



## **PROGRAM SAFEGUARD CONTRACTOR (PSC)**

*PSC 500-99-0009/0009*

*Outpatient Rehabilitation Services Payment System Evaluation*

### **Feasibility and Impact Analysis: Application of Various Outpatient Therapy Service Claim HCPCS Edits *Final Report***

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The Centers for Medicare and Medicaid Services

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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 Task Order contract, AdvanceMed is conducting additional study that follows-on the previous analyses of calendar year (CY) 1998-2000 outpatient therapy claims<sup>1 2</sup>. The current study uses CY 2002 claims data and includes a variety of activities to assist CMS in identifying innovative and operationally efficient methods for the appropriate payment of therapy claims. Among these activities are:

- Identifying the feasibility of various outpatient therapy payment options and developing a strategy and general timeline necessary for the implementation of the various options<sup>3</sup>;
- Identifying potential program vulnerabilities/overpayments related to improper coding or overutilization of outpatient therapy procedure codes, and the feasibility and impact of implementing automated edits to reduce such overpayments (this report<sup>4</sup>);
- Identifying various clinical and demographic characteristics of the most costly outpatient therapy patients<sup>5</sup>; and,
- 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 scheme<sup>6</sup>.

On April 6, 2004 AdvanceMed submitted the first of a series of reports titled *Strategy for Developing Short and Long-Term Therapy Payment Options*.<sup>7</sup> The *Strategy* report detailed the complexity of the outpatient therapy benefit. For example, the historical intertwining of coverage and payment policies has allowed the benefit to expand over time to assure that medically necessary physical therapy, occupational therapy, and speech-language pathology services are available to a greater number of beneficiaries in a greater variety of settings.

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<sup>1</sup> 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.

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

<sup>3</sup> Ciolek, D., Hwang, W., and Olshin, J.. *Strategy for Developing Short and Long-Term Therapy Payment Options*. CMS Contract No. PSC 500-99-0009/0009. Draft submitted February 2004. Final submitted April 2004.

<sup>4</sup> Ciolek, D, Hwang, W. *Feasibility and Impact Analysis: Application of Various Outpatient Therapy Service Claim HCPCS Edits*. Draft Submitted June 2004. CMS Contract No. PSC 500-99-0009/0009.

<sup>5</sup> Ciolek, D., Hwang, W.. *Utilization Analysis: High Expenditure Users of Outpatient Therapy Services CY 2002: Beneficiary Characteristics*. Draft submitted July 2004. Final submitted September 2004. CMS Contract No. PSC 500-99-0009/0009.

<sup>6</sup> Ciolek, D., 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.

<sup>7</sup> Ciolek, D., et al., *Strategy*. April 2004.

However, that same complexity has precluded a simple solution to assuring beneficiary access to services, identifying appropriate treatment, and preventing unnecessary expenditures<sup>8</sup>.

The underlying premise of the series of reports under this contract is to explore the feasibility of implementing realistic short-term interventions to reduce improper expenditures that will permit the exploration of various alternative payment models that might be considered for long-term interventions. The following goals were considered while developing the analytic models used for the short and long-term approaches considered:

- The methods should continue to ensure beneficiary access to quality care;
- They should be easy to administer;
- They should be capable of being implemented quickly;
- They should ensure predictability of government outlays and integrity of the Medicare program;
- They should help providers predict their Medicare revenues;
- They should establish the Federal government as a prudent buyer of services; and,
- They should minimize administrative burden.

CMS also indicated that consideration should also be given to ways to pay claims that minimize the need for manual review, create incentives for appropriate use of services, reduce contractor workload, that could be budget neutral with other proposed approaches, and be appropriate for the education of providers and contractors.

In the *Strategy* report, the section labeled “Identification of Short-Term Alternative Payment Strategies for Outpatient Therapy Services to Support Further Development of Long-Term Approaches<sup>9</sup>” outlined specific analyses that AdvanceMed could undertake to identify whether various payment policy options would be feasible and cost-effective. Among the options listed were analyses of volume and costs associated with:

- Improper payments for ““non-timed”<sup>10</sup>” HCPCS;
- Payments for “time-based<sup>11</sup>” HCPCS billed at higher than average volumes; and,

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<sup>8</sup> The term “expenditure(s)” is used in this report consistent with the definition found in the CMS online glossary ([www.cms.hhs.gov/glossary](http://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.

<sup>9</sup> Ciolek, D., et al., *Strategy*. April 2004. p. 36.

<sup>10</sup> “Non-timed” HCPCS, referred to as “service” HCPCS in the earlier draft of this report, refers to those procedure codes that do not have a time element associated with them. Typically, “non-timed” HCPCS are only billed one “unit” per treatment day. In limited situations, Medicare will pay for multiple “units” of “non-timed” HCPCS billed on a single date if documentation supports that a distinctly different service was furnished (e.g., a separate body location or a treatment furnished at distinctly different times of the day. Most HCPCS typically used for SLP services are “non-timed” codes.

<sup>11</sup> “Time-based” HCPCS refers to those procedure codes that may be billed in time intervals. Most constant attendance modalities and direct (one-to-one) patient contact procedures used for outpatient therapy are timed in 15-

- Payments for clinically “illogical” ICD-9<sup>12</sup> and HCPCS<sup>13</sup> coding combinations.

This report presents findings of the potential for applying various automated claim processing edits that can be implemented through the CWF and/or Medicare contractor claims processing systems to reduce improper expenditures. The report will describe the methodology used for conducting the various analyses, the results, and it will summarize the feasibility of implementing the options analyzed.

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minute intervals. This means that for a treatment consisting of 45 minutes, up to three “units” of “time-based” HCPCS could be billed. Most HCPCS typically used for PT and OT services are “time-based” codes.

<sup>12</sup> ICD-9 = International Classification of Diseases, 9<sup>th</sup> Revision, Clinical Modification

<sup>13</sup> HCPCS = Healthcare Common Procedure Coding System

## 2.0 Methodology

In order to analyze the utilization of outpatient therapy service procedures (HCPCS) for the purposes of identifying potential system edits that could be implemented to reduce improper expenditures, it was necessary to identify the specific procedures, provider types and payment policies that describe outpatient therapy. After careful consideration, these services were operationally defined within the context of Medicare claims data. Simply put, this process identified if a billed HCPCS represented outpatient therapy services furnished in a Medicare outpatient therapy setting. Once the core data elements were identified, further analytic procedures were implemented to estimate the impact of improper expenditures by type of service (Physical Therapy [PT], Occupational Therapy [OT] or Speech Language Pathology [SLP]) and by setting.

The following sections describe the technical processes implemented to:

- Identify the source data for analysis;
- Obtain the source data for analysis;
- Create therapy data sets for analysis; and,
- Conduct analysis of outpatient therapy HCPCS billing patterns.

### 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 Statement of Work (SOW) necessitates use of data not currently available in research or public use files (PUFs). Under prior studies, AdvanceMed provided data specifications to CMS. CMS Office of Information Services (OIS) then extracted the data from the National Claims History (NCH) mainframe files and provided data tapes to the contractor for project use<sup>14</sup>. 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, approved by CMS, was implemented for this study based on “lessons learned”, and the identification of recently created NCH “data warehouse” within the CMS PSC Western Integrity Center (WIC).<sup>15</sup> Simply stated, the WIC possesses 100% NCH data files for the elements necessary for the outpatient therapy analyses required in this SOW, and 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:

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<sup>14</sup> 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.)

<sup>15</sup> 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.

- CMS mainframe activities continue without interruption from an ad hoc contractor job request;
- Two task orders under the CSC and 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 the CMS OIS department 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 user 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.

## 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 that obtained therapy services in CY 2002 were identified. Only claims for beneficiaries that received therapy were included in the AdvanceMed therapy database<sup>16</sup>.

To accomplish this, AdvanceMed reviewed applicable outpatient therapy service payment and coding policy resources that applied during CY 2002<sup>17 18 19 20</sup>, and that reflect how CMS has administered the outpatient therapy cap policy when it was enforced in 2003<sup>21 22</sup>.

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

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<sup>16</sup> The prior outpatient therapy study (Olshin, J., et al., 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.

<sup>17</sup> Transmittal AB-01-68, May 1, 2001. *Subject: Consolidation of Program Memorandums for Outpatient Rehabilitation Therapy Services.*

<sup>18</sup> 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.

<sup>19</sup> Numeric Level I HCPCS code definitions: *Current Procedural Terminology CPT 2002 Professional Edition*, AMA Press, Chicago, IL. 2001.

<sup>20</sup> Alphanumeric Level II HCPCS code definitions: *2002 HCPCS Level II Professional*, Ingenix, Inc., Salt Lake City, UT, 2001.

<sup>21</sup> Transmittal 30, Pub. 100-04, November 14, 2003, Change Request 2973.

<sup>22</sup> 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](http://www.cms.hhs.gov/manuals/104_claims/clm104c05.pdf). Last accessed: September 15, 2004.

AdvanceMed therapy data set if at least one claim with a date of service during CY 2002 contained:

- In RIC 1-5 - Revenue Center Code = 042x, 043x, and/or 044x, 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*
    - 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 processed<sup>23</sup>.

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<sup>24</sup> (Figure 1).

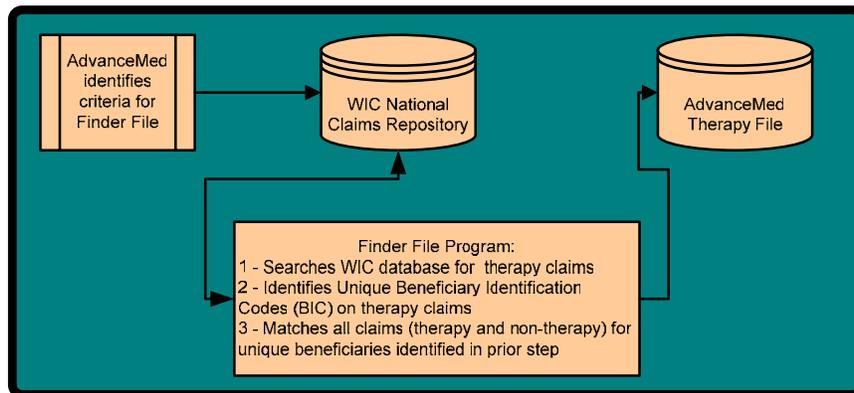
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<sup>23</sup> *Specialty Utilization File Used to Create Resource-Based Practice Expense Relative Value Units for Calendar Year 2004* estimates 98.5% for CY 2002. Available at:

<http://www.cms.hhs.gov/regulations/pfs/2004fc/2004frutil.zip>. Last Accessed: September 15, 2004.

