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PSC 500-99-0009/0009
Outpatient Rehabilitation Services Payment System Evaluation

Utilization Analysis:
Characteristics of High Expenditure Users of Outpatient
Therapy Services
CY 2002
Final Report

Prepared For:
The Centers for Medicare and Medicaid Services

Prepared By:
Daniel E. Ciolek, M.S.
Wenke Hwang, Ph.D.

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1.0 Introduction

The Centers for Medicare and Medicaid Services (CMS) has contracted with AdvanceMed, a CSC Company (formerly DynCorp), to provide professional services that build upon prior studies related to the outpatient therapy benefit under Medicare Part B. Under the Program Safeguard Contract (PSC) for Outpatient Rehabilitation Payment Service Evaluation, AdvanceMed is conducting a study of CY 2002 claims data that augments their previous analyses of calendar year (CY) 1998-2000 outpatient therapy claims^{1 2}.

This report identifies clinical and demographic characteristics of the outpatient therapy patients generating the highest annual expenditures³. The report will describe the methodology used, the results, and summary. Results will be used in the development and application of analytic models to outpatient therapy claims data in order to assist CMS in identifying if existing claims data can be used to form the foundation for an episodic-based patient classification modeling scheme⁴. In addition, an analysis of the estimated impact of variations of the annual per-beneficiary financial limitation to the outpatient therapy benefit is presented.

2.0 Methodology

Analytic models were developed to identify individual beneficiaries who received outpatient therapy services and to assure that the services furnished were actually therapy services⁵.

Specifically, the analysis identified claim procedure lines billed and the types of providers billing the therapy services⁶. Beneficiaries who received services that were identified by Medicare as Medicare Part B therapy services that were paid using the physician fee schedule were identified as Part B therapy users. After individual therapy users were identified, they were ranked according to their identified annual Part B therapy utilization. Additional analysis of various clinical and demographic characteristics was then conducted upon the outpatient therapy users generating the highest annual expenditures.

The following sections describe the technical processes implemented to:

- Identify the source data for analysis;
- Obtain the source data for analysis;

¹ Olshin, J., Ciolek, D., and Hwang, W.. *Study and Report on Outpatient Therapy Utilization: Physical Therapy, Occupational Therapy, and Speech-Language Pathology Services billed to Medicare Part B in all Settings in 1998, 1999, and 2000*. September 2002. CMS Contract No. 500-99-0009/002. Available at <http://www.cms.hhs.gov/medlearn/therapy/dyncorprpt.asp>. Last accessed: September 15, 2004.

² AdvanceMed. *Therapy Services Error Rate Study*. April 2003. CMS Contract No. 500-99-0009/002.

³ The term “expenditure(s)” is used in this report consistent with the definition found in the CMS online glossary (www.cms.hhs.gov/glossary); “The issuance of checks, disbursement of cash, or electronic transfer of funds made to liquidate an expense...the same as an outlay.” Expenditure(s) therefore describes the amount paid by Medicare for allowed Part B therapy services after deductibles and coinsurance. The terms “payment(s)” and “expenditure(s)” are used interchangeably in this report.

⁴ Ciolek, D. and Hwang, W. *Development of a Model Episode-Based Payment System for Outpatient Therapy Services: Feasibility Analysis Using Existing CY 2002 Claims Data*. Draft Submitted September 2004.

⁵ These methods are limited to the information available on the claim form. Verification that the service billed was the service rendered would require at least medical review of patient records and ideally clinical observation of services as they are rendered.

⁶ Claims data can be used to identify the individual or organization submitting the claim and the type of therapy services furnished, but not to identify the individual furnishing the services (e.g. “incident to” services).

- Create therapy data sets for analysis; and,
- Conduct utilization analysis of top users of outpatient therapy services.

2.1 Identification of Source Therapy Data for Analysis

One of the most challenging aspects of the current scope of work relates to timely, accurate and cost effective data gathering. The SOW necessitates use of data not currently available in research or public use files (PUFs)⁷. For prior studies, the CMS Office of Information Services (OIS) extracted the data from the NCH mainframe files and provided data tapes to the contractor for project use⁸. This approach has not always resulted in timely delivery of the files. In addition, the use of foreign tapes has also resulted in problems with the completeness of the data files and the integrity of the tapes.

A new approach for data gathering was use of a recently created NCH “data warehouse” within the CMS PSC Western Integrity Center (WIC).⁹ Simply stated, the WIC possesses 100% of the NCH data files for the elements necessary for the outpatient therapy analyses required in this SOW. AdvanceMed obtained the source claims data from the WIC rather than from the CMS OIS department. This innovative approach to obtaining source data is consistent with the recommendations from the June 4, 2003 rehabilitation data teleconference at CMS, which suggested innovative and cost effective models for utilizing existing national data sets. The benefits associated with this approach are:

- CMS mainframe activities continue without interruption from an Ad Hoc contractor job request;
- Two task orders under the CSC/AdvanceMed PSC umbrella contracts leverage expertise and infrastructure; and,
- Analytic activities under the SOW commenced sooner than possible under the traditional approach.

2.2 Obtaining Source Therapy Data for Analysis

The process for obtaining source data from another CMS PCS contractor instead of from CMS/ OIS required the development of new and innovative procedures. In order to facilitate the direct transfer of claims data from the WIC database to the current outpatient therapy study, data use agreements were obtained by both the source contract and the recipient contract, and systems security procedures were updated by both contracts to permit the coordination of this data sharing activity. For the purposes of this study AdvanceMed determined that maintaining a therapy data set on a separate, dedicated server was preferable to manipulating such a data set stored upon the WIC server.

⁷ Complete therapy data cannot be obtained by using the publicly available BESS or HCIS files. These files do not account for demographic differences of therapy users from the general Medicare population. Replication of this study would require access of 100% of NCH therapy claims for the year, or the creation of therapy-specific files that merge carrier and intermediary outpatient therapy claims data.

⁸ AdvanceMed has used this approach extensively for current and past PSC task orders (Statistical Analysis Center, Therapy Review Program, Ohio/West Virginia, Tennessee/North Carolina and Arkansas/Louisiana/Oklahoma).

⁹ The WIC can provide current claims data for the most recent 18-month time frame with rather simple data manipulation. Archived WIC files can also be restored and formatted but require a more intensive level of effort. Because WIC data is constructed with monthly beneficiary enrollment data, AdvanceMed continues to require the source beneficiary denominator file from CMS to analyze annual beneficiary enrollment information.

2.3 Creation of Therapy Data Sets for Analysis

The WIC NCH claims database contains data for 100% of the claims processed for a given time period. Selection criteria were established to assure that Medicare claims related to beneficiaries who obtained therapy services in CY 2002 were identified. Only claims for beneficiaries that received therapy were included in the AdvanceMed therapy database¹⁰.

To accomplish this, AdvanceMed reviewed applicable outpatient therapy service payment and coding policy resources that applied during CY 2002^{11 12 13 14}, and that reflect how CMS has administered the outpatient therapy cap policy when it was enforced in 2003^{15 16}.

The criteria identified for inclusion in the AdvanceMed therapy data set was designed to identify unique beneficiaries that received some form of therapy (PT, OT, and/or SLP services) under Part A or Part B during CY 2002 under a broad net. Therefore, a beneficiary was included in the AdvanceMed therapy data set if at least one claim with a date of service during CY 2002 contained:

- In RIC¹⁷ 1-5 - Revenue Center Code = 042x (PT), 043x (OT), and/or 044x (SLP), or
 - if revenue center is not 042x, 043x, and/or 044x, and,
 - at least one Line HCPCS Code = 29065, 29075, 29085, 29086, 29105, 29125, 29126, 29130, 29131, 29200, 29220, 29240, 29260, 29280, 29345, 29355, 29365, 29405, 29425, 29445, 29505, 29515, 29520, 29530, 29540, 29550, 29580, 29590, 64550, 90901, 90911, 92506, 92507, 92508, 92510, 92525, 92526, 92597, 92598, 92601, 92602, 92603, 92604, 92607, 92608, 92609, 92610, 92611, 92612, 92614, 92616, 95831, 95832, 95833, 95834, 95851, 95852, 96000, 96001, 96002, 96003, 96105, 96110, 96111, 96115, 97001-97799, G0129, G0151, G0152, G0153, G0169, G0193, G0194, G0195, G0196, G0197, G0198, G0199, G0200, G0201, G0279, G0280, G0281, G0283, V5362, V5363, V5364, 0020T, 0029T
- In RIC 6 - Line HCFA Provider Specialty Codes = 65 or 67, or
 - if specialties are not 65 or 67, and,

¹⁰ The prior outpatient therapy study (Olshin, J., et al., *Study and Report...* September 2002) indicated that only about 8.6 percent of Medicare enrollees receive outpatient therapy services in a given year. Limiting the AdvanceMed therapy database in this study to include only those beneficiaries that received therapy services significantly reduced system resource needs.

¹¹ Transmittal AB-01-68, May 1, 2001 *Subject: Consolidation of Program Memorandums for Outpatient Rehabilitation Therapy Services.*

¹² Federal Register, November 1, 2001. *Medicare Program; Revision to Payment Policies and Five-Year Review of and Adjustments to the Relative Value Units Under the Physician Fee Schedule for Calendar Year 2002; Final Rule.* Addendum B.

¹³ Numeric Level I HCPCS code definitions: *Current Procedural Terminology CPT 2002 Professional Edition*, AMA Press, Chicago, IL. 2001.

¹⁴ Alphanumeric Level II HCPCS code definitions: *2002 HCPCS Level II Professional*, Ingenix, Inc., Salt Lake City, UT, 2001.

¹⁵ Transmittal 30, Pub. 100-04, November 14, 2003, Change Request 2973.

¹⁶ Pub. 100-04, Medicare Claims Processing Manual, Chapter 5, Section 10.2: The Financial Limitation. Available at: http://www.cms.hhs.gov/manuals/104_claims/clm104c05.pdf. Last accessed: September 15, 2004.

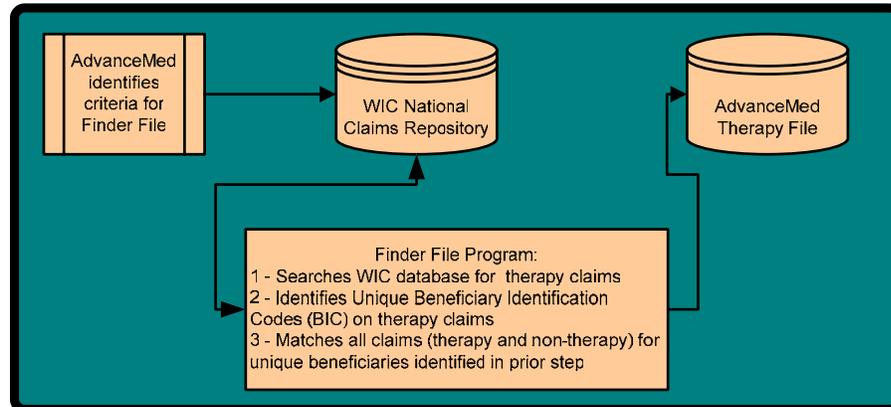
¹⁷ RIC = NCH MQA RIC Code: 1 = Hospital (Part A benefit), 2 = SNF (Part A benefit), 3 = Hospice (Part A benefit), 4 = Outpatient (Part B benefit-institutional settings), 5 = Home Health Agency (Part A benefit), 6 = Physician/Supplier (Part B benefit - non-institutional settings), and 7 = Durable Medical Equipment (Part B benefit).

- at least one Line HCPCS Code = 29065, 29075, 29085, 29086, 29105, 29125, 29126, 29130, 29131, 29200, 29220, 29240, 29260, 29280, 29345, 29355, 29365, 29405, 29425, 29445, 29505, 29515, 29520, 29530, 29540, 29550, 29580, 29590, 64550, 90901, 90911, 92506, 92507, 92508, 92510, 92525, 92526, 92597, 92598, 92601, 92602, 92603, 92604, 92607, 92608, 92609, 92610, 92611, 92612, 92614, 92616, 95831, 95832, 95833, 95834, 95851, 95852, 96000, 96001, 96002, 96003, 96105, 96110, 96111, 96115, 97001-97799, G0129, G0151, G0152, G0153, G0169, G0193, G0194, G0195, G0196, G0197, G0198, G0199, G0200, G0201, G0279, G0280, G0281, G0283, V5362, V5363, V5364, 0020T, 0029T.

To ensure that the AdvanceMed therapy data set contained all claims for dates of service furnished to beneficiaries in CY 2002, all claims processed for an eighteen-month period (January 1, 2002-June 30, 2003) were examined for CY 2002 dates of service. CMS historically has reported that within six months of the close of a calendar year, at least ninety-eight percent of claims for that given year have been processed¹⁸.

Once a universe of beneficiaries was identified that met the inclusion criteria, all Medicare claims for that unique beneficiary with CY 2002 dates of services (therapy or not) were identified and included in the AdvanceMed therapy database (Figure 1).

Figure 1. Key Steps in Obtaining the Source Therapy NCH Data



2.4 Development of Analytic Models for High-Annual Expenditure Part B Therapy Users

This section describes the criteria established to analyze NCH claims data to create the data sets necessary to analyze annual outpatient therapy utilization on a per-beneficiary basis, particularly among therapy users generating the highest expenditures. The methodology used to identify therapy service procedures and provider settings are consistent with current CMS policy. Because of data limitations that were present in CY 2002, the methodology to identify the type of therapy service furnished (described in Section 2.4.2)

¹⁸ Specialty Utilization File Used to Create Resource-Based Practice Expense Relative Value Units for Calendar Year 2004 estimates 98.5% for CY 2002. Available at: <http://www.cms.hhs.gov/regulations/pfs/2004fc/2004frutil.zip>. Last accessed: September 15, 2004.

were modified for this analysis to prevent exclusion of services that are therapy, but cannot be clearly identified as PT, OT or SLP.

Analytic models were developed to permit analysis of beneficiaries generating annual expenditures representing the top 5% of Part B therapy users in CY 2002. Descriptive analysis of these high expenditure therapy users includes:

- Claim diagnosis;
- Type of therapy;
- Annual utilization expenditures; and,
- Demographic characteristics of therapy users.

2.4.1 Identification of Part B Therapy Claims and Setting

The analytic basis for the identification of outpatient therapy claims is the current published policy related to the implementation of the outpatient therapy caps as published in the Medicare Claims Processing Manual.¹⁹ Essentially, the CMS therapy cap policy identified a list of HCPCS that are considered therapy for the purposes of cap tracking²⁰. The list of therapy procedures that the caps would apply to varies depending upon the type of provider setting furnishing the listed HCPCS code, the specialty of the provider if they are a professional billing a carrier, and whether or not a therapy service modifier was used^{21 22}.

The following summarizes the claim criteria that were matched with the therapy HCPCS by provider setting:

- **Hospital** – If bill type = 12 or 13 and revenue center = 042x (PT), 043x (OT), or 044x(SLP)
- **SNF** - If bill type = 22 or 23 and revenue center = 042x (PT), 043x (OT), or 044x(SLP)
- **HHA** - If bill type = 34 and revenue center = 042x (PT), 043x (OT), or 044x(SLP)
- **CORF** - If bill type = 74 and revenue center = 042x (PT), 043x (OT), or 044x(SLP)
- **ORF** - If bill type = 75 and revenue center = 042x (PT), 043x (OT), or 044x(SLP)
- **PTPP** (Physical therapist in private practice) – If provider specialty = 65
- **OTPP** (Occupational therapist in private practice - If provider specialty = 67

¹⁹ Pub. 100-04, Medicare Claims Processing Manual, Chapter 5, Section 10.2: The Financial Limitation. Available at: http://www.cms.hhs.gov/manuals/104_claims/clm104c05.pdf. Last accessed: September 15, 2004.

²⁰ Pub. 100-04, Medicare Claims Processing Manual, Chapter 5, Section 20 lists the HCPCS codes that are always therapy and those that are sometimes therapy depending on the circumstances. This report identifies and analyzes all those HCPCS billed in circumstances that identify them as therapy services whether they are listed as “always therapy” or they are “sometimes therapy” codes that are being reported on the claim as therapy services by use of a therapy modifier. In other circumstances (e.g. “sometimes therapy” codes without a therapy modifier), they may be physician services and are not included in the analysis.

²¹ Therapy Modifier = GP for physical therapy, GO for occupational therapy or GN for speech-language pathology services.

²² The HCPCS specifications applicable for CY 2002 used in this study were reported in Appendix A of our earlier report titled; *Feasibility and Impact Analysis: Application of Various Outpatient Therapy Service Claim HCPCS Edits*. Final Submitted September 2004. CMS Contract No. PSC 900-99-0009/0009.

- **Physician**²³ – If provider specialty = 01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 33, 34, 36, 37, 38, 39, 40, 41, 44, 46, 48, 66, 70, 72, 76, 77, 78, 79, 81, 82, 83, 84, 85, 86, 90, 91, 92, 93, 94, 98, or 99
- **Non-Physician Practitioner** – If Provider Specialty = 50, 89, or 97.

2.4.2 Determining Type of Therapy Furnished

Once a claim line was identified as a therapy service, the next step was to assign the type of therapy to that claim line. While currently published claim processing policy stipulates that any Part B procedure code line containing a procedure code identified in the manual as “always therapy” will be rejected unless it contains an outpatient therapy modifier (GP = physical therapy, GO = occupational therapy, GN = speech-language pathology), this was not implemented in CY 2002²⁴. Preliminary analysis of CY 2002 claims indicated minimal use of the therapy modifiers, particularly in non-institutional provider settings, meaning that the modifiers could not be used to track type of therapy services furnished in CY 2002. Instead, this analysis applied a best-fit algorithm to the identified therapy claim lines to label the type of service furnished.

For institutional provider settings, existing policies stipulate that therapy service claim lines be described by revenue center, in addition to the billed HCPCS. Since revenue center codes are present on all institutional provider claim lines, we assigned the therapy type to the lines as follows:

- Revenue center 042x (0420-0429) = physical therapy;
- Revenue center 043x (0430-0439) = occupational therapy; and,
- Revenue center 044x (0430-0439) = speech-language pathology.

