



Skilled Nursing Facility Therapy Payment Models

Technical Expert Panel

Acumen, LLC
February 2015

Outline

Preliminary Material | Not Intended for Release

Sessions		
1	a	Welcome and Introductions
	b	Project Overview
2		Evaluating Therapy Payment Alternatives
3		Identifying Therapy Costs for Part A Stays
4		Understanding and Addressing Special Subpopulations
5	a	Selecting Beneficiary Characteristics Predictive of Therapy Utilization
	b	Identifying Limitations of Current Data and Models
6		Exploring Additional Patterns in Therapy Utilization
7		Open Discussion

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Session 1a: Welcome and Introductions

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Session Objective

Introduce the purpose, expectations, and participants of the SNF Therapy Payment Models TEP

Session Topics

- Welcome
- TEP Overview
 - Goals
 - Agenda
 - Session Structure
 - Guidelines
- Introductions

Session Time

<15 minutes

Welcome

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- CMS has contracted with Acumen, LLC to identify potential refinements and alternatives to the existing methodology used to pay for services under the SNF PPS
- This TEP is an important way to gain vital stakeholder and expert input during the process

TEP Overview: Goals

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1. Present SNF Therapy Payment Models project background and current analyses to stakeholders
2. Obtain key stakeholder input on features of SNF Part A therapy payment being analyzed
3. Solicit recommendations for further exploration of SNF Part A therapy and development of payment options

TEP Overview: Agenda

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Session		Time	Topic
Morning	Session 1a	8:30 to 8:45 AM	Welcome and Introductions
	Session 1b		Project Overview
	Session 2	8:45 to 9:15 AM	Evaluating Therapy Payment Alternatives
	Session 3	9:15 to 10:15 AM	Identifying Therapy Costs for Part A Stays
	Break	10:15 to 10:30 AM	-
	Session 4	10:30 to 11:45 AM	Understanding and Addressing Special Subpopulations
Lunch		11:45 AM to 12:45 PM	-
Afternoon	Session 5a	12:45 to 1:45 PM	Selecting Beneficiary Characteristics Predictive of Therapy Utilization
	Break	1:45 to 2:00 PM	-
	Session 5b	2:00 to 2:45 PM	Identifying Limitations of Current Data and Models
	Break	2:45 to 3:00 PM	-
	Session 6	3:00 to 3:45 PM	Exploring Additional Patterns in Therapy Utilization
	Session 7	3:45 to 4:30 PM	Open Discussion

TEP Overview: Session Structure

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- Session overview
 - Session objective
 - Session topics
 - Session time
- Context for discussion
- Panelist discussion

TEP Overview: Guidelines

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- Roles of panelists and observers

Panelists	• Review data analysis results and discussion questions • Consider and comment on research efforts related to therapy payment under the SNF PPS
Observers	• Listen to presentation and panelist discussion • Participate in open discussion period at end of day

Introductions

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- Panelists
- Project team representatives

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Session 1b: Project Overview

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Session Objective

Present high-level overview of SNF Therapy Payment Models project and prior work

Session Topics

- Project Motivation and Goals
- Project Activities
 - Stage 1: Review of Therapy Payment Concepts
 - Stage 2: Development of Therapy Payment Models
- Scope of TEP

Session Time

<15 minutes

Project Motivation and Goals

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- Strong interest in researching alternative reimbursement models and refinements, particularly for therapy services
 - Are there ways to base payments on beneficiary characteristics and care needs rather than on the amount of therapy provided?
- Three main project goals
 - Develop alternative approaches for therapy payment under the SNF PPS
 - Evaluate how these changes could strengthen the system
 - Select and support implementation of payment system refinement/alternative

Project Activities: Stage 1

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Literature Review and Stakeholder Outreach	• Gathered information on prior studies and evaluations of SNF PPS therapy payments through environmental scan and stakeholder outreach
Therapy Payment Components	• Identified components of therapy payment and evaluated options for components based on potential impact and implementation
Therapy Payment System Approaches	• Evaluated four main approaches to paying for therapy services based on standard criteria
Recommendation for Next Stage	• Proceeded with further investigating resident characteristics model and resident characteristics model with a resource-based adjustment

Project Activities: Stage 2

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SNF Data Analysis	Analyze current therapy utilization and payments to support design of SNF PPS refinements and alternatives
Technical Expert Panel	Gather expert stakeholder feedback to help guide development of therapy payment models
Payment Model Development	Formalize therapy payment system approaches into implementable alternatives
Payment Model Simulation	Estimate and understand impact of proposed models on beneficiaries, SNF providers, and overall Medicare program

Scope of TEP

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- Focus of this TEP is **SNF Part A therapy payments**
 - Recently expanded project scope includes potential improvements to the entire SNF PPS payment system
 - Plan to provide separate opportunities for stakeholder input on non-therapy-related refinement possibilities

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Session 2: Evaluating Therapy Payment Alternatives

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Session Objective

Identify and define the characteristics of a successful therapy payment alternative for the SNF PPS

Session Topics

- Therapy Payment Concepts
- Evaluation Criteria

Session Time

30 minutes

Therapy Payment Concepts

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- Evaluated four main payment approaches
 - 1 Resident characteristics model
 - 2 Adjusted resident characteristics model
 - 3 Fee schedule
 - 4 Competitive bidding
- Recommended continuing analysis of two approaches
 - 1 Resident characteristics model
 - 2 Adjusted resident characteristics model

Evaluation Criteria

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- Aim to identify the full set of dimensions on which to evaluate the viability of therapy payment alternatives

Group 1	Improves payment accuracy for SNF services
Group 2	Improves incentives to provide the appropriate level of care for individuals
Group 3	Feasible to implement in the short-to-medium term
Group 4	Minimizes burden on stakeholders
Group 5	Minimizes start-up and ongoing implementation costs for CMS
Group 6	Reduces impacts on or improves consistency with other settings and payers

Discussion Questions

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1. Do these six criteria groups capture the full range of characteristics of a successful therapy payment system alternative?
 - Are there additional criteria or criteria groups to add that would capture important aspects of a therapy payment system alternative?
2. Criteria Group 1 measures whether the SNF PPS payment alternative uses “reproducible, verifiable, and objective characteristics” to determine therapy payments.
 - What qualifies beneficiary characteristics as reproducible, verifiable, and objective?
 - How do these align with standards for “evidence-based resident characteristics predictive of therapy utilization” (Criteria Group 2)?
3. Criteria Group 4 measures whether the SNF PPS payment alternative improves the “overall predictability of the payment system” and helps reduce “system complexity.”
 - What are ways to measure performance on this criteria from an operational perspective? From a therapist’s perspective?
4. Criteria Group 6 measures whether the SNF PPS payment alternative “improves consistency with other Medicare benefits.”
 - Are there systems—Part B therapy, inpatient rehabilitation facility PPS, home health PPS, acute hospital PPS—that should be weighed more heavily when evaluating performance on this criterion?

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Session 3: Identifying Therapy Costs for Part A Stays

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Session Objective

Understand components of measuring therapy services and their impact on estimating the relationship between resident characteristics and therapy use

Session Topics

- Therapy Definition Components
- Therapy Definition Comparison
 - Therapy Utilization Measures and Units
 - Therapy Disciplines and Units
 - Next Steps

Session Time

60 minutes

Therapy Definition Components

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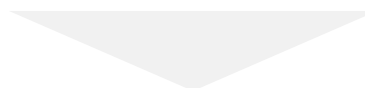
- Three components to define a beneficiary's therapy services
- Options tested to understand which best fits utilization patterns and data

Therapy Utilization Measures	Therapy Unit Options	Therapy Discipline Combinations
Therapy Minutes	Per Day	Total Therapy
Therapy Charges	Per Stay	Individual Disciplines
Therapy Costs	Per Benefit Period	Combined Disciplines

Therapy Comparison: Therapy Utilization Measures and Units

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Therapy Unit	Total Therapy Costs (\$)		Total Therapy Charges (\$)		Total Therapy Minutes (Mins)	
	Median	95 th Percentile	Median	95 th Percentile	Median	95 th Percentile
Per Day	139	266	243	556	94	110
Per Stay	2,864	11,567	5,119	20,987	1,843	6,819
Per Benefit Period	3,722	14,827	6,769	27,108	2,295	8,888

- 
- Estimates of therapy utilization **differ markedly based on the unit** selected to capture a beneficiary's related SNF Part A therapy services.
 - A stay represents a lower bound estimate of therapy services possibly related to the same condition(s), while a benefit period represents the upper bound.

Therapy Comparison: Therapy Disciplines and Units

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Therapy Unit	Physical Therapy Costs (\$)		Occupational Therapy Costs (\$)		Speech Therapy Costs (\$)	
	Median	95 th Percentile	Median	95 th Percentile	Median	95 th Percentile
Per Day	65	141	55	111	0	71
Per Stay	1,355	5,548	1,125	4,657	0	2,360
Per Benefit Period	1,791	7,065	1,470	5,921	0	3,035

- 
- The **three therapy disciplines are not equally used** for SNF PPS beneficiaries; physical and occupational therapy are much more common than speech therapy
 - Physical and occupational therapy would likely drive connections between beneficiary characteristics and therapy use if estimated using a dependent variable of total therapy.

