



## More for Less in Long-Term Home Care Services: Titrating Payment to Risk, Value and Effectiveness

This brief describes a new budgeting approach for allocating home care services for frail elderly people developed by William Weissert, a grantee of the Home Care Research Initiative (HCRI). The services discussed are personal care, nursing and other services delivered in the home to chronically ill, frail, elderly individuals who are likely to receive many more unskilled than skilled services and are not typically in need of rehabilitative, restorative or other post-acute care.

### Proposal

- Home care payment policy should be reformed. It should be designed to align incentives for appropriate resource allocation among home care clients with efficiency and outcome goals.
- Patient care budgets should be titrated to an individual home care client's risks of adverse outcome, the effectiveness of home care in mitigating each adverse outcome risk, and the value of avoiding those outcomes.
- Most care should be provided where it will do the most good and less where it is ineffective and potentially wasteful.

The aim of this new budgeting approach is to produce better and more effective care at lower overall costs despite potentially increasing the total number of clients served.

### The Problem

Three decades of randomized controlled and comparison group studies have shown that when access to home care is expanded by offering free Medicare or Medicaid-subsidized services, most clients who then seek home care are in fact at quite low risk of entering a nursing home.<sup>1,2</sup> This can be clearly seen from the results of control groups that did not receive the expanded home care. Among these groups, at most a quarter of clients entered nursing homes, demonstrating that three-quarters of patients—who were just like those who received home care—stayed out of nursing homes without it.<sup>3</sup>

- 1 Weissert, W.G., Cready, C and Pawelak, J. (1988). "The past and future of home and community based long-term care." *Milbank Quarterly*, 66(2): 309-388.
- 2 Weissert, W.G. and Hedrick, S.C. (1994). "Lessons learned from research on the effects of community based long-term care." *JAGS*, 42: 348-353.
- 3 Hedrick, S.C. Rothman, M.L., Chapko, M., Ehreth, J.L., Diehr, P., Inui, T.S., Connis, Rt., Grover, P.L., and Kelly, J. R. (1993). "Summary and discussion of methods and results of the adult day health care evaluation." *Medical Care*, 31: SS94-SS103.

The problem, according to Weissert, is client selection, or targeting, and another, well-known principle of health care provision—complementarity. That is, when ambulatory services are offered as a substitute for institutional care, some clients do indeed use it as a substitute for institutional care. However, others—who would not have used institutional care—now ask for the ambulatory service, in this case, home care. Thus, total users of health care, both institutional and noninstitutional, increase and costs rise.<sup>4,5</sup>

*The tendency to serve clients at low risk of entering a nursing home means that if the care is designed (and budgeted) principally to keep patients out of such institutions, many clients who use home care will not benefit from it.* Patients at low risk of nursing home entry may have other needs that home care might serve, but only if their low risk of nursing home entry is acknowledged so home care can focus on other needs and budget accordingly.

Three-quarters of home care clients will not enter a nursing home whether they get home care or not. Nevertheless, according to Weissert, many factors promote denial of this fact.

- The federal government requires states to attest that all their clients are at high risk of entering a nursing home. Indeed the law says that Medicaid may not pay for them unless “but for home care” they would enter a nursing home.

4 Weissert, W.G., Cready, C and Pawelak, J. (1988). “The past and future of home and community based long-term care.” *Milbank Quarterly*, 66(2): 309-388.

5 Weissert, W.G. and Hedrick, S.C. (1994). “Lessons learned from research on the effects of community based long-term care.” *JAGS*, 42: 348-353.

6 Kemper, P. (1988). “The evaluation of the national long-term care channeling demonstration: 10. Overview of the findings.” *Health Services Research*, 23: 161-174.