<sup>24</sup> Although analysis of Part A data and non-therapy services is not a component of the analysis of this particular report, the inclusion permits later possible analysis (e.g. payment modeling) that considers prior use of therapy services and other healthcare utilization. Inclusion of this information in the AdvanceMed therapy database will also permit later data mining if necessary.

**Figure 1 - Key Steps in Obtaining the Source Therapy NCH Data**



## 2.4 Development of Analytic Models of Therapy HCPCS Billing Patterns

This section describes the criteria established to analyze NCH claims data to create the data sets necessary to analyze HCPCS billing patterns of Part B therapy providers. 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) were modified for this analysis to assure inclusion of all therapy procedures.

For the purposes of this report, analytic models to identify the preponderance and costs associated with atypical outpatient therapy HCPCS billing patterns that could indicate coding errors or inappropriate utilization were developed for the following coding patterns:

- Billing of “non-timed” HCPCS with more than one “unit” per claim line;
- Payments for claim lines with “time-based” HCPCS billed at higher than average volumes<sup>25</sup>; and,
- Billing of combinations of HCPCS with ICD-9-CM diagnoses that are clinically “illogical” for the type of service.

Table 1 summarizes the goals for an acceptable alternative payment option as they apply to the feasibility and impact analyses conducted for this report.

<sup>25</sup> On April 16, 2004, CMS published an updated policy in the Program Integrity Manual, Pub 100-08, Transmittal 72, CR 3088 with an implementation date of May 1, 2004. This policy change added the term “*medically unbelievable services*” to the requirements on which an automated review may be based. The determination of what threshold of “unit” volume for individual procedures would be considered as “*medically unbelievable*” is beyond the scope of this report. However, for this feasibility and impact analysis, we identified a threshold for all “time-based” HCPCS as “over 3 units” (equals lines with 4 or more units billed) and “over 4 units” (equals 5 or more “units” billed). This means that if an individual procedure was billed for 60 or more minutes, or 75 or more minutes per treatment day, we classified that HCPCS claim line as having higher than average volume.

**Table 1. Summary of Benefits of Short-Term CWF Edit Options**

Benefit	“Non-timed” HCPCS Edits	“Time-based” HCPCS Edits	“Illogical” ICD-9 and HCPCS Combination Edits
<b>Beneficiary access</b>	No limits		
<b>Easy to administer</b>	Yes: Simple automated edits.	Yes: Simple automated edits – More complex if threshold varied per individual HCPCS (e.g. 4 vs. 5 or more line “unit” limit).	Very complex automated edits – impacted by annual HCPCS and ICD-9 coding updates.
<b>Implement quickly</b>	Yes	Somewhat: This would be most appropriately implemented if separate thresholds were established per individual HCPCS. The threshold may also need to vary by therapy type if appropriate.	Somewhat: Requires complex updates as ICD-9 codes updates are effective in October while HCPCS updates are effective in January.
<b>Predictability of outlays</b>	Yes: Can currently estimate based on CY 2002 claims.		
<b>Help providers predict revenues</b>	Yes: No annual cap - fee schedule methodology maintained.		
<b>Accomplished by reducing need for manual medical review</b>	Yes: Automated (if supported by clear policy, be based on medically unbelievable service(s), or occur when no timely response is received in response to an ADR letter <sup>26</sup> .		
<b>Reduce contractor workload</b>	Yes: Automated.	Somewhat: Automated – However, development of individual HCPCS thresholds and/or tracking of any potential high-volume modifiers implemented to permit necessary services will require some contractor workload.	Somewhat: Automated – However, development and maintenance of edits may require additional local policy development. These edits could reduce manual review if applied appropriately.
<b>Control therapy costs</b>	Yes: Reject/deny improper coding.		
<b>Appropriate for provider/contractor education</b>	Yes: Proper coding is reinforced.		
<b>Supports long-term payment models</b>	Yes: Proper coding supports classification schemes & practice pattern models.		

**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.<sup>27</sup> Essentially, the CMS therapy cap policy identified a list of HCPCS that are considered “always therapy” for the purposes of cap tracking. The list of “always 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<sup>28</sup> was used. Appendix A: “Always

<sup>26</sup> Program Integrity Manual (Pub. 100-08), Section 5.1. Automated Prepayment Review. Available at: [http://www.cms.hhs.gov/manuals/pm\\_trans/R72PI.pdf](http://www.cms.hhs.gov/manuals/pm_trans/R72PI.pdf). Last accessed: September 15, 2004.

<sup>27</sup> 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](http://www.cms.hhs.gov/manuals/104_claims/clm104c05.pdf). Last accessed: September 15, 2004.

<sup>28</sup> Therapy Modifier = GP for physical therapy, GO for occupational therapy or GN for speech-language pathology services.

Therapy” HCPCS Codes CY 2002 summarizes the “always therapy” HCPCS and the criteria used to identify if the HCPCS was considered to be “always therapy.”

The following summarizes the claim criteria that were matched with the “always 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
- **Physician** – 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 an “always 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 “always therapy” procedure code line 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 2002<sup>29</sup>. 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 “always 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.

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<sup>29</sup> Transmittal AB-03-018, Change Request 2183 requiring mandatory use of modifiers was implemented on July 1, 2003.

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 require 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 “always therapy” HCPCS were assigned to the provider specialty number. For example, if a billed line of HCPCS 97110 – 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 “always 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, we determined that it was not appropriate to exclude these lines from this HCPCS edits feasibility and impact analysis. In our preliminary analysis we found that when the modifiers were used, the overwhelming majority of the lines were attributed to physical therapy services. Therefore, for the purposes of this analysis, if an “always therapy” HCPCS were 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.

### 3.0 Results: Utilization Patterns of Part B Therapy HCPCS

The following analysis represents the first national study of Part B therapy utilization that permits a direct comparison of carrier and intermediary processed claims to the level of individual HCPCS codes.

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 Medicare 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<sup>30 31</sup>. In a utilization report of Part B therapy services furnished from 1998 to 2000, AdvanceMed highlighted this challenge in providing an accurate estimate of institutional provider therapy service utilization as follows:

“... for almost the entire period of the three years under study FI and RHHI claims contained only line item charges, and claim level paid amounts. As a result, it became necessary for this study to extrapolate a paid amount estimate for therapy line items on FI and RHHI claims, because the claim level paid amounts included other line items that were not therapy. Claim level paid amounts were not used, because they would grossly overestimate Medicare payments to institutional providers for therapy services. In addition, methodologies for estimating cost-to-charge ratios used in other studies could not be used here, since the reimbursement for therapy line items was not cost-based in 1999 or 2000<sup>32</sup>. “

Conversely, non-institutional provider claims submitted to carriers have had accurate line payment information in the NCH files for several years, and precise utilization analyses by provider specialty and individual HCPCS have provided the basis for public use files (PUFs) such as the Part B Extract and Summary System (BESS) database<sup>33</sup> 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.

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<sup>30</sup> 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.

<sup>31</sup> Olshin, J., et al., *Study and Report*. September 2002.

<sup>32</sup> Ibid, pg. 17.

<sup>33</sup> BESS User's Guide available at: <http://www.cms.hhs.gov/providers/bess/default.asp>. Last accessed, September 15, 2004.

### **3.1 Utilization Trends of Part B Therapy Services**

#### **Part B therapy expenditures nearly reached \$3.4 Billion in CY 2002.**

Analysis of the universe of CY 2002 claims in this study revealed that Medicare issued payments for 109.5 million claim lines and for 179.2 million HCPCS “units”. The total allowed amount was \$4.32 billion, of which Medicare issued total payments, after deductibles and coinsurance, amounting to \$3.39 billion.

#### **AdvanceMed estimates of total outpatient therapy utilization for CY 2002 is consistent with CMS Office of Actuary (OACT) estimates.**

Analysis of CY 2002 Part B therapy services in this study revealed total Medicare expenditures of \$3.39 billion as compared with the CMS OACT estimate of \$3.28 billion<sup>34</sup>. This finding supports the efficacy of using the WIC NCH repository database for future Part B therapy analysis rather than the more time consuming process of requesting NCH data from the CMS Office of Information Services (OIS).

#### **Expenditures for Part B therapy services demonstrated a decline in 1999, followed by steady increases during subsequent years.**

The CMS Office of the Actuary (OACT) and AdvanceMed estimates of Part B therapy expenditures from 1998 through 2003 (Figure 2) are consistent, and it is notable that in both estimates, the total therapy expenditure trends did not recover to pre-BBA levels until 2001<sup>35</sup>. Also, as discussed in an earlier report under this contract<sup>36</sup>, the rate of growth of therapy services has been slower than the overall Medicare program from 1996-2003. While overall Medicare expenditures increased an average 9.4 percent per year since 1996, outpatient therapy expenditures increased an average of only 7.9 percent during the same period.

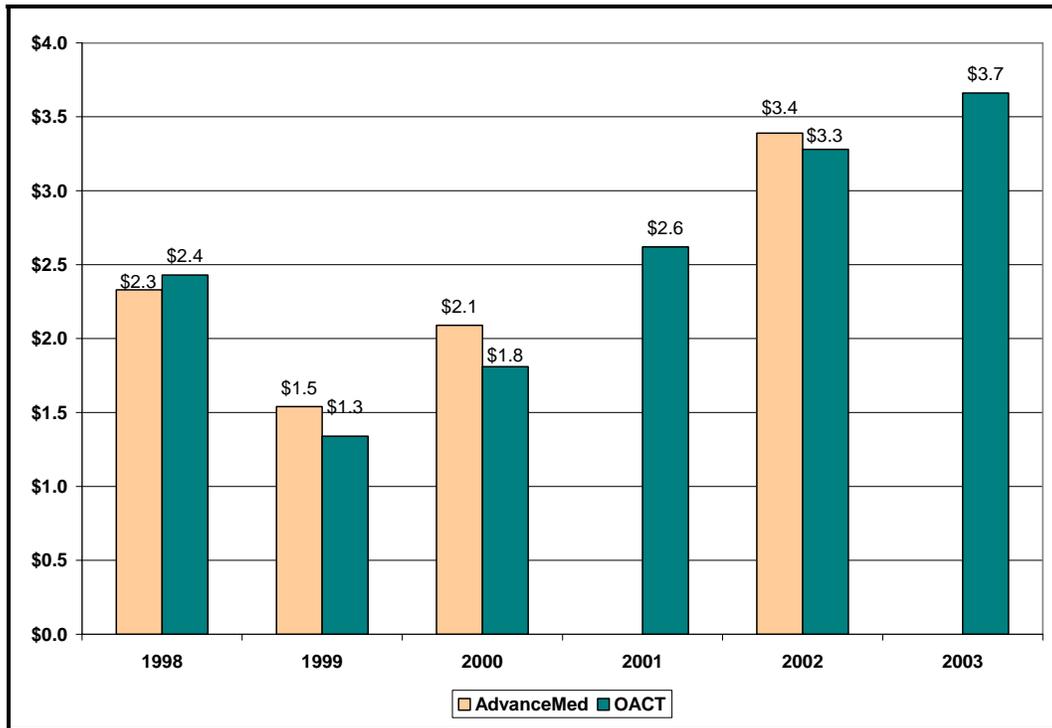
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<sup>34</sup> CMS OACT estimates of January 23, 2004. E-mail from CMS February 12, 2004.