Therapy Comparison: Next Steps

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Therapy Utilization Measures	• Plan to test therapy costs as primary utilization measure • Test secondary measures at important stages of modeling to confirm congruence of results
Therapy Unit Options	• Plan to test per day, per stay, and per benefit period as unit options • Stay and benefit period definitions used as lower and upper bounds on related SNF therapy services
Therapy Discipline Combinations	• Plan to test individual disciplines as primary discipline combination • Identify most specific relationships to beneficiary characteristics, while total therapy serves as baseline comparison

Discussion Questions

Preliminary Material | Not Intended for Release

1. Which therapy unit provides the most comprehensive measure of a beneficiary's related SNF therapy services: a per-stay unit or a per-benefit-period unit?
 - Are there reliable indicators that signal a resident is being treated for a different condition than when he/she was first admitted to a SNF during the benefit period?
 - How do days spent outside of an institution between SNF stays or transfers between providers affect the definition of related therapy services?
2. Which payment unit—per day, per stay, per benefit period—best fits the patterns of therapy provision in the SNF Part A setting from an operational perspective?
 - What are the implications of the choice of payment unit for access to therapy services vs. appropriate therapy provision? For payment accuracy vs. payment system complexity?
 - Which payment unit is most compatible with the overall trends in payment for Medicare post-acute care?
3. Are the costs that factor into providing physical, occupational, and speech therapy different enough to suggest modeling the disciplines separately?
 - What are specific resident characteristics that are expected to be particularly important to one discipline but not to others?

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Session 4: Understanding and Addressing Special Subpopulations

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Session Objective

Identify and examine differentiating characteristics of therapy service provision for special SNF subpopulations

Session Topics

- Residents with Prior Long-Term Care
- Beneficiaries at Hospital-Based Facilities

Session Time

1 hour 15 minutes

Residents with Prior Long-Term Care

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- Residents that enter SNF care following a long-term care (LTC) nursing home stay exhibit a different profile of therapy services than other SNF residents do
- Residents with prior LTC comprise a sizable portion of the SNF population
 - Stay definition: ~15%
 - Benefit period definition: ~10%
- Need to understand how best to address the unique relationship in this subpopulation between beneficiary characteristics and SNF therapy use

Residents with Prior Long-Term Care: Enrollment and SNF Benefit Use

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Characteristics	Prior LTC	No Prior LTC
Percentage dually enrolled at start of benefit period	83%	25%
Average number of utilization days in benefit period	46	35
Percentage with exhausted benefit (100 utilization days)	15%	6%



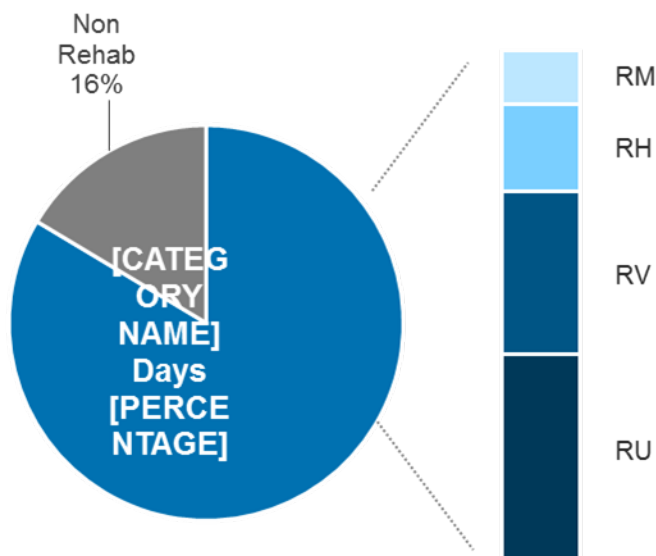
Residents with prior LTC are much more commonly dually enrolled in Medicare and Medicaid and more frequently exhaust their benefit than those without prior LTC.

Residents with Prior Long-Term Care: Therapy Services (1/2)

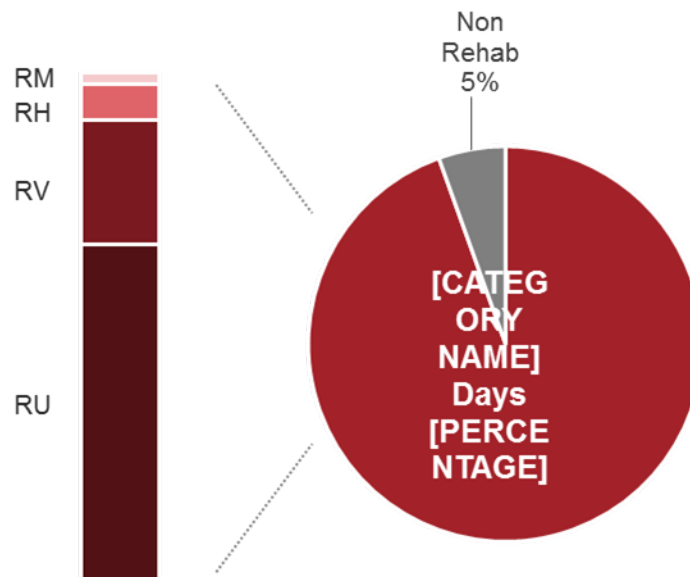
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Residents with prior LTC generally receive lower levels of therapy and have lower total therapy costs across a benefit period than those without prior LTC.

Prior LTC



No Prior LTC

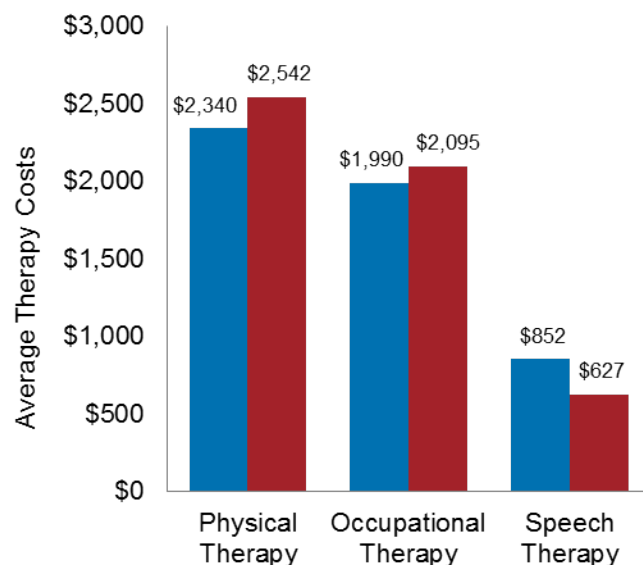


Residents with Prior Long-Term Care: Therapy Services (2/2)

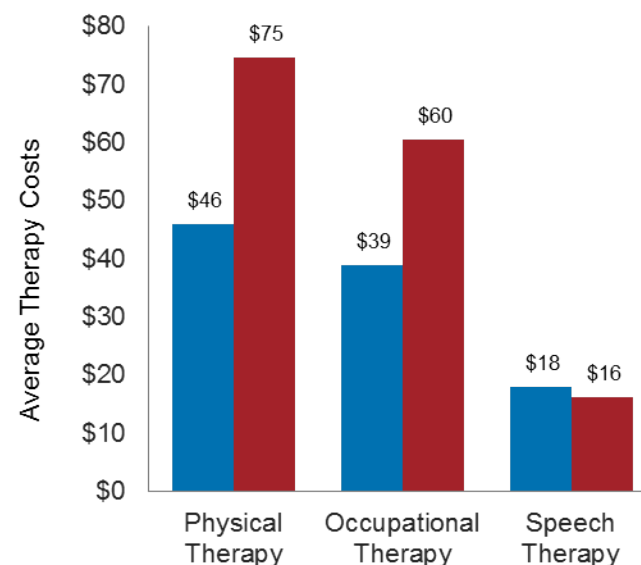
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Residents with prior LTC have comparable therapy costs across a benefit period, but have lower average therapy costs per day than those without prior LTC.

Per Benefit Period



Per Day



Residents with Prior Long-Term Care: Diagnoses

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Most Common SNF Primary Diagnoses		Percentage	Median Util Days
Care involving use of rehabilitation procedures	LTC	21%	41
	No LTC	39%	25
Other orthopedic aftercare	LTC	2%	51
	No LTC	6%	27
Pneumonia, organism unspecified	LTC	6%	33
	No LTC	2%	25
Heart failure	LTC	3%	34
	No LTC	2%	27
General symptoms	LTC	2%	37
	No LTC	2%	29
Disorders of muscle, ligament, and fascia	LTC	3%	38
	No LTC	2%	28
Other disorders of urethra and urinary tract	LTC	5%	33
	No LTC	2%	30
Chronic airways obstruction, not elsewhere classified	LTC	2%	38
	No LTC	1%	26

Residents with prior LTC have longer stays, given the same primary diagnosis at the start of the benefit period, as those without prior LTC.

