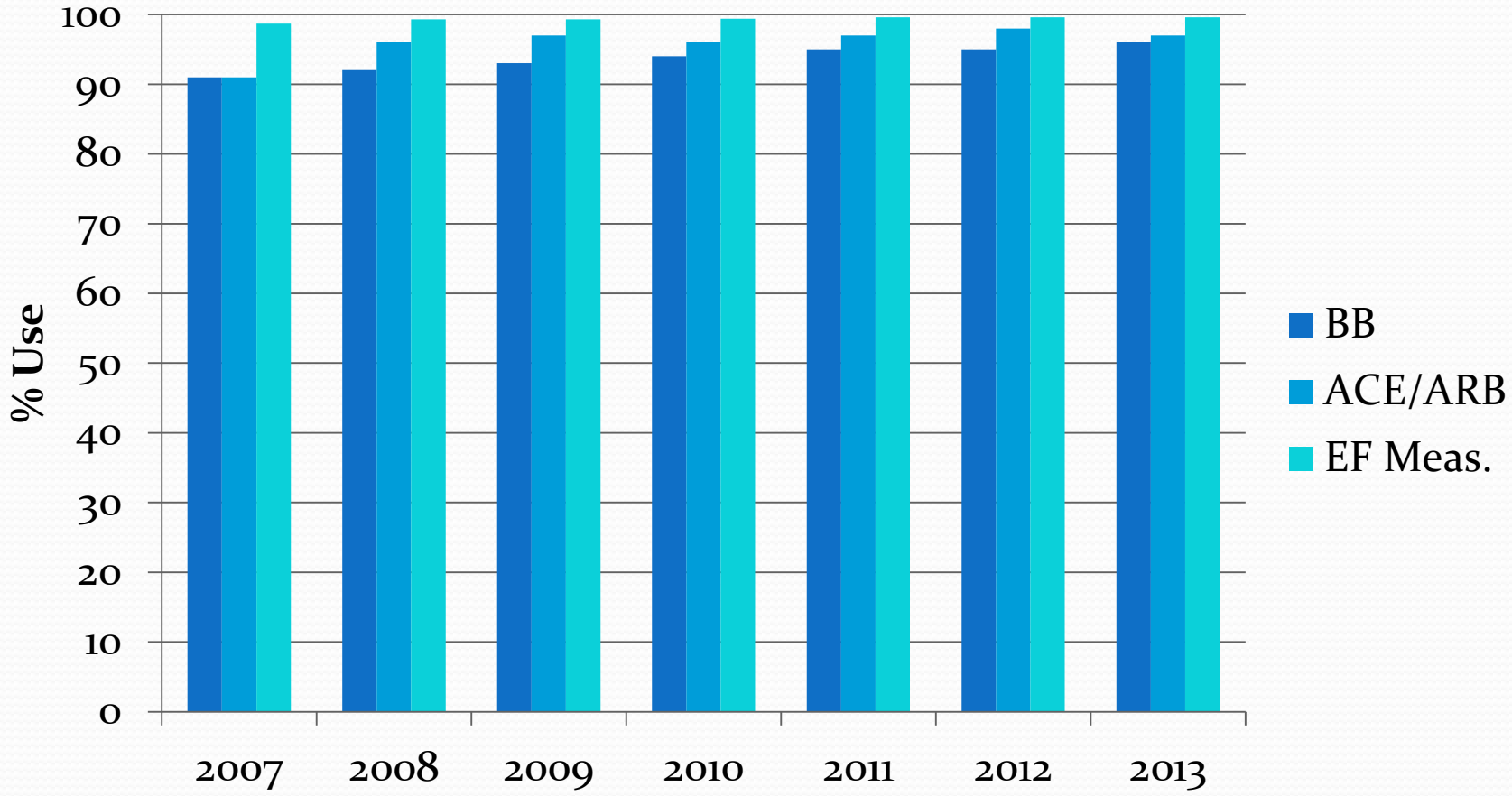
Shah, Circ-HF 2011

VA HF Readmissions in the Elderly

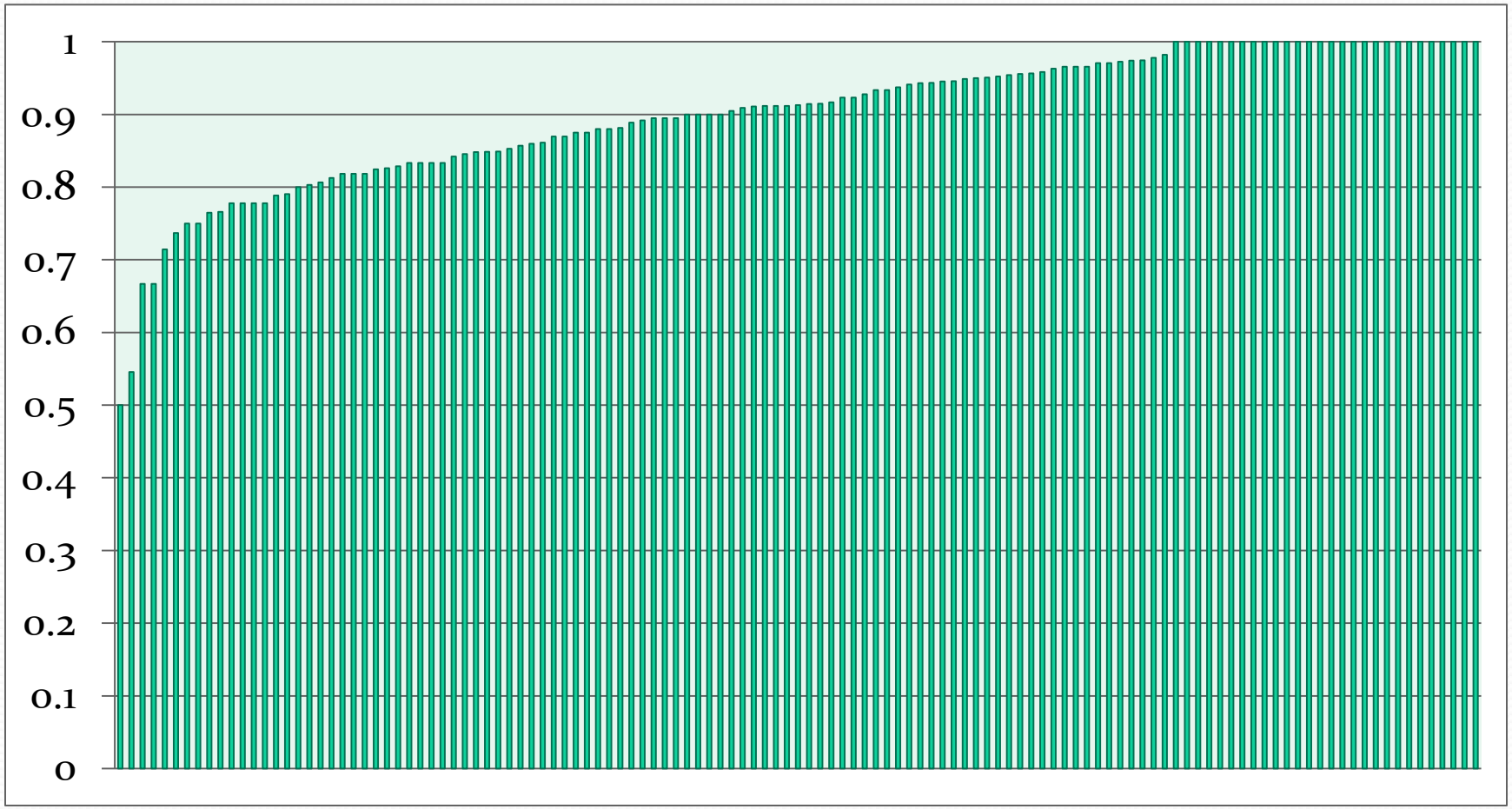


Shah, Circ-HF 2011