<sup>35</sup> Figure 2 does not reflect the full impact of BBA provisions on outpatient therapy services. In particular, the BBA mandated an immediate 10% reduction in cost-report payments to institutional therapy providers, and CMS implemented salary equivalency provisions for institutional provider OT and SLP services during 1998. Although not reflected in Figure 5, total therapy expenditures were likely higher in CY 1997.

<sup>36</sup> Ciolek, D., et al., *Strategy*. April 2004. pg. 7.

**Figure 2. Total Part B Therapy Expenditure Estimate Trends 1998-2003 (in billions)**



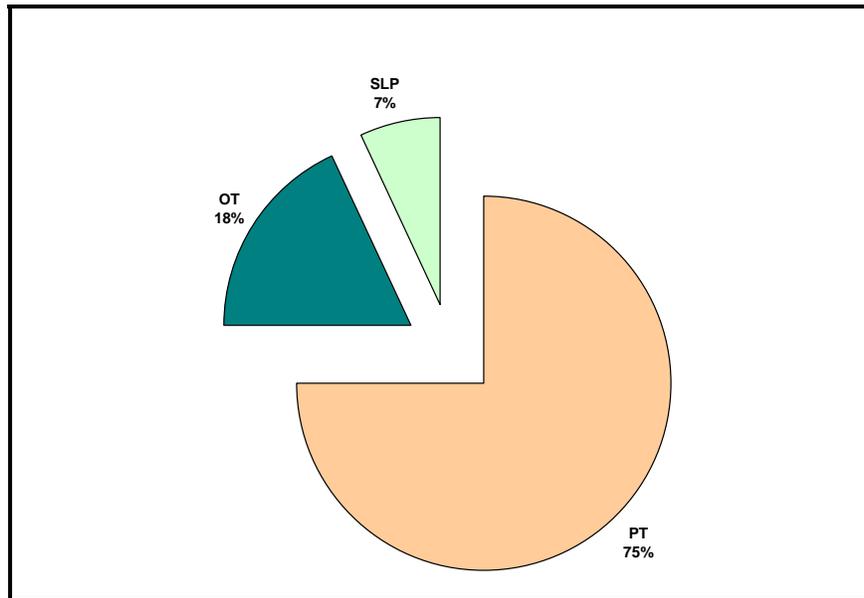
### 3.1.1 Part B Therapy Utilization CY 2002 by Type of Therapy

**Physical therapy services represent 75 percent of Part B therapy expenditures.**

For the purpose of this study, physical therapy services are represented by any HCPCS line that was billed by a PTPP, by an institutional provider in revenue center 042x, or by a physician or non-physician practitioner using the GP modifier. In addition, any “always therapy” HCPCS code billed by a physician or non-physician practitioner that did not contain any therapy modifier was described as a physical therapy service<sup>37</sup>. Figure 3 and Table 2 reveal that physical therapy represented 75%, or \$2.54 billion, of Part B therapy expenditures in CY 2002, followed by occupational therapy at 18%, or \$612 million, and speech-language pathology services at seven percent, or \$236 million.

<sup>37</sup> Preliminary analysis revealed poor compliance of physicians and non-physician practitioners to use therapy modifiers in 2002 (<5%). However, when they were used, the GP modifier was reported overwhelmingly. Part of the reason for this poor compliance was that although the modifiers were required, CMS did not mandate automatic claim line rejection for noncompliance until July 1, 2003. Since these HCPCS would be tracked when the therapy caps are effective, the investigators assigned the most likely modifier (GP) to all such HCPCS to capture the otherwise unclassified service type.

**Figure 3. Distribution of Part B Therapy Expenditures in CY 2002 by Therapy Type**



**Table 2. Total Part B Therapy HCPCS Utilization in CY 2002 by Therapy Type**

Therapy Type	Total Number Paid Lines	Total Number "Units"	Total Allowed Amount	Total Paid Amount
Total <sup>38</sup>	109,465,330	179,242,335	\$4,320,611,505	\$3,392,226,958
PT <sup>39</sup>	89,465,881	139,220,737	\$3,240,920,829	\$2,544,116,563
OT <sup>40</sup>	16,366,257	33,345,363	\$775,910,132	\$611,906,952
SLP <sup>41</sup>	3,633,192	6,676,235	\$303,780,544	\$236,203,443

### 3.1.2 Part B Therapy Utilization CY 2002 by Provider Setting

**Over 50% of Part B therapy payments are issued to outpatient hospitals and skilled nursing facilities (SNF).**

Figure 4 and Table 3 indicate that in CY 2002, SNFs received 29.5%, or \$1.0 billion in Part B therapy payments, followed by outpatient hospitals at 23.6%, or \$801 million. Physical Therapists in private practice (PTPP) were next at 17.6% of payments, or \$596 million, followed by outpatient rehabilitation facilities (ORF) at 14.8%, or \$503 million, and physician providers at 9.4%, or \$320 million<sup>42</sup>.

<sup>38</sup> Appendix B-Table 1

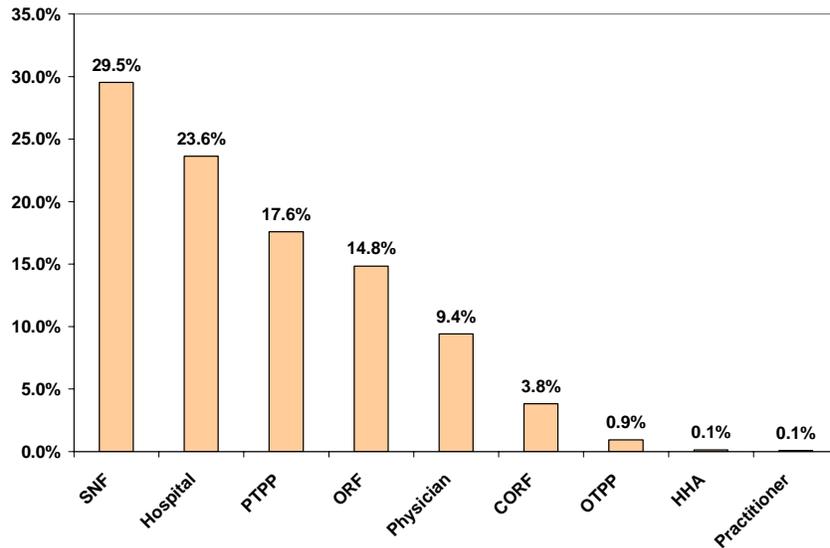
<sup>39</sup> Appendix B-Table 2

<sup>40</sup> Appendix B-Table 3

<sup>41</sup> Appendix B-Table 4

<sup>42</sup> Physician and PTPP/OTPP setting payment trends may vary from prior years due to a recent provider enrollment policy change by CMS. Recently, CMS began issuing PTPP/OTPP provider numbers to physical therapist/occupational therapist employees of physicians. In this situation, a service may be furnished in a physician office but the line payment is assigned to the PTPP/OTPP number of the performing therapist. Otherwise, it is recorded as a physician service under "incident-to" rules.

**Figure 4. Distribution of Part B Therapy Expenditures in CY 2002 by Provider Setting**



**Table 3. Total Part B Therapy HCPCS Utilization in CY 2002 by Provider Setting**

Setting	Total Number Paid Lines	Total Number "Units"	Total Allowed Amount	Total Paid Amount
<b>Total<sup>43</sup></b>	<b>109,465,330</b>	<b>179,242,335</b>	<b>\$4,320,611,505</b>	<b>\$3,392,226,957</b>
<b>Hospital<sup>44</sup></b>	22,990,390	36,782,232	\$1,052,743,483	\$801,272,305
<b>SNF<sup>45</sup></b>	28,745,496	54,358,277	\$1,257,421,429	\$1,002,162,651
<b>CORF<sup>46</sup></b>	4,259,491	6,285,206	\$163,809,817	\$129,814,243
<b>ORF<sup>47</sup></b>	17,299,741	33,178,659	\$644,101,070	\$503,277,583
<b>HHA<sup>48</sup></b>	138,372	433,333	\$5,850,442	\$4,658,860
<b>PTPP<sup>49</sup></b>	21,941,210	30,104,429	\$750,200,563	\$596,317,046
<b>OTPP<sup>50</sup></b>	946,226	1,493,803	\$40,407,226	\$32,155,921
<b>Physician<sup>51</sup></b>	13,029,031	16,455,810	\$402,423,039	\$319,662,075
<b>Practitioner<sup>52</sup></b>	115,373	150,586	\$3,654,435	\$2,906,274

<sup>43</sup> Appendix D-Table 1 and Appendix E-Table 1

<sup>44</sup> Appendix D-Table 2.1 and Appendix E-Table 2.1

<sup>45</sup> Appendix D-Table 2.2 and Appendix E-Table 2.2

<sup>46</sup> Appendix D-Table 2.3 and Appendix E-Table 2.3

<sup>47</sup> Appendix D-Table 2.4 and Appendix E-Table 2.4

<sup>48</sup> Appendix D-Table 2.5 and Appendix E-Table 2.5

<sup>49</sup> Appendix D-Table 3.1 and Appendix E-Table 3.1

<sup>50</sup> Appendix D-Table 3.2 and Appendix E-Table 3.2

<sup>51</sup> Appendix D-Table 3.3 and Appendix E-Table 3.3

<sup>52</sup> Appendix D-Table 3.4 and Appendix E-Table 3.4

### 3.1.3 Part B Therapy Utilization CY 2002 by Individual HCPCS

Thirty-seven percent of Part B therapy payments are issued for a single code, therapeutic exercise.

Table 4 indicates that in CY 2002, 37% of Part B therapy expenditures were attributed to the therapeutic exercise code (97110) accounting for \$1.26 billion in payments. This was followed by therapeutic activities (97530) at 12.4% or \$421 million, and manual therapy techniques (97140) at 7.5% or \$254 million. The top two HCPCS account for nearly 50% of all expenditures, and the top ten account for 86%. Appendix A contains a list of the definitions for the “always therapy” HCPCS. Appendix B contains four tables that rank total Part B therapy expenditures per individual “always therapy” HCPCS as an aggregate (Table 1), and by PT, OT, and SLP services separately (Tables 2-4).

