

---

# Linked Data Analysis of Dually Eligible Beneficiaries in New England

Paul Saucier, M.A., Lee Bezanson, R.N., J.D., Maureen Booth, M.R.P., Stuart Bratesman, Jr., M.P.P., Julie T. Fralich, M.B.A., Daniel Gildea, M.S., Elaina K. Goldstein, J.D., M.P.A., Darlene O'Connor, Ph.D., Christopher V. Perrone, M.P.P., and Katharine K. Willrich, M.S.

---

*Analysis of linked Medicare/Medicaid data files from four New England States (Connecticut, Maine, Massachusetts, and New Hampshire) confirm that dually eligible beneficiaries used a disproportionate amount of both Medicare and Medicaid resources in 1995, driven largely by the significant subset of the population that used institutional long-term care (LTC). If States and the Federal Government are successful in developing approaches to dually eligible beneficiaries that reduce the use of institutional LTC, overall public costs per person could decline while Federal costs remained constant, and beneficiaries could have a greater selection of community-based options and experience greater satisfaction.*

## **NEW ENGLAND STATES CONSORTIUM INITIATIVE**

In 1995 the commissioners of health and social services from the six New England States (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and

Vermont) met to discuss proposed legislative changes in Washington. Congress was completing work on a Federal budget that would combine significant limits on future growth of the Medicaid budget with greatly expanded State flexibility to administer the program. Should the proposed budget become law, States would need to identify and address areas where greater efficiency could be achieved. The commissioners quickly decided to focus on dually eligible beneficiaries. Care for this group was thought to be significantly fragmented and rife with perverse incentives to use institutional services, making the group a logical target for improved services. Furthermore, dually eligible beneficiaries represented the single most expensive subpopulation in the Medicaid program. The commissioners decided to focus their attention on dually eligible beneficiaries and to share their research, policy analysis, and program development resources. They formalized their relationship with a memorandum of understanding creating the New England States Consortium in January 1997.

When planning began on these initiatives, it quickly became clear that the States would be seriously hampered in their analyses if only Medicaid could be considered. In order to build new service delivery systems that included both Medicaid and Medicare, the New England States needed Medicare data. To analyze the relationship between programs at the care-delivery level, the States would need to know how Medicare and Medicaid services interacted

---

Paul Saucier, Maureen Booth, Stuart Bratesman, Jr., and Julie Fralich are with the Edmund S. Muskie School of Public Service at the University of Southern Maine. Lee Bezanson is with the New Hampshire Department of Health and Human Services. Daniel Gildea is with JEN Associates. Elaina Goldstein is a consultant to the Rhode Island Department of Human Services. Darlene O'Connor is with the Connecticut Department of Social Services. Christopher Perrone and Katharine Willrich are with the Massachusetts Division of Medical Assistance. This article was supported in part by The Robert Wood Johnson Foundation. The opinions expressed are those of the authors and do not necessarily reflect the views of the University of Southern Maine, the New Hampshire Department of Health and Human Services, JEN Associates, the Rhode Island Department of Human Services, the Connecticut Department of Social Services, the Massachusetts Division of Medical Assistance, the Robert Wood Johnson Foundation (RWJF), or the Health Care Financing Administration (HCFA).

at the beneficiary level. Thus, the effort to create person-level linked Medicare-Medicaid files was launched, and to date four New England States (Connecticut, Maine, Massachusetts, and New Hampshire) have at least 2 years' worth of linked data. As of this writing, the remaining two States (Rhode Island and Vermont) expect to complete matches soon. These linked files have been created with support from HCFA and RWJF.<sup>1</sup>

The States have so far used linked data primarily for actuarial analyses, but as we discuss later, many other promising uses of the data are emerging. In this article we offer some descriptive data compiled from completed links of 1995 data in Connecticut, Maine, Massachusetts, and New Hampshire. We then discuss the significance of this new data resource for States and HCFA, outlining how the New England States have used and plan to use it to:

- Support the development of programs that provide dually eligible individuals with the appropriate care at the appropriate time.
- Prevent the progression of disability or disease.
- Manage overall public (Medicare and Medicaid) costs.
- Make the lines between programs invisible to beneficiaries.

## **APPROACH TO THE DATA**

### **Sources**

The data sources used by the New England States Consortium were the enrollment records and administrative records for all payments for services in the Medicaid and Medicare programs. Medicaid data for

elderly and disabled adult beneficiaries were supplied by each of the individual States. (Data for Aid to Families with Dependent Children beneficiaries and children with disabilities were excluded.) The Medicare data were provided by HCFA on an individual State basis, using beneficiary address information to identify State residents. The Medicare data were in a standard format for all of the States. Both Medicaid and Medicare provided person-level enrollment records detailing personal demographics, the dates of eligibility, and reasons for eligibility. Both programs also supplied claims-level files that documented payments to providers for medical services and products.

### **Approach**

The linkages between Medicaid and Medicare program data were carefully implemented State by State to ensure the most accurate possible identification of dually eligible beneficiaries. All available Medicaid and Medicare identifiers were used to effect a joining of the two systems. The result of the linkage process was the assignment of a single standardized identifier for all dually eligible individuals and the creation of a cross-walk between all program identifiers. The data presented here were aggregated from the four State files.

To identify dually eligible beneficiaries, an operational definition had to be developed. As used in this analysis, a dually eligible person is one who is eligible for and enrolled in both the Medicaid and Medicare programs concurrently. Because eligibility for Medicaid and Medicare is frequently determined on a monthly basis and varies over time for individuals, identification of dually eligible individuals is based on an indication of a simultaneous, positive Medicaid and Medicare enrollment in the same month, as seen independently in the administrative eligibility data from the two programs.

<sup>1</sup> Medicare data were supplied by HCFA. Medicaid data were supplied by the Connecticut Department of Social Services, Maine Department of Human Services, Massachusetts Division of Medical Assistance, and New Hampshire Department of Health and Human Services.

The total number of months of dual eligibility was divided by 12 and expressed as full-year equivalent beneficiaries.

The institutional and community LTC status of the dually eligible population was an essential variable in the population analyses. To identify institutionalized beneficiaries, two different approaches were used. The first approach was based on reviews of claims submitted by LTC providers. If the number of calendar days of institutional LTC provided to an individual in a month exceeded a threshold, the individual was considered to have a positive institutional status in the month. The second approach was based on a review of monthly eligibility status to detect categories of aid that identify nursing home residency.<sup>2</sup>

To identify beneficiaries who qualified clinically for nursing home services but were served in the community, a similar algorithm was applied. Beneficiaries were grouped in the elderly home and community-based services waiver (EHCBSW) category if their files carried that eligibility status in a month or if they received a threshold amount of EHCBSW services in a month.

## Limitations

The data presented here are aggregated from four individual State analytic files constructed primarily to examine the financial relationship between Medicaid and Medicare for dually eligible beneficiaries. Because the files were developed originally to support financial analyses, they have lim-

ited use in delivery-system profiling and quality studies, but the richness of the source data is sufficient to create additional files designed for those purposes. Although the four individual files are very similar, they do reflect State Medicaid program variation and the varying needs of policymakers across the four States. For example, in developing a definition for institutional services, Massachusetts included chronic-disease hospitals, a service that does not exist in the other three States.

It is estimated that approximately 98 percent of each State's dually eligible population was successfully identified, leaving 2 percent of dually eligible beneficiaries who went undetected. The 2 percent are Medicaid beneficiaries for whom Medicare eligibility was not indicated in the Medicare data, most probably because the Medicare files indicate a different State of residence. For example, a dually eligible beneficiary who spent part of the year in Connecticut and part of the year in Florida may have Florida listed as the State of residence in HCFA's Medicare file. As a result, that beneficiary's Medicare record would not be included in the Medicare files received and analyzed for the State of Connecticut.

Although the intent was to define dually eligible beneficiaries as those with full Medicaid and Medicare benefits in any given month, it is possible that a small number of Qualified Medicare Beneficiary (QMB)-only and Special Low-Income Medicare Beneficiary (SLMB)-only individuals have been captured, depending on the structure and coding standards in each State's Medicaid eligibility records. (By QMB-only and SLMB-only, we mean individuals who qualify for Medicaid assistance that is limited to certain Medicare cost-sharing requirements.) In particular, more examination is needed regarding the transition of these individuals to nursing facilities,

<sup>2</sup> The specific needs of policymakers in each of the four States resulted in varying definitions of institutional LTC. In Massachusetts institutional LTC is defined to include nursing facilities, intermediate care facilities for the mentally retarded, and chronic-disease hospitals. In the other three States (Connecticut, Maine, and New Hampshire), institutional LTC is defined to include nursing facilities only. In Massachusetts and New Hampshire, a threshold of 15 days of service in a given month was used. In Maine the threshold was any nursing-facility eligibility or claim in a given month. In Connecticut beneficiaries in institutional LTC were identified by monthly eligibility status.

where many spend down their assets and income and become eligible for full Medicaid coverage. It is unclear whether States consistently recode such individuals as they make the transition from one eligibility category to the other. This is an area of great policy interest to States, because QMB-only and SLMB-only beneficiaries are thought to be likely targets for efforts to prevent nursing home admissions.

