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Out-of-Pocket Spending for Ambulatory Physical Therapy Services From 2008 to 2012: National Panel Survey

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**Out-of-Pocket Spending for Ambulatory Physical Therapy Services From 2008 to
2012: National Panel Survey**

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Background: Out-of-pocket (OOP) expenditures are incurred as insurers and employers shift some of the burden of healthcare costs onto consumers. As cost-sharing increases, OOP expenditures could be a barrier to physical therapy (PT) care.

Objective: To identify factors associated with any OOP PT spending and to identify factors associated with higher spending among individuals incurring OOP costs.

Design: Retrospective analysis using the four most recently available panels of data from the Medical Expenditure Panel Survey (MEPS) encompassing 2008-2012.

Methods: A data file containing episodes of PT care for 2,189 persons was created. Logistic regression was used to identify factors related to having an OOP expenditure. A multivariable generalized linear model was used to identify factors related to mean OOP expenditures.

Results: On average, an episode of care encompassed 9.9 visits with mean total expenditures of \$1,708 (median \$792). Fifty-four percent of episodes had an OOP expenditure. For individuals with OOP expenditures, the mean OOP expenditure for an episode was \$351 (median \$144). Being female, non-Hispanic and having a higher income was associated with higher odds of incurring an OOP expenditure while being in worse general health, age >65, being nonwhite and having public funding were associated with lower odds of incurring an OOP expenditure. Amounts of OOP spending were higher in urban areas and in all census geographic regions relative to the Northeast.

Limitations: Estimates are based on household-reported survey data, limited to ambulatory care, and do not include institutionalized individuals.

Conclusions: At 54%, the proportion of individuals with OOP expenditures for PT is lower than for general medical care. We found several predictors of having OOP expenditures and of the magnitude of that expenditure.

INTRODUCTION

Controlling healthcare expenditures is a national priority, and a focus of substantial legislative and regulatory activity.¹ While the rate of growth in healthcare expenditures in the US has slowed, out-of-pocket (OOP) expenditures are accelerating.² Cost-sharing mechanisms such as copayments and deductibles shift some of the burden for health care expenditures onto consumers.³ These mechanisms are quite common with only 12% of US health care seekers paying nothing out of pocket toward their health care expenditures.⁴ In 1996, the average OOP expenditure for a US family was \$459; that figure rose to \$795 by 2009, an increase of 73%.⁵ Many American families have difficulty paying medical bills and, as a result, are cutting back on their use of health care.^{5,6} Increasing the OOP burden on consumers creates a possible barrier to care and a greater financial burden for those with less economic means that could result in poorer health status.⁷ This barrier may be amplified in a service like physical therapy (PT) that involves episodic care with multiple visits in an episode.

Demographic variations in OOP expenditures have been seen in preventive health services such as mammography screening.⁸ Disparities in OOP expenditures are evident in populations with disabilities; families of children with activity limitations have higher OOP expenditures⁹ with more burden falling on the lower income families.¹⁰ The prevalence of chronic conditions is rising and there is evidence for a disproportionate burden of OOP expenditures among persons who have these conditions.¹¹ The financial burden created by cost-sharing is of concern since it has the potential to be a barrier to care and could result in poorer health status in at-risk populations who avoid these additional costs.

Recently, a number of American Physical Therapy Association (APTA) state chapters have initiated state-level legislative activity directed at limiting the impact of OOP expenditures that take the form of copayments. The APTA has drafted model legislation for fair copays and there are currently 5 states that have passed laws that limit the copayment for PT.¹² The data that support these legislative efforts comes from state and federal surveys and indicate that nationally there is wide variation in copays per visit ranging from \$10 to \$40.¹³⁻¹⁶

Our study examined the burden of OOP expenditures on patients in the United States who report the use of PT services. We used Andersen's "behavioral model"^{17,18} as a conceptual framework to identify the independent variables (i.e., predictors) for having any OOP expenditure and for expenditure magnitude. The behavioral model was developed to model healthcare utilization and we used it to frame our research since factors associated with utilization should align with factors associated with the expenditures incurred due to utilization. In the behavioral model the three constructs associated with utilization at the individual level are need factors, predisposing factors and enabling factors. Need factors are the variables that describe perceived health status and health conditions. When access to care is equitable, need factors are the strongest predictors of utilization.¹⁷ Predisposing factors are demographic descriptors and variables related to socioeconomic status. Enabling factors are the resources needed to pursue care such as insurance, income and having a usual source of care. Predisposing and enabling factors may predominantly influence utilization when there are inequities of access to care.¹⁷

Based on previous studies of OOP expenditures, we hypothesized that having any OOP expenditure would be associated with enabling factors such as income and health insurance coverage.¹⁹ We also hypothesized that predictors of the magnitude of OOP expenditures for PT would be associated with the enabling factor of geographic variation²⁰ and that higher income would be associated with higher OOP expenditures.¹⁹

METHOD

Data Source

This study used data from the Medical Expenditure Panel Survey (MEPS) Household Component. The MEPS is a survey sponsored by the Agency for Healthcare Research and Quality (AHRQ) that provides data drawn from a nationally representative sample of the US civilian noninstitutionalized population. Detailed information and survey methodology for the MEPS are available through the AHRQ MEPS website.²¹ The MEPS is designed, in part, to examine issues of utilization and expenditure. Machlin et al.²² used the MEPS for studying utilization and expenditures for episodes of ambulatory PT. MEPS also has been used as a data source to examine OOP expenditures for mammography screening as a specific health service,⁸ and OOP expenditures associated with a number of health conditions including psoriasis,²³ inflammatory bowel disease,²⁴ osteoarthritis,²⁵ and number of chronic health conditions.¹¹

To construct the analytic file, we used the longitudinal data files and the annual office-based and hospital outpatient event files from the most recently published publicly-available datasets. Two years of data were available for each of the 4 MEPS panels we used, which were: panel 13 (2008-2009), panel 14 (2009-2010), panel 15 (2010-2011) and panel 16 (2011-2012). By pooling multiple panels we were able to

generate sample sizes that were sufficient for nationally-based estimates and that reduced sampling error for these estimates.

