

An Explanatory Model for the Relationship Between Physical Therapists' Self-perceptions of Value and Care Prioritization Decisions in the Acute Hospital

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ABSTRACT

Purpose: The aim of the study was to understand how acute care physical therapists' perceptions of the value of physical therapy inform their decisions regarding which patients to treat.

Methods: This was a qualitative study using a grounded theory approach. Data were collected using semistructured interviews with a purposive sample of acute hospital physical therapists in the United States. Interview transcriptions were analyzed to derive codes and identify an explanatory model.

Results: Participants included 16 physical therapists from 4 hospital systems. Their descriptions indicate that care prioritization is influenced by a self-perception of value informed by both patient- and system-driven thinking. Patient-driven thinking prioritizes factors considered most important to individual patients (eg, improved functional independence). System-driven thinking prioritizes factors most important to the health system (eg, a certain patient population or productivity expectation). The relative contribution of system- and patient-driven thinking in prioritization decisions was variable from one participant to another.

Conclusions: In addition to the perceived value of physical therapy for individual patients, acute hospital physical therapists integrate organization-level factors into prioritization decisions. Future research should seek to understand how this may influence practice variation and identify practice patterns that simultaneously optimize outcomes considered important by both patients and organizations.

The 2007 Rothstein Debate hosted by the APTA deliberated the question, "Should physical therapists be practicing in the acute care setting?"¹ The content of the debate revealed that while acute care physical therapists perceive an inherent value in their role, which components of their work are most valuable and how that value manifests were unclear. In 2012, during the 43rd Mary McMillan Lecture, Dr Alan Jette emphasized the need to overcome these gaps by establishing the value of physical therapy, or to "discover what works in physical therapy, for what conditions, under what circum-

stances, to achieve what outcomes, and at what cost."² The practice of acute care physical therapists is complex due to wide variability in the populations of patients treated, their illness acuity, and their goals, along with the complex nature of the acute hospital environment.³⁻¹¹ This complexity makes an empirical evaluation of the potential value of acute care physical therapy challenging. Further, evidence indicates that physical therapist care in the acute hospital remains highly variable, and the effect of that care for many hospitalized patient populations is unclear.^{3,5,12-21}

As the US health care system continues its shift from volume- to value-based care,²²⁻²⁴ acute care physical therapists need to define and communicate their value—the per-unit cost of their effect on important outcomes.²⁵ While observing and quantifying the work that acute care physical therapists do is possible, understanding the underlying rationale for their care delivery decisions and the extent to which they feel those decisions affect important outcomes is imperative. One such decision is prioritizing particular patients over others since therapists do not see all hospitalized patients.²⁶ While previous qualitative studies^{4,5,8-11,27-30} have explored the roles and expertise of acute care physical therapists, evidence

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of how care delivery—including patient prioritization—is affected by self-perceived value, specifically the extent to which therapists incorporate anticipated outcomes into their care decisions, is lacking. Thus, in this qualitative study, we sought to understand how acute care physical therapists' perceptions of the value (specifically, the outcomes) of physical therapy inform their decisions regarding which patients to treat.

METHODS

Theoretical Frameworks

We followed the guidelines outlined in the Standards for Reporting Qualitative Research (Appendix 1).³¹ The methods were consistent with those of a “social constructivism” paradigm, which emphasizes that “realities are locally and specifically constructed.”³² We adopted this paradigm *a priori* to capture the unique experiences of each participant and the environments in which they worked. The study progressed using grounded theory. In this approach, researchers construct a theoretical model grounded in the data themselves using a series of codes to distill, sort, and enable comparisons across the data.³³ The study was approved by our Institutional Review Board (IRB_0099621).

Reflexivity: Researcher Characteristics

Our research team consisted of 3 research-trained physical therapists. One of these researchers has formal training in qualitative methods, and all 3 have experience using qualitative methods. Each has practiced (or currently do practice) as acute care physical therapists and remains actively engaged in conducting research that pertains to care delivery in this setting. Each considers the need to determine and maximize the value-added components of rehabilitation practice as part of their research agendas.

Participant Recruitment

Study participants were recruited via purposive sampling from the professional network of the primary investigator (PI). Recruitment was targeted at the hospital-level, geographically diverse, and varied in size (patient capacity and therapy staffing). Given those criteria, we also targeted hospitals where participants may be accessible for in-person interviews with the PI, who the research team had determined *a priori* would conduct each interview. Given a known travel schedule for the PI, we coordinated recruitment through therapy department managers who each, per our request, provided the names and email addresses of 4 physical therapists who had been practicing for varying lengths of time. Sixteen potential participants were contacted via email to provide study information and gauge interest in participation. Of these, 5 were known to the PI before the study (current or former professional colleagues).

Each participant provided informed consent before data collection.

Data Collection

Data were collected from semistructured interviews. When in-person interviews were not possible, video calls were used as a substitute to match the dynamics of an in-person interaction closely. Each interview was conducted in a private space located either in the hospital or at a mutually agreed-upon public location. The interviewer used a written guide for each interview (Appendix 2), which the PI pilot tested with colleagues from multiple disciplines (education, social work, and rehabilitation) prior to use. Interviews were scheduled to last 60 minutes. During each interview, the PI recorded field notes for use during the interview or consideration during the analysis. Each interview was audio-recorded with permission from the participant. Although the option for repeat interviews was agreed to at the end of each interview, none were conducted.

Transcription of each interview was completed by 1 of 3 transcriptionists (the PI and 2 research assistants). A standardized transcription method was used to ensure consistency in punctuation and the capture of nonspoken cues during each interview (ie, meaningful pauses and verbal emphases). Transcripts were used by the investigators for data analysis but not returned to participants. Unique participant identifiers were assigned so that investigators (except the PI) were blinded to each participant's identity and hospital affiliation during their analyses. Additional recruitment beyond the initial 16 participants was considered but was deemed unnecessary following analysis given thematic saturation (ie, no previously unobserved perspectives being shared by participants).