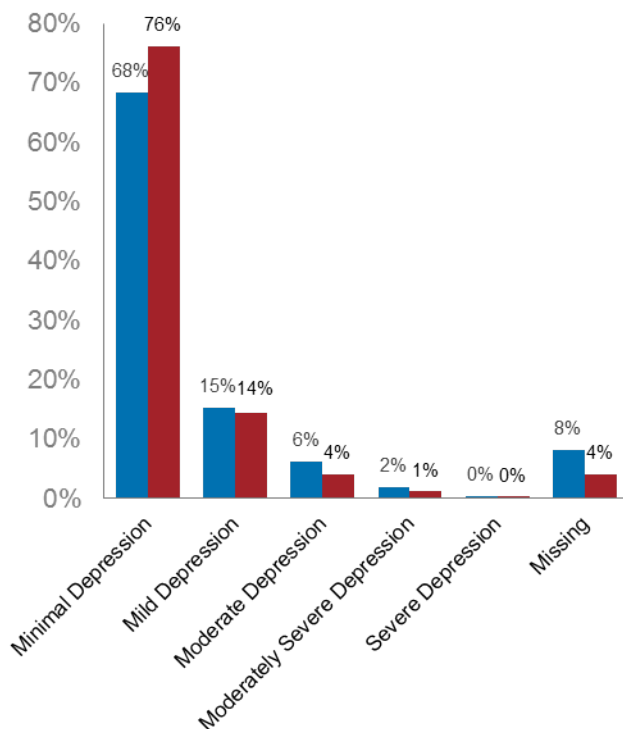
Similar trends are observed using diagnoses from the qualifying inpatient stays.

Residents with Prior Long-Term Care: Mood and Cognitive Patterns

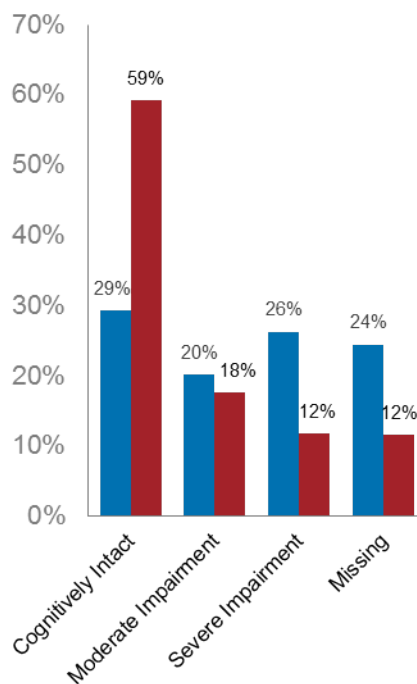
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Residents with prior LTC may have characteristics that complicate therapy services, such as cognitive issues, more frequently than those without prior LTC.

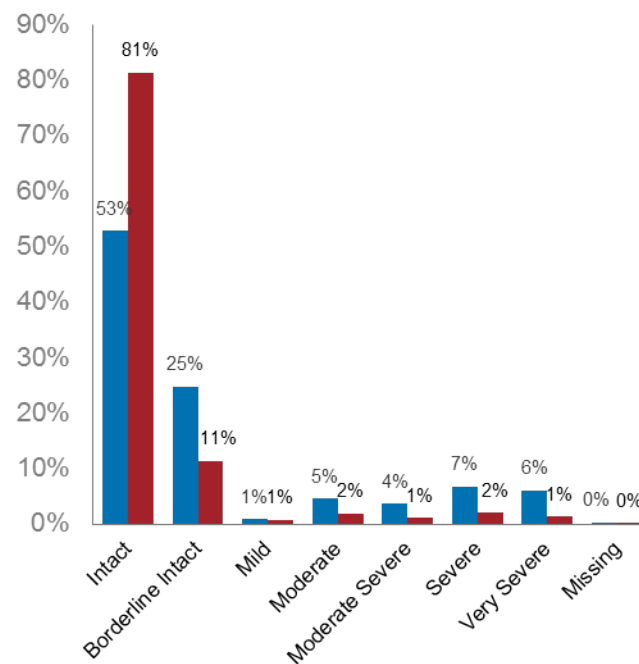
Mood Score



BIMS



CPS



Residents with Prior Long-Term Care: Functional Ability

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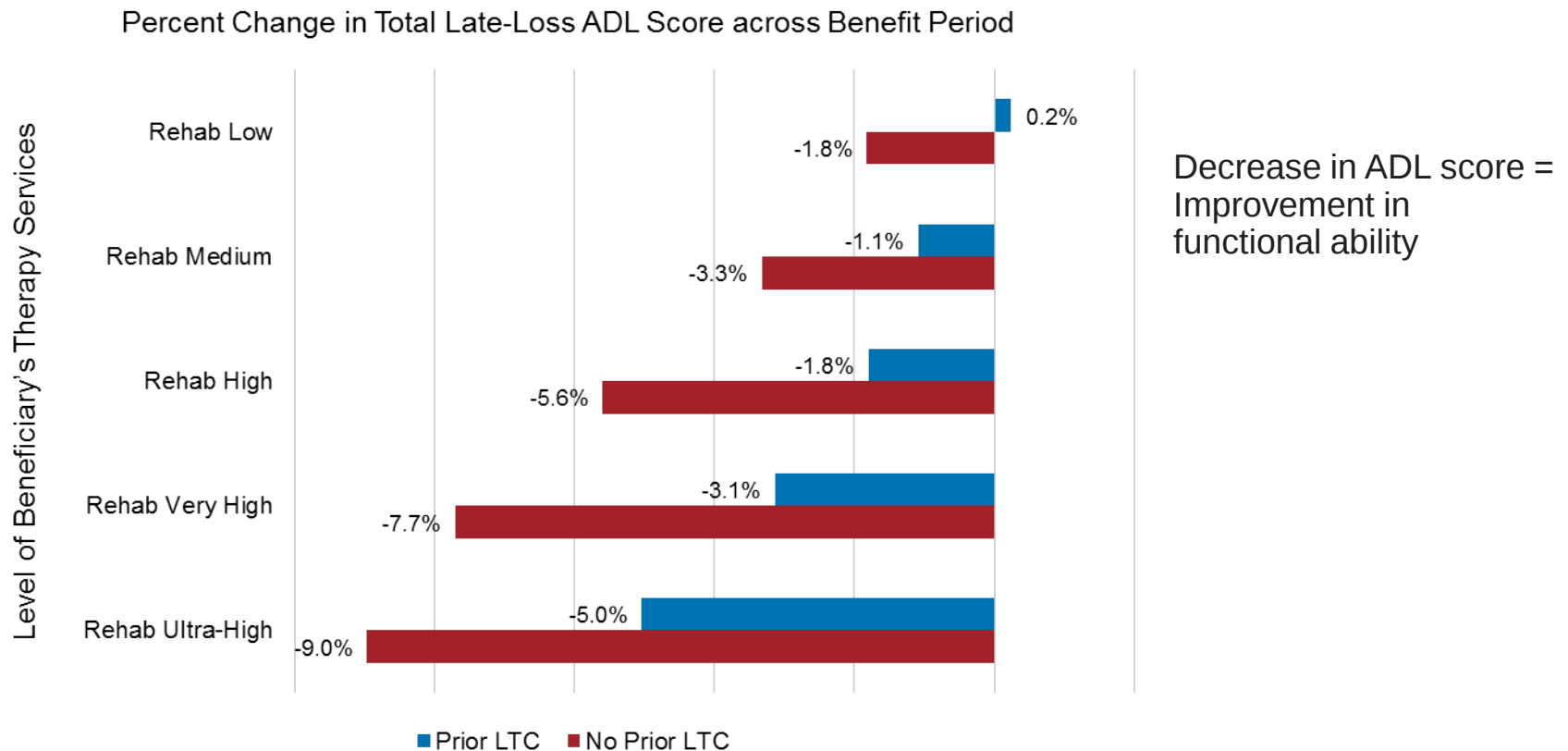
Self-Performance Score on 5-Day Assessment	Bed Mobility		Eating		Toileting		Transfer	
	Prior LTC	No Prior LTC	Prior LTC	No Prior LTC	Prior LTC	No Prior LTC	Prior LTC	No Prior LTC
0: Independent	4%	4%	19%	32%	2%	2%	3%	2%
1: Supervision	4%	6%	32%	41%	3%	5%	4%	6%
2: Limited Assistance	9%	18%	13%	12%	7%	17%	9%	19%
3: Extensive Assistance	67%	69%	22%	10%	61%	68%	56%	65%
4: Total Dependence	15%	4%	12%	4%	25%	6%	22%	6%
7: Occurred Once or Twice	0%	0%	0%	0%	0%	0%	2%	1%
8: Did Not Occur	0%	0%	0%	0%	0%	0%	2%	1%

Residents with prior LTC are more dependent when performing activities of daily living than those without prior LTC.

