

Reminders to Improve Quality of Heart Failure Care

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7/10/2014

Financial Conflicts

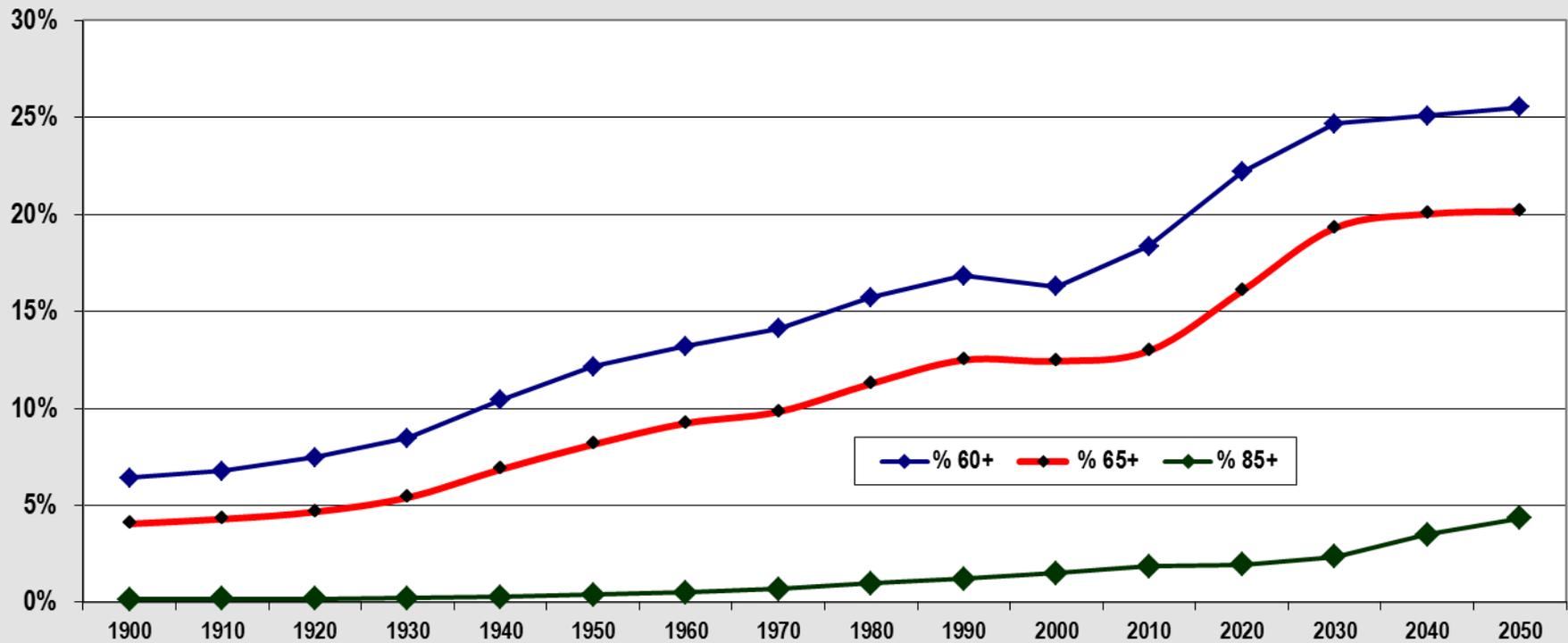
- None

Outline

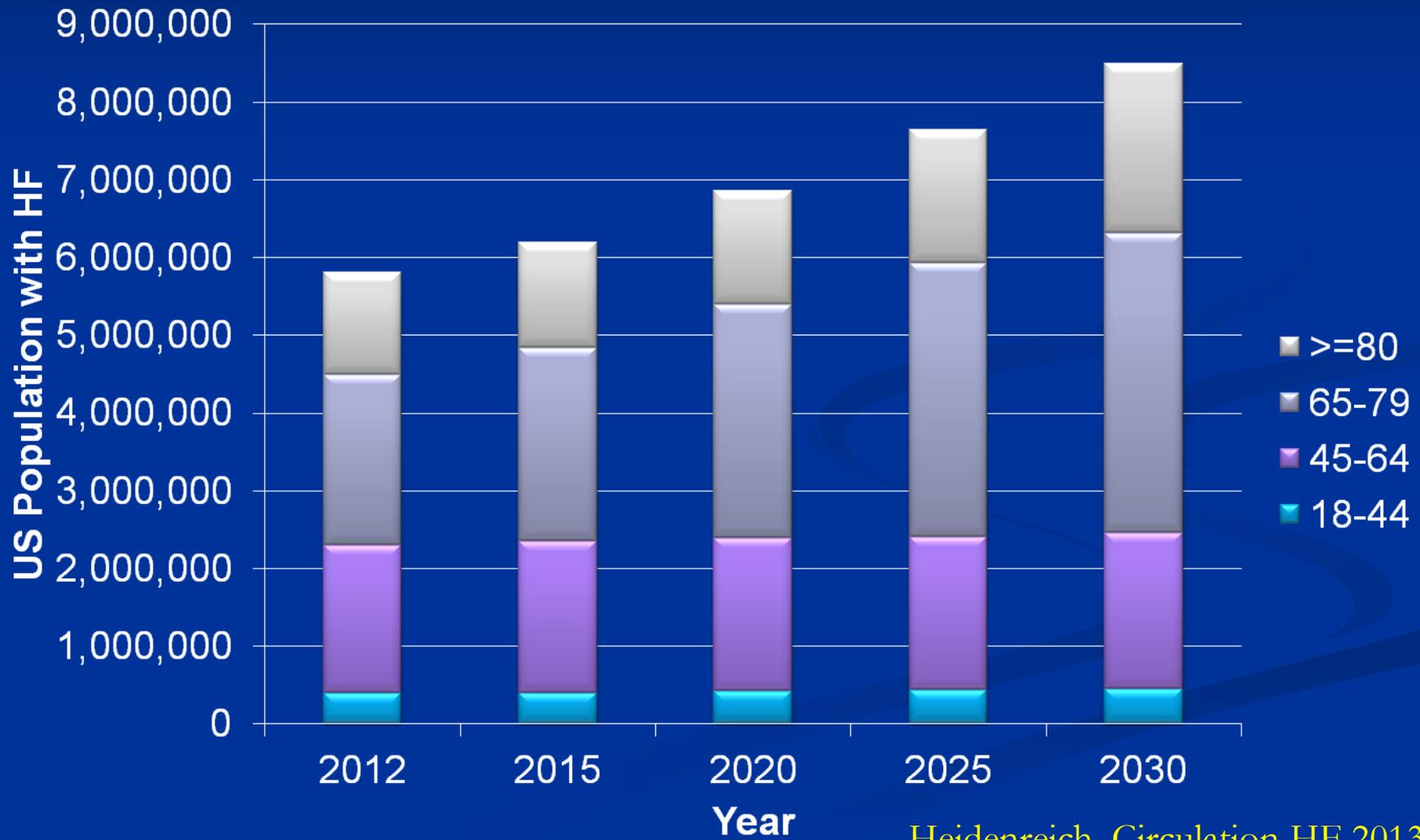
- Reminders in Echocardiography Reports
 - Increase Medication Use
- Reminders for Implantable Cardioverter Defibrillators