Dually eligible beneficiary months in Medicare health maintenance organizations (HMOs) were excluded from the analysis because Medicare claims are not available for those months. Counting months of eligibility with no corresponding Medicare claims would artificially dilute the per person per month (PPPM) calculations. The small number of beneficiaries affected did not justify developing proxy Medicare claims. Maine and New Hampshire had no dually eligible beneficiaries enrolled in Medicare HMOs, and Connecticut had about 350. Massachusetts had approximately 5,000, representing less than 4 percent of the State's dually eligible population.

Consistent with other studies using claims data, these expenditures are not adjusted to reflect spending not tied to provider claims, such as Medicaid buy-in of Medicare Part B premiums, or to reflect financial adjustments that are not reflected in the claims data.

## **DUALLY ELIGIBLE BENEFICIARIES IN FOUR STATES**

### **Overview of Elderly and Disabled Combined**

In 1995 just under 2 million elderly and adult disabled people in Connecticut, Maine, Massachusetts, and New Hampshire were covered by Medicare, Medicaid, or both

programs.<sup>3</sup> Total Medicare and Medicaid spending for this group was just under \$13.8 billion. More than 1.5 million were elderly and the remainder (nearly 315,000) were adults with disabilities who were 18-64 years of age.

In terms of program eligibility, the largest subset of this group was Medicare-only beneficiaries, comprising 79 percent, or just under 1.5 million beneficiaries. Not surprisingly, this subset accounted for the largest single portion of public spending, with just over \$6.3 billion in expenditures, or 46 percent of the total (Figure 1). By contrast, the subset of dually eligible beneficiaries comprised only 13 percent of beneficiaries but accounted for nearly as much as the Medicare-only group in expenditures: \$5.7 billion, or 41 percent of the total. Medicaid-only beneficiaries represented the smallest subset both in terms of people and expenditures.

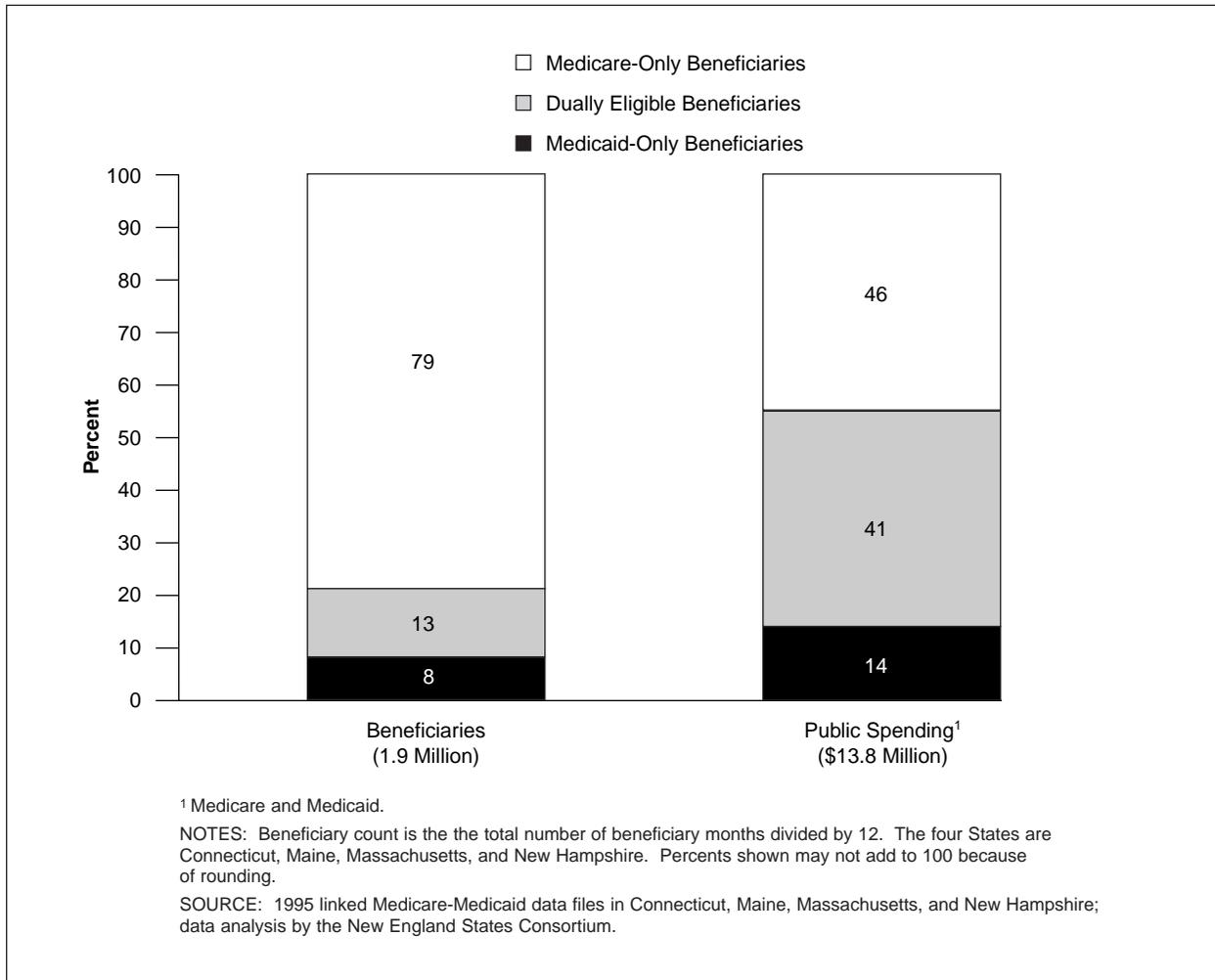
When all elderly beneficiaries (of Medicare, Medicaid, or both) and all adults with disabilities (of Medicare, Medicaid, or both) were analyzed separately, the same general pattern as already presented held for elderly beneficiaries, but a very different picture emerged for beneficiaries with disabilities (Figure 2).

Because a significantly smaller percentage of disabled beneficiaries under 65 years of age have Medicare coverage, Medicaid plays a more prominent role as a source of coverage for this group. As would be expected, the mix of Medicaid and Medicare spending also varied significantly between elderly beneficiaries and those with disabilities. Among all elderly beneficiaries (of Medicare, Medicaid, or both), 71 percent of expenditures were paid for by Medicare, and 29 percent were

<sup>3</sup> For the purposes of our analysis, disabled is defined as being under 65 years of age and receiving (1) Medicaid under the blind or disabled category of assistance or (2) Medicare.

Figure 1

Coverage Category Compared With Combined Medicare and Medicaid Spending for All Elderly and Disabled Beneficiaries in Four States: 1995



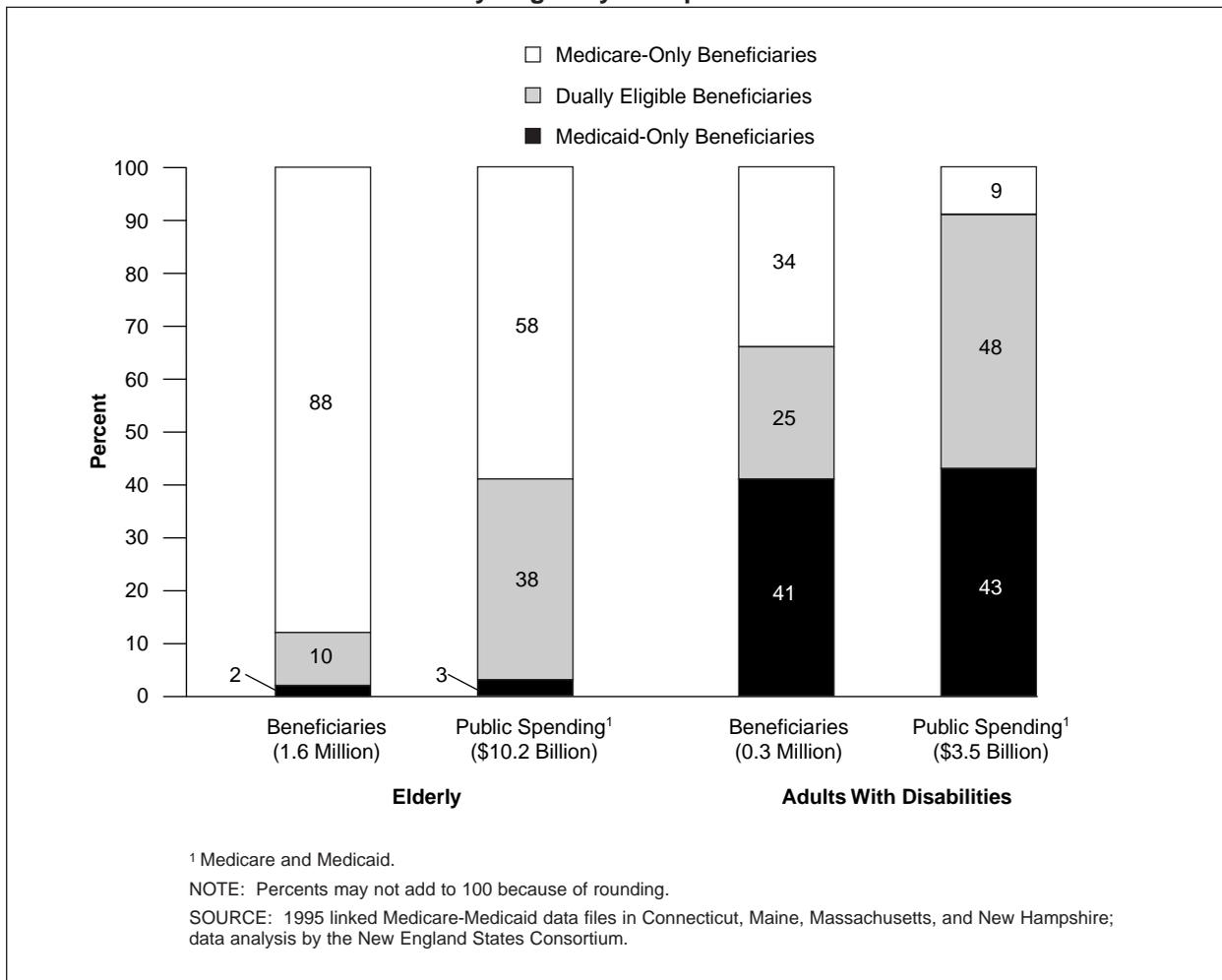
paid for by Medicaid, reflecting the nearly universal Medicare coverage of elderly people. For those with disabilities, the relationship was reversed: more than three-quarters (77 percent) of the spending was by Medicaid and just under one-quarter was by Medicare.