Beta Blockers and ACE/ARB at a High Level Among Ideal Candidates

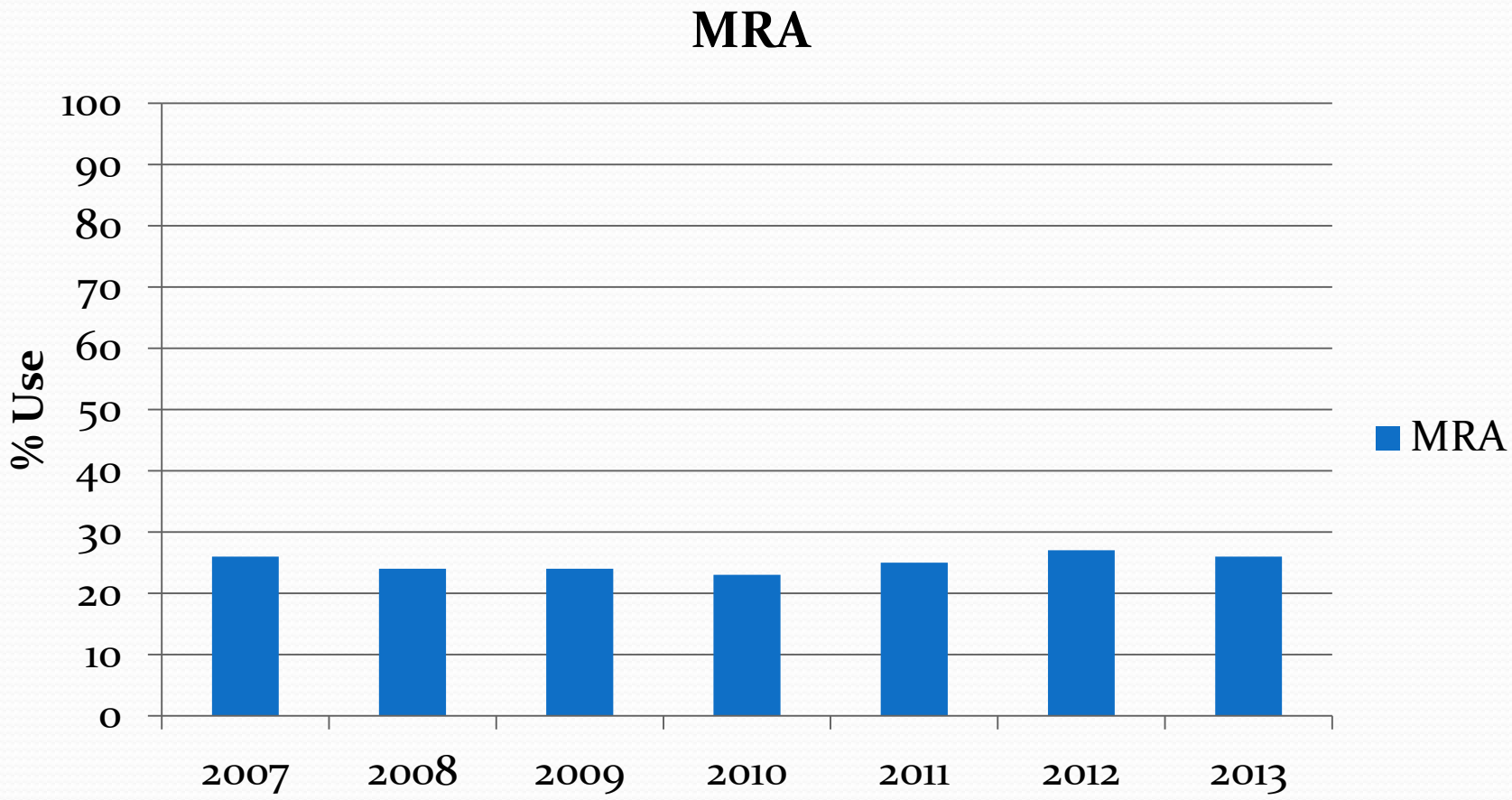


Beta-Blocker Use by Facility

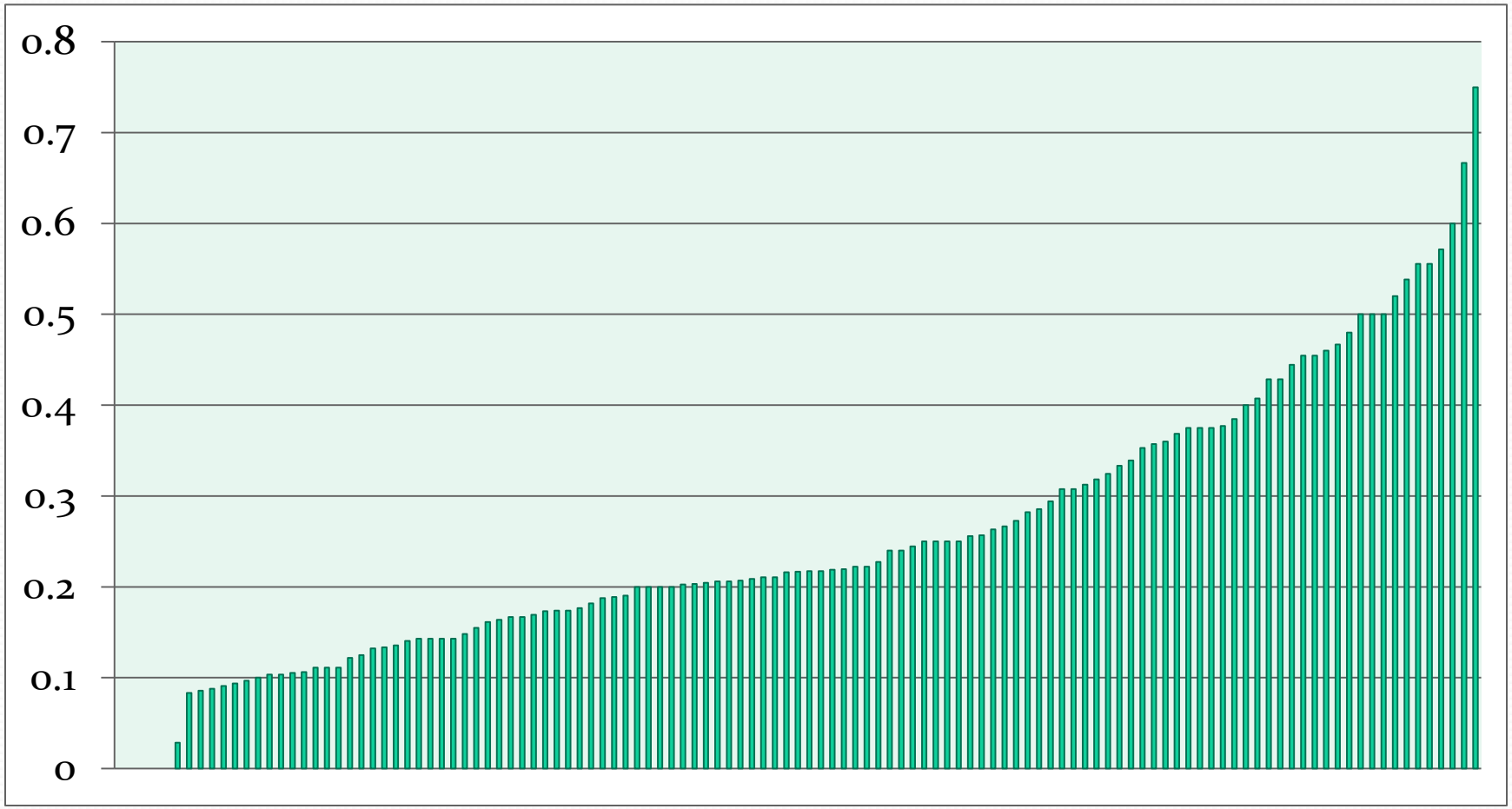