Aging of the US Population

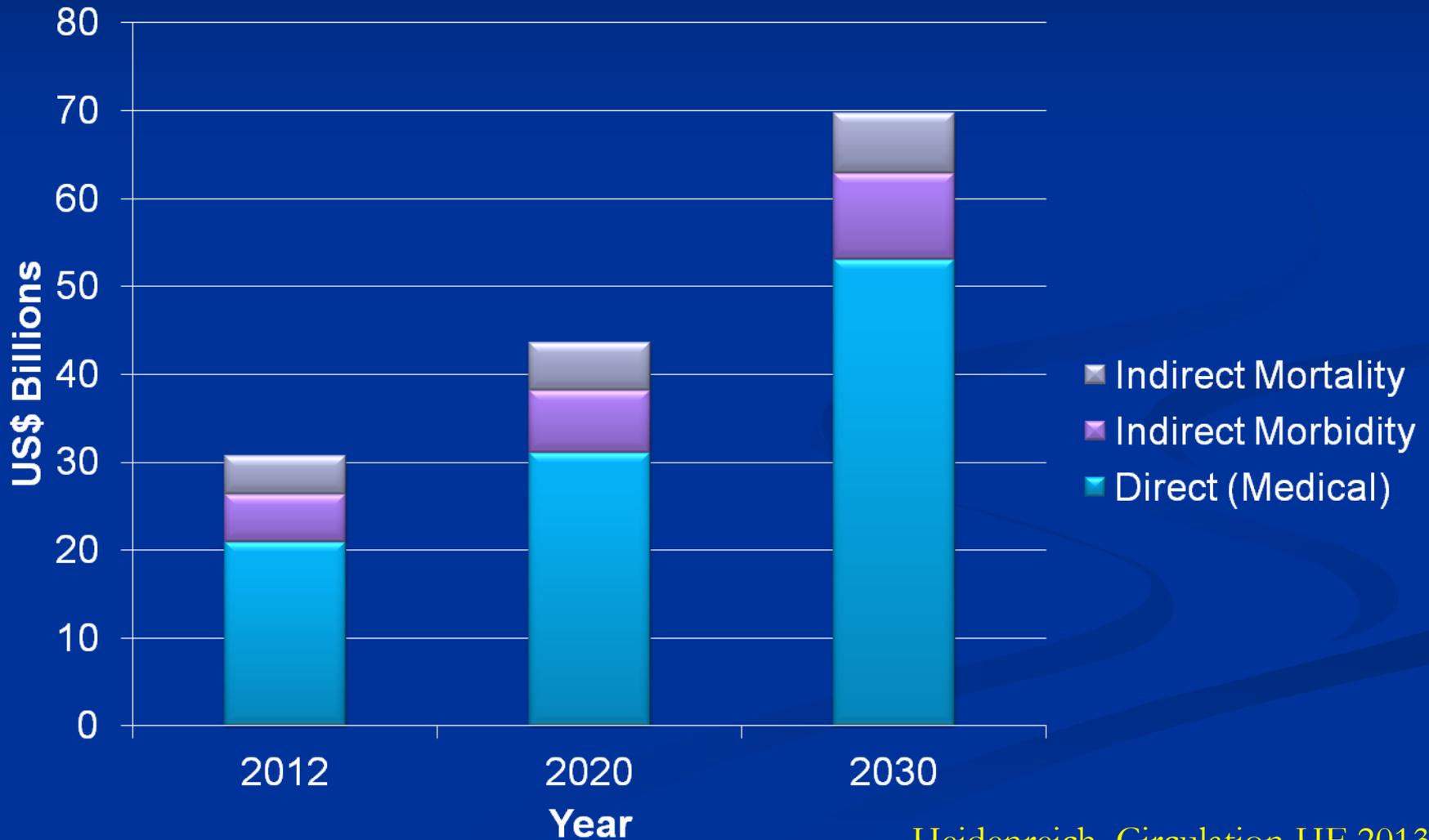
Older Population by Age: 1900-2050 - Percent 60+, Percent 65+, and 85+



Projected US Population with Heart Failure



Projected Costs of HF



Implications of Cost Trends

- Not enough providers
 - Primary care and specialty care
- Need more tools
 - Decision support
 - Targeted reminders

Limitations of Reminders

- Low impact (low cost)
- Reminder overload
 - Particularly if they go to an individual and not the team (PACT)
- Most effective if they occur at the time of the patient encounter

Promise of the Echocardiography Report for Delivering HF

Reminders

- Echocardiography used for ejection fraction measurement
 - All HF patients have one done at some point
- The report is usually reviewed at the time of the patient encounter
- A cardiologist signs the report (may be an opinion leader)
- Not provider specific, available to anyone caring for the patient.

