



Resource Use and Costs of Heart Failure in Medicare Population, 2003-2005

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Presenter Disclosure Information

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FINANCIAL DISCLOSURE:

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Background: Heart Failure (HF)

- Substantial clinical burden
 - Affecting 5 million people in the US¹
 - 550,000 new cases diagnosed annually²
 - Annual death nearly 300,000^{1,2}
- Significant and growing economic burden on the health care system
 - Costs estimated at 35 billion in 2008¹
 - Constitutes 1-2% of all healthcare spending³
 - 3/4 of the resources are consumed by the elderly³
- This study aims to examine the mortality, costs, resource use for Medicare patients with newly diagnosed HF during a 3-year period

¹ Rosamond W, Flegal K, Friday G, et al. Heart disease and stroke statistics: 2008 update.

² Curtis LH, et al. Incidence and Prevalence of Heart Failure in Elderly Persons, 1994-2003. Arch Intern Med 2008. 168(4): 418-424

³ Liao L, Allen LA, Whellan DJ. Economic Burden of Heart Failure in the Elderly. Pharmacoeconomics 2008; 26(6): 447-462

Data Sources

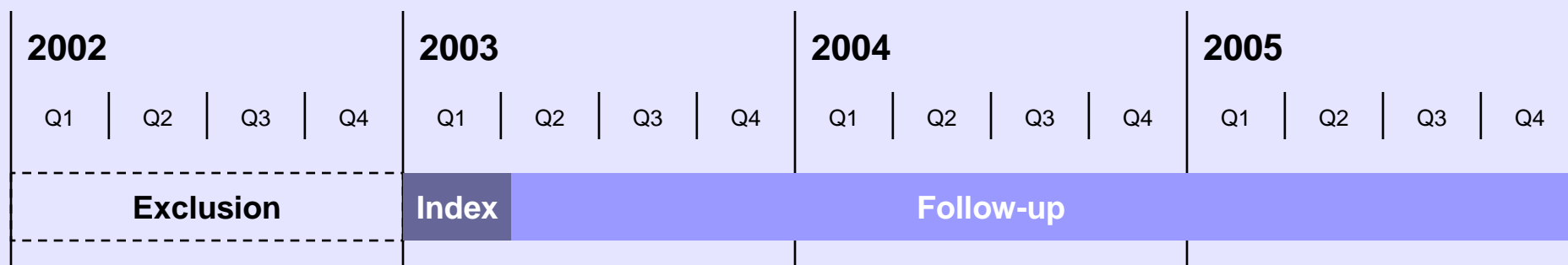
- CMS Medicare Standard Analytic Files (SAFs)
 - Represent medical claims for 5% randomly selected Medicare beneficiaries
 - Detailed patient-level data
 - patient characteristics
 - all inpatient, outpatient, physician, and supplier claims submitted to Medicare
 - diagnosis and procedure codes
 - charges and payments for each service
 - data can be linked across years via unique identifier
 - Robust datasets; generalizable findings
 - Widely utilized and published (e.g., *Circulation*⁴, *Health Serv Res*⁵, *J Am Coll Cardiol*⁶)

⁴ Clark MA et al. Clinical and economic outcomes of percutaneous coronary interventions in the elderly: an analysis of medicare claims data. *Circulation*. 2004; 110(3):259-64

⁵ Koroukian SM et al. Colorectal cancer screening in the elderly population: disparities by dual Medicare-Medicaid enrollment status. *Health Serv Res*. 2006; 41(6):2136-54.

⁶ Hernandez AF et al. Outcomes in heart failure patients after major noncardiac surgery. *J Am Coll Cardiol*. 2004; 44(7):1446-53.

Sample Selection



Index

Identified patients with a primary HF diagnosis (ICD-9-CM 428.xx) from Q1 2003

Exclusion

Excluded patients with prior HF diagnoses in 2002

Follow-up

Followed selected patients through Q4 2005 and linked their claims across different care settings