Mean value for 121 VA facilities 2007-2014

MRAs (e.g. spironolactone) Among Candidates

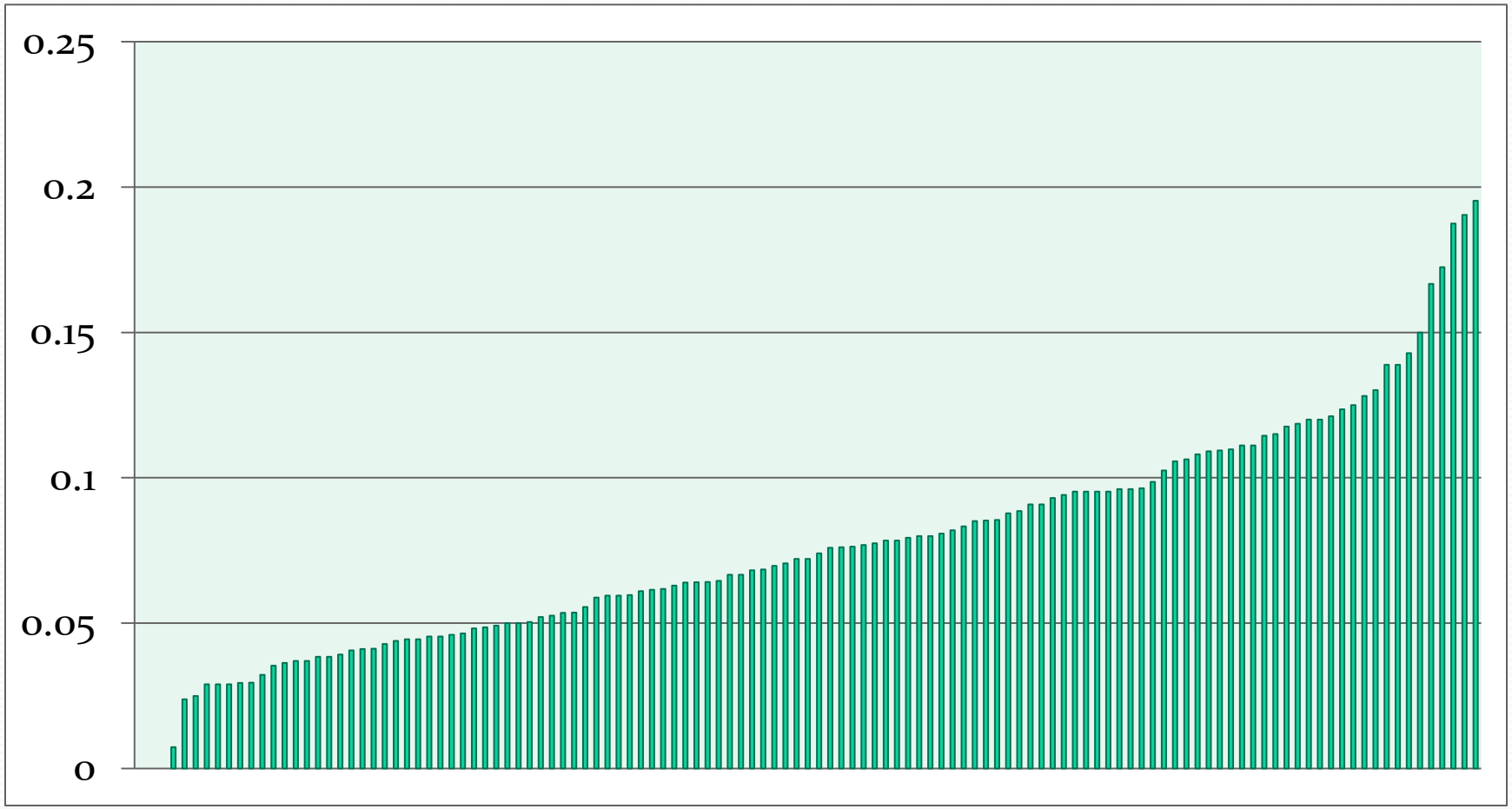


MRA (Spironolactone) Use



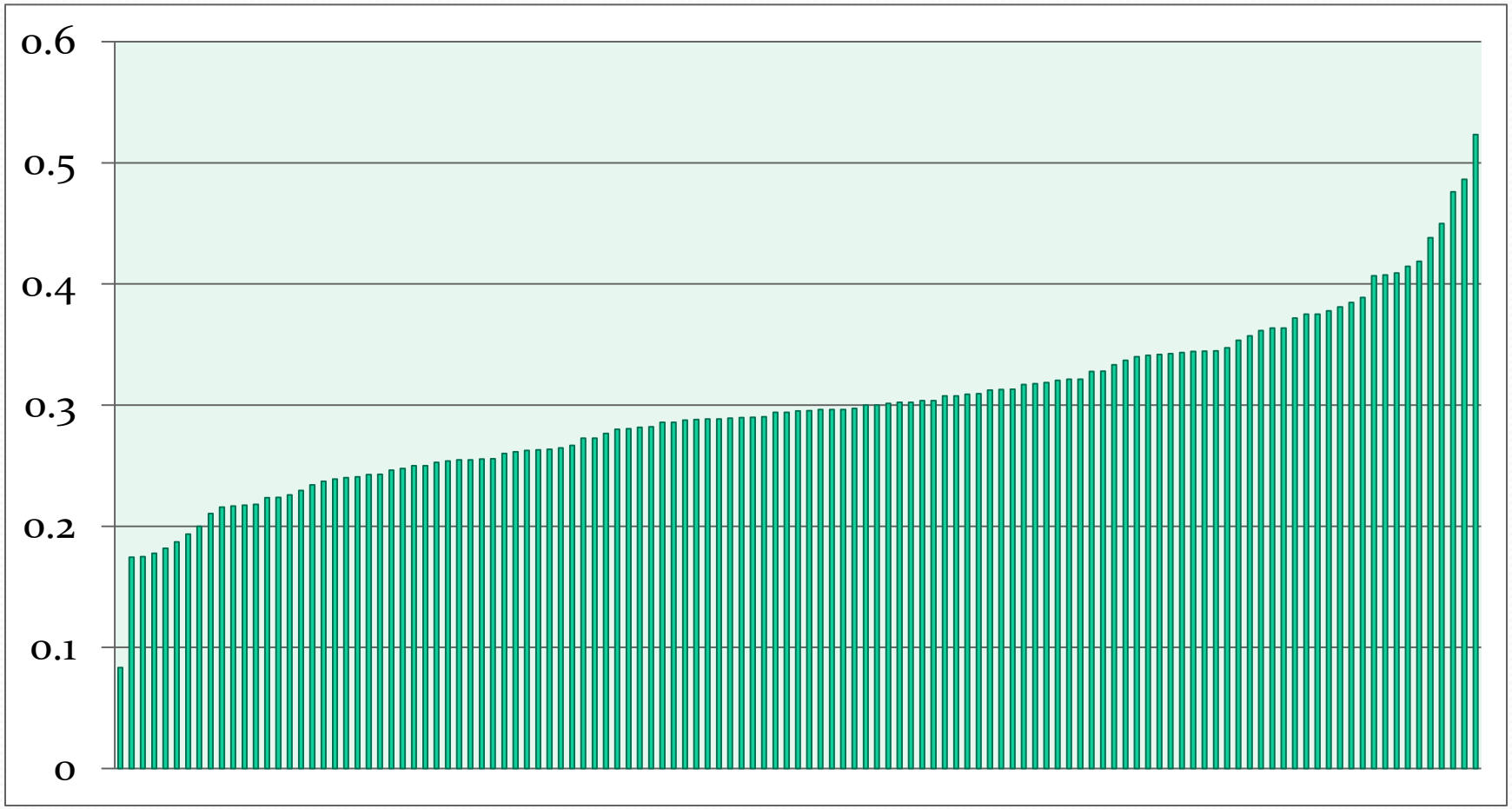