VA ACE Inhibitor Reminder Study

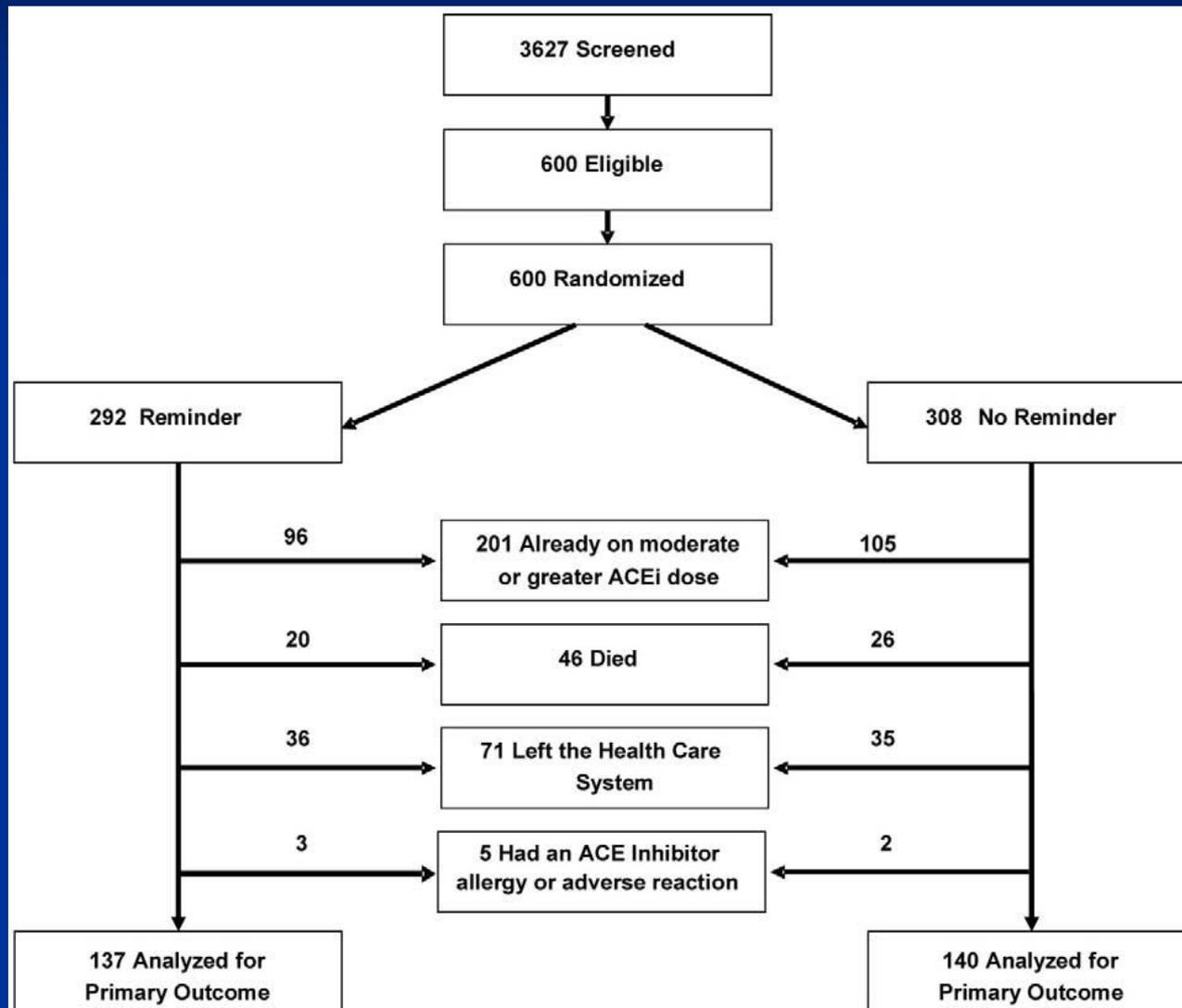
- Could a clinical reminder attached to the echocardiography report (that provides ejection fraction data) be effective in increasing the dose used?
 - Many patients are treated at doses below those shown effective in RCTs.



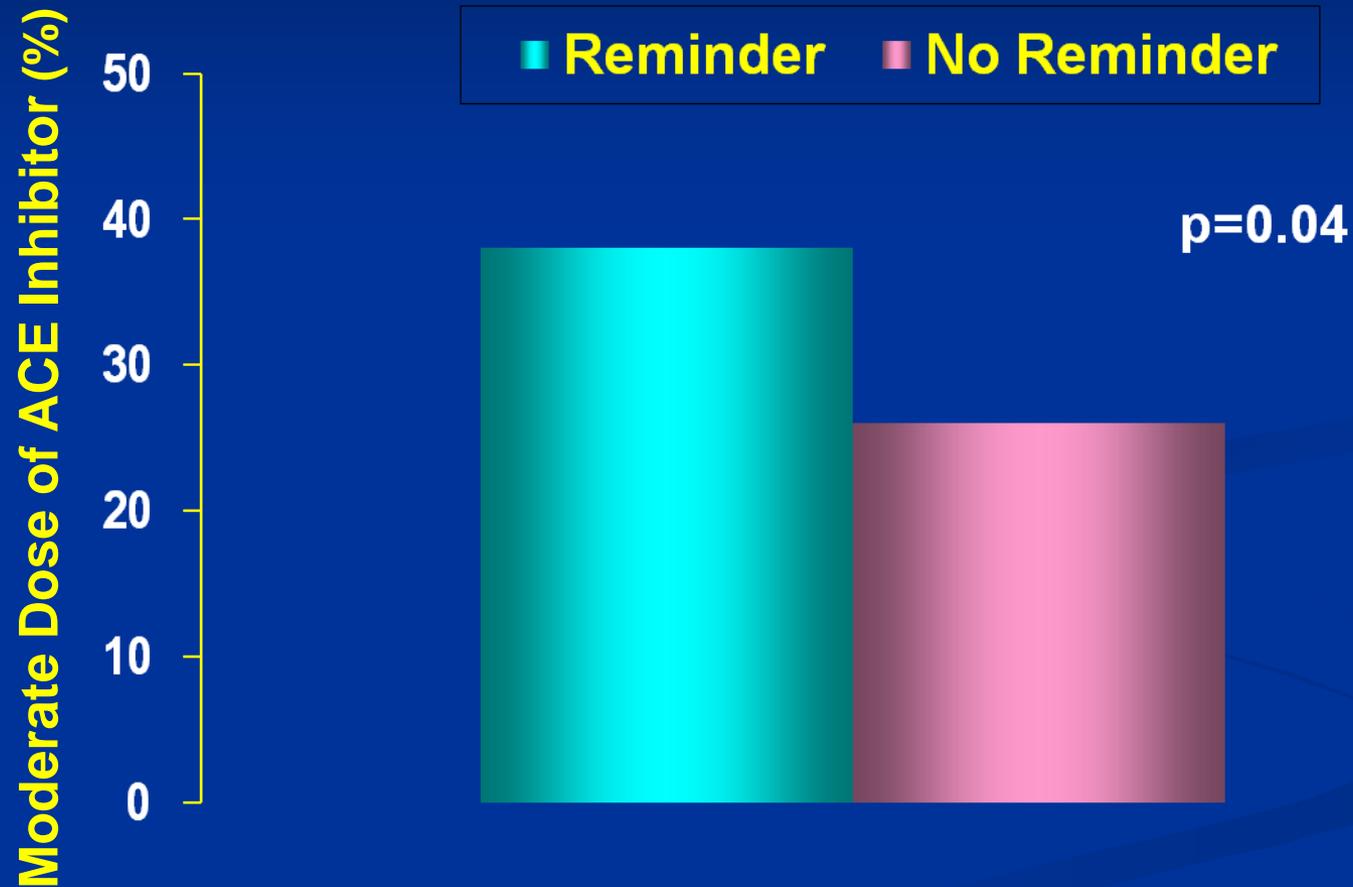
VA ACE Inhibitor Reminder Study

- What is the appropriate level of randomization?
 - Influencing providers
 - Contamination is a concern
 - The report is patient specific
 - More than one clinician may act on the report
 - Predicting this provider at the time of randomization is difficult