More investigation is needed regarding the unique service patterns of adults with disabilities, but on the surface the difference appears to be explained largely by differences in Medicare eligibility rules. Elderly people generally qualify for Medicare upon reaching age 65, whereas younger adults must first be determined to

be disabled and are then subject to a 24-month waiting period before Medicare benefits begin. As a result of less Medicare coverage for adults with disabilities under age 65 than for elderly people, Medicaid expenditures comprise a much greater portion of public expenditures for the group under age 65.

The differences in Medicare coverage also explain why it can be so difficult for Federal and State policymakers to view dually eligible populations the same way. Referring again to Figure 2, 10 percent of all elderly beneficiaries are dually eligible and 2 percent have Medicaid coverage only.

**Figure 2**  
**Coverage Category Compared With Combined Medicare and Medicaid Spending,**  
**by Eligibility Group: 1995**



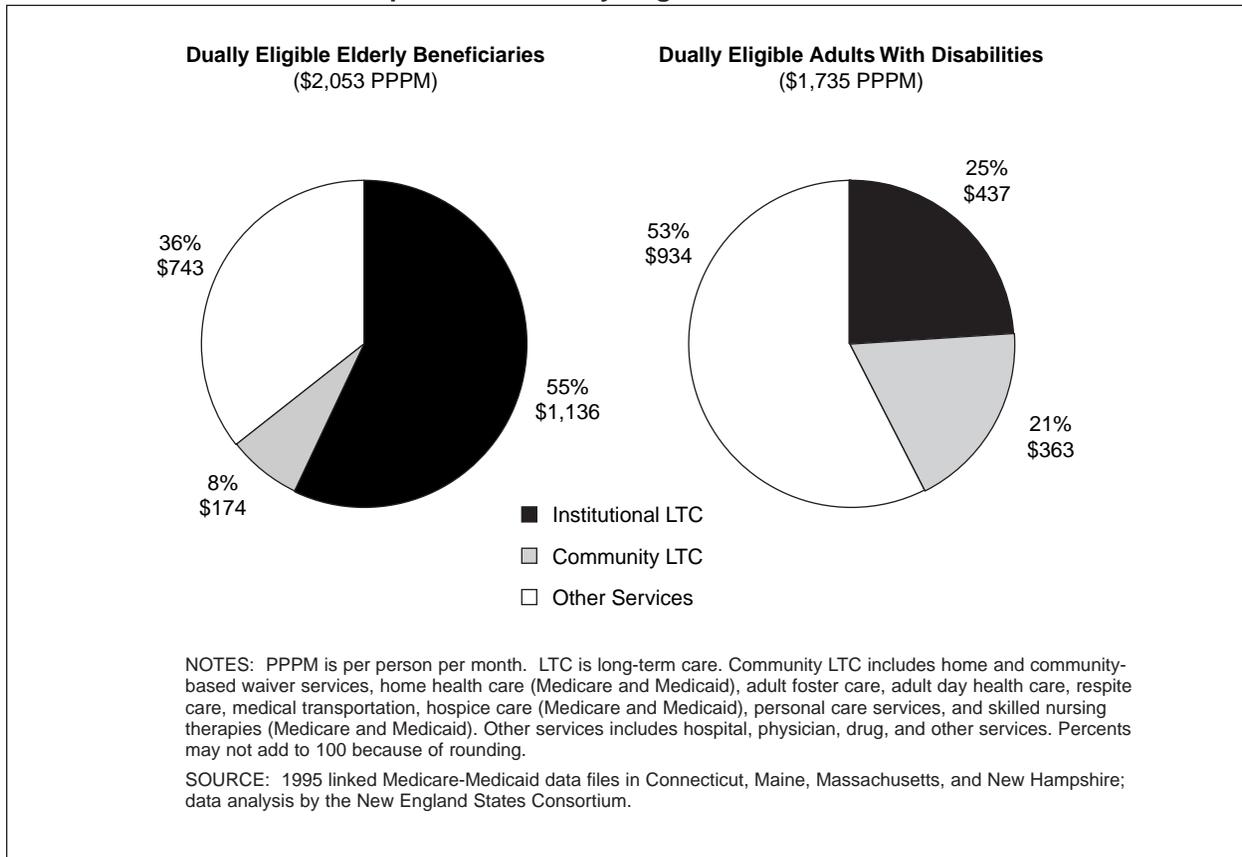
The remaining 88 percent have Medicare coverage only. Although the States cover 12 percent of elderly beneficiaries, approximately 83 percent of those with State coverage are dually eligible, and therefore Medicaid programs must address Medicare issues when designing programs for elderly beneficiaries. The Federal Government, on the other hand, covers 98 percent (Medicare-only plus those who are dually eligible) of all elderly beneficiaries. From the Federal perspective, only about 10 percent of elderly Medicare beneficiaries are dually eligible. Figure 2 also shows the respective State and Federal perspectives flip: For disabled beneficiaries under

65 years of age, dually eligible beneficiaries are a smaller percentage of those with State coverage (38 percent), and a larger percentage of Medicare beneficiaries (42 percent). Understanding this difference in perspectives is critical to advancing the Federal-State dialogue on dual eligibility.

A simple way of controlling for differences in Medicare coverage across the two groups (all elderly and all disabled under age 65) is to look at the distribution of Medicare and Medicaid spending for those in each group who are dually eligible. When comparing these two subgroups, Medicaid is still more significant to disabled beneficiaries under age 65 than to

**Figure 3**

**Combined Medicare and Medicaid Spending PPPM, by Service Type for Dually Eligible Elderly Beneficiaries Compared With Dually Eligible Adults With Disabilities: 1995**



elderly beneficiaries, but the ratios of Medicaid to Medicare spending for each subgroup (1.94 for dually eligible elderly, 2.34 for dually eligible disabled under age 65) are much closer to one another.

Although the ratio of Medicaid to Medicare expenditures is more similar for the two dually eligible groups, service mix was quite different, particularly regarding LTC. For dually eligible elderly beneficiaries in the four States, 55 percent of the average PPPM expenditures went to institutional LTC settings and 8 percent went to community LTC services.<sup>4</sup> For dually eli-

gible disabled persons under 65 years of age, 25 percent was spent on institutional long-term care settings, and 21 percent was spent on community long-term care (Figure 3).

At average PPPM expenditures of \$1,735 for dually eligible disabled persons under age 65, and \$2,053 for dually eligible elderly beneficiaries, both have high public expenditures because they use a large amount of LTC. Furthermore, the higher cost of serving dually eligible elderly beneficiaries is associated with that group's higher use of institutional LTC (relative to dually eligible disabled persons under age 65). Because Medicare covers relatively little LTC, the cost of serving dually eligible beneficiaries falls disproportionately on Medicaid. Dually eligible beneficiaries are also important to

<sup>4</sup> Refer to footnote 2 for definition of institutional LTC. Community LTC is defined to include home and community-based waiver services, home health care, adult foster care, adult day health care, respite care, medical transportation, hospice care, personal care services, and skilled nursing therapies. Of these, home health care, hospice care, and skilled nursing therapies are covered by both Medicaid and Medicare. The remaining are Medicaid services.