Subjects

The unit of analysis for this study was the individual participant's episode of PT care. To be included in the study the participant had to have participated in the entire 2-year survey cycle and had at least one visit to a physical therapist. PT visits were identified using the "type of provider seen" variable in the office-based and hospital outpatient events files. Episodes were constructed in a manner similar to Machlin et al²² such that an episode was a group of visits with a gap of no more than 90 days between consecutive visits. Episodes with visits occurring in the first or last 60 days of the 2-year cycle of empanelment were excluded because we were unable to determine when an episode of care started or stopped for these visits. We used a combination of 60-day and 90-day windows to balance our desire to maximize our sample size while limiting the extent to which we would underestimate visit counts due to censoring at the beginning and end of each panel and the extent to which we would overestimate visit counts per episode with a shorter time interval. Since the time window to avoid censoring had a much greater impact on sample size we elected to use a less conservative cut-off of 60 days rather than 90 days.

For any participant with more than one episode in the 2-year period, only the first episode of care was used. The final analytic file included 2,189 participants who had an episode of PT care (Figure 1). Of the 2,189 participants, only 229 had more than one episode of care with 211 having 2 episodes and 18 having 3 episodes.

Variables

In the analysis of factors related to having an OOP expenditure, the dichotomous dependent variable was defined as having \$0 or greater than \$0 in OOP expenditures across the episode of PT care. All expenditure data and visit count data were derived directly from the 2 events files and summed across all visits in an episode of care. Expenditures were adjusted to 2012 dollars using the Consumer Price Index.^{26,27} Total expenditures for an episode represented both payments by insurers and other sources, and OOP expenditures by the participant. OOP expenditures included copayments and any other direct payments made by the individual participant for care. A variable was generated to mark all episodes associated with any OOP expenditure.

Need factor variables were: number of visits in the episode, diagnosis, perceived health status, mental health status, and the presence of a functional limitation. The cumulative count of visits to PT providers associated with the episode was derived from the MEPS events files to represent the number of visits in the episode of PT care. The diagnosis variable was created by classifying the ICD-9-CM code of the primary household-reported condition associated with the visits as either being musculoskeletal or any other condition.²² The perceived health status and mental health status variables originated from a MEPS question in which the individual was asked to rate their health or mental health as excellent, very good, good, fair or poor. We collapsed these response categories to very good to excellent, good and poor to fair to ensure sufficient sample sizes in each category. The variable representing the presence of a functional limitation was derived from a MEPS question that asked if the individual had “difficulties walking, climbing stairs, grasping objects, reaching overhead, lifting, bending or stooping, or standing for long periods of time.”²⁸ The health status and functional limitations

questions were asked of participants during each of the MEPS interviews and in our analysis were matched to the time period of the MEPS survey when the episode of PT care took place.

Predisposing factor variables were: age, sex, race, Hispanic ethnicity, and education. Age was divided into 3 categories, 0-17, 18-64 and greater than 65 years. Race was classified as white/nonwhite and ethnicity was classified as Hispanic/non-Hispanic. Participant's highest completed years of education were divided into 3 categories: less than 12 years, 12 years and greater than 12 years.

Enabling factor variables were: geographic region, metropolitan statistical area (MSA) status (differentiating urban from rural geographic areas), income, insurance, and setting in which care was provided. Geographic region was based on the 4 US Census regions of Northeast, Midwest, South and West. MSA status classifies participants as living in urban or rural areas. Three income categories were used in relation to poverty status with low income being defined as less than 200% of poverty level, middle income defined as 200-399% of the poverty level and high income defined as 400% of the poverty level or higher. We used the summary insurance coverage indicator provided by MEPS that has 3 categories of insurance: private insurance indicates the person had any type of private coverage (including TRICARE/CHAMPVA), public insurance coverage only that includes Medicare and Medicaid, and uninsured. Unlike Machlin et al²² we did not use a blended age/insurance variable because age and public insurance were not highly correlated. Among the subgroup of adults aged 65 and over 78% were identified as having private insurance, indicative of individuals with supplemental insurance in

addition to Medicare. The setting in which care was provided is dichotomized in the MEPS as either a hospital-based outpatient clinic or an office-based clinic.

Data Analysis

We used the “SVY” survey estimation commands in Stata version 13.1 to employ longitudinal weights, strata and cluster variables supplied by MEPS to compute nationally-representative descriptive statistics for all episodes of PT care. To examine predictors of any OOP expenditures among all persons who had an episode of PT, we first examined unadjusted, bivariable relationships using chi-square tests for categorical variables and t-tests for continuous variables. To adjust for multiple factors, we used multivariable logistic regression analysis.