ACE Inhibitor Reminder Study

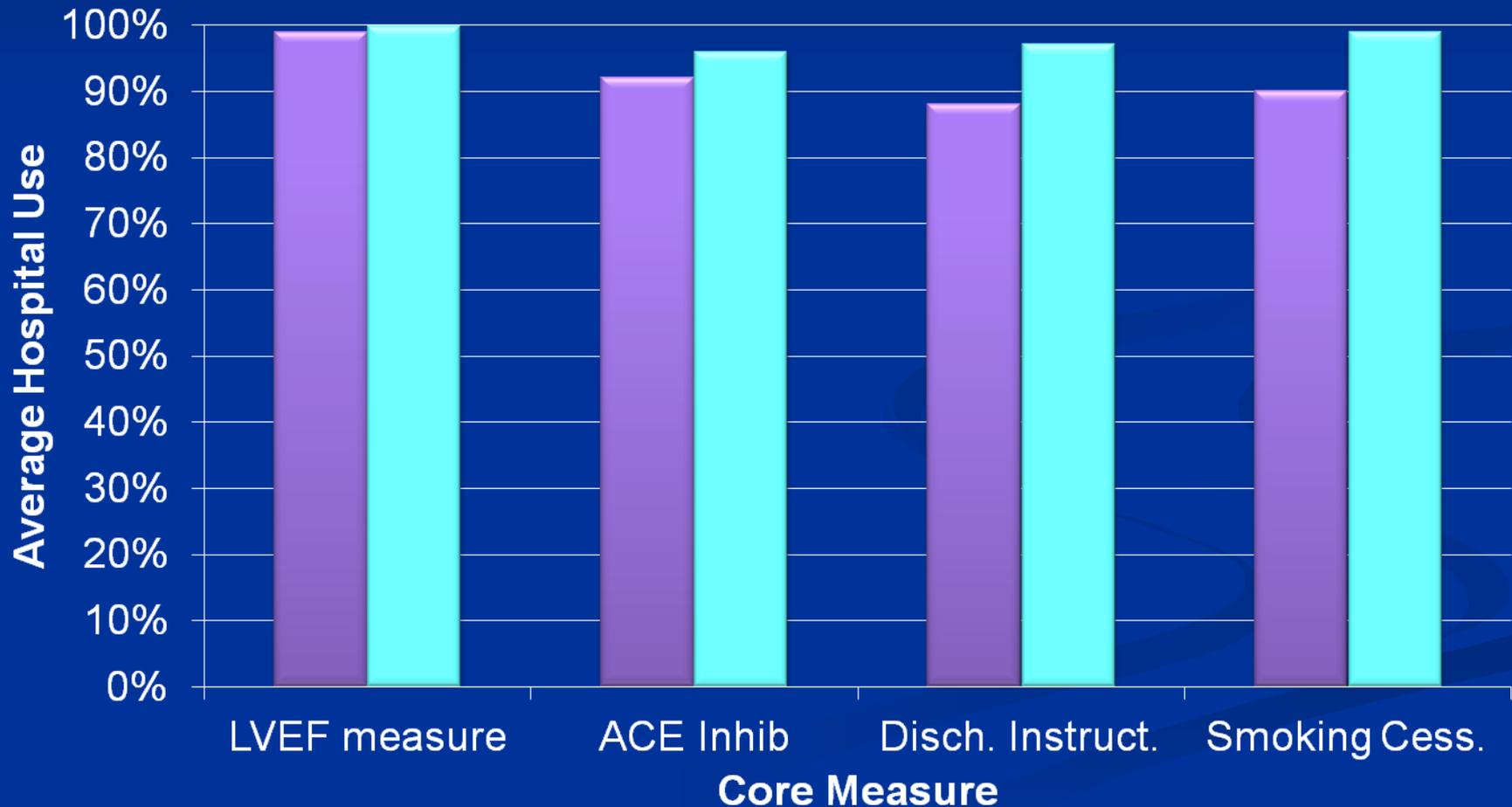


VA: Reminder in the Echo Report for ACE-Inhibitors



Inpatient Process of Care at a Ceiling as Measured by Medicare

■ 2005 ■ 2011



VA Beta-Blocker Reminder Study

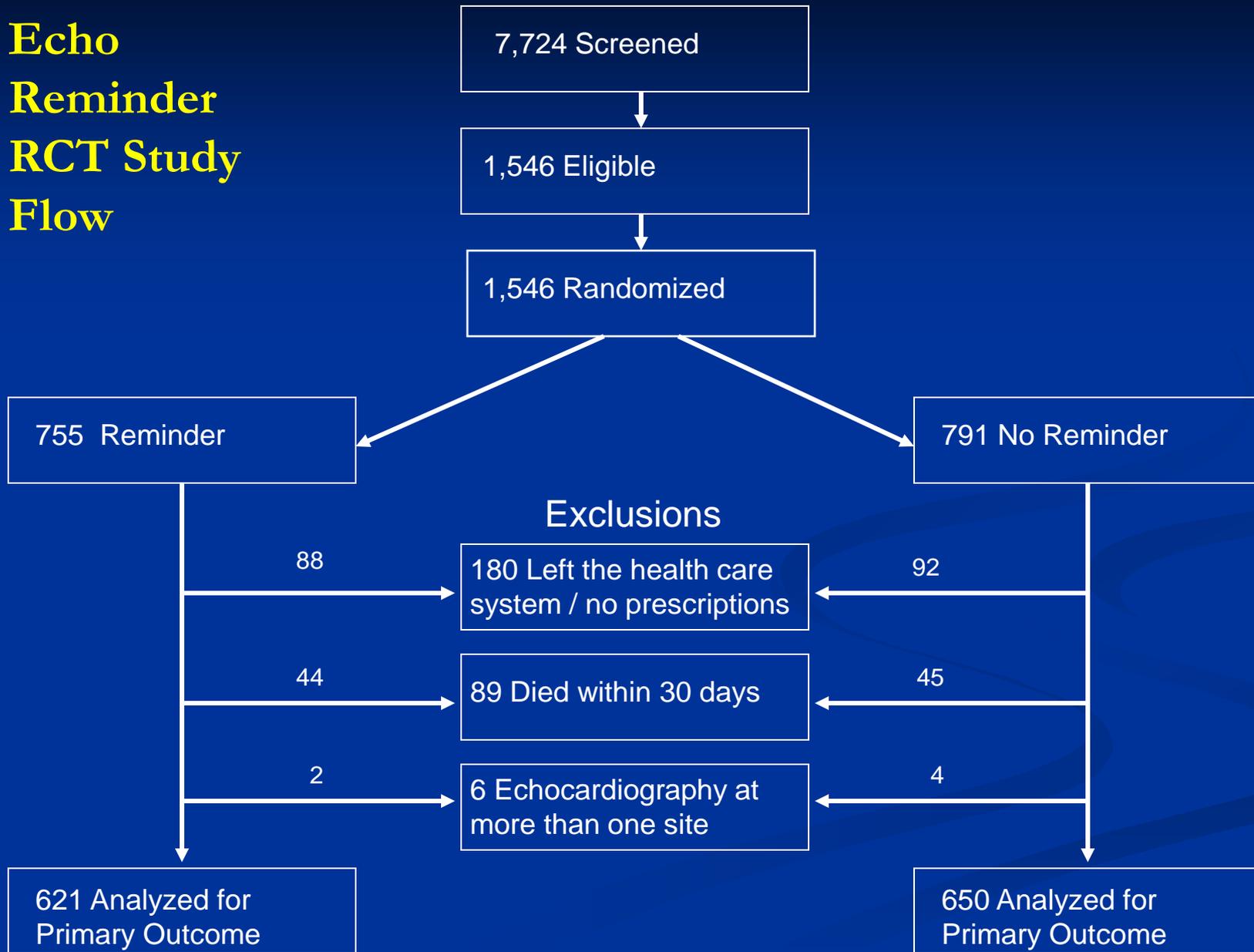
- Could a clinical reminder attached to the echocardiography report (that provides ejection fraction data) be effective in increasing prescriptions for beta-blockers?