- Congress fails to change the law to recognize that for most patients, home care is better suited to serving needs other than nursing home prevention, because perpetuating this myth is one way of keeping the total number of those eligible for home care under some control.
- Likewise, some state officials want home care not for its intrinsic value, but because they have been promised that it will save them money by reducing demand for nursing home beds.
- Patients like home care, and they themselves often believe it is helping them stay out of a nursing home. Furthermore, to the extent that any savings are generated, analysis shows that much of it goes to the patients and their families rather than to Medicaid or other government funding sources.<sup>6</sup>

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## Why It Matters

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Since public policy is rational only if viewed from the multitude of perspectives of all who participate in it, there is some temptation to say “so what?” Who cares if home care does not achieve policy goals so long as some people keep coming to it? Weissert points out, though, that the stakes are high for several reasons:

- First and foremost, home care has the potential to produce more benefits, but does not do so. This may be because it operates under false assumptions about its purpose for a given set of clients. If the first step toward solving a problem is recognizing its existence, it seems to follow that it is just as important to recognize the right problem rather than the wrong one. For patients at low risk of nursing home entry, working to keep them out of nursing homes means that resources are being directed at a problem that does not really exist. The opportunity cost may be failure to work on problems that do exist and could be solved or at least mitigated.

- A second consequence of poor management of home care’s resource allocation is that it substantially adds to total program costs – an important concern considering that millions of individuals go entirely without Medicaid coverage while states fret over the rising share of their budgets which are consumed by Medicaid in general and Medicaid long-term care costs in particular. If patients could be served more efficiently, Medicaid funds saved could be spent on others, or on other services demanding broader coverage—from mental health and substance abuse prevention and treatment services to contraceptive services, dental care and prescription drugs.
- A third consequence is that great efforts are made—often unsuccessfully—to screen applicants to find those at high risk of nursing home use. Could it be better perhaps to skip the screening and meet the other needs of home care clients? The following approach essentially answers that question with a “yes.”

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## Proposed Reform

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Weissert suggests that what is needed is *an alternative payment system for home care intended to better allocate resources so that waste is minimized and outcome benefits are maximized*. An additional consequence may be that a larger total number of home care clients can be served without additional expenditures over current levels of aggregate home care spending.

Rather than serve everyone as if they all faced the same expensive threats of nursing home or hospital entry, Weissert proposes that home care be adjusted to actual risks faced. He calls it titrating, as when an intravenous drug is adjusted to a patient’s disease severity, age and bodyweight. According to Weissert, the amount of home care should be titrated to the risks

the home care client faces – more care for those at high risk, less for those at low risk. Furthermore, he proposes to adjust the amount of care so that it also reflects the value of the outcomes to be achieved. The amount would be further adjusted by how effective home care is in achieving each outcome.

**The result is a payment formula for home care that emphasizes Effectiveness, Risk, and Value, or ERV. For example:** An elderly woman at high risk of hospitalization and loss of one of her ADLs would receive a high budget for home care under our formula because hospitalization is an expensive adverse outcome and therefore highly valued. If home care is effective in preventing hospitalization and loss of physical function, then this individual would be likely to receive a high home care budget: high E (effectiveness of home care in mitigating the risks she faces), high R (if she is at high risk), and high V (because hospitalization is an expensive adverse outcome and likewise, preventing loss of physical function might be highly valued, an issue which is explored more fully below).

**Conversely:** An individual at low risk of hospitalization, low risk of nursing home use, low risk of death, low risk of functional decline, and low risk of loss of life satisfaction would receive a low home care budget since her risk, R, is low even if effectiveness of home care in mitigating those risks, E, is high and the risks are highly valued, V. That is, payment is based upon the product of ERV (effectiveness, risks and value).

In this way, care is titrated to risks and value of those risks, and home care programs have an important incentive to achieve high effectiveness since payment rises with effectiveness of home care in mitigating risks.

**Calculating the effectiveness, risk, and value of home care** To calculate a well-titrated budget for home care patients, good information is needed about each component of the calculation. Initially, setting the value portion of these budgets must be relatively arbitrary. Similarly, good effectiveness data are not yet available. Estimating the risks, on the other hand, is more straightforward. One simply statistically profiles the factors that are associated with each of the adverse outcomes for which we plan to budget. (That is, from a home care-eligible population's experience, those who had the adverse outcome are statistically compared with those who did not, to see how much each difference between the two groups increases the probability of the adverse outcome occurring.) However, problems remain.

