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Care Coordination Challenges Among High-Needs, High-Costs Older Adults in a Medigap Plan

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ABSTRACT

Purpose of the Study: Many adults 65 years or older have high health care needs and costs. Here, we describe their care coordination challenges.

Primary Practice Setting: Individuals with an AARP Medicare Supplement Insurance plan insured by UnitedHealthcare Insurance Company (for New York residents, UnitedHealthcare Insurance Company of New York).

Methodology and Sample: The three groups included the highest needs, highest costs (the “highest group”), the high needs, high costs (the “high group”), and the “all other group.” Eligibility was determined by applying an internally developed algorithm based upon a number of criteria, including hierarchical condition category score, the Optum ImpactPro prospective risk score, as well as diagnoses of coronary artery disease, congestive heart failure, or diabetes.

Results: The highest group comprised 2%, although consumed 12% of health care expenditures. The high group comprised 20% and consumed 46% of expenditures, whereas the all other group comprised 78% and consumed 42% of expenditures. On average, the highest group had \$102,798 in yearly health care expenditures, compared with \$34,610 and \$7,634 for the high and all other groups, respectively. Fifty-seven percent of the highest group saw 16 or more different providers annually, compared with 21% and 2% of the high and all other groups, respectively. Finally, 28% of the highest group had prescriptions from at least seven different providers, compared with 20% and 5% of the high and all other groups, respectively.

Implications for Case Management Practice: Individuals with high health care needs and costs have visits to numerous health care providers and receive multiple prescriptions for pharmacotherapy. As a result, these individuals can become overwhelmed trying to manage and coordinate their health care needs. Care coordination programs may help these individuals coordinate their care.

Key words: case management, comorbidity, disease management, gerontology, Medicare

The proportion of the U.S. population 65 years or older is growing. A report by the Institute of Medicine stated that the increasing age of those born between 1946 and 1964, combined with an increase in life expectancy and a decrease in the number of younger individuals, will lead to older adults comprising a larger percentage of the U.S. population (Institute of Medicine, 2008). The report estimated that between 2005 and 2030 the number of adults 65 years or older will almost double, from 37 million to more than 70 million, accounting for an increase from 12% of the U.S. population to almost 20%. This anticipated steady increase is often referred to as the “Silver Tsunami” or “Silver Surge” (Barry, 2008).

Advancing age is often accompanied by an increase in chronic conditions and a subsequent increase in health care needs and costs (Hong, Siegel, & Ferris, 2014). For example, a 2012 report stated that 67% of Medicare beneficiaries had two or more chronic conditions, and 37% had four or more

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Traditional fee-for-service Medicare has significant cost sharing that can create a financial hazard for individuals with high health care needs and costs. As a result, about 21% of individuals have some type of Medicare Supplement Insurance plan to help defray the out-of-pocket costs associated with Medicare.

(Centers for Medicare & Medicaid Services, 2012). Notably, the 14% of beneficiaries with six or more chronic conditions accounted for 55% of Medicare spending on hospitalizations and 63% of postacute care dollars, such as those spent for skilled nursing facility and other long-term care (Centers for Medicare & Medicaid Services, 2012).

Medicare is the U.S. federal health insurance program for individuals 65 years of age or more and has four different parts (Medicare.Gov, n.d.). Medicare Part A covers inpatient hospital stays, care in a skilled nursing facility, hospice care, and some home health care. Medicare Part B covers many outpatient services, medical supplies, and preventive services. Medicare Part C, also known as Medicare Advantage, is coverage offered through private companies that contract with Medicare to provide all Part A and Part B benefits; most offer prescription drug coverage. In 2015, about 31% of the Medicare population were in Medicare Advantage plans (Jacobson, Damico, Neuman, & Gold, 2015). Nearly two thirds of Medicare Advantage enrollees are in Health Maintenance Organization plans and about a quarter are in Preferred Provider Organization plans, which provide greater flexibility to access health professionals outside an established network (Kaiser Family Foundation, n.d.). Finally, Medicare Part D provides prescription drug coverage for those with traditional fee-for-service Medicare. Medicare Parts A and B are often referred to as traditional, fee-for-service Medicare, and individuals with this coverage have more choice in selecting their health care providers. Conversely, individuals in Medicare Advantage plans are usually required to use their in-network providers. Although Medicare is a valuable source of health insurance for disabled and older adults, funding the program has been the focus of significant debate.