Mean value for 121 VA facilities 2007-2014

30-Day Death By Facility



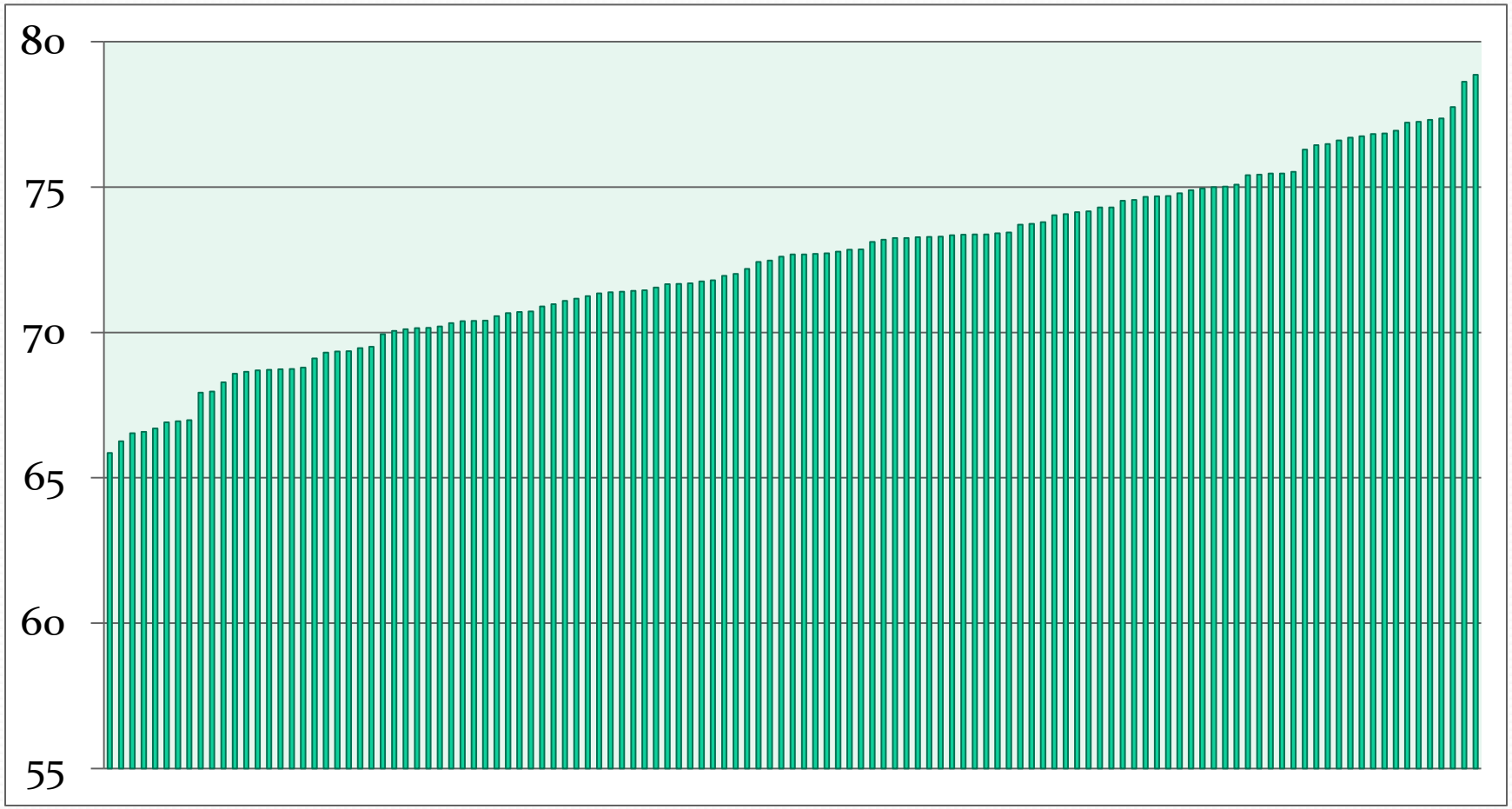
Mean value for 121 VA facilities 2007-2014