Residents with Prior Long-Term Care: Functional Improvement

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Residents with prior LTC exhibit less improvement in functional ability across a benefit period, controlling for their level of therapy services, than those without prior LTC.



Beneficiaries at Hospital-Based Facilities

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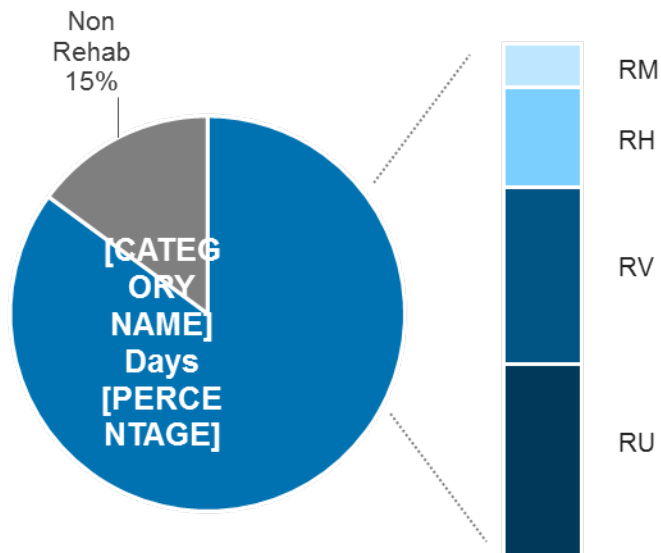
- Hospital-based facilities may treat beneficiaries that are more medically complex; they may also have different cost structures than freestanding facilities
- Beneficiaries at hospital-based facilities comprise an important portion of the overall SNF study population
- Need to understand how best to address the unique relationship in this subpopulation between beneficiary characteristics and SNF therapy costs

Beneficiaries at Hospital-Based Facilities: Therapy Services (1/2)

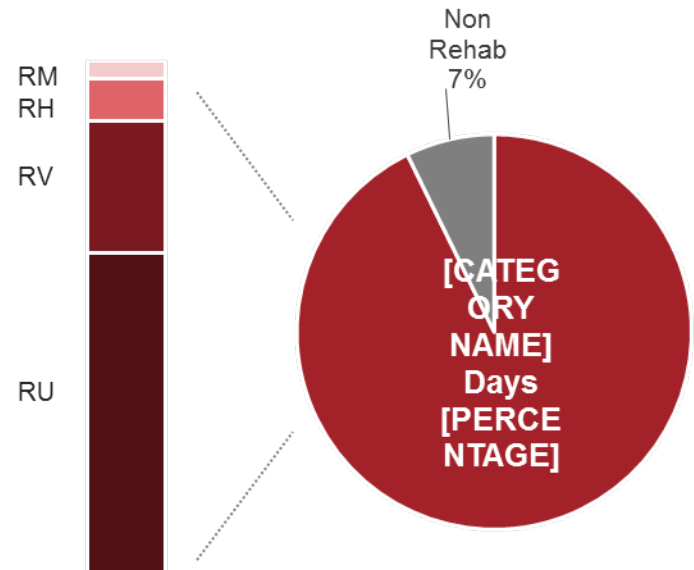
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Beneficiaries at hospital-based facilities generally receive lower levels of therapy than those at freestanding facilities.

Hospital-Based Facilities



Freestanding Facilities

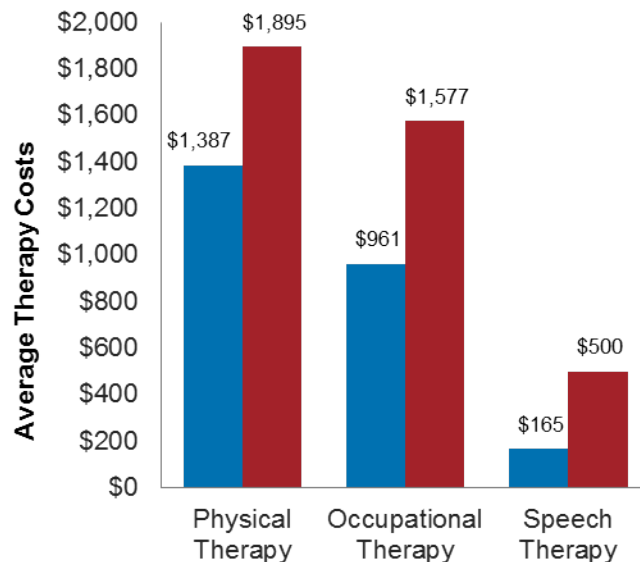


Beneficiaries at Hospital-Based Facilities: Therapy Services (2/2)

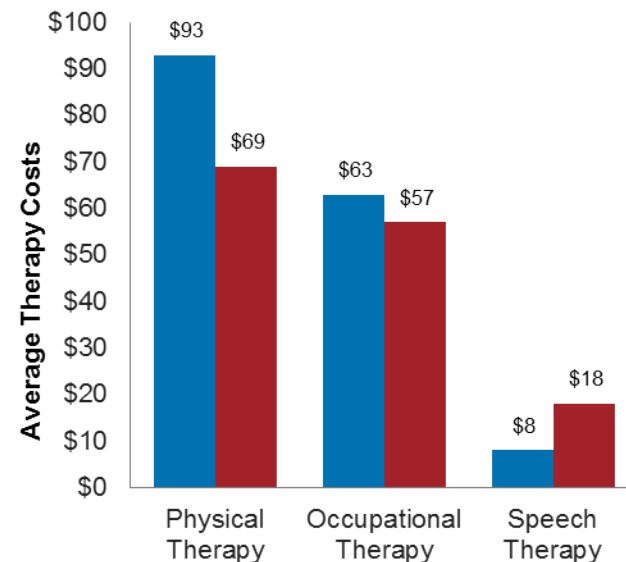
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Beneficiaries at hospital-based facilities have lower therapy costs across a stay, but have higher physical therapy costs per day than those at freestanding facilities.

Per Stay



Per Day



Average LOS: Hospital-Based 16 days, Freestanding 28 days

Discussion Questions

Preliminary Material | Not Intended for Release

1. In which ways do SNF beneficiaries with a prior history of long-term care in a nursing home differ from typical SNF beneficiaries?
 - Are there defining characteristics of these residents with a prior history of long-term care in terms of therapy use?
2. In which ways are the cost structures for therapy expected to differ between hospital-based facilities and freestanding facilities (e.g., type of staff)?
 - How do the residents at hospital-based facilities typically differ from those at freestanding facilities in terms of resident characteristics?
 - Should any of these resident profiles be considered separately in relation to therapy services specifically?
3. Are there any additional beneficiary or provider subpopulations that should be considered separately in relation to therapy services?

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Session 5a: Selecting Beneficiary Characteristics Predictive of Therapy Utilization

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Session Objective

Explore beneficiary characteristics available in current data for predicting therapy costs in the SNF population and their relative strengths and weaknesses

Session Topics

- Data Sources
- Variable Selection
 - Medical Condition
 - Functional Complexity
 - Future Steps

Session Time

60 minutes

Data Sources

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- Drew variables from three sources

MDS Assessments	• Characteristics taken from 5-day SNF PPS assessment • Also consider other PPS assessments or OBRA assessments
SNF Claims	• Information taken from all SNF claims for the stay/benefit period
Qualifying Inpatient Stay Claims	• Information taken from the inpatient stay linked to the SNF stay or the first qualifying inpatient stay for the benefit period • Currently only using diagnosis-related information to augment the MDS-based model

Variable Selection

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- Work to date for selecting beneficiary characteristics for inclusion in initial regression models:
 - Literature review
 - o Clinical literature
 - o Prior models developed (e.g., MedPAC's models)
 - Clinical review
 - Data quality cleaning
 - Statistical selection methods
- Reviewed variables from categories such as:
 - Medical conditions
 - Cognitive complexity
 - Mood
 - Pain
 - Impairments
 - Functional status



779 variables
considered for initial
testing

Variable Selection: Medical Condition

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Most Common SNF Principal Diagnoses	Percentage of Stays
Care involving use of rehabilitation procedures	36%
Other orthopedic aftercare	5%
Pneumonia, organism unspecified	3%
Heart failure	3%
Disorders of muscle, ligament, and fascia	2%
Other disorders of urethra and urinary tract	2%
General symptoms	2%
Other and unspecified aftercare	2%
Chronic airways obstruction, not elsewhere classified	1%