Data Analysis

All transcripts were stored in a secure, shared electronic drive. Each of the 3 researchers independently reviewed each transcript and constructed initial codes from the data. The codes that we sought to derive most explicitly were those that were consistent with topics pertaining to our primary question for this study. We independently reviewed the coded transcriptions in batches of 3 to 4 at a time. Throughout the coding process, we met every 1 to 2 weeks to discuss initial codes and categorize them into focused codes that were most common and relevant across our individual analyses. This process was iterative in that we continuously reconsidered prior codes and revisited previously reviewed transcripts to derive focused codes that were truly representative of participant perspectives. The focused codes informed the final explanatory model.

Establishing Trustworthiness

Lincoln and Guba³⁴ have articulated 4 criteria for trustworthiness of qualitative research: credibility, transferability, dependability, and confirmability.

We aimed for credibility by employing data triangulation (3 independent reviews of each transcript) and member checks (feedback from participants regarding the study's findings).³⁵ We sent an email to each participant to request that they contact us if willing to review the findings. For those who replied, we provided a written summary of the study's purpose, methods, key results, and conclusions with a link to an anonymous online survey (Appendix 3) through which we obtained their feedback.

We sought transferability by including a purposive sample of participants—those with varying levels of experience and working in hospitals that vary in location and size. Further, we sought a thick description from each participant to understand the settings in which they worked (from which they drew their perspectives), their perceptions relating to the value of their work, and the particular factors that they considered when making decisions about care prioritization, and how they felt these were interrelated; the findings of this study are rooted in that thick description. For dependability and confirmability, we maintained an audit trail to record the decisions we made regarding the study's methods and findings and noting the rationale for each decision.³⁶

RESULTS

Study Participants

All 16 participants—4 from each hospital—that we contacted agreed to participate. One hospital was in the West, one in the Midwest, and 2 in the Northeast. Three were in an urban setting and 1 in a suburban area. All were not-for-profit teaching hospitals. They ranged in size from 415 to 1167 beds, and the average number of full-time physical therapist equivalents per day in each hospital ranged from 11 to 36.

Of the 16 participants, 37.5% ($n = 6$) had been practicing in acute care for more than 10 years, and another 37.5% had been practicing in acute care for 3 years or less. Fifty percent ($n = 8$) held clinical doctorates (Table 1). In-person interviews were conducted with 13 of the participants, and 3 were interviewed via video call. The interviews ranged from 43 to 74 minutes in length. Of the 16 original participants, 11 (69%) agreed to review the study summary and provide feedback. We received completed surveys from 7 of these 11 participants (44% of the original participants).

Initial and Focused Codes

The derived codes are presented in the coding tree (see Figure 1). The initial codes are the primary factors described by participants as the perceived value of physical therapy treatment in the hospital and factors that participants consider when deciding how to prioritize care. Generally, these codes could be categorized simply as a "perception of value" or "prioritization decision factor." However, these could also be categorized as applicable

to individual patients, the health system in which the participant worked, or both. The participants' descriptions indicate interrelatedness among these focused codes in clinical practice. That is, when making care prioritization decisions, they consistently weigh what they perceive as valuable for individual patients and what they perceive as valuable to their health system and must do so while considering factors that relate to the status of each patient and the environment of their health system. Table 2 (with rows labeled for reference) provides quotes from participants that exemplify select initial codes with the applicable focused code.

Perceptions of Value

Participants described that factors like providing patient education, improving patients' experience during hospitalization, and providing timely discharge recommendations—among others—are valuable outcomes of their work. Providing education was perceived to be mostly of value to an individual patient, but providing timely discharge recommendations was perceived to be important mostly to the health system. Improving patients' experience, when described, was consistently perceived to be valuable to both—patients' satisfaction can improve when they are able to be physically active, and that can translate to higher scores on patient satisfaction surveys.

Each of the factors presented in the coding tree related to participants' perception of value could be similarly categorized as most important to patients or to health systems. The perceived contribution of a physical therapist to patients' length of stay reduction is an illustrative example of how these categories—and the factors themselves—overlap within the descriptions and how participants' perceptions varied from one another.

Every participant discussed that a physical therapist could help to reduce patients' lengths of stay. Most attributed this to making a timely discharge recommendation, which they described as being important to the system (see Table 2, row V6 as an example). A few participants also described a shorter length of stay as meaningful to individual patients. The few participants who expressed such a perception described that they could potentially influence the length of stay by facilitating a more rapid recovery of function—an outcome most commonly described as important to patients (see Table 2: V4). Many participants shared the belief that they played a role in improving functional status (see Table 2: V2), but most did not link it to length of stay reduction. Thus, while every participant described that a physical therapist could contribute to reducing the length of stay, their descriptions indicate variable perceptions of the mechanism for that contribution. Other outcomes perceived as valuable (eg, decreasing readmission risk and minimizing health-related complications) were similarly informed by a unique combination of factors

TABLE 1. Characteristics of Study Participants							
Participant ID	Sex	Total Years Practicing PT	Years in Acute Care	Years at Current Facility	Patient Populations Treated	Highest PT Education	Specialty Certification
PT01	Female	1-3	1-3	1-3	Cardiovascular	Doctorate	No
PT02	Female	>10	>10	>10	Cardiovascular	Masters	Yes
PT03	Female	3-5	3-5	1-3	Cardiovascular	Doctorate	No
PT04	Female	>10	>10	>10	Neurological, orthopedic	Bachelors	No
PT05	Female	1-3	1-3	1-3	Neurological	Doctorate	No
PT06	Female	>10	5-10	3-5	Cardiovascular, general medicine, oncology	Bachelors	No
PT07	Female	3-5	3-5	1-3	General medicine	Doctorate	No
PT08	Female	>10	>10	>10	General medicine	Bachelors	No
PT09	Male	>10	5-10	5-10	General medicine	Masters	Yes
PT10	Female	1-3	1-3	1-3	Cardiovascular, General medicine	Doctorate	No
PT11	Female	>10	>10	>10	Cardiovascular, general medicine, neurological, oncology, orthopedic	Bachelors	No
PT12	Female	>10	>10	5-10	Cardiovascular	Bachelors	No
PT13	Female	<1	<1	<1	General medicine	Doctorate	No
PT14	Female	1-3	<1	1-3	Cardiovascular	Doctorate	No
PT15	Female	<1	<1	<1	Cardiovascular, orthopedic	Doctorate	No
PT16	Male	>10	>10	5-10	Neurological, orthopedic	Masters	Yes

that participants considered important to individual patients or to the health system.