Medicare, however, because they have high Medicare expenditures relative to Medicare-only beneficiaries.

In the remainder of this study, we take a closer look at the most expensive subgroup discussed so far, elderly LTC users. Although it would be useful to present parallel data for those under age 65, analysis of the younger group is complicated by several factors. The 24-month waiting period for Medicare among younger disabled beneficiaries and the subsequent work-related churning that occurs as beneficiaries lose and regain eligibility make periods of dual eligibility more difficult to interpret. Significant differences in State programs for people with disabilities under age 65 make multi-State analyses of Medicaid expenditures far more challenging. In addition, significant differences in service approaches to subgroups of younger disabled beneficiaries (including people with physical disabilities, developmental disabilities, and mental illness) make it important to draw further distinctions among the subgroups. Though more difficult to undertake, successful analyses of the younger disabled population may provide insight into how the use of institutional LTC can be avoided. These analyses will be the subject of a subsequent study.

### **Closer Look at Dually Eligible Elderly**

Already the dominant group (relative to adults with disabilities) in terms of number of beneficiaries, total public expenditures, average PPPM public expenditures, and use of institutional LTC, dually eligible elderly beneficiaries will place severe pressure on both the Medicare and Medicaid programs as the number of elderly people continues to grow. Between 1992 and 2010, the number of people age 65 and over will grow by nearly 30 percent. In the same period, the num-

ber of those age 85 and over, who are much more likely to need LTC, will nearly double (American Association of Retired Persons, 1995).

In 1995 the four States had nearly 160,000 dually eligible elderly beneficiaries, with combined Medicare and Medicaid expenditures of just under \$4 billion. As previously noted, this number represents 10 percent of all elderly beneficiaries in the four States, but 38 percent of total Medicare and Medicaid spending on elderly beneficiaries (Figure 2). The average PPPM expenditures for Medicare and Medicaid combined were \$2,053 for dually eligible elderly beneficiaries, nearly six times the average PPPM for elderly beneficiaries with Medicare only (\$363).

Of the \$2,053 PPPM, Medicaid expenses totaled an average of \$1,348 PPPM, most of it (\$1,044 PPPM) for institutional LTC. Medicaid spent an additional \$304 PPPM on all other services, with prescription drugs (\$85) and community LTC (\$80) being the second and third largest of these.

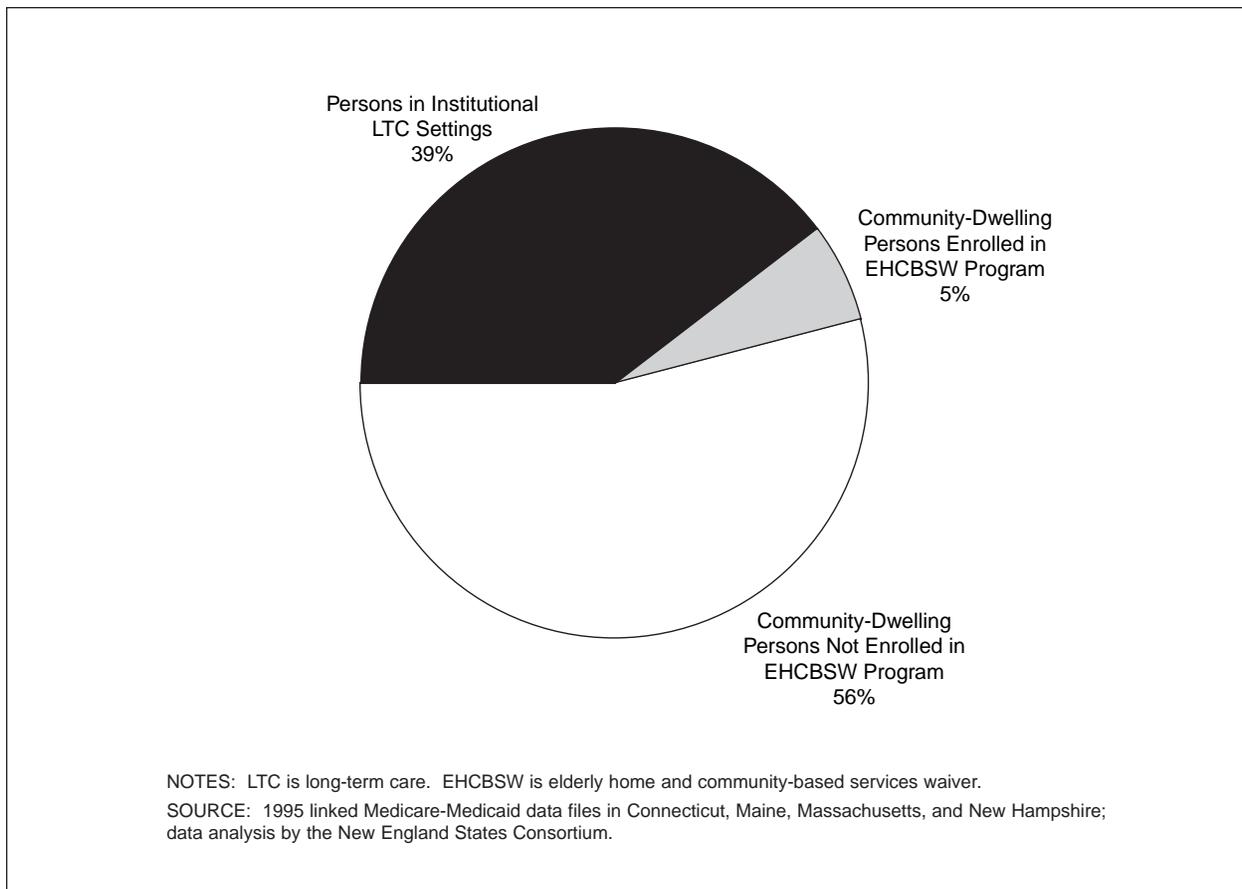
The remaining \$705 PPPM was paid by Medicare. This amount may appear modest when compared with Medicaid's \$1,348 PPPM, but it is nearly twice what the Medicare program spends on those who qualify for Medicare only, \$363 PPPM.

The amount and composition of spending varied greatly by care setting. Figure 4 shows the distribution of dually eligible elderly beneficiaries by care setting in the four States. Fifty-six percent were served in community settings but were not in an EHCBSW program.<sup>5</sup>

This large group is often referred to as "well" because of their relatively low spending, but with average expenditures of

<sup>5</sup> All four States offer EHCBSW services under section 1915(c) of the Social Security Act. These services include a wide array of home and community-based services designed to divert beneficiaries from nursing homes, and they are offered only to beneficiaries who would otherwise qualify for nursing home services.

**Figure 4**  
**Percent of Dually Eligible Elderly Beneficiaries, by Care Setting: 1995**



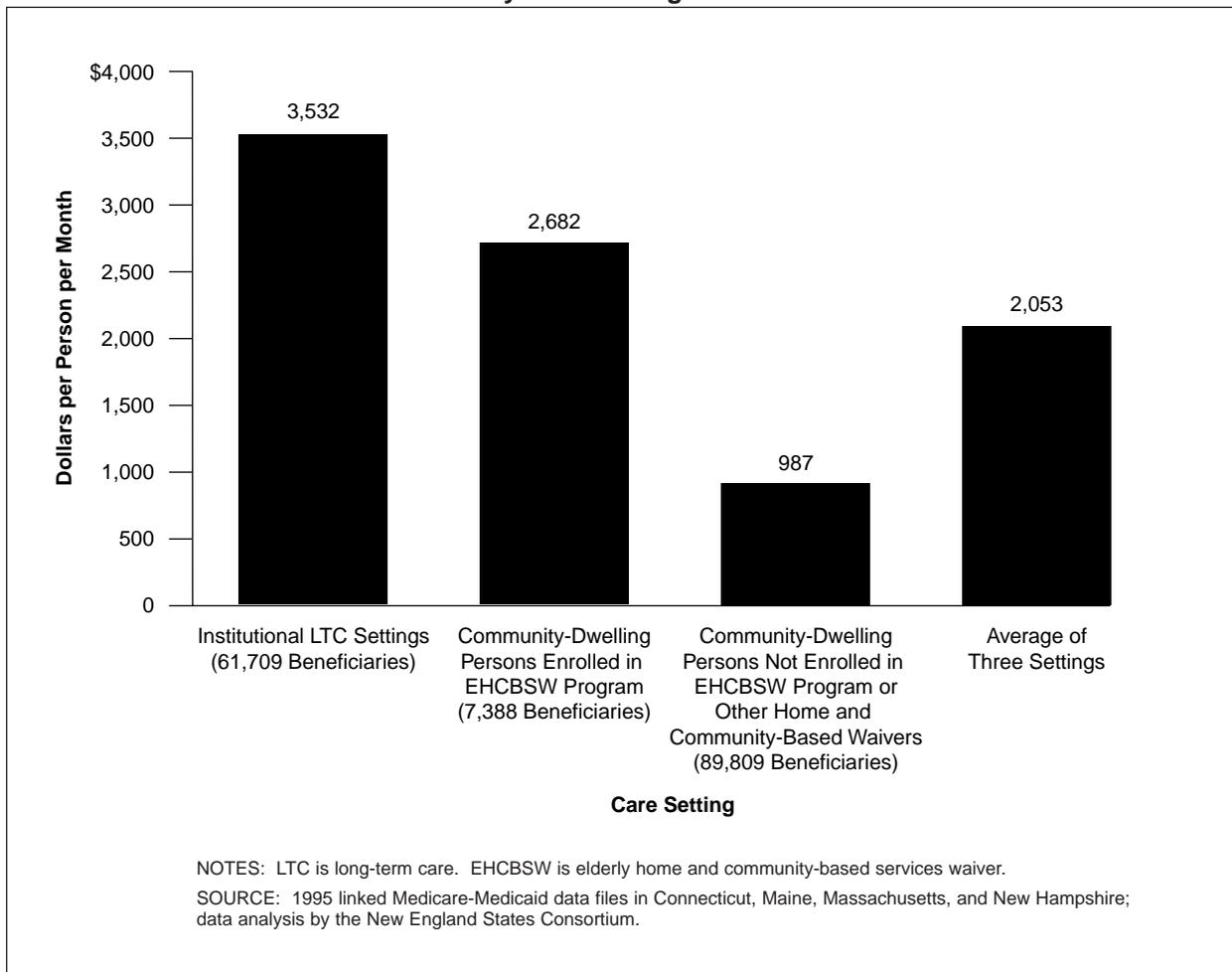
\$987 PPM (Figure 5), the group clearly includes subgroups with significant expenditures for acute or chronic care. The States are digging deeper into the linked data to identify significant subgroups within these community dwellers and to experiment with methods for identifying those who could benefit from more aggressive early intervention efforts.