To address our second aim of identifying predictors of the magnitude of OOP expenditures, we used a generalized linear model with gamma distribution and log link in the subsample that had any OOP expenditure. Expenditure data is typically skewed because of the small percentage of patients in the tail of the distribution with larger values. Linear regression models of expenditure data can produce biased results and even with transformed expenditure data can't be easily interpreted. The generalized linear model accommodates skewness and provides reliable estimates of the mean and variance relationship of the data.²⁹ The appropriateness of specifying the model with a gamma distribution and log link was verified by a modified Park test.³⁰

RESULTS

Characteristics of the study sample

The sample contained 2,189 participants who had an episode of PT care that took place in 2008-2012 and were part of one of 4 MEPS panels. The sample with population

weights applied represents 53 million episodes in the US across the 5 years of study. Among these episodes, 53.7% (95% CI 51.3, 56.0) of patients incurred at least \$1 in OOP spending. Table 1 provides the weighted descriptive information on the entire sample. On average, there were 9.9 (95% CI 9.1, 10.6) visits per episode of PT care with mean total expenditures of \$1,709 (95% CI \$1498, \$1,919) and a median value of \$792. The full sample contains predominantly working age adults (65.5% between the ages of 18-64) with musculoskeletal conditions (78.1%, 95% CI 75.9, 80.1). The sample was 60.6% (95% CI 58.5, 62.8) women, 88.4% (95% CI 86.4, 90.1) were reported as white and only 7.3% as Hispanic (95% CI 6.1, 8.7). Most care was provided to patients who live in urban areas (85.1%, 95% CI 80.8, 88.6) and in office-based settings (88.9%, 95% CI 87.2, 90.5). Both the full sample and the subsample with OOP expenditures were fairly evenly divided among the 4 MEPS panels ($\chi^2 = 61.12$, $p=0.70$).

Predictors of OOP expenditures vs no OOP expenditures

Among patients with some amount of OOP spending, mean OOP expenditures were \$351.43 (95% CI \$299.03, \$403.83) per episode of care with a median of \$144.00 (Table 2). When OOP expenditures occurred, they were 19.5% of the total expenditures over the course of an episode of PT care. The OOP expenditures equated to a mean value of \$44.73 expended per visit and a median value of \$22.96 per visit. The odds of incurring an OOP expenditure were significantly higher for women, non-Hispanic individuals and those with higher incomes; and significantly lower for those in worse general health, for nonwhites, for those with publicly funded insurance coverage and for adults age >65 (Table 3).

Characteristics of the subsample with OOP expenditures

The distribution of the sample by the magnitude of OOP expenditures per episode of care is illustrated in Figure 2. The top 1% of those with an OOP expenditure accounted for 14.6% of all OOP expenditures. The top 5% accounted for 38.2% of the total. Overall, the top 50% accounted for 90.6% of all OOP expenditures are accounted for with a mean OOP expenditure per episode of \$638.50 or \$67.79 per visit.

Predictors of higher OOP expenses

In the generalized linear model after controlling for the number of visits in an episode and other factors, the enabling factors related to a participants living in other geographic locations were associated with higher OOP expenditures relative to those living in the northeast census region and in those living in urban versus rural areas (Table 3).

DISCUSSION

Our research provides a comprehensive assessment of the financial impact of OOP expenditures on patients in the US who receive ambulatory care from a physical therapist. We identified predictors of incurring OOP expenditures, the absolute amounts of OOP expenditures and the relative burden these costs impose on patients.

Approximately 54% of episodes of PT care are partially or fully funded by the patient through OOP expenditures that are, on average, \$45 per visit. Females, non-Hispanics and individuals with a higher income are more likely to have OOP expenditures.

Individuals in fair to poor health, older adults, nonwhite persons and those insured through public programs are less likely to have OOP expenditures. After controlling for the number of visits in an episode, the strongest predictors of the magnitude of

expenditures for an episode of PT care were living in areas other than the northeast region or living in an urban area.

This study expands on work by Machlin et al²² who used MEPS data from the time period of 2004-2007 to study the determinants of utilization and total expenditures for an episode of PT care. The characteristics of the participants and the episodes of care in our more current MEPS panels are quite similar to those in Machlin et al²² who provided the first benchmark data with an average of 9.6 visits per episode and average expenses adjusted to 2012 dollars of \$1,311. Comparably, the average number of visits per episode in our sample was 9.9 and the increase in expenses per episode was \$1,709 indicating a growth in episode-level spending on PT. The Machlin²² study did not report OOP costs for PT episodes of care so we cannot evaluate whether the share of expenditures paid directly by patients has changed between the time periods covered in the 2 studies. In addition, we included all episodes of care including care for children and not only those of adults.

Data from 2011 for the US indicates that 12% of people pay no OOP expenditures for health services⁴ but our analysis shows that 46% of PT episodes of care involve no OOP expenditure. It would appear that as of 2012, cost-sharing in the form of an OOP expenditure is not consistently a standard approach to funding PT care. Our analysis of the determinants of having OOP expenditures suggests that the burden of those expenditures is not only related to the enabling characteristics of our conceptual model, but also to elements of the need and predisposing characteristics. In terms of the predisposing characteristics and patient demographics, women and non-Hispanic individuals are more likely to have an OOP expenditure while nonwhites and older adults

are less likely to incur OOP expenses. A series of studies on condition-based OOP expenditures similarly found a relationship between having an OOP expenditure and sex, race, and ethnicity.²³⁻²⁵ Though these groups are more likely to have OOP expenditures, the average amount expended per-episode did not differ significantly among individuals with these characteristics.

Among the need characteristics, being in poorer health resulted in a 32% lower odds of having an OOP expenditure. Since the need for PT may be higher among those in poorer health this finding indicates that this subgroup is less likely to have OOP expenditures as a barrier to PT access. Our analysis is limited in that we cannot determine if some participants did not receive PT services because OOP expenditures were so great that access to PT was never achieved.