For example, if a SNF Part B claim line contained a 042x revenue center label, the claim line was labeled a physical therapy service.

For non-institutional providers, existing policies attribute the provider specialty code of the treating clinician in addition to the billed HCPCS on the claim line. Since physical therapists in private practice use specialty code = 65, and occupational therapists in private practice use specialty code = 67, the therapy HCPCS were assigned to the provider specialty number. For example, if a billed line of HCPCS 97001 – therapeutic exercise was billed on a line with provider specialty = 67, the line was labeled an occupational therapy service.

The non-institutional provider algorithm was more complex when therapy HCPCS were billed on lines with physician and non-physician practitioner provider specialty numbers. In the small number of lines that were assigned the GP, GO, or GN therapy modifiers, the lines were labeled as the type of therapy service designated by the modifier.

Since preliminary analysis indicated that nearly ten percent of the CY 2002 Part B therapy expenditures were generated by physician and non-physician practitioners that did not use the therapy modifiers when billing “always therapy” codes as described in the manual, we determined that it was not appropriate to exclude these lines from this analysis of beneficiaries generating the highest annual therapy expenditures. In our preliminary analysis we found that, when the modifiers were used with “always therapy” codes, the

²³ NOTE: The chiropractic specialty (35) is not included in this analysis, as it may not be paid for outpatient therapy services per 42CFR410.22 (b)(2) and Section 1861(r)(5) of the Act.

²⁴ Transmittal AB-03-018, Change Request 2183 requiring mandatory use of modifiers was implemented on July 1, 2003.

overwhelming majority of the lines were attributed to physical therapy services. Therefore, for the purposes of this analysis, if an “always therapy” HCPCS was billed on a physician or non-physician practitioner line that did not have a therapy modifier, then the services were labeled (operationally defined) as physical therapy. *Future analysis of claim service dates after July 1, 2003 could apply a more direct approach of using the therapy modifiers to identify type of therapy.*

2.4.3 Determining Type of Therapy Data to Present

A number of alternative applications of the Part B therapy payment caps have been proposed²⁵. Among these alternative application approaches are:

- Increasing the dollar amount for the existing limits in the statute (PT/SLP combined and OT);
- Combining the two existing therapy limits into a single outpatient therapy limit;
- Separating the two existing therapy limits by type of therapy service creating three separate caps (PT, OT and SLP); and,
- Increasing the growth rate for the therapy caps.

In addition, other approaches that could track therapy expenditures on a different basis than the annual per-beneficiary basis required by current law have also been discussed. They include, but are not limited to:

- Limit the number of visits or services rather than payment;
- Implement the caps on a per-beneficiary per-provider basis;
- Apply limits at the facility level;
- Allow higher caps or exemptions for patients with greater need;
- Intensify and expand medical review efforts; and,
- Extend the moratorium or delete outpatient therapy caps.

In order to be able to quantify the potential impact of several of these variations, we constructed the existing (CY 2002) claims information to support discussion regarding their feasibility and implications. Any attempt to control expenditures may have unanticipated and undesired consequences, particularly among specific demographic populations or among beneficiaries presenting with particular conditions. In order to provide a comparative baseline, this report includes analysis of annual per-beneficiary Part B therapy use patterns, in the aggregate, by type of therapy service, by claim diagnosis, and by other demographic variables among all therapy users. Additional analysis focusing on the top 5% of beneficiaries generating the highest annual therapy expenditures, and analysis focusing on beneficiaries that may be impacted by various applications of a therapy cap are presented to indicate areas of potential opportunities and vulnerabilities of the various options being considered.

²⁵ Ciolek, D., Hwang, W., and Olshin, J.. *Strategy for Developing Short and Long-Term Therapy Payment Options*. Final Submitted April 2004, pp 25-35. CMS Contract No. PSC 500-99-0009/0009.

3.0 Results: Part B Therapy Utilization Overview for CY 2002

The following analysis represents the first national study of Part B therapy utilization by individual beneficiaries that permits a direct comparison of carrier and intermediary processed claims to the level of individual HCPCS codes. Results are presented in the context of annual per-beneficiary expenditures.

Until Version I of the Medicare National Claims History (NCH) file was implemented in October of 2000, there was little precision in estimating overall Part B therapy expenditures, and even less accuracy in estimates of utilization by setting, type of therapy service, or individual HCPCS used. This was an inherent limitation resulting from a benefit category (outpatient therapy services) being paid through both carrier and fiscal intermediary payment contractors.

Prior to Version I of the NCH, fiscal intermediary Part B therapy claim data did not contain information identifying the payment issued to a specific claim line. Institutional provider claim payments were recorded at the claim level. Therefore, when multiple HCPCS or therapy revenue centers were billed on a claim, which is common in hospital and SNF settings, it was impossible to determine what services were allowed when a partial denial was reported. Reports of outpatient therapy utilization prior to CY 2001 dates of service universally applied extrapolation methodologies to estimate institutional provider Part B therapy expenditures^{26 27}.

Conversely, non-institutional provider claims submitted to carriers have had accurate line payment information in the NCH files for several years. In addition, precise utilization analyses by provider specialty and individual HCPCS have provided the basis for PUFs such as the Part B Extract and Summary System (BESS) database²⁸ and payment policy making decisions that affect Part B therapy services in all settings. The CY 2002 claims NCH data described in this report includes institutional provider line payment information that permits an analysis of HCPCS utilization that is consistent with how non-institutional provider utilization has been historically reported.

3.1. Number of Part B Therapy Users in CY 2002 by Therapy Type

Analysis of the universe of CY 2002 claims in this study revealed that Medicare issued payments for 3,747,395 individuals (Appendix A and Figure 2). Of these, 3.3 million (88%) received physical therapy, 745 thousand (19.9%) received occupational therapy, and 368 thousand (9.8%) received speech-language pathology services. In addition, 3.5 million individuals (93.5%) received a combination of physical therapy and/or speech-language pathology services²⁹.

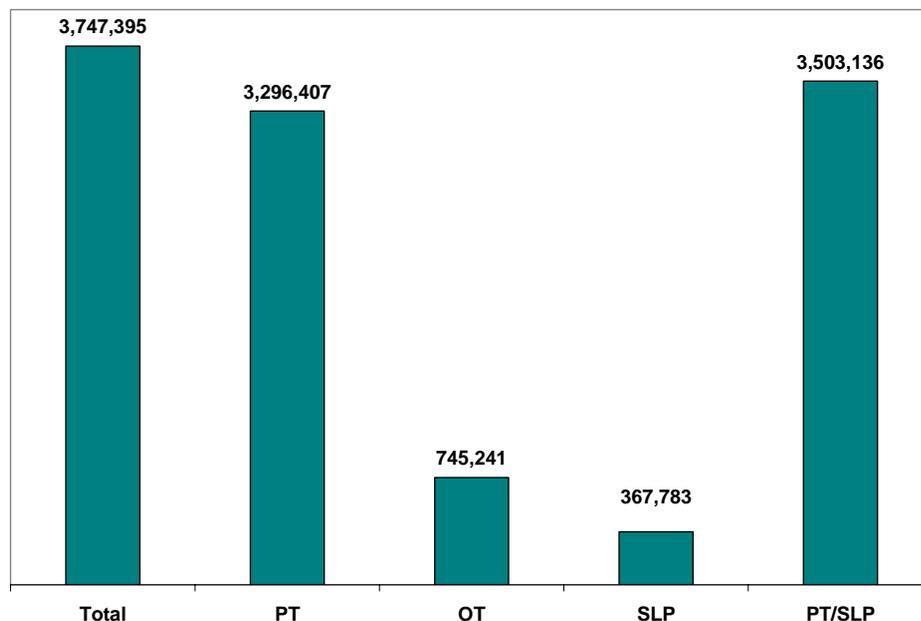
²⁶ Maxwell, S., Baseggio, C., and Storeygard, M.. *Part B Therapy Services Under Medicare in 1998-2000: Impact of Extending Fee Schedule Payments and Coverage Limits*. September 2001. HCFA Contract No. 500-95-0055. Available at: <http://cms.hhs.gov/medlearn/therapy/impactcover.asp>. Last Accessed: September 15, 2004.

²⁷ Olshin, J., et al., *Study and Report...* September 2002.

²⁸ BESS User's Guide available at: <http://www.cms.hhs.gov/providers/bess/default.asp>. Last accessed, September 15, 2004.

²⁹ NOTE: Part B therapy users may receive PT and/or OT and/or SLP services during a CY. The numbers of users presented are not mutually exclusive; for example, a user that received PT and OT services would be included in both the PT and OT user group denominators. As a result, the user totals of the separately reported therapies exceed the overall denominator of 3.75 million users that received any type of Part B therapy services. In addition, PT/SLP combined is reported for context related to the therapy cap policy.

Figure 2. Number of Part B Therapy Users in CY 2002 – By Therapy Type³⁰



The 3.75 million individuals receiving Part B therapy services in CY 2002 represent a two-year increase in patient volume of 4.4% (158 thousand individuals) compared to the 3.6 million therapy users in CY 2000 reported in a prior utilization report by this contractor³¹. Over the same period, the Medicare Trustees report that the number of Medicare Part B enrollees increased by 1.9 percent from 37.34 million to 38.05 million.³²

3.2. Average Annual Expenditures of Part B Therapy Users in CY 2002 by Therapy Type

The total expenditure for all outpatient therapy services in CY 2002 was \$3.4 billion. The average annual paid amount per therapy user for PT, OT and SLP services combined in CY 2002 was \$896. In comparison, the average paid amount for all three therapies combined during CY 2000, as reported in an earlier study³³, was \$581 per user. The median annual paid amount for all three therapies combined was \$466 per user in CY 2002.

While only twenty percent of therapy users receive occupational therapy services, the average and median payment amounts are higher than observed for physical therapy and speech-language pathology services, either alone or combined. For occupational therapy services alone, users generated an average paid amount of \$821 while the average payments for physical therapy (\$706) and speech-language pathology services (\$643) were less. When PT and SLP are combined, the average annual expenditure increased slightly to \$783 (Table 1), or \$38 per user less than OT.

³⁰ Source: Appendix A-Table 1.

³¹ Olshin, J., et al., *Study and Report...* September 2002. p.20.

³² Table II.A3 of the 2004 *Annual Report of the Board of Trustees of the Federal Hospital Insurance and Federal Supplementary Medical Insurance Trust Funds*. Available at: <http://www.cms.hhs.gov/publications/trusteesreport/2004/tabiiia3.asp>. Last accessed: September 15, 2004.

³³ Olshin, J., et al., *Study and Report...* September 2002, p. 27.

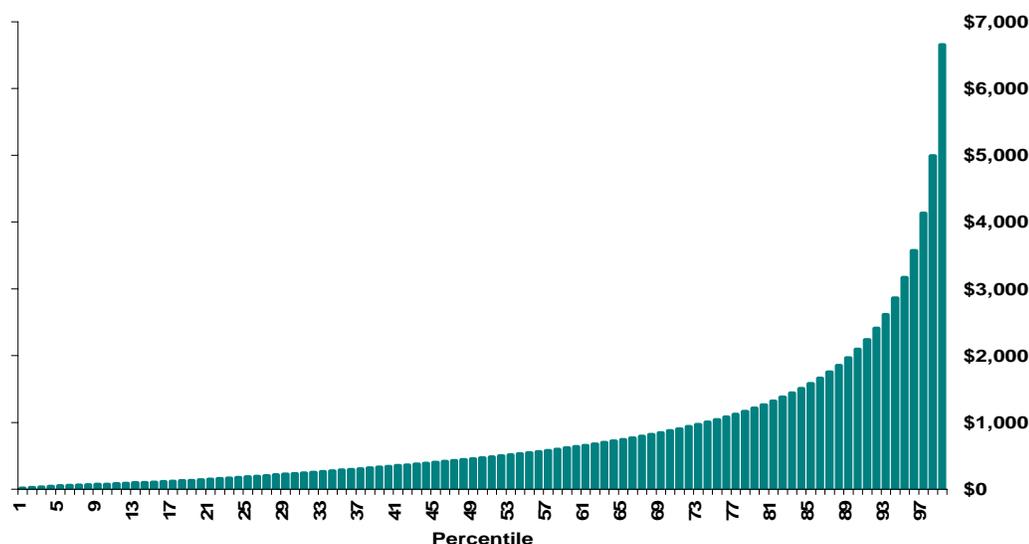
A slightly different pattern is observed when examining the median or middlemost expenditure by therapy type. During CY 2002, the median annual paid amount for users of physical therapy (\$447) or occupational therapy (\$449) alone, or physical therapy and speech-language pathology services combined (\$446) was nearly identical. The median paid amount for speech-language pathology services was markedly lower at \$307. A median that is below the mean indicates proportionally greater costs for beneficiaries at the high end of the scale, as evident in Figure 3.

Table 1. Average and Median Annual User Expenditure – By Therapy Group Type

| Annual User Expenditure | All Therapy Users Paid | PT Users Paid | OT Users Paid | SLP Users Paid | PT/SLP Users Paid |
|----------------------------|------------------------|---------------|---------------|----------------|-------------------|
| Average (Mean) Expenditure | \$896 | \$760 | \$821 | \$643 | \$783 |
| Median Expenditure | \$466 | \$447 | \$449 | \$307 | \$446 |

Overall the majority of Part B therapy users continued to generate fairly low annual expenditures (Appendix D). For example, 10 percent of therapy users generated less than \$75 in annual paid amounts (\$73), while 25 percent generated \$183 in annual amounts paid. One-half of the therapy users, the median, generated \$466 in annual payments. The paid amounts begin to increase significantly at higher percentiles with \$1039 at the 75th percentile, \$2092 at the 90th percentile, and \$3167 at the 95th percentile. Annual payments for CY 2002 PT, OT and SLP services at the 99th percentile increased to \$6654 (Figure 3).

Figure 3. Annual Therapy User Paid Amount Percentile Benchmarks – PT/OT/SLP Combined³⁴



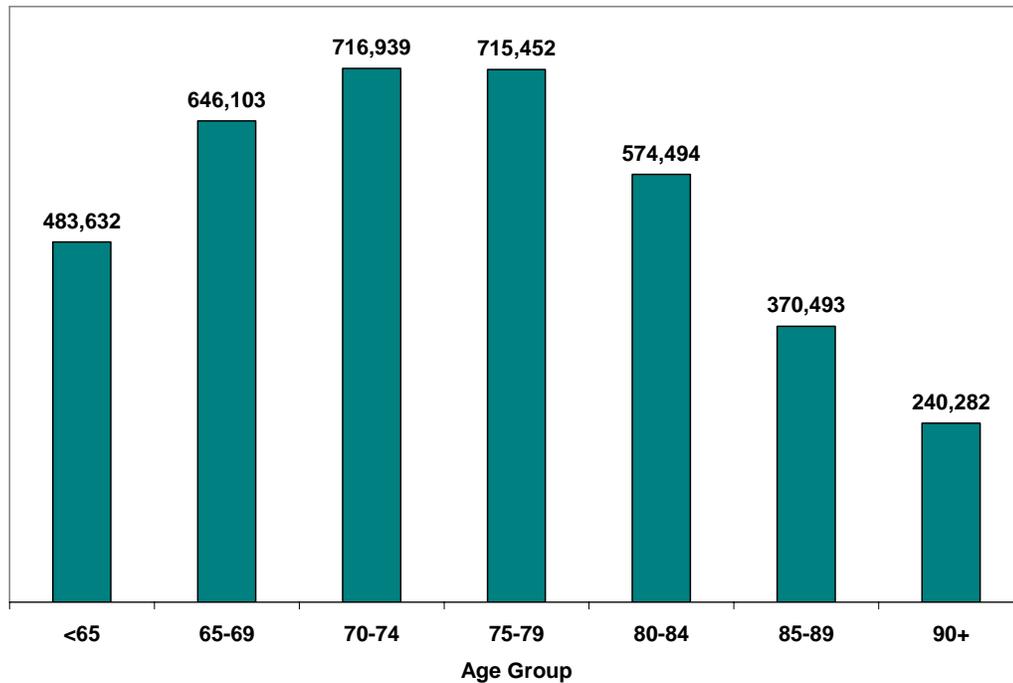
3.3 Number of Part B Therapy Users by Age Group in CY 2002

During CY 2002, most Part B therapy users were in the age groups 70-74 (717 thousand) and 75-79 (714 thousand), each representing 19.1 percent of all therapy users (Figure 4). The age groups with

³⁴ Source: Appendix D-Table 1.

the smallest size were for individuals 90 and over with 240 thousand (6.4%) and those age 85-89 with 370 thousand (9.9%). This overall pattern of utilization by age is similar to studies of prior years³⁵.