### For which outcomes do we calculate the risk?

The outcomes in this study included only death, hospitalization, nursing home admission, and decline in physical function. Ideally, all risks for all types of outcomes likely to be suffered by home care patients would be included in the calculation: Loss of personal control, loss of privacy, etc.. Positive outcomes could also be included, such as reduced anxiety, freedom from worry, reduced caregiver burden and reduced caregiver stress, and any other outcome for which home care might be effective. But coming up with risk estimates requires data, and data to measure these more subtle outcomes are simply not available because they have not been collected.

7 Chernew, M.E., Weissert, W.G., and Hirth, R.A. (2001). "Heterogeneity of risk in a managed home health care population." *Medical Care*. Accepted for publication.

8 Miller, E.A. and Weissert, W.G., "Incidence of four adverse outcomes in the elderly population: Implications for long-term care policy and research." Submitted to *Research on Aging*, Spring 2000.

9 Miller, E.A. and Weissert, W.G. (Sept. 2000) "Predicting elderly people's risk for nursing home placement, hospitalization, functional impairment and mortality: A comparative review and analysis." *Medical Care Research and Review*. 57(3): 259-297.

### Major risk factors for home care outcomes

- Prior hospitalization
- Age
- Dependencies
- Living alone
- Nonwhite race
- Lack of living spouse

So, for the study reported here, the range of outcomes used was quite limited. To illustrate the approach (and perhaps encourage collection of better outcome data), just four outcomes were used, although more would

have been preferred. The risk estimation regression analysis findings, which use five years of panel data from the Arizona Long-Term Care System (ALTCS), are available elsewhere.<sup>7</sup>

### What do we know about the effectiveness of home care services?

As with outcome data, effectiveness data for home care are hard to come by. The literature was scoured for studies that measured the ability of home care services to achieve specific outcomes (of various types) and used those results. When there was a distribution of effectiveness available, higher estimates were typically chosen in favor of lower ones, because of the belief that if home care were better budgeted and managed, it would be more effective.<sup>8,9</sup> The author preferred to err high in estimating budgets.

### How valuable are home care services?

Finally, the biggest challenge was estimating the value of the outcomes achieved by home care services. For hospitalization and nursing home use, the costs of outcomes are relatively easy to estimate from national cost statistics. But how should a value be set on things like loss of function in one activity of daily living? Here Weissert relied on estimates of the value of a quality adjusted life year, or QALY. He synthesized estimates from many U.S. and international studies, sorting by standard ways of valuing QALYs (human

capital versus occupational and nonoccupational risk assumption payments). A detailed presentation of the method of valuation is published elsewhere.<sup>10</sup> More work is clearly needed on this topic, but his method provides a starting point that is intended as an illustration of the approach, rather than as a hard estimate.

Taken together, these valuations allowed the production of a risk profile for the four risks for each patient in the ALTCS sample, which had over 50,000 assessments of more than 25,000 patients. We estimated each patient's risk of each of four adverse outcomes, set an estimate of home care's effectiveness in avoiding the outcome, and placed a value on each outcome. Then the budgets for each risk were summed across all the patient's risks and a budget for each patient was obtained.