1-Year Mortality



Mean value for 121 VA facilities 2007-2014

Mean Age of HF Patients

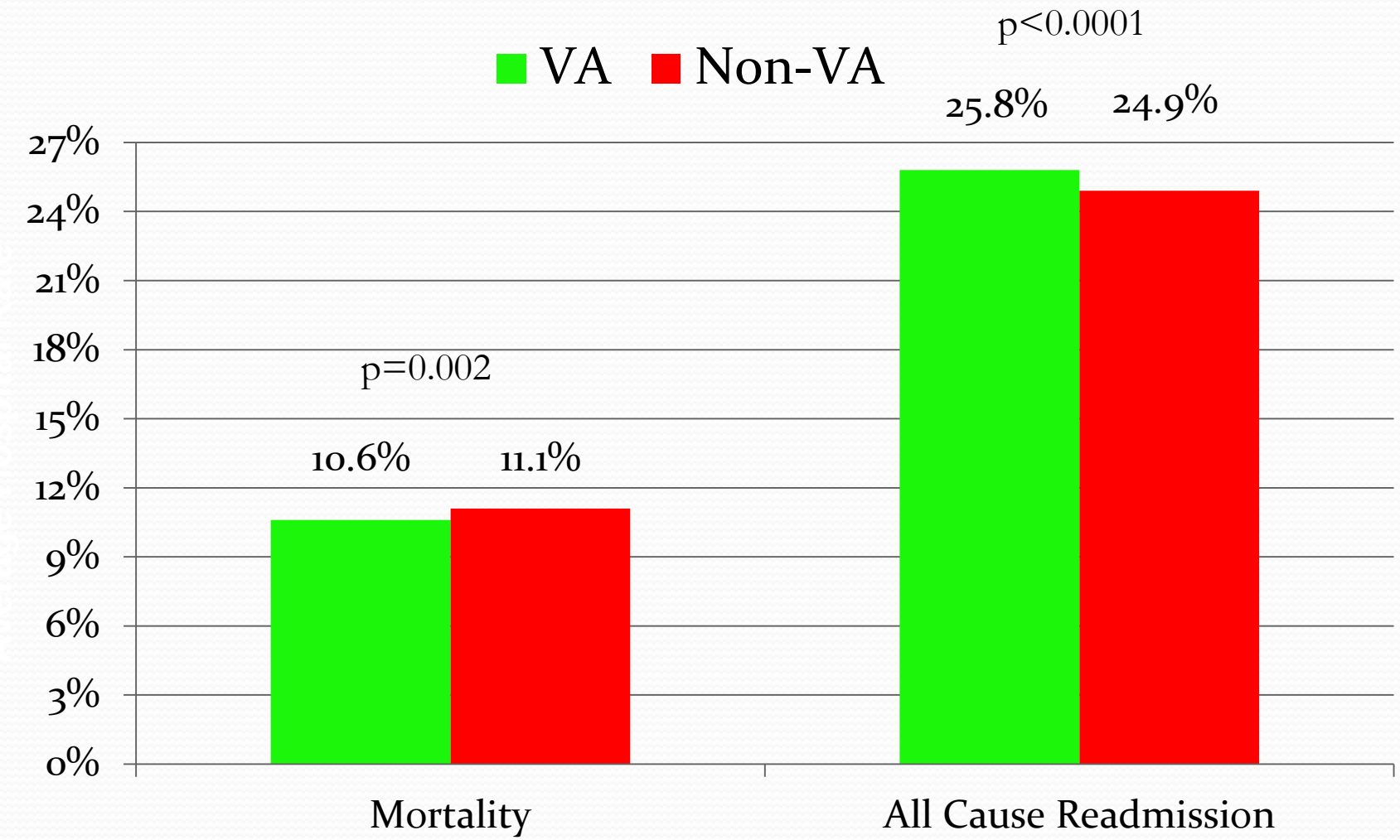


Mean value for 121 VA facilities 2007-2014

Facility Predictors of 1 yr. Death

- Mean age: 1.2% absolute increase in death for 10 year increase.
- Mean BB use: 1.5% absolute decrease in death for 10% increase in use.
- ACE inhibitor and MRA use not significantly associated.