As we had anticipated in the conceptual model, the enabling construct variables of insurance and income were both related to having an OOP expenditure. However, geographic variables were not significant in the model. The odds of incurring OOP costs were 31% lower for individuals with public insurance relative to individuals with private insurance indicating that Medicaid (for younger individuals primarily) and Medicare programs have alleviated much of the OOP cost burden for PT care for its beneficiaries. Individuals of higher income categories are more than twice as likely to have an OOP expenditure compared to individuals in the lowest income category even after controlling for insurance. From these results, we conjecture that the concept of cost-sharing as represented by OOP expenditures primarily targets higher income and privately-insured individuals.

Given the amounts of OOP expenditures per episode of care and the distribution of total expenditures, it might appear that a number of individuals with higher incomes may be paying for the entire episode OOP. In the model for the magnitude of OOP expenditures after controlling for visits in an episode, living in an urban area was associated with 72% greater OOP expenditures and in terms of geographic regions the South is associated with 44% greater and the West with 29% greater expenditures as compared to persons in the Northeast. The geographic results are consistent with current APTA lobbying efforts at limiting patient expenditures through the fair-copays model legislation, which are focused in these same geographic regions.¹²

In our sample only 10.8% of episodes were completely self-paid. Episodes that were funded completely OOP were evenly distributed across the three income levels and evenly distributed across all quintiles of the OOP expenditure distribution. The highest burden of OOP expenditures for PT is disproportionately concentrated as 25% of patients who incur any OOP expenditure accounted for 75% of all OOP expenditures. Fifty percent of patients with OOP expenditures accounted for only 10% of the total OOP expenditures on PT episodes of care. This disproportionate pattern with a concentration of spending is typical in spending for all health services and for OOP expenditures for all medical care.^{31,32} We believe that if there is a desire to reduce the level of OOP expenditures, attention to the small proportion of higher expenditure episodes could result in the largest reduction of OOP expenditures for PT.

We undertook this study to understand the nature of OOP expenditure and to ascertain if there were clear disparities in who incurred these expenditures for physical therapy. While the mean value of \$351 for an episode of PT may not appear excessive,

using Machlin and Carper's⁴ annualized mean of \$703 indicates that for those individuals the PT episode encompassed half of their OOP expenditures for the year. We believe that for some individuals the OOP expenditure could be a barrier to obtaining PT care and that the policy implications could include advocacy for a limit on OOP expenditures for physical therapy services as a smaller proportion of annual OOP health spending. In the least, our findings indicate that the profession should continue to monitor the proportion of those who have OOP expenditures and the amount incurred.

Our study has several strengths, but also some important limitations. The use of MEPS, a population-based data source, and the pooling of multiple years are strengths of our analysis. Although MEPS collects information on the cost of insurance premiums, the survey is not designed to provide specific information about the proportion allocated to cover specific care types including PT. Nevertheless, rising insurance premiums contribute to the financial burden of medical care for many patients. Additional limits of the data source include that MEPS does not incorporate institutionalized individuals and the information in the files is self-reported and based on household responses to the repeated surveys. It is possible that respondent recall bias is a limitation of this data. AHRQ does not validate the household or individual response data and only validates a proportion of the expenditures. Furthermore, we recognize that these estimates are limited to only PT provided in ambulatory care settings and that both unmeasured factors and possible selection bias among those who receive PT care may explain some of the observed differences in OOP expenditures. Future research should address OOP expenditures for institutional care to gain an understanding of their impact. Our analysis was restricted to the first episode of PT care during the period of participant

empanelment. For 90% of the participants this was the only episode of care however, not including all episodes may be viewed as a limitation of this study. The insurance coverage variable we used from the MEPS was restricted to 3 broad categories that resulted in a limited analysis of insurance type on OOP expenditures. The insurance variable did not clearly indicate persons on Medicare or whether persons with Medicare also had supplemental coverage. This lack of information on supplemental coverage certainly influenced our findings for those with Medicare coverage.

Our analysis is limited to individuals who had at least one PT visit and we could not discern to what extent cost-sharing in the form of OOP expenditures may influence a patient's decision to initiate an episode of PT. Finally, while we used the most recently available MEPS data, it is possible that OOP expenditures for PT services after 2012 have changed relative to that reported in our study. Recently published trend analysis shows growth in patients' health care financial burden.^{33,34} Cost-sharing mechanisms including co-payments and high deductible plans are anticipated to increase; thus, OOP expenditures for PT are also likely to increase over time.

CONCLUSION

This study offers practitioners and policy-makers a US population-based analysis of the burden of OOP expenditures placed on patients who receive PT services. These data may assist legislative efforts to alter the landscape of cost-sharing and OOP expenditures for PT care. We provide national estimates that describe those who incur OOP expenditures in an episode of ambulatory PT care and the amounts incurred. We found several predictors of having an OOP expenditure and of the magnitude of that

expenditure. The proportion of those incurring OOP expenditures for PT is lower than for general medical care.