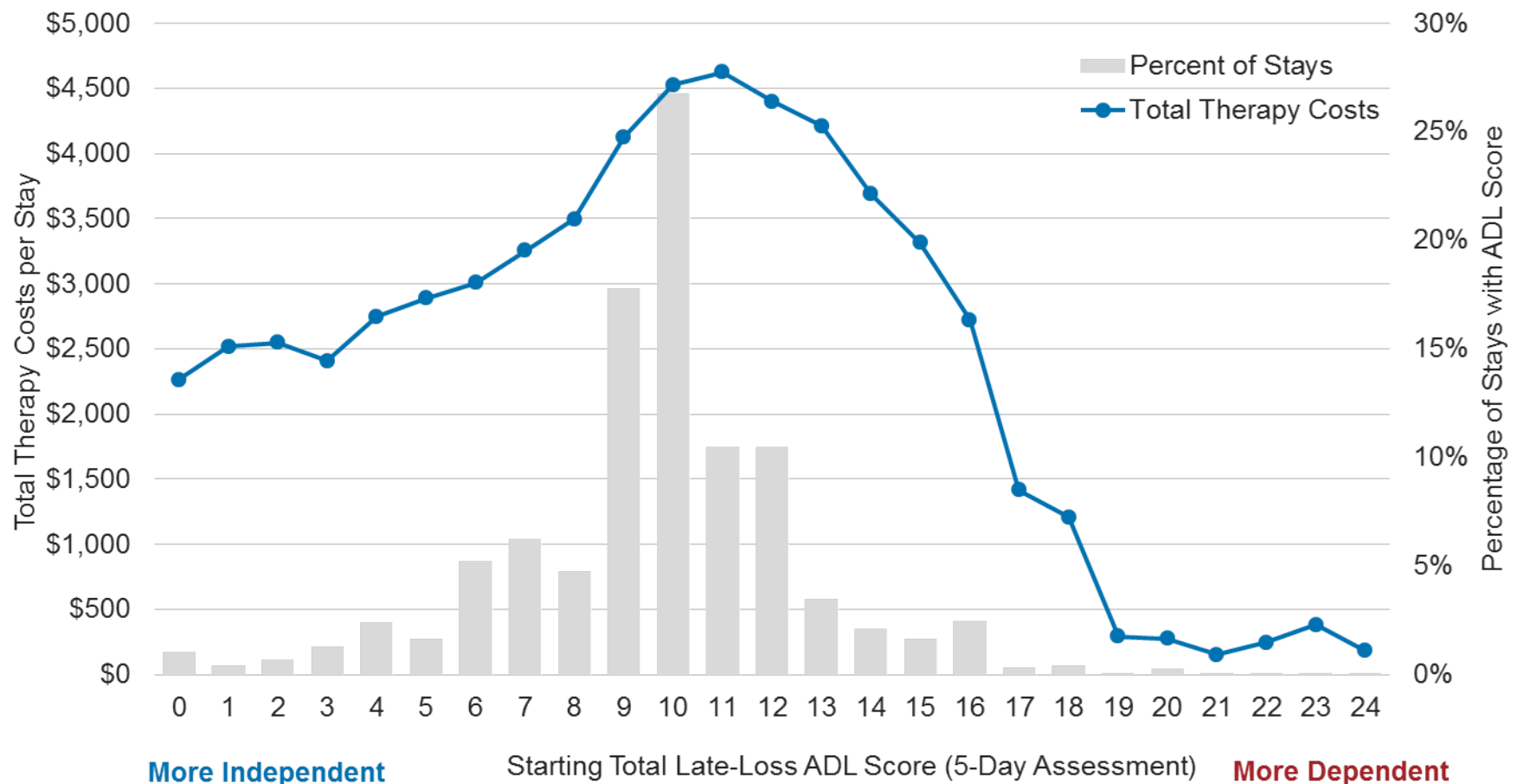
Most Common Qualifying IP Stay MS-DRG	Percentage of Stays
Major joint replacement or reattachment of lower extremity	8%
Septicemia or severe sepsis w/o MV 96+ hours	7%
Hip & femur procedures except major joint	4%
Heart failure & shock	4%
Kidney & urinary tract neoplasms	4%
Simple pneumonia & pleurisy	3%
Renal failure	3%
Intracranial hemorrhage or cerebral infarction	3%
Signs & symptoms	3%

The diagnoses from beneficiaries' qualifying inpatient stays provide **more specificity** than diagnoses from SNF claims, but are not necessarily directly connected to the SNF care.

Variable Selection: Functional Complexity

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A beneficiary's functional ability, as defined by late-loss ADLs, displays an **inverse u-shape** relationship with therapy costs.



Variable Selection: Future Steps

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- Conduct follow-up investigations of existing measures based on TEP recommendations
- Identify and vet additional measures through
 - TEP member recommendations
 - Academic and clinical literature
 - Clinical experts
 - Other Medicare settings
- Investigate statistical approaches to variable selection and trimming

Discussion Questions

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1. What are the most accurate ways of identifying the clinical condition underlying the need for therapy?
 - Primary diagnoses from qualifying inpatient stay claims? Primary diagnoses from SNF claims? Other approaches?
 - Does this method change for stays in a benefit period that have intervening hospitalizations?
2. What are the advantages and limitations of using ADLs to predict therapy utilization? In particular, consider the following dimensions of ADLs:
 - Self-performance vs. support
 - Payment vs. non-payment items
 - Ambulatory vs. other (e.g., eating)
3. Are there particular groupings of conditions that work well to predict the impact of comorbidities on SNF therapy utilization?
4. Are there specific beneficiary characteristics measured by the MDS that are believed to be important to therapy use and that should be included in the model? Are there reasons to consider excluding any MDS variables from the model (e.g., might lead to adverse incentives)?
 - Are there measures not currently collected that may be indicative of type and/or intensity of therapy utilization that should be considered for future collection?

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Session 5b: Identifying Limitations of Current Data and Models

Preliminary Material | Not Intended for Release

Session Objective

Understand capability of current SNF beneficiary characteristics to predict therapy costs and limitations of baseline characteristics' ability to predict length of stay

Session Topics

- Therapy Cost Regression Models
 - Distribution of Therapy Costs
 - Regression Framework
 - Comparison of Actual and Predicted Therapy Costs
- Length-of-Stay Effect
 - Adjusting Regression Framework
 - Comparison of Actual and Predicted Therapy Costs

Session Time

45 minutes

Therapy Cost Regression Models

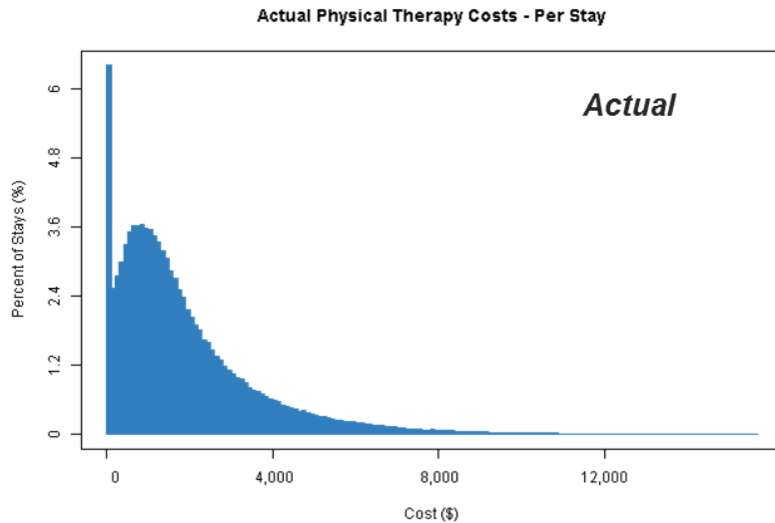
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- Current model designed to determine how well therapy costs can be predicted with baseline information (i.e., information available at the beginning of the SNF stay)
- Uses beneficiary characteristics from 5-day PPS assessment and qualifying inpatient stay

Therapy Cost Regression Models: Distribution of Therapy Costs

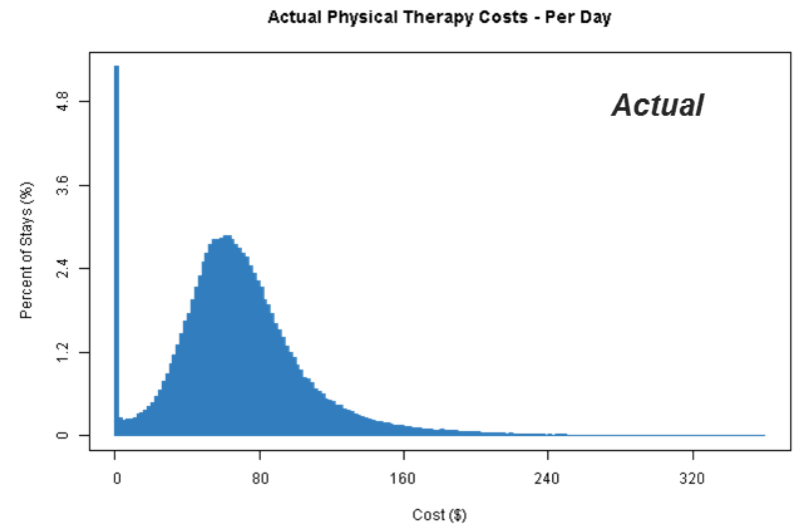
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Per Stay