In 2014, Medicare covered 53.8 million individuals, and had \$613.3 billion in total expenditures and an income of \$599.3 billion (The Boards of Trustees Federal Hospital Insurance and Federal Supplementary Medical Insurance Trust Funds, 2015). Because Medicare is spending more than it accrues, estimates

predict that Medicare's hospital insurance trust fund will be depleted in 2030 (The Boards of Trustees Federal Hospital Insurance and Federal Supplementary Medical Insurance Trust Funds, 2015). As a result, there is much debate within the federal government and health care industry regarding what changes are needed to ensure the long-term solvency of Medicare.

Traditional fee-for-service Medicare has significant cost sharing that can create a financial hazard for individuals with high health care needs and costs. As a result, about 21% of individuals have some type of Medicare Supplement Insurance plan to help defray the out-of-pocket costs associated with Medicare (AARP Center for Policy and Research, 2015). Medicare beneficiaries with multiple chronic conditions have high health care needs and often receive fragmented health care. A recent study found that most see two primary care physicians and five specialists working in four different practices (Pham, Schrag, O'Malley, Wu, & Bach, 2007). The Institute of Medicine noticed these inefficiencies and recommended increasing the use of programs that can help Medicare beneficiaries better coordinate their care (Cruz & Cruz, 2001). Health care professionals responded by establishing a number of care coordination programs designed to help these individuals live healthier lives by identifying and engaging those most at risk for severe illness or adverse health outcomes or high, and potentially preventable, health care utilization. Once engaged, a care coordinator will assess gaps in health care and develop a plan of care intended to address the health care needs of the participant. Care coordinators will also confer and collaborate with medical providers, review the use and appropriateness of, and adherence with, prescribed medications, accompany individuals to their medical appointments if needed, provide patient and family education, and assist with referral to community resources as appropriate (Hawkins et al., 2014).

The objective of this study was to describe the health care needs and costs of individuals with an AARP Medicare Supplement Insurance plan insured by UnitedHealthcare Insurance Company (for New York residents, UnitedHealthcare Insurance Company of New York). More specifically, we describe their burden

Medicare beneficiaries with multiple chronic conditions have high health care needs and often receive fragmented health care. A recent study found that most see two primary care physicians and five specialists working in four different practices.

of medical conditions, differences in performance on established quality of care metrics, as well as their differences in use of health care services and level of health care expenditures, using three defined levels of health care needs and costs.

RESEARCH DESIGN

Study Population

This study included 3.7 million individuals with an AARP Medicare Supplement Insurance plan, insured by UnitedHealthcare Insurance Company, who also had 12 months of continuous coverage between July 1, 2013, and June 30, 2014. Three groups were used in this study, determined by applying rules often used to identify individuals eligible to participate in disease and case management programs, as described in the next paragraph. The three groups included the highest needs, highest costs (the “highest group”), the high needs, high costs (the “high group”), and the “all other group.”

Health Care Needs and Costs Groups

Eligibility was determined by applying an internally developed algorithm to individuals with an AARP Medicare Supplement Insurance plan. This algorithm was based upon a number of criteria, including hierarchical condition category (HCC) score, the Optum ImpactPro (IPRO) prospective risk score, as well as diagnoses of three conditions commonly targeted by disease management programs: coronary artery disease, congestive heart failure, or diabetes. As described in more detail in Table 1, the highest group included individuals with HCC scores 3.75 or more. The high group consisted of those with HCC scores less than 3.75, but had other combinations of HCC score, IPRO risk score, and either congestive heart failure, coronary artery disease, or diabetes. The all other group included all other individuals who did not meet the criteria for the highest or high groups. The HCC score is obtained from a standard risk adjustment tool utilized by the Centers for Medicare & Medicaid Services (CMS). The HCC model developed by the CMS uses a sample of over 1 million individuals with Medicare to predict health care costs on the basis of demographic and health conditions, which are then converted into relative risk factors (Pope et al., 2011). Thus, the average Medicare insured has an HCC score of 1.0, whereas scores greater or less than 1.0 reflect expectations, respectively, for higher, or lower, future costs on the basis of the individual’s age, gender, and medical conditions.

