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Cristian Meghea
Michigan State University

William Corser
Michigan State University

Qi Zhu
Michigan State University

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Health Service Use and Expenditure Patterns of Dual Eligibles in Michigan

Cristian Meghea, PhD[1,2]

William Corser, PhD, RN[1]

Qi Zhu, MS[1]

[1] Institute for Health Policy, Michigan State University, East Lansing, Michigan 48824

[2] Department of Obstetrics, Gynecology, and Reproductive Biology, Michigan State University, East Lansing, Michigan 48824

Corresponding author:
Cristian Meghea, PhD
Assistant Professor
Institute for Health Policy and
Department of Obstetrics, Gynecology, and Reproductive Biology
Michigan State University
965 Fee Rd., Room A632-B
East Lansing, MI 48824
Email: Cristian.Meghea@hc.msu.edu
Phone: 5178843955
Fax: 5173531663

Abstract

Objective: The objective is to provide a statewide population-based comparison of Michigan beneficiaries dually eligible for Medicare and Medicaid (duals) to Medicare-only beneficiaries, including the public health expenditures by service type, and to focus on the LTC service use patterns of elderly duals receiving care in various settings.

Data Sources: Data sources were linked 2005 and 2006 individual Medicaid and Medicare claims from all Michigan duals.

Methods: CMS provided Medicare claims and beneficiary data. Michigan Department of Community Health provided Medicaid claims data.

Design: We compared characteristics and health expenditures across various categories of beneficiaries and LTC care settings.

Principal Findings: The 13% duals accounted for 33% of total Medicare and Medicaid expenditures. Eight percent of elderly beneficiaries were duals in 2005, accounting for 26% of public health expenditures in the aged. The average monthly expenditures of elderly duals were: $4,896 in institutional LTC, $2,921 for those served through HCBS waiver programs, and $1,488 for those in the community.

Conclusions: Duals in Michigan account for a disproportionate large share of state and federal health expenditures. Michigan's experience suggests that LTC services can be offered in home and community-based settings, at lower costs compared to institutional LTC. The shift in prescription drug coverage from Medicaid to Medicare increased the drug expenditures for some duals and had limited impact on overall dual expenditures. Results may be pertinent within the context of impending healthcare reforms.

Keywords: Dually Eligible; Medicaid; Medicare; Michigan

Introduction

In the United States, individuals dually eligible for Medicare and Medicaid (duals) are high-expenditure beneficiaries. Although duals comprise approximately 15% of all Medicaid enrollees, they account for nearly 40% of total Medicaid healthcare expenditures (Yip, Nishita, Crimmins, & Wilber, 2007; Bruen & Holahan, 2003; Rousseau, et al.,, 2010).

Approximately one fifth of Medicare beneficiaries are duals, accounting for 24% of total Medicare spending (Rousseau, et al., 2010). Duals are one of the most vulnerable populations being served by any publicly funded health care program (Bruen & Holahan, 2003; Moon & Shin, 2006). Duals are significantly poorer and sicker than Medicare-only beneficiaries, consume more healthcare services, and have more long-term care (LTC) needs than Medicare-only beneficiaries (Yip, Nishita, Crimmins, & Wilber, 2007; ; Rousseau, et al., 2010; Moon & Shin, 2006).

The most physically impaired duals tend to be elderly beneficiaries residing in nursing homes (Yip, Nishita, Crimmins, & Wilber, 2007). By far the costliest type of Medicaid expenditure incurred by the duals is for *LTC* nursing home room and board services, with the majority of services consumed by the elderly (Kaiser Commission on Medicaid Facts, 2011). A relatively small proportion of duals continue to consume the vast majority of available LTC resources (Yip, Nishita, Crimmins, & Wilber, 2007; Rousseau, et al., 2010; Moon & Shin, 2006; Kaiser Commission on Medicaid Facts, 2011).

Most such LTC services are covered by Medicaid and provide duals with both medical and non-medical care activities concerning daily dressing, bathing, and toileting tasks. These types of LTC services can also be provided at duals' homes in the community through Medicaid state waiver programs (Rousseau, et al., 2010; Kaiser Commission on Medicaid Facts, 2011). In

Michigan, the Home and Community-Based Services (HCBS) waiver program, MI Choice, was designed to enable elderly and disabled duals prevent or delay transfer to an institution by providing them LTC home-based services and support, while also anticipating fiscal savings.