Prioritization Decision Factors

Participants universally reported more patients needing therapy services than could be seen by available staff. This requires therapists to prioritize decisions regarding which patients could be seen (and in what order) and which could not. Among the system factors that affected prioritization decisions were expectations as to the timeliness of completing initial evaluations (see Table 2: P2), expectations for productivity, for example, patients treated per day, new patients evaluated per day, time in direct patient treatment (see Table 2: P4), and dynamics within inter- and intradisciplinary teams (see Table 2: P8). Most described that their hospitals' policies required that patients with certain diagnoses or under the care of particular physicians would be prioritized for treatment (see Table 2: P12). Some indicated that they prioritized care consistent with a perception of personal ownership for particular patient populations or units/wards within the hospital, for example, in an intensive care unit (ICU) (see Table 2: P9).

Participants described an effect on prioritization decisions by patient-level factors like the patient's physical

availability, for example, gone for an MRI scan (see Table 2: P1), the difference between current and prior functional levels (see Table 2: P13), and expected functional prognosis, as it related to the nature and acuity of their illnesses, injuries, or procedures. Some participants also described considering patients' social/contextual situation, for example, family support, home environment, and insurance provider, as an important indicator of their need (or not) for physical therapist intervention (see Table 2: P14).

The individual factors affecting prioritization decisions apply either to individual patients or to the health system environment. However, when attempting to make care prioritization decisions, participants' descriptions indicate that both had to be considered simultaneously. In Table 2 (P3), for example, PT09 describes attempting to reconcile a historical system-driven trend to prioritize new evaluations over treatments with an evolving practice in the medical ICU to complete evaluations "when it is most appropriate for the patient." Table 2 provides examples of this interrelationship between patient- and system-level factors and their effect on care prioritization decisions (specifically for productivity expectations, staffing models, interdisciplinary team dynamics, and a patient's functional prognosis).

Primary question: How do physical therapists in the acute care setting use their self-perception of the value of physical therapy to guide their decisions regarding which patients to treat?

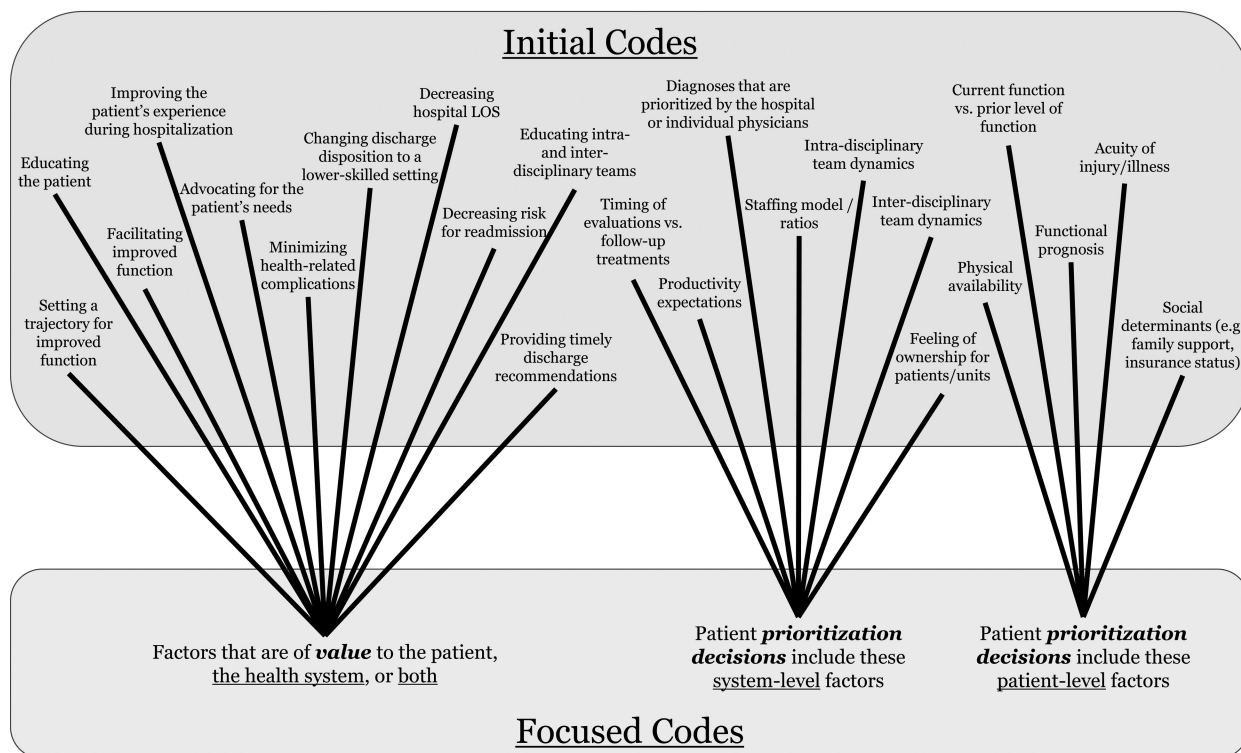


FIGURE 1. Coding Tree.

Explanatory Model: System- and Patient-Driven Thinking

From these interrelated focused codes, we derived the following to explain the relationship between acute hospital physical therapists' self-perceptions of value and their care prioritization decisions (see Figure 2):

Prioritization of care delivery is influenced by a unique underlying perception of value, which is informed by individual tendencies toward system- or patient-driven thinking.

System-driven thinking is characterized by considering mostly the predetermined and stated needs of the specific health system. Patient-driven thinking is characterized by considering mostly the characteristics and needs of individual patients. Participants were informed by both, but with variable levels of each.

An illustrative example of this model, discussed often in various contexts by participants, is prioritizing patients in the hospital following an elective total joint arthroplasty (TJA). In this case, strict system-driven thinking is consistent with an administrative standardization for the frequency and mode of physical therapy interventions for *all* of these patients. For example, PT07 stated:

If they have any type of ortho injury [or surgery], we're supposed to see them [twice] daily.