The IPRO risk score is calculated using predictive modeling that utilizes medical claims, pharmacy

TABLE 1
Criteria Used to Create Needs and Costs Groups

Group	Criteria
Highest needs, highest costs	HCC score ≥ 3.75
High needs, high costs	Congestive heart failure with HCC > 2.8 or Optum IPRO prospective risk score > 7.0 Or: Coronary artery disease with either: (1) HCC > 2.8 or IPRO > 7.0 Or: (2) HCC < 2.8 and nonadherent on statin medication, ACE-inhibitor medication, or β-blocker medication Or: - Diabetes with either: (1) HCC > 2.8 or IPRO > 7.0 - Or: (2) HCC < 2.8 and nonadherent on ACE-inhibitor medication Or: - Having an HCC > 2.8 or IPRO > 7.0
All other	All others not meeting the above criteria

Note. ACE = angiotensin-converting-enzyme; HCC = hierarchical condition category; IPRO = ImpactPro.

claims, laboratory results (when available), and member demographics, and uses information about diagnoses observed in the claims data to generate a score, centered around 1.0. This score predicts whether Medicare-allowed charges will be higher or lower than average in the upcoming year.

Descriptive Variables

Demographic variables were created from a number of data sources and used to illustrate differences among the three cohorts. Administrative data files included the individual’s age, gender, and two variables measuring location. The first location variable indicated whether the individual resided in a rural versus an urban area based on core-based statistical area definitions published by the U.S. Census Bureau (U.S. Census Bureau, n.d.a). The second indicated the state of residence for the individual. Administrative data also provided the type of Medicare Supplement plan on the basis of the level of coverage provided.

The analyses also assessed differences in the supply of health care services in the individual’s area of residence, derived from the Dartmouth Atlas of Healthcare (The Dartmouth Atlas of Healthcare). Included were the number of hospital beds, primary care providers, nurses, and surgeons. These data are at the hospital service area level (Birkmeyer et al., 1999), which were then transferred to zip code level

by the crosswalk supplied with the data and then calculated per 1,000 residents.

Socioeconomic variables included zip code-level correlates of the individual's race, income, and educational level, which were unknown. Therefore, zip code-level correlates of these measures were utilized, accomplished by extracting 2010 U.S. Census Bureau demographic data from the American Fact Finder website (U.S. Census Bureau, n.d.b). Ascribing labels to individuals based on their zip codes is imperfect, but we believe it is better to attempt to account for socioeconomic factors in this way rather than make no adjustments for socioeconomic factors. Therefore, we used zip code-level correlates of race and income. Likely, membership in various race or income groups has been shown to correlate with zip code-based metrics, which in turn have been shown to influence health care utilization and expenditures (American Hospital Association, 2009).

In addition to the HCC and IPRO risk scores, this analysis included a number of other health-related variables. Variables were created for the number of annual visits to a family or internal medicine provider, specialist, surgeon, nonphysician health care provider, or to a therapist of any type, other than behavioral health. We also included variables that describe the total number of health care visits, the number of unique providers seen, as well as the number of unique providers who wrote a prescription for pharmacotherapy, and the number of drug classes prescribed. Also included were variables for the number of emergency department (ED) visits and number of hospitalizations. Finally, evidence-based medicine (EBM) grouper software was used to identify individuals with 15 different medical conditions. This software utilizes medical claims, pharmacy claims, and laboratory result records to identify patients with selected clinical conditions (Ingenix, 2007). These conditions were chosen on the basis of historical prevalence in those who are 65 years and older, as well as volume of cases identified in the study population. These conditions included congestive heart failure, atrial fibrillation, diabetes, asthma, rheumatoid arthritis, hypertension, coronary artery disease, chronic obstructive pulmonary disease, hyperlipidemia, depression, osteoporosis, chronic kidney disease, stroke, and breast or prostate cancer. A variable was also created to indicate the total number of these conditions that were comorbid.