The various settings and programs through which duals can receive services are important determinants of their costs and payment coverage. For example, Medicaid pays 55% of LTC expenditures and Medicare pays for 21% of expenditures for duals residing in LTC nursing home facilities (Yip, Nishita, Crimmins, & Wilber, 2007; Rousseau, et al., 2010). Another 16% is out of pocket, and the remaining 8% of total expenditures are primarily covered by private insurance. In contrast, Medicaid covers only 17% of expenses for community-dwelling duals' care, with Medicare covering approximately 70% (Yip, Nishita, Crimmins, & Wilber, 2007)

Enacted in 2003, the *Medicare Prescription Drug, Improvement, and Modernization Act* (MMA) resulted in the largest overhaul of Medicare in its then 38-year history (U.S. Department of Health and Human Services, 2012a). One of the most significant provisions in the MMA was the establishment of a 2006 federal entitlement benefit for prescription drugs for all Medicare beneficiaries (Medicare Part D). The enactment of Part D shifted payments for most duals' prescription drugs from Medicaid to Medicare as of January 1st, 2006 (Department of Health and Human Services, 2012b). The resultant changes in drug coverage and expenditures for duals in national samples have already been documented (Henry J. Kaiser Family Foundation, 2012; Bradley, Dahman, Bataski, & Koroukian, 2010; Bagchi, Esposito, & Verdier, 2007; Basu, Yin, & Alexander, 2010).

Relatively few studies to date have examined overall patterns of healthcare utilization and LTC service use for an entire state's population of duals. In addition, broad changes in service

use and expenditures during the notable coverage shifts imposed by the MMA have been understudied. It is increasingly important to better understand how future coverage changes may influence the healthcare use patterns and expenditures of different types of duals (Kaiser Commission on Medicaid Facts, 2011; Center for Health Care Strategies, 2010a).

Our specific objectives were to provide a statewide population-based comparison of Michigan duals to Medicare-only beneficiaries, including the public health expenditures by service type, and to focus on the LTC service use patterns of elderly duals receiving care in various settings. We present population characteristics and patterns of expenditures around the time of the significant shift in prescription drug coverage imposed by the enactment of *Medicare Part D*.

Methods

Population. This study profiled the entire population of Michigan Medicare-eligible beneficiaries during 2005 and 2006. We performed distinct calendar-year analyses for the population eligible in 2005 and in 2006. Dually eligible beneficiaries were compared to beneficiaries eligible only for Medicare. Analyses then focused on the population of elderly duals, aged 65 or older, and further on the elderly duals in long-term care.

Data Sources. Linked Medicaid and Medicare individual-level data formed the foundation for these analyses. Fee-for-service (FFS) Medicaid claims/encounters during calendar years 2005 and 2006 provided one portion of data at two points in time for analyzing the service use and expenditure patterns of all Michigan duals. Fee-for-service Medicare claims/encounters data during the same period completed the data set used for these analyses. The Medicare data were obtained from the federal Center for Medicaid and Medicare Services (CMS), while the

Medicaid data came from the Michigan Department of Community Health (MDCH) Data Warehouse (Michigan Department of Community Health, 2012).

The linked Medicare beneficiary summary file included the demographic characteristics. Seven comprehensive types of Medicare claims data were used: inpatient hospital, outpatient hospital and clinic, physician, skilled nursing facility, home health agency, hospice claims, and prescription drugs for 2006. Physician claims were extracted from the carrier claims Medicare file containing claims submitted by non-institutional providers (over 95% of these claims were submitted by physicians). We grouped the Medicaid claims into similar service use categories so that equivalent comparisons of the Medicaid-Medicare service use and expenditure patterns could be made.

The combined beneficiary data set included individual-level medical claims dates of service, reimbursement amount, provider information, and demographic information (zip code, sex, race, and date of birth). These data included each dual's Medicare and Medicaid eligibility and program participation, such as monthly entitlement indicators and monthly participation in the HCBS. The CMS provided a key crosswalk file, linking the unique social security number of duals included in the MDCH data warehouse to the unique beneficiary identification code present in the Medicare data.

Definitions: *dual status, long-term care, care settings, service types.* Similar to one earlier study, the beneficiaries in these analyses were defined as duals each year if they were documented as meeting both Medicaid and Medicare eligibility in the same month, for at least one month during the calendar year (Moon, et al., 2006).

