

A nurse-facilitator intervention improved the use of β -blockers in outpatients with stable congestive heart failure

Ansari M, Shlipak MG, Heidenreich PA, et al. **Improving guideline adherence: a randomized trial evaluating strategies to increase β -blocker use in heart failure.** *Circulation.* 2003;107:2799-804.

QUESTION

In outpatients with stable, congestive heart failure (CHF), how do nurse-facilitator or provider- and patient-notification interventions compare with provider education for increasing the use of β -blockers?

DESIGN

Cluster randomized (allocation concealed*), blinded {data collectors}†,* controlled trial with 1-year follow-up.

SETTING

Veterans Affairs medical center in San Francisco, California, USA.

PATIENTS

169 patients (mean age 70 y, 96% men) who met Framingham criteria for CHF, and had left ventricular ejection fraction \leq 45% or moderate or severe left ventricular systolic dysfunction. Exclusion criteria included current treatment with, or contraindications to, β -blockers (including asthma, severe obstructive lung disease, and diabetes). All patients were included in the analysis.

INTERVENTION

All providers (internal medicine specialists, cardiologists, and nurse practitioners) received a provider education program (β -blocker use in CHF patients and guidelines for β -blocker initiation and uptitration). 25 providers with 54 patients were allocated to a nurse-facilitator

group (an assigned nurse practitioner supervised by 2 cardiologists who initiated, titrated, and stabilized patients on β -blockers until target or maximum tolerated β -blocker dose was reached). 25 providers with 64 patients were allocated to provider and patient notification (computerized provider reminders and patient letters advocating β -blocker therapy). 24 providers with 51 patients were allocated to a control group (provider education).

MAIN OUTCOME MEASURES

Proportion of patients initiated or uptitrated and maintained on β -blockers, and proportion of patients reaching target daily doses of β -blockers (carvedilol 50 mg, metoprolol tartrate 100 mg, or atenolol 100 mg).

MAIN RESULTS

Analysis was by intention to treat. More patients in the nurse-facilitator group were

initiated or uptitrated on β -blockers and reached daily target β -blocker doses than in the provider- and patient-notification or control groups (Table).

CONCLUSION

In outpatients with stable, congestive heart failure, a nurse-facilitator intervention was more effective than provider and patient notification or provider education for increasing the use of β -blockers.

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*See Glossary.

†Information provided by author.

Nurse facilitator (NF) or provider and patient notification (PPN) vs provider education (control) for congestive heart failure at 1 year†

Outcomes	Comparisons	Event rates	RBI/RBR (95% CI)	NNT/NNH (CI)
Patients initiated or uptitrated on β -blockers	NF vs control	67% vs 27%	RBI 143% (54 to 302)	NNT 3 (2 to 5)
	PPN vs control	16% vs 27%	RBR 43% (-15 to 72)	NNH Not significant
Patients with target β -blocker doses	NF vs control	43% vs 9.8%	RBI 334% (89 to 947)	NNT 4 (3 to 7)
	PPN vs control	1.6% vs 9.8%	RBR 84% (1 to 97)	NNH 13 (6 to 3312)

†RBR = relative benefit reduction. Other abbreviations defined in Glossary; RBI, RBR, NNT, NNH, and CI calculated from data in article.

COMMENTARY

The study by Ansari and colleagues shows that dedicating personnel to supervise specific treatment regimens is more effective than provider education and provider and patient reminders. We already know that passive education is not effective and that clinical reminders must be used judiciously to maximize effectiveness. Reminders seem to work best for periodic, 1-step preventive strategies or single components of multifaceted interventions, but don't work as well for more complex behaviors. Regarding generalizability, the study's site (university-affiliated Veterans Affairs medical center) is less of a concern than its size. It may be easier for larger organizations to implement personnel interventions than small practices.

Available evidence (1, 2) shows that treatment goals for specific diseases are achieved more successfully by personnel (case managers) who are dedicated to addressing that single disease than by primary care providers, who face multiple competing patient and evidence-based demands and limited time. However, the disease-specific case management model ignores the complexity of treating patients with multiple illnesses. One conceivable outcome of widely implementing dedicated personnel interventions for patients with comorbid conditions is a disintegrated nightmare of weekly appointments with individual nurse

specialists addressing only 1 medication or disease. Looking for single-behavior simple fixes fails to address how the system must deal with cost, efficiency, health outcomes, and patient satisfaction in the face of multimorbidity. The result is chaos superimposed on complexity.

Such promising approaches as the Chronic Illness Care Model (3) recognize the need to identify effective, cross-cutting strategies for health care systems and microsystems to manage multimorbidity. The model proposes 6 key strategies: patient self-management support, provider decision support and expert consultation, community resources and partnerships, clinical information systems, delivery redesign, and health care system support and culture. Addressing only 1 aspect at a time will not move the system where it needs to go.

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