Provider Level Interventions: Beta-blocker

- Line added to echocardiography report if LVEF<40% suggesting beta-blocker candidacy (starting doses provided for carvedilol and metoprolol succinate)
- Similar reminders successful for ACEi dosage, ongoing study of appropriate use-guidance for follow-up studies

Echo Reminder RCT Study Flow





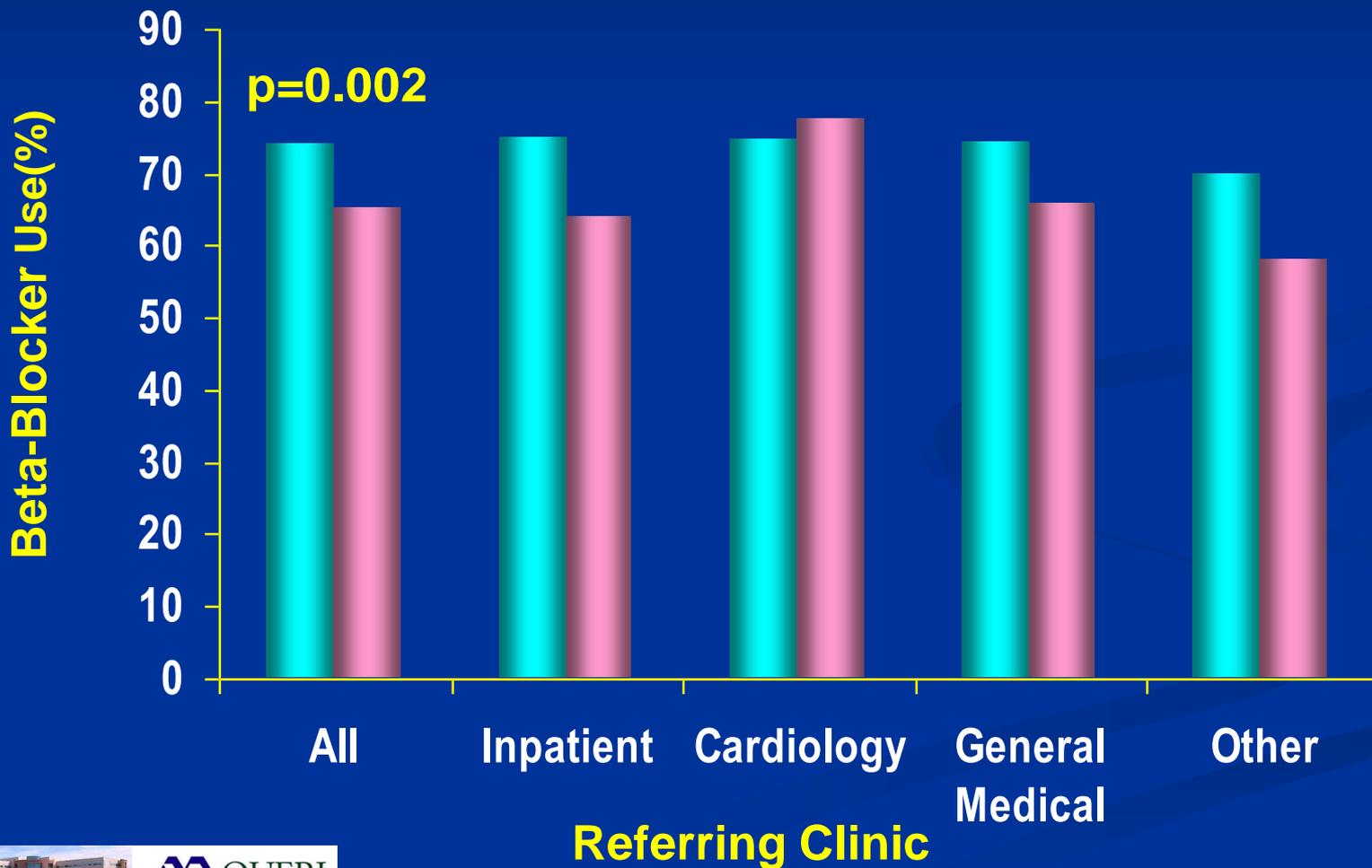
Patient Characteristics

Baseline Characteristics of the Study Population