**Table 4. Total Part B Therapy HCPCS Utilization in CY 2002 (all therapies) – Top 15 HCPCS Ranked by Total Expenditures<sup>53</sup>**

Paid Rank	HCPCS	Total Number Paid Lines	Total Number “Units”	Total Allowed Amount	Total Paid Amount	Percent of Total Paid
	<b>Total</b>	<b>109,465,330</b>	<b>179,242,335</b>	<b>\$4,320,611,505</b>	<b>\$3,392,226,957</b>	<b>100.0%</b>
1	97110	34,501,209	67,154,207	\$1,597,699,082	\$1,255,488,744	37.0%
2	97530	10,532,975	19,644,863	\$532,900,954	\$420,815,881	12.4%
3	97140	9,819,379	14,077,709	\$323,713,607	\$254,179,645	7.5%
4	97112	7,619,494	10,699,852	\$278,374,672	\$219,683,481	6.5%
5	97001*	3,229,693	5,330,461	\$230,835,141	\$177,665,612	5.2%
6	97116	7,439,006	11,100,934	\$215,201,795	\$170,689,477	5.0%
7	97535	3,572,560	7,280,468	\$180,253,602	\$143,327,335	4.2%
8	92526	1,564,710	3,043,147	\$131,158,474	\$104,435,898	3.1%
9	97014*	6,979,544	7,417,747	\$104,084,310	\$80,927,721	2.4%
10	97035	7,789,005	8,655,968	\$93,681,219	\$73,730,928	2.2%
11	92507*	977,712	1,455,787	\$86,367,261	\$65,517,248	1.9%
12	97113	1,080,136	3,024,951	\$82,300,624	\$64,412,460	1.9%
13	97124	2,490,185	2,909,584	\$60,423,675	\$47,739,694	1.4%
14	97003*	756,156	1,702,897	\$58,375,234	\$45,086,638	1.3%
15	97032	1,865,139	2,417,614	\$39,304,520	\$30,950,655	0.9%

\* Non-timed HCPCS

### Differences exist in Part B therapy HCPCS rank by total expenditures for PT, OT, and SLP services.

Appendix B-Table 2 indicates that HCPCS 97110 (therapeutic exercise), 97530 (therapeutic activities), and 97140 (manual therapy) accounted for 62% of all PT expenditures in CY 2002. Appendix B-Table 3 indicated a slight variation for OT service delivery in that 97110 and 97530 were followed by 97535 (self-care/home management training) as the three HCPCS with highest expenditure amounts at 72% of all OT payments. Conversely, Appendix B-Table 4 indicates that SLPs use significantly different procedures with 92526 (treatment of swallowing dysfunction), 92507 (treatment of speech disorder), and G0195 (clinical evaluation of swallowing dysfunction) representing 82% of total SLP payments.

<sup>53</sup> Appendix B-Table 1

**Part B PT and OT HCPCS utilization by “unit” volume is dominated by “time-based” codes, while SLP utilization is dominated by “non-timed” codes.**

The aggregate ranking of therapy HCPCS (PT/OT/SLP combined) listed in Table 5 indicate that the “time-based” HCPCS 97110, 97530, 97140, 97116, 97112, and 97035 are the six most frequently billed HCPCS, accounting for nearly two-thirds (63.4%) of all therapy HCPCS “units” billed. Although the “non-timed” code 97014 (unattended electrical stimulation) ranked seventh, it only accounted for 4.1% of all HCPCS “units” billed. Appendix C-Table 1 contains a complete aggregate ranking of “always therapy” HCPCS by “unit” volume.

For PT services, Appendix C-Table 2 reveals that eight of the ten most frequently billed HCPCS “units” are “time-based”, and represent over eighty percent of all PT “units” billed. For OT services, Appendix C-Table 3 demonstrates that nine of the top ten most frequently billed HCPCS are “time-based” and account for eighty-nine percent of all OT “units” billed. In total contrast, Appendix C-Table 4 reveals that the top three most frequently billed HCPCS for SLP services are for “non-timed” procedures. These procedures, 92526 (treatment of swallowing disorder), 92507 (treatment of speech disorder), and G0195 (clinical evaluation of swallowing) account for seventy-eight percent of all SLP HCPCS “units” billed.

Upon closer review of Table 5 and the tables in Appendix C, the general trend is that the overall ranking of “unit” volume roughly parallels the ranking by expenditure tables located in Appendix B. However, some lower-priced “time-based” codes appear higher ranked in the “unit” volume tables than in the expenditure tables. For example, in Table 5, the “time-based” code 97035 (ultrasound) ranks sixth in “unit” count for all therapies aggregated with over 3.5 million “units” billed; however, the total paid amount of \$74 million ranks 97035 at tenth in total expenditures per Table 4.

**Table 5. Total Part B Therapy HCPCS Utilization in CY 2002 – Top 15 HCPCS Ranked by “Unit” Volume<sup>54</sup>**

“Unit” Count Rank	HCPCS	Total Number Paid Lines	Total Number “Units”	Total Allowed Amount	Total Paid Amount	HCPCS % of “Units” Total
	<b>Total</b>	<b>109,465,330</b>	<b>179,242,335</b>	<b>\$4,320,611,505</b>	<b>\$3,392,226,957</b>	<b>100.0%</b>
1	97110	34,501,209	67,154,207	\$1,597,699,082	\$1,255,488,744	37.5%
2	97530	10,532,975	19,644,863	\$532,900,954	\$420,815,881	11.0%
3	97140	9,819,379	14,077,709	\$323,713,607	\$254,179,645	7.9%
4	97116	7,439,006	11,100,934	\$215,201,795	\$170,689,477	6.2%
5	97112	7,619,494	10,699,852	\$278,374,672	\$219,683,481	6.0%
6	97035	7,789,005	8,655,968	\$93,681,219	\$73,730,928	4.8%
7	97014*	6,979,544	7,417,747	\$104,084,310	\$80,927,721	4.1%
8	97535	3,572,560	7,280,468	\$180,253,602	\$143,327,335	4.1%
9	97001*	3,229,693	5,330,461	\$230,835,141	\$177,665,612	3.0%
10	92526*	1,564,710	3,043,147	\$131,158,474	\$104,435,898	1.7%
11	97113	1,080,136	3,024,951	\$82,300,624	\$64,412,460	1.7%
12	97124	2,490,185	2,909,584	\$60,423,675	\$47,739,694	1.6%
13	97032	1,865,139	2,417,614	\$39,304,520	\$30,950,655	1.3%
14	97003*	756,156	1,702,897	\$58,375,234	\$45,086,638	1.0%
15	97504	454,377	1,570,706	\$19,963,556	\$15,766,141	0.9%

\* Non-timed HCPCS

<sup>54</sup> Appendix C-Table 1

### **Part B therapy HCPCS payments and allowed “unit” volumes vary by practice setting.**

In addition to differences observed in HCPCS used, payments and “unit” volumes between PT, OT, and SLP services, there were also HCPCS utilization pattern differences apparent depending upon the provider setting. Appendix D contains tables detailing the total number of paid lines, total number of “units”, total allowed amounts, and total paid amounts for each “always therapy” “non-timed” HCPCS paid for in CY 2002. These tables are listed in the alphanumeric order of the HCPCS for each setting studied. In addition, information is provided detailing the allowed and paid amounts per HCPCS claim line as well as the allowed and paid amounts per HCPCS “unit.”

Appendix E contains tables similar to Appendix D that reveal the differences in “time-based” HCPCS utilization patterns by Part B therapy setting. Of note in Appendix E is the percentage of each timed HCPCS code that had more than 3 and more than 4 “units” billed in a single line is represented in the last two columns. For example, in Appendix E-Table 1, aquatic therapy (97113) has 22.7% of all lines billed with over 3 “units”. This means that at least 4 or more “units” (60 or more minutes) were billed in a single day for the one-on-one aquatic therapy procedure 22.7% of the time this procedure was billed. By drilling down to Appendix E-Table 2.3, aquatic therapy (97113) in a CORF is billed for an hour or more 31.63% of the time it is billed. The same procedure is less likely to be billed for more than 3 “units” in a hospital outpatient therapy setting. Appendix E-Table 2.1 demonstrates that only 17.58% of hospital claim lines with the aquatic therapy code (97113) are billed at rates higher than 3 “units” per line. A later report<sup>55</sup> will indicate the statistical significance of the observed utilization differences between settings.

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<sup>55</sup> Ciolek, D., and Hwang, W.. *Development*. Draft submitted September 2004.

## 4.0 Results: Estimated Impact of Improper Therapy “Non-timed” HCPCS Payments

Many outpatient therapy procedure codes represented by HCPCS numbers are described as “non-timed” codes. “Non-timed” codes are those that may only be billed for one “unit” per visit<sup>56</sup>. However, prior analysis of outpatient therapy services<sup>57</sup> indicated that many providers were billing Medicare for multiple “units” of “non-timed” codes. For example, in CY 2000, outpatient hospitals billed Medicare an average of 2.7 “units” of 97001 (physical therapy evaluation). A subsequent medical review study confirmed that many providers received improper payments for these miscoded procedures<sup>58</sup>.

Analyzing more current 2002 claims data, AdvanceMed applied a model “non-timed” HCPCS edit to determine the extent and dollar impact of the potential miscoding that year. From this analysis, patterns of billing for individual “non-timed” HCPCS were analyzed to identify the potential effects of CWF edits or alerts that could notify a provider submitting claims electronically that the volume of “non-timed” “units” billed is unusual. Such feedback to providers would permit them to correct errors before claim processing and reduce improper expenditures.

In addition, estimates are presented to determine the potential dollar impact to the outpatient therapy benefit if these edits were applied. The results confirm that “non-timed” codes continue to be frequently billed incorrectly, and that they also continue to be paid improperly.