At the other end of the spectrum are the 39 percent of beneficiaries served in institutional LTC settings (Figure 4). Combined Medicaid and Medicare spending for this group averaged \$3,531 PPM, more than 3.5 times the PPM of the community-dwelling persons not enrolled in an EHCBSW program (Figure 5). In the four

States in 1995, Medicare and Medicaid together spent \$2.6 billion for this group, representing two-thirds of total spending on all dually eligible elders.

The remaining 5 percent of dually eligible beneficiaries are served in the community through EHCBSW programs. These are beneficiaries who meet the medical criteria for institutional services but are served alternatively in community settings. In 1995 spending on this group averaged \$2,682 PPM (Figure 5). The New England States Consortium is particularly interested in finding ways to serve more nursing-home-eligible and near-eligible beneficiaries in community settings.

**Figure 5**  
**Combined Medicare and Medicaid Spending on Dually Eligible Elderly Beneficiaries,**  
**by Care Setting: 1995**



**Elderly Certified for Institutional-Level Services**

*Institutionalized Compared With EHCBSW Beneficiaries*

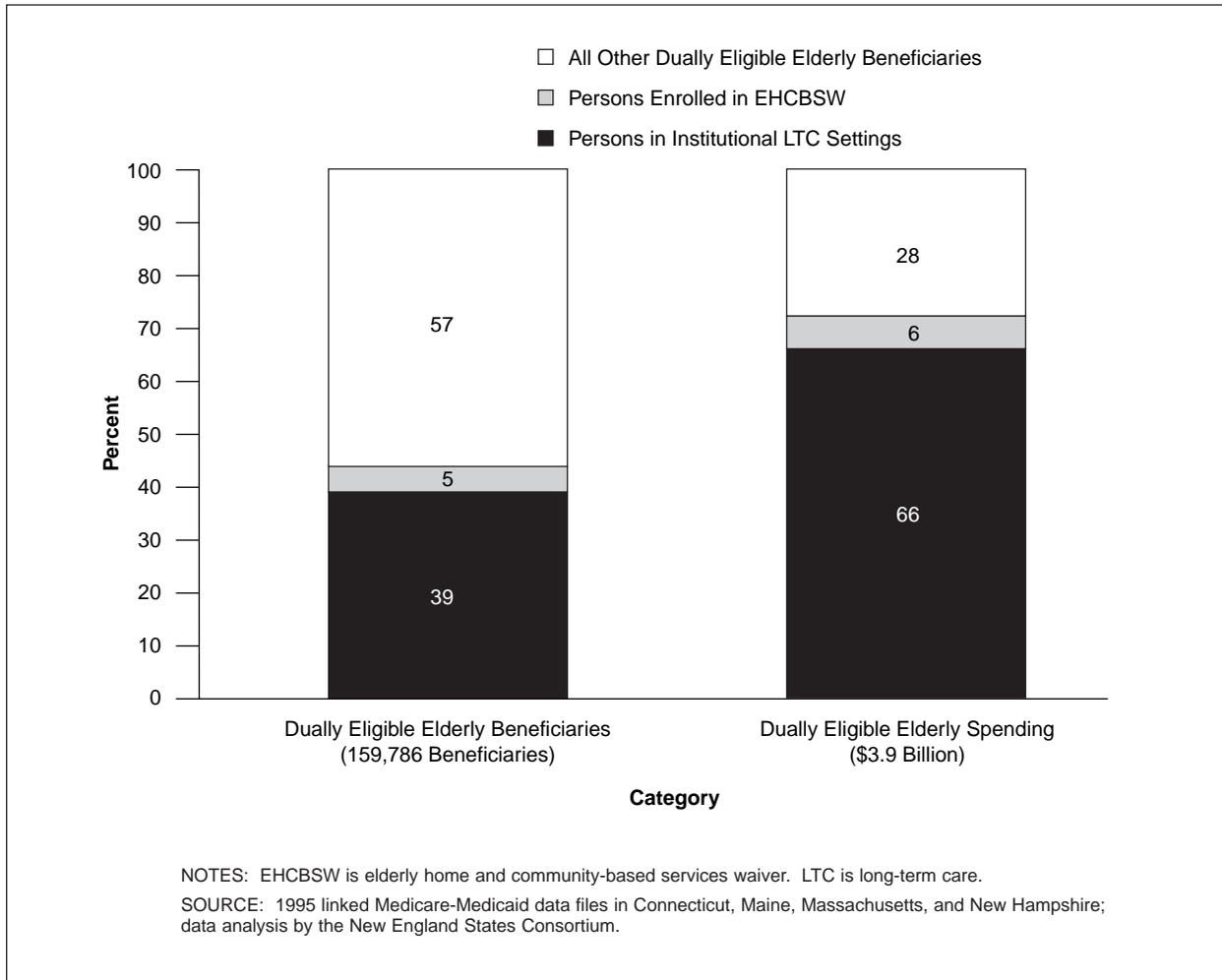
All four States have EHCBSW Medicaid programs. With the linked data, the four States have been able to compare total Medicare and Medicaid spending and service mix for those in EHCBSW programs compared with those in institutional LTC settings. Regionally, 39 percent of dually eligible elderly beneficiaries were served in institutional LTC settings in 1995, and

they were responsible for 66 percent of combined Medicare and Medicaid spending. Only 5 percent were served in EHCBSW programs, and they accounted for 6 percent of spending (Figure 6).

As previously shown in Figure 5, combined Medicare and Medicaid costs for EHCBSW participants averaged \$2,682 PPM, compared with \$3,531 for those living in institutional LTC settings. As we discuss later, States that add assessment data to their linked files in the future will be able to compare the medical and functional status of beneficiaries in nursing facilities with those in EHCBSW programs. This will

**Figure 6**

**Percent of Dually Eligible Elderly Beneficiaries, by Care Setting and Corresponding Combined Medicare and Medicaid Total Spending: 1995**



allow States to estimate how many nursing facility residents might be alternatively served in community settings and what mix of services they require.

*Service Mix*

Not surprisingly, the mix of services used by dually eligible elderly beneficiaries in institutional LTC settings was quite different from that used by EHCBSW program participants (Figure 7).