Conversely, strict patient-driven thinking is consistent with considering each patient's unique presentation following TJA and matching the frequency and mode of physical therapy interventions with the patient's *individual* need. For example, PT03 stated:

After knee replacements, [patients] still need some skilled [physical therapy] for cues and gait and [education on] their exercise program, but it's just so cookie-cutter that you don't need a [physical therapist] to do it all. I mean, do we really need to see these people [two times per day]? I don't think so ... How are you going to justify seeing an ortho patient twice a day when there are plenty of patients who didn't get seen at all that day?

Participants also frequently discussed system-defined productivity measures as a primary metric to which they were accountable, which may or may not play a role in how prioritization decisions were made. System-driven thinking, for example, was exemplified in this quote from PT09:

We always have this underlying concern about keeping our productivity high. So, you always have to have a couple extra patients in your back pocket in case something falls through with somebody else so you can maintain your productivity ... You

TABLE 2. Participant Quotes as Examples of Select Initial Codes and the Explanatory Model

Focused Code	Row Label	Initial Code	Example Quote	System- or Patient-Driven
Perception of value	V1	Educating the Patient	"My opinion is that I want to see the patients that aren't getting specific education or something else that we can provide versus just walking with the patient or pulling them out of bed." (PT10; emphasis from participant)	Patient-driven
	V2	Facilitating improved function	"The main role [of acute care physical therapists] to me ... is to evaluate [a patient's] functional mobility [at the time] we see them and work on getting it better." (PT06)	Patient-driven
	V3	Decreasing hospital length of stay	"You know, we're looking how long have they been here, when did we get the order. We're more driven in that direction—you know, length of stay. We're trying to get these patients out of here as quickly as possible so that definitely drives if we haven't seen somebody and the order has been there for three days." (PT12)	System-driven
	V4		"But I do think, since we're kind of the only ones concentrating on those deficits, we're influencing the length of stay both in the ICU and in the hospital in general because we're attempting to get those patients back to their baseline and then also training the family in order to get them home. No one else really does that on a mobility/ADL side of things. And so, you know, if someone is here and they're not independent with ADLs and they kind of need to be independent with those things before they go home, I'm the one addressing that or OT is the one addressing that and so, until they're able to do that, they're still in the hospital." (PT05)	Patient-driven
	V5	Educating intra- and interdisciplinary teams	"I went to [a PT colleague] and was like, 'Why can't we mobilize some of these people?' And we realized it was an issue across some of the ICUs. Some doctors would let us move these complex patients and some wouldn't. So we're like, 'That's clearly an issue. Why would the intensivist who's on [shift] be the reason we're doing something or not doing something?' So we wrote a protocol on the mobility expectations of patients on specific devices because we're like, 'This is an issue and this is how we're going to fix that issue.' And it was actually received super well." (PT03)	Patient-driven
	V6	Providing timely discharge recommendations	"The doctors can let us know that it's important to see [a patient] because they could leave if we see them. So they need to know PT's input into that. That's probably the highest priority, are those patients, because it's always about getting them out of here. Length of stay is a big issue. So, those are our highest priorities, are the patients that it's impacting their discharge." (PT04)	System-driven
	V7	Changing discharge disposition to a lower-skilled setting	"[In the ICU], I help by working on their activity tolerance so they can do more on the floor so they can hopefully go home." (PT13)	Patient-driven
Care prioritization decisions	P1	Patients' physical availability	"It's more annoying than anything because sometimes ... the patient is out of the room for something or someone else is seeing my patient at 11:00 when I had scheduled with nursing or respiratory to come and see the patient." (PT13)	Patient-driven

(continues)

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TABLE 2. Participant Quotes as Examples of Select Initial Codes and the Explanatory Model (Continued)

Focused Code	Row Label	Initial Code	Example Quote	System- or Patient-Driven
	P2	Timing of evaluations vs follow-up treatments	"I go up to the floor, check with the medical staff on the evals and usually prioritize patients starting with the evals first and then I try to prioritize ... people who weren't seen the day before ... I think we're supposed to see [new patients] within 24 hours of actually getting the order." (PT05)	System-driven
	P3		"And, you know, traditionally here we've been encouraged to see evals early. And I still play with that in the back of my mind a little bit because I'd like to kind of get them out of the way. But we're kind of working in this paradigm in the MICU about doing an eval when it's most appropriate for the patient. So I think most of the staff that work there, including myself, if it's just a range of motion patient that we've got eval orders on, we would typically wait till the end of the day to do that one to see if there's any patient changes where we can do some functional stuff. And sometimes we don't catch them 'til the next day. Usually we catch them within 48 hours. Um... that has not been the traditional model so it's still kind of up in the air a little bit for how we're approaching that. Because we used to just go in and do a range of motion eval, call it an eval, and we're changing that paradigm a little bit for where we can address the need of the patient." (PT09)	Patient-driven
	P4	Productivity expectations	"Goal is to get 24 units. An eval is four units so every new eval is like, 'Great yeah! I can do that.' So it is kind of the goal to do three in the morning and three in the afternoon." (PT15)	System-driven
	P5		"Occasionally, I certainly think I would be more productive as far as billable units if I had a huge list because there's endless opportunities of who you can see. If you can't see one, you just move on to the next one. And on days when we're not as well staffed, yeah, I'm definitely more productive. But is more productive necessarily what's best for the patient? I don't think so, no. If I can identify patients that need me the most and focus on getting those sessions even if it means me waiting 20 minutes for the patient to be available and not going to see somebody else because if I see somebody else and then come back, the patient might not be available. You know, if I really focus on patients that need me, yeah, productivity is maybe not the best." (PT01)	Patient-driven
	P6	Staffing model/ratios	"When I first started here, [balancing the priority list with my own clinical decision-making] was really hard because it was like, these people really do need it and they really would benefit. But I feel like I can't prioritize them because either (a) I have too many other priorities or (b) it's just not justifiable, it's just like, 'Man, it would be great, but...' You know, if we had a one-to-one ratio for everyone then life would be great. So now that I'm a little further in, I think, I would actually almost say I've maybe gotten a little jaded." (PT14)	System-driven

(continues)

TABLE 2. Participant Quotes as Examples of Select Initial Codes and the Explanatory Model (Continued)