### 4.1. Estimated Impact of Improper “Non-timed” HCPCS Payments CY 2002 by Type of Therapy

**The potential error rate for improper payments for “non-timed” HCPCS in CY 2002 was 5.7 percent.**

During CY 2002, 4.08 percent of paid lines containing “non-timed” HCPCS were billed with multiple “units.” This corresponds to an overpayment impact estimate of \$36.7 million for all therapies (PT, OT, and SLP) combined (Table 6). Particularly revealing in Table 6 is that Medicare contractor edits apparently did not effectively identify “non-timed” procedures being billed with multiple “units” until at least ten “units” per line were submitted. For example, while the number of “units” billed per line increased from 1-9 (left column), the payment per line increased (fifth column), yet the relative “unit” price in the last column remained stable (\$23-

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<sup>56</sup> “Non-timed” HCPCS, referred to as “service” HCPCS in the earlier draft of this report, refers to those procedure codes that do not have a time element associated with them. Typically, “non-timed” HCPCS are only billed one “unit” per treatment day. In limited situations, Medicare will pay for multiple “units” of “non-timed” HCPCS billed on a single date if documentation supports that a distinctly different service was furnished (e.g. a separate body location or a treatment furnished at distinctly different times of the day. Most HCPCS typically used for SLP services are “non-timed” codes.

<sup>57</sup> Olshin, J., et al., *Study and Report*, Appendix S. September 2002.

<sup>58</sup> AdvanceMed, *Therapy Services*, April 2003.

36”unit”). However, when providers billed more than 10 “non-timed” HCPCS “units” in a line, the average “unit” payment dropped to 34 cents<sup>59</sup>.

Appendix G contains several tables that highlight that this pattern of the average line paid amount increasing with the number of “non-timed” “units” billed is consistent for all three types of therapy services. In addition, this pattern was present regardless of whether the “non-timed” HCPCS were billed by institutional providers whose claims were processed by intermediaries, or non-institutional providers whose claims were processed by carriers. Also of note is that payments were issued by intermediaries for outpatient therapy HCPCS lines with no “units” recorded when no payment should have been issued.

**Table 6. Impact Analysis: Application of Volume Control Edits on “non-timed” Therapy HCPCS<sup>60</sup>**

Number of “Non-timed” HCPCS Billed per Paid Line	Total Number Paid Lines	Total Number “Units”	Total Paid Amount	Paid/Line	Paid/“Unit”
Total	20,539,412	27,846,384	\$647,291,265	\$31.51	\$23.25
1 “Unit”	19,701,215	19,701,215	\$585,708,448	\$29.73	\$29.73
2 “Units”	458,829	917,658	\$27,410,024	\$59.74	\$29.87
3 “Units”	118,129	354,387	\$12,906,543	\$109.26	\$36.42
4 “Units”	104,264	417,056	\$15,258,193	\$146.34	\$36.59
5 “Units”	8,368	41,840	\$1,474,384	\$176.19	\$35.24
6 “Units”	9,011	54,066	\$1,346,348	\$149.41	\$24.90
7 “Units”	1,255	8,785	\$256,178	\$204.13	\$29.16
8 “Units”	3,429	27,432	\$572,713	\$167.02	\$20.88
9 “Units”	543	4,887	\$141,480	\$260.55	\$28.95
10+ “Units”	8,185	6,319,058	\$2,171,698	\$265.33	\$0.34
0 “Units” <sup>61</sup>	126,184	0	\$45,256	\$0.36	N/A
<b>Total (all lines)</b>	<b>20,539,412</b>	<b>27,846,384</b>	<b>\$647,291,265</b>	<b>\$31.51</b>	<b>\$23.25</b>
<b>Line = 1 “Unit”</b>	<b>19,701,215</b>	<b>19,701,215</b>	<b>\$585,708,448</b>	<b>\$29.73</b>	<b>\$29.73</b>
<b>Line &lt; or &gt; 1 “Unit”</b>	<b>838,197</b>	<b>8,145,169</b>	<b>\$61,582,817</b>	<b>\$73.47</b>	<b>\$7.56</b>
<b>Impact Estimate</b>	<b>4.08%<sup>62</sup></b>	<b>7,306,972<sup>63</sup></b>	<b>\$36,663,589<sup>64</sup></b>		

<sup>59</sup> Current NCH data does not identify how many “units” per line may have been disallowed; only “units” billed and line paid amounts. The average “unit” price is therefore a marker of the effectiveness of any edits and not an indicator of how many “units” were actually allowed for payment.

<sup>60</sup> Appendix G-Table 1

<sup>61</sup> Some institutional provider lines with no HCPCS “units” billed received payments. No payments were issued to non-institutional providers when HCPCS “unit” count billed = 0.

<sup>62</sup> **Number of Paid Lines Impact Estimate** = Total Number Paid Lines (all lines)/Total Number Paid Lines (Line< or > 1 “Unit”). In Table 6, this indicates that 4.08% of claim lines submitted with “non-timed” HCPCS had < or > 1 “unit” billed.

<sup>63</sup> **Total Number of “Units” Impact Estimate** = Total Number “Units” (Line < or > 1 “Unit”) – Total Number Paid Lines (Line < or > 1 “Unit”). In Table 6, this indicates that 7,306,972 “non-timed” HCPCS units were billed in excess of the one “unit” described by “non-timed” codes.

<sup>64</sup> **Total Paid Amount Impact Estimate** = Total Paid Amount (Line < or > 1 “Unit”) – (Total Number Paid Lines (Line < or > 1 “Unit”)\*[Paid/Line (Line = 1 Unit)]). In Table 6, this indicates the estimated dollar impact of payments being issued for “non-timed” HCPCS lines billed with < or > 1 “unit”. In this case, instead of the observed Paid/Line of \$73.47 for lines with < or > 1 “unit”, the line allowed amount was adjusted to the \$29.73 observed when only 1 “unit” was billed/line. The \$36,663,589 impact estimate reflects the total dollars paid above and beyond what would have been paid if only one “unit” were billed per “non-timed” HCPCS line.

**Speech-language pathology service “non-timed” HCPCS accounted for \$21 million of the potential error estimate of \$36.7 million in improper payments.**

As previously described (Section 3.1.3), the majority of HCPCS used to describe SLP services are “non-timed” codes. Therefore, any potential billing errors or payment errors related to “non-timed” codes is most likely to be reflected in SLP payments. This is illustrated by data analysis. In CY 2002, the billing of multiple “units” for “non-timed” HCPCS for speech-language pathology services accounted for 56.6% of the estimated dollar impact of “non-timed” code errors. SLP “non-timed” HCPCS billed at volumes greater than one “unit” accounted for \$20.78 million of the total error impact estimate, followed by PT at \$7.02 million and OT with \$3.01 million (Table 7). Appendix G-Table 4.1 and Appendix G-Table 4.2 indicate that nearly all of the estimated SLP “non-timed” code payment errors can be attributed to institutional providers as intermediaries issued \$20.78 million of the SLP “non-timed” HCPCS payments in error while non-institutional providers received only two thousand dollars in error.

**Table 7. Impact Estimate of Improper “Non-timed” HCPCS Payments in CY 2002 by Therapy Type**

Therapy Type	Impact Estimate	Percent of Total \$ Paid in Error
Total <sup>65</sup>	\$36,663,589	100.0%
PT <sup>66</sup>	\$7,016,021	19.1%
OT <sup>67</sup>	\$3,007,461	0.8%
SLP <sup>68</sup>	\$20,775,934	56.6%

**4.2. Estimated Impact of Improper Therapy “Non-timed” HCPCS Payments in CY 2002 by Setting**

**Intermediary processed claims accounted for 88 percent of potential payment error estimate of \$36.7 for “non-timed” HCPCS.**

Institutional providers submitting claims to intermediaries accounted for 88% or \$32.4 million of the total \$36.7 million improper payment impact estimate attributed to allowed “non-timed” HCPCS lines with more than one “unit” billed. The institutional provider impact analysis tables for “non-timed” HCPCS are located in Appendix F-Table 2 and those for non-institutional providers are located in Appendix F-Table 3.

**Skilled nursing facilities (SNF) and hospitals account for 80.2 percent of the \$36.7 million in estimated improper payments for “non-timed” HCPCS.**

As indicated in another report under this contract<sup>69</sup>, the great majority of SLP services are furnished in hospital outpatient and SNF institutional provider settings. This factor, combined

<sup>65</sup> Appendix G-Table 1

<sup>66</sup> Appendix G-Table 2

<sup>67</sup> Appendix G-Table 3

<sup>68</sup> Appendix G-Table 4

<sup>69</sup> Ciolek, D., and Hwang, W.. *Utilization Analysis*, September 2004.

with the prevalence of the use of “non-timed” HCPCS for SLP services has resulted in the great majority of estimated improper payments for miscoded “non-timed” codes being attributed to hospitals and SNFs. Table 8 indicates that SNF providers received \$19.1 million in potentially improper payments in CY 2002 for billing multiple “units” of “non-timed” HCPCS. Outpatient hospitals followed with \$10.3 million in similar potential overpayments. Although home health agencies represent only 0.7% of estimated total “non-timed” code payment errors, Appendix F-Table 2.5 reveals that 18.9% of the home health untimed therapy lines were submitted erroneously.

**Table 8. Impact Estimate of Improper “Non-timed” HCPCS Payments in CY 2002 by Therapy Setting**

Therapy Setting	Impact Estimate	Percent of Total \$ Paid in Error
Total <sup>70</sup>	\$36,663,589	100.0%
Hospital <sup>71</sup>	\$10,335,400	28.2%
SNF <sup>72</sup>	\$19,055,661	52.0%
CORF <sup>73</sup>	\$614,070	1.7%
ORF <sup>74</sup>	\$587,173	1.6%
HHA <sup>75</sup>	\$239,330	0.7%
PTPP <sup>76</sup>	\$581,461	1.6%
OTPP <sup>77</sup>	\$27,093	0.1%
Physician <sup>78</sup>	\$697,856	1.9%
Practitioner <sup>79</sup>	\$6,925	0.0%

<sup>70</sup> Appendix F-Table 1

<sup>71</sup> Appendix F-Table 2.1

<sup>72</sup> Appendix F-Table 2.2

<sup>73</sup> Appendix F-Table 2.3

<sup>74</sup> Appendix F-Table 2.4

<sup>75</sup> Appendix F-Table 2.5

<sup>76</sup> Appendix F-Table 3.1

<sup>77</sup> Appendix F-Table 3.2

<sup>78</sup> Appendix F-Table 3.3

<sup>79</sup> Appendix F-Table 3.4

## 5.0 Results: Estimated Impact of Payments for Claim Lines of Therapy “Time-based” HCPCS Billed at Higher-than-Average “Unit” Volumes

Many outpatient therapy procedure codes represented by HCPCS numbers are described as “time-based” codes. “Time-based” codes may be billed for one or more “unit” per visit. Most “time-based” codes are described in 15-minute periods, or “units.” While some patient conditions may warrant treatment times in excess of one hour, claims data indicates that the preponderance of “time-based” therapy service procedures are furnished anywhere between 1-4 “units” (approximately 15-60 minutes) per HCPCS during a given day<sup>80</sup>. However, prior utilization analysis of outpatient therapy claims from 1998-2000<sup>81</sup> indicated that many providers were billing Medicare for unusually high numbers of “time-based” “units” in a single visit. For example, in CY 2000, outpatient rehabilitation facilities billed Medicare an average of 3.5 “units” (approximately 52 minutes) of 97124 (massage) per visit. A subsequent medical review study with claims sampled from the same year confirmed that many providers billed procedures in excess of 6-8 “units” (1.5 to 2 hours) per visit. While some of these were found on review to be not medically necessary or not supported by the documentation, on many occasions it appeared that the provider documented a lesser intensity of services, but erred upon transcription<sup>82</sup>. Regardless of the reason for the error, improper payments were issued.