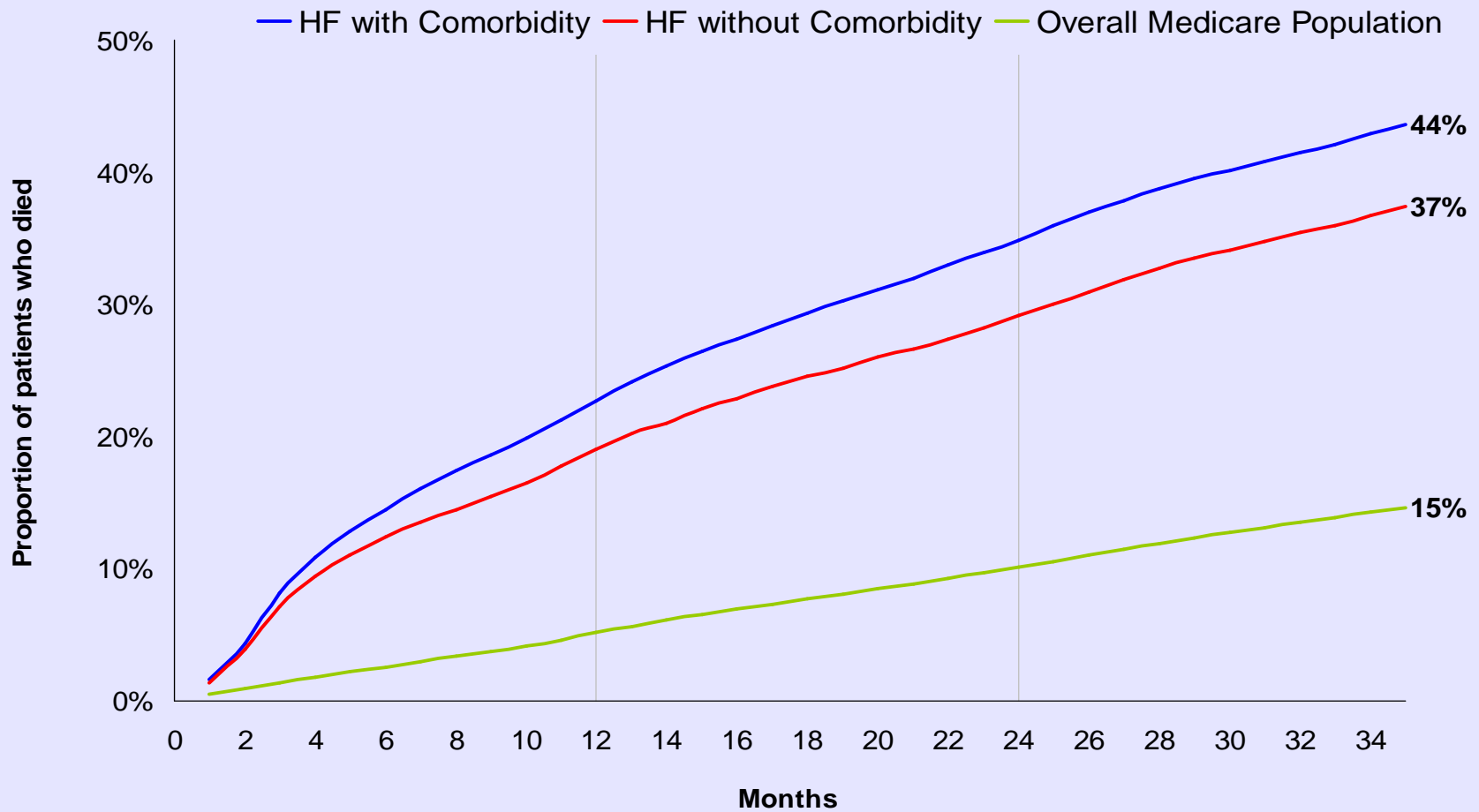
Medicare HF patients were older than total population; 68% had at least one comorbid condition

	Newly Diagnosed HF Patients (N=30,386)	Overall Medicare Population (N=1,713,502)	P Value
Age (year)			
Mean (SD)	77 (11)	71 (12)	<0.001
Gender, N (%)			
Male	12,487 (41.2)	715,070 (42.1)	0.01
Female	17,802 (58.8)	985,179 (57.9)	
Race, N (%)			
White	25,300 (83.5)	1,453,306 (85.5)	<0.001
African American	3,440 (11.4)	158,427 (9.3)	
Other	1,549 (5.1)	88,516 (5.2)	
Charlson Comorbidity Index, N (%)			
<1	9,781 (32.2)	NA	NA
≥1	20,605 (67.8)		