Differences in health care quality were assessed using EBM metrics. EBM is treatment consistent with processes described in the peer-reviewed literature that are associated with higher quality of care (Sackett, Rosenberg, Gray, Haynes, & Richardson, 1996). When there was evidence in the medical claims database or pharmaceutical claims database that the member met a relevant recommended guideline for

managing an individual disease or condition, he or she was flagged as adherent with that EBM guideline. Guideline adherence was calculated for congestive heart failure, diabetes, hypertension, coronary artery disease, hyperlipidemia, depression, and atrial fibrillation. Adherence was also calculated for the broad groups of medication adherence and care patterns. Medication adherence included whether or not the individual was adherent with his or her prescription medication regimen, whereas care pattern metrics included adherence with recurring office visits and laboratory tests or procedures. An adherence index was calculated on the basis of the number of EBM rules that applied to each individual (denominator) and the number of EBM rules with which the individual was adherent (numerator). Individuals were considered adherent if their adherence index was 70% or greater for that specific disease condition, medication adherence, or care pattern. EBM metrics were excluded if the metric was not pertinent to those 65 years or older, if the metric included laboratory result values (these data were not available), was for an immunization, or if there were fewer than 100 individuals for whom the metric applied.

Health care expenditure data were also utilized, and included yearly adjusted medical expenditures paid by Medicare, the AARP Medicare Supplement Insurance plan, and the individual. Pharmaceutical data were available for little more than half of the study population, namely those who had a United-Healthcare AARP MedicareRx Part D plan. Variables were created to capture the yearly adjusted amount of pharmaceutical claims paid by the AARP MedicareRx Part D plan and paid by the individual.

Statistical Analyses

Frequency distributions of the above-mentioned variables by group of interest (highest, high, and all other) were produced for this study to demonstrate care coordination burden and the potential opportunity for intervention with care coordination. Given the large size of the all other group, very small absolute differences in frequency distributions were statistically significant, yet these differences were of little practical significance. As a result, meaningful differences were subjectively judged on the basis of a minimum of a five-percentage point difference in frequencies between the three groups.

RESULTS

There were 69,739 (1.9%) individuals in the highest group, 747,182 (20.2%) in the high group, and 2,877,505 (77.9%) in the all other group (see Table 2). As expected, those in the highest and

TABLE 2
Descriptive Characteristics of Individuals With
an AARP-Branded Medicare Supplement Plan

Characteristic	Highest Group <i>n</i> = 69,739	High Group <i>n</i> = 747,182	All Other Group <i>n</i> = 2,877,505
<i>Demographics</i>			
Age			
<65	2.5%	2.0%	1.0%
65–69	9.5%	11.5%	24.7%
70–74	16.4%	18.1%	26.2%
75–79	18.3%	18.7%	18.1%
80–84	18.2%	17.1%	12.6%
≥85	35.1%	32.5%	17.3%
Gender			
Female	47.3%	55.6%	59.9%
Male	52.7%	44.4%	40.1%
Medigap plan type			
First-dollar coverage	75.3%	75.4%	71.6%
Least coverage	4.8%	4.8%	5.6%
Medium coverage	19.3%	19.5%	18.8%
Add-on rider	0.0%	0.0%	0.1%
Missing	0.6%	0.2%	3.9%
<i>Health-related variables^a</i>			
Average HCC score	4.68	1.89	0.76
Average Optum ImpactPro prospective risk score	16.88	7.61	2.77
Family practice or internal medicine provider visits			
0	4.6%	8.4%	22.0%
1–3	8.7%	19.8%	42.9%
4–5	6.8%	14.0%	16.2%
6–10	15.2%	24.4%	13.6%
11–15	13.4%	14.1%	3.4%
≥16	51.2%	19.3%	1.9%
Specialist provider visits			
0	4.2%	6.5%	27.1%
1–3	7.4%	16.0%	35.9%
4–5	5.0%	11.0%	13.7%
6–10	12.9%	23.6%	15.8%
11–15	11.4%	15.8%	4.8%
≥16	59.1%	27.1%	2.8%
Surgeon visits			
0	44.2%	54.5%	75.7%
1–3	30.7%	28.3%	18.0%
4–5	9.1%	7.8%	3.4%
6–10	10.2%	7.1%	2.4%
11–15	3.2%	1.6%	0.4%
≥16	2.6%	0.7%	0.1%