On April 16, 2004, CMS published an updated policy in the Program Integrity Manual, Pub. 100-08, Transmittal 72, CR 3088 with an implementation date of May 1, 2004. This policy change added the term “*medically unbelievable services*” to the requirements on which an automated review may be based. This updated policy provides a mechanism whereas automated edits could be considered to limit the number of individual HCPCS “units” that could be billed that could serve to limit payment errors.

By analyzing more current 2002 claims data, AdvanceMed applied a model “time-based” HCPCS edit to determine the potential dollar impact if system edits were implemented to prevent payments for unusual “unit” volumes of “time-based” HCPCS that suggest billing errors or possible over utilization. Patterns of billing for individual “time-based” HCPCS were analyzed to identify opportunities to introduce CWF edits, or alerts that could notify a provider submitting claims electronically that the volume of “time-based” “units” billed is unusual. Such feedback to providers would permit them to correct errors before claim processing and reduce improper payments. Furthermore, from this analysis, estimates were made to determine the potential impact to outpatient therapy expenditures that could be realized if these edits were applied.

The determination of what threshold of “unit” volume for individual procedures would be considered as “*medically unbelievable*” is beyond the scope of this report. However, for this feasibility and impact analysis, we identified a threshold for all “time-based” HCPCS as “over 3 units” (equals lines with 4 or more “units” billed) and “over 4 units” (equals 5 or more “units”

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<sup>80</sup> NOTE: It is clinically appropriate for some conditions to require more than one hour of treatment by a single procedure or a combination of procedures.

<sup>81</sup> Olshin, J., et al., *Study and Report*. September 2002, Appendix S.

<sup>82</sup> AdvanceMed, April 2003.

billed). This means that if an individual procedure was billed for 60 or more minutes, or 75 or more minutes per treatment day, we classified that HCPCS claim line as having higher than average volume<sup>83</sup>.

The results confirm that many “time-based” codes continue to be billed and paid for with unusual frequencies and that there is a significant cost impact if the payments were improperly made.

### **5.1. Estimated Impact of Payments for Claim Lines of Therapy “Time-based” HCPCS with Higher-Than Average “Unit” Volumes CY 2002 by Type of Therapy**

**The estimated impact for applying system edits to limit individual Part B therapy “time-based” procedure line “units” to no more than 3 “units” per line is \$100 million. Raising the edit limit to no more than 4 “units” per line would reduce the impact to \$23.7 million.**

Table 9 provides a summary of the number of “time-based” HCPCS “units” billed per paid line for all therapy services (PT, OT, SLP) combined in CY 2002. The number of paid lines, total number of “units” billed, total amount paid, payment per line, and payment for HCPCS “unit” is described depending upon the number of “units” billed per line (0-10+). The bottom rows of the table provide estimate analysis of the impact of applying “unit” thresholds to limit payments for lines with higher-than average HCPCS “units” billed to either 3 or 4 “units”.

If CMS were to arbitrarily apply a limit of 3 “units” per “always therapy” “time-based” HCPCS line across the board, only 3.16 percent of all paid outpatient therapy “time-based” HCPCS lines would be impacted; however, the total dollar impact would be \$100.2 million (Table 9). In other words, this amount of expenditure reduction is estimated if Medicare issued payments for the first three “units” billed, but denied payment for the fourth “unit” and any additional “unit” on a therapy line.

If the “unit” limit edit threshold were raised to allow up to 4 “units” of a “time-based” code per line, (but to edit 5 or more “units”) the edit would only impact 0.47 percent of all paid outpatient therapy “time-based” HCPCS lines, for an amount of \$23.7 million (Table 9).

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<sup>83</sup> Although not calculated in this report, the tables in Appendix H and Appendix I also provide detailed information of “time-based” HCPCS ‘units’ billing patterns for claim lines with 5-9 units per line, 10 or more “units” per line, as well as the formulas used for estimated to be made about the impact of lines with higher “unit” volumes billed.

**Table 9. Impact Analysis: Application of Volume Control Edits on “Time-based” Therapy HCPCS<sup>84</sup>**

Number of “Time-based” HCPCS Billed per Paid Line	Total Number Paid Lines	Total Number “Units”	Total Paid Amount	Paid/Line	Paid/“Unit”
Total	88,925,918	151,395,951	\$2,744,935,693	\$30.87	\$18.13
1 “Unit”	59,419,965	59,419,965	\$1,185,877,897	\$19.96	\$19.96
2 “Units”	20,878,158	41,756,316	\$906,721,447	\$43.43	\$21.71
3 “Units”	5,814,422	17,443,266	\$383,866,158	\$66.02	\$22.01
4 “Units”	2,388,131	9,552,524	\$211,091,762	\$88.39	\$22.10
5 “Units”	195,138	975,690	\$21,411,469	\$109.72	\$21.94
6 “Units”	107,930	647,580	\$13,616,846	\$126.16	\$21.03
7 “Units”	24,357	170,499	\$3,512,039	\$144.19	\$20.60
8 “Units”	35,055	280,440	\$5,560,828	\$158.63	\$19.83
9 “Units”	7,477	67,293	\$1,360,643	\$181.98	\$20.22
10+ “Units”	49,864	21,082,378	\$11,790,847	\$236.46	\$0.56
0 “Units” <sup>85</sup>	5,421	0	\$125,757	\$23.20	N/A
<b>Total (all lines)</b>	<b>88,925,918</b>	<b>151,395,951</b>	<b>\$2,744,935,693</b>	<b>\$30.87</b>	<b>\$18.13</b>
<b>Line = 1 “Unit”</b>	<b>59,419,965</b>	<b>59,419,965</b>	<b>\$1,185,877,897</b>	<b>\$19.96</b>	<b>\$19.96</b>
<b>Line &gt; 3 “Units”</b>	<b>2,807,952</b>	<b>32,776,404</b>	<b>\$268,344,434</b>	<b>\$95.57</b>	<b>\$8.19</b>
<b>Impact Estimate</b>	<b>3.16%<sup>86</sup></b>	<b>24,352,548<sup>87</sup></b>	<b>\$100,224,769<sup>88</sup></b>		
<b>Line &gt; 4 “Units”</b>	<b>419,821</b>	<b>23,223,880</b>	<b>\$57,252,672</b>	<b>\$136.37</b>	<b>\$2.47</b>
<b>Impact Estimate</b>	<b>0.47%<sup>86</sup></b>	<b>21,544,596<sup>87</sup></b>	<b>\$23,738,250<sup>88</sup></b>		

**Applying system edits to limit individual Part B therapy “time-based” procedure line “units” to no more than 3 “units” or 4 “units” per line would impact physical therapy with the greatest total dollar amounts.**

If outpatient therapy “time-based” HCPCS were limited to no more than 3 “units” per line, PT payments would be reduced by \$70.4 million, followed by OT at \$25.8 million, and SLP at \$822 thousand. If the edit threshold were raised to limit payment to no more than 4 “units” per line,

<sup>84</sup> Appendix H-Table 1.

<sup>85</sup> Some institutional provider lines with no HCPCS “units” billed received payments. No payments were issued to non-institutional providers when HCPCS “unit” count billed= 0.

<sup>86</sup> **Number of Paid Lines Impact Estimate** = Total Number Paid Lines (all lines)/Total Number Paid Lines (Line > 3 [or 4] “Units”). In Table 9, this indicates that 3.16% of paid claim lines submitted with “time-based” HCPCS had > 3 “units” billed, and 0.47% of claim lines with “time-based” HCPCS had > 4 “units” billed.

<sup>87</sup> **Total Number of “Units” Impact Estimate** = Total Number “Units” (Line > 3 [or 4] “Units”) – (Total Number Paid Lines (Line > 3 [or 4] “Units”)\*3 [or 4]). In Table 9, this indicates that 24,352,548 “time-based” HCPCS “units” were billed in excess of 3 “units” per line. In other words, this represents the sum of all “units” billed when the line “unit” count was 4-10+ (less 3 allowed “units”). This table also indicates that 21,544,596 “time-based” HCPCS “units” were billed in excess of 4 “units” per line.

<sup>88</sup> **Total Paid Amount Impact Estimate** = Total Paid Amount (Line > 3 [or 4] “Units”) – (Total Number Paid Lines (Line > 3 [or 4] “Units”)\*[Paid/Line (Line = 1 “Unit”)]\* 3 [or 4] units). In Table 9, this indicates the estimated dollar impact of paid amounts being issued for “time-based” HCPCS lines billed with > 3 [or 4] “units”. In this case, instead of the observed Paid/Line of \$95.57 for lines with > 3 “units” or of \$136.37 for lines with > 4 “units”, the line paid amount was adjusted to a factor of the \$19.96 observed when only 1 “unit” was billed/line. The \$100,224,769 impact estimate reflects the total paid dollars above and beyond three “units” per time-based HCPCS line. Similarly, the \$23,738,250 impact estimate reflects the total paid dollars above and beyond four “units” per “time-based” HCPCS line.

PT payments would again be impacted the most at \$15.0 million, followed by OT at \$7.5 million, and SLP at \$291 thousand (Table 10).

**Table 10. Impact Estimate of “Time-based” HCPCS Edits by Therapy Type**

Therapy Type	Over 3 “Units” Extra “Units” Cost Estimate	Over 4 “Units” Extra “Units” Cost Estimate	Percent of \$ Over 3 “Units”	Percent of \$ Over 4 “Units”
<b>Total<sup>89</sup></b>	<b>\$100,224,769</b>	<b>\$23,738,250</b>	<b>100.0%</b>	<b>100.0%</b>
<b>PT<sup>90</sup></b>	\$70,406,361	\$15,033,332	70.2%	63.3%
<b>OT<sup>91</sup></b>	\$25,795,783	\$7,531,599	25.7%	31.7%
<b>SLP<sup>92</sup></b>	\$822,176	\$291,173	0.8%	1.2%

Additional detail regarding the pattern of “time-based” HCPCS “unit” volume by therapy type is available in Appendix I. This Appendix contains information similar to Table 9, but separates PT, OT, and SLP services, and then further separates PT, OT, and SLP services by institutional provider versus non-institutional provider type.