Figure 4. Number of Part B Therapy Users in CY 2002 – By Age Group³⁶

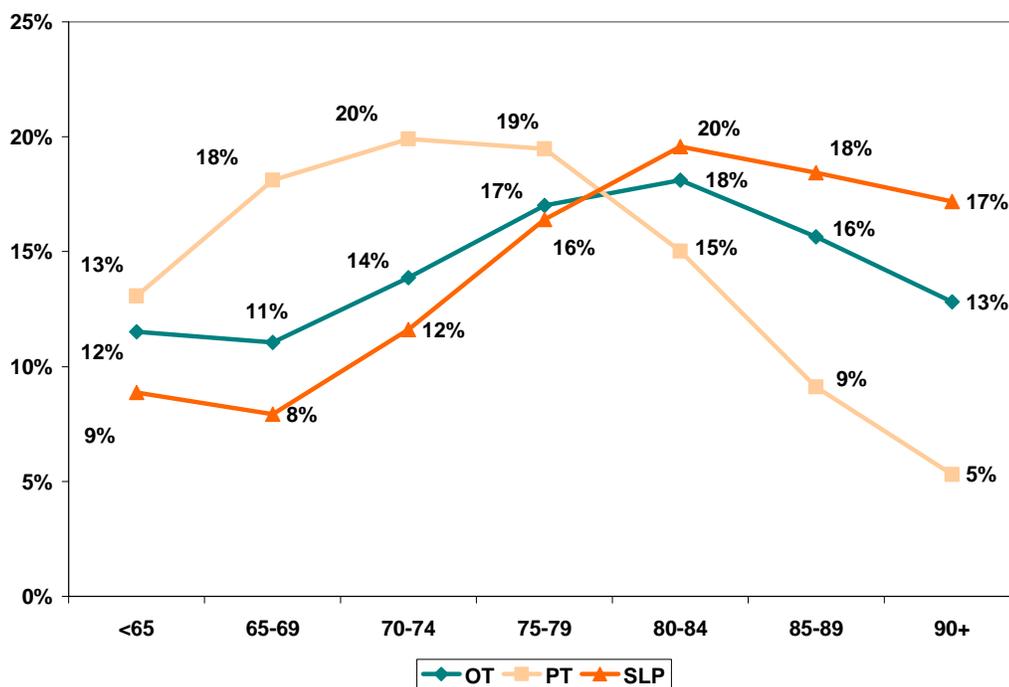


However, SLP and OT services were more likely to be furnished to slightly older age groups than PT services (Figure 5). Appendix A demonstrates that while the peak age groups for PT patient volume were from 70-79, the SLP peak was for individuals aged 80-89 while the OT peak was for individuals aged 75-84. Although not included in Figure 5, Appendix A-Table 1 demonstrates that the age distribution of PT/SLP combined parallels the PT pattern due to the overwhelming majority of PT users. In addition, therapy users aged 80 and above were more likely to receive combinations of therapy services than younger individuals.

³⁵ In a prior study (Olshin, J., et al., *Study and Report...* September 2002) the age groups 85-89 and 90+ were merged. This study reports these age groups separately.

³⁶ Source: Appendix A-Table 1.

Figure 5. Age Distribution of Part B Therapy Users in CY 2002 – By Therapy Type³⁷



3.3.1 Distribution of Part B Therapy Users by Age Group and by Average Expenditures in CY 2002

Another variable to be considered in addition to the number of therapy users in each age group is the relative annual expenditure per individual within each age group. In other words, which age groups contained the most high expenditure therapy users Appendix A-Tables 2.1, 3.1, 4.1, 5.1, and 6.1 provide tables representing the number of individuals in each age group that generated annual expenditures that placed them into percentile groups. For example, an individual in the “<10th Percentile” group would have generated therapy expenditures that were surpassed by 90% of all other therapy users. Conversely, individuals in the “Above 99th Percentile” group generated therapy expenditures greater than 99 percent of all other therapy users.

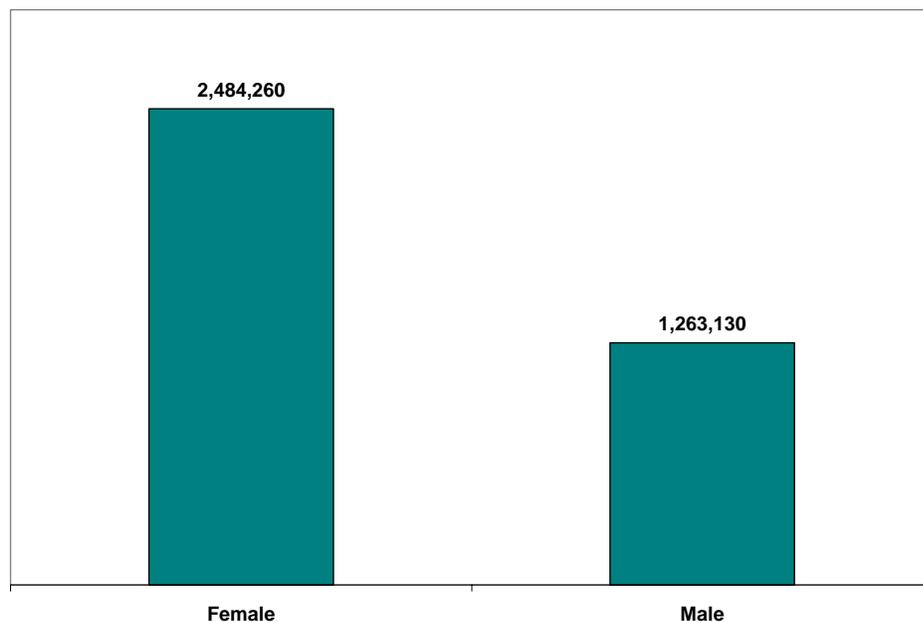
The results reveal a significantly different age impact on expenditures for care between all therapy type groups. For example, Appendix A-Table 2.1 demonstrates that, among all therapy users, all users over 80 had a higher probability of being among the top 25%. OT users show a slight variation in Appendix A-Table 4.1 in that those under age 65 were more likely to be among the top 1% users, while SLP users had yet another pattern with older users (80 and above) having a higher probability of being in the 75-95th percentile groups while younger users (under 80) were more likely to be among the top 5% users (Appendix A-Table 5.1).

³⁷ Source: Appendix A.

3.4. Number of Part B Therapy Users by Gender in CY 2002

About 2.48 million female (66.3%) and 1.16 million male (33.7%) individuals used Part B therapy services in CY 2002 (Fig 6). This overall pattern of utilization by gender is similar to studies of prior years. Figure 6 demonstrates this 2:1 ratio of therapy users by gender. As represented in Appendix B-Tables 2.1, 3.1, 4.1, 5.1, and 6.1, there was only a small gender difference in the distribution of individual therapy users by expenditure percentile and it was consistent across all therapy service groups presented. Males were more likely to be present in the lowest cost (<25th percentile) and highest cost (>90th percentile) groups than females. In other words, males either received a little therapy, or a lot, while females generally received an amount nearing the median.

Figure 6. Number of Part B Therapy Users in CY 2002 – By Gender³⁸



3.5 Number of Part B Therapy Users by State in CY 2002

Three states represented nearly one-quarter of all therapy users and nine states represented over one-half in CY 2002. Florida had nearly 325 thousand individuals who received Part B therapy services in CY 2002, representing 8.7% of all users nationwide. California followed with 295 thousand (7.9%) and New York with 270 thousand (7.2%). These three states represent 23.8% of all individual Part B therapy users. These three states and the next seven states with the most therapy users accounted for 53.3% of all therapy users (Table 2).

³⁸ Source: Appendix: B-Table 1.

Table 2. Number of Part B Therapy Users in CY 2002 – Top Ten States³⁹

| Rank | State | Individual Therapy Users | Percent Therapy Users of Total | Cumulative Percent of Therapy Users |
|------|----------------|--------------------------|--------------------------------|-------------------------------------|
| | All | 3,747,395 | 100.0% | |
| 1 | Florida | 324,701 | 8.7% | 8.7% |
| 2 | California | 295,450 | 7.9% | 16.5% |
| 3 | New York | 270,252 | 7.2% | 23.8% |
| 4 | Texas | 210,658 | 5.6% | 29.4% |
| 5 | Pennsylvania | 189,190 | 5.0% | 34.4% |
| 6 | Ohio | 174,925 | 4.7% | 39.1% |
| 7 | Illinois | 159,345 | 4.3% | 43.4% |
| 8 | Michigan | 154,938 | 4.1% | 47.5% |
| 9 | New Jersey | 113,771 | 3.0% | 50.5% |
| 10 | North Carolina | 104,445 | 2.8% | 53.3% |

However, a slightly different pattern of therapy user volume by state is observed when the individual type of therapy is considered. Appendix E-Table 1.0 demonstrates that some states are more likely than average to provide particular types of services. For example, while Florida represents 8.7 percent of all therapy users, it represents 9.3 percent of all OT users nationally.

There is no specific pattern that varies by state for therapy users regardless of therapy type services as demonstrated by the tables in Appendix E. However, states that have a higher than average number of users with high average expenditures are generally consistent between therapy types suggesting a potential impact from regional fee schedule price variations or local practice pattern variations.

³⁹ Source: Appendix: C-Table 1.

4.0 Results: High Expenditure Therapy Users in CY 2002

The following sections will discuss Part B therapy users that generate high annual expenditure amounts within the context of age, gender and state of residence demographic variables. This analysis of the age, gender and state demographic characteristics of beneficiaries representing the 95th and above percentile with regards to annual expenditures helps identify characteristics that could differentiate these individuals from typical therapy users. Such identification supports the development of patient classification modeling schemes. The results of this analysis are presented in Appendix E.

4.1 Interaction of Therapy Type and Age

There are apparent differences in the probability that therapy users of different age groups will create the highest annual expenditures. For example, in Table 3, the column labeled “Percent of Top 5% Users of PT within Age Group” indicates that 6.5% of all PT users aged 90 and above are among the 5% of beneficiaries with highest annual expenditures, while only 4.3% of those age 65-69 are. This is a preliminary indicator that the 90+ age group is more likely to generate high annual PT expenditures, and could be a vulnerable demographic group under an annual per-beneficiary payment limitation policy.

The interaction of age and type of therapy group also appears to vary depending upon the type of therapy. As highlighted in Table 3, it appears that PT users must reach the age of 80 or above before they are more likely to be among the top 5% PT users. However, with SLP services, the exact opposite pattern emerges. For SLP users, those in age groups 75-79 and below had an apparent higher probability among SLP users to be in the top 5%. An entirely different third pattern is apparent for OT as the both the youngest (age 65-69 and below) and oldest (age 90+) age groups appear more likely to be among the top 5% highest annual expenditure OT users.

The similarity of the Top 5% user patterns of the “All Therapies” and “PT/SLP” groups with the PT group most likely is related to the fact that PT represents an overwhelming majority of all therapy users and therefore negates the overall impact of OT and SLP when therapy types are merged for analysis. This has implications related to future payment modeling considerations, and estimates of the potential impact of therapy caps when combining therapy services under a single limitation (e.g. PT and SLP combined).

Table 3. Age Group Representation of Top 5% Therapy Users by Therapy Type⁴⁰

| Age Group | Percent of Top Users of All Therapies Within Age Group | Percent of Top Users of PT Within Age Group | Percent of Top Users of OT Within Age Group | Percent of Top Users of SLP Within Age Group | Percent of Top Users of PT/SLP Within Age Group |
|-----------|--|---|---|--|---|
| Total | 5.0% | 5.0% | 5.0% | 5.0% | 5.0% |
| <65 | 4.2% | 4.4% | 8.3% | 5.6% | 4.4% |
| 65-69 | 3.6% | 4.3% | 7.5% | 6.1% | 4.2% |
| 70-74 | 4.1% | 4.7% | 4.3% | 5.7% | 4.6% |
| 75-79 | 4.8% | 5.0% | 3.2% | 5.5% | 5.0% |
| 80-84 | 5.9% | 5.4% | 2.9% | 5.0% | 5.5% |
| 85-89 | 7.4% | 6.2% | 4.3% | 4.5% | 6.4% |
| 90+ | 7.9% | 6.5% | 6.7% | 3.7% | 6.5% |

⁴⁰ Source: Appendix: E-Table 1.

4.2 Interaction of Therapy Type and Gender

Table 4A demonstrates that gender does not appear to have much impact the likelihood that an individual receiving any type or combination of therapies will be among the top 5% in annual expenditures. There is only a slight trend with males appearing among the top 5% annual expenditure therapy users at a higher rate than females for the PT, SLP, and PT/SLP combined groups. There is no apparent difference for OT services. Subsequent modeling activities may identify if gender is a factor in subsets other than type of therapy group.

Table 4A. Gender Group Representation of Top 5% Therapy Users by Therapy Type⁴¹

| Gender Group | Percent of Top Users of All Therapies Within Gender Group | Percent of Top Users of PT Within Gender Group | Percent of Top Users of OT Within Gender Group | Percent of Top Users of SLP Within Gender Group | Percent of Top Users of PT/SLP Within Gender Group |
|--------------|---|--|--|---|--|
| Total | 5.0% | 5.0% | 5.0% | 5.0% | 5.0% |
| Female | 5.0% | 5.0% | 5.0% | 4.9% | 4.9% |
| Male | 5.1% | 5.1% | 5.0% | 5.2% | 5.2% |

4.3 Interaction of Therapy Type and State

Analysis of the likelihood of individuals in certain states being among the top 5% high expenditure therapy users (Appendix E-Table 3) revealed that therapy users in certain states appear to be more likely to be top users based upon annual expenditures. This pattern varied within states by type of therapy. For example, in some states, people were more likely to be among the top 5% PT users but less likely to be among the top 5% OT users.

The states with the most Part B therapy users (Table 2) are also the states with the highest number of beneficiaries for whom expenditures are among the top 5% (Table 4B). Table 4B, which selected the ten states with the greatest number of therapy users among the top 5%, demonstrates such variations between and within states. For example, while Florida has the highest number of total therapy users (described in section 3.5 of this report), it also has the greatest number of the top 5% users. However, the percent of top users in Florida is disproportionate to other states. For example, on average, Florida would be expected to have 5% of the top users. However, it actually has 8.3% of all top users nationwide for all therapies, 7.5% for PT, 11% for OT, and 6.3% for SLP services. Conversely, Pennsylvania, Ohio, and Illinois are also among the top ten states in total number of top 5% therapy users, but they have a top user rate that is at or lower than the 5% average for all therapy type groups. Further modeling activities could assist in determining the impact of localized fee schedule variations, age demographics, diagnosis and other variables may have had in creating these observed patterns.

⁴¹ Source: Appendix: E-Table 2.

Table 4B. State Group Representation of Top 5% Therapy Users by Therapy Type: Ten States with Most Top Users⁴²

| State Group | Top 5% Users All Therapies (N) | Percent of Top Users of All Therapies Within State Group | Percent of Top Users of PT Within State Group | Percent of Top Users of OT Within State Group | Percent of Top Users of SLP Within State Group | Percent of Top Users of PT/SLP Within State Group |
|----------------|--------------------------------|--|---|---|--|---|
| Florida | 26,835 | 8.3% | 7.5% | 11.0% | 6.3% | 7.3% |
| California | 20,744 | 7.0% | 8.4% | 5.7% | 6.7% | 8.1% |
| New York | 13,982 | 5.2% | 7.1% | 4.4% | 3.0% | 6.5% |
| Texas | 11,890 | 5.6% | 4.4% | 7.0% | 8.0% | 4.9% |
| Pennsylvania | 9,276 | 4.9% | 5.0% | 3.3% | 4.0% | 5.0% |
| Ohio | 8,176 | 4.7% | 3.6% | 3.6% | 4.6% | 4.1% |
| Michigan | 8,106 | 5.2% | 5.7% | 5.7% | 3.3% | 5.3% |
| Illinois | 7,150 | 4.5% | 4.1% | 4.4% | 3.5% | 4.1% |
| New Jersey | 6,225 | 5.5% | 6.8% | 3.8% | 5.5% | 6.5% |
| North Carolina | 6,021 | 5.8% | 5.4% | 7.2% | 6.3% | 5.5% |

⁴² Source: Appendix E-Table 3.

5.0 Results: Diagnosis of Part B Therapy Users

The therapy user variable that is considered by both provider and beneficiary advocates as having the most influence on expenditures is clinical status. This belief is demonstrated by the recent request by Congress to have the Government Accounting Office (GAO) study patient conditions or diseases that justify waiving a Part B therapy user from a capped benefit⁴³.

However, defining clinical status or condition requires that the information that describes the condition is complete and accurate. This analysis is limited by the accuracy of the diagnosis on the claim in representing the therapy condition being treated. The following sections describe the results of an analysis of CMS therapy claims diagnosis information related to Part B therapy services, described by type of therapy. This information is being used to form the basis of the payment modeling activities being performed for a later report.

The principal claim diagnosis listed on the first claim during the first therapy encounter date in CY 2002 was used to classify a therapy user of that type of therapy. For example, if a beneficiary received PT on January 16, 2002 with a diagnosis of “Acute Stroke”(436), then that individual was classified as an “Acute Stroke” patient for the entire year (even if a different diagnosis was reported later in the year). All PT payments for that individual in CY 2002 would then describe their annual expenditures. It would be possible, with further analysis, to refine this method to account for changes in the principle and secondary diagnosis later in the year. However, this method is suitable to this single year study intended to test the feasibility of modeling.

Within a type of therapy, an individual is assigned only one diagnosis group for the year and can only be counted once within that specific therapy group (e.g. PT). However, the therapy groups are not mutually exclusive. Therefore, if that same individual received both PT and OT services, then he/she would be counted once in the PT group, the OT group, and once in the “All Therapies” group.

5.1 Frequently Observed Diagnoses of Part B Therapy Users

The tables in Appendix F present the ICD-9 groups with the greatest number of unique therapy users within each type of therapy group (PT, OT, SLP, PT/SLP, and All Therapy Users). They are ranked from the most commonly occurring (Rank = 1) to those less frequently observed. Most tables contain the first 100 ranked diagnosis groups.

The results demonstrate differences in the types of diagnoses that are most often treated under PT, OT, and SLP plans of care. The results also highlight diagnosis coding issues that will impact later patient classification modeling activities under this contract, and may be relevant to other CMS payment policy considerations.

For example, in Table 5, ten percent of all PT users in CY 2002 first presented with a principal claim diagnosis of V57.1 (other physical therapy) which is a generic code most often used by institutional providers, including hospitals and SNFs. There is not a requirement for providers to submit a diagnosis that more precisely describes the beneficiary’s medical condition, or condition being treated under a therapy plan of care.

⁴³ Pub. L. 108-173 Medicare Prescription Drug, Improvement, and Modernization Act of 2003 (MMA). Enacted December 8, 2003. §624(c)

In addition, in Table 7, the fifth and tenth most commonly reported SLP diagnosis groups were “Other physical therapy” and “Difficulty in walking” respectively. This further demonstrates a methodological concern with using claim principal diagnoses for patient classification, particularly as they relate to SLP and OT services. Under current claims processing guidelines, institutional providers may submit PT, OT and SLP services on the same claim. There is no process to identify the principal diagnosis for each individual therapy. Because the PT revenue center (042x) is most commonly reported before the higher numbered OT (043x) and SLP (044x) revenue centers, there is a greater likelihood in this analytic approach that OT and SLP users will be reported by the PT diagnosis than the reverse. For payment policy based on classification of individuals by diagnostic categories, as suggested by the Balanced Budget Refinement Act of 1999, a specific diagnosis related to each service would be needed.