Focused Code	Row Label	Initial Code	Example Quote	System- or Patient-Driven
	P7		<p>"I would say in general, the staffing at our hospital is, I have come to realize, incredible. We have the staffing to be able to do what we want to do, which is to be able to see every appropriate patient every day and not even just every day, but multiple times a day, if appropriate. And I've realized that most other institutions don't have that time and resources are always the biggest constraint that keep people from being able to do what they want to do." (PT01)</p>	Patient-driven
	P8	Interdisciplinary team dynamics	<p>"On some floors, it is a struggle...to get other staff to get [a patient] out of bed. Like, nursing staff, to get [a patient] out of bed. Even just to the chair. Even if it's a dependent Hoyer-lift transfer to the chair. It is a battle to get that. And so, sometimes I feel like literally, if therapy does not come, they're going to just sit in bed and, you know, get a nice ulcer and who knows what else. Then there are other floors, like the one I'm on right now, that I'm going to see someone for therapy and they're coming back from a walk and I'm like, 'Man, I wish you would have scheduled with me. Now you're pooped and you've already done three walks today.'" (PT14)</p>	System-driven
	P9		<p>"I mean, I feel like if you probably ask other staff they would say that I over prioritize ICU patients and like medically complex patients. I mean, I got that on my annual review, that I over prioritize medically complex patients, but to me, those patients are going to be bedbound if therapy is not involved in their mobility. Nursing isn't necessarily ... like if they're max assist of 2 or dependent with their mobility they need the skilled level of mobility to mobilize, just to move, the nurse to manage some of the lines and tubes, and a perfusionist to manage other things. It's literally the definition of multidisciplinary mobility and it's not gonna happen without PT. So to me, I would rather spend my time <i>there</i> where that patient might then get to mobilize and have improved respiratory status because of it versus like quote-unquote walking a patient, which I feel like gets overdone. Is that actually skilled [for a Doctor of Physical Therapy]? Why couldn't a tech or someone do that?" (PT03, emphasis from participant)</p>	Patient-driven
	P10	Functional prognosis	<p>"[I may not see] people who I feel the nurses can maybe, at least get them out of bed easily enough to a chair. They are going to a rehab facility. And this is unfortunate because, the truth be told, anyone going to a rehab facility needs therapy! That is why they are going to rehab! But, if they are going to rehab, in this facility, and we don't have time to see them, they are probably less of a priority." (PT11)</p>	System-driven

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TABLE 2. Participant Quotes as Examples of Select Initial Codes and the Explanatory Model (Continued)

Focused Code	Row Label	Initial Code	Example Quote	System- or Patient-Driven
	P11		"Do I spend half an hour working on balance with somebody who is walking independently through the halls and is doing everything themselves, but might have...oh their balance might be just a little bit off from normal? Probably not, because my time could be better spent with that person who wants to be able to go home, but needs assistance to do anything. You know what I'm saying? That person might still benefit from therapy, but they can go to outpatient. They don't need for my time to be spent with them there at that moment." (PT16)	Patient-driven
	P12	Diagnoses that are prioritized by the hospital or individual physicians	"So, you have to know, usually their diagnosis, what the order is, and who the doc is, because you're going to know based on the doctor. Who wants their patients seen that day? Otherwise you're going to get a phone call or a page. Or when they're making rounds they're going to flag you and say, 'I need you to see so-and-so today.' So, you know, [prioritization] is driven by those things. Probably diagnosis and physician." (PT08)	System-driven
	P13	Current function vs prior level of function	"You have to look at the prior level of function before they came into the hospital. If you have someone who was walking around taking care of themselves—able to do stairs at home, is maybe working full- or part-time, or normally is driving and then they come in and they need max assist to sit at the edge of the bed, or can barely tolerate sitting up or participating in therapy for more than 15 or 20 minutes. Those are the patients who need more therapy because they were doing so much better before and now, because they are so sick, they just don't have the activity tolerance." (PT13)	Patient-driven
	P14	Social determinants	[I] think about those patients that I know are going to be walking...I've given them everything that they need [and] their family is supportive [so]...I know it will be ok if they're not seen." (PT10)	Patient-driven

kind of have that little bit of leeway with your day ... I hear that as part of a drive, a motivation—to have more patients than you can handle because we know there's going to be problems with—it's the nature of acute care that you're going to run into roadblocks or schedule conflicts or something like that.

A patient-driven mindset, however, is evident in this statement from PT02:

I have always hated productivity. I have been fighting against productivity my entire career. Because you could be a productive therapist and do nothing of value for your patient. If all you ever did was go room to room and do bed exercises with people (I am not saying bed exercises don't matter, because they do) but you could have an amazingly high

productivity and have not changed anything about the patient's intelligence, or discharge plan, or communication with anybody else, or anything else ... I mean, to me, [productivity] doesn't speak in any way to the value of our services.

An important feature of this explanatory model is the *individuality* associated with it. That is, each participant was unique as to the extent that he or she considered the health system's needs or the needs of individual patients. Among participants, no individual expressed perceptions that were wholly consistent with one or the other at the extreme ends of system- versus patient-driven thinking. Rather, each described their perceptions such that it was evident that they had adopted some characteristics of each into how they perceived and prioritized care.

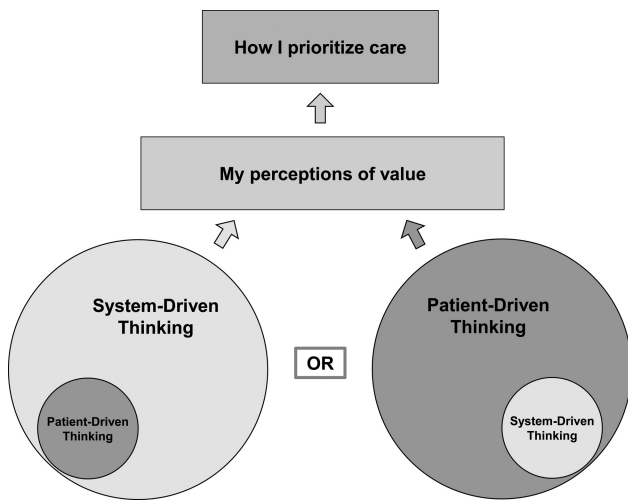


FIGURE 2. Explanatory Model. Notes: "System-driven thinking" is characterized by considering *mostly* the predetermined and stated needs of the specific health system. "Patient-driven thinking" is characterized by considering *mostly* the characteristics and needs of individual patients.

