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Cost-Effectiveness of Transitional Care Services After Hospitalization With Heart Failure

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Background: Patients with heart failure (HF) discharged from the hospital are at high risk for death and rehospitalization. Transitional care service interventions attempt to mitigate these risks.

Objective: To assess the cost-effectiveness of 3 types of postdischarge HF transitional care services and standard care.

Design: Decision analytic microsimulation model.

Data Sources: Randomized controlled trials, clinical registries, cohort studies, Centers for Disease Control and Prevention life tables, Centers for Medicare & Medicaid Services data, and National Inpatient Sample (Healthcare Cost and Utilization Project) data.

Target Population: Patients with HF who were aged 75 years at hospital discharge.

Time Horizon: Lifetime.

Perspective: Health care sector.

Intervention: Disease management clinics, nurse home visits (NHVs), and nurse case management.

Outcome Measures: Quality-adjusted life-years (QALYs), costs, net monetary benefits, and incremental cost-effectiveness ratios (ICERs).

Results of Base-Case Analysis: All 3 transitional care interventions examined were more costly and effective than standard care, with NHVs dominating the other 2 interventions. Compared with standard care, NHVs increased QALYs (2.49 vs. 2.25) and costs ($81 327 vs. $76 705), resulting in an ICER of $19 570 per QALY gained.

Results of Sensitivity Analysis: Results were largely insensitive to variations in in-hospital mortality, age at baseline, or costs of rehospitalization. Probabilistic sensitivity analysis confirmed that transitional care services were preferred over standard care in nearly all 10 000 samples, at willingness-to-pay thresholds of $50 000 or more per QALY gained.

Limitation: Transitional care service designs and implementations are heterogeneous, leading to uncertainty about intervention effectiveness and costs when applied in particular settings.

Conclusion: In older patients with HF, transitional care services are economically attractive, with NHVs being the most cost-effective strategy in many situations. Transitional care services should become the standard of care for postdischarge management of patients with HF.

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The worldwide prevalence of heart failure (HF) is estimated to be 26 million and is increasing (1). In the United States, 5.7 million adults have been diagnosed with HF, with estimated annual direct costs of $39.2 billion to $60 billion (2, 3). Total HF costs in the United States are expected to exceed $70 billion by 2030 (4).

Heart failure primarily affects older persons and is the second most common inpatient diagnosis billed to Medicare (5). Patients with HF requiring inpatient admission are a vulnerable population and have a poor long-term prognosis, with a 2-year readmission-free survival rate as low as 17% (6). Risks for death and rehospitalization are accentuated immediately after inpatient discharge, with much of the economic burden in HF resulting from costly hospital readmissions. Several groups have identified transition-of-care interventions after acute hospitalization as an important area to improve patient safety and reduce HF costs (4, 7). Programs providing coordinated postdischarge care may successfully reduce all-cause rehospitalization rates and mortality compared with standard care (8).

Previous evidence on the cost-effectiveness of transitional care for patients with HF is scarce, consisting predominantly of trial-based cost-effectiveness analyses (9). These analyses have limitations given that follow-up generally is short and the cost and efficacy estimates are based on single trials. Because of the shorter time horizons, these studies may capture upfront cost savings or quality-adjusted life-year (QALY) gains that may attenuate over a lifetime.

Our study examined the lifetime cost-effectiveness of 3 types of transitional care services for patients with HF discharged from the hospital; all had been shown to reduce rates of all-cause mortality and rehospitalization compared with standard care in the most up-to-date and comprehensive meta-analysis of transitional care services in patients with HF (7).

See also:

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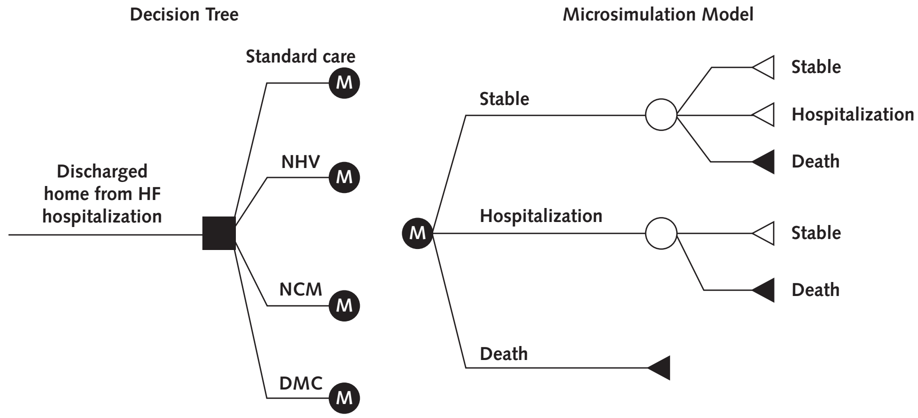
Web-Only
Supplement

Figure 1. Decision tree and microsimulation model.