5.1.1 Frequently Observed Diagnoses of Part B Therapy Users: Physical Therapy

Among the other top ten most common PT diagnoses (Table 5), six were musculoskeletal related conditions (“Lumbago”, “Pain in joint, shoulder region”, “Cervicalgia”, “Pain in joint, lower leg”, “Osteoarthritis, lower leg” and “Disorders of bursa and tendons in shoulder region”), one was a central neurological disorder (“Acute, but ill-defined cerebrovascular disease” [“Stroke”]), and the remaining two were for general symptoms (“Abnormality of gait” and “Pain in joint, lower leg”). The top 10 PT diagnoses by volume accounted for 33% of all PT users while the top 99 diagnoses represent 74% of PT users.

Table 5. Most Frequently Observed Diagnoses Among PT Users⁴⁴

| ICD-9 Frequency Rank | ICD-9 Code | Diagnosis Description | PT Users (N) | Row Percent | Cumulative Percent |
|----------------------|------------|---|--------------|-------------|--------------------|
| | | All diagnoses | 3,296,407 | | |
| 1 | V57.1 | Other physical therapy | 338,509 | 10.27% | 10.27% |
| 2 | 724.2 | Lumbago | 219,618 | 6.66% | 16.93% |
| 3 | 781.2 | Abnormality of gait | 116,623 | 3.54% | 20.47% |
| 4 | 719.41 | Pain in joint, shoulder region | 87,489 | 2.65% | 23.12% |
| 5 | 723.1 | Cervicalgia | 80,870 | 2.45% | 25.58% |
| 6 | 719.46 | Pain in joint, lower leg | 77,819 | 2.36% | 27.94% |
| 7 | 436 | Acute, but ill-defined cerebrovascular disease | 47,710 | 1.45% | 29.38% |
| 8 | 715.96 | Osteoarthritis, unspecified whether generalized or localized, lower leg | 45,399 | 1.38% | 30.76% |
| 9 | 729.5 | Pain in limb | 43,637 | 1.32% | 32.09% |
| 10 | 726.10 | Disorders of bursa and tendons in shoulder region, not elsewhere classified | 43,569 | 1.32% | 33.41% |

5.1.2 Frequently Observed Diagnoses of Part B Therapy Users: Occupational Therapy

Among the top ten most common OT diagnoses (Table 6), only two represent specific diagnoses. “Acute, but ill-defined stroke” was the most common at 4.39 percent of OT users. However, the generic diagnosis codes “Other physical therapy” and “Occupational therapy encounter” ranked second and third, representing 8.31 percent of OT users. Among the remaining seven top OT diagnoses, five were for general symptoms (“Abnormality of gait”, “Other general symptoms”, “Debility”, “Muscular wasting and disuse atrophy”, and “Difficulty in walking”), one for swallowing disorders (“Dysphagia”), and one for a peripheral nerve injury condition (“Carpal Tunnel Syndrome”). The top 10 OT diagnoses by volume accounted for 28% of all OT users while the top 100 diagnoses represent 70% of OT users.

⁴⁴Source: Appendix: F-Table 2.

Table 6. Most Frequently Observed Diagnoses Among OT Users⁴⁵

| ICD-9 Frequency Rank | ICD-9 Code | Diagnosis Description | OT Users (N) | Row Percent | Cumulative Percent |
|----------------------|------------|---|--------------|-------------|--------------------|
| | | All diagnoses | 745,241 | | |
| 1 | 436 | Acute, but ill-defined, cerebrovascular disease | 32,726 | 4.39% | 4.39% |
| 2 | V57.1 | Other physical therapy | 31,739 | 4.26% | 8.65% |
| 3 | V57.21 | Occupational therapy encounter | 30,178 | 4.05% | 12.70% |
| 4 | 781.2 | Abnormality of gait | 27,369 | 3.67% | 16.37% |
| 5 | 780.9 | Other general symptoms | 15,644 | 2.10% | 18.47% |
| 6 | 787.2 | Dysphagia | 15,537 | 2.08% | 20.56% |
| 7 | 799.3 | Debility, unspecified | 15,224 | 2.04% | 22.60% |
| 8 | 728.2 | Muscular wasting and disuse atrophy, not elsewhere classified | 13,228 | 1.77% | 24.37% |
| 9 | 719.70 | Difficulty in walking, site unspecified | 12,341 | 1.66% | 26.03% |
| 10 | 354.0 | Carpal Tunnel Syndrome | 12,189 | 1.64% | 27.67% |

5.1.3 Frequently Observed Diagnoses of Part B Therapy Users: Speech-Language Pathology

Among the top ten most common SLP diagnoses (Table 7), swallowing disorders (“Dysphagia” was the most common at twenty-eight percent. Three central neurological conditions were also among the top ten most common SLP diagnoses (“Acute Stroke”, “Alzheimer’s Disease”, and “Parkinson’s Disease”). There were two cardiopulmonary related conditions (“Congestive Heart Failure” and “Pneumonia”), in addition to two general symptom diagnoses (“Abnormality of gait” and “Difficulty walking”) and two generic diagnoses (“Other physical therapy” and “Speech therapy”) among the most frequently reported SLP conditions. The top 10 SLP diagnoses by volume accounted for 49% of all SLP users while the top 100 diagnoses represent 82% of SLP users. It is likely that PT diagnoses show up so often as primary diagnoses on claims with SLP services because SLPs often work in multidisciplinary teams with PTs⁴⁶. Since PT is often the first service provided after illness or injury, the primary diagnosis on the claim is more likely to be related to PT than SLP.

Table 7. Most Frequently Observed Diagnoses Among SLP Users⁴⁷

| ICD-9 Frequency Rank | ICD-9 Code | Diagnosis Description | SLP Users (N) | Row Percent | Cumulative Percent |
|----------------------|------------|---|---------------|-------------|--------------------|
| | | All diagnoses | 367,783 | | |
| 1 | 787.2 | Dysphagia | 101,201 | 27.52% | 27.52% |
| 2 | 436 | Acute, but ill-defined, cerebrovascular disease | 22,411 | 6.09% | 33.61% |
| 3 | V57.3 | Speech therapy | 12,630 | 3.43% | 37.04% |
| 4 | 781.2 | Abnormality of gait | 9,546 | 2.60% | 39.64% |
| 5 | V57.1 | Other physical therapy | 7,724 | 2.10% | 41.74% |
| 6 | 331.0 | Alzheimer’s Disease | 7,545 | 2.05% | 43.79% |
| 7 | 332.0 | Parkinson’s Disease, paralysis agitans | 7,047 | 1.92% | 45.71% |
| 8 | 428.0 | Congestive Heart Failure, unspecified | 4,469 | 1.22% | 46.92% |
| 9 | 486 | Pneumonia, unspecified | 4,392 | 1.19% | 48.12% |
| 10 | 719.70 | Difficulty in walking, site unspecified | 4,384 | 1.19% | 49.31% |

⁴⁵Source: Appendix: F-Table 3.

⁴⁶ In institutional settings (e.g. SNF, CORF) this is a common and appropriate practice; however therapy services are reported on the same claim, and therefore share claim diagnoses.

⁴⁷Source: Appendix: F-Table 4.

5.2 Average Expenditures for Frequently Observed Diagnoses of Part B Therapy Users

The following tables (8-10) describe the ICD-9 groups with the highest annual average therapy utilization during CY 2002. The basis for these tables is the ICD-9 groups with the greatest number of unique therapy users represented in Appendix F. The expenditure values for these common diagnoses were then ranked in order of average annual expenditures per therapy user (Rank 1 = highest expenditure), and are presented in Appendix G. It is clear that there are a large number of diagnoses represented in the top 5% most costly claims. It is not possible to highlight a few that would account for the highest expenditures.

The results demonstrate significant differences in the types of diagnosis groups that have high annual utilization depending upon the type of therapy. The results also highlight that frequently occurring diagnosis groups (as described in Section 5.1) are not necessarily conditions that require high average expenditures.

5.2.1 Average Expenditures for Frequently Observed Diagnoses: Physical Therapy

For PT users (N = 3,296,407), the average annual PT paid amounts for all diagnoses was \$760 (Table 8). The average PT user also received \$137 in OT and \$40 in SLP during the calendar year resulting in a total therapy paid average of \$938 for the PT users group. The ten PT diagnosis groups with the highest average PT paid amounts ranged from \$1215 for generalized osteoarthritis to \$1062 for Parkinson's disease. Among the PT diagnosis groups with the highest annual PT expenditures, four were for musculoskeletal conditions ("General osteoarthritis-multiple sites", "Hip fracture", "Unspecified generalized osteoarthritis", and "Knee joint replacement"), three were for central neurological conditions ("Late effects of Stroke", "Acute Stroke" and "Parkinson's Disease"), two were for general symptoms ("General symptoms" and "Difficulty in walking"), and the second ranked PT diagnosis by average annual PT paid amount was "Decubitus Ulcers".

An interesting observation is that some diagnosis groups of PT users do not use much OT or SLP (e.g. "Knee replacement" [V43.65] only averages \$15 OT and \$1 SLP), while others use significantly more (e.g. "Acute Stroke" [436] uses \$616 in OT and \$306 in SLP). This will have an impact on future modeling activities and payment policy considerations; certain diagnoses are more likely to receive multiple types of therapy.

Table 8. Ranking of Average Annual Therapy Expenditures for Most Frequently Observed Diagnoses – PT Users⁴⁸

| ICD-9 \$ Rank PT | ICD-9 Code | Diagnosis Description | PT Users (N) | PT Paid Average | OT Paid Average | SLP Paid Average | Total Therapy Paid Average |
|------------------|------------|--|--------------|-----------------|-----------------|------------------|----------------------------|
| | | All PT Users | 3,296,407 | \$760 | \$137 | \$40 | \$938 |
| 1 | 715.09 | Osteoarthritis, generalized, multiple sites | 11,276 | \$1,215 | \$380 | \$31 | \$1,627 |
| 2 | 707.0 | Decubitus ulcer | 6,038 | \$1,206 | \$253 | \$86 | \$1,545 |
| 3 | 438.0 | Late effects cerebrovascular disease, cognitive deficits | 5,604 | \$1,190 | \$761 | \$331 | \$2,282 |
| 4 | 436 | Acute, but ill-defined cerebrovascular disease | 47,710 | \$1,161 | \$616 | \$306 | \$2,083 |
| 5 | 820.8 | Fracture of neck of femur, unspecified part, closed | 15,603 | \$1,141 | \$376 | \$77 | \$1,594 |
| 6 | 715.00 | Osteoarthritis, generalized, site unspecified | 8,509 | \$1,119 | \$194 | \$32 | \$1,345 |
| 7 | V43.65 | Joint replacement, knee | 21,150 | \$1,092 | \$15 | \$1 | \$1,108 |
| 8 | 780.9 | Other general symptoms | 17,854 | \$1,079 | \$662 | \$154 | \$1,895 |
| 9 | 719.79 | Difficulty in walking, multiple sites | 9,031 | \$1,068 | \$389 | \$98 | \$1,555 |

⁴⁸ Source: Appendix G-Table 2.

| ICD-9 \$ Rank PT | ICD-9 Code | Diagnosis Description | PT Users (N) | PT Paid Average | OT Paid Average | SLP Paid Average | Total Therapy Paid Average |
|------------------|------------|---|--------------|-----------------|-----------------|------------------|----------------------------|
| 10 | 332.0 | Paralysis agitans (Parkinson's Disease) | 20,688 | \$1,062 | \$416 | \$176 | \$1,655 |

5.2.2 Average Expenditures for Frequently Observed Diagnoses: Occupational Therapy

For OT users (N = 745,241), the average annual OT paid amounts for all diagnoses was \$821 (Table 9). The average OT user also received \$738 in PT and \$165 in SLP during the calendar year resulting in a total therapy paid average of \$1725 for the OT users group. The ten OT diagnosis groups with the highest average OT paid amounts ranged from \$1576 for “Brachia neuritis” to \$1096 for “Hip fracture”. Among the OT diagnosis groups with the highest annual OT expenditures, the top two were for peripheral nerve conditions (“Brachia neuritis” and “Lumbosacral Neuritis”), four were for musculoskeletal conditions (“Lumbar sprain”, “Generalized osteoarthritis”, “Shoulder fracture” and “Hip fracture”), two were for central neurological conditions (“Hemiplegia” affecting dominant or non-dominant sides), and two were for general symptoms (“Muscular wasting” and “Difficulty in walking”).

Similar to PT users is the observation that some diagnosis groups of OT users do not use much PT or SLP (e.g. “Hip fracture” [812.00] only averages \$655 PT and \$46 SLP), while others use significantly more (e.g. “Hemiplegia affecting dominant side” [438.21] uses \$1032 in PT and \$431 in SLP).

Table 9. Ranking of Average Annual Therapy Expenditures for Most Frequently Observed Diagnoses – SLP Users⁴⁹

| ICD-9 \$ Rank OT | ICD-9 Code | Diagnosis Description | OT Users (N) | OT Paid Average | PT Paid Average | SLP Paid Average | Total Therapy Paid Average |
|------------------|------------|--|--------------|-----------------|-----------------|------------------|----------------------------|
| | | All OT Users | 745,241 | \$821 | \$738 | \$165 | \$1,725 |
| 1 | 723.4 | Brachia neuritis or radiculitis NOS | 1,436 | \$1,576 | \$1,613 | \$3 | \$3,192 |
| 2 | 724.4 | Thoracic or lumbosacral neuritis or radiculitis, unspecified | 1,602 | \$1,408 | \$1,835 | \$14 | \$3,257 |
| 3 | 847.2 | Sprains and strains, lumbar | 1,477 | \$1,345 | \$1,815 | \$32 | \$3,192 |
| 4 | 715.09 | Osteoarthritis, generalized, multiple sites | 3,860 | \$1,270 | \$1,252 | \$80 | \$2,601 |
| 5 | 438.21 | Hemiplegia affecting dominant side | 2,832 | \$1,199 | \$1,032 | \$431 | \$2,662 |
| 6 | 438.22 | Hemiplegia affecting non-dominant side | 2,746 | \$1,172 | \$1,059 | \$263 | \$2,494 |
| 7 | 728.2 | Muscular wasting and disuse atrophy, not elsewhere classified | 13,228 | \$1,164 | \$1,093 | \$164 | \$2,420 |
| 8 | 719.79 | Difficulty in walking, multiple sites | 3,186 | \$1,127 | \$1,377 | \$196 | \$2,700 |
| 9 | 812.00 | Fracture of humerus, upper end, unspecified part, closed | 2,156 | \$1,125 | \$655 | \$46 | \$1,826 |
| 10 | 820.21 | Fracture of neck of femur, peritrochanteric, closed, intertrochanteric section | 1,572 | \$1,096 | \$1,425 | \$158 | \$2,679 |

5.2.3 Average Expenditures for Frequently Observed Diagnoses: Speech-Language Pathology

For SLP users (N = 367,783), the average annual SLP paid amounts for all diagnoses was \$643 (Table 10). The average SLP user also received \$499 in PT and \$396 in SLP during the calendar year resulting in a total therapy paid average of \$1537 for the SLP users group. The ten SLP diagnosis groups with the highest average SLP paid amounts ranged from \$1122 for aphasia related to stroke to \$933 for cognitive deficits related to stroke. In fact, the top twelve reported diagnosis groups among the highest users of SLP were for central neurological conditions that, with the exception of aphasia (784.3) were also associated

⁴⁹ Source: Appendix: G-Table 3.

with significant PT and OT payments. The policy implications for SLP are that those individuals most likely to require extensive SLP services are also more likely to need corresponding PT and/or OT services.

Table 10. Average Expenditures for Frequently Observed Diagnoses of SLP Users⁵⁰

| ICD-9 \$ Rank SLP | ICD-9 Code | Diagnosis Description | SLP Users (N) | SLP Paid Average | PT Paid Average | OT Paid Average | Total Therapy Paid Average |
|-------------------|------------|---|---------------|------------------|-----------------|-----------------|----------------------------|
| | | All SLP Users | 367,783 | \$643 | \$499 | \$396 | \$1,537 |
| 1 | 438.11 | Late effects of cerebrovascular disease, aphasia | 1,692 | \$1,122 | \$306 | \$289 | \$1,717 |
| 2 | 438.21 | Late effects of cerebrovascular disease, hemiplegia affecting dominant side | 1,300 | \$1,121 | \$1,086 | \$1,057 | \$3,264 |
| 3 | 784.3 | Aphasia | 3,202 | \$1,117 | \$252 | \$212 | \$1,581 |
| 4 | 431 | Intracerebral hemorrhage | 715 | \$1,106 | \$973 | \$887 | \$2,966 |
| 5 | 436 | Acute, but ill-defined, cerebrovascular disease | 22,411 | \$986 | \$765 | \$690 | \$2,441 |
| 6 | 784.60 | Symbolic dysfunction, unspecified | 875 | \$973 | \$361 | \$305 | \$1,640 |
| 7 | 784.69 | Other symbolic dysfunction | 622 | \$964 | \$388 | \$283 | \$1,635 |
| 8 | 434.91 | Cerebral artery occlusion, unspecified, with cerebral infarction | 1,697 | \$960 | \$1,029 | \$920 | \$2,909 |
| 9 | 342.90 | Hemiplegia, unspecified type, unspecified side | 831 | \$946 | \$952 | \$875 | \$2,773 |
| 10 | 438.0 | Late effects of cerebrovascular disease, cognitive deficits | 3,417 | \$933 | \$629 | \$620 | \$2,182 |

5.3 Top 5% Expenditures by Diagnosis

Table 11 represents the average total therapy payments for only the Top 5% users of Part B therapy services. In other words, of the diagnosis groups discussed in Section 5.0 of this report, what were the annual average payments for highest therapy users within each diagnosis? For example, while the “Total Therapy Paid Average” for all therapy users in CY 2002 (N = 3,747,396) was \$896, the average for the top 5% (N = 187,436) was \$5430.