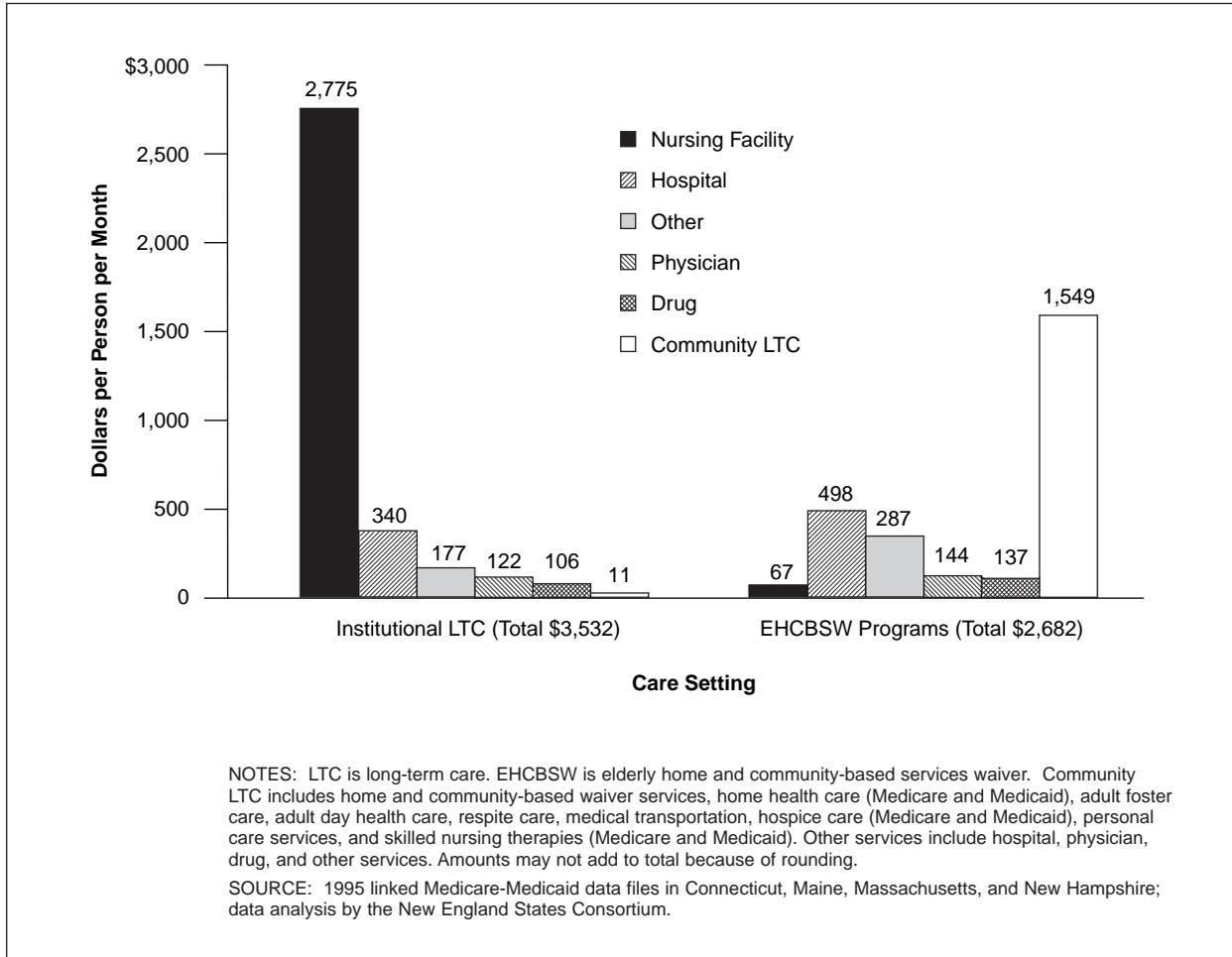
Although EHCBSW participants were much less costly overall, they used more of every service type except nursing facility

services. This included greater hospital, physician, and drug costs. The most significant expense for EHCBSW participants was community LTC.

The difference in service mix resulted in a very different distribution of costs across the two payers (Figure 8). For those in nursing facilities, Medicaid paid 84 percent (\$2,954) of the PPSM costs and Medicare paid 16 percent (\$579). For EHCBSW participants Medicare's share of the PPSM costs was much greater (\$1,467, or 55 percent). This finding is consistent with research conducted using the Medicare Current Beneficiary Survey, which has

Figure 7

Combined Medicare and Medicaid Spending for Dually Eligible Elderly Beneficiaries on Various Services, by Care Setting: 1995



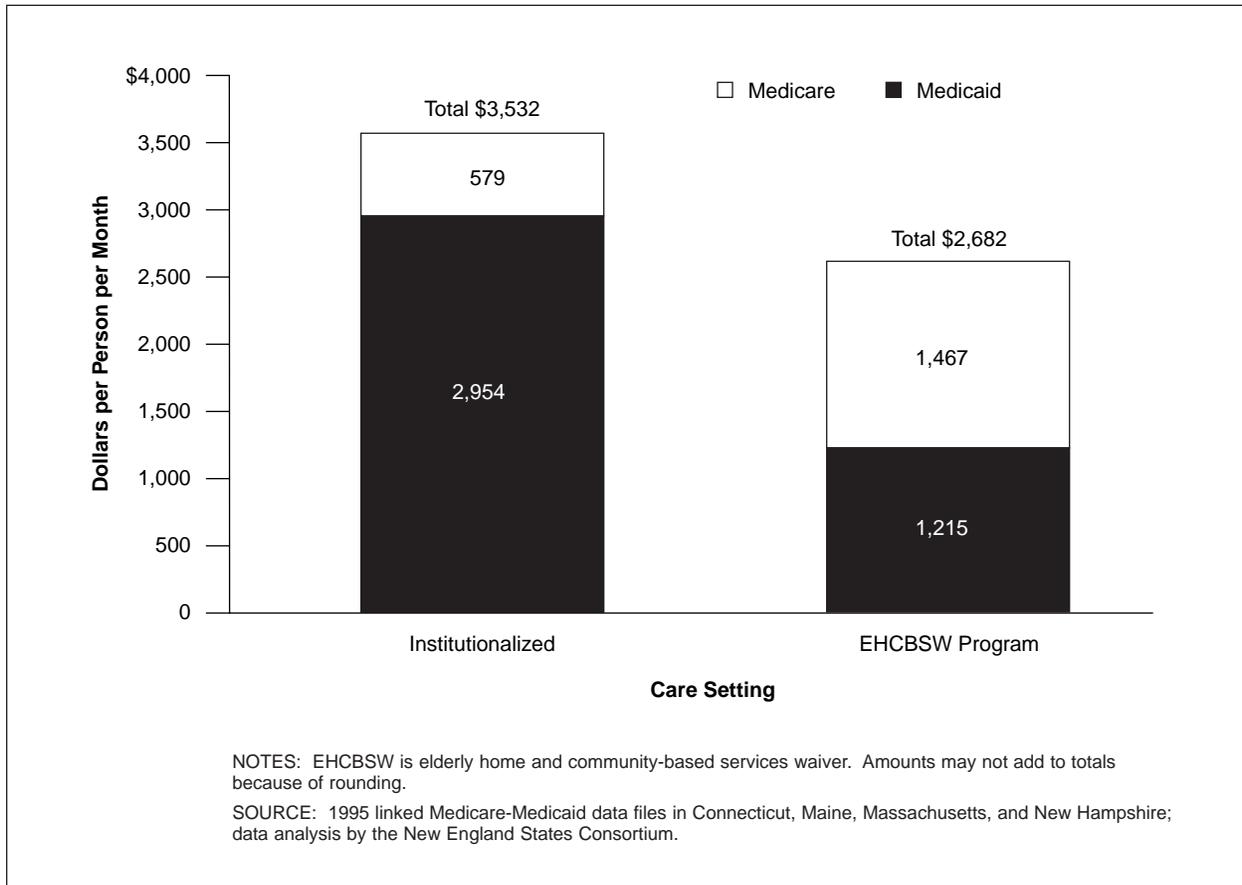
found that Medicare spends less on beneficiaries in institutional LTC settings than it does on beneficiaries with similar levels of functional impairment in the community (Komisar, Hunt-McCool, and Feder, 1997-98; Liu, Wall, and Wissoker, 1997).

Figure 9 shows Medicare compared with Medicaid spending by service type for the two care settings. Medicare spending on hospital services was significantly more for EHCBSW participants (\$474 PPPM) than for elderly beneficiaries in institutions (\$231 PPPM), but the largest Medicare difference was in community LTC. Medicare spent \$637 PPPM on home health care and other community LTC services for EHCBSW par-

ticipants, as opposed to \$8 PPPM for those served in institutions. This compares with an average Medicaid community LTC expenditure of \$912 PPPM for EHCBSW participants. Clearly, dually eligible beneficiaries in EHCBSW programs rely on a combined package of Medicare and Medicaid services, and any demonstration program aimed at keeping dually eligible beneficiaries out of nursing homes must ensure that these two important programs work well together.