Participant Feedback

Of the 7 participants providing feedback via the anonymous survey, 6 (86%) strongly or somewhat agreed with the primary finding as stated in the summary: "For individual physical therapists, either system-driven or patient-driven thinking is the primary driver of his or her perceptions of the value of physical therapy interventions in the acute care setting, which informs how he or she prioritizes patients for physical therapy care delivery." The seventh participant selected "Unsure." In the written commentary accompanying this question, one of the participants in agreement specifically discussed productivity expectations:

It seems as though some therapists are very driven to reach a productivity goal and that this may determine treatment choices made such as maybe not using equipment during the session because obtaining it would take time and wouldn't count toward system measures. Other therapists who value personalized care end up spending 10+ hours when they are being paid for 8 in order to provide truly individualized care, and yet they still try very hard to meet productivity expectations. (Survey01)

Another confirmed our finding that both patient-driven and system-driven thinking inform individual practice, but that one may be more prevalent. The participant noted:

I think that [physical therapists] have a default stronger system of either system or patient. However, I think that there is a balance between the two, and that balance is always shifting. For me, I think I am more patient driven ... maybe 80% patient and 20% system. But that might shift depending on supervisors, the hospital I work in, if I'm training somebody else, my level of burn out, etc. (Survey05)

Interestingly, when asked to rate their level of agreement with the statement, "The value of physical therapist services in the acute care setting is clearly defined and informs how I prioritize my patients for care," only 4 (57%) participants selected "Somewhat agree." Of the other 3, 1 selected "Unsure," 1 selected "Somewhat disagree," and 1 selected "Strongly disagree." Those who indicated their agreement shared interesting perspectives, including:

I think the value of physical therapy in acute care is somewhat defined based on the research that is out there ... [For] example, research has shown that early mobility improves outcomes and decreases length of stay and mortality, so we know those patients should be prioritized. But attempting to prioritize [individual patients within an ICU] who would benefit from early mobility, that prioritization is not completely defined. (Survey04)

We clearly have work to do on defining value, but I believe that our services are valued by other members of the team and our patients. (Survey01)

One of the participants who disagreed with the statement indicated that:

Value varies widely based on who you ask and where you are. Value might be seen in helping get everyone walkers prior to discharge ... [or] in sitting in rounds and discharge meetings rather than seeing patients. (Survey03)

Overall, all 7 participants indicated that the study's findings were consistent—n = 3 (43%) rated "Very consistent" and n = 4 (57%) rated "Somewhat consistent"—with their own perceptions of how physical therapy is delivered in the acute care setting. In association with this question, one of the participants summarized their perceptions by noting:

I have worked at a few different facilities and am familiar with many of the examples that were given regarding care delivery and prioritization. Practices are variable based on the priorities of different facilities, nursing cultures, physicians, department supervisors, etc. So, I agree that different [physical therapists] would prioritize the care they provide differently, and also in terms of both system-driven and patient-driven factors depending [on the] influence [of] their facility as well as their own internal priorities. (Survey04)

DISCUSSION

In this study, we sought to qualitatively address the question: How do physical therapists in the acute care setting use their self-perceptions of physical therapy's value to guide their decisions regarding which patients

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to treat? The explanatory model derived from therapists' thick descriptions is that acute care physical therapists' underlying rationale for care prioritization decisions is consistent with their perception of value. That perception is informed by system- or patient-driven thinking, where factors related to either ideology are weighed individually by each physical therapist and result in a unique approach to practice. As such, considerable variability exists in how physical therapists choose to prioritize their efforts in care delivery.

System- and patient-driven thinking may initially be thought of on 2 ends of a spectrum with competing goals. System-driven thinking is consistent with achieving population-level outcomes measured at the organizational level, but perhaps at the expense of considering individual patients' unique needs. Patient-driven thinking is most concerned with the needs of each patient and the achievement of patient-level outcomes, but may be limiting to the achievement of organizational objectives. However, in some settings and circumstances, alignment between system- and patient-driven priorities may be enhanced. As a ready example, consider the sudden shift in hospital operations caused by the public health crisis from the coronavirus disease, COVID-19, which created a shortage of hospital beds. In this environment, both the health system and individual patients valued rapid and appropriate discharge disposition decisions. As observed in this study and elsewhere,^{6,37} physical therapists recognize their value in providing appropriate discharge recommendations whenever movement system impairments complicate discharge planning. However, efforts to prevent the virus spread contributed to the need for patients to be discharged quickly and to their own homes when possible.³⁸ In our hospitals, as likely in others, renewed emphasis was placed on the role of physical therapists to intervene and facilitate functional improvement that could enable discharge to home.

In a standard care environment, the value of the acute care physical therapist's role remains difficult to quantify without the simultaneous measurement of standardized outcomes and a clear account of the care delivery that lead to those outcomes, specifically the cost of the required resources. The measurement of value requires both.³⁹ Universally, the participants in this study perceived value in their roles, but little consistency existed in how they defined that value. Their descriptions varied widely as to the outcomes they believed they could influence and their perceived contribution to those outcomes. Recent work to standardize outcome assessment in the hospital setting, particularly physical function, contributes to our ability to better define and communicate the value of physical therapy in the acute care hospital.^{37,40,41}

Perhaps underscoring the relatively adolescent use of standardized outcomes in the acute care setting, participants in this study described variable patterns of

practice in an effort to affect outcomes they perceived to be important. For example, while some therapists perceived an ability to influence a patient's discharge disposition by providing a high frequency of intervention, others described an opposite approach in that their early recommendation of discharge to a skilled nursing facility dictated a lower frequency of care. Additionally, some therapists described an emphasis in their practice in providing care for patients in the ICU, consistent with evidence that early mobility has positive effects on functional improvement, delirium reduction, and hospital length of stay.^{16,42,43} However, many described that they prioritized patients in other populations, either as a matter of hospital policy or personal perception of benefit for these other patients.