Among the top 5% Part B therapy users, five of the top ten diagnosis groups based upon average annual expenditures describe central neurological conditions (“Stroke and similar manifestations”), two were musculoskeletal (“Generalized osteoarthroses” and “Shoulder sprains”), two were related to cardiopulmonary and circulatory disorders (“Respiratory failure” and “Peripheral vascular disease”) and one for “Decubitus ulcers of the skin”. Similar to the average expenditure patterns of all therapy users of particular diagnosis groups, individuals with high cost conditions (e.g., “Cerebral artery occlusion” [434.91]) generated high expenditures across all three therapy types suggesting a pattern of interdisciplinary approach to treating the diagnosis. Other diagnosis groups more consistently received services from a particular therapy type (e.g., “Decubitus ulcer” [707.0]) where the PT average expenditure among top 5% users was \$4795 while the SLP average was only \$385)⁵¹. This suggests that some conditions may only require one type of therapy; however the amount necessary may be considerable. Medical review of claims by therapists would be required to assess whether the diagnosis was appropriate and the treatment necessary for the reported condition.

⁵⁰ Source: Appendix: G-Table 4.

⁵¹ Full results of the expenditure analysis by diagnosis of the top 5% therapy users are located in Appendix G.

Table 11. Average Expenditures for Frequently Observed Diagnoses of all Top 5% Users⁵²

| ICD-9 \$ Rank Top 5% | ICD-9 Code | Diagnosis Description | Top 5% Users (N) | Total Therapy Paid Average Top 5% | PT Paid Average Top 5% | OT Paid Average Top 5% | SLP Paid Average Top 5% |
|----------------------|------------|---|------------------|-----------------------------------|------------------------|------------------------|-------------------------|
| | | All therapy Users | 3,747,396 | \$896 | \$669 | \$163 | \$63 |
| | | Top 5% Expenditure Users | 187,436 | \$5,430 | \$3,345 | \$1,560 | \$525 |
| 1 | 434.91 | Cerebral artery occlusion, unspecified, with cerebral infarction | 656 | \$6,784 | \$2,679 | \$2,415 | \$1,690 |
| 2 | 518.81 | Acute respiratory failure | 345 | \$6,737 | \$3,255 | \$2,121 | \$1,361 |
| 3 | 707.0 | Decubitus ulcer | 847 | \$6,402 | \$4,795 | \$1,221 | \$385 |
| 4 | 438.21 | Late effects of cerebrovascular disease, hemiplegia affecting dominant side | 903 | \$6,139 | \$2,639 | \$2,384 | \$1,116 |
| 5 | 715.09 | Osteoarthritis, generalized, multiple sites | 1,590 | \$6,115 | \$3,945 | \$2,019 | \$151 |
| 6 | 342.90 | Hemiplegia, unspecified | 591 | \$6,101 | \$3,090 | \$2,136 | \$874 |
| 7 | 438.22 | Late effects of cerebrovascular disease, hemiplegia affecting non-dominant side | 779 | \$6,089 | \$2,906 | \$2,472 | \$710 |
| 8 | 436 | Acute, but ill-defined, cerebrovascular disease | 10,316 | \$6,086 | \$2,782 | \$2,087 | \$1,218 |
| 9 | 443.9 | Peripheral vascular disease, unspecified | 400 | \$5,994 | \$3,652 | \$2,030 | \$312 |
| 10 | 840.9 | Sprains and strains, unspecified part of shoulder and upper arm | 635 | \$5,985 | \$4,154 | \$1,823 | \$8 |

⁵² Source: Appendix: G-Table 6.

6.0 Estimated Impact of the Application of Annual Per-Beneficiary Financial Limitations (Caps) on PT, OT, and SLP Services (Separately) and PT and SLP Services (Combined) in CY 2002

Section 4541(a)(2) of the Balanced Budget Act of 1997 (BBA)⁵³, which added §1834(k)(5) to the Social Security Act (the Act), required payment under a prospective payment system for outpatient rehabilitation services. Outpatient rehabilitation services include the following services:

- Physical therapy (which includes outpatient speech-language pathology); and,
- Occupational therapy.

In addition, Section 4541(c) of the BBA required application of a financial limitation⁵⁴ to all outpatient rehabilitation services (with the exception of outpatient departments of a hospital). In 1999, an annual per beneficiary limit of \$1,500 applied to all outpatient physical therapy services (including speech-language pathology services). A separate limit applied to all occupational therapy services. The limit is based on incurred expenses and includes applicable deductible (\$100 at the time) and coinsurance (20 percent). The BBA provided that the limits be indexed by the Medicare Economic Index (MEI) each year beginning in 2002⁵⁵.

The limitation is based on the services the Medicare beneficiary receives and not the type of practitioner who provides the service. Therefore, physical therapists, speech-language pathologists, occupational therapists as well as physicians and certain non-physician practitioners⁵⁶ could render a therapy service. As a result of subsequent Congressional actions^{57 58}, the limitations were only in effect during CY 1999, and from September 1, 2003 through December 7, 2003, at which time Congress re-enacted a moratorium on financial limitations on outpatient therapy services. The current moratorium is effective from December 8, 2003 through December 31, 2005.

In order to assist in the understanding of the potential impact on beneficiaries if the outpatient therapy financial limitations are resumed on January 1, 2006, the following analysis was conducted to identify demographic and clinical variables that may contribute to the likelihood that an individual beneficiary may be impacted by the currently described PT and SLP (combined) cap, or the OT (separate) cap; or, by three separate PT, OT and SLP caps. In other words, what are the age, gender, state of residence, and principal claim diagnosis of those individuals that have historically received therapy services that exceed the financial limitation thresholds? In addition, since the cap policy excludes hospital outpatient therapy services from the financial limitation, are there differences in the estimated impact of the financial limitation between beneficiaries that access hospital outpatient therapy services versus those who do not?

⁵³ Pub. L. 105-33. Enacted August 5, 1997.

⁵⁴ The outpatient therapy “financial limitation” is commonly referred to as the therapy “cap”. These terms are used synonymously in this report.

⁵⁵ Based upon the MEI, the financial limitation for CY 2002 would have been \$1540 allowed amount (~\$1232 paid amount) if there was not a moratorium.

⁵⁶ Under Medicare, the non-physician practitioners permitted to bill for outpatient therapy services is limited to physician assistants, nurse practitioners, and clinical nurse specialists (as permitted within their state law).

⁵⁷ Pub. L 106-113 Balanced Budget Refinement Act of 1999 (BBRA). Enacted November 29, 1999. Placed a two-year moratorium on the enforcement of the financial limitations (effective CY 2000-2001).

⁵⁸ Pub. L. 106-554 Medicare, Medicaid and SCHIP Benefits Improvement and Protection Act of 2000 (BIPA). Enacted December 21, 2000. Provided an additional one-year extension to the moratorium on the therapy caps, effective CY 2002.

6.1 Analytic Assumptions: Basis of Financial Limitation Impact Estimates

The selection criteria for identifying outpatient therapy services described in Section 2.4 of this report is very consistent with, and is based upon, the current CMS claims processing manual instructions regarding the outpatient therapy financial limitation policy⁵⁹. The selection criteria requires looking at a variety of claims data criteria including, institutional provider revenue center and bill type, non-institutional provider specialty number, presence of a therapy modifier, and presence of a specified therapy HCPCS code, all to assure that outpatient therapy services were identified. However, there is one very significant difference that needed to be addressed before estimating the impact of financial limitations.

Since hospital outpatient services are excluded from the cap policy, CMS developed a financial limitation tracking process in the Common Working File (CWF) that specifically excluded hospital outpatient provider bill types from the tracking file. Therefore, while an individual may receive outpatient therapy services from an outpatient hospital therapy provider, the Medicare expenditures are not debited against their annual financial limitation.

The results reported in Sections 3 through 5 and in Appendices A through G of this report were intended to describe beneficiary utilization patterns that cross all outpatient therapy settings, and therefore included hospital outpatient expenditures. The inclusion of hospital expenditures in that analysis was necessary for the analysis of high expenditure therapy users and ongoing patient classification modeling activities described in Section 1.0 of this report.

However, in order to estimate the impact of the financial limitations as they would actually be applied, we excluded all hospital outpatient therapy expenditures from our analysis of annual per-beneficiary utilization patterns. Therefore, when we describe the “*estimated impact*” of the therapy caps we are describing payments that were issued above the cap thresholds (excluding hospital payments), and the characteristics of the beneficiaries surpassing these thresholds. The resulting estimates of the impact of the financial limitations are located in Appendices H through O. Data in this section and in the Appendices H through O do not include expenditures at outpatient hospital settings that are not subject to caps.

We are assuming that, since there was no enforcement of the therapy caps in CY 2002, there were no systemic barriers limiting outpatient therapy service delivery beyond ongoing national or local coverage policy decisions regarding specific items or services, or medical necessity decisions. Therefore, the utilization observed describes normal service delivery patterns.

The estimated impact analysis results reflect when beneficiaries surpassed the various cap thresholds. In CY 2002, the cap threshold of \$1232 paid amount is based upon 80 percent of a \$1540 allowed amount of the financial limitation had it been enforced in CY 2002.

There are no adjustments made for anticipated changes in provider or beneficiary behaviors if the caps were actually in place. For example, we have not adjusted for potential behavioral changes that may include the “rationing” of care or a change of provider from a non-hospital provider to an outpatient hospital setting to circumvent the caps.

6.2 Estimated Impact of Financial Limitations on Overall Expenditures

During CY 2002, we estimate that over fourteen percent (14.5%) or 508,686 beneficiaries receiving PT and/or SLP services subject to the PT/SLP cap surpassed the cap threshold and accounted for \$642,383,941

⁵⁹ Pub. 104, Ch. 5, Section 10.2, available at http://www.cms.hhs.gov/manuals/104_claims/clm104c05.pdf. Last accessed: September 15, 2004.

of the total payments above the cap (Table 12). Over seventeen percent (17.4%) or 129,509 beneficiaries receiving OT services subject to the caps also surpassed the cap threshold and accounted for \$160,209,108 in payments above the cap.

Overall, we estimate that Medicare paid \$802,593,050 in outpatient therapy benefits above what would have been permitted if the two separate caps (PT/SLP and OT) were enforced. This represents 23.7 percent of all outpatient therapy expenditures subject to the caps for that year. Total Medicare expenditures for outpatient therapy services in CY 2002 is estimated at \$3,392,226,958).

If the PT/SLP cap limitation was divided into two separate caps, there would have been only a 1.2 percent total impact on expenditures, meaning that an additional \$41 million would have been paid before the separate PT or SLP caps were reached.

The following sections will include discussion of other variables contained in Table 12.

Table 12. Estimated Impact of Financial Limitations on Overall CY 2002 Expenditures

| Therapy type limit | Beneficiaries surpassing cap threshold | Percent of beneficiaries surpassing cap threshold | Average paid above cap threshold | Total paid above cap thresholds | Percent dollar impact on total payments if caps were in effect ⁶⁰ |
|---|--|---|----------------------------------|---------------------------------|--|
| PT | 463,893 | 14.1% | \$1,188 | \$550,984,272 | 21.7% |
| OT | 129,509 | 17.4% | \$1,237 | \$160,209,108 | 26.2% |
| SLP | 41,765 | 11.4% | \$1,195 | \$49,906,251 | 21.1% |
| PT/SLP | 508,686 | 14.5% | \$1,263 | \$642,383,941 | 23.1% |
| Total 3 Caps (PT, OT, SLP) | | | | \$761,099,632 | 22.4% |
| Total 2 Caps (PT/SLP and OT) | | | | \$802,593,050 | 23.7% |
| Impact of Separating PT/SLP into separate caps | | | | \$41,493,418 | 1.2% |

6.2.1 Impact by Age

We considered the estimated impact of the financial limitation threshold of \$1540 allowed amount (~\$1232 paid amount) if it were enforced in CY 2002 with regards to beneficiary age. In particular, we identified the number of beneficiaries within each age group (in 5-year increments) that surpassed the cap threshold amounts and the average payments issued above the financial limitation threshold for those beneficiaries. From this we were able to estimate the expenditures made in CY 2002 that were for services furnished in excess of the financial limitations had they been enforced. The results, describing possible variations of the caps including separate PT, OT, and SLP caps, are summarized in Figure 7. Tables describing the three separate therapies as well as a combined PT/SLP cap are included in Appendix H-Table 1, Appendix I-Table 1, Appendix J-Table 1, and Appendix K-Table 1, of this report.

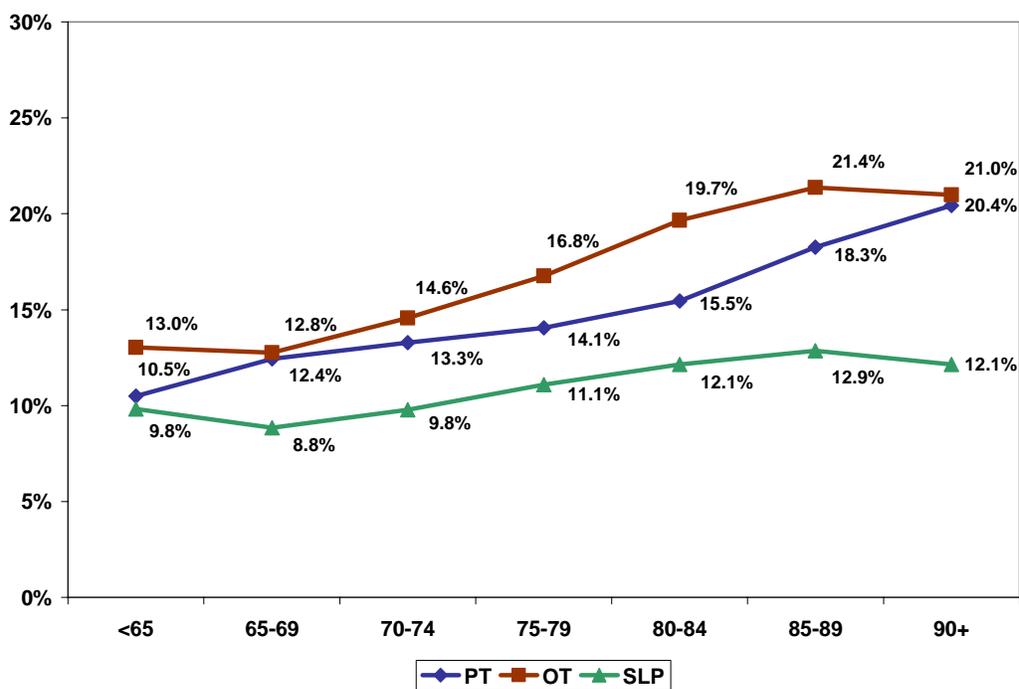
When beneficiary age is considered, as beneficiary age increased, the percentage of beneficiaries that surpassed the payment limitation threshold in CY 2002 generally increased for all therapy types (Figure 7). While the overall percentage of beneficiaries that received PT surpassing the payment limitations was 14.1 percent, the rate was only 10.5 percent for those under age 65, and increased steadily to a 20.4 percent rate

⁶⁰ Percent dollar impact on total payments = “Total paid above cap thresholds” row amount / the total estimated Medicare expenditures for the type of therapy described in the row. Total expenditures PT = \$2,544,116,563, Total OT = \$611,906,952, Total SLP = \$236,203,443, Total PT/SLP = \$2,780,320,006, Total of all therapies = \$3,392,226,958.

for beneficiaries aged 90 and above. The rate of beneficiaries surpassing the OT cap threshold was higher than PT and SLP overall, at 17.4 percent, and within each age group, the lowest rate being 12.8 percent for beneficiaries aged 65-69, and the highest rate at 21.4 percent of beneficiaries aged 85-89. The rate that beneficiaries using SLP services would have surpassed the financial limitations was the least of the three therapy types at 11.4 percent. If there were a combined PT/SLP cap in CY 2002, we estimate an overall rate of surpassing the financial limitation of 14.5 percent, demonstrating a steady increase from a low of 10.7 percent for beneficiaries under age 65 to 21.1 percent for beneficiaries aged 90 and above⁶¹.

In addition, since the financial limitation policy exempts hospital outpatient therapy service expenditures, we *also* estimated the percentage of beneficiaries surpassing the financial limitations that did not access hospital outpatient therapy services in CY 2002 and compared this with those that accessed outpatient hospitals. Section 6.4.1 describes the impact of the hospital exception by age demographic.

Figure 7. Estimated Percent of Beneficiaries Surpassing Separate PT, OT, and SLP Financial Limitation thresholds During CY 2002 by Beneficiary Age⁶²



6.2.2 Impact by Gender

In addition to beneficiary age, we considered the estimated impact of the financial limitation threshold of \$1540 allowed amount (~\$1232 paid amount) if it were enforced in CY 2002 with regards to beneficiary gender. In particular, we identified the number of beneficiaries of each gender that surpassed the cap threshold amounts and the average payments issued above the financial limitation threshold for those

⁶¹ Source: Appendix K-Table 1.