**5.2. Estimated Impact of Payments for Claim Lines of Therapy “Time-based” HCPCS with Higher-Than Average “Unit” Volumes CY 2002 by Setting**

In practice, it would be necessary to review each code to determine an appropriate limit on “units”, but assuming that such a process resulted in an average of limits at 3 or 4 “units”, the following estimates would apply.

**The estimated impact for applying system edits to limit individual Part B therapy “time-based” procedure line “units” to no more than 3 “units” per line would impact hospitals the most, at \$34.8 million, followed by SNF, PTPP and ORF settings.**

Table 11 reveals that outpatient hospitals would have a \$34.8 million reduction in payments if this edit were applied, representing 35% of all payments of lines with more than 3 “units” billed. SNF would follow with a \$20.3 million reduction (20% of total dollar impact), followed by PTPP at \$16.6 million and ORF at \$16.3 million.

**The estimated impact for applying system edits to limit individual Part B therapy “time-based” procedure line “units” to no more than 4 “units” per would impact skilled nursing facilities the most, at \$7.8 million, followed by outpatient hospital, ORF, and physician settings.**

SNF received 33% of the total payment dollars (\$7.8 million) for “time-based” HCPCS billed in excess of 4 “units” per line. Outpatient hospitals followed with a \$5.6 million (24%) for “units” billed beyond 4 in a line. The impact on ORF and physician settings was \$3.8 million and \$2.9 million respectively.

<sup>89</sup> Appendix I-Table 1

<sup>90</sup> Appendix I-Table 2

<sup>91</sup> Appendix I-Table 3

<sup>92</sup> Appendix I-Table 4

**Table 11. Impact Estimate of “Time-based” HCPCS Edits by Therapy Setting**

Setting	Over 3 “Units” Extra “Units” Cost Estimate	Over 4 “Units” Extra “Units” Cost Estimate	Percent of \$ Over 3 “Units”	Percent of \$ Over 4 “Units”
<b>Total</b> <sup>93</sup>	<b>\$100,224,769</b>	<b>\$23,738,250</b>	<b>100.0%</b>	<b>100.0%</b>
<b>Hospital</b> <sup>94</sup>	\$34,799,949	\$5,642,066	34.7%	23.8%
<b>SNF</b> <sup>95</sup>	\$20,265,883	\$7,817,322	20.2%	32.9%
<b>CORF</b> <sup>96</sup>	\$4,223,657	\$1,194,389	4.2%	5.0%
<b>ORF</b> <sup>97</sup>	\$16,351,609	\$3,817,979	16.3%	16.1%
<b>HHA</b> <sup>98</sup>	\$173,140	\$33,223	0.2%	0.1%
<b>PTPP</b> <sup>99</sup>	\$16,637,291	\$1,700,165	16.6%	7.2%
<b>OTPP</b> <sup>100</sup>	\$4,967,168	\$829,076	5.0%	3.5%
<b>Physician</b> <sup>101</sup>	\$8,088,584	\$2,864,659	8.1%	12.1%
<b>Practitioner</b> <sup>102</sup>	\$12,257	\$5,604	0.0%	0.0%

Unlike “non-timed” codes, there is no apparent difference in how intermediaries and carriers process “time-based” Part B therapy HCPCS with unusually high “unit” frequencies.

Appendix H reveals that the percentage of paid “time-based” therapy HCPCS lines that have greater than 3 or 4 “units” per line is relative consistent across provider settings and Medicare contractor type.

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<sup>93</sup> Appendix H-Table 1  
<sup>94</sup> Appendix H-Table 2.1  
<sup>95</sup> Appendix H-Table 2.2  
<sup>96</sup> Appendix H-Table 2.3  
<sup>97</sup> Appendix H-Table 2.4  
<sup>98</sup> Appendix H-Table 2.5  
<sup>99</sup> Appendix H-Table 3.1  
<sup>100</sup> Appendix H-Table 3.2  
<sup>101</sup> Appendix H-Table 3.3  
<sup>102</sup> Appendix H-Table 3.4

## **6.0 Results: Estimated Cost Impact of Clinically “Illogical” Combinations of Select Therapy Procedure Codes (HCPCS) with Reported Line or Claim Diagnosis (ICD-9-CM)**

One of the greatest challenges in any analysis of healthcare resource utilization based upon the clinical condition of the patient is the presence of appropriate claim diagnosis information. A recent outpatient therapy service utilization report identified how limited the current Part B outpatient therapy claim diagnosis information is in identifying the actual clinical status of the patient. There are several factors that play a role<sup>103</sup>.

First, institutional provider claim forms (CMS-1450) are not designed to collect diagnosis information at the claim procedure line level. When there are multiple revenue centers and multiple diagnoses included on the claim, it is not possible to confirm the diagnoses related to the therapy services being furnished.

Second, while non-institutional provider claim forms (CMS-1500) do contain procedure line diagnosis code information, there are only three additional diagnoses permitted to help identify co-morbidities, while the CMS-1450 form permits up to eight additional co-morbid diagnoses. While recent HIPAA standards for electronic claim filing has the potential to improve this situation for electronically filed claims, institutional providers still submit some different information regarding outpatient therapy than non-institutional providers. Unless all electronic outpatient therapy claim formats are standardized, or the existing paper claim forms are modified, this will mean ongoing issues regarding the proper identification of therapy diagnosis using claims data alone.

Third, because of the complexities of billing requirements for institutional providers that bill for both Part A inpatient and Part B outpatient services, outpatient therapy claims frequently have the “Supplementary Classification of Factors Influencing Health Status and Contact with Health Services” ICD-9-CM codes (e.g. V57 series that describe “Care involving use of rehabilitation procedures”) as the principal, and sometimes only diagnoses listed on the therapy claim.

In addition, there are minimal apparent system protections to prevent outpatient therapy providers from submitting claims for, and being paid for procedures that are totally illogical for the listed diagnoses. For example, while it seems illogical to perform manual therapy for a diagnosis of an eye infection, common transcription errors often result in payments for such code combinations.

While many Medicare contractors have implemented Local Coverage Determination (LCD) policies that list medically necessary coding combinations, and often have system edits in place to prevent improper code combinations, the lack of a universal application of such logic results in improper payments and the skewing of utilization information that could be used for modeling payment methodologies based upon claim diagnoses. In order to prepare CMS claims data to better reflect the treatment diagnosis, measures that are universally applied to reinforce proper diagnosis coding is essential.

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<sup>103</sup> Olshin, J., et al., September 2002 p. 79.

By analyzing more current 2002 claims data, AdvanceMed applied a model of “Illogical” ICD-9 and HCPCS edits to determine the current extent and dollar impact of such unusual coding. The basis of this analysis is an extensive algorithm that was developed by AdvanceMed in cooperation with the American Physical Therapy Association (APTA) in 2002. This algorithm matched all available HCPCS codes and ICD-9 CM codes applicable in the year 2002, and described logical combinations for physical therapy services. This algorithm represented all the combinations identified in available physical therapy and physical medicine and rehabilitation LCDs at the time, as well as expert opinion from a workgroup of physical therapists.

From this analysis, patterns of billing for “Illogical” ICD-9 and HCPCS code combinations were analyzed to identify opportunities to introduce CWF edits or alerts that could notify a provider submitting claims electronically that the ICD-9 and HCPCS code combination is “illogical”. Such feedback to providers would permit them to correct errors before claim processing and reduce improper payments and improve the quality of the diagnosis data. Furthermore, from this analysis, estimations were made to determine the potential expenditure impact to the outpatient therapy benefit if these edits were applied through the common working file rather than through the various contractor systems.

The results confirm that clinically “illogical” combinations of therapy HCPCS and ICD-9 codes continue to be frequently billed and paid for, and that a universal application of edits or alerts may assist in reducing coding errors. However, the following analysis represents only a limited scope of the potential impact of applying such “illogical” code combination edits. The reasons for the limited scope are as follows:

Since the intent for this type of potential CWF edit methodology is to prevent clinically “illogical” combinations of therapy procedure codes with the reported diagnosis, it is imperative to receive clinical input regarding the appropriateness of the proposed edits. At the time of this analysis, the only available model was for physical therapy service, which was created by AdvanceMed in with the cooperation of the American Physical Therapy Association (APTA) in 2002 as part of a template LMRP/LCD developed under another contract. Since a comparable edit list was not available for occupational therapy or speech-language pathology services, the investigators elected to limit the “illogical” code combination edit model to CY 2002 physical therapy services.

After conducting alpha testing on the physical therapy “illogical” code combinations edit model a number of administrative problems were observed:

- First, because of the lack of line diagnosis codes for institutional provider claims, the claim principal diagnosis codes were considered as a replacement. However, because of the high incidence of alphanumeric V57 series ICD-9 codes listed as principal claim diagnoses, instead of a numeric medical diagnosis, a high “false positive” error estimate was probable (and confirmed with pilot testing). Instead, the investigators decided to apply a more conservative methodology for institutional provider claim analysis by comparing the billed HCPCS with *any* of the listed ICD-9 codes (up to 9 codes) on the institutional provider claim. Although this approach may not be sensitive enough to capture all “illogical” code combinations, it would protect providers and beneficiaries from unnecessary improper automated payment denials if implemented. In addition, this

methodology permits further feasibility testing; and assures confidence that the errors reported for institutional providers definitely represent “illogical” code combinations.

- Second, because of the sheer volume of potential HCPCS and ICD-9 combinations, the investigators decided to limit the application of the “illogical” code combination edit model to the CMS list of “always therapy” HCPCS and to ICD-9 coded to the third digit only. However, after alpha testing, a number of these HCPCS came back with results indicating unusually high rates of error - many at 100%. After further analysis, several HCPCS were removed from the “always therapy” edit model list. For example, a code like 97139 – Unlisted Therapeutic Procedure - did not have specific diagnosis codes attributed to it in the template PT LCD algorithm. The specific limited list of HCPCS included in this “illogical” code combination edit analysis is located in the results tables of Appendix J. Again, although many HCPCS codes were eliminated from this edit feasibility model, this conservative approach has created error estimates that represent only the most “illogical” coding combinations.