The square represents the choice among transitional care services. For each intervention strategy, patients remain in that strategy until death. The intervention is at the start of the microsimulation (the first discharge from the hospital) only. Open circles represent chance nodes. Patients enter the microsimulation model (represented by M in a circle), which simulates the clinical events that may occur during weekly periods: Patients may remain stable (nonhospitalized), be rehospitalized, or exit the simulation on death. If rehospitalized, patients may return to stable condition or exit the simulation as the result of in-hospital death. The model tracks time since last discharge, which along with a patient's age and sex, can determine risks for subsequent events. DMC = disease management clinic; HF = heart failure; NCM = nurse case management; NHV = nurse home visit.

METHODS

We report the results of our cost-effectiveness analysis in accordance with the Consolidated Health Economic Evaluation Reporting Standards (10).

Study Design

We developed a decision analytic microsimulation model to evaluate whether patients with HF discharged from the hospital should continue with standard care or receive more intensive follow-up transitional care services. We express outcomes in U.S. dollars, inflation adjusted to December 2018; QALYs; net monetary benefits; and incremental cost-effectiveness ratios (ICERs) from the perspective of the health care sector. We discounted both costs and QALYs at an annual rate of 3% (11, 12).

Decision Analytic Model

Our population included patients discharged from an index hospitalization with a primary diagnosis of symptomatic HF, with no restriction on HF classification. The population comprised patients aged 75 years, evenly divided between men and women, consistent with the populations in the source efficacy trials (7) (Supplement Tables 1 and 2 and accompanying text, available at Annals.org).

The model followed a large population of simulated patients over their remaining lifetime at weekly intervals, recording subsequent events as they occurred (Figure 1). Each week, patients remained stable, were rehospitalized for any reason, or died. In the postdischarge period, patients with HF had excess mortality and an increased risk for readmission that rapidly declined during the following year (13, 14). Thus, risks for rehospitalization or death depended on the time since the last hospital discharge for individual patients. We used a weekly transition cycle to capture this rapidly declining risk. Our model captured the excess risk for death and further hospitalizations in the postdischarge period for all potential admissions during the lifetime of each of our patients (see the Supplement, available at Annals.org, for a detailed description of the model).

Mortality and Rehospitalization Risk

We assumed that mortality and readmission risk under standard care, in the year after a hospitalization, would follow a retrospective cohort analysis of more than 3 million Medicare fee-for-service beneficiaries (13). This retrospective study had an age and sex distribution similar to that of the treatment efficacy trials we included (discussed later) and assessed all-cause readmission and all-cause mortality risks for 1 year after HF hospitalization. To model admission-free mortality beyond 1 year after discharge, we fit a power function to the mortality hazard curve in the initial 52 weeks after discharge (13), and used this power function to extrapolate the admission-free, longer-term mortality rate (Supplement Figure 1, available at Annals.org). To prevent negative HF mortality, we ensured that mortality was never lower than in the age- and sex-specific general population (15). This would apply only to a small subset of patients with HF who are never rehospitalized and have a very long life expectancy (see the Supplement for details). We assumed that 1 year after the last hospital discharge, the readmission probability became constant. After every rehospitalization, the weekly mortality and readmission probabilities were again modeled as described earlier. For all rehospitalizations, the visit duration was assumed to be 1 week and the in-hospital weekly mortality risk was 3.6% (16).

Treatment Strategies and Efficacy

We compared 3 transitional care services with standard care: nurse home visits (NHVs), nurse case management (NCM), and disease management clinics (DMCs). We selected these interventions because they were the only interventions that significantly reduced all-cause mortality or all-cause readmissions in a network meta-analysis (7). To assess the strength of the efficacy evidence, we performed a critical appraisal of this meta-analysis (**Supplement**). The health effects of the interventions were modeled by applying their relative hazards of mortality and rehospitalization to the rates under standard care (**Table 1**).

Because data on the long-term efficacy of the interventions were limited, we chose a conservative modeling approach when evaluating cost-effectiveness: For our intervention cohort, we assumed that the interventions reduced risks for death and rehospitalization only during the year after the first hospital discharge. In our conservative approach, we also assumed that intervention costs continued to accrue after subsequent readmissions, whereas risks were no longer reduced by the intervention.

