## **Heart Failure** in older adults ABOUT...

eart failure affects an estimated 4.6 million individuals in the United States representing an estimated annual direct cost of \$19.6 billion in 1999 alone.<sup>1</sup> The prevalence of heart failure increases with age: it is present among more than 5 percent of persons aged 60 to 69 and 10 percent of persons aged 70 and older.<sup>1</sup> Heart failure is the most common diagnosis among hospitalized patients aged 65 and older.<sup>1</sup> The overall fatality rate from heart failure is high: 20 percent of patients die within the first year after diagnosis, and 50 percent die within five years. Elderly heart failure patients, particularly those hospitalized, face an even higher mortality rate.1

Elderly patients with heart failure experience significant variations in processes and outcomes of care. Improvements in processes of care have been demonstrated to lead to improvements in patient outcomes.<sup>23</sup> The recent literature includes some important findings about the process of care for heart failure:

ACE inhibitor therapy has been shown to reduce the incidence of new-onset symptomatic heart failure among both symptomatic and asymptomatic patients with moderate or severely reduced left ventricular systolic dysfunction (LVEF < 0.40), and ACE inhibitors administered at target doses have been shown to reduce mortality in patients with heart failure.<sup>4-11</sup>

Patients with stable New York Heart Association Class I-III heart failure due to left ventricular systolic dysfunction receiving beta blocker therapy have demonstrated a marked reduction in morbidity and mortality.<sup>12-18</sup>

Hypertension treatment has been shown to lower the risk of developing heart failure among elderly patients and observational data indicate that hypertension control is associated with improved ventricular function and decreased symptoms in patients with heart failure.<sup>19-21</sup>

Multidisciplinary heart failure intervention following hospital discharge can result in improved quality of life, fewer hospitalizations, and a trend for improved survival. Intervention involved monitoring of daily weight, medication management, sodium restriction, exercise training, smoking cessation, and counseling (patient and family).<sup>3, 22-24</sup>

Lowering LDL cholesterol with lipid lowering therapy to < 100 mg/dl in patients with heart failure and coronary artery disease decreases the risk of new cardiac injury and demonstrates a reduction in heart failure and heart failure deaths.<sup>25-27</sup>

These research findings demonstrate that there are lifesaving interventions for patients with systolic dysfunction. All patients with heart failure should have assessment of left ventricular ejection fraction. This is the single most important measurement to obtain and is the primary means of distinguishing patients with systolic dysfunction from those who have other causes of heart failure. At least 30–50 percent of elderly heart failure patients have preserved left ventricular systolic function.28

This information is an interim result of a funded three-year collaboration between Pfizer and RAND to measure and improve the quality of care provided for older Americans.





NEW

FACTS

## References

1. American Heart Association, 1999 Heart and Stroke Statistical Update. Dallas, TX: *American Heart Association*, 1997.

2. Cohn, JN. The management of chronic heart failure. *N Engl J Med.* 1996;335:490–498.

3. Fonarow GC, Stevenson LW, Walden JA, et al. Impact of a comprehensive heart failure management program on hospital readmission and functional status of patients with advanced heart failure. *J Am Coll Cardiol.* 1997;30: 725–733.

4. The SOLVD Investigators. Effect of enalapril on mortality and the development of heart failure in asymptomatic patients with reduced left ventricular ejection fractions. *N Engl J Med.* 1992;327:685–691.

5. Pfeffer MA, Braunwald E, Moye LA, et al. (The SAVE Investigators) Effect of captopril on mortality and morbidity in patients with left ventricular dys-function after myocardial infarction. Results of the survival and ventricular enlargement trial. *N Engl J Med.* 1992;327:669–677.

6. Kober L, Torp-Pedersen C, Carlsen JE, et al. A clinical trial of the angiotensin-converting-enzyme inhibitor trandolapril in patients with left ventricular dysfunction after myocardial infarction. Trandolapril Cardiac Evaluation (TRACE) Study Group. *N Engl J Med.* 1995;333:1670–1676.

7. The CONSENSUS Trial Study Group. Effects of enalapril on mortality in severe congestive heart failure: results of the Cooperative North Scandinavian Enalapril Survival Study (CONSENSUS). *N Engl J Med.* 1987;316:1429–1435.

8. Packer M. Do angiotensin-converting enzyme inhibitors prolong life in patients with heart failure treated in clinical practice? *J Am Coll Cardiol.* 1996;28:1323–1327.

9. Pacher R, Stanek B, Globits S, et al. Effects of two different enalapril dosages on clinical, haemodynamic and neurohumoral response of patients with severe congestive heart failure. *Eur Heart J.* 1996;17:1223–1232.