Although the Medicare cost per beneficiary in EHCBSW programs was significantly more than for those in institutional LTC settings, the total Federal share was

**Figure 8**  
**Medicare Compared With Medicaid Spending for Dually Eligible Elderly Beneficiaries,**  
**by Care Setting: 1995**



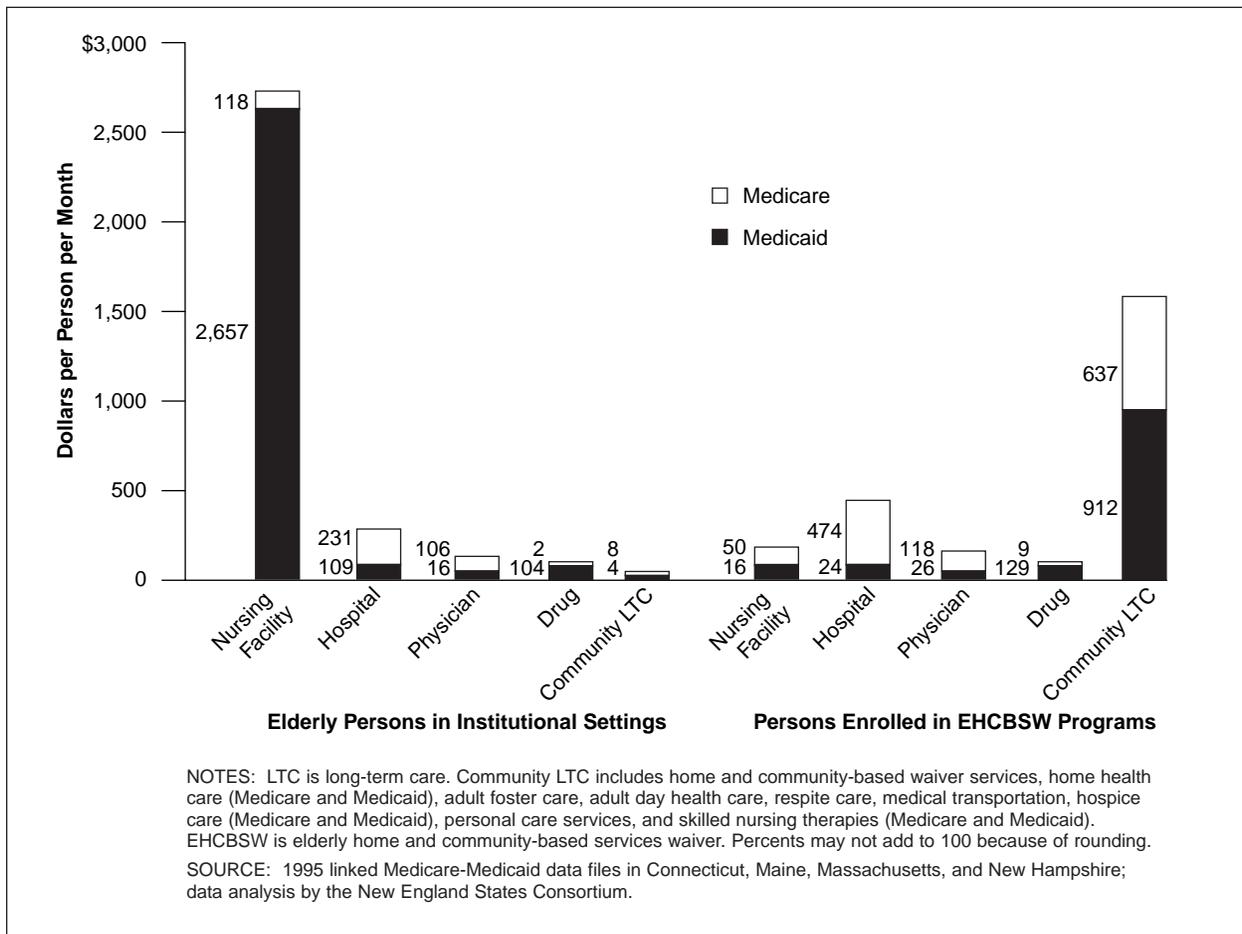
almost the same across settings when Federal matching funds for Medicaid were taken into account. The Federal Government paid at least 50 percent of Medicaid expenditures in the four States. (The Federal Medical Assistance Percentage was actually greater than 60 percent in Maine, but 50 percent can be used as a conservative estimate of the Federal share for the region.) Figure 10 applies this estimate to the PPPM amounts shown in Figure 8. For those in institutional settings, the total estimated Federal share is \$2,055 PPPM, and in waiver programs it is estimated to be \$2,074. If new program initiatives are successful at serving more dually eligible beneficiaries in community

settings as an alternative to institutional care, public spending (Federal plus State) and State spending per beneficiary will decrease, while Federal spending per beneficiary will remain about the same—most importantly, government will be responding to strong beneficiary preferences to remain in the community as long as is safely possible.

### **CURRENT WORK USING LINKED DATA**

The linked Medicare-Medicaid data allow Federal and State program planners and researchers to do several things that had not been possible before. First, the

**Figure 9**  
**Medicare Compared With Medicaid Spending for Dually Eligible Elderly Beneficiaries,**  
**by Service and Care Setting: 1995**



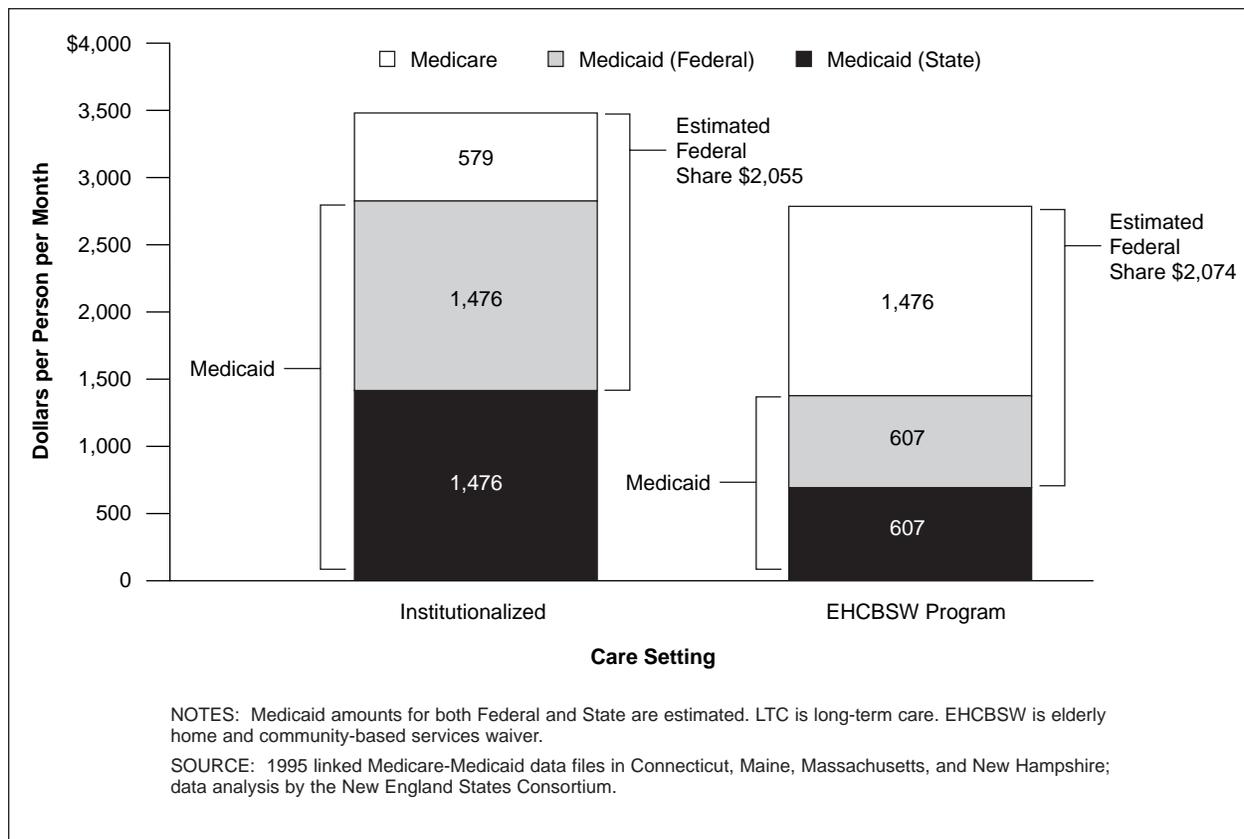
linked data provide a complete picture of Medicare and Medicaid service use and expenditures for this population. This facilitates analyses of the interrelated nature of Medicare- and Medicaid-covered services. Secondly, the linked data can be used to identify dually eligible individuals with greater accuracy than either HCFA or States had been able to do in the past. Previously, many of those who were spending down to Medicaid in the nursing facility did not have a State buy-in indicator and therefore were not identified by HCFA as dually eligible. Finally, the linked data make it possible to analyze utilization, expenditures, and eligibility of beneficiaries over time.

### Quality Management

Linked data sets expand capacity to effectively monitor and improve the quality of care to dually eligible beneficiaries. Although time delays in receipt and linking of data limit their use in day-to-day operational monitoring, the data will permit States and HCFA to evaluate plan and program performance over time and across providers. Some specific applications may include:

- Establishment of fee-for-service (FFS) baseline indicators for use in quality-improvement efforts as well as broader evaluation activities. The current data can be used to establish a starting point

**Figure 10**  
**Estimated Federal Compared With State Spending for Dually Eligible Elderly Beneficiaries, by Care Setting: 1995**



in terms of costs, utilization, and outcomes. These measures can be compared with data collected in the future as new programs are implemented.

- Creation of provider profiles comparing case-mix-adjusted service use of peer groups across the full range of Medicare and Medicaid services.
- Comparison of total service use by beneficiaries with comparable diagnoses or chronic conditions to better understand treatment patterns and the possible substitution effects between Medicare and Medicaid services.