### **6.1 Estimated Impact of Clinically “Illogical” Combinations of Select Physical Therapy HCPCS with Reported Line or Claim ICD-9-CM – CY 2002 by Setting**

**With a limited list of 37 therapy HCPCS, there was an estimated \$16.7 million in “illogical” HCPCS/ICD-9 coding combination payments in CY 2002.**

After significantly reducing the number of HCPCS included in this feasibility analysis of applying edits to “illogical” HCPCS/ICD-9 coding combinations to 37 HCPCS for PT services, less than one percent of the HCPCS lines analyzed contained “illogical” combinations of HCPCS and ICD-9 codes. However, even with this very conservative methodology, it is estimated that had this edit been applied, \$16.7 million in payments in 2002 might have instead been denied (Table 12).

**Non-Institutional Providers demonstrated a higher percentage of claim lines with “illogical” code combination errors.**

About two percent of non-institutional provider HCPCS tested had “illogical” code combinations accounting for \$13.14 million of the \$16.7 million identified as potential overpayments (Appendix J-Table 3). This may be an artifact of the methodology difference in the edit model depending upon the Medicare contractor type. Because non-institutional provider claims contain a line diagnosis, the analysis was limited to that diagnosis. However, because of the technical limitations of institutional provider claims, all claim diagnoses for those claims were considered. This created a bias favoring institutional providers.

However, if the edits were applied to outpatient therapy claims with these limitations, the PTPP setting would be most impacted at \$8.2 million, followed by physicians that did not use therapy modifiers at \$4.6 million, hospital outpatient PT at \$2.3 million, and SNF PT at \$765 thousand (Table 12).

The results in Table 12 also distinguish the difference in “illogical” code combinations when physicians and non-physician practitioners use the GP modifier for PT versus when no modifier was applied and the claim line defaulted to PT services (as described in Section 2.4.2). The findings of a higher rate of “illogical” code combinations observed when no modifier was used

in a physician or non-physician practitioner’s office may or they could be coding errors where therapy codes are billed but therapy services are not rendered.

**Table 12. Impact Estimate of Clinically “Illogical” Combinations in CY 2002 of Select PT HCPCS with Reported Line or Claim ICD-9 Codes by Setting**

Setting	Total Number “Illogical” Paid Lines	Total “Units” in “Illogical” Lines	Total Paid in “Illogical” Lines (Potential Overpayment)	Total Number Paid Lines	“Illogical” Percent of Paid Lines
<b>Total</b> <sup>104</sup>	<b>727,994</b>	<b>969,547</b>	<b>\$16,731,128</b>	<b>87,113,746</b>	<b>0.8%</b>
<b>Hospital</b> <sup>105</sup>	58,662	87,054	\$2,260,539	18,778,368	0.3%
<b>SNF</b> <sup>106</sup>	19,731	56,838	\$764,765	17,055,756	0.1%
<b>CORF</b> <sup>107</sup>	1,485	2,546	\$56,657	2,990,517	0.1%
<b>ORF</b> <sup>108</sup>	14,993	23,209	\$513,011	14,391,596	0.1%
<b>HHA</b> <sup>109</sup>	101	175	\$4,361	105,020	0.1%
<b>PTPP</b> <sup>110</sup>	380,456	481,472	\$8,155,612	21,888,851	1.7%
<b>Physician GP Modifier</b> <sup>111</sup>	12,248	15,433	\$267,639	834,542	1.5%
<b>Physician No Modifier</b> <sup>112</sup>	236,862	299,098	\$4,636,133	10,987,576	2.2%
<b>Practitioner GP Modifier</b> <sup>113</sup>	40	41	\$619	2,710	1.5%
<b>Practitioner No Modifier</b> <sup>114</sup>	3,773	4,277	\$84,147	78,810	4.8%

## 6.2 Estimated Impact of Clinically “Illogical” Combinations of Select Physical Therapy HCPCS with Reported Line or Claim ICD-9-CM – Top 15 HCPCS Ranked by Estimated Cost Error

Of the tested HCPCS, with potential “illogical” HCPCS/ICD-9 coding combinations, codes such as 97033 (iontophoresis), 97542 (wheelchair management/prolusion training), vasopneumatic device application (97016), and contrast baths (97034), have atypical rates of potential errors. The right-hand column of the tables in Appendix J identifies the percentage of paid lines that met the criteria for the “illogical” edit used in the analysis.

**Nearly \$400 thousand was paid for occupational therapy evaluations and re-evaluations to physical therapy providers in CY 2002.**

Appendix J-Table 1 demonstrates that the occupational therapy evaluation code (97003 - \$328 thousand) and re-evaluation code (97004-\$40 thousand) were paid to physical therapy providers

<sup>104</sup> Appendix J-Table 1  
<sup>105</sup> Appendix J-Table 2.1  
<sup>106</sup> Appendix J-Table 2.2  
<sup>107</sup> Appendix J-Table 2.3  
<sup>108</sup> Appendix J-Table 2.4  
<sup>109</sup> Appendix J-Table 2.5  
<sup>110</sup> Appendix J-Table 3.1  
<sup>111</sup> Appendix J-Table 3.2  
<sup>112</sup> Appendix J-Table 3.3  
<sup>113</sup> Appendix J-Table 3.4  
<sup>114</sup> Appendix J-Table 3.5

in CY 2002. This means that the non-institutional provider services were billed with a PTPP provider number on the claim line, or the institutional provider billed the procedure in the 042x revenue center. Such coding problems, if not corrected, could be problematic if the therapy caps are reinstated as an institutional provider could circumvent the caps by billing another revenue center.

**Table 13. Impact Estimate of Clinically “Illogical” Combinations of Select PT HCPCS in CY 2002 with Reported Line or Claim ICD-9 Codes - Top 15 HCPCS Ranked by Potential Payment Error Amount<sup>115</sup>**

Impact Rank by Cost	HCPCS	Total Number “Illogical” Paid Lines	Total “Units” in “Illogical” Lines	Total Allowed in “Illogical” Lines	Total Paid in “Illogical” Lines	Total Number Paid Lines	“Illogical” Percent of Paid Lines
	<b>Total</b>	<b>727,994</b>	<b>969,547</b>	<b>\$21,211,316</b>	<b>\$16,731,128</b>	<b>87,113,746</b>	<b>0.8%</b>
1	97110	95,462	168,729	\$4,496,944	\$3,529,006	29,642,658	0.3%
2	97140	86,387	118,107	\$2,935,761	\$2,328,938	9,106,982	0.9%
3	97530	33,547	50,724	\$1,656,887	\$1,306,900	7,293,751	0.5%
4	97001	20,914	21,685	\$1,487,444	\$1,153,151	3,222,006	0.6%
5	97032	57,003	73,342	\$1,213,097	\$966,390	1,770,210	3.2%
6	97601	19,813	22,101	\$960,112	\$758,616	597,063	3.3%
7	97035	81,209	85,467	\$926,442	\$737,244	7,490,378	1.1%
8	97014	60,128	61,399	\$869,903	\$691,102	6,755,568	0.9%
9	97112	20,412	27,412	\$761,856	\$600,894	6,008,288	0.3%
10	97033	41,184	48,575	\$683,747	\$543,643	396,241	10.4%
11	97012	49,064	49,526	\$655,015	\$521,275	739,741	6.6%
12	97116	17,022	29,666	\$493,923	\$388,390	7,426,559	0.2%
13	97113	6,907	16,204	\$474,976	\$374,664	1,067,135	0.6%
14	97124	18,775	22,528	\$455,309	\$360,942	2,288,198	0.8%
15	97542	8,237	9,092	\$460,694	\$358,298	106,296	7.7%

<sup>115</sup> Adapted from Appendix J-Table 1

## 7.0 Summary

This analysis of Part B therapy HCPCS utilization and the potential application of various outpatient therapy service claim HCPCS edits has demonstrated that such edits are feasible and could have an immediate impact on reducing improper payments and improving proper coding behavior. The following specific conclusions can be made from this analysis:

- The study methodology using an innovative method of obtaining NCH claims data by leveraging the information on an existing contractor data set, rather than obtaining the data from the CMS mainframe, is a more efficient method of obtaining therapy data for analysis and has not compromised the quality or completeness of the data.
- The analytic models developed effectively capture the universe of Part B therapy services as reflected by AdvanceMed benchmark comparisons with ‘standard’ benchmarks such as the CMS OACT estimates and BESS procedure code utilization tables.
- \$36.7 million in expenditures could be impacted by universally implementing “non-timed” HCPCS edits<sup>116</sup> to Part B therapy services.
  - The greatest dollar impact of “non-timed” HCPCS edits is attributed to intermediary processed institutional claims, particularly for speech-language pathology services, and the SNF and hospital outpatient settings.
  - Focused provider and billing office education, particular for hospital and SNF outpatient therapy providers could also have immediate impact on improving correct coding of “non-timed” HCPCS.
- The application of “unit” volume edits limiting “time-based” HCPCS has an impact of \$100.2 million if payment is limited to 3 “units” per line, and an impact of \$23.7 million if payment is limited to 4 “units” per line.
  - NOTE: Such edit thresholds could be customized to different “unit” amounts for different “time-based” HCPCS.
  - NOTE: Safeguards could be implemented (e.g. special high use code modifier) to permit providers to furnish medically necessary high volume procedures in rare situations.
- At least \$16.7 million in payments could be impacted by implementing a limited list of “illogical” combinations of line HCPCS with line or claim diagnosis codes for physical therapy services.
  - NOTE: Additional refinements and the creation of comparable edits for OT and SLP services<sup>117</sup> would increase the potential impact from this “illogical” code combination edit model.

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<sup>116</sup> NOTE: “Non-timed” HCPCS codes should never be billed more than once per visit. However, many providers submit claims for (and contractors pay for) multiple units of “service” HCPCS codes during one visit. When a separate and clinically appropriate visit is furnished on the same date of service (e.g., such as 97601-selective debridement without anesthesia), the service should be billed with a distinctive service modifier.

- The \$153.6 million in overall dollar impact identified in this report is 4.5% of the \$3.39 billion in Part B therapy expenditures in CY 2002.

This analysis was constructed to describe utilization patterns of individual HCPCS claim lines; therefore, the “unit” of measurement was the claim line. It was not constructed to analyze combinations of HCPCS often billed at the claim level when outpatient therapy services are furnished. Such an analysis may be useful in the future, to analyze the combinations of services that are frequently billed and to identify patterns of overuse of multiple services. In addition to considering the potential application of line HCPCS edits similar to those described in this report, consideration could also be given to investigating the utilization patterns at the claim level to determine if similar claim level edits could be feasible.

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<sup>117</sup> NOTE: The American Speech-Language-Hearing Association (ASHA) recently furnished a suggested HCPCS/ICD-9 edits list, at CMS request for testing SLP services; however, the algorithm could not be applied before the data analysis for this report was completed.