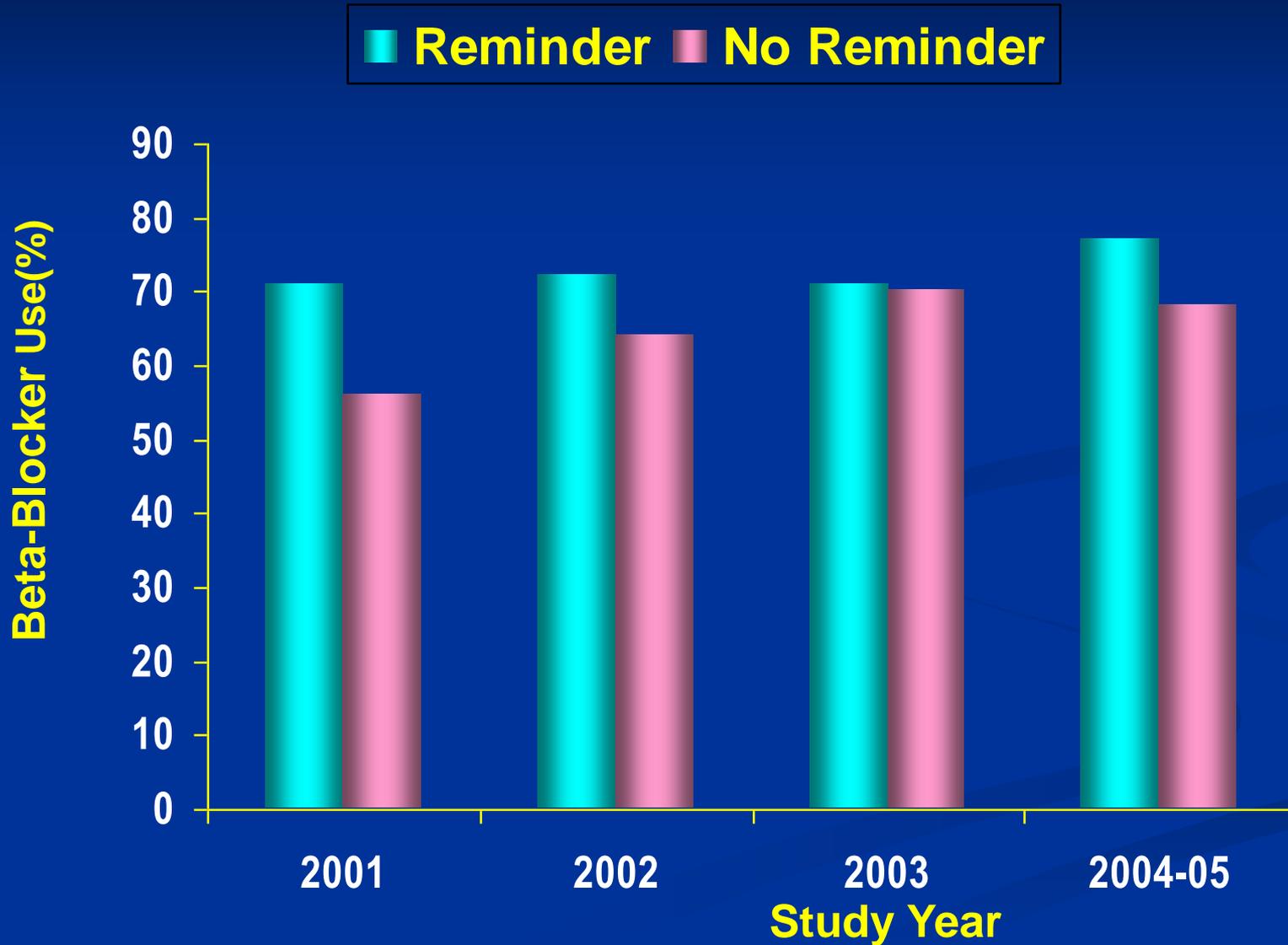
Characteristic	Reminder	No Reminder	<i>P</i>
No.	621	650	...
Age, y	69±11	69±12	0.84
Male	615/621 (99)	634/650 (98)	0.05
Race*			0.165
White	278/369 (75)	321/407 (79)	...
Black	31/369 (8.4)	41/407 (10)	...
Hispanic	40/369 (11)	33/407 (8.1)	...
Asian	18/369 (4.9)	12/407 (3.0)	...
Native American	2/369 (0.5)	0/407 (0)	...
Heart failure	394/621 (63)	386/650 (59)	0.14
Ischemic heart disease	437/621 (70)	458/650 (70)	0.97