(continues)

TABLE 2
Descriptive Characteristics of Individuals With
an AARP-Branded Medicare Supplement Plan
(Continued)

Characteristic	Highest Group <i>n</i> = 69,739	High Group <i>n</i> = 747,182	All Other Group <i>n</i> = 2,877,505
Nonphysician provider visits			
0	13.9%	24.5%	52.0%
1–3	26.7%	37.1%	35.1%
4–5	12.0%	12.8%	6.5%
6–10	19.2%	14.9%	4.7%
11–15	10.4%	5.6%	1.1%
≥16	17.7%	5.2%	0.6%
Therapy provider visits			
0	90.3%	86.9%	91.5%
1–3	2.5%	2.9%	1.9%
4–5	0.9%	1.3%	0.9%
6–10	2.1%	3.0%	2.3%
11–15	1.3%	2.1%	1.4%
≥16	3.0%	3.8%	2.0%
Number of annual health care visits			
0–6	2.4%	4.9%	40.6%
7–12	3.2%	10.6%	26.7%
13–24	10.8%	29.0%	23.3%
25–35	12.8%	22.0%	6.0%
≥36	70.8%	33.5%	3.3%
Number of unique providers seen			
0	0.8%	0.4%	5.5%
1–3	2.9%	7.5%	38.3%
4–5	4.2%	11.6%	23.1%
6–10	16.4%	35.1%	26.0%
11–15	17.9%	24.0%	5.5%
≥16	56.5%	21.4%	1.6%
Number of drug classes prescribed			
1–5	4.5%	8.9%	40.1%
6–9	13.4%	24.8%	35.8%
10–19	58.7%	58.0%	23.4%
≥20	23.5%	8.4%	0.6%
Missing ^b	39.9%	36.9%	43.5%
Number of providers writing a prescription			
1–2	6.5%	8.6%	23.2%
3–4	11.7%	17.4%	19.7%
5–6	13.6%	16.6%	9.1%
≥7	28.4%	20.4%	4.5%
Missing ^b	39.9%	36.9%	43.5%

(continues)

TABLE 2
Descriptive Characteristics of Individuals With
an AARP-Branded Medicare Supplement Plan
(Continued)

Characteristic	Highest Group <i>n</i> = 69,739	High Group <i>n</i> = 747,182	All Other Group <i>n</i> = 2,877,505
Number of ED visits			
0	26.9%	51.9%	80.1%
1	15.5%	21.3%	14.0%
2	15.7%	12.0%	3.8%
3	13.3%	6.7%	1.2%
≥4	28.6%	8.1%	0.8%
Number of hospital admissions			
0	18.8%	50.6%	87.9%
1	22.0%	26.8%	9.3%
2	18.8%	12.1%	1.9%
3	13.8%	5.4%	0.5%
≥4	26.6%	5.1%	0.3%
Number of co-occurring disease conditions			
0	2.6%	3.6%	22.7%
1–2	16.0%	28.0%	48.5%
3–4	31.5%	44.6%	25.8%
5–6	32.6%	20.4%	2.8%
≥7	17.4%	3.4%	0.1%
Health care expenditures			
Medical costs (yearly adjusted)			
Medicare paid	\$92,324	\$30,586	\$6,401
Plan paid	\$10,285	\$3,838	\$1,055
Total patient paid	\$188	\$186	\$135
Total medical costs	\$102,798	\$34,610	\$7,634
Total costs	13.0%	47.0%	39.9%
Part D costs (yearly adjusted)			
Part D plan paid amount	\$5,496	\$3,331	\$1,225
Part D member paid	\$1,145	\$906	\$521
Part D total covered amount	\$6,641	\$4,237	\$1,747
Total Part D costs	5.4%	36.6%	58.1%

Note. ED = emergency department; HCC = hierarchical condition category.