### Does current spending match patients' risks?

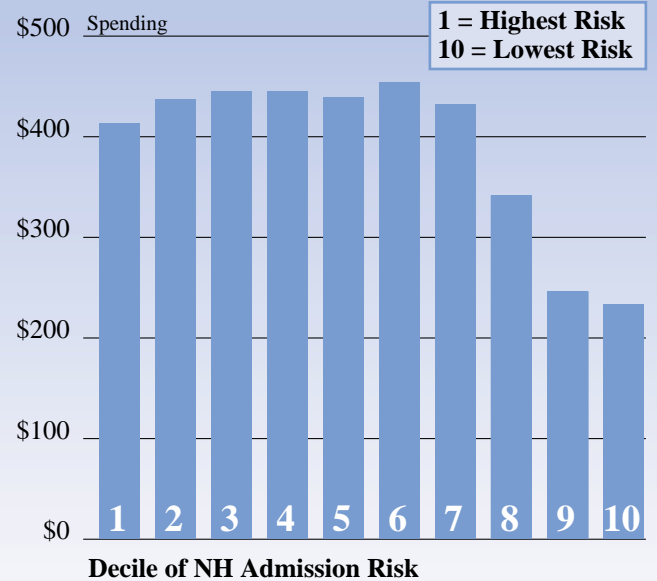
Using the proposed method, Weissert compared actual spending in the ALTCS program with each patient's calculated risks (see figure 1). Little systematic relationship was found between how much care the patient used and how much risk they faced, illustrating exactly what Weissert thinks is wrong with home care and why a new approach is so badly needed. Because effectiveness, risk and value are not taken into account in setting home care budgets, the amount spent on a given patient bears little relationship to how much value can be recouped for that patient by home care. The sickest patients—those at greatest risk—may be getting too little care, while low risk patients may be getting too much. The estimates showed that low-risk patients may get twice as much care as their risks would suggest they should get, while high risk patients got perhaps half as much as their risks would suggest.<sup>11</sup>

### How would the budget work?

Case managers would be given three pieces of infor-

**Figure 1:**

### Per Capita Spending by Decile of Nursing Home Admission Risk



mation on each patient: Assessment results; a risk profile for each of several outcomes; and a budget for each risk, summed to produce a total monthly budget for each patient. The risk profile would give case managers a clear set of goals for patients: Mitigating high-risk outcomes. The budgets would be targets only, with discretion to spend more or less on a given patient, but variations from the targets would require explanation and in some cases, authorization.

Training for case managers would be an important component of the program, and would focus on the kinds of home care that have proven effective for each outcome, and the extent to which home care is effective for a given risk. In the short run this method would produce two major benefits: reallocation of

10 Hirth, R.A., Chernew, M.E., Miller, E., Fendrick, A.M., and Weissert, W.G. (2000). "Willingness to pay for a Quality-adjusted Life Year: In search of a standard." *Medical Decision Making*, 20, 332-342.

11 Weissert, W.G., Chernew, M., and Hirth, R. (2001) "Beyond managed long-term care: Paying for home care based upon risks of adverse outcomes." *Health Affairs*, 20(3):172-180.

**Table 1: Illustrative ERV Budget for a Patient Facing Several Risks**

Characteristics		Outcome	Monthly Risk	Monthly Target Budget
ADLs	5	Death	11.73%	\$119
Married	Married	Functional Decline	4.40%	\$90
Age	78	Hospitalization	1.74%	\$100
Sex	Female	Nursing home admission	32.88%	\$1,537
<b>Total</b>				<b>\$1,846</b>

resources from low-risk to high-risk patients, and more focus on specific risks for specific patients. In the longer term, the method should produce better outcomes and no increase in total spending.

## Conclusions

If home care monthly budgets were adjusted for the patient's risk, effectiveness and value, case managers would know what risks were paramount for a patient, and which patients were at highest risks. Moreover, much of the pressure currently placed on screening would be relaxed because individuals who are wrongly judged to need home care would not automatically become expensive mistakes—as they do now. Instead, their home care could be kept at low cost to

suit their low risk. As the program gains experience with individual patients or patients' health status change, budgets could be adjusted appropriately.

The consequence should be that more patients are served, more effectively and more efficiently, with a substantially improved ability to correct and make adjustments in response to unavoidable patient selection errors. Care would be guided by the patient's risk profile, and allocations among patients would be more equitable in the true sense of the word: Allocations would reflect risk. Home care could be like other venues in the health care system—where we routinely expect dosage of care to be determined not by the myth of meeting some threshold, but by calculated estimation of risk and the potential to benefit, so that the care is worth the cost.

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The Home Care Research Initiative, a program of The Robert Wood Johnson Foundation, was established to support research and analysis that will improve the knowledge base underlying home care policy and practice. It is based at the Center for Home Care Policy and Research at the Visiting Nurse Service of NY.

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