Outcome 2012: Mortality Better, Readmission Worse than Medicare



Source: Hospital Compare

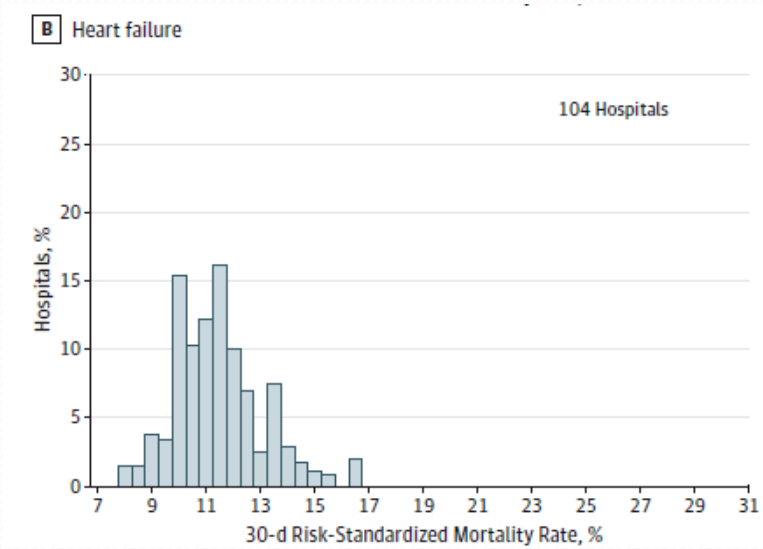
VA vs. Non-VA Medicare Patients AMI and HF outcomes

	Acute Myocardial Infarction				Heart Failure			
	Mortality		Readmission		Mortality		Readmission	
	VA	Non-VA	VA	Non-VA	VA	Non-VA	VA	Non-VA
Total No. of admissions	8012	124 220	7929	132 276	22 882	215 312	26 231	269 856
Total No. of hospitals	103	1439	103	1420	104	1500	104	1500
Demographics								
Age, mean (SD), y	76.2 (8.4)	77.8 (8.0)	75.5 (8.1)	77.5 (7.9)	77.3 (8.4)	80.0 (8.1)	77.0 (8.3)	79.7 (8.0)
Race, %								
White	77.0	86.1	84.4	86.4	72.6	82.4	78.8	81.6
Black	11.4	7.9	12.1	7.9	15.9	12.0	18.4	12.8
Other	3.1	5.8	3.3	5.5	2.6	5.4	2.7	5.5
Unknown	8.5	0.2	0.2	0.2	8.9	0.1	0.2	0.1
Cardiovascular medical history, %								
PCI	12.8	18.1	14.7	19.7	7.3	15.5		
CABG	17.1	14.2	17.2	14.1	17.6	25.5	18.5	26.5