VA: Reminder in the Echo Report for Beta-blockers

Reminder No Reminder

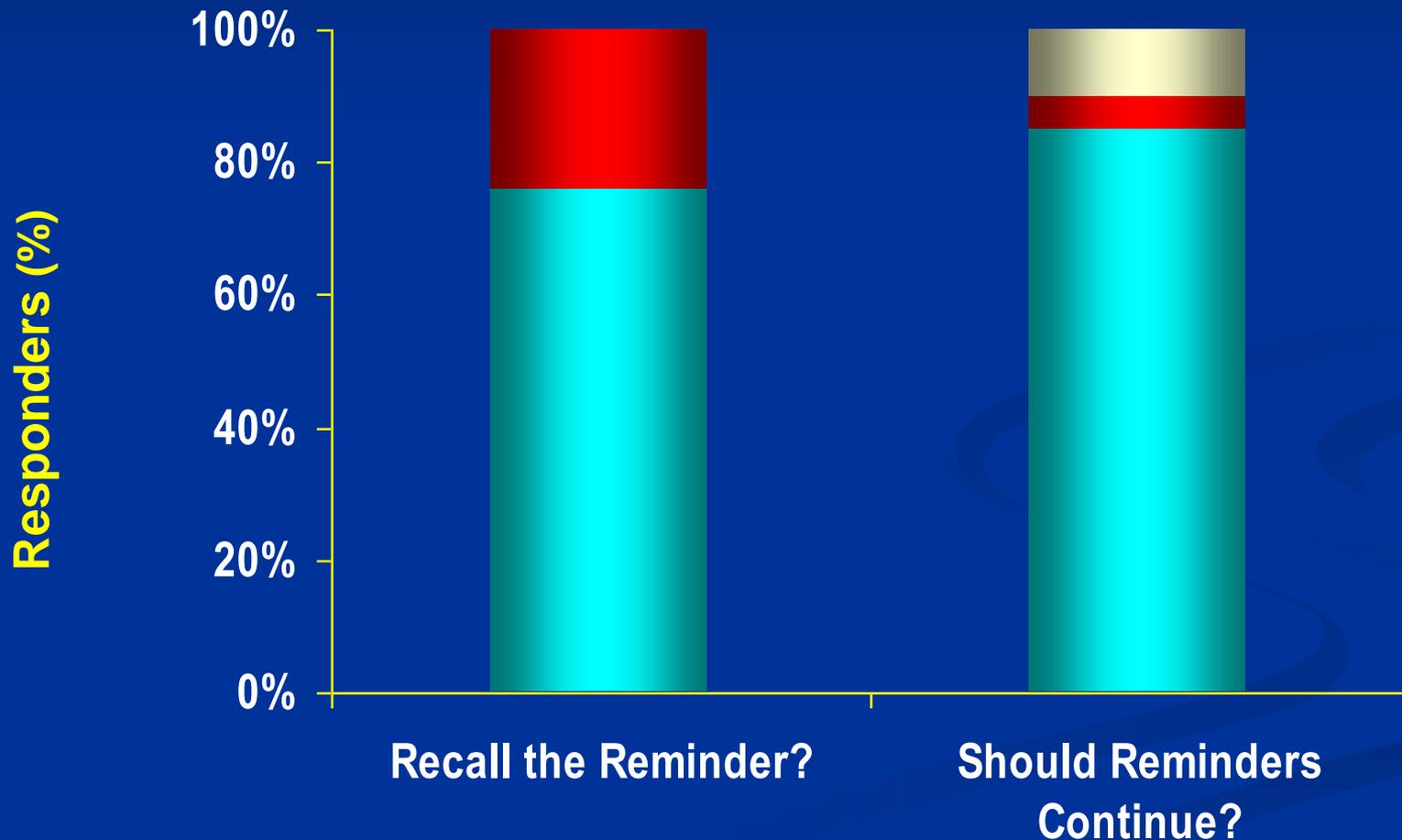


Reminder Effect over Time



Primary Care Provider Survey

■ Yes ■ No ■ No Opinion



Implementation of Reminders in Echocardiography Reports

Randomized Trial of Implementation

- 158 VA facilities randomized to
 - Email
 - Email plus invitation to Web-based meeting
- Designed from the perspective of VA administrator:
 - List of contacts not necessarily
 - No advance contact with the facilities

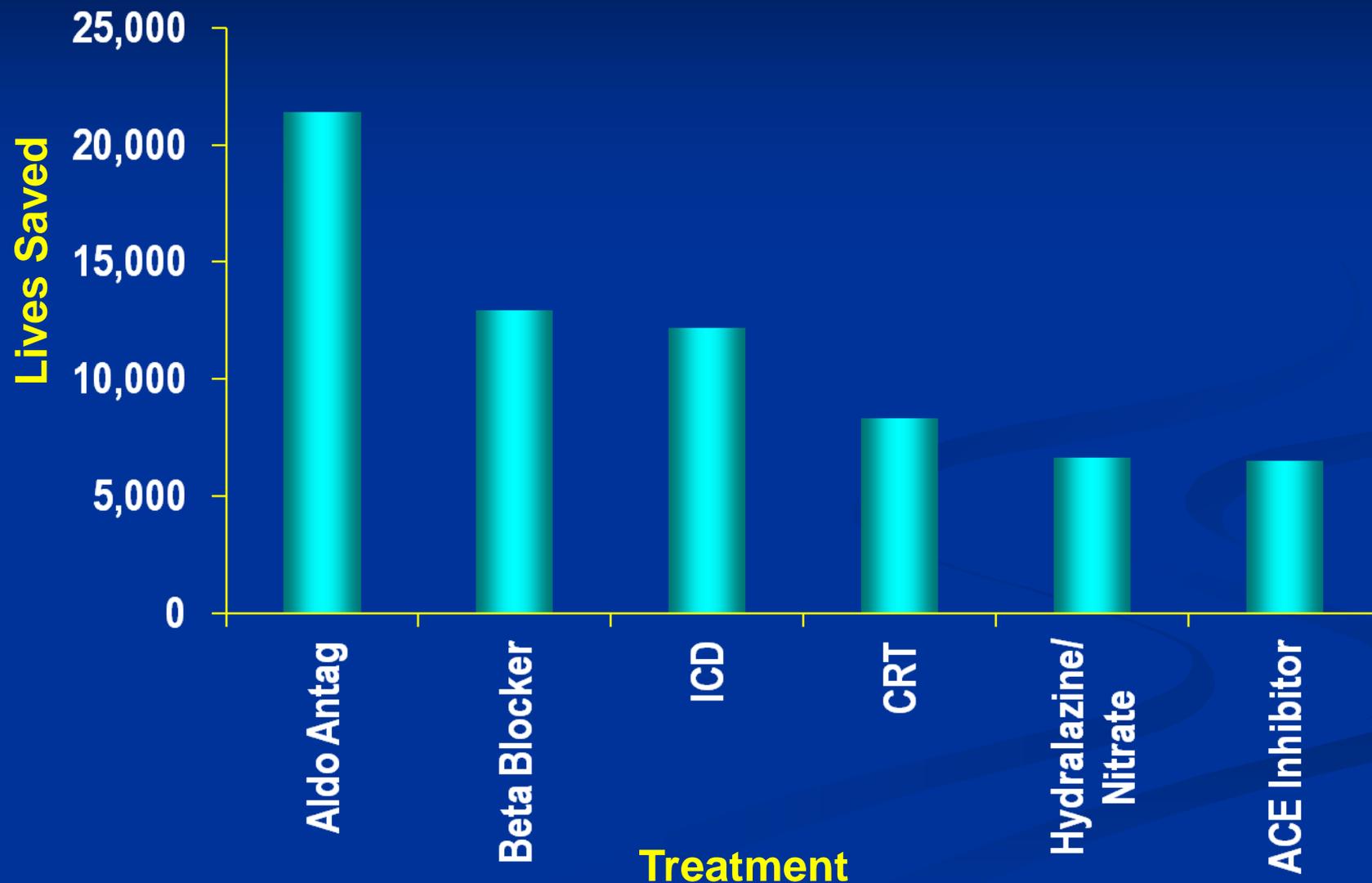
Email

- Described the intervention in enough detail for each lab director to start doing it.
- Provided abstract of article with link.
- Gave contact info