10. Packer M, Poole-Wilson P, Armstrong P, et al. Comparative effects of lowdose versus high-dose lisinopril on survival and major events in chronic heart failure: the Assessment of Treatment with Lisinopril and Survival Study (ATLAS). (Abstr) *Eur Heart J.* 1998;19(suppl):142.

11. Krumholz HM, Wang Y, Parent EM, Mockalis J, Petrillo M, Radford MJ. Quality of care for elderly patients hospitalized with heart failure. *Arch Intern Med.* 1997;157:2242–2247.

12. Doughty RN, Rodgers A, Sharpe N, MacMahon S. Effects of beta-blocker therapy on mortality in patients with heart failure. A systematic overview of randomized controlled trials. *Eur Heart J.* 1997;18:560–565.

13. Lechat P, Packer M, Chalon S, Cucherat M, Arab T, Boissel JP. Clinical effects of beta-adrenergic blockade in chronic heart failure: a meta-analysis of double-blind, placebo-controlled, randomized trials. *Circulation*. 1998;98:1184–1191.

14. Heidenreich PA, Lee TT, Massie BM. Effect of beta-blockade on mortality in patients with heart failure: a meta-analysis of randomized clinical trials. *JAm Coll Cardiol.* 1997;30:27–34.

15. Packer M, Bristow MR, Cohn JN, et al. The effect of carvedilol on morbidity and mortality in patients with chronic heart failure. U.S. Carvedilol Heart Failure Study Group. *N Engl J Med.* 1996;334:1349–1355.

16. CIBIS-II Investigators and Committee. The Cardiac Insufficiency Bisoprolol Study 11 (CIBIS-II): a randomized trial. *Lancet*. 1999;353:9–13.

17. The International Steering Committee. Rationale, design and organization of the Metoprolol CR/XL Randomized Intervention Trial in Heart Failure (MERIT-HF). *Am J Cardiol.* 1997;80(suppl 9B):54J–58J.

18. Consensus Recommendations for the Management of Chronic Heart Failure. Action HF Steering Committee and Advisory Board. *Am J Cardiol.* 1999;83:1A–39A.

19. Veterans Administration Cooperative Study Group on Antihypertensive Agents. Effects of treatment on morbidity in hypertension. II. Results in patients with diastolic blood pressure averaging 90 through 114 mm Hg. *JAMA*. 1970;213:1143–1152.

20. Kostis JB, Davis BR, Cutler J, et al. Prevention of heart failure by antihypertensive drug treatment in older persons with isolated systolic hypertension. SHEP cooperative research group. *JAMA*. 1997;278:212–216.

21. Psaty BM, Smith NL, Siscovick DS, et al. Health outcomes associated with antihypertensive therapies used as first-line agents. A systematic review and meta-analysis. *JAMA*. 1997;277:739–745.

22. Rich MW, Beckham V, Wittenberg C, Leven CL, Freedland KE, Carney RM. A multidisciplinary intervention to prevent the readmission of elderly patients with congestive heart failure. *N Engl J Med.* 1995;333:1190–1195.

23. Stewart S; Vandenbroek AJ; Pearson S; Horowitz JD. Prolonged beneficial effects of a home-based intervention on unplanned readmissions and mortality among patients with congestive heart failure. *Arch Intern Med.* 1999; 59:257–261.

24. Konstam M, Dracup K, Baker D, et al. Heart Failure: Evaluation and Care of Patients with left-ventricular systolic dysfunction. Clinical Practice Guideline No. 11. *AHCPR Publication* No. 94-0612. Rockville, MD: Agency for Health Care Policy and Research, Public Health Service, U.S. Department of Health and Human Services. June 1994:41–46.

25. Gould AL, Rossouw JE, Santanello NC, Heyse JF, Furberg CD. Cholesterol reduction yields clinical benefit: impact of statin trials. *Circulation*. 1998;97:946–952.

26. Randomized trial of cholesterol lowering in 4444 patients with coronary heart disease: the Scandinavian Simvastatin Survival Study (4S). *Lancet.* 1994;344:1383–1389.

27. Miettinen TA, Pyorala K, Olsson AG, et al. Cholesterol-lowering therapy in women and elderly patients with myocardial infarction or angina pectoris: findings from the Scandinavian Simvastatin Survival Study (4S). *Circulation*. 1997;96:4211–4218.

28. Rich MW. Epidemiology, pathophysiology, and etiology of congestive heart failure in older adults. *J Am Geri So.* 1997;45:968–974.