^aBased upon an annual (12 months) period.

^bAbout half of all individuals with an AARP-branded Medigap plan have an AARP MedicareRx Part D plan.

high groups were older, with more than 30% 85 years or older, compared with 17% of the all other group. The highest group was 53% male, compared with 44% and 40% for the high and all other groups, respectively. Otherwise, the observed differences for the geographic location variables, the geo-coded race, ethnicity, and education variables, as well as the supply side measures, did not meet the five-percentage point difference criteria for being practically significant, and were not included in Table 2 for brevity.

With the exception of hyperlipidemia, the highest and high groups had a higher percentage of any of the disease conditions measured (see Figure 1). In addition, the highest and high groups had more comorbid conditions. Eighty-one percent of the highest group had three or more disease conditions, compared with 68% and 29% for the high and all other groups, respectively. Similarly, 50% of the highest group had five or more disease conditions, compared with 24% of the high group and 3% of the all other group.

The highest group saw more medical providers and had more prescriptions for pharmacotherapy. Eighty-three percent of the highest group had at least six visits with a specialist, compared with 66% and 23% of individuals in the high and all other groups, respectively. Similarly, 80% of the highest group had at least six visits with a family or internal medicine provider, compared with 58% and 19% of individuals in the high and all other groups, respectively. This trend continues, as a higher percentage of the highest group had six or more visits with surgeons or non-physician providers, followed by the high group and then the all other group. However, this trend was not observed for therapists, where 10% of the high group had seen a therapy provider, compared with 13% of the highest group and 9% of the all other group.

Fifty-seven percent of individuals in the highest group saw 16 or more different providers in a year, compared with 21% and 2% of individuals in the high and all other groups, respectively. Individuals in the highest group averaged 68 health care visits per year, whereas those in the high and all other groups averaged 32 and 11 visits per year, respectively. In addition, 28% of individuals in the highest group had prescriptions from at least seven different providers, compared with 20% and 5% of individuals in the high and all other groups, respectively. Finally, 24% of individuals in the high group had prescriptions from more than 20 different classes of drugs, in

FIGURE 1
Distribution of disease conditions among the highest,
high, and all other groups.

comparison to 8% and 1% of individuals in the high and all other groups, respectively.

The highest group had more visits to an ED and were hospitalized more frequently. Twenty-nine percent of individuals in the highest group had at least four visits to an emergency department, and 27% were hospitalized four or more times. In comparison, 8% and 1% of individuals in the high and all other groups had at least four visits to an ED, whereas 5% and less than 1% of individuals in the high and all other groups had four or more hospitalizations.

Individuals in the highest group averaged \$102,798 in annual medical expenditures, compared with \$34,610 for individuals in the high group and \$7,634 for individuals in the all other group. About 89% of total medical expenditures were paid for by Medicare, about 10% by Medigap, and the remainder by the individual. About half of the individuals had purchased an AARP MedicareRx Part D plan insured through UnitedHealthcare, allowing prescription drug expenditures to be estimated for this group. Individuals in the highest group averaged a total of \$6,641 in annual AARP MedicareRx Part D plan expenditures, compared with a total of \$4,237 for individuals in the high group and a total of \$1,747 for individuals in the all other group. Total Part D expenditures included those paid by UnitedHealthcare and those paid by the individual.