The NHV consists of a nurse visiting the patient's home for clinical assessment and education after hospital discharge (7). The NHV approach may include a single home visit (as in half the studies) or several visits, and usually began within 2 weeks of discharge. Nurse case management is a multifaceted disease management program led by nurses. All programs involve self-care education and structured telephone support after discharge; some also include NHVs. In the DMC intervention, patients present to clinics for follow-up visits with a team-based, multidisciplinary HF management approach. These interventions are described further in the **Supplement** and **Supplement Tables 1** and **2**.

Standard care was heterogeneous among studies (**Supplement Tables 1** and **2**). It most often consisted of inpatient education, as in the intervention groups, as well as scheduled follow-up with a cardiologist, primary care physician, or both, following local standards. Some studies had standard care protocols consistent with recommended modern standards, such as follow-up cardiology visits within 14 days of discharge.

Combining information from several trials of health care program implementation may be difficult because of heterogeneous intervention definitions that vary regionally. To address this challenge, we selected conservative estimates in terms of lower effectiveness and higher costs.

Costs

We inflation-adjusted costs to December 2018 U.S. dollars and converted foreign currency to U.S. dollars via purchasing power parity adjustments (17–19). We included costs for the interventions; background costs, by age; background HF treatment costs; and costs of rehospitalizations (**Table 1**). Background HF treatment costs consisted of outpatient visits, prescribed medications, and laboratory expenses (20, 21). Rehospitalization costs were based on National Inpatient Hospital

Table 1. Base-Case Model Parameters

Parameter	Standard Care	DMCs	NHVs	NCM	References
Demographics					
Age, *y*	75	75	75	75	7
Female, %	50	50	50	50	7
Efficacy					
Mortality, RR	1.00	0.80	0.78	0.86	7
Readmission, IRR	1.00	0.80	0.65	0.77	7
Mortality and readmission rates					
General mortality	Age and sex dependent according to CDC life tables				15
Mortality after 1 y after discharge	Dependent on time since discharge*				13
In-hospital mortality	0.036	0.036	0.036	0.036	16
Postdischarge mortality	Dependent on time since discharge†				13
Postdischarge readmission	Dependent on time since discharge†				13
Costs‡					
Intervention cost, *mCPI 2018 US $*	0	1041	521	946	§
Background health care cost, patients aged ≥65 y, *$ per patient per month*	1353	1353	1353	1353	20, 21
Isolated HF background cost, *$ per patient per month*	92	92	92	92	21
Readmission cost, *$*	12 591	12 591	12 591	12 591	NIS/HCUP
Utilities					
Baseline for women	0.864	0.864	0.864	0.864	23
Adjustment for age, sex	‖	‖	‖	‖	–
Adjustment for number of readmissions	‖	‖	‖	‖	–
Decrement for readmission	Baseline × 0.828 for 1 wk, 0 for time of readmission (1 wk)				24

CDC = Centers for Disease Control and Prevention; DMC = disease management clinic; HCUP = Healthcare Cost and Utilization Project; HF = heart failure; IRR = incident rate ratio; mCPI = Medical Consumer Price Index; NCM = nurse case management; NHV = nurse home visit; NIS = National Inpatient Sample; RR = risk ratio.
* See Supplement Figure 1, available at Annals.org.
† See Supplement Table 3, available at Annals.org.
‡ All costs are rounded to the nearest dollar.
§ See Supplement Table 4, available at Annals.org.
‖ See Supplement Table 5, available at Annals.org.

Table 2. Health and Economic Outcomes of Transition Care Services Versus Standard Care*

Parameter	Standard Care	NHVs	DMCs	NCM
Mean readmissions, *n*	2.91	2.81	2.91†	2.86
Average life-years, *n*	2.98	3.28	3.20	3.17
Average QALYs, *n*	2.25	2.49	2.42	2.40
Average lifetime cost, $‡	76 705	81 327	83 334	81 972
Incremental NMB vs. standard care, by WTP threshold, $				
$50 000	–	7379	1865	2233
$75 000	–	13 379	6115	5983
$100 000	–	19 379	10 365	9733
Incremental cost vs. standard care, *$ per QALY gained*	–	19 570	Dominated	Dominated

DMCs = disease management clinics; NCM = nurse case management; NHVs = nurse home visits; NMB = net monetary benefit; QALY = quality-adjusted life-year; WTP = willingness-to-pay.
* All costs and QALYs are discounted by a yearly rate of 3%.
† On average, DMC patients had an equal number of readmissions as standard care patients because of the risk reduction in mortality, which led to patients being at risk for readmission for a longer period.
‡ Lifetime cost includes intervention, background health care, background heart failure, and rehospitalization costs.

Costs from the Healthcare Cost and Utilization Project (22). We obtained costs for interventions from the randomized controlled trials that reported them (Supplement Table 4, available at Annals.org) and included direct costs attributable to the transitional care services only. After appropriate currency and inflation adjustment, we calculated the weighted mean intervention costs with weights based on the study sample sizes. We conservatively assumed that the full intervention costs occurred immediately after hospital discharge for all patients.