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Table 1.				
Sample characteristics and expenditures for an episode of physical therapy ^a				
	unweighted, n	weighted, n or %(CI)	Total expenditures in 2012 dollars per episode, mean (CI)	Median expenditures per episode
All episodes	2,189	53,004,787	\$1,709 (\$1,498, \$1,919)	\$792
Diagnosis				
All other diagnoses	496	21.9 (19.8, 24.1)	\$2,102 (\$1,508, \$2,696)	\$708
Musculoskeletal diagnosis	1,693	78.1 (75.9, 80.2)	\$1,599 (\$1,420, \$1,777)	\$816
Perceived health status				
Very good to excellent	899	45.9 (43.0, 48.9)	\$1,440 (\$1,187, \$1,693)	\$728
Good	706	31.4 (28.7, 34.2)	\$1,626 (\$1,435, \$1,818)	\$867
Fair to poor	584	22.6 (20.8, 24.7)	\$2,368 (\$1,666, \$3,069)	\$821
Mental health status				
Very good to excellent	1,271	61.2 (58.4, 64.0)	\$1,575 (\$1,368, \$1,783)	\$763
Good	647	28.3 (25.7, 31.0)	\$1,678 (\$1,361, \$1,996)	\$846
Fair to poor	271	10.5 (8.9, 12.3)	\$2,571 (\$1,504, \$3,639)	\$843
Functional limitation				
No	1,476	68.9 (65.9, 71.7)	\$1,427 (\$1,252, \$1,603)	\$686
Yes	713	31.1 (28.3, 34.1)	\$2,331 (\$1,828, \$2,834)	\$1,012
Age, years				
0-17	165	7.2 (5.9, 8.7)	\$1,458 (\$1,036, \$1,880)	\$559
18-64	1,450	65.5 (62.8, 68.1)	\$1,839 (\$1,548, \$2,129)	\$827
≥65	574	27.3 (24.6, 30.3)	\$1,463 (\$1,260, \$1,666)	\$811
Sex				
Male	816	39.4 (37.2, 41.5)	\$1,672 (\$1,405, \$1,940)	\$740
Female	1,373	60.6 (58.5, 62.8)	\$1,732 (\$1,460, \$2,005)	\$841
Race				

White	1,731	88.4 (86.4, 90.1)	\$1,667 (\$1,452, \$1,883)	\$811
Nonwhite	458	11.6 (9.9, 13.6)	\$2,023 (\$1,335, \$2,711)	\$686
Hispanic ethnicity				
Hispanic	302	7.3 (6.1, 8.7)	\$1,840 (\$799, \$2,881)	\$631
Non-Hispanic	1,887	92.7 (91.3, 93.9)	\$1,698 (\$1,494, \$1,903)	\$813
Education				
< 12 years	390	14.1 (12.4, 16.0)	\$1,672 (\$1,235, \$2,109)	\$686
12 years	572	24.5 (22.3, 26.9)	\$2,054 (\$1,461, \$2,646)	\$839
> 12 years	1,227	61.4 (58.7, 64.0)	\$1,579 (\$1,358, \$1,800)	\$815
Income				
Low	652	22.5 (20.5, 24.7)	\$1,687 (\$1,397, \$1,976)	\$758
Middle	625	27.1 (24.7, 29.5)	\$1,673 (\$1,355, \$1,991)	\$833
High	912	50.4 (47.3, 53.4)	\$1,738 (\$1,403, \$2,073)	\$783
Insurance				
Private	1,567	78.2 (75.6, 80.7)	\$1,737 (\$1,501, \$1,972)	\$831
Public	511	18.1 (16.1, 20.4)	\$1,634 (\$1,167, \$2,102)	\$704
Uninsured	111	3.6 (2.8, 4.7)	\$1,474 (\$909, \$2,038)	\$449
Census region				
Northeast	421	22.1 (18.9, 25.6)	\$1,997 (\$1,345, \$2,650)	\$780
Midwest	577	25.4 (22.6, 28.4)	\$1,806 (\$1,540, \$2,072)	\$903
South	592	27.2 (24.3, 30.3)	\$1,590 (\$1,210, \$1,970)	\$735
West	599	25.3 (23.0, 27.8)	\$1,487 (\$1,118, \$1,856)	\$783
MSA status				
Non-MSA	304	14.9 (11.4, 19.2)	\$1,585 (\$1,234, \$1,936)	\$762
MSA	1,885	85.1 (80.8, 88.6)	\$1,730 (\$1,492, \$1,968)	\$802
Type of setting				
Office-based	1,938	88.9 (87.2, 90.5)	\$1,498 (\$1,354, \$1,642)	\$774
Outpatient hospital	251	11.1 (9.5, 12.8)	\$3,404 (\$2,041, \$4,767)	\$938
Panel				
13	590	25.6 (23.3, 28.1)	\$1,835 (\$1,368, \$2,302)	\$791

14	536	23.5 (21.5, 25.7)	\$1,779 (\$1,372, \$2,185)	\$867
15	472	26.9 (24.7, 29.4)	\$1,495 (\$1,259, \$1,731)	\$821
16	591	23.9 (21.9, 26.1)	\$1,746 (\$1,340, \$2,152)	\$744