### Targeting a High-Risk Population

The linked data allow analysts to identify the “pre-dually eligible” population—Medicare beneficiaries who, through a

nursing home admission or other catastrophic event, will spend down their modest income and/or assets to qualify for Medicaid—and follow them over time. Analyses of the pre-dually eligible population could help States and HCFA to understand the characteristics of beneficiaries associated with spend down and to craft early-intervention strategies that might prevent or delay the need for long-term nursing facility services.

### Understanding the Impact of Supplemental Benefits

Several States offer services to Medicare beneficiaries who do not qualify for Medicaid. Most common are State-funded home care programs and prescription drug programs. As part of the pre-dually eligible

identification already described, States can examine the impact of State-funded services by adding State program data to the linked files. In addition to informing other States about the efficacy of certain services, these analyses could also be used to design new, cost-effective Medicare services for all beneficiaries.

### **Health Status and Service Costs**

Previous studies have demonstrated the relationship between the functional status of beneficiaries and Medicare spending (Gruenberg, Kaganova, and Hornbrook, 1996; Komisar, Hunt-McCool, and Feder, 1997-98; Liu, Wall, and Wissoker, 1997; Pope et al., 1998). To examine this relationship, at least two of the New England States are considering adding LTC assessment data to their linked data sets. Retrospective analysis of people who become functionally impaired over time could lead to the development of risk-screening tools and risk-adjusted payment systems that capture utilization of both Medicare and Medicaid services, rather than just one or the other. Addition of the assessment data will also be critical in characterizing the pre-dually eligible population.

### **Examining Provider Networks**

Using provider identification codes, it is possible to construct analytic files that identify the combinations of Medicare and Medicaid providers used by dually eligible beneficiaries. States and HCFA can use this information to identify current providers used by the population and define minimum-capacity requirements for networks. In an environment that emphasizes consumer choice, it will be important to know not only what types of services the target

group uses, but specifically which providers and services are preferred. Over time, the information can be used to identify the combinations of providers that seem particularly effective in meeting program goals, such as serving more people in community settings and fewer in institutional settings.

### **Ensuring Adequacy of Combined Payments**

Given that a provider network's behavior will be influenced by the total payment it receives, the State must ensure that Medicaid and Medicare payments combined will adequately pay networks for the target population and establish financial incentives consistent with specified program goals. The linked data are instrumental in ensuring that combined payments are both adequate and appropriate, because they allow States to analyze historical Medicare payments for dually eligible beneficiaries. For example, Massachusetts used its linked data to compare FFS Medicare expenditures with adjusted average per capita cost (AAPCC) payments, and found that the AAPCC would substantially underpay networks for frail seniors residing in the community—the very population that States believe would benefit most from an integrated program—and overpay plans for beneficiaries residing in nursing facilities. The State worried that the payment structure might discourage networks from participating or expanding community-based LTC options and might also promote inappropriate nursing facility placement of frail enrollees. As a result Massachusetts decided to seek a Medicare waiver so that it could adopt a Medicare payment methodology that would adequately pay participating networks for frail elderly beneficiaries living in the community.

## **Risk Adjusters and Budget Neutrality**

If a State determines that the existing Medicare payment would not appropriately pay a network for the target population, the linked data can facilitate the development of a State-specific Medicare risk adjuster, as well as the preparation of Medicare budget-neutrality projections that must accompany a State's request for a waiver to adopt a payment methodology other than the one used for Medicare+Choice plans. For example, New York State, in partnership with the Community Coalition for Long-Term Care, combined linked Medicare-Medicaid claims data with health and functional data from the State's risk-assessment tool, DMS-1, for beneficiaries in Monroe County. Using these data, researchers developed Medicare and Medicaid payment methodologies that vary payment according to an enrollee's DMS-1 risk score. Similarly, Connecticut is in the process of combining their linked data with functional-assessment data for all those who use State-funded home care, home and community-based waiver, or nursing home services in the State, and will explore the relationship between Medicare expenditures and functional status across all of these populations.

## **Developing and Testing Risk-Sharing Approaches**

Risk-sharing can be defined broadly to include any strategy that protects payers (in this case, HCFA and the States) and contractors from assuming the entire risk of costs that differ from expectations. To date Medicaid and Medicare have been treated separately in programs for dually eligible beneficiaries. This has created a policy environment in which States and HCFA watch anxiously to see if new pro-

grams cost more to Medicare or to Medicaid. Using the linked data, total program costs could be considered and a three-way risk-sharing approach developed in which HCFA, States, and program contractors would share financial risk on the basis of a formula developed with the linked files. Specific risk-sharing applications could include risk corridors, partial capitation, and reinsurance.<sup>6</sup> For example, the linked data could be used to determine the FFS distribution of spending across Medicare and Medicaid for the target population. This could help States and HCFA to develop appropriate mechanisms for distributing risk between the two programs and to monitor how the distribution of costs changes under an integrated, capitated system. Also, if risk-sharing operates for one program but not the other, the linked data could be used to monitor whether contractors shift costs to the program with which financial risk is shared.

## **CONCLUSION**

With support from HCFA and RWJF, four of the New England States have created linked Medicare-Medicaid data files, and the other two are in the process of developing such files. The initial files, constructed primarily for the purpose of actuarial analysis, show that dually eligible beneficiaries are far more expensive to serve than Medicare-only or Medicaid-only beneficiaries because dually eligible beneficiaries use LTC to a far greater extent.

Dually eligible disabled beneficiaries under 65 years of age spend less on average than dually eligible elderly beneficiaries because, as a group, they rely less on institutional LTC in favor of community-based alternatives.

<sup>6</sup> A detailed discussion of these options is beyond the scope of this article. For more information, refer to Newhouse, Buntin, and Chapman (1997) and Newhouse (1998).

The dually eligible elderly enrolled in EHCBSW programs are less expensive to serve than those in institutional settings. Although Medicare costs are higher for EHCBSW participants than for those in institutional settings, overall Federal costs of both groups are similar when the Federal share of Medicaid is considered.

Working collaboratively to compile and analyze linked data, the New England States have already learned much about the pattern and cost of Medicaid and Medicare services used by dually eligible beneficiaries in the region. By developing multi-year files over time and supplementing the linked Medicare-Medicaid data with assessments and other State information in the future, applications of the data will be expanded to include identification of beneficiaries at risk, examination of care patterns for signs of true integration, development of quality-oversight systems that address the combined impact of Medicare and Medicaid, and development of more sophisticated payment systems. Many of these applications require longitudinal files, demanding sustained effort and attention on the part of States, HCFA, foundations, researchers, and other interested parties.

## ACKNOWLEDGMENTS

The summary data reported in this article were derived from analytic files constructed from linked Medicare-Medicaid data sets. John Gardner of JEN Associates worked extensively on Connecticut, Massachusetts, and New Hampshire files. Catherine McGuire and Jasper Ziller of the University of Southern Maine, Muskie School of Public Service, created the Maine files.

The RWJF has supported the creation and analysis of linked data in New England through the Medicare/Medicaid Integration Program at the University of Maryland Center on Aging.

The authors are grateful to the following individuals who provided insightful comments that improved the article: Elise Bolda, Andrew Coburn, Judith Feder, Leonard Gruenberg, Harriet Komisar, Korbin Liu, Mark Meiners, Joseph Newhouse, and Pamela Parker.

## REFERENCES

- American Association of Retired Persons: *Long-Term Care*. Public Policy Institute Fact Sheet. Washington, DC: April, 1995.
- Gruenberg, L., Kaganova, E., and Hornbrook, M.: Improving the AAPCC With Health-Status Measures From the MCBS. *Health Care Financing Review* 17(3):59-75, Spring 1996.
- Komisar, H.L., Hunt-McCool, J., and Feder, J.: Medicare Spending for Elderly Beneficiaries Who Need Long Term Care. *Inquiry* 34:302-310, Winter 1997-98.
- Liu, K., Wall, S., and Wissoker, D.: Disability and Medicare Cost of Elderly Persons. *The Millbank Quarterly* 75(4):461-494, Winter 1997.
- Newhouse, J.P., Buntin, M.B., and Chapman, J.D.: Risk Adjustment and Medicare: Taking a Closer Look. *Health Affairs* 16(5):26-43, September/October 1997.
- Newhouse, J.P.: Risk Adjustment: Where Are We Now? *Inquiry* 35:122-131, Summer 1998.
- Pope, G., Ellis, R., Liu, C., et al.: *Revised Diagnostic Cost Group (DCG)/Hierarchical Coexisting Conditions (HCC) Models for Medicare Risk Adjustment*. Final Report to the Health Care Financing Administration. Contract Number 500-95-048. Waltham, MA. Health Economics Research, Inc., 1998.

---

Reprint Requests: Paul Saucier, Edmund S. Muskie School of Public Service, University of Southern Maine, P.O. Box 9300, Portland, ME 04104-9300. E-mail: pauls@usm.maine.edu.