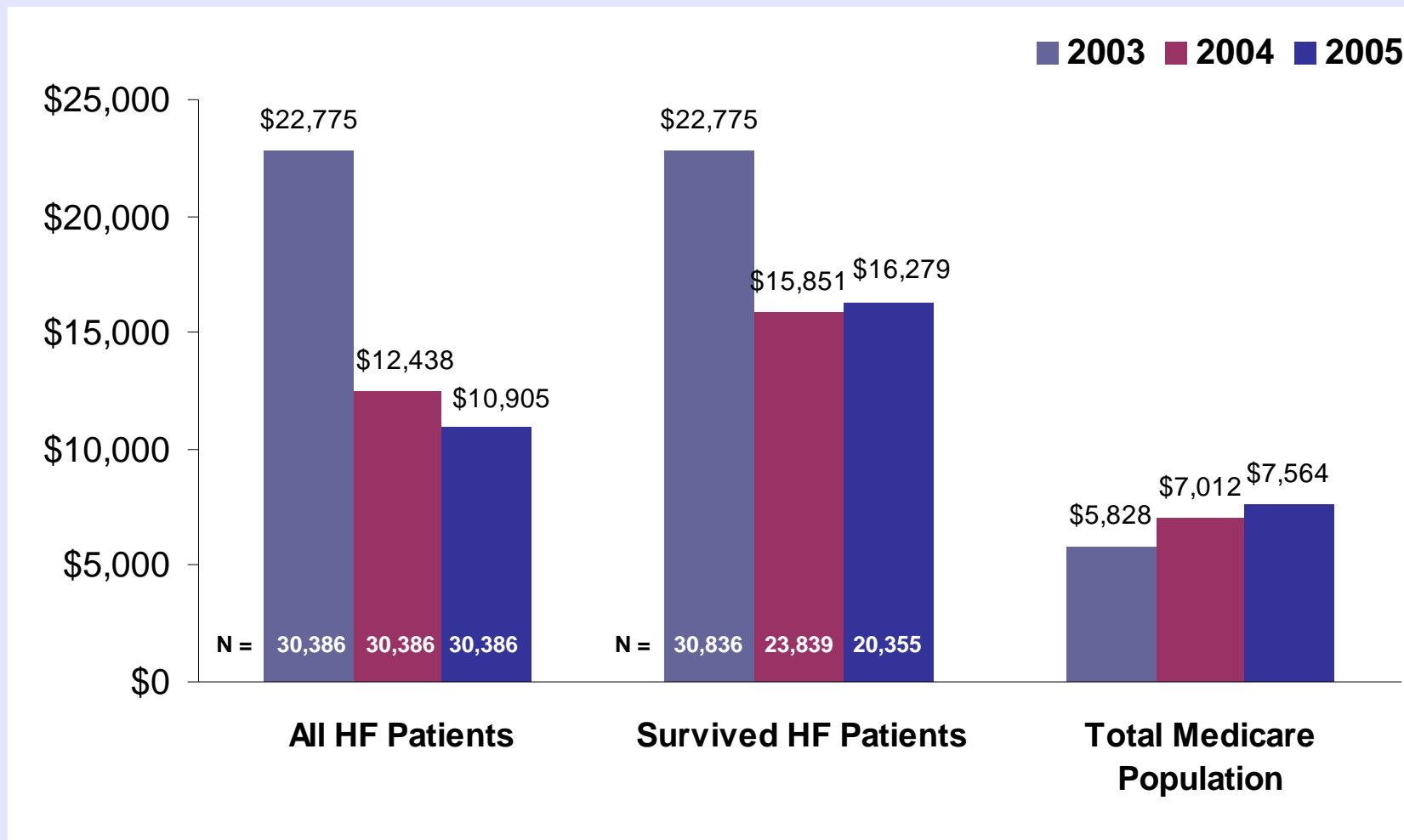
HF patients were 3 times more likely to die in first year following HF diagnoses than overall Medicare population (22% vs 5%, P<0.001); 2 times more in second & third years (15% vs 5%; 14% vs 15%, P<0.001)

Mortality Rate	Newly Diagnosed HF Patients (N=30,386)	Overall Medicare Population (N=1,713,502)
Annual		
1-year	22%	5%
2-year	15%	5%
3-year	14%	5%
Cumulative		
1-year	22%	5%
2-year	33%	10%
3-year	42%	15%