^a MSA = metropolitan statistical area, CI = confidence interval

	Episodes with OOP expenditure		OOP expenditures per episode		
	unweighted, n	weighted % (95% CI)	Mean (95% CI)	Median	%OOP to total expenditures per episode (95% CI)
All episodes	1,074	53.7 (51.3, 56.0)	\$351 (\$299, \$404)	\$144	19.5 (15.9, 23.2)
Diagnosis					
All other diagnoses	224	19.9 (17.1, 23.1)	\$307 (\$205, \$409)	\$129	13.5 (6.6, 20.5)
Musculoskeletal diagnosis	850	80.1 (76.9, 82.9)	\$362 (\$300, \$425)	\$149	21.5 (17.4, 25.6)
Perceived health status					
Very good to excellent	504	51.7 (47.9, 55.5)	\$318 (\$266, \$369)	\$133	20.6 (15.4, 25.8)
Good	349	31.7 (28.0, 35.6)	\$395 (\$255, \$535)	\$142	22.8 (15.6, 29.9)
Fair to poor	221	16.6 (14.4, 18.9)	\$374 (\$301, \$447)	\$173	13.7 (7.7, 19.7)
Mental health status					
Very good to excellent	679	66.6 (63.3, 69.8)	\$373 (\$298, \$448)	\$144	21.6 (16.9, 26.3)
Good	292	24.7 (21.7, 28.0)	\$313 (\$231, \$395)	\$153	18.6 (12.6, 24.5)
Fair to poor	103	8.7 (6.9, 10.9)	\$296 (\$193, \$400)	\$129	11.0 (2.5, 19.5)
Functional limitation					
No	792	74.9 (71.3, 78.1)	\$327 (\$265, \$389)	\$135	21.5 (16.6, 26.4)
Yes	282	25.1 (21.9, 28.7)	\$424 (\$327, \$522)	\$168	16.1 (10.6, 21.6)
Age, years					
0-17	90	8.5 (6.7, 10.8)	\$274 (\$180, \$369)	\$130	18.3 (11.8, 24.9)
18-64	765	72.1 (68.0, 75.8)	\$373 (\$306, \$441)	\$145	19.2 (14.8, 23.5)
≥65	219	19.4 (16.2, 23.1)	\$303 (\$212, \$394)	\$142	22.0 (16.2, 27.7)
Sex					

Male	390	37.3 (34.3, 40.4)	\$389 (\$263, \$515)	\$141	23.8 (17.0, 30.7)
Female	684	62.7 (59.6, 65.7)	\$329 (\$284, \$374)	\$145	17.3 (13.3, 21.4)
Race					
White	884	90.2 (88.0, 92.1)	\$348 (\$292, \$404)	\$145	19.5 (15.6, 23.4)
Nonwhite	190	9.8 (7.9, 12.0)	\$387 (\$243, \$530)	\$133	19.4 (11.5, 27.4)
Hispanic ethnicity					
Hispanic	117	5.7 (4.4, 7.5)	\$241 (\$159, \$322)	\$81	19.7 (11.0, 28.3)
Non-Hispanic	957	94.3 (92.5, 95.6)	\$358 (\$303, \$413)	\$147	19.5 (15.7, 23.3)
Education					
< 12 years	157	12.6 (10.3, 15.2)	\$275 (\$193, \$357)	\$130	14.3 (8.0, 20.5)
12 years	229	19.8 (16.9, 23.0)	\$307 (\$219, \$395)	\$128	13.1 (6.4, 19.8)
> 12 years	688	67.6 (64.3, 70.8)	\$379 (\$304, \$453)	\$150	23.4 (18.7, 28.1)
Income					
Low	195	14.0 (11.8, 16.6)	\$319 (\$246, \$392)	\$117	14.8 (9.8, 19.8)
Middle	318	26.6 (23.2, 30.2)	\$282 (\$227, \$337)	\$133	17.6 (14.4, 20.9)
High	561	59.4 (55.7, 63.0)	\$390 (\$305, \$475)	\$155	21.6 (15.6, 27.6)
Insurance					
Private	894	86.3 (83.7, 88.6)	\$361 (\$300, \$422)	\$149	19.8 (15.8, 23.8)
Public	138	10.9 (9.0, 13.2)	\$270 (\$177, \$363)	\$133	15.8 (9.2, 22.4)
Uninsured	42	2.7 (1.9, 3.9)	\$384 (\$173, \$595)	\$99	27.6 (13.2, 42.1)
Census region					
Northeast	204	22.4 (18.6, 26.7)	\$302 (\$218, \$386)	\$133	15.5 (9.0, 22.1)
Midwest	259	22.9 (19.9, 26.2)	\$339 (\$260, \$419)	\$147	17.5 (12.4, 22.7)
South	286	27.0 (23.5, 30.9)	\$400 (\$249, \$550)	\$172	20.7 (11.0, 30.4)
West	325	27.7 (24.3, 31.4)	\$354 (\$274, \$434)	\$129	24.5 (20.0, 28.9)
MSA status					
Non-MSA	132	13.1 (9.3, 18.1)	\$190 (\$139, \$241)	\$105	12.4 (7.8, 16.9)
MSA	942	86.9 (81.9, 90.7)	\$376 (\$316, \$435)	\$150	20.4 (16.3, 24.5)
Type of setting					
Office-based	962	90.8 (88.8, 92.4)	\$353 (\$295, \$410)	\$145	23.2 (19.3, 27.1)

Outpatient hospital	112	9.2 (7.6, 11.2)	\$340 (\$222, \$459)	\$120	7.5 (4.1, 10.8)
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^a OOP = out-of-pocket, MSA = metropolitan statistical area, CI = confidence interval

Table 3.									
Factors associated with OOP expenditures for an episode of physical therapy ^a									
	Episode with >0 OOP expenditure^b				OOP expenditure amount^c				
	Odds ratio	95% CI		P	Exponentiated Coefficient	95% CI		P	
Need Factors									
Number of visits in episode	1.00	0.99	1.01	0.88	1.07	1.05	1.09	<0.001	
Diagnosis									
All other diagnoses	REF				REF				
Musculoskeletal diagnosis	1.08	0.82	1.43	0.58	1.07	0.81	1.42	0.62	
Perceived health status									
Very good to excellent	REF				REF				
Good	1.04	0.79	1.36	0.79	1.26	0.92	1.73	0.14	
Fair to poor	0.68	0.47	0.98	0.04	1.28	0.96	1.7	0.09	
Mental health status									
Very good to excellent	REF				REF				
Good	0.81	0.63	1.05	0.12	0.89	0.66	1.2	0.43	
Fair to poor	0.93	0.61	1.42	0.73	0.72	0.49	1.06	0.10	
Functional limitation									
No	REF				REF				
Yes	0.92	0.71	1.18	0.49	1.17	0.88	1.56	0.29	
Predisposing Factors									
Age, years									
0-17	REF				REF				
18-64	0.79	0.46	1.36	0.39	1.12	0.75	1.67	0.58	
≥65	0.36	0.20	0.63	<0.001	1.04	0.64	1.69	0.89	
Sex									
Male	REF				REF				