- Bimodal distribution is right-skewed
- Subset of stays have zero physical therapy costs

Per Day



- Bimodal distribution
- Non-zero mode is consistent with a Poisson distribution
- Subset of stays have zero physical therapy costs

Therapy Cost Regression Models: Regression Framework

Preliminary Material | Not Intended for Release

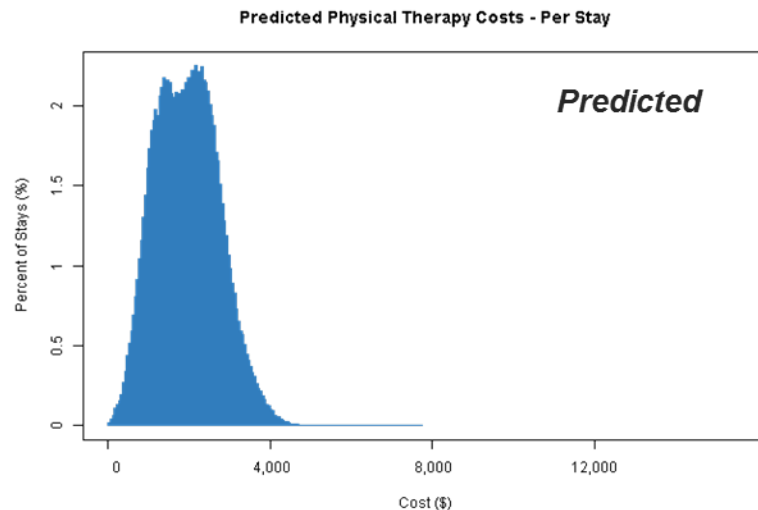
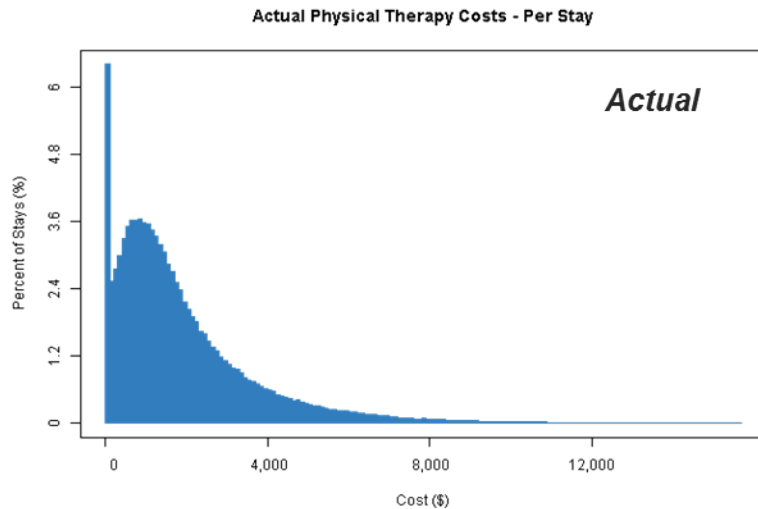
- Non-negative per-stay and per-day costs
- $Y=f(\text{medical condition, functional status, cognitive status, medical complexity, impairments, ...}, \epsilon)$
- Following previous literature, framework fits costs to a Poisson distribution

Model	Therapy Unit	Number of Variables	Pseudo R ² for Predicting Therapy Costs		
			PT	OT	ST
MDS Based Model	Per Stay	779	0.2142	0.2131	0.2254
	Per Day	779	0.106	0.0714	0.1633

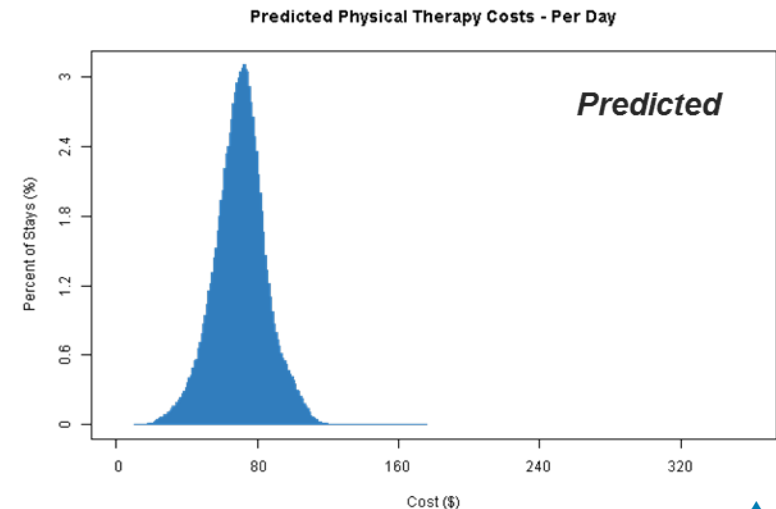
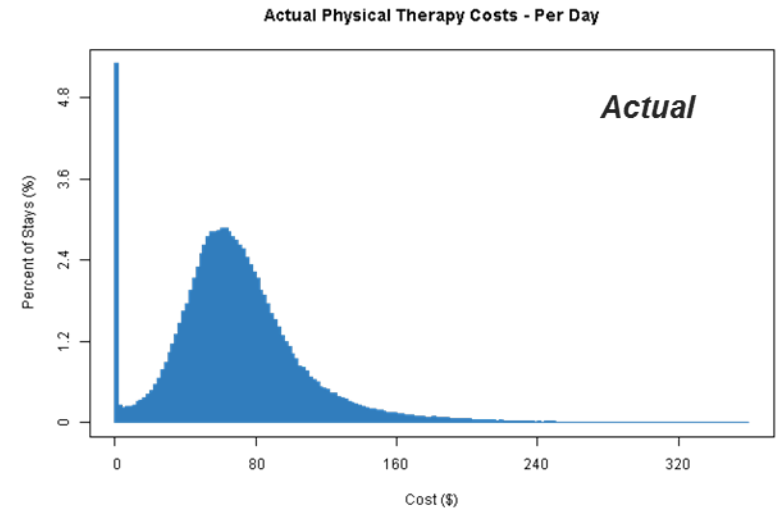
Therapy Cost Regression Models: Comparison of Actual and Predicted Therapy Costs

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Per Stay



Per Day



Length-of-Stay Effect

Preliminary Material | Not Intended for Release

- Initial setup does not explicitly address prediction of short stays or stays with no therapy costs
- Capturing the bimodal distribution (i.e., also capturing the stays with little/no therapy costs) may require a two-step model that predicts receipt of therapy services
- However, additional explanatory variables may solve the issue within same framework
 - e.g., proxy for LOS by measuring ADL changes across stay

Length-of-Stay Effect: Adjusting Regression Framework

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- Added interaction of starting total late-loss ADL score with change in functional ability over the stay
 - Monotonic increase, monotonic decrease, fluctuation (both increase and decrease), no change, only one assessment

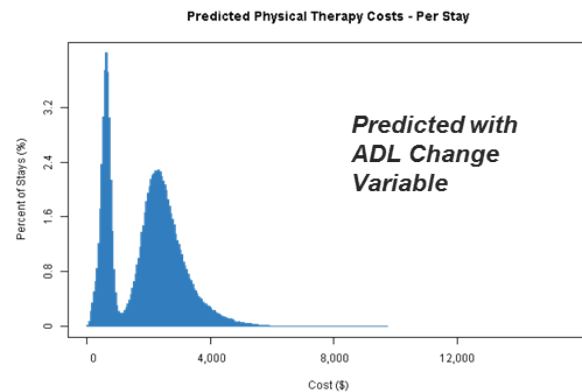
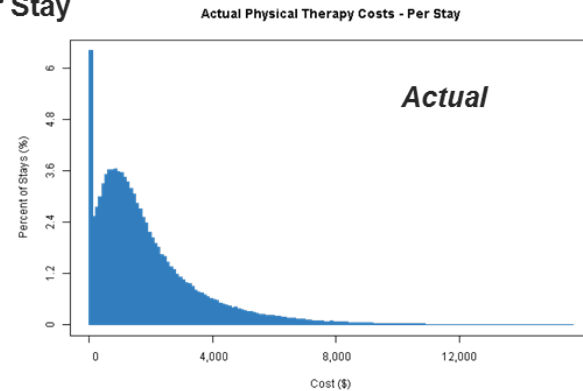
Dependent Variable	Pseudo R-Squared	
	Model 1 - No Interaction Term Included	Model 2 - Interaction Term Included
PT Costs per Stay	0.2142	0.4342
PT Costs per Day	0.1060	0.1082

- Addition of interaction term drives a large increase in model's predictive power