Placement into an institutional LTC *care setting* was defined as *Level of Care Code 2* in the Medicaid eligibility data during three or more consecutive months of a calendar year (Yip,

Nishita, Crimmins, & Wilber, 2007). A beneficiary was considered to be a HCBS waiver program participant receiving LTC services if an LTC coverage code was present in at least three consecutive months of the calendar year. All others duals were considered to be community-dwelling beneficiaries not in long-term care.

Nursing home room and board represented the institutional LTC service type in our analyses. Community LTC services included HCBS waiver services, home health care, hospice care, adult foster care, skilled nursing therapies, and home help. The remaining service types were grouped together as other services. We relied on provider and claim types to further categorize services into hospital, physician, and pharmacy.

Analyses. Our analyses were based on demographic data reported on the Medicare health claims and approved reimbursement amounts documented in the Medicaid and Medicare claims. The descriptive table presents counts, percentages, and demographic characteristics of all individual beneficiaries regardless of the number of months eligible in a calendar year. All remaining analyses reporting beneficiary counts and expenditures relied on full-year-equivalent beneficiaries dividing total number of months of dual eligibility in a year by 12, in order to have comparable study units,

Monthly expenditures were presented as per-member-per-month (PMPM) averages to account for the fact that some beneficiaries were eligible fewer than 12 months of the year. All dual expenditures were presented in 2006 dollars for meaningful comparisons between years (2005 amounts were adjusted for inflation). Analyses were completed using Stata 10.0 (StataCorp. 2007) and SAS 9.2 (SAS Institute Inc. 2009) data analysis software programs.

Results

Duals in Michigan: During both 2005 and 2006, there were close to 1.6 million individual beneficiaries in Michigan covered by Medicare, with about 15% dually-eligible for both Medicare and Medicaid. The mean age of Michigan duals was 63 years, while Medicare-only beneficiaries had a mean age of 73. Over 52% of the duals were aged 65 or older, while 83% of the Medicare-only enrollees were in that age group. Approximately 25% of the duals were African-American, compared to only 9.5% among the Medicare-only beneficiaries (see Table 1).

Table 1
Medicare data 2005-2006 – Characteristics of Dually Eligible Beneficiaries (DEB) vs. Medicare-Only Beneficiaries (MOB) in Michigan

	All		Medicare-only		Dually eligibles	
	2005	2006	2005	2006	2005	2006
N %	1,578,299 100%	1,599,117 100%	1,337,430 84.7%	1,349,885 84.4%	240,869 15.3%	249,232 15.6%
Age mean	71	71	73	73	63	63
Age<35	26503 1.7	25891 1.6	7272 0.5	6,588 0.5	19,231 8.0	19,303 7.7
Age 35-44	46428 2.9	45358 2.8	18147 1.4	16,810 1.3	28281 11.7	28,548 11.5
Age 45-54	84850 5.4	86453 5.4	48314 3.6	46,872 3.5	36536 15.2	39,581 15.9
Age 55-64	111226 7.1	117307 7.3	82148 6.1	85,392 6.3	29078 12.1	31,915 12.8
Age>=65	1309292 83.0	1324108 82.8	118154 88.3	1,194,223 88.47	127743 53.0	129,885 52.11
Female	883,064 56	891,968 55.78	733,429 54.8	737,911 54.7	149,635 62.1	154,057 61.8
White	1,356,432 85.9	1,373,876 85.9	1,188,891 88.9	1,200,474 88.9	167,541 69.6	173,402 69.6
Asian	7,701 0.49	8,340 0.52	3,577 0.27	3,849 0.29	4,124 1.71	4,491 1.80
African-American	188,073 11.9	191,279 12	127,263 9.52	128,005 9.48	60,810 25.25	63,274 25.39
Hispanic	5,521 0.35	5,736 0.36	3,049 0.23	3,023 0.22	2472 1.03	2,713 1.09
Native American	4,438 0.28	4,537 0.28	3,132 0.23	3,172 0.23	1,306 0.54	1,365 0.55