In the absence of evidence to guide decisions to deliver care that consistently contributes to optimal outcomes for patients who benefit most, health systems primarily use process measures (ie, productivity) to quantify the volume of work done by physical therapists in the hospital.^{20,44,45} They consider patient outcome measures (eg, functional change, hospital length of stay, preventable iatrogenic conditions, and discharge disposition) separately.^{23,46,47} Operational measures that would simultaneously account for both (ie, measures of value) are critically needed and are likely to improve alignment between system- and patient-driven priorities.⁴⁸

Recent work by Hull and Thut^{49,50} is evidence of effort toward developing and applying a value-based measure. They have described their derivation and implementation of the "therapy value quotient" (TVQ), which accounts for a direct patient outcome (functional change) and indirect therapist efforts (expert clinical consultation of the therapist with nurse or physician) relative to the cost of therapist care delivery. While more work needs to be done to see if, how, and where their TVQ works for optimizing outcomes, their efforts are an important move in the right direction. Continued efforts in this area will enable physical therapists to deliver care that is consistently valuable to both the patient and the system. Those efforts can be enhanced, as subsequent research better facilitates understanding the effects of physical therapist interventions on patient-level outcomes manifest during and potentially following acute care hospitalization.

Limitations

Our study had multiple limitations, primarily affecting transferability. Our sample was limited to 16 physical therapists in 4 US hospitals. These hospitals were all academic teaching hospitals; physical therapists working in nonacademic and for-profit hospitals may work in an environment that is altogether distinct from those we interviewed, but such therapists' perspectives were not captured here. Additionally, our data collection was cross-sectional. Apart from 7 participants who provided feedback on the study's findings, we are unsure whether

the perceptions shared by each participant during his or her interview were unique to that point in their career or whether they have maintained similar perceptions over time. In addition to seeking feedback from all participants, we attempted to account for this limitation by including therapists with varying experience levels. Lastly, while the candor in responses was judged to be similar across all participants, we cannot rule out that the responses from the 5 participants known to the PI may have been influenced in some way by their familiarity. It should be noted that none of these relationships were supervisory in nature, and participants were assured of the anonymity of their responses.

CONCLUSIONS

This study shows that challenges remain in understanding how value is manifest in the practice of acute care physical therapists. In care delivery, they perceive both the value of their care and how they prioritize care in terms of system-level and patient-level factors. Due to gaps in evidence linking acute care physical therapy care prioritization decisions to patient-level outcomes, health systems emphasize process measures to assess work but face challenges in quantifying physical therapy's true value. An inconsistent perception of value is likely one explanation for the high variability observed in acute care physical therapist practice. Especially as the standardization of outcome assessment in the hospital increases, future studies should further illuminate the relationship between the care processes in which acute care physical therapists engage and the outcomes that those interventions affect for individual patients. A growing base of evidence should inform enhanced value-based measurement of acute care physical therapy delivery to facilitate more consistent high-value care.

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APPENDIX 1. Standards for Reporting Qualitative Research (SRQR)* http://www.equator-network.org/reporting-guidelines/srqr/	
Title and Abstract	Page/Line No(s).
<i>Title:</i> Concise description of the nature and topic of the study Identifying the study as qualitative or indicating the approach (eg, ethnography and grounded theory) or data collection methods (eg, interview and focus group) is recommended	1/1
<i>Abstract:</i> Summary of key elements of the study using the abstract format of the intended publication; typically includes background, purpose, methods, results, and conclusions	2/3-23
Introduction	
<i>Problem formulation:</i> Description and significance of the problem/phenomenon studied; review of relevant theory and empirical work; problem statement	3-4/38-48
<i>Purpose or research question:</i> Purpose of the study and specific objectives or questions	4/48-50
Methods	
<i>Qualitative approach and research paradigm:</i> Qualitative approach (eg, ethnography, grounded theory, case study, phenomenology, and narrative research) and guiding theory if appropriate; identifying the research paradigm (eg, postpositivist, constructivist/interpretivist) is also recommended; rationale**	4/55, 59
<i>Researcher characteristics and reflexivity:</i> Researchers' characteristics that may influence the research, including personal attributes, qualifications/experience, relationship with participants, assumptions, and/or presuppositions; potential or actual interaction between researchers' characteristics and the research questions, approach, methods, results, and/or transferability	4-5/64-70
<i>Context:</i> Setting/site and salient contextual factors; rationale**	5, 8/74-77, 139-143
<i>Sampling strategy:</i> How and why research participants, documents, or events were selected; criteria for deciding when no further sampling was necessary (eg, sampling saturation); rationale**	5/72-82
<i>Ethical issues pertaining to human subjects:</i> Documentation of approval by an appropriate ethics review board and participant consent, or explanation for lack thereof; other confidentiality and data security issues	4/61-62
<i>Data collection methods:</i> Types of data collected; details of data collection procedures including (as appropriate) start and stop dates of data collection and analysis, iterative process, triangulation of sources/methods, and modification of procedures in response to evolving study findings; rationale**	5-6/84-103, 107-115
<i>Data collection instruments and technologies:</i> Description of instruments (eg, interview guides and questionnaires) and devices (eg, audio recorders) used for data collection; if/how the instrument(s) changed over the course of the study	5-6/84-103
<i>Units of study:</i> Number and relevant characteristics of participants, documents, or events included in the study; level of participation (could be reported in results)	8/138-150
<i>Data processing:</i> Methods for processing data prior to and during analysis, including transcription, data entry, data management and security, verification of data integrity, data coding, and anonymization/ de-identification of excerpts	6-7/105-115
<i>Data analysis:</i> Process by which inferences, themes, etc, were identified and developed, including the researchers involved in data analysis; usually references a specific paradigm or approach; rationale**	4, 6-7/59-61, 108-115
<i>Techniques to enhance trustworthiness:</i> Techniques to enhance trustworthiness and credibility of data analysis (eg, member checking, audit trail, and triangulation); rationale**	7/117-134
Results/findings	
<i>Synthesis and interpretation:</i> Main findings (eg, interpretations, inferences, and themes); might include development of a theory or model, or integration with prior research or theory	8-11/152-228
<i>Links to empirical data:</i> Evidence (eg, quotes, field notes, text excerpts, and photographs) to substantiate analytic findings	12-16/233-323