Because NHVs were identified as the dominant treatment, we also performed an exploratory sensitivity analysis that used an NHV intervention cost estimate of $1214, which we constructed by using a conservative microcosting analysis for a high-cost U.S. district (see the Supplement for details).

Health-Related Quality of Life

We identified utilities on the basis of a regression analysis from EPHESUS (Eplerenone Post–Acute Myocardial Infarction Heart Failure Efficacy and Survival Study), a multicenter, randomized controlled trial investigating 6232 patients with HF (23). The utility for patients aged 75 years with stable HF was 0.864 for women and 0.918 for men, which declined further for older age and additional readmissions (Supplement Table 5, available at Annals.org). During rehospitalization, we modeled a reduction in quality of life to zero for the duration of the hospitalization. In a sensitivity analysis, we explored the effect of less to no reduction in quality of life during hospitalization. In addition, to account for decreased quality of life in the time preceding rehospitalization, we modeled a decrease in utility by a factor of 0.828 for 1 week, consistent with previous analyses (24).

Model Calibration and Validity

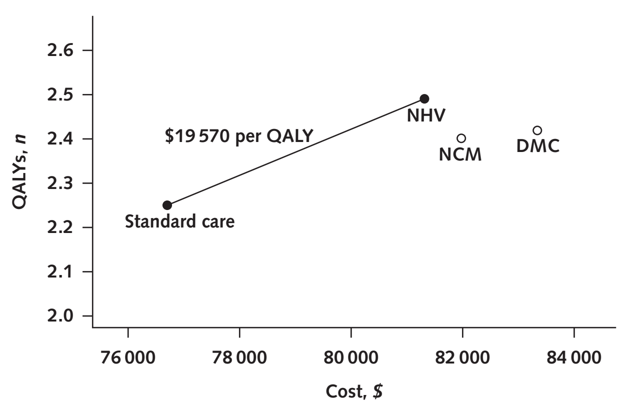
We verified that the modeled 52-week survival and readmission curves accurately reproduced the input curves (13) and validated our model in terms of mortality and rehospitalizations. We compared the simulated initial 30-day postdischarge mortality and the simulated long-term survival curve under standard care with published long-term care survival data not used in the construction or parameterization of the model. In addition, we compared the readmission rate within 30 days in standard care to previously published data.

Sensitivity and Uncertainty Analyses

We performed several 1-way and 2-way deterministic sensitivity analyses. We varied all base-case parameters (listed in Table 1) within appropriate ranges. In addition, after a systematic literature search to update the evidence base, we applied the same categorization of interventions into NHVs, NCM, or DMCs for newly identified trials and meta-analyzed the efficacy estimates from these trials with our base-case estimates (see the Supplement for methodological details). We then used the pooled estimates in a sensitivity analysis.