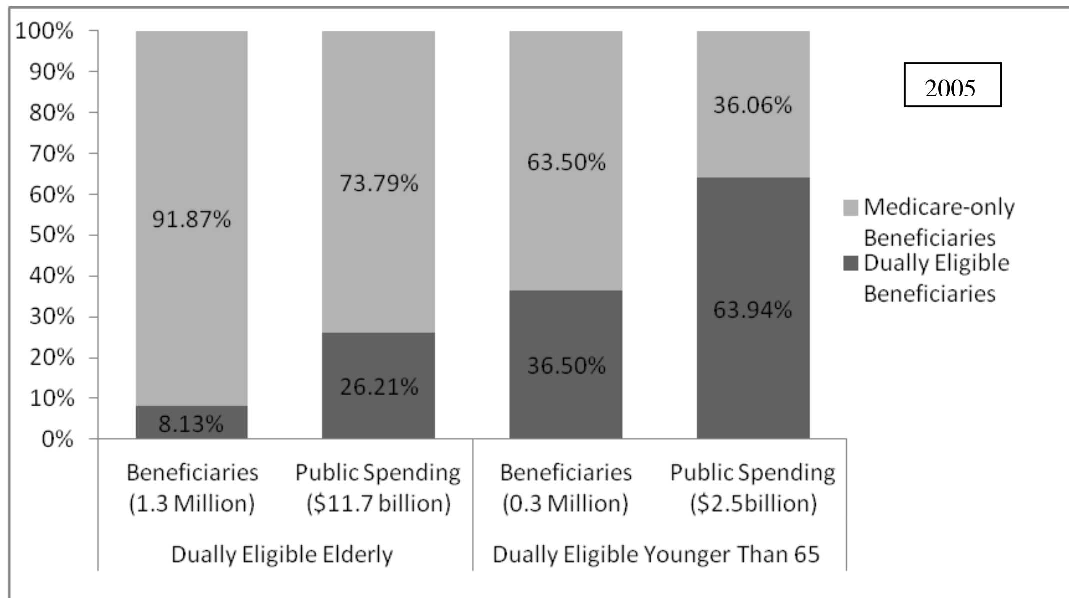
Notes: Full-year-equivalent beneficiary counts are presented (total number of beneficiary months divided by 12) Except for mean age, all outcomes are counts and within-column percentage in parenthesis.

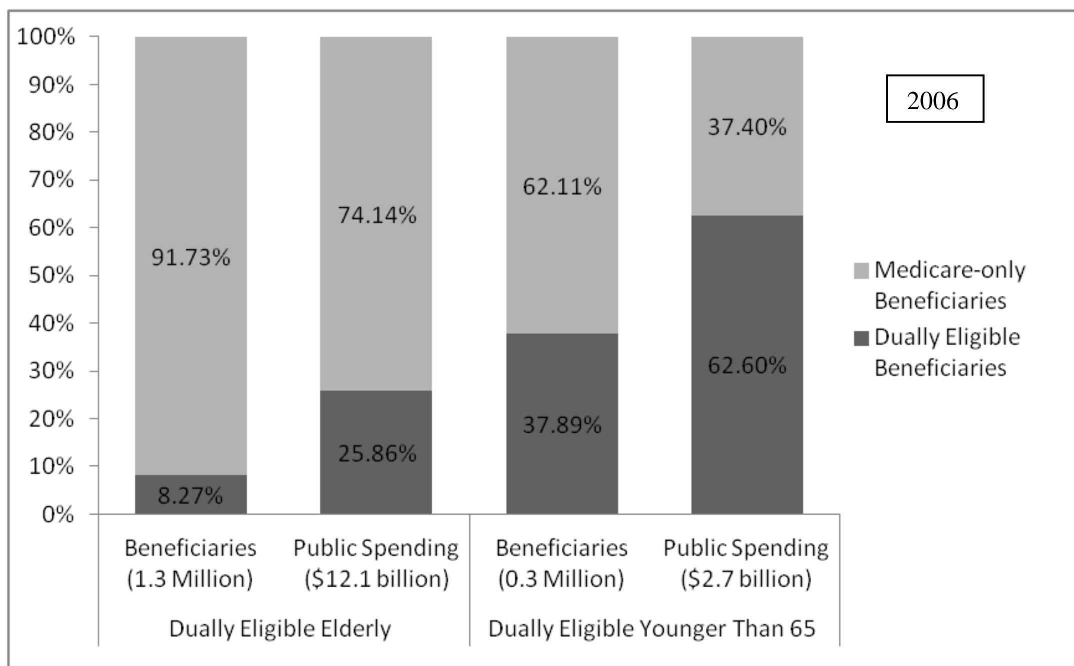
SOURCE: Medicare beneficiary summary 2005 and 2006, linked to Medicaid eligibility data from the Michigan Department of Community Health