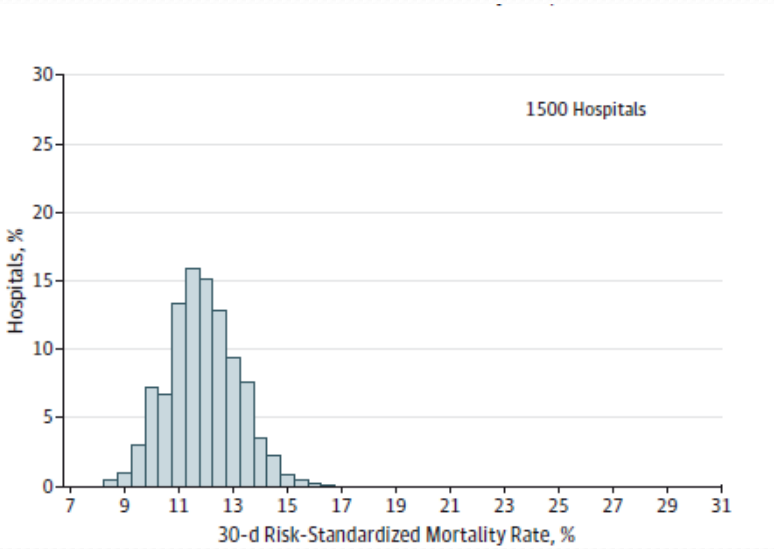
Nuti, JAMA 2016

VA vs. Non-VA Outcomes: Heart Failure Mortality

VA

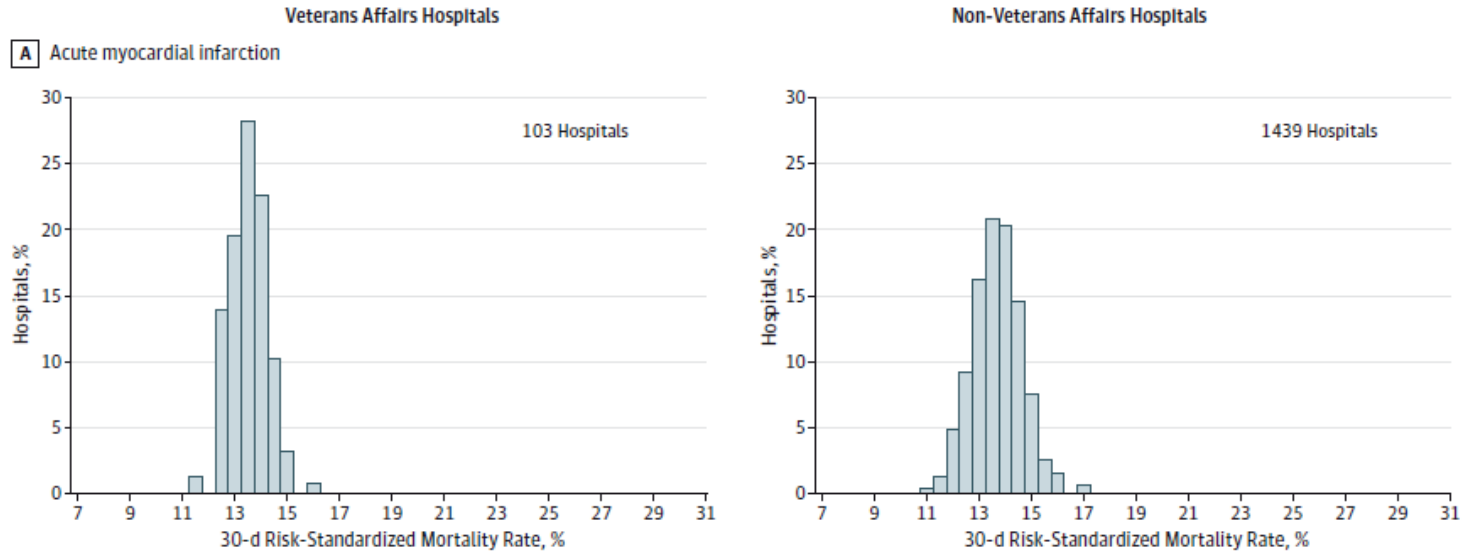


Non-VA



Nuti, JAMA 2016

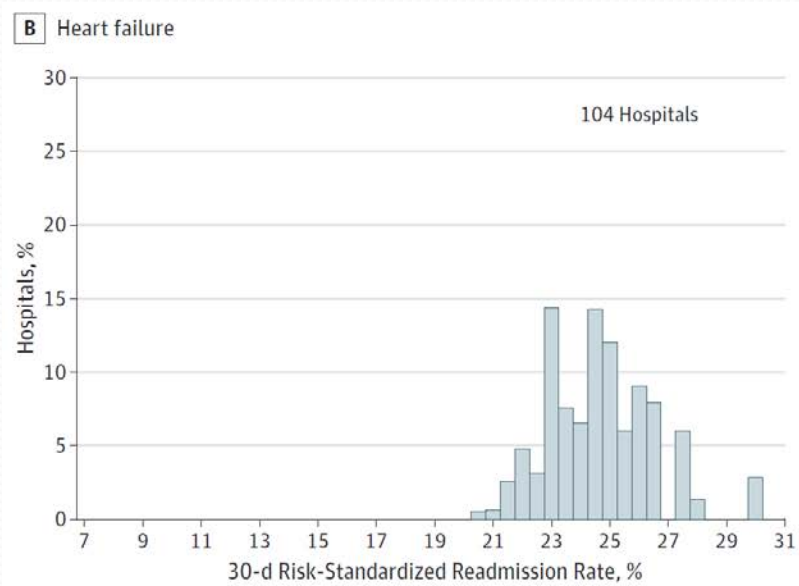
VA vs. Non-VA Outcomes: Acute MI Mortality