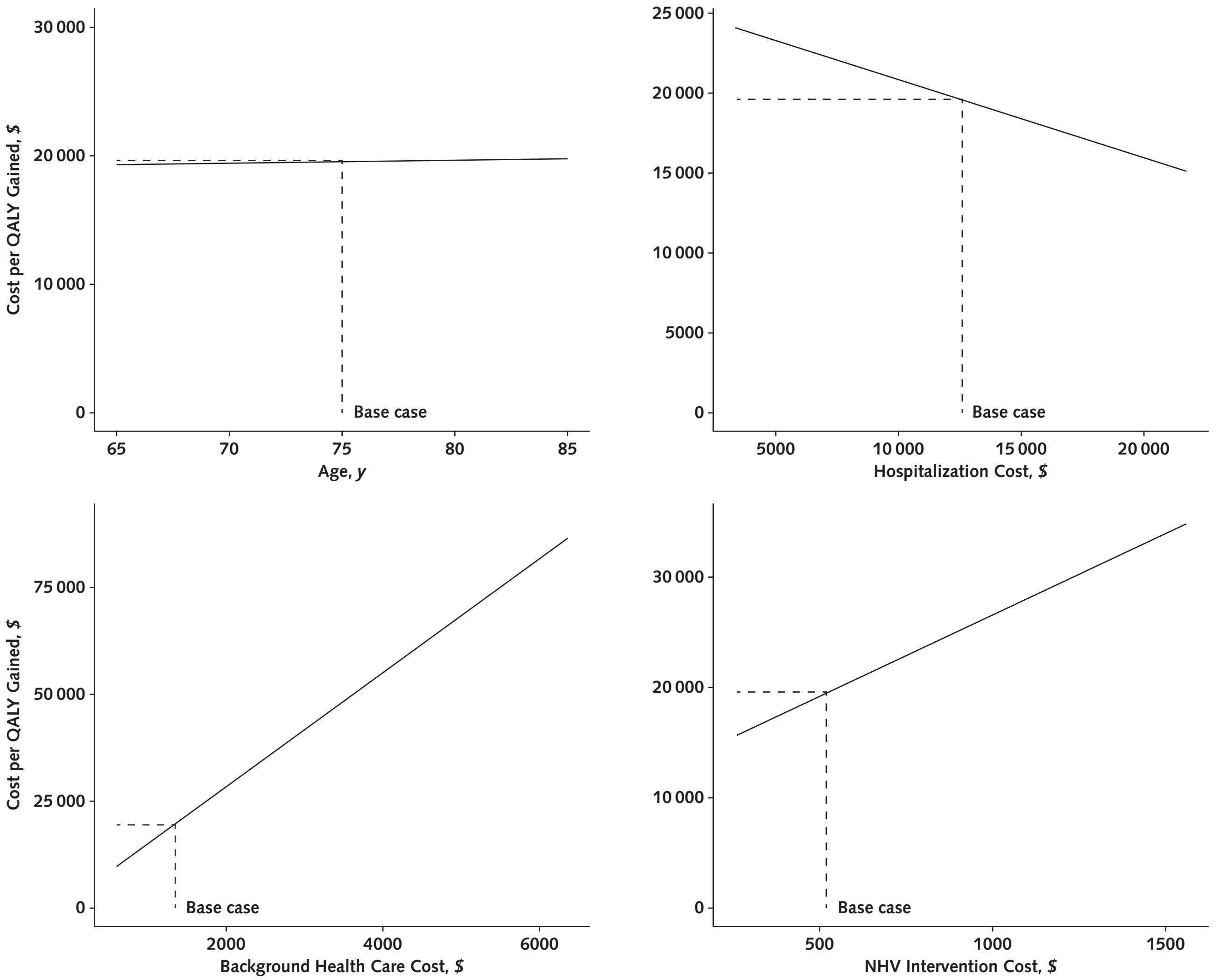
We performed 2-way sensitivity analyses of the efficacy parameters separately for each treatment by varying the value of the relative risk reduction of mortality and hospitalization within the interval 0.50 to 1.05.

Figure 2. Cost-effectiveness frontier.



The cost-effectiveness frontier is shown as a black line, and the interventions on the frontier are depicted by solid black circles (standard care and NHV). The inverse of the slope is equal to the incremental cost-effectiveness ratio. The dominated interventions (NCM and DMC) are depicted by open circles. DMC = disease management clinic; NCM = nurse case management; NHV = nurse home visit; QALY = quality-adjusted life-year.

Figure 3. One-way sensitivity analyses: the incremental cost-effectiveness ratio of NHVs compared with standard care as a function of baseline age, hospitalization cost, background heart failure health care costs, and NHV intervention cost.



NHV = nurse home visit; QALY = quality-adjusted life-year.

To assess the sensitivity of the preferred strategies, we reported which treatments maximized the net monetary benefit over this interval across 3 willingness-to-pay (WTP) thresholds per QALY gained (see the **Supplement** for details).

Because of the similarities of the interventions, mortality and readmission risks are likely to be positively correlated within and across treatments. We therefore performed a multiway sensitivity analysis, in which we assumed the effectiveness of the interventions in reducing mortality and hospitalization to be perfectly correlated, by varying the effectiveness of the interventions according to the percentage distance from equality of efficacy between standard care and all the transitional care services.

To explore the influence of model parameter uncertainty, we conducted a full probabilistic sensitivity analysis (PSA). We included all uncertain parameters and defined population distributions for them that satisfy the properties of the parameters. We drew 10 000 random samples, assuming independence of all parameters. With each of these samples, we simulated 5000 patients receiving each intervention (see the **Supplement** for a detailed description of the PSA and **Supplement Table 6**, available at Annals.org, for the parameter distributions used).

Role of the Funding Source

None of the funding sources was involved in the design, conduct, or reporting of the study.

RESULTS

Model Calibration and Validity

Modeled survival and readmission rates with standard care were consistent with both the input curves

(13) and previous large-scale epidemiologic studies (25–28) (Supplement Figure 2, available at Annals.org).