Medicare and Medicaid paid combined FFS health expenditures of $14.2 billion in 2005, increasing to $14.8 billion in 2006 for the approximately 1.6 million beneficiaries. The approximately 13% ***full-year-equivalent*** duals accounted for 33% all Medicaid and Medicare expenditures on this population in 2005 ($4.7 billion) and in 2006 ($4.8 billion).

Elderly duals. Among the 1.3 million beneficiaries aged 65 or over, eight percent were dual eligibles in 2005, accounting for 26% of the public health expenditures in the aged population (see Figure 1). Also as seen in Figure 1, among the younger beneficiaries, the 36.5% duals accounted for 64% of the expenditures in 2005.

Figure 1
Dually eligibles vs. Medicare-only beneficiaries, by age (elderly compared to <65 years of age): beneficiary counts and share of public expenditures

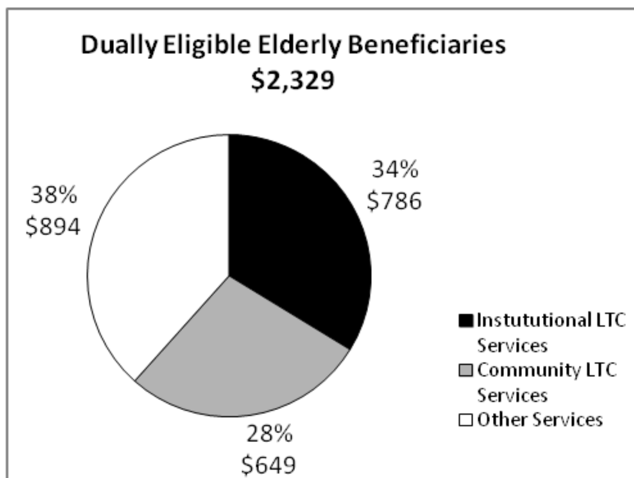


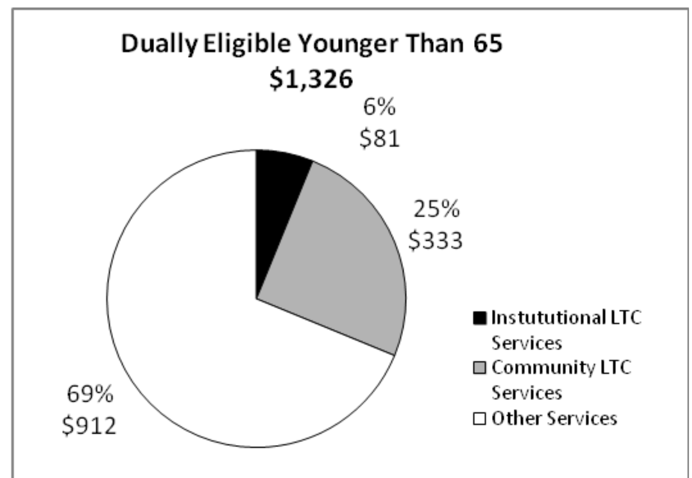


The average PMPM expenditures in 2005 were $2,329 for an elderly dual and $1,326 for a dual younger than 65 (see Figure 2). Reporting on the mix of *services*, 34% of the overall elderly duals expenditures in 2005 were on institutional LTC services, while only six percent of the younger duals' expenditures represented institutional LTC (Figure 2). The mix of services was similar in 2006 (Figure 2).