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APPENDIX 1. Standards for Reporting Qualitative Research (SRQR)* (Continued)

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Discussion

<i>Integration with prior work, implications, transferability, and contribution(s) to the field:</i> Short summary of main findings; explanation of how findings and conclusions connect to, support, elaborate on, or challenge conclusions of earlier scholarship; discussion of scope of application/generalizability; identification of unique contribution(s) to scholarship in a discipline or field	16-18/327-391
<i>Limitations:</i> Trustworthiness and limitations of findings	19/393-403

Other

<i>Conflicts of interest:</i> Potential sources of influence or perceived influence on study conduct and conclusions; how these were managed	N/A
<i>Funding:</i> Sources of funding and other support; role of funders in data collection, interpretation, and reporting	Cover letter
<p>*The authors created the SRQR by searching the literature to identify guidelines, reporting standards, and critical appraisal criteria for qualitative research; reviewing the reference lists of retrieved sources; and contacting experts to gain feedback. The SRQR aims to improve the transparency of all aspects of qualitative research by providing clear standards for reporting qualitative research.</p> <p>**The rationale should briefly discuss the justification for choosing that theory, approach, method, or technique rather than other options available, the assumptions and limitations implicit in those choices, and how those choices influence study conclusions and transferability. As appropriate, the rationale for several items might be discussed together.</p> <p>From O'Brien et al.³¹</p>	

APPENDIX 2. Guide for Semistructured Interviews

The interviews may include, but will not be limited to, questions such as the following, in no particular order:

- What is a typical day like at work for you?
 - When you get to work each morning, how many patients do you expect to treat that day?
 - How do you decide which patients to treat or not to treat?
 - Is there a patient population that is prioritized at your hospital?
 - How do you identify a patient as being one that *needs* physical therapy?
 - Describe the type (or types) of patient that you know you are going to try and provide treatment for that day ...
 - Describe the type (or types) of patient that you know you are *not* going to try and provide treatment for that day ...
 - (If the participants discusses productivity) Where does the goal for productivity come from?
- What is your staff's model as to your work area from day to day?
 - How do you feel about this model?
- What do you think patients get out of physical therapy while they're in the hospital?
- How do you know if a patient is benefitting from your treatment?
 - How do you know a patient is *not* benefitting from physical therapy treatment?
 - What do you do when you think that a patient will not benefit from physical therapy?
 - What do you do when you recognize that a patient is not benefitting from your treatment?
- Where do you get information to help you make decisions about patient care?
- What challenges do you have as you try to do your job?
- What supports are in place to help you do your job?
- What, if anything, about your day-to-day work do you think needs to change?

APPENDIX 3. Participant Feedback on Results

Start of block: Survey instruction

Thank you for taking the time to further share your perceptions of how physical therapy is delivered in the acute care setting. We very much appreciate your honest feedback on the study summary. This feedback will remain anonymous unless you wish to discuss it further directly with the study's authors. In that case, we ask that you provide your email address where indicated.

For the following questions, recall that:

System-driven thinking is characterized by considering mostly the predetermined and stated needs of the specific health system.

Patient-driven thinking is characterized by considering mostly the characteristics and needs of individual patients.

End of block: Survey instruction

Start of Block: General feedback

Q1 The following is a primary finding from the study:

"For individual physical therapists, either system-driven or patient-driven thinking is the primary driver of his or her perceptions of the value of physical therapy interventions in the acute care setting, which informs how he or she prioritizes patients for physical therapy care delivery."

How much do you agree with this statement?

- Strongly agree (1)
- Somewhat agree (2)
- Unsure (3)
- Somewhat disagree (4)
- Strongly disagree (5)

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Display this question:

If Q1 = Strongly agree

Or Q1 = Somewhat agree

Q2 Why do you agree with the statement?

Display this question:

If Q1 = Somewhat disagree

Or Q1 = Strongly disagree

Q3 Why do you disagree with the statement?

Q4 The following is a primary conclusion that the authors make as a result of the study:

"Systems often emphasize system-level process measures to assess work, but continue to face challenges in quantifying the value of rehabilitation services in *terms of direct benefit to patients.*"

How much do you agree with this statement?

- Strongly agree (1)
- Somewhat agree (2)
- Unsure (3)
- Somewhat disagree (4)
- Strongly disagree (5)

Display this question:

If Q4 = Strongly agree

Or Q4 = Somewhat agree

Q5 Why do you agree with the statement?

Display this question:

If Q4 = Somewhat disagree

Or Q4 = Strongly disagree

Q6 Why do you disagree with the statement?

Q7 How much do you agree with the following statement?

"The value of physical therapist services in the acute care setting is clearly defined and informs how I prioritize my patients for care."

- Strongly agree (1)
- Somewhat agree (2)
- Unsure (3)
- Somewhat disagree (4)
- Strongly disagree (5)

Display this question:

If Q7 = Strongly agree

Or Q7 = Somewhat agree

Q8 Why do you agree with the statement?

Display this question:

If Q7 = Somewhat disagree

Or Q7 = Strongly disagree

Q9 Why do you disagree with the statement?

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Q10 In general, how consistent are the study's findings with your own perceptions of how physical therapy is delivered in the acute care setting?

- Very consistent (1)
- Somewhat consistent (2)
- Unsure (3)
- Somewhat inconsistent (4)
- Very inconsistent (5)

Display this Question:
If Q10 = Very consistent
Or Q10 = Somewhat consistent

Q11 Why do you consider the findings to be consistent with your own perceptions?

Display this question:
If Q10 = Somewhat inconsistent
Or Q10 = Very inconsistent

Q12 Why do you consider the findings to be inconsistent with your own perceptions?

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Q13 The study's primary question was:

How do physical therapists in the acute care setting use their self-perception of the value of *physical* therapy to guide their decisions regarding which patients to treat?

The authors used semistructured interviews to collect information from acute care physical therapists about their perceptions of care delivery and its benefits. They then used qualitative data coding to derive thematic meaning from the information that was presented.

What do you think of these methods to address the study's primary question?

Q14 Please share any additional thoughts you have about the study, its findings, additional perceptions you have at this point, and/or the potential implications of these findings on clinical practice.

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