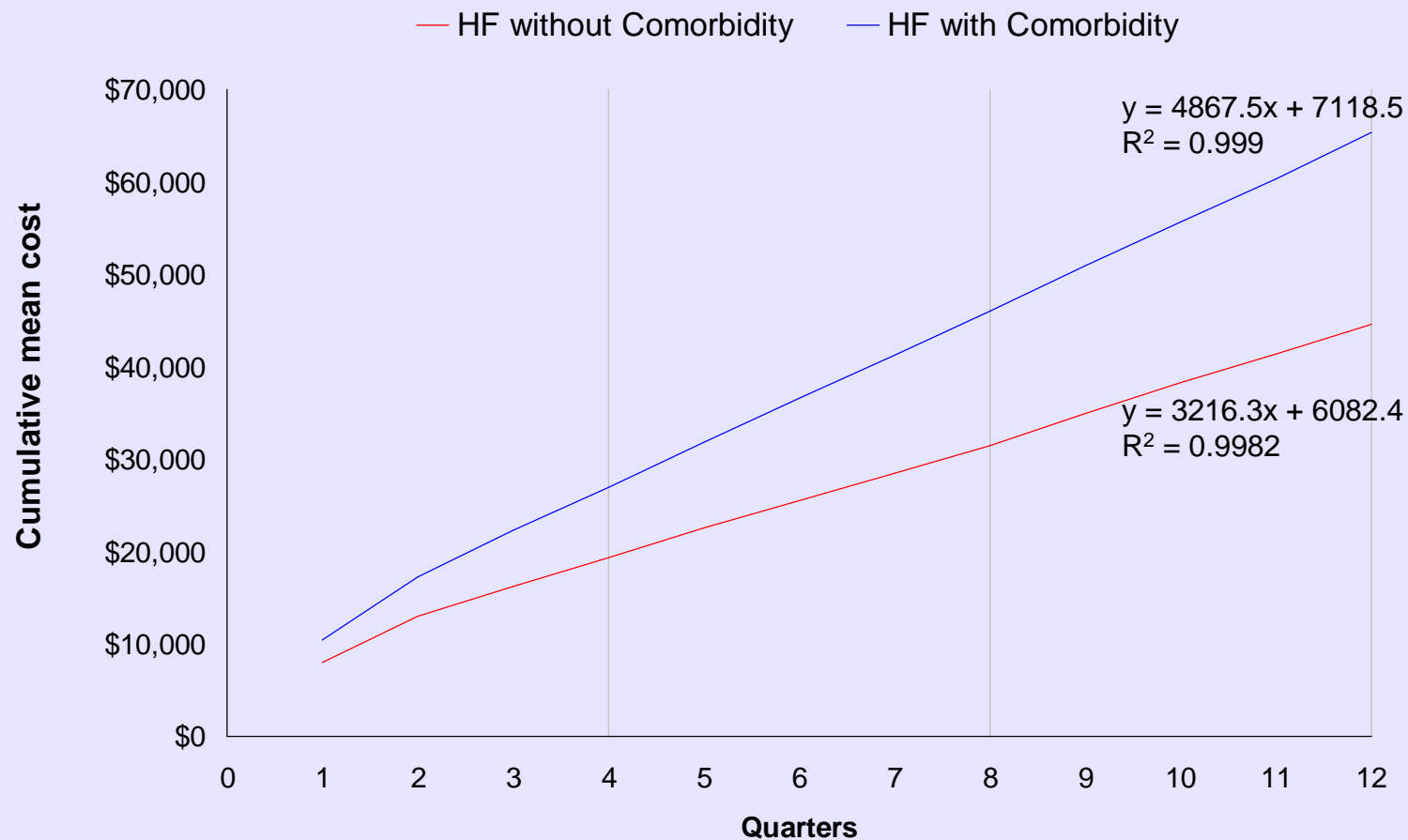
HF patients with comorbidities had worse mortality than those without