When evaluating quality of care using the EBM metrics, the all other group had the highest adherence, followed by the high group, with the highest group having the lowest adherence (see Figure 2). This trend was consistent across all EBM metric categories, except care pattern metrics, where the highest group had the highest adherence, followed by the all other group and high group, respectively. Care pattern metrics include whether or not individuals had recurring office visits and laboratory tests as recommended to manage their chronic health conditions.

FIGURE 2
Evidence-based medicine metrics by disease condition for the highest, high, and all other groups.

DISCUSSION

This study included individuals with an AARP Medicare Supplement Insurance plan to compare differences between three groups of individuals on the basis of their health care needs and costs to demonstrate their health care burden and opportunity for care coordination. The highest group represented only 2% of this population, although consumed 12% of health care expenditures. As expected, this group was older, sicker, consumed more health care resources, and had poorer adherence with most EBM metrics. In comparison, the high group comprised 20% of this population and consumed 46% of health care expenditures, whereas the all other group comprised 78% of this population and consumed 42% of health care expenditures.

These findings suggest that individuals in the highest and high groups need help coordinating their care. The individuals within these groups have a higher prevalence of multiple chronic conditions, which are associated with a greater risk of death, disability, institutionalization, greater use of health care resources, poorer quality of life, and higher rates of adverse effects of treatment or interventions (American Geriatrics Society Expert Panel on the Care of Older Adults With Multimorbidity, 2012). The individuals within the highest and high groups were often treated by 11 or more different health care providers in a year, and about 25% of both groups had seven or more different providers writing prescriptions for pharmacotherapy. In addition, about 24% of the highest group and 8% of the high group had more than 20 prescriptions for different drug classes, whereas 42% of the highest group and 15% of the high group had at least three visits to an ED. Traditional fee-for-service Medicare and Medigap plans do not require insureds to have a primary care provider. As a result, the burden of care coordination among numerous medical providers falls to the individual. Subsequently, this uncoordinated care likely leads to lack of any defined goals of care or plan of care direction, increased risk for duplication, unnecessary or potentially harmful services, increased risk of pharmacotherapy errors, increased avoidable costs to Medicare, Medigap, and the individual, and other poor health outcomes.

Regarding EBM metrics, most of those in the highest and high groups were 85 years or older and had four medical conditions on average. It is possible that adherence for an EBM metric for one condition is made more difficult by the presence of other comorbid conditions, causing those with several comorbid conditions to appear to have poorer adherence. Integrating guideline-directed care for individuals with multiple chronic conditions has

been challenging (American Geriatrics Society Expert Panel on the Care of Older Adults With Multimorbidity, 2012) and would likely be more successful with care coordination. In addition, the highest group had the highest compliance for care pattern EBM metrics. Because these individuals averaged 68 health care visits annually, it is likely that their care pattern needs are being addressed during these visits. The possible association between poor EBM adherence among the high and all other groups and transitioning to a more at-risk and potentially sicker group is worth further study.

Although data regarding quality of life were not available, quality of life includes physical, material, social, and emotional well-being, as well as social development and activity (Felce & Perry, 1995). Given the high number of disease conditions in the highest and high groups, and the resulting number of health care visits, prescriptions for pharmacotherapy, emergency department visits, and hospitalizations, these individuals had poor physical health and well-being. As explained next, those in the highest group and high group likely suffered financially from having a large burden of illness.

Individuals in the highest group averaged \$102,798 in health care expenditures, compared with \$34,610 for those in the high group and \$7,634 for those in the all other group. However, the amount actually paid for medical care by the individual was similar across the three groups (\$188 for those in the highest group, compared with \$186 and \$135 for those in the high and all other groups, respectively). Many individuals purchase Medigap plans that cover most expenditures (i.e., first-dollar coverage plans) because they allow insureds to better predict their month-to-month health care expenditures. First-dollar coverage Medigap plans pay for most or all of traditional fee-for-service Medicare's deductibles and coinsurance. They are also the most popular Medigap plans, and at least 70% of individuals in all three groups had these plans, so observing similar amounts paid by all three groups was not unexpected. Using first-dollar coverage plans also simplifies billing processes, which is an advantage when seeing multiple providers, as was observed for the highest and high groups.