Female	1.36	1.09	1.70	0.01	1.05	0.85	1.29	0.65
Race								
White	REF				REF			
Nonwhite	0.73	0.56	0.95	0.02	1.11	0.74	1.67	0.62
Hispanic ethnicity								
Hispanic	REF				REF			
Non-Hispanic	1.53	1.03	2.29	0.04	1.26	0.88	1.8	0.21
Education								
< 12 years	REF				REF			
12 years	0.89	0.59	1.36	0.60	0.8	0.52	1.24	0.32
> 12 years	1.24	0.84	1.82	0.27	0.99	0.70	1.4	0.97
Enabling Factors								
Income								
Low	REF				REF			
Middle	1.76	1.29	2.42	<0.001	0.94	0.69	1.27	0.68
High	2.27	1.64	3.14	<0.001	1.24	0.88	1.74	0.21
Insurance								
Private	REF				REF			
Public	0.69	0.51	0.92	0.01	0.84	0.56	1.26	0.40
Uninsured	0.61	0.31	1.17	0.14	0.88	0.55	1.41	0.59
Census region								
Northeast	REF				REF			
Midwest	0.80	0.60	1.07	0.13	1.26	0.98	1.62	0.07
South	1.11	0.83	1.48	0.49	1.44	1.07	1.95	0.02
West	1.17	0.85	1.59	0.33	1.29	1.00	1.66	0.05
MSA status								
Non-MSA	REF				REF			
MSA	1.07	0.80	1.44	0.62	1.72	1.37	2.14	<0.001
Type of setting								
Office-based	REF				REF			

Outpatient hospital	0.91	0.64	1.29	0.59	0.98	0.66	1.44	0.90
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^a OOP = out-of-pocket, MSA = metropolitan statistical area, CI = confidence interval

^b n= 53,004,787 weighted episodes

^c n= 28,451,157 weighted episodes with OOP expenditure

Figure 1. Sample construction and composition from MEPS public use files to a single analytic file.

Figure 2. Distribution of out-of-pocket expenditures for episodes of physical therapy 2008 – 2012. The first column represents all episodes with an OOP expenditure, the second column represents all the OOP expenditures made for physical therapy episodes of care. The shading shows proportionally how the episodes correspond to a share of the total OOP expenditures made for PT episodes. For example 1% of the PT episodes correspond to 14.6% of the total expenditures and this 1% has a mean per episode expenditure of \$5246 and per visit of \$304.