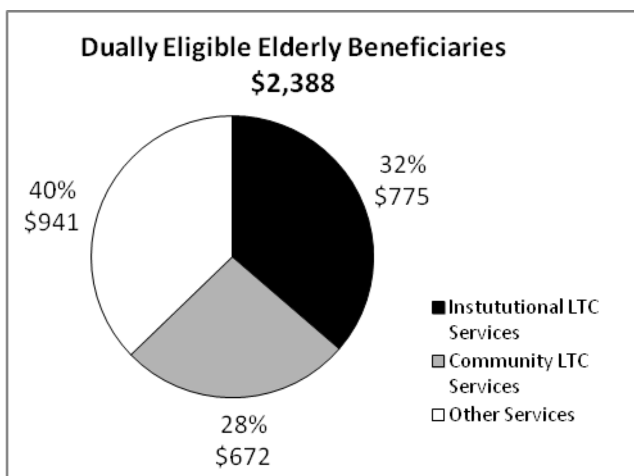
Figure 2
Combined Medicare and Medicaid Spending PMPM, By Service for Dually Eligible Elderly Beneficiaries Compared With Dually Eligble Adults With Disabilities:

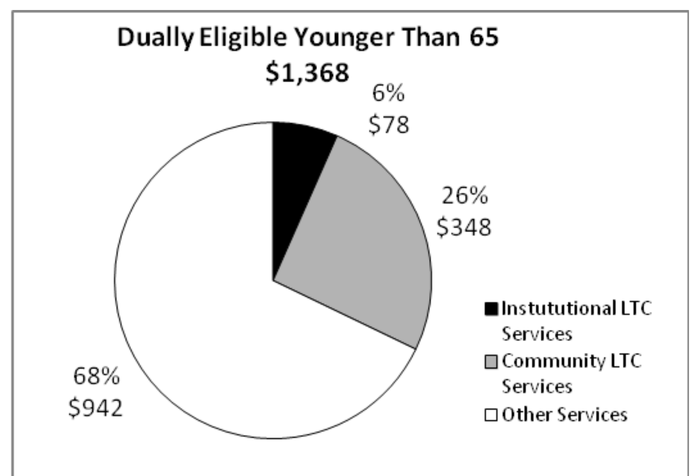
2005





2006





While the average PMPM expenditures of the elderly duals were $2,329 in 2005, there were considerable variations by care setting: $4,896 for the elderly duals in institutional LTC, $2,921 for the elderly duals in LTC served through the HCBS waiver program, and $1,488 for other elderly duals residing in the community. Approximately 23% of the dual elderly in 2005 were served in institutional LTC care settings, accounting for 47% of the group's expenditures. These unreported results are available from the authors.

Elderly duals in long-term care. The monthly nursing facility expenditures of elderly duals receiving their LTC in institutional care settings were stable at $3,440 in 2005 and $3,444 in 2006 (Figure 3). Medicaid and Medicare also paid, on average, $769 a month for hospital services and $758 on HCBS waiver services in 2005 for each elderly dual in LTC cared for at home or in the community through the Michigan MI Choice waiver program. The monthly average amounts for 2006 were $747 and $854 respectively (Figure 3). The monthly hospital expenditures of those in institutional LTC increased from $512 to $641 (Figure 3). In both care settings, the pharmacy expenditures increased in 2006 (Figure 3).