Base-Case Analysis

With standard care, simulated patients with HF discharged from the hospital at age 75 years had an average life expectancy of 2.98 years and an average of 2.91 hospitalizations during their remaining lifetime (Table 2). These numbers translated into 2.25 QALYs. We found that NHVs strictly dominated both DMCs and NCM. Compared with standard care, NHVs increased life expectancy by approximately 4 months, decreased the number of hospitalizations by 0.1 (10 readmissions per 100 patients with HF), and resulted in increases in lifetime health care costs ($4622). The expected increase in QALYs was 0.24. Cost increases were primarily attributable to increased life expectancy, leading to longer periods of HF care (approximately 92% of the increased costs were attributable to background health costs due to longer survival) (see Supplement Table 7, available at Annals.org). The increase in QALYs was driven by longer life expectancy and fewer subsequent hospitalizations. With these outcomes combined, the NHV intervention cost $19 570 per QALY gained compared with standard care (Figure 2).

Sensitivity Analyses

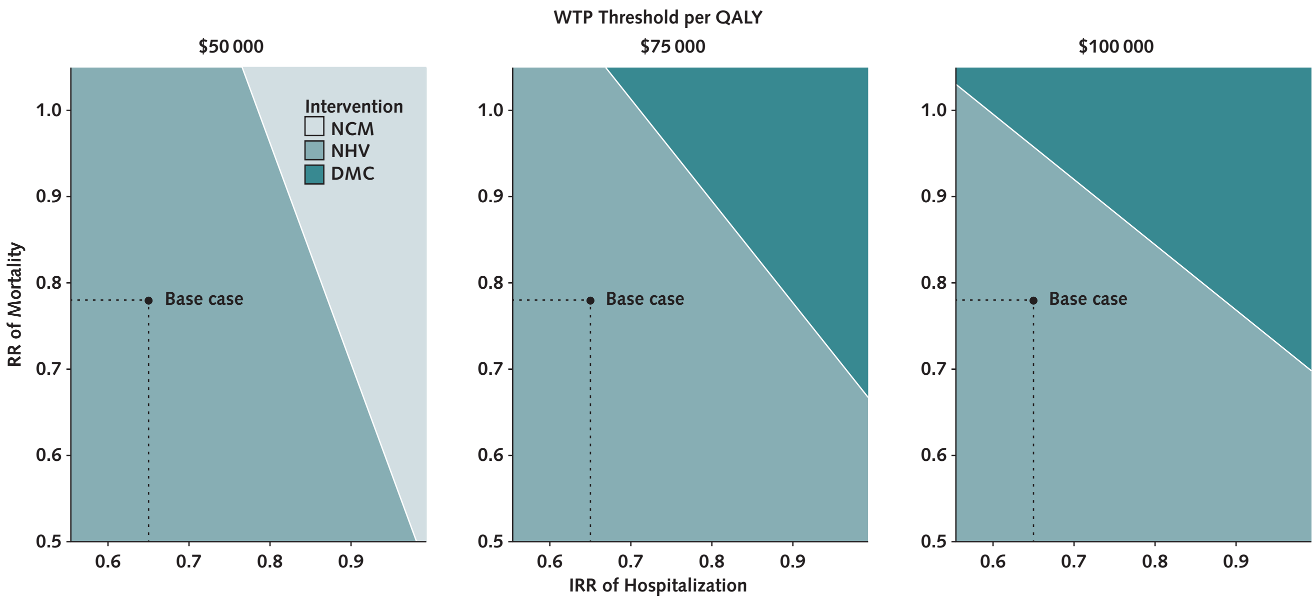
Nurse home visits remained cost-effective across a wide range of sensitivity analyses. In all the 1-way sensitivity analyses (Figure 3 and Supplement Figures 3 and 4, available at Annals.org), NHVs remained the preferred strategy among the transitional care services (assessed across 3 WTP thresholds per QALY gained, $50 000 to $100 000).

Of note, when NHV costs were 3-fold higher, or rehospitalization rates were 50% lower, the cost per QALY gained for NHVs remained below $35 000. The ICER for NHVs was virtually unchanged in a sensitivity analysis assuming no reduction in quality of life during rehospitalization.

The NHV intervention maintained its cost-effectiveness even for older patients (Figure 3, *top left*). Background health care costs may vary by health system, and we found that if background costs are 3-fold higher, NHVs cost $50 000 per QALY gained (Figure 3). The results also are largely insensitive to variations in the discount rate over relevant ranges (Supplement Figure 3).

The cost-effectiveness of NHVs depends on their ability to reduce all-cause mortality and all-cause rehospitalization rates. We varied the relative efficacy of NHVs in reducing mortality and hospitalizations from 0.50 to 1.05, and for each combination of these incident rate ratios and risk ratios, we determined which intervention was cost-effective across WTP thresholds of $50 000 to $100 000 per QALY gained (Figure 4). Nurse home visits remained cost-effective for a broad range of incident rate ratio–risk ratio combinations for mortality and readmission, which are quite stable across the WTP thresholds. When the NHV intervention does not achieve the efficacy levels that make it cost-effective, the alternative intervention preferred depends on the WTP threshold: at $50 000 per QALY gained, it is NCM; at $75 000 or $100 000 per QALY gained, it is DMCs. Similar sensitivity analyses for NCM and DMCs showed that NHVs remained preferable to

Figure 4. Two-way sensitivity analysis of NHV efficacy.