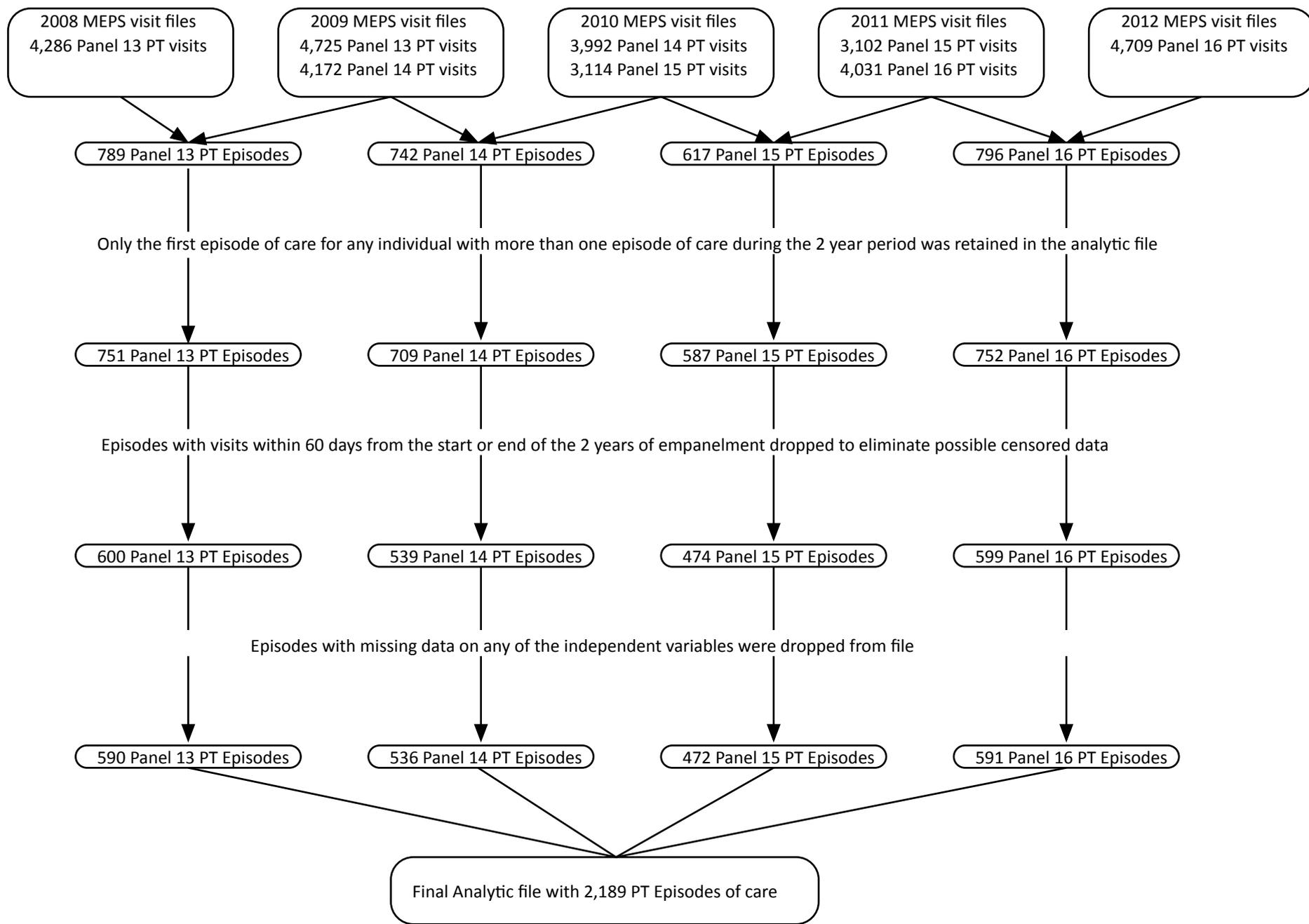


Figure 1.

Sample construction and composition from MEPS public use files to a single analytic file. MEPS = Medical Expenditure Panel Survey; PT = Physical Therapy.

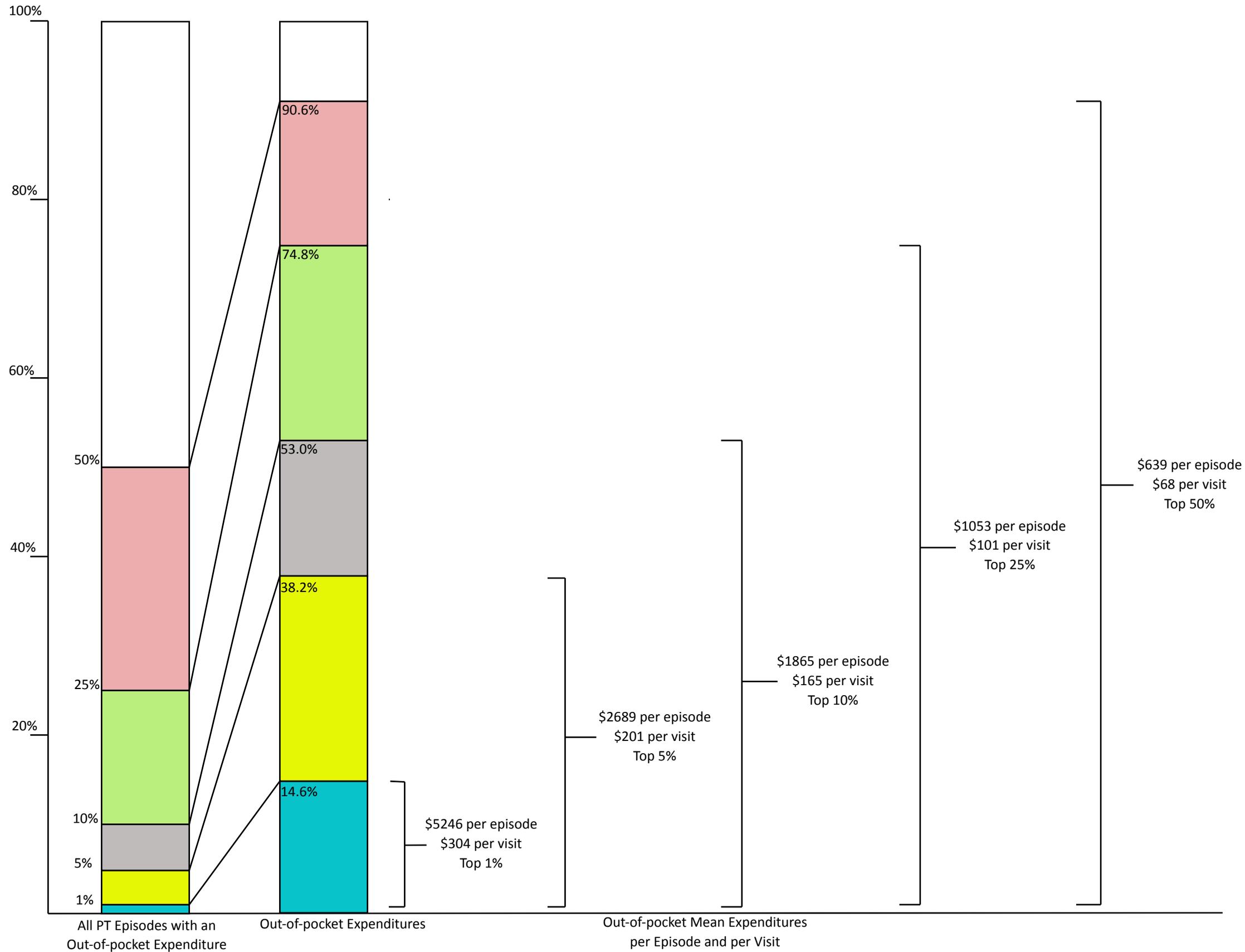


Figure 3.

Distribution of out-of-pocket expenditures for episodes of physical therapy 2008-2012. The first column represents all episodes with an OOP expenditure, the second column represents all the OOP expenditures made for physical therapy episodes of care. The shading shows proportionally how the episodes correspond to a share of the total OOP expenditures made for PT episodes. For example 1% of the PT episodes correspond to 14.6% of the total expenditures and this 1% has a mean per episode expenditure of \$5246 and per visit of \$304.

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