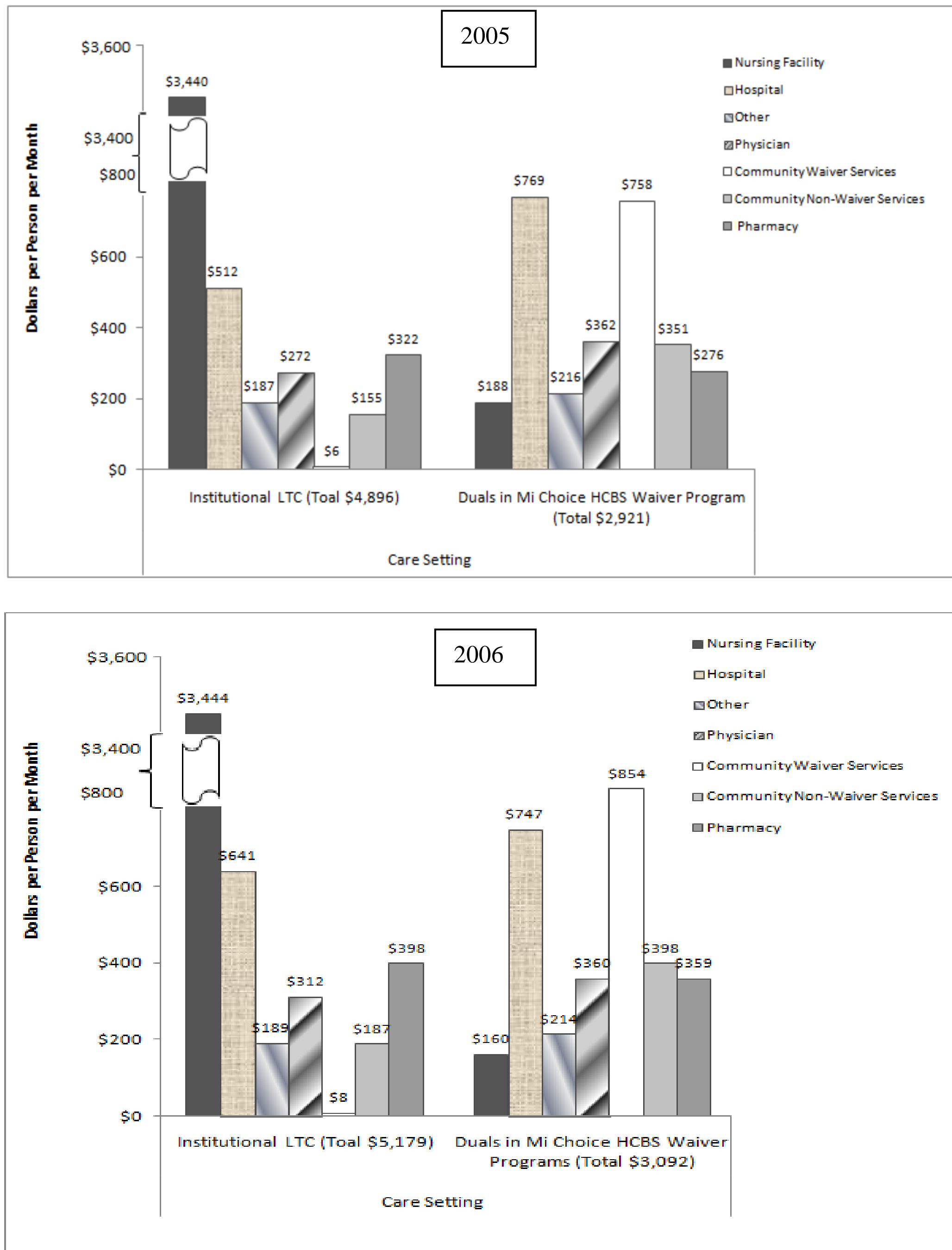


Figure 3
Per Month Medicaid and Medicare Spending for Elderly duals in Long Term Care by Service Type and Care Setting

Discussion

There were close to 1.6 million Michigan individuals each year in 2005 and 2006 covered in part or fully by Medicare. Approximately 16%, almost 250,000 in 2006, were dually insured by both Medicaid and Medicare. The percentage of duals among the entire Medicare population was smaller in Michigan than the 21% estimated from the overall 2011 US population (Kaiser Commission on Medicaid Facts, 2011; Kaiser Family Foundation, 2011).

Over half of the dual population in Michigan were aged 65 or over, while the remaining duals were younger disabled individuals. There was a higher percentage of women duals compared to the Medicare-only beneficiaries, likely a sign of the persistent overall gender gap in income and the fact that Medicaid eligibility is mainly income-based (Kaiser Commission on Medicaid Facts, 2011). Minorities, in particular African-Americans, were also over-represented among the duals compared to Medicare-only beneficiaries, reflecting similar income disparities. Hispanic, Asian, and Native American were also more frequent among duals compared to Medicare-only beneficiaries.

Similar to results seen in other states and nationally, (MedPAC, 2010b; Massachusetts Medicaid Policy Institute, 2012) the Michigan duals accounted for a disproportionate share of the public healthcare service expenditures, comprising approximately one-seventh of all Medicare beneficiaries but accruing approximately a third of total expenditures. This concentrated use of resources was even more pronounced among the elderly duals, representing less than one tenth of beneficiaries but accounted for over a quarter of all expenditures. When comparing all duals with Medicare-only beneficiaries, the ratio of expenditures share to beneficiary share was more than 3-to-1 among elderly duals and less than 2-to-1 among younger disabled duals. These findings support earlier work showing that the duals tend to be sicker, poorer and more costly

compared to Medicare-only beneficiaries (Moon & Shin, 2006; Kaiser Commission on Medicaid Facts, 2011; Center for Health Care Strategies, 2010a; Center for Health Care Strategies, 2010b; MedPAC, 2010a).