Interventions that maximize net monetary benefit across 4 WTP thresholds in a 2-way sensitivity analysis of the efficacy of NHVs. DMC = disease management clinic; IRR = incident rate ratio; NCM = nurse case management; NHV = nurse home visit; QALY = quality-adjusted life-year; RR = relative risk; WTP = willingness-to-pay.

the other 2 interventions over a broad efficacy range (Supplement Figures 5 and 6, available at Annals.org).

In our last deterministic sensitivity analysis, we made the interventions successively more and less effective, measured as the efficacy differential from standard care (see Supplement Figure 7, available at Annals.org, for details on the calculation of the efficacy differential and the result). The ICER of NHVs compared with standard care rises above $50 000 when its efficacy is 80% closer to being equal to that of standard care.

Results were similar when we used updated estimates that included results from 4 trials reported after publication of the network meta-analysis that informed our intervention efficacies (7) (Supplement).

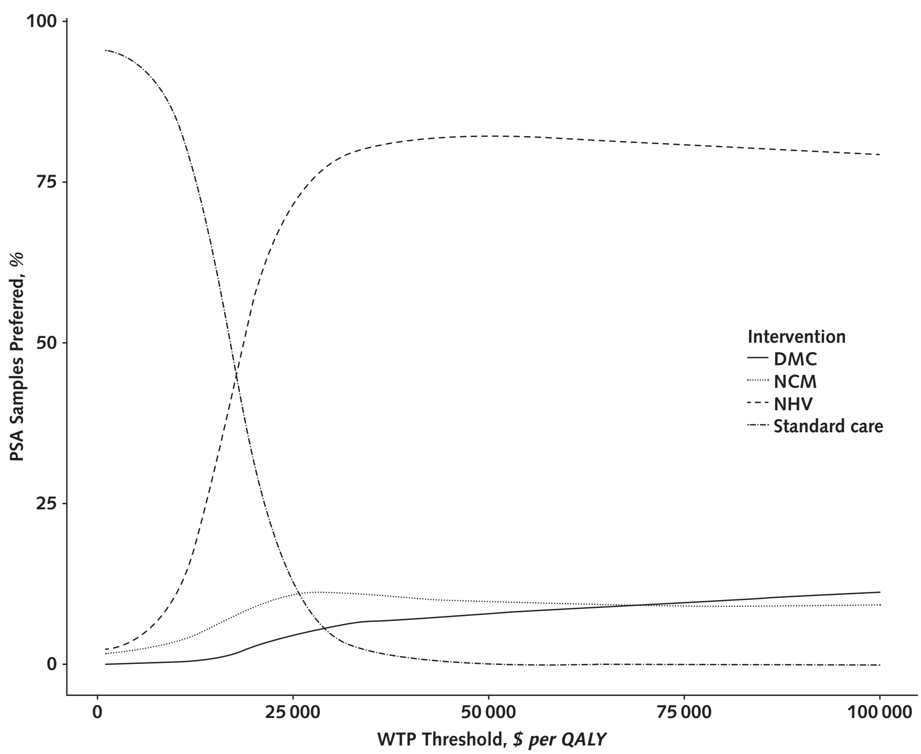
In the PSA, the cost-effectiveness acceptability curve demonstrated that the NHV intervention is most likely optimal when the WTP is above $18 000 per QALY gained and that above $68 000 per QALY gained, standard care is never the preferred intervention (Figure 5). The difference in net monetary benefit (the average incremental net monetary benefit) between the interventions and standard care increased with higher WTP thresholds (Supplement Figure 8, available at Annals.org), but between-intervention differences were not statistically significant (all $P > 0.27$). One or more transitional care services were preferred over standard care in 99.8% of 10 000 PSA samples at a WTP threshold of $50 000 per QALY gained.

DISCUSSION

Among elderly patients discharged from the hospital with a primary diagnosis of HF, implementation of a transitional care service to mitigate high early mortality and readmission risks is cost-effective at standard WTP for health. In the base case, NHVs were more effective and less costly than the other transition care interventions. However, each of the interventions resulted in important improvements in health outcomes, and the differences among the interventions were modest. Furthermore, it is highly unlikely that standard care postdischarge management is more cost-effective than any of the transitional care services we studied. Therefore, implementation of one of the transitional care services included in this analysis would be preferred to standard care.