The MyCarePath Care Coordination Program

Individuals in the highest and high groups may benefit from participating in a care coordination program. Beginning in 2008, a number of care coordination programs were piloted for individuals with an AARP Medicare Supplement Insurance plan within target markets in five states, including parts of California, Florida, New York, North Carolina, and Ohio. Included were high-risk case management (HRCM), moderate case management, disease management programs for coronary artery disease, congestive heart failure, and diabetes, and a depression management program. These programs were ongoing through 2012. In a recent evaluation, the HRCM program was shown to decrease hospital readmissions, improve EBM quality metrics, and reduce health care spending (Hawkins et al., 2014).

Beginning in 2013, these programs transitioned into "MyCarePath," a program with a holistic focus that includes telephonic and face-to-face visits conducted by a nurse-led multidisciplinary care coordination team. The registered nurses who lead the teams are licensed in the states for which they provide services. In addition, these nurses are certified case managers, or are working toward certification, through the Commission for Case Management Certification. Other team members include licensed social workers with either a bachelor's or master's degree in social work, a pharmacist, a registered dietitian, and three licensed physicians, of which two are board certified in internal medicine and geriatric medicine, whereas the third is board certified by the American Board of Psychiatry and Neurology with added qualifications in geriatric psychiatry. In addition, nonclinical team members provide support to the licensed staff, but do not interface directly with participants during the care coordination process.

Components of the MyCarePath care coordination program include the ability to identify individuals with an AARP-branded Medicare Supplement plan who may benefit from care coordination, an engagement process, an in-home health needs assessment, and care coordination.

The program uses several sources to find individuals qualified for the program. Medical claims data

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Individuals with high health care needs and costs have visits to numerous health care providers and receive multiple prescriptions for pharmacotherapy. As a result, these individuals can become overwhelmed trying to manage and coordinate their health care needs. In fact, many may consider it a full-time job to manage such a large volume of health care appointments and prescriptions.

are used to identify those with HCC scores greater than 3.74. Individuals were also invited into the program if they were referred to the program, such as through the telephonic nurse help line available to all individuals with an AARP-branded Medicare Supplement plan. Some may have been referred to the program by their doctor or another care provider who knew of the program, whereas others may have been referred after completing a health risk assessment survey that yielded information about their health status and suggested that participation in MyCarePath may be beneficial.

The engagement process includes nurses and engagement specialists who make outbound telephone calls to eligible individuals. Other methods used include mailings and interactive voice response, which is a technology that allows a computer to interact with those eligible via telephone. Once engaged, a home visit is scheduled with participants. During these visits, the nurse works with the participant to identify gaps in care, and then develops a “plan of care” designed to close these gaps. Gaps may consist of a lack of medical care, an unmet behavioral health need, or nonmedical needs, such as safe housing, caregiver support, food security, and transportation.

As with the HRCM program, MyCarePath is intended to help participants live healthier lives and decrease health care expenditures. To accomplish this, the care coordination team helps participants to manage appointment scheduling and treatment plans from multiple providers, and reconcile multiple medications and medication adherence issues. Education on health-related topics is provided as needed, and there are other resources to help with community and caregiver support.

CONCLUSIONS

This study found that individuals with traditional fee-for-service Medicare and a Medigap plan can be risk-stratified on the basis of health care needs and costs, and that 22% of this group has high health care needs that account for nearly 60% of group health care costs. Individuals with high health care needs and costs have visits to numerous health care providers and receive multiple prescriptions for

pharmacotherapy. As a result, these individuals can become overwhelmed trying to manage and coordinate their health care needs. In fact, many may consider it a full-time job to manage such a large volume of health care appointments and prescriptions. Care coordination programs, such as MyCarePath, are ideally suited to help these individuals better understand and successfully meet their health care challenges. By teaming with a nurse-led care coordination team, and with physician collaboration, high health care need individuals participating in a care coordination program may achieve improved health care outcomes, including better quality of care and reduced health care expenditures.

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