Implementation of the Reminder: 51 Echocardiography Labs



Impact if Treatments Reach Optimal Levels

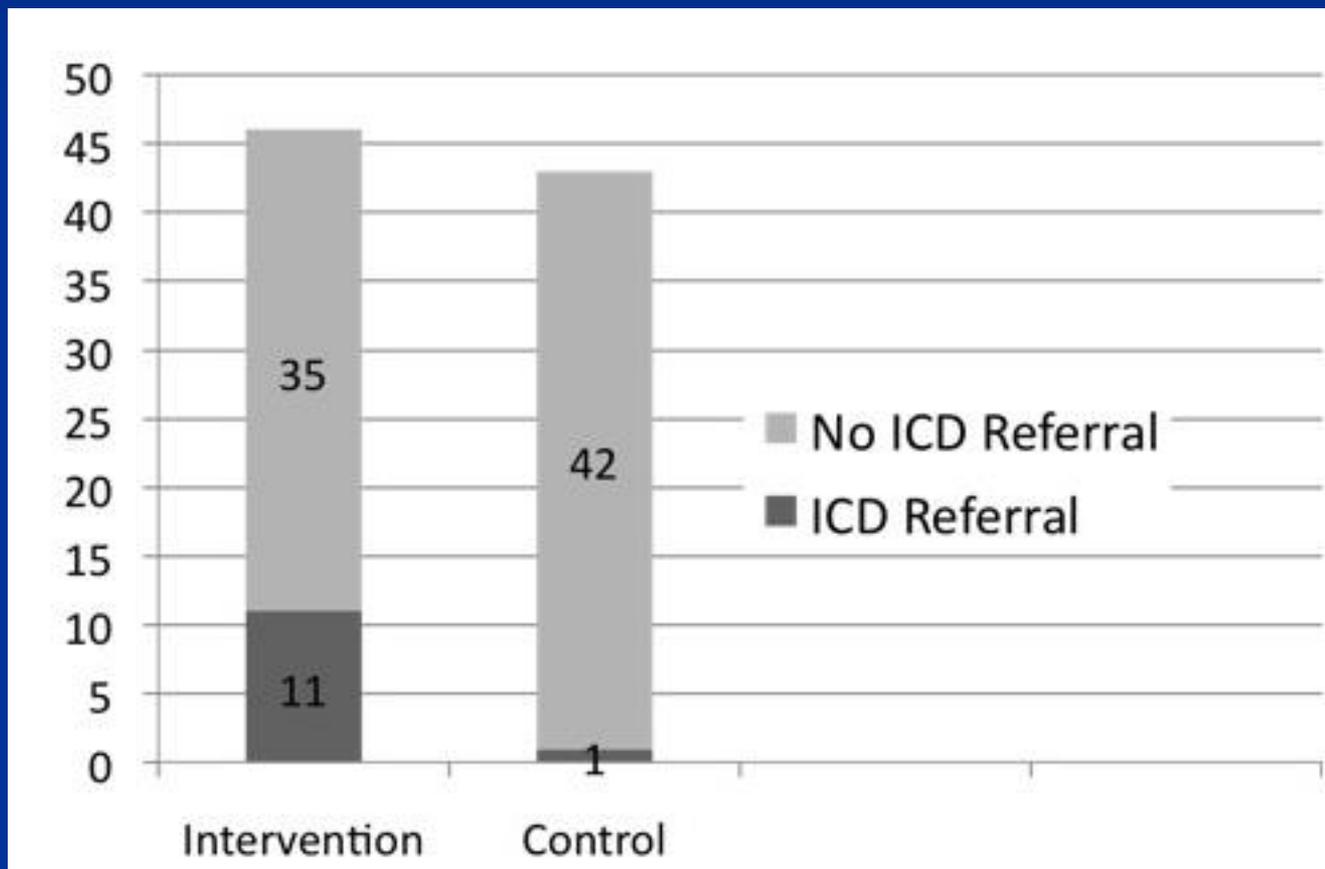


Provider Level Interventions: ICD

Note

- Note suggesting possible ICD candidacy placed in medical record of those with LVEF $\leq 35\%$ and age < 80 years.
- Note described how to refer for ICD evaluation.

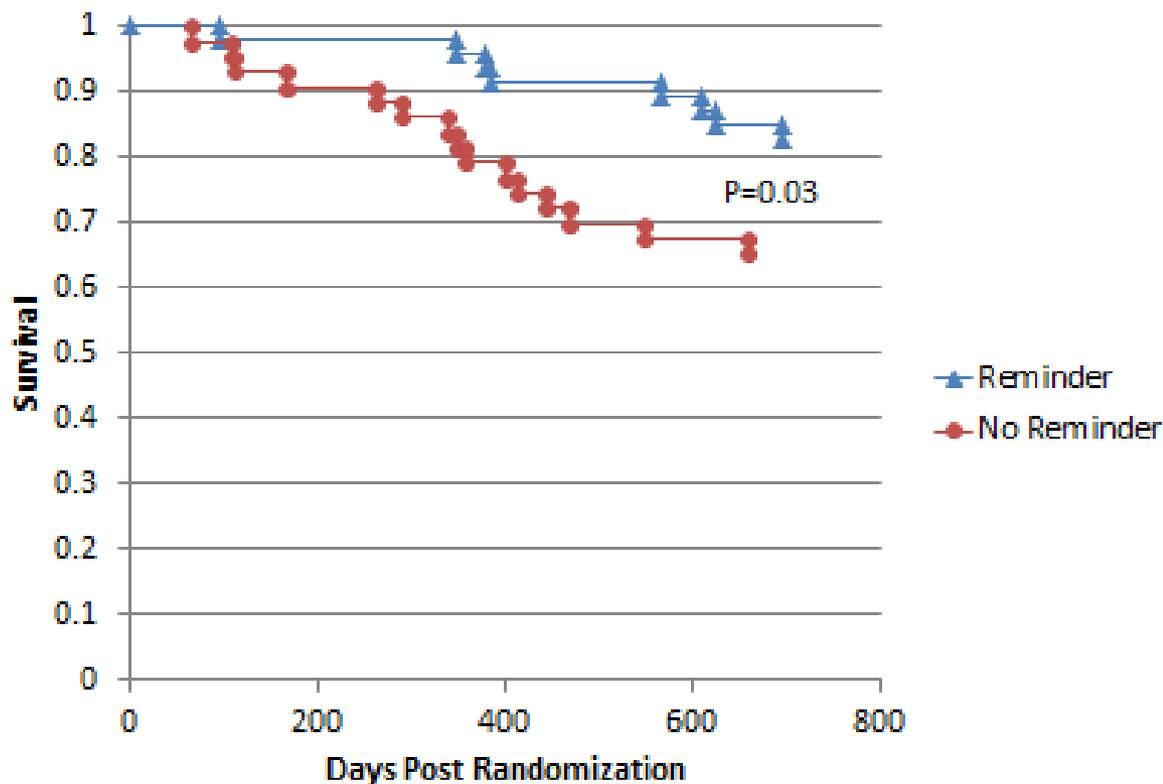
Impact of ICD Note in the Medical Record



Other Impacts of ICD Note

- Improvement in medication use through referral to cardiology
- More discussion of end of life plans

Mortality Following ICD Note



At Risk	0	200	400	600
Reminder	46	45	42	41
No Reminder	43	39	34	29

Ongoing and Future Reminders

- Reducing Inappropriate Follow-Up Echocardiograms for Stable HF
- Mineralocorticoid Receptor Antagonist Use

Conclusions

- Reminders in echocardiography reports have a small but significant impact on care
- Provider satisfaction high
- Reminders direct to providers for ICD discussion were more effective
- Ease of implementation helps spread the use to other facilities.
 - No IT or programming expertise required.

Interested in Reminders/Notifications?

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