Our work builds on previous research on the cost-effectiveness of postdischarge transitional care services for patients with HF. The network meta-analysis informing the intervention efficacy parameters of the present study found that the transitional care services explored have short-term cost savings (7). However, limiting the time horizon may overestimate the value of an intervention, because it may capture upfront cost savings or increases in QALYs that may attenuate or even reverse over a lifetime horizon. In a systematic literature search, we identified 6 economic analyses on transitional care models in patients with HF that considered long-term

Figure 5. PSA: cost-effectiveness acceptability curve.



The proportion of PSA samples in which a transition care intervention or standard care was the preferred strategy. DMC = disease management clinic; NCM = nurse case management; NHV = nurse home visit; PSA = probabilistic sensitivity analysis; QALY = quality-adjusted life-year; WTP = willingness-to-pay.

cost-effectiveness (see the **Supplement** for details on the search strategy and results). In summary, like our study, these analyses found transitional care services to be cost-effective, with ICERs ranging from $5000 to $37 000 (2018 U.S. dollars); however, these studies differ from ours in several ways: They aggregated interventions into a single composite intervention; assessed a single intervention versus standard care; or relied on cohort models with simplifications, such as capping the maximum number of readmissions and monthly cycle lengths. In comparison, our model captures for several transitional care services the excess death and readmission risks in the postdischarge period for all potential admissions during the lifetime of each of our patients, using weekly cycle lengths to adequately capture the rapid decline of the initially high risk for death and readmission (13, 29).

Despite proof of benefit for these interventions, evidence continues to show that transitional care services are underutilized. A recent study of 18 million Medicaid charges found that only 7% of eligible patients at medium to high risk for rehospitalization received transitional services in 2015 (30). Our results have important implications for decision makers in hospital administration as well as in insurance and policy settings. First, given their demonstrated efficacy and cost-effectiveness, transitional care services should become the standard of care for postdischarge management of patients with HF. Second, the increasing reimbursement restrictions and regulations affecting HF readmissions, such as the Centers for Medicare & Medicaid Services Hospital Readmission Reduction Program, make this work particularly informative to decision makers. For example, hospital system administrators may use this work to conclude that because of the rural population they serve, an NHV intervention would not be feasible; however, the same administration may determine that a DMC is cost-effective for its WTP threshold, patient base, and hospital system.

The present study also demonstrates implications for future research. Descriptions and definitions of implementation services in the interventional trials informing the efficacy parameters in our analysis often lacked detail, rendering cross-trial comparisons and standardization of interventions challenging. To address these challenges, authors of implementation trials should consider reporting their work in the context of a validated framework, such as RE-AIM (Reach, Effectiveness, Adoption, Implementation, and Maintenance) or CFIR (Consolidated Framework for Implementation Research) (31, 32). Lastly, evidence for subgroups of patients with HF (such as those with milder vs. advanced disease) is lacking. A need exists for high-quality studies assessing the short- and long-term efficacy in diverse HF populations and reporting the implemented care services in a modular way to facilitate comparisons across different interventions.

A limitation of our study was the heterogeneity in design and cost within individual transitional care services published in the current literature. We addressed this limitation by making conservative assumptions about interventions, costs, and populations, as well as by examining scenarios with efficacy effect sizes at the least effective end of the 95% CI. In addition, our results apply to populations of elderly patients after HF hospitalization. These patients have a high risk for death; therefore, our findings may not be generalizable to other HF populations, such as younger patients with mild HF at lower risk for death. We were unable to model subgroups of patients with HF with preserved versus reduced ejection fraction, because the randomized controlled trials providing efficacy data mostly included patients with reduced ejection fraction and did not provide results stratified by ejection fraction categories. However, the population explored in this analysis represents about half the HF population, those who are among the most costly patients with HF (33). In addition, standard care may have been evolving during the trials assessed in this analysis, which might diminish the cost-effectiveness observed here; however, this evolution has not translated into a slowing of rehospitalization rates (34).

For most patients with HF, implementing transitional care services after hospital discharge seems to be cost-effective compared with standard care; the NHV intervention costs $19 570 per QALY gained.

Although NHVs are preferred in many situations, absolute differences among the transitional care services we considered were relatively small. One of the transitional care services in this analysis should become part of standard care for postdischarge management of patients with HF, but the best implementation choice among NHVs, NCM, and DMCs may depend on setting-specific features.

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Reproducible Research Statement: *Study protocol:* Not applicable. *Statistical code and data set:* Available on the Open Science Framework (Center for Open Science) Web site (https://osf.io/pngc5/?view_only=6e6f52ef2f93486d99c343dd68a9c1f1).

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