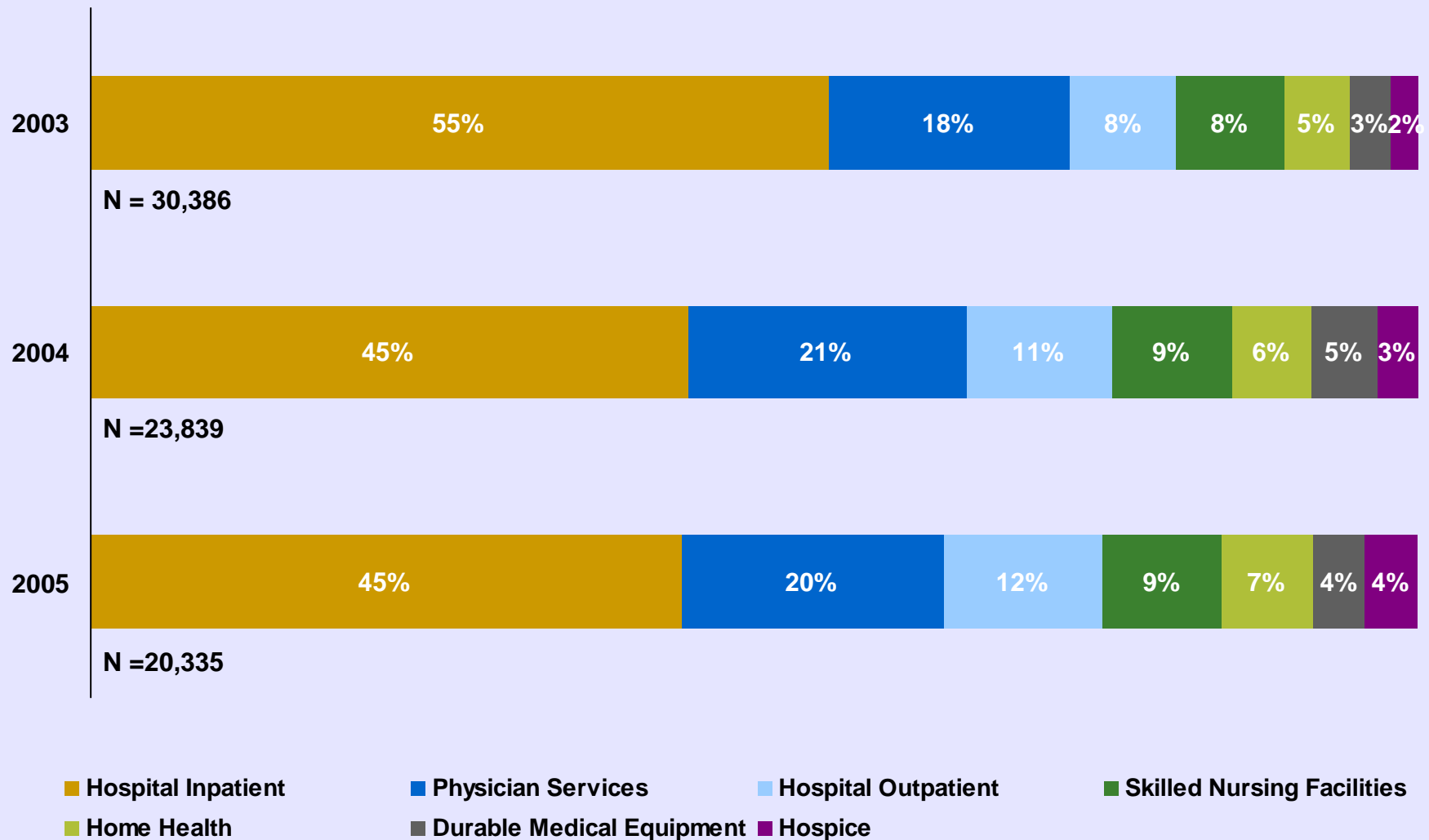
Mean Medicare per patient costs significantly higher for HF than total population (P<0.001)



HF patients with comorbidities incurred approximately 50% higher costs than those without per quarter alive



Hospitalizations are the main cost drivers for Medicare HF patients



80% of newly diagnosed HF patients were hospitalized; average number of hospitalizations was 2.8 during 3 years

	2003	2004	2005	2003-2005
N	30,386	23,839	20,335	30,386
Patients hospitalized for any reasons, n (%)	19,444 (64%)	10,313 (43%)	8,633 (43%)	24,209 (80%)
Number of all-cause hospitalizations, Mean (SD)	1.5 (1.8)	0.9 (1.5)	0.9 (1.5)	2.8 (3.1)

Newly diagnosed HF patients averaged 7 ambulatory visits per year

	2003	2004	2005	2003-2005
N	30,386	23,839	20,335	30,386
Patients with ambulatory visits, n (%)	13,462 (44%)	9,719 (41%)	8,318 (41%)	18,882 (62%)
Number of ambulatory visits, Mean (SD)	7.9 (12.7)	7.2 (12.2)	7.2 (12.1)	18.4 (27.3)

Ambulatory visits included hospital outpatient department visits, ER visits and physician office visits

Limitations

- Only costs to the Medicare system included
- Diagnosis was based on Medical claims without HF severity information
- Prescription drug use not included

Conclusions

- HF patients are associated with significantly higher mortality and consume substantially more health care resource than their elderly peers
- HF patients with comorbidities had both higher mortality and higher costs than those without
- Hospitalization is the major cost driver; therefore, further interventions aimed to reducing hospitalizations of this chronic disease will need to be identified

Q & A



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