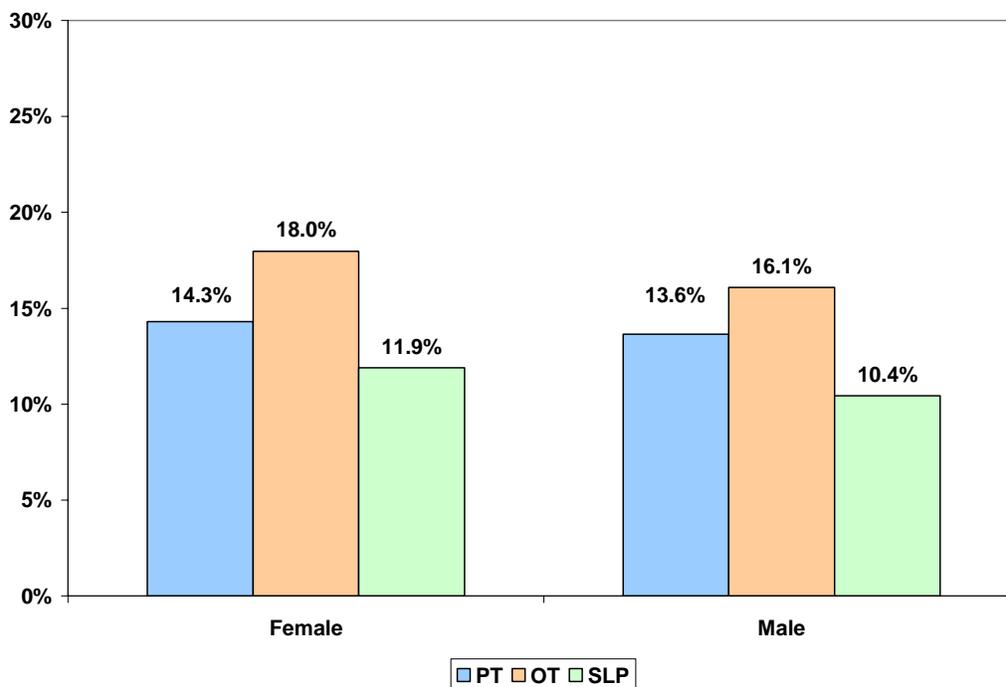
⁶² Source: Appendix H-Table 1, Appendix I-Table 1, and Appendix J-Table 1.

beneficiaries. From this we were able to estimate the expenditures made in CY 2002 that were for services furnished in excess of the financial limitations had they been enforced. The results, describing possible variations of the caps including separate PT, OT, and SLP caps, are summarized in Figure 8. Tables describing the three separate therapies as well as a combined PT/SLP cap are included in Appendix H-Table 2, Appendix I-Table 2, Appendix J-Table 2, and Appendix K-Table 2, of this report.

When beneficiary gender is considered, a slightly higher percentage of females surpassed the financial limitation thresholds for all therapy types in CY 2002 (Fig. 8). While the overall percentage of beneficiaries that received PT surpassing the payment limitations was 14.1 percent, the rate was 14.3 percent for females, and 13.6 percent for males. A similar pattern was apparent for OT as the rate for females surpassing the cap threshold was 18.0 percent, while the rate for males was only 16.1 percent, resulting in the overall OT rate of 17.4 percent. With SLP services, the overall rate of beneficiaries surpassing the financial limitation was 11.4 percent, with the female rate of 11.9 percent being higher than the male rate of 10.4 percent. If there were a combined PT/SLP cap in CY 2002, we estimate an overall rate of surpassing the financial limitation of 14.5 percent, with a female rate of 14.8 percent and a male rate of 14.0 percent.⁶³

In addition, since the financial limitation policy exempts hospital outpatient therapy service expenditures, we *also* estimated the percentage of beneficiaries surpassing the financial limitations that did not access hospital outpatient therapy services in CY 2002 and compared this with those that accessed outpatient hospitals. Section 6.4.2 describes the impact of the hospital exception by age demographic.

Figure 8. Estimated Percent of Beneficiaries Surpassing Separate PT, OT, and SLP Financial Limitation Thresholds during CY 2002 by Beneficiary Gender⁶⁴



⁶³ Source: Appendix K-Table 1.

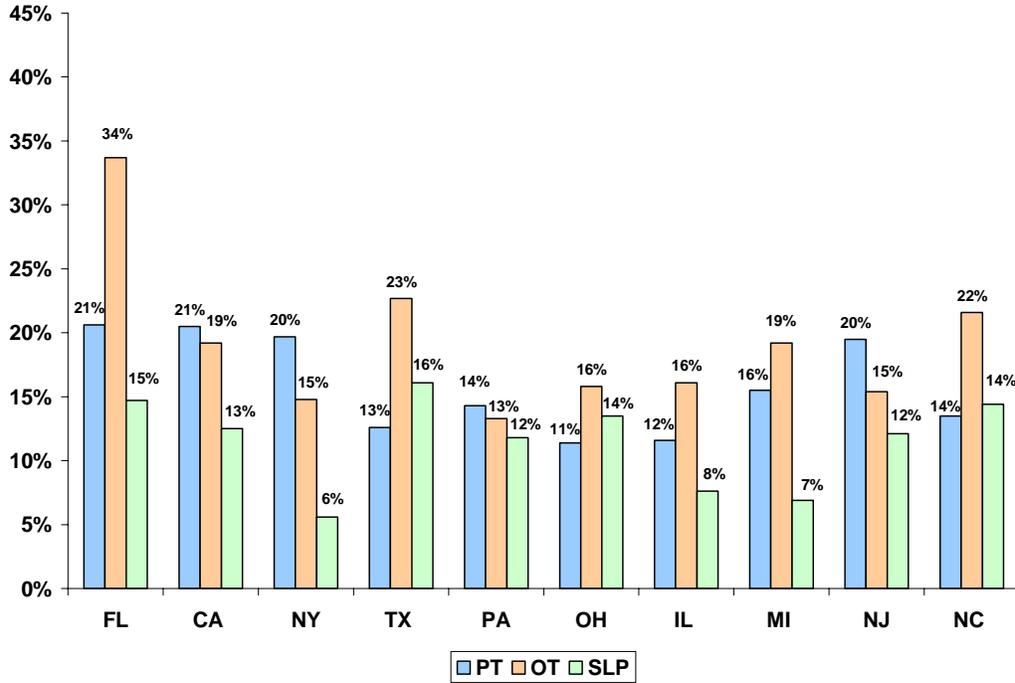
⁶⁴ Source: Appendix H-Table 2, Appendix I-Table 2, and Appendix J-Table 2.

6.2.3 Impact by State of Residence

We also considered the estimated impact of the financial limitation threshold of \$1540 allowed amount (~\$1232 paid amount) if it were enforced in CY 2002 with regards to beneficiary state of residence to identify potential variations in treatment patterns and the potential influence of geographic fee schedule variations. In particular, we identified the number of beneficiaries in each state that surpassed the cap threshold amounts and the average payments issued above the financial limitation threshold for those beneficiaries. From this we were able to estimate the expenditures made in CY 2002 that were for services furnished in excess of the financial limitations had they been enforced. The results, describing possible variations of the caps including separate PT, OT, and SLP caps, are summarized for the ten states with the greatest number of outpatient therapy users in CY 2002 in Figure 9. Tables describing the three separate therapies as well as a combined PT/SLP cap are included in Appendix H-Table 3, Appendix I-Table 3, Appendix J-Table 3, and Appendix K-Table 3, of this report.

When beneficiary state is considered, a remarkable variation is apparent between states in the percentage of beneficiaries that surpassed the payment limitation thresholds had they been enforced in CY 2002. Unlike the age and gender demographic variables described earlier, there was not a consistent pattern across therapy types. For example, in the ten states with the greatest number of therapy users (Figure 9), the rate of OT beneficiaries surpassing the financial limitation varied from a high of 34 percent in Florida to a low of 13 percent in Pennsylvania. Figure 9 also demonstrates differences between the therapy types as OT rates of surpassing the cap thresholds were the highest in six of the top ten most populous therapy patient states (FL, TX, OH, IL, MI, and NC), while PT had the highest rate in four states (CA, NY, PA, and NJ).

Figure 9. Estimated Percent of Beneficiaries Surpassing Separate PT, OT, and SLP Financial Limitation Thresholds During CY 2002 by Beneficiary State of Residence (Top 10 by Patient Volume)⁶⁵



During CY 2002, while the average national rate for beneficiaries surpassing the PT financial limitation thresholds was 14.1 percent, the range varied from a low of 2.6 percent in North Dakota to a high of 20.6 percent in Florida⁶⁶. The range for OT beneficiaries surpassing the cap threshold was even larger between states. While the national OT average was 17.4 percent, over one-third (33.7%) of beneficiaries in Florida that received OT surpassed the cap threshold, while only 4.3 percent did so in North Dakota⁶⁷. Differences between state rates of beneficiaries surpassing the SLP financial limitation from the national average of 11.4 percent were also apparent, with a high of 25.0 percent in Louisiana and a low of 1.8 percent in Hawaii⁶⁸. While the average rate of beneficiaries surpassing the combined PT/SLP financial limitation was 14.5 percent nationally, the individual states had rates ranging from a high of 20.9 percent in Florida to a low of 2.9 percent in North Dakota⁶⁹. However, state fee schedule variations alone do not appear to explain the results, which may also indicate the influence of state differences in rates of outpatient hospital access.

Since the financial limitation policy exempts hospital outpatient therapy service expenditures, we *also* estimated the percentage of beneficiaries surpassing the financial limitations that did not access hospital

⁶⁵ Source: Appendix H-Table 3, Appendix I-Table 3, and Appendix J-Table 3.

⁶⁶ Source: Appendix H-Table 3.

⁶⁷ Source: Appendix I-Table 3.

⁶⁸ Source: Appendix J-Table 3.

⁶⁹ Source: Appendix K-Table 3.

outpatient therapy services in CY 2002 and compared this with those that accessed outpatient hospitals. Section 6.4.3 describes the impact of the hospital exception by state demographic.

6.3 Impact by Diagnosis

To estimate the impact of the financial limitation threshold of \$1540 allowed amount (~\$1232 paid amount) if it were enforced in CY 2002 with regards to beneficiary clinical status, we classified beneficiaries by the principal claim diagnosis of the first outpatient therapy claim for the particular type of therapy during CY 2002⁷⁰. Once classified, all applicable outpatient therapy claims for that beneficiary were attributed to that first identified diagnosis. This classification scheme does not adjust for multiple diagnoses, multiple episodes, or other clinical variables. From this, we were able to estimate the expenditures made in CY 2002 that were for services furnished in excess of the financial limitations had they been enforced. The results, describing possible variations of the caps including separate PT (Table 13), OT (Table 14), and SLP (Table 15) caps, are presented for the fifteen most frequently observed diagnoses with the greatest number of outpatient therapy users in CY 2002. Tables describing the three separate therapies as well as a combined PT/SLP cap are included in Appendix H-Table 4, Appendix I-Table 4, Appendix J-Table 4, and Appendix K-Table 4, of this report.

6.3.1 Impact by Diagnosis – Physical Therapy

Of the nearly 3.3 million beneficiaries that received outpatient PT services in CY 2002, we estimate that 463,893, or 14.1 percent, generated expenditures in excess of the financial limitation amount if it would have applied as a separate PT cap. The total estimated PT payments above the financial limitation threshold was \$550,984,272.

The analysis of beneficiary diagnosis (without regard to other variable characteristics) presents a long list of conditions more likely to surpass the financial limitation amounts. For example, of the top 15 most commonly reported PT diagnoses presented in Table 13, “Acute Stroke” (ICD-9 = 436) has the highest rate of beneficiaries surpassing the financial limit threshold amount at 23.2 percent and the highest average payments above the cap threshold (\$1555). The findings for this easily identified and understood diagnosis and others in the top 15 could possibly support consideration of using claim diagnosis to exempt beneficiaries from the financial limitation.

Table 13. Estimated Financial Limitation Impact by Diagnosis – Physical Therapy⁷¹

| Claim diagnosis group | | Beneficiaries receiving PT services | Beneficiaries surpassing PT cap threshold | Percent of beneficiaries surpassing PT cap threshold | Average paid above PT cap threshold | Total paid above PT cap threshold |
|-----------------------|--------------------------------|-------------------------------------|---|--|-------------------------------------|-----------------------------------|
| ICD-9 Code | Diagnosis Description | | | | | |
| Total | All Reported Diagnoses | 3,296,407 | 463,893 | 14.1% | \$1,188 | \$550,984,272 |
| V57.1 | Other physical therapy | 338,509 | 4,162 | 1.2% | \$987 | \$4,107,478 |
| 724.2 | Lumbago | 219,618 | 29,018 | 13.2% | \$1,202 | \$34,877,315 |
| 781.2 | Abnormality of gait | 116,623 | 24,814 | 21.3% | \$1,200 | \$29,770,348 |
| 719.41 | Pain in joint, shoulder region | 87,489 | 12,191 | 13.9% | \$1,094 | \$13,337,564 |
| 723.1 | Cervicalgia | 80,870 | 9,085 | 11.2% | \$1,162 | \$10,556,588 |

⁷⁰ Section 5.0 of this report describes the diagnosis classification methodology.

⁷¹ Source: Appendix H-Table 4

| Claim diagnosis group | | Beneficiaries receiving PT services | Beneficiaries surpassing PT cap threshold | Percent of beneficiaries surpassing PT cap threshold | Average paid above PT cap threshold | Total paid above PT cap threshold |
|-----------------------|---|-------------------------------------|---|--|-------------------------------------|-----------------------------------|
| ICD-9 Code | Diagnosis Description | | | | | |
| 719.46 | Pain in joint, lower leg | 77,819 | 12,263 | 15.8% | \$1,169 | \$14,337,286 |
| 436 | Acute, but ill-defined cerebrovascular disease | 47,710 | 11,060 | 23.2% | \$1,555 | \$17,199,295 |
| 715.96 | Osteoarthritis, unspecified whether generalized or localized, lower leg | 45,399 | 7,260 | 16.0% | \$1,123 | \$8,156,174 |
| 729.5 | Pain in limb | 43,637 | 5,271 | 12.1% | \$1,377 | \$7,256,111 |
| 726.10 | Disorders of bursa and tendons in shoulder region, not elsewhere classified | 43,569 | 6,476 | 14.9% | \$1,037 | \$6,716,130 |
| 840.4 | Sprains and strains, rotator cuff (capsule) | 42,061 | 8,331 | 19.8% | \$986 | \$8,216,949 |
| 724.02 | Spinal stenosis, other than cervical, lumbar region | 41,355 | 6,199 | 15.0% | \$988 | \$6,127,402 |
| 719.45 | Pain in joint, pelvic region and thigh | 40,848 | 4,776 | 11.7% | \$1,065 | \$5,087,013 |
| 724.5 | Backache, unspecified | 40,774 | 3,935 | 9.7% | \$1,247 | \$4,908,676 |
| 715.16 | Osteoarthritis, localized, primary, lower leg | 37,809 | 7,794 | 20.6% | \$1,002 | \$7,811,459 |

For example, among the top 15 most frequently report PT diagnoses, eight have more than the average number of beneficiaries surpassing the PT cap threshold. However, in reviewing the list of the top 98 most frequently reported PT diagnoses that is presented in Appendix H-Table 4, there are fifteen other diagnoses reported that have higher rates of beneficiaries surpassing the financial limitations. Some of these do not describe specific clinical conditions as well as others, but clearly generate higher rates of high expenditure users. They include:

- 438.0 – Late effects of stroke at 31.3%
- 715.09 – Osteoarthritis, generalized, multiple sites at 29.3%
- 719.79 – Difficulty in walking, multiple sites at 28.2%
- 780.9 – Other general symptoms at 28.1%
- 401.9 – Essential hypertension at 27.7%
- 715.00 – Osteoarthritis, generalized, site unspecified at 27.1%
- 727.61 – Non-traumatic rotator cuff rupture at 27.0%
- 728.2 – Muscular wasting and disuse atrophy at 26.4%
- 719.70 – Difficulty in walking, site unspecified at 26.0%
- 820.8 – Closed fracture of neck of femur at 25.8%
- 719.75 – Difficulty in walking, pelvic region and thigh at 25.2%
- 332.0 – Parkinson’s Disease at 24.5%
- 250.00 – Type II Diabetes at 24.1%

- 707.0 – Decubitus ulcers at 24.1%
- 428.0 – Congestive Heart Failure at 23.3%.

The great variety of conditions described by these diagnoses (all that have relatively high rates of beneficiaries surpassing the PT limitation threshold) highlights the difficulty in using claim diagnosis alone to exclude certain individuals from the financial limitation.

6.3.2 Impact by Diagnosis – Occupational Therapy

Of the 745,240 beneficiaries that received outpatient OT services in CY 2002, we estimate that 129,509 or 17.4 percent generated expenditures in excess of the financial limitation amount if it would have applied. The total estimated OT payments above the financial limitation threshold was \$160,209,108.

With regards to beneficiary diagnosis, similar to the PT results, there are many of the frequently reported diagnoses with a high number of beneficiaries who exceed the cap, but there is no pattern that clearly identifies particular conditions more likely to surpass the OT financial limitation amounts. For example, of the top 15 most commonly reported OT diagnoses presented in Table 14, “Muscular wasting and disuse atrophy” (ICD-9 = 728.2) has the highest rate of beneficiaries surpassing the financial limit threshold amount at 32.1 percent, although “Acute Stroke” (ICD-9 = 436) had the highest average payments above the cap threshold (\$1453). Among the 15 most frequently reported OT diagnoses, several nonspecific diagnoses demonstrate rates of beneficiaries surpassing the financial limit threshold by greater than 25 percent.