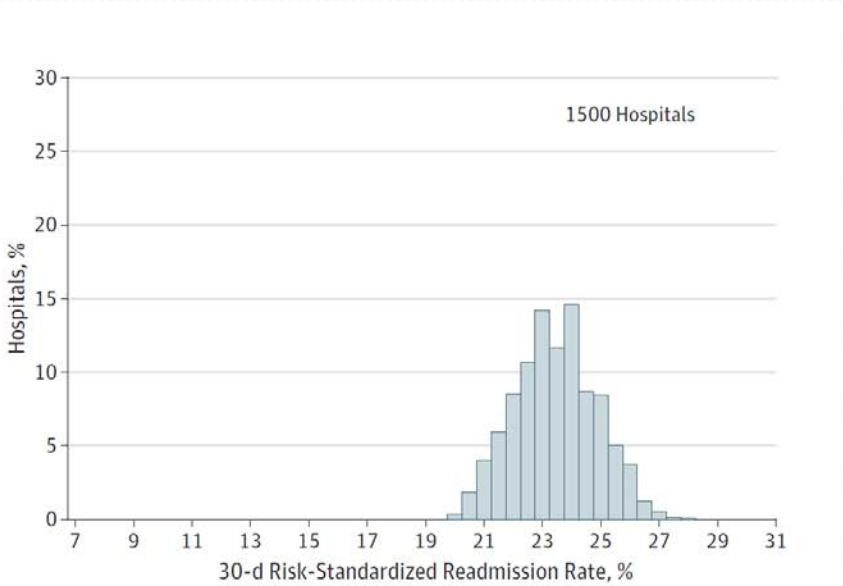
Nuti, JAMA 2016

VA vs. Non-VA Heart Failure All-Cause Readmission

VA

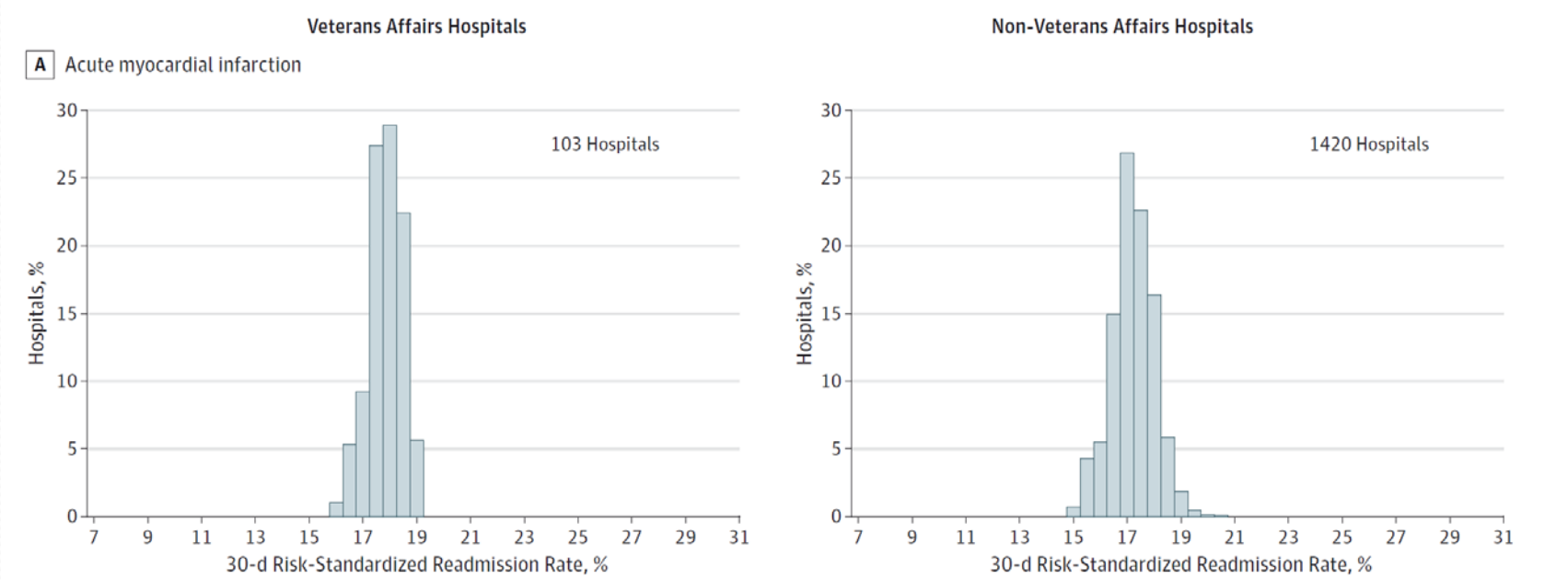


Non-VA



Nuti, JAMA 2016

VA vs. Non-VA Outcomes: Acute MI Readmission



Nuti, JAMA 2016

VA vs. Non-VA Outcomes for AMI, HF and Pneumonia

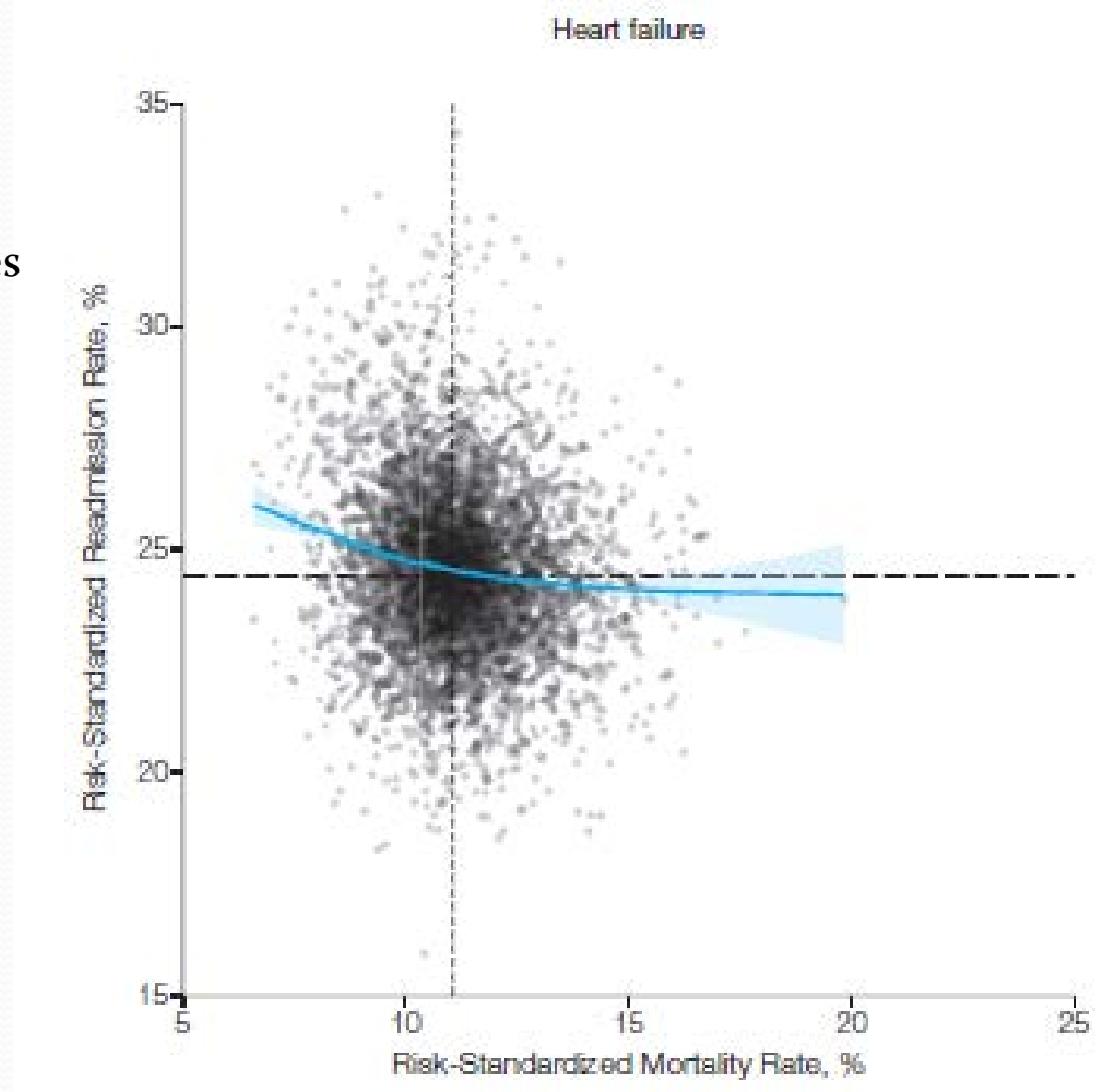
Table 3. Thirty-Day Mortality and Readmission Rates for Medicare Beneficiaries in Veterans Affairs and non-Veterans Affairs Hospitals, 2010-2013

30-d Rate, Mean (95% CI), %	Observed[a]			Risk-Standardized			Mean-Aggregate Within-MSA Percentage Difference Between VA and Non-VA Hospitals (95% CI)	*P* Value
	VA Hospitals	Non-VA Hospitals	*P* Value	VA Hospitals	Non-VA Hospitals	*P* Value		
Acute Myocardial Infarction								
Mortality	11.62 (10.72 to 12.52)	13.88 (13.63 to 14.13)	<.001	13.52 (13.38 to 13.66)	13.69 (13.64 to 13.74)	.02	−0.22 (−0.40 to −0.04)	.02
Readmission	20.05 (19.10 to 21.01)	17.16 (16.89 to 17.43)	<.001	17.84 (17.71 to 17.96)	17.21 (17.17 to 17.25)	<.001	0.62 (0.48 to 0.75)	<.001
Heart Failure								
Mortality	8.92 (8.33 to 9.52)	12.19 (12.01 to 12.36)	<.001	11.43 (11.11 to 11.75)	11.87 (11.80 to 11.93)	.008	−0.63 (−0.95 to −0.31)	<.001
Readmission	24.34 (23.58 to 25.11)	23.51 (23.29 to 23.72)	.03	24.66 (24.31 to 25.02)	23.46 (23.39 to 23.53)	<.001	0.97 (0.59 to 1.34)	<.001
Pneumonia								
Mortality	11.07 (10.41 to 11.72)	12.33 (12.15 to 12.52)	<.001	12.63 (12.19 to 13.07)	12.17 (12.08 to 12.26)	.045	−0.03 (−0.46 to 0.40)	.90
Readmission	19.36 (18.61 to 20.11)	18.61 (18.40 to 18.82)	.04	19.44 (19.19 to 19.69)	18.68 (18.63 to 18.73)	<.001	0.66 (0.41 to 0.91)	<.001

Nuti, JAMA 2016

Readmission vs. Mortality

Hospitals with lowest mortality had the highest readmission rates



Krumholz, 2013, JAMA

Summary: HF in the VA

- Outpatient increasing
- Inpatient care stable
- Mortality declining
  - Associated with improved process of care (beta-blockers)
- Readmissions have recently dropped slightly
- VA has better mortality than non-VA hospitals
  - Higher readmission, unclear if linked.