Elderly duals institutionalized in Michigan LTC settings were especially costly, totaling over $1.7 billion in 2006, amounting to 55% of total state Medicaid expenditures based on the authors' calculations. The LTC elderly duals in home and community-based settings (HCBS) were served at 60% the monthly per beneficiary cost of the institutional LTC elderly duals. Notably, a small proportion (i.e. approximately 6%) of eligible elderly Michigan duals actually received LTC services through the HCBS waiver, with approximately one quarter of all elderly duals residing in nursing homes at much higher costs. This represents a clear area for potential cost savings for nursing home eligible duals who may prefer to stay at home and receive LTC services through such waiver programs (Center for Health Care Strategies, 2010a; Center for Health Care Strategies, 2010b; MedPAC, 2010a; Department of Health and Human Services, 2012b).

The expenditure variations by age, service type and care setting reflect the heterogeneity in health status and needs as well as the types of services preferred and required by different types of duals. They also reveal the difficulty of disentangling types of services and sources of payment for the dual beneficiaries. For example, the elderly nursing home duals had lower expenditures on hospital and physician services compared to the HCBS elderly duals, consistent with prior literature. [1] In addition, the difference in expenditures on nursing home services is higher than the overall difference in expenditure between the two groups of beneficiaries.

These results suggest that, while the nursing home room and board was the main driver of the higher monthly beneficiary expenditures of the elderly in institutional LTC, other services

may have been provided by the nursing homes and likely included in the overall nursing home rate. Nursing home room and board was by far the largest LTC expenditure for elderly duals and was the main driver of the higher monthly beneficiary expenditures of the elderly in institutional LTC compared to elderly in home or community-based LTC.

Medicaid's share of the duals expenditures decreased in 2006 as the prescription drugs coverage for the duals shifted to Medicare. The duals total per beneficiary expenditures remained unchanged in 2006 compared to 2005. Elderly duals in LTC increased their expenditures in 2006 compared to 2005 in nearly all service categories. The notable exception was the most expensive service category, the nursing facility charges, which did not change. This was not surprising, as the room and board rates remained virtually constant. The monthly prescription drug expenditures increased in 2006 by 24% for duals living in nursing homes and by 30% for duals receiving home-based-care. Their total monthly expenditures were affected to a lesser extent as the prescription drugs represented a small share of overall costs. Among elderly duals, the monthly expenditures of those in institutional LTC and in the home-based LTC waiver program increased by only 6% in 2006, while the other elderly duals not in LTC actually decreased their expenditures by 11% compared to 2005.

These analyses were subject to several limitations that should be considered for future work in this area. First the authors were only able to analyze the expenditure patterns of FFS duals. However, the Kaiser Family Foundation reported that only 1.4% of national duals were enrolled in Medicare Advantage Plans in 2005 and 5.5% in 2006 (Henry J. Kaiser Family Foundation, 2012). The managed care penetration among duals in Michigan at the time was similarly estimated to be between only 4% and 6% (unpublished estimation from contributor Thomas McRae). Second, the authors were limited by the inherent limitations found in claims

data, including the fact that the expenditures were not adjusted to reflect spending not tied to provider claims, or to reflect financial adjustments that were not reflected in the claims data (Saucier, et al., 1998).

Using data from the entire population of Michigan duals, we confirmed the findings in other states, and nationally, that duals accounted for a disproportionate large share of state and federal health expenditures. While the change in the prescription drug coverage of the duals from Medicaid to Medicare increased the drug expenditures for some duals, it had limited impact on the overall dual expenditures. Those duals who were younger than 65 were less expensive to serve than the elderly duals, mostly because they consumed fewer institutional LTC services. Michigan's experience suggests that LTC services can be offered in home and community-based settings, at lower costs compared to institutional LTC. The increasing numbers of elderly and/or disabled lower-income duals will likely put additional pressure on policymakers attempting to creatively develop targeted cost-effective programs (Center for Health Care Strategies, 2010a; MedPAC, 2010B; Massachusetts Medicaid Policy Institute, 2012. In order to reduce care fragmentation, provide improved, more patient-centered care, and reduce costs, states began integrating Medicaid and Medicare services available to duals. Serving more elderly with LTC needs in home and community-based settings through Medicaid waiver programs seems to be an additional opportunity to reduce costs while accommodating the beneficiary preferences.

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