Table 14. Estimated Financial Limitation Impact by Diagnosis – Occupational Therapy⁷²

| Claim diagnosis group | | Beneficiaries receiving OT services | Beneficiaries surpassing OT cap threshold | Percent of beneficiaries surpassing OT cap threshold | Average paid above OT cap threshold | Total paid above OT cap threshold |
|-----------------------|---|-------------------------------------|---|--|-------------------------------------|-----------------------------------|
| ICD-9 Code | Diagnosis Description | | | | | |
| Total | All Reported Diagnoses | 745,240 | 129,509 | 17.4% | \$1,237 | \$160,209,108 |
| 436 | Acute, but ill-defined, cerebrovascular disease | 32,726 | 6,768 | 20.7% | \$1,453 | \$9,834,716 |
| V57.1 | Other physical therapy | 31,739 | 759 | 2.4% | \$1,074 | \$815,204 |
| V57.21 | Occupational therapy encounter | 30,178 | 185 | 0.6% | \$958 | \$177,213 |
| 781.2 | Abnormality of gait | 27,369 | 7,159 | 26.2% | \$1,220 | \$8,731,188 |
| 780.9 | Other general symptoms | 15,664 | 3,989 | 25.5% | \$1,207 | \$4,815,960 |
| 787.2 | Dysphagia | 15,537 | 3,056 | 19.7% | \$1,095 | \$3,344,914 |
| 799.3 | Debility, unspecified | 15,224 | 3,391 | 22.3% | \$1,164 | \$3,947,700 |
| 728.2 | Muscular wasting and disuse atrophy, not elsewhere classified | 13,228 | 4,240 | 32.1% | \$1,290 | \$5,468,922 |
| 719.70 | Difficulty in walking, site unspecified | 12,341 | 3,528 | 28.6% | \$1,149 | \$4,052,472 |
| 354.0 | Carpal Tunnel Syndrome | 12,189 | 518 | 4.2% | \$779 | \$403,273 |
| 332.0 | Parkinson's Disease paralysis agitans | 10,865 | 2,679 | 24.7% | \$1,296 | \$3,472,600 |
| 428.0 | Congestive Heart Failure, unspecified | 9,939 | 2,427 | 24.4% | \$1,245 | \$3,021,833 |

⁷² Source: Appendix I-Table 4

| Claim diagnosis group | | Beneficiaries receiving OT services | Beneficiaries surpassing OT cap threshold | Percent of beneficiaries surpassing OT cap threshold | Average paid above OT cap threshold | Total paid above OT cap threshold |
|-----------------------|--|-------------------------------------|---|--|-------------------------------------|-----------------------------------|
| ICD-9 Code | Diagnosis Description | | | | | |
| 728.9 | Unspecified disorder of muscle, ligament, and fascia | 9,857 | 2,822 | 28.6% | \$1,236 | \$3,488,331 |
| 331.0 | Alzheimer's Disease | 9,542 | 1,423 | 14.9% | \$881 | \$1,253,421 |
| 715.90 | Osteoarthritis, unspecified whether generalized or localized, site unspecified | 9,522 | 2,160 | 22.7% | \$1,419 | \$3,063,960 |

In addition, if reviewing the list of the top 100 most frequently reported OT diagnoses that is presented in Appendix I-Table 4, there are five other diagnoses reported that have higher rates of beneficiaries surpassing the financial limitations. Some of these do not describe specific clinical conditions as well as others, but clearly generate higher rates of high expenditure users. They include:

- 723.4 – Brachia neuritis or radiculitis at 46.2%
- 847.2 – Lumbar sprains and strains at 45.0%
- 724.4 – Thoracic or lumbosacral neuritis or radiculitis, unspecified at 43.4%
- 715.09 – Osteoarthritis, generalized, multiple sites at 22.7%
- 719.79 – Difficulty in walking, multiple sites at 28.6%.

The great variety of conditions described by these diagnoses (all that have relatively high rates of beneficiaries surpassing the OT limitation threshold) highlights the difficulty in using claim diagnosis alone to exclude certain individuals from the financial limitation. The presence of atypical diagnoses (e.g. the second most frequently reported OT principal claim diagnosis of V57.1 (“Other physical therapy”)) also presents a significant barriers in identifying the true OT diagnosis using claim diagnosis⁷³.

6.3.3 Impact by Diagnosis – Speech-Language Pathology

Of the 367,783 beneficiaries that received outpatient SLP services in CY 2002, we estimate that 41,765 or 11.4 percent generated expenditures in excess of the financial limitation amount if it would have applied as a separate SLP cap. The total estimated SLP payments above the financial limitation threshold was \$49,906,251.

With regards to beneficiary diagnosis, similar to the PT and OT results, there is no pattern that clearly identifies particular conditions more likely to surpass the SLP financial limitation amounts. For example, of the top 15 most commonly reported SLP diagnoses presented in Table 15, “Late effects of a Stroke” (ICD-9 = 438.0) has the highest rate of beneficiaries surpassing the financial limit threshold amount at 20.9 percent, although “Other speech disturbance” (ICD-9 = 784.5) had the highest average payments above the cap threshold (\$1435). However, unlike PT and OT users, one single diagnosis, “Dysphagia” (ICD-9 =

⁷³ The great majority of outpatient OT services are furnished by hospital and SNF providers that bill using the UB-92 form, or electronic equivalent. These claim forms do not provide fields that permit identification of a therapy-specific diagnosis. Frequently, if a beneficiary is receiving multiple therapies simultaneously, the PT diagnosis is reported first on the claim.

787.2) is the predominant diagnosis of SLP beneficiary users⁷⁴ and it has a lower than average rate of beneficiaries exceeding the cap.

Among the 15 most frequently reported SLP diagnoses in Table 15 and among the top 100 reported SLP diagnoses in Appendix J-Table 4, several nonspecific and atypical diagnoses appear, some with higher than average rates for surpassing the SLP cap threshold. They include 781.2 (“Gait abnormality”), V57.1 (“Other physical therapy”), and 719.70 (“Difficulty in walking, site unspecified”). The great variety of conditions described by these diagnoses (some that have relatively high rates of beneficiaries surpassing the SLP limitation threshold), highlights the difficulty in using claim diagnosis alone to exclude certain individuals from the financial limitation. The presence of atypical diagnoses also presents a significant barrier in identifying the true SLP diagnosis using claim diagnosis⁷⁵.

Table 15. Estimated Financial Limitation Impact by Diagnosis – Speech-Language Pathology⁷⁶

| Claim diagnosis group | | Beneficiaries receiving SLP services | Beneficiaries surpassing SLP cap threshold | Percent of beneficiaries surpassing SLP cap threshold | Average paid above SLP cap threshold | Total paid above SLP cap threshold |
|-----------------------|---|--------------------------------------|--|---|--------------------------------------|------------------------------------|
| ICD-9 Code | Diagnosis Description | | | | | |
| Total | All Reported Diagnoses | 367,783 | 41,765 | 11.4% | \$1,195 | \$49,906,251 |
| 787.2 | Dysphagia | 101,201 | 8,570 | 8.5% | \$1,106 | \$9,478,334 |
| 436 | Acute, but ill-defined, cerebrovascular disease | 22,411 | 3,723 | 16.6% | \$1,533 | \$5,707,955 |
| V57.3 | Speech therapy | 12,630 | 212 | 1.7% | \$1,266 | \$268,492 |
| 781.2 | Abnormality of gait | 9,546 | 1,551 | 16.2% | \$1,109 | \$1,719,904 |
| V57.1 | Other physical therapy | 7,724 | 140 | 1.8% | \$1,142 | \$159,886 |
| 331.0 | Alzheimer’s Disease | 7,545 | 818 | 10.8% | \$829 | \$677,975 |
| 332.0 | Parkinson’s Disease, paralysis agitans | 7,047 | 1,161 | 16.5% | \$1,212 | \$1,407,643 |
| 428.0 | Congestive Heart Failure, unspecified | 4,469 | 654 | 14.6% | \$1,068 | \$698,394 |
| 486 | Pneumonia, unspecified | 4,392 | 589 | 13.4% | \$1,079 | \$635,655 |
| 719.70 | Difficulty in walking, site unspecified | 4,384 | 756 | 17.2% | \$1,118 | \$845,079 |
| 799.3 | Debility, unspecified | 4,251 | 716 | 16.8% | \$1,101 | \$788,295 |
| 780.9 | Other general symptoms | 4,231 | 836 | 19.8% | \$1,216 | \$1,016,584 |
| 784.5 | Other speech disturbance | 4,039 | 369 | 9.1% | \$1,435 | \$529,688 |
| 290.0 | Senile dementia, uncomplicated | 3,964 | 468 | 11.8% | \$847 | \$396,223 |
| 438.0 | Late effects of cerebrovascular disease, cognitive deficits | 3,417 | 713 | 20.9% | \$1,306 | \$931,035 |

⁷⁴ 101,201 beneficiaries receiving SLP with a diagnosis of dysphagia represents 27.5% of all SLP users and 8,570 SLP users over the financial limitation with dysphagia represents 20.5% of all SLP beneficiaries surpassing the financial limit threshold.

⁷⁵ The great majority of outpatient SLP services are furnished by hospital and SNF providers that bill using the UB-92 form, or electronic equivalent. These claim forms do not provide fields that permit identification of a therapy-specific diagnosis. Frequently, if a beneficiary is receiving multiple therapies simultaneously, the PT diagnosis is reported first on the claim.

⁷⁶ Source: Appendix J-Table 4.

6.4 Estimated Impact of the Hospital Outpatient Exception on Beneficiary Likelihood to Surpass Financial Limitations

The analysis in this section considers the potential impact and vulnerabilities of the hospital outpatient exception within the outpatient therapy financial limitation policy. In particular, are there possible age, gender or state of residence variations that may influence the likelihood of a beneficiary surpassing one of the financial limitations?

This analysis compares the percentage of outpatient therapy users that received at least some services from a hospital versus those that received the services from providers other than a hospital. Section 6.1.1 of this report introduced the overall rate of beneficiaries surpassing various outpatient therapy financial limitation thresholds had they been enforced in CY 2002. That section indicated that a vast majority of beneficiaries surpassing the financial limitations did not access hospital outpatient therapy services (PT = 93.8%, OT = 97.7%, SLP = 88.9, PT/SLP combined 92.4%). This section further investigates the effectiveness of the hospital exception policy as an outlet for beneficiaries that require services beyond the financial limitations.

As Table 16 demonstrates, over 2 million beneficiaries (63.3% of the total number) receiving PT services in CY 2002 did not access a hospital outpatient therapy provider. Of those beneficiaries that did access a hospital provider, only 2.4 percent surpassed the PT cap threshold. However, 20.8 percent of the beneficiaries that did not access a hospital for their outpatient PT surpassed the financial threshold.

For OT, nearly one-half million beneficiaries (67.1 %) received outpatient services from a provider that was not an outpatient hospital, and 25.3 percent of these individuals exceeded the OT cap threshold. Conversely, only 1.2 percent of the beneficiaries that accessed hospital outpatient services surpassed the financial limitation.

Nearly sixty percent (220,152) of beneficiaries receiving SLP services in CY 2002 received services from providers other than hospital outpatient, and among these, 16.9 percent surpassed the financial limitation. Meanwhile, only 3.1 percent of the beneficiaries that had some access a hospital outpatient department for SLP services surpassed the cap threshold.

When PT and SLP services are combined under a single financial limitation a similar pattern emerges. Of the 3.5 million beneficiaries that received PT and/or SLP services, 62.5 percent went to providers other than a hospital outpatient setting and 21.5 percent of them surpassed the cap threshold. In contrast, only 3.0 percent of PT/SLP users that accessed hospital outpatient services surpassed the financial limitation.

Table 16. Estimated Impact of the Hospital Outpatient Exception⁷⁷

| | Beneficiaries receiving therapy services | Beneficiaries surpassing cap thresholds | Percent of patients surpassing cap thresholds |
|-------------------------------------|---|--|--|
| PT Total | 3,296,407 | 463,893 | 14.1% |
| Hospital not accessed ⁷⁸ | 2,087,979 | 435,280 | 20.8% |
| Hospital accessed ⁷⁹ | 1,208,428 | 28,613 | 2.4% |
| % Not using hospital ⁸⁰ | 63.3% | 93.8% | |
| OT Total | 745,240 | 129,509 | 17.4% |
| Hospital not accessed | 499,837 | 126,488 | 25.3% |
| Hospital accessed | 245,403 | 3,021 | 1.2% |
| % Not using hospital | 67.1% | 97.7% | |
| SLP Total | 367,783 | 41,765 | 11.4% |
| Hospital not accessed | 220,152 | 37,116 | 16.9% |
| Hospital accessed | 147,631 | 4,649 | 3.1% |
| % Not using hospital | 59.9% | 88.9% | |
| PT/SLP Total | 3,503,136 | 508,686 | 14.5% |
| Hospital not accessed | 2,187,838 | 469,850 | 21.5% |
| Hospital accessed | 1,315,298 | 38,836 | 3.0% |
| % Not using hospital | 62.5% | 92.4% | |

6.4.1 Impact of the Exception – Age Demographics

The line chart in Figure 10 indicates the age group prevalence of beneficiaries among those that could not, or chose not to access outpatient hospital therapy services in CY 2002 that surpassed the financial limitation amount. By excluding individuals that accessed outpatient hospital services during CY 2002, a remarkably different trend is observed than is observed in Figure 7 in Section 6.1.1.

The most notable difference is the slope of the lines. In the earlier analysis, when all outpatient therapy users were described, the trend for all three therapy types was that the percentage of beneficiaries surpassing the financial threshold limits increased with age. However, in Figure 10, among those beneficiaries that did not access hospital outpatient services, the percentage of beneficiaries surpassing the cap thresholds increases only with PT services (paralleling Figure 7). For OT and SLP services, the proportion of beneficiaries that did not access outpatient hospital services decreases with beneficiary age.

⁷⁷ Source: Appendix L.

⁷⁸ The “Hospital not accessed” row represents the beneficiaries that received outpatient therapy services during CY 2002 but could not, or chose not to receive any of these services from a hospital outpatient provider. Since none of the therapy furnished to these individuals was from a hospital outpatient provider, all incurred expenses were debited against the applicable cap estimate.

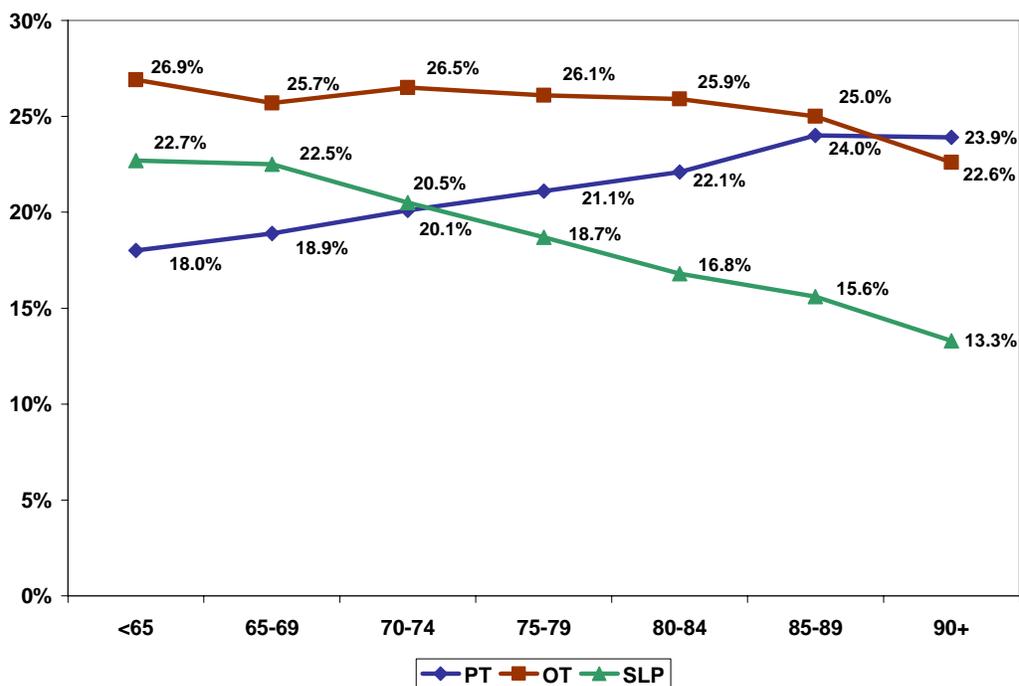
⁷⁹ The “Hospital accessed” row represents beneficiaries that received at least one outpatient therapy treatment from an outpatient hospital provider during CY 2002. The only incurred expenses debited against the applicable cap estimate were for services furnished by an outpatient therapy provider that was not identified as a hospital.

⁸⁰ The “% Not using hospital” row represents the distribution of beneficiaries that either could not, or chose not to access outpatient therapy services from an outpatient hospital provider during CY 2002. In addition, this row identifies the distribution of beneficiaries surpassing the cap thresholds that either could not, or chose not to access outpatient therapy services from an outpatient hospital provider during CY 2002.

This result may be influenced by the higher proportion of OT and SLP users access the exempted outpatient hospital setting than observed for older PT users.

The other notable difference is that the proportion of beneficiaries surpassing the financial limitations when they did not access hospital outpatient services is much higher than the average. For PT services, the average rate for all beneficiaries is 14.1 percent; however, when they do not access hospital outpatient services, the rate increases from 18.0 percent for those under age 65, up to 23.9 percent for those aged 90 and above. For OT, while the national rate is 17.4 percent, OT ranges from 26.9 percent for those under age 65 to 22.6 percent for those aged 90 and above. Beneficiaries that receive SLP from providers other than hospitals surpass the cap threshold at rates ranging from 22.7 percent for those under age 65 to 13.3 percent for those aged 90 and over.

Figure 10. Estimated Beneficiary Rate of Surpassing Financial Limitations When Hospital Outpatient Services Are Not Accessed – Age Demographics⁸¹



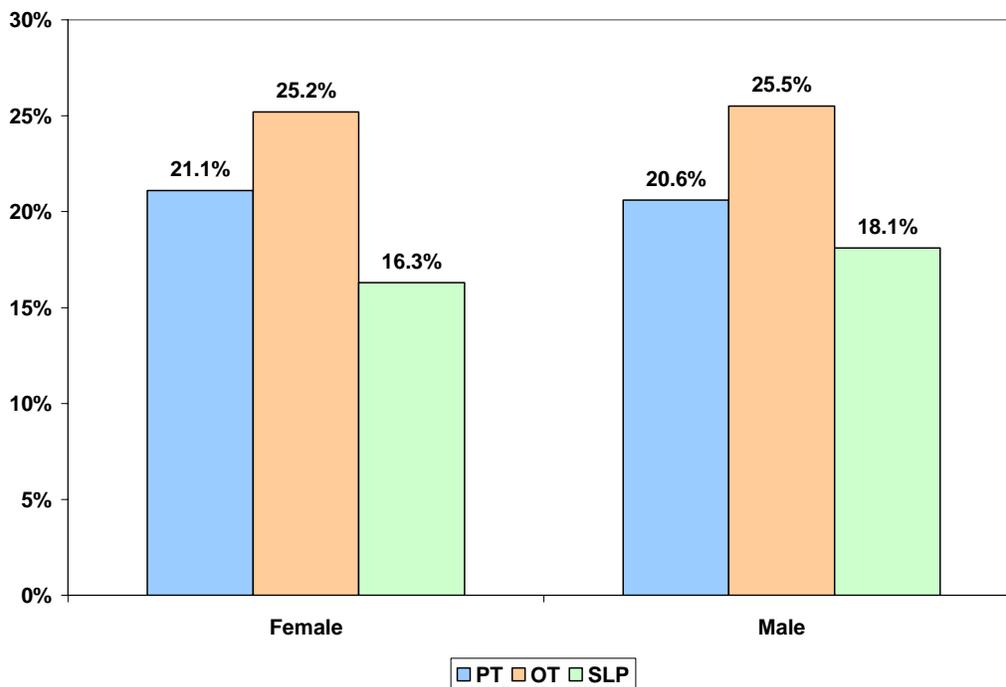
⁸¹ Source: Appendix L.