Length-of-Stay Effect: Comparison of Actual and Predicted Therapy Costs

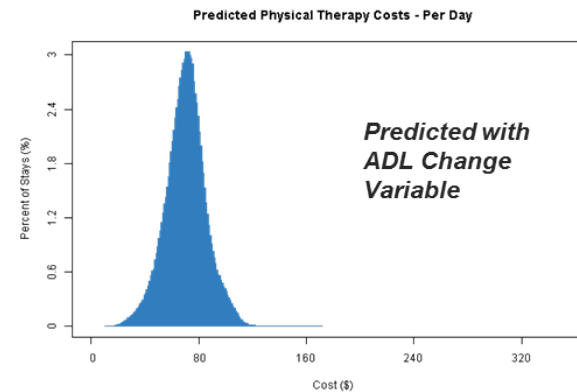
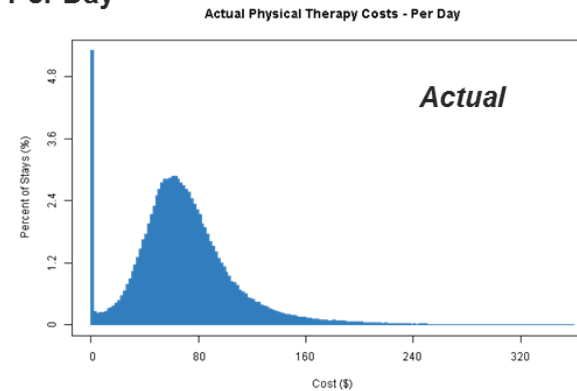
Preliminary Material | Not Intended for Release

Per Stay



Bimodal distribution =
ADL change variable captures
short stays

Per Day



Unimodal distribution =
ADL change variable does not capture
the zero therapy per-day group

Discussion Questions

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1. Are there resident characteristics that reliably identify residents who will receive little to no therapy? Residents who will have extremely short stays?
 - Are there characteristics that are currently only observable to facilities that should be collected by CMS to support payment?
2. What are the advantages and limitations of using beneficiary characteristics from the start of a stay to predict therapy costs?
 - What types of health events or status changes are most influential on a beneficiary's care while in a SNF? What are effective ways to capture these changes?
3. Most studies of therapy payment system alternatives use an assessment-based proxy to capture the effect of length of stay on SNF costs. Are there items on the MDS expected to be predictive of length of stay?
 - Are there beneficiary characteristics that could be collected upon admission to the SNF that would serve as good predictors of length of stay?

Outline

Preliminary Material | Not Intended for Release

Sessions		
1	a	Welcome and Introductions
	b	Project Overview
2		Evaluating Therapy Payment Alternatives
3		Identifying Therapy Costs for Part A Stays
4		Understanding and Addressing Special Subpopulations
5	a	Selecting Beneficiary Characteristics Predictive of Therapy Utilization
	b	Identifying Limitations of Current Data and Models
6		Exploring Additional Patterns in Therapy Utilization
7		Open Discussion

Session 6: Exploring Additional Patterns in Therapy Utilization

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Session Objective

Understand effects on payment accuracy of therapy utilization patterns that are less common or difficult to predict at the start of the stay

Session Topics

- Declining Therapy Use over Stay
 - Scheduled PPS Assessments
 - RUG Changes
- High-Cost Therapy Stays
 - Total Therapy
 - Different Therapy Disciplines
 - Ability to Predict

Session Time

45 minutes

Declining Therapy Use over Stay

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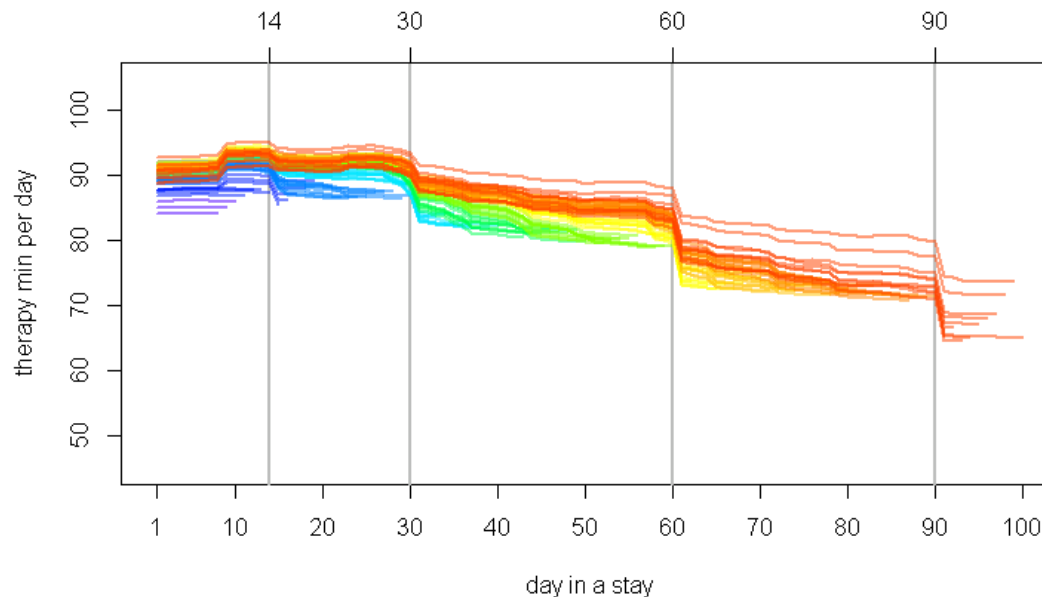
- Data shows decreasing therapy levels across a stay in the overall study population
- Beneficiary characteristics regression framework predicts therapy utilization with characteristics observed at the beginning of a SNF stay; does not explicitly address the interaction of length of stay and declining therapy levels
- Examining patterns in therapy use across a stay may help identify new characteristics or suggest options for resource-based adjustments that would increase the accuracy of therapy payment estimates

Declining Therapy Use over Stay: Overall Study Population

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- Average number of therapy minutes per day declines over the course of the stay
- Declining pattern exists for stays of different lengths
- Shifts observed primarily at scheduled PPS assessment windows

Therapy Minutes per Day vs. Day in Stay (for All Stay Lengths)

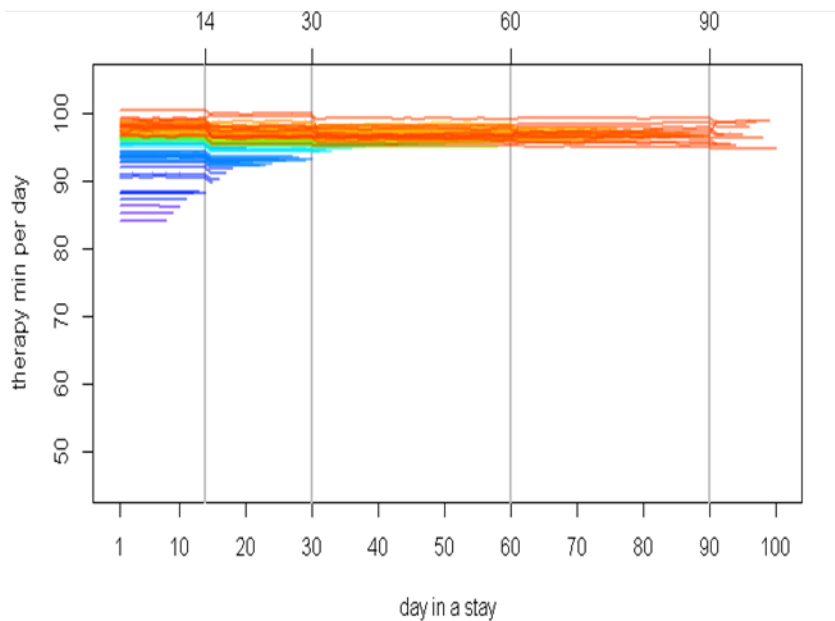


Declining Therapy Use over Stay: RUG Changes

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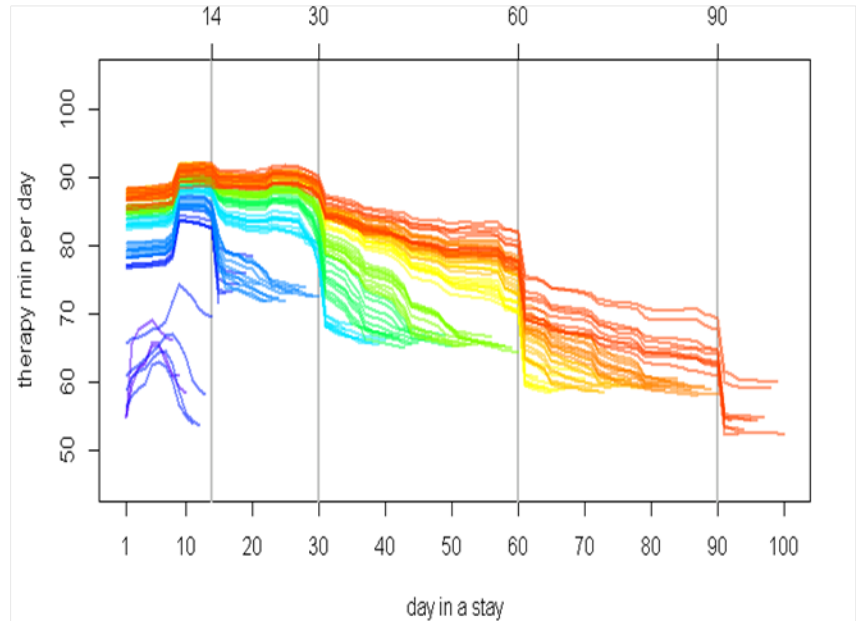
To decompose these results, separated Part A SNF stays into:

No change in RUG (73% of stay population)



For stays with no RUG change, average therapy minutes per day is **steady** during the stay

At least one change in RUG (27% of stay population)



For stays with at least one RUG change, average therapy minutes per day **declines** during the stay

High-Cost Therapy Stays

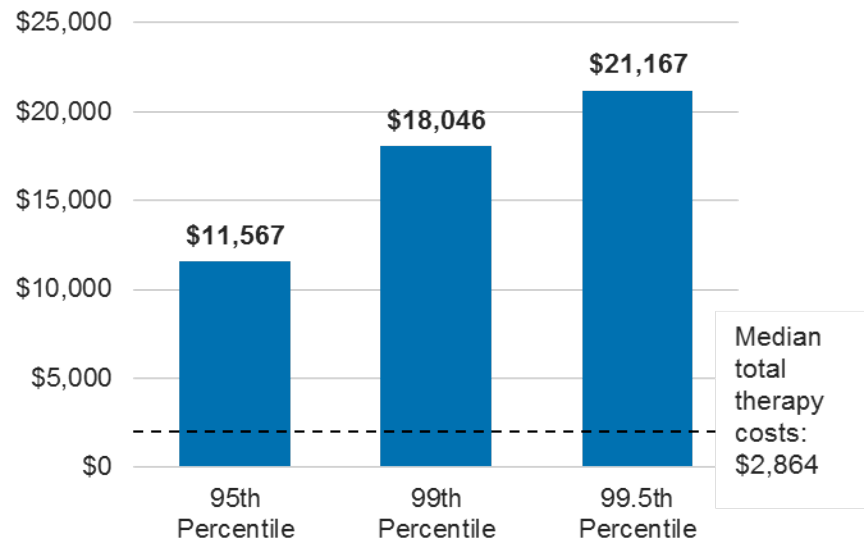
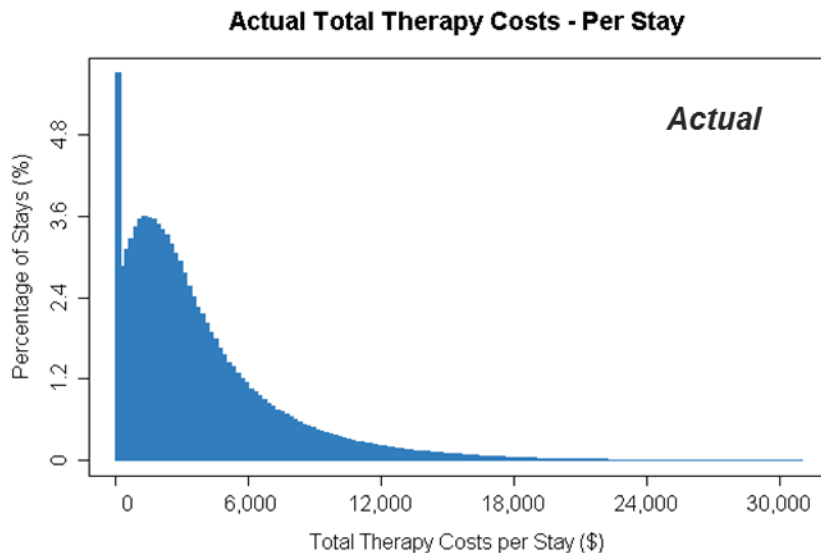
Preliminary Material | Not Intended for Release

- Data shows small percentage of stays with very high therapy costs
- Beneficiary characteristics regression framework predicts average cost given a beneficiary's observed characteristics, but may not capture unusual cases well
- Examining high-cost therapy cases may help identify new characteristics or suggest options for resource-based adjustments that would increase the accuracy of therapy payment estimates

High-Cost Therapy Stays: Total Therapy

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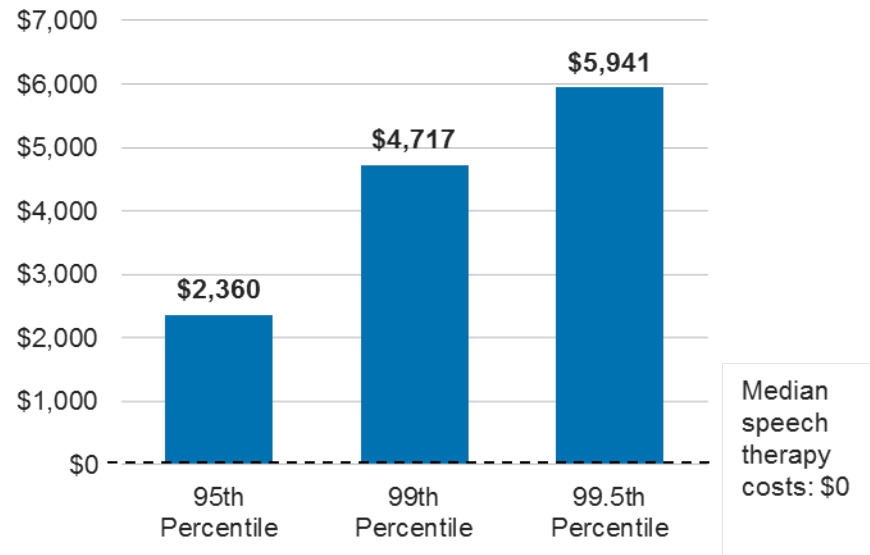
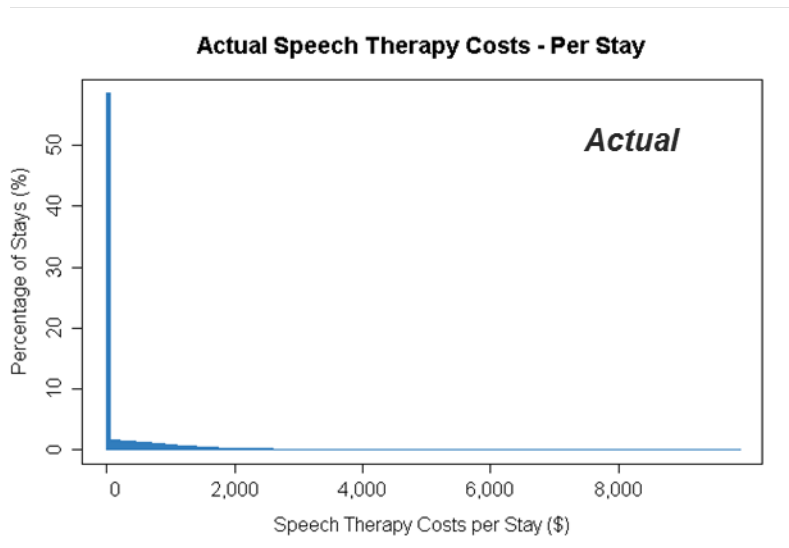
Total therapy costs for 95th (99th) percentile of stays are roughly 4 (6) times higher than 50th percentile



High -Cost Therapy Stays: Therapy Disciplines

Preliminary Material | Not Intended for Release

- Distributions of physical and occupational therapy costs per stay closely match that of total therapy
- Speech therapy costs differ markedly
 - 50th percentile does not receive any ST services



Discussion Questions

Preliminary Material | Not Intended for Release

1. What characteristics distinguish beneficiaries who change therapy levels during a stay (e.g., from Rehabilitation Very High to Rehabilitation High) from those who do not?
2. Are there types of beneficiaries who follow a different pattern of therapy utilization not observed in the broader SNF population (i.e., pattern other than stable or declining therapy use across a stay)?
 - What are options for identifying this subpopulation?
3. What are options for addressing the pattern of declining therapy utilization in terms of payment?
 - Can these shifts be mapped to changes in beneficiary characteristics?
 - How could this information best be incorporated into the choice of payment unit?
4. Are there beneficiary characteristics that are expected to be common across high-cost therapy cases?
 - Are there ways to identify that a beneficiary will be a high cost therapy case near the beginning of the stay?
 - Are there uncollected measures that are associated with high therapy cost beneficiaries?
5. Other than an outlier payment, are there other possible mechanisms for addressing high-cost therapy cases?

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Session 7: Open Discussion

Preliminary Material | Not Intended for Release

Session Objective

- Provide opportunity for all TEP participants to offer feedback and thoughts

Session Topics

- Open Discussion

Session Time

45 minutes

Open Discussion

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- All attendees, including observers, encouraged to comment on day's discussion
- Speakers may offer comments or direct questions to panelists, project team representatives, or other attendees
- Please limit remarks to allow time for others to participate

Thank You