6.4.2 Impact of the Exception – Gender Demographics

Similar to the age demographic, there is a slight variation in the pattern of beneficiaries surpassing the outpatient therapy financial limitation amounts in CY 2002 when analyzing beneficiaries that did not access hospital outpatient therapy services. The only major difference is that the rate of surpassing the financial limitations is higher when a hospital was not accessed. However, while females had a higher rate for all three therapy types in Figure 8 (Section 6.2.2), a higher percentage of male OT and SLP users surpass the cap thresholds in Figure 11.

For example, Figure 11 demonstrates that 21.1 percent of females and 20.6 percent of males receiving PT services from a provider other than a hospital surpassed the financial limit threshold. However, for OT and SLP, the percentage of males surpassing the financial limits is greater than the female percentage (OT – 25.5% male > 25.2% female) (SLP – 18.1% male > 16.3% female).

Figure 11. Estimated Beneficiary Rate of Surpassing Financial Limitations When Hospital Outpatient Services Not Accessed – Gender Demographics⁸²

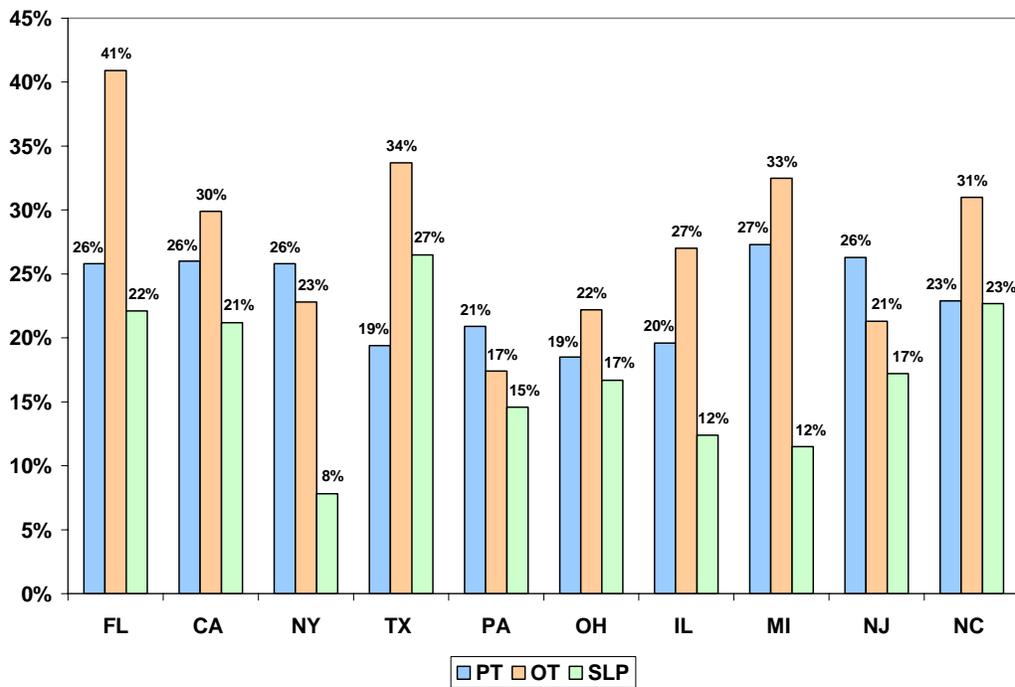


⁸²Source: Appendix M

6.4.3 Estimated Impact of the Hospital Outpatient Exception on Beneficiary Likelihood to Surpass Financial Limitations – State Demographics

As Figure 12 demonstrates, there are significant beneficiary state of residence variations in the distribution of individuals that are likely to surpass the outpatient therapy financial limitation thresholds when a beneficiary does not access a hospital outpatient provider. Similar to Figure 9 in Section 6.2.3, the rates that beneficiaries surpass the financial limit thresholds varies by state and by type of therapy within a state. While Figure 12 highlights the ten states with the greatest number of outpatient therapy users, the results of all states are presented in Appendix N.

Figure 12. Estimated Beneficiary Rate of Surpassing Financial Limitations When Hospital Outpatient Services Not Accessed – State Demographics⁸³



An interesting observation that can be made regarding possible barriers to outpatient hospital access is the percentage of beneficiaries that access hospital services. The higher the percentage of beneficiaries in a state that access hospital services, the lower the likelihood that beneficiaries will surpass the cap threshold amount since hospital payments are not debited against the caps. However, as reported in Appendix N, there is a wide variation between states regarding hospital access. For example, for PT services, 84.1 percent of PT beneficiaries in Maryland did not access hospital services and that state had an overall rate of beneficiaries surpassing the financial limit of 19.7 percent; while only 38.9 percent of PT beneficiaries in North Dakota did not access hospital services. As a result, only 5.6 percent of PT users in North Dakota

⁸³ Source: Appendix N.

surpassed the financial limit threshold. Similar patterns are observed in Appendix N for OT, SLP and PT/SLP combined.

6.4.4 Impact of the Exception – Annual Expenditure Benchmarks

In theory, the hospital outpatient exception to the outpatient therapy financial limitation policy permits beneficiaries that need intensive therapy services the option to transfer care to a hospital outpatient provider once they have reached the annual financial limitation at a non-hospital provider⁸⁴. Sections 6.4.1 through 6.4.3 have described the impact that beneficiary hospital access has on the likelihood that beneficiaries will surpass the financial limitations. In general, very few individuals that access outpatient hospital services would be subject to the annual limitation. However, based upon the CY 2002 claims data analyzed, the majority of outpatient therapy users do not receive services from a hospital outpatient therapy department, and for most variables, the rate of surpassing the financial limitations was greater than 20 percent. Although we cannot determine if this was by consumer preference, or by lack of access to a hospital outpatient facility, a deeper consideration of the implications of the hospital exception can be made by comparing expenditure benchmarks of the tables presented in Appendices H-N. Appendix O contains three tables that provide annual expenditure benchmarks.

Unlike the tables presented in Appendix D, the results in these tables do not include outpatient hospital therapy expenditures since those services were exempted from the financial limitations⁸⁵, and therefore more accurately reflect expenditure percentiles that could be used in financial limitation policy considerations. In particular, these tables (using CY 2002 claims data) can be used to provide quick estimates of the potential impact of various cap thresholds (e.g. what dollar threshold would be needed to impact no more than 5 percent of beneficiaries receiving therapy services?).

Appendix O-Table 1 describes the benchmark averages for all beneficiaries receiving outpatient therapy regardless of setting. However, hospital paid dollars were excluded from the average per the financial limitation hospital exemption policy. Any dollars attributed to the hospital access group indicate only those expenditures incurred from other settings, and does not include outpatient hospital expenditures. This table represents the results discussed in Section 6.1 of this report.

Appendix O-Table 2 describes the benchmark averages for all beneficiaries receiving at least one outpatient therapy treatment from an outpatient hospital provider during CY 2002. These results correlate with the “Hospital accessed” rows on the tables in Appendices L-N. Beneficiaries in this group could also have received outpatient therapy from non-hospital providers; however, hospital paid dollars were excluded from the average per the financial limitation hospital exemption policy. This table most likely represents those individuals that would benefit from the financial limitation hospital exception policy. Since hospital expenditures are not debited against the financial limitations, most of the fields in this table contain \$0.

Appendix O-Table 3 describes the benchmark averages for all beneficiaries that received outpatient therapy services during CY 2002 but could not, or chose not to receive any services from a hospital outpatient provider. These results correlate with the “Hospital not accessed” rows on the tables in Appendices L-N. Since none of the therapy furnished to these individuals was from a hospital provider, all incurred expenses were debited against the applicable cap estimate. This table most likely represents those individuals that are either not able to, or choose not to benefit from the financial limitation hospital

⁸⁴ This exception does not apply to SNF inpatients who reside in the certified portion of the SNF.

⁸⁵ This debiting process is consistent with Common Working File (CWF) financial limitation tracking procedures described in the Medicare Claims Processing Manual (Pub. 104), Ch. 5, Section 10.2. *The Financial Limitation*.

exception policy. For example, individuals residing in a certified portion of a SNF are not able to access hospital outpatient therapy services due to consolidated billing requirements. This table represents the results discussed in Section 6.2 of this report

The tan shaded cells represent the estimated therapy user percentile groups surpassing the financial limitation threshold amounts for CY 2002, had they been enforced.

7.0 Summary

This utilization analysis of the per-beneficiary annual utilization of Part B therapy services for CY 2002 presents a variety of descriptive analytic tables that present various demographic and clinical characteristics of Part B therapy users. The characteristics described include the age, gender and state of residence of beneficiaries receiving outpatient therapy services and classifies them clinically based upon the principal claim diagnosis reported during the first therapy encounter. Additional analysis of the estimated impact of variations of the outpatient therapy financial limitations is also presented.

7.1 Overall Utilization

During CY 2002, Medicare issued \$3.39 billion in outpatient therapy payments for 3.75 million beneficiaries. Of this, \$2.54 billion was for physical therapy (PT) services for 3.3 million beneficiaries, \$612 million was for occupational therapy (OT) services for 745 thousand beneficiaries, and \$236 million was for speech-language pathology (SLP) services for 368 thousand beneficiaries.

The average paid amount for all therapies combined in CY 2002 was \$896 and the median payment was \$466. The average annual paid amount was \$760 for PT, \$821 for OT, and \$643 for SLP. The median paid amount was \$447 for PT, \$449 for OT, and \$307 for SLP.

The overall distribution of therapy users by age group was relatively normal, peaking at age groups 70-74 and 75-79 (19.1 percent each). However, beneficiaries receiving PT services were younger than those receiving OT and SLP services (PT peak at age 70-74, OT and SLP peak at age 80-84). Females accounted for nearly two-thirds (66.3%) of all therapy users. Three states (Florida, California, and New York) accounted for nearly one quarter (23.8%) of all therapy users while ten states accounted for over half (53.3%). The state-by-state patterns of delivery of PT, OT and SLP services varied.

7.2 High Expenditure Therapy Users

The demographics of outpatient therapy users that generate annual expenditures among the top 5% are different than the average outpatient therapy user, and the differences vary by type of therapy. For PT services, the older a beneficiary becomes, the more likely they will be among the top 5% most costly individuals. For OT users, those users under age 69 and those aged 90 and above were more likely to be high expenditure users. With SLP services, a more typical bell curve appeared with the highest expense users being aged 65-69. There was a small trend for males to be higher expenditure PT and SLP users. There was wide variation in high expenditure users by state and by therapy type within states. Among the most populous ten states, Florida and California also had a greater likelihood of top 5% expenditure users.

When the principal claim diagnosis of high expenditure outpatient therapy users is considered, it is apparent that PT, OT and SLP generally treat different conditions. However, inconsistent claim diagnosis reporting requirements limits the analysis.

Among the top ten most common PT diagnoses, one was for a generic "Other physical therapy" diagnosis, six were for musculoskeletal conditions, one was for a central neurological condition, and the two remaining diagnoses were for general symptoms. The top ten PT diagnoses accounted for 33 percent of all PT users. Among the top ten most frequently reported OT diagnoses, "Acute Stroke" was the most common; however, the generic "Other physical therapy" and "Occupational therapy encounter" ranked second and third. Among the remaining top ten OT diagnoses were five for general symptoms, one for swallowing disorders, and one for a peripheral nerve injury. The top ten OT diagnoses accounted for 28% of all OT users. SLP users were dominated by beneficiaries with a diagnosis of "Dysphagia" (28%).

Three central nervous system disorders and two cardiopulmonary conditions were also in the top ten SLP diagnoses. In addition, there were two general symptom and two generic diagnosis codes. The top ten SLP codes accounted for 49% of all SLP users.

Among the top 5% Part B therapy users, five of the top ten diagnosis groups based upon average annual expenditures describe central neurological conditions (“Stroke and similar manifestations”), two were musculoskeletal (“Generalized osteoarthroses” and “Shoulder sprains”), two were related to cardiopulmonary and circulatory disorders (“Respiratory failure” and “Peripheral vascular disease”) and one for “Decubitus ulcers of the skin”. Similar to the average expenditure patterns of all therapy users of particular diagnosis groups, individuals with high cost conditions (e.g., “Cerebral artery occlusion” [434.91]) generated high expenditures across all three therapy types suggesting a pattern of interdisciplinary approach to treating the diagnosis. Other diagnosis groups more consistently received services from a particular therapy type (e.g., “Decubitus ulcer” [707.0]) where the PT average expenditure among top 5% users was \$4795 while the SLP average was only \$385).

7.3 Estimated Impact of Financial Limitations

By excluding hospital outpatient therapy expenditures from the analysis presented in the earlier sections of this report we were able to simulate the impact of the application of the outpatient therapy financial limitation had it applied in CY 2002 for PT, OT and SLP services separately, and PT and SLP services combined. We estimate that in CY 2002, 14.1 percent of all beneficiaries receiving PT, 17.4 percent of those receiving OT services, and 11.4% that received SLP services would have surpassed separate financial limitations. The rate for the combined PT/SLP cap was 14.5 percent. If there were three caps, the financial impact would have been \$551 million, or 21.7 percent of the total PT payments, \$160 million, or 26.2 percent of the total OT payments, and \$50 million, or 21.1 percent of the total SLP payments in CY 2002. The total impact if there were two caps (OT and PT/SLP) would have totaled \$803 million. The impact for three separate caps would have been \$761 million.

We estimate that as beneficiaries get older they are more likely to surpass the payment limitation thresholds, and this pattern is consistent for all three therapy types. Females surpass the financial limit thresholds at a slightly higher rate than males.

In addition, there are significant geographic variations in the percentage of beneficiaries that surpass the payment limitations. During CY 2002, while the average national rate for beneficiaries surpassing the PT financial limitation thresholds was 14.1 percent, the range varied from a low of 2.6 percent in North Dakota to a high of 20.6 percent in Florida. The range for OT beneficiaries surpassing the cap threshold was even larger between states. While the national OT average was 17.4 percent, over one-third (33.7%) of beneficiaries in Florida that received OT surpassed the cap threshold while only 4.3 percent did so in North Dakota. Differences between state rates of beneficiaries surpassing the SLP financial limitation from the national average of 11.4 percent were also apparent, with a high of 25.0 percent in Louisiana and a low of 1.8 percent in Hawaii.

With regards to beneficiary diagnosis, there is no pattern that clearly identifies particular conditions more likely to surpass the financial limitation amounts. For example, of the top 15 most commonly reported PT diagnoses presented in Table 13, “Acute Stroke” (ICD-9 = 436) has the highest rate of beneficiaries surpassing the financial limit threshold amount at 23.2 percent and the highest average payments above the cap threshold (\$1555). However, in reviewing the list of the top 98 most frequently reported PT diagnoses, there are fifteen other diagnoses reported that have higher rates of

beneficiaries surpassing the financial limitations. Some of these do not describe specific clinical conditions as well as others, but clearly generate higher rates of high expenditure users. They include:

- 438.0 – Late effects of stroke at 31.3%
- 715.09 – Osteoarthritis, generalized, multiple sites at 29.3%
- 719.79 – Difficulty in walking, multiple sites at 28.2%
- 780.9 – Other general symptoms at 28.1%
- 401.9 – Essential hypertension at 27.7%
- 715.00 – Osteoarthritis, generalized, site unspecified at 27.1%
- 727.61 – Non-traumatic rotator cuff rupture at 27.0%
- 728.2 – Muscular wasting and disuse atrophy at 26.4%
- 719.70 – Difficulty in walking, site unspecified at 26.0%
- 820.8 – Closed fracture of neck of femur at 25.8%
- 719.75 – Difficulty in walking, pelvic region and thigh at 25.2%
- 332.0 – Parkinson’s Disease at 24.5%
- 250.00 – Type II Diabetes at 24.1%
- 707.0 – Decubitus ulcers at 24.1%
- 428.0 – Congestive Heart Failure at 23.3%.

The great variety of conditions described by these diagnoses (all that have relatively high rates of beneficiaries surpassing the PT limitation threshold), highlights the difficulty in using claim diagnosis alone to exclude certain individuals from the financial limitation. In addition, similar claim diagnosis issues are apparent for OT and SLP services. Furthermore, the presence of atypical, and sometimes illogical, diagnoses also highlights significant barriers in identifying the true OT and SLP diagnosis using claim diagnosis.

The hospital exception to the outpatient therapy payment limitations has a significant impact of whether beneficiaries surpassed the cap thresholds in CY 2002. Since outpatient hospital expenditures are not debited against the therapy financial limitations, very few of those beneficiaries that accessed outpatient hospital therapy services in CY 2002 (generally less than 3%) generated expenditures exceeding the cap threshold amount. However, generally twenty percent or more of those individuals that either could not, or elected not to go to a hospital outpatient therapy provider generated expenditures exceeding the cap threshold amounts for all three therapies. This difference was most pronounced when comparing state-by-state results.

For PT services, of all the beneficiaries that surpassed the financial limits in CY 2002, 93.8 percent of them nationally received services from a provider that was not a hospital outpatient setting. Nearly all of the PT users in Puerto Rico (98.1%) that surpassed the cap threshold did not access hospital outpatient PT services while the rate was only 85.6 percent in North Dakota. For OT services, while 97.7 percent of beneficiaries surpassing the cap thresholds did not access outpatient hospital services, the rate by state ranged from a high of 99.2 percent in Delaware to a low of 87.4 percent in North Dakota. For SLP services, the national rate was 88.9 percent with a high of 95.0 percent in Wyoming and a low of 73.3 percent in Hawaii.