

# Service Utilization and Costs of Patients at a Cash-Based Physical Therapy Clinic

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Cash-based physical therapy, a model in which the clinicians do not accept insurance payments and accept only direct payment, is quickly becoming an enticing option for clinicians who own their own practice. The purpose of this study was to describe service utilization for a single cash-based physical therapy clinic. Forty-eight charts of patients who had been discharged between 2013 and 2016 were randomly selected. The data were deidentified prior to the researchers gaining access. Chronic diagnoses were predominately prevalent ( $n = 28$ ). The lumbo/pelvic region of diagnoses (39.6%) and knee/leg region of diagnoses (29.2%) encompassed the majority of the diagnoses. The mean physical therapy utilization for the cohort per episode of care was  $8.0 \pm 8.1$  visits per episode of care, total cost of  $\$780.19 \pm 530.30$  per episode of care, and  $\$97.52$  per visit. This study is the first to present data regarding costs, utilization, and patient demographics for a cash-based physical therapy clinic. Key words: *cash based, cost, health care, private practice, utilization*

CASH-BASED PRACTICE, ALSO known as “con-  
cierge” or “direct-pay” practice, is a business  
model that has gained interest in medicine,<sup>1</sup> podi-  
atry,<sup>2</sup> chiropractic,<sup>3</sup> and physical therapy (PT).<sup>4</sup> In  
this model, the clinicians do not accept insurance  
payments, accepting only direct payment from  
patients. This can occur either through monthly  
membership fees or per visit. One of the many  
reasons this model is so appealing is that it allows

for clinicians to eliminate the difficulties and re-  
strictions associated with insurance-based care.<sup>5</sup>  
There are currently no studies examining the  
costs and utilization associated with cash-based  
PT practice. With the growing number of clini-  
cians choosing to open cash-based practices, it  
is appropriate to examine the costs, utilization,  
and access associated with this growing patient  
care model.

When examining costs associated with PT  
services, it is important to first examine out-of-  
pocket costs (copayments and deductibles)  
and reimbursement when services are received,  
where care is received, and previous diagnoses.  
Two recent studies showed that out-of-pocket  
costs associated with the use of insurance to  
pay for PT services are a significant portion  
of total expenditures, averaging  $\$26.78$ <sup>6</sup> and  
 $\$44.73$ <sup>7</sup> per visit. Second, the costs and sub-  
sequent utilization can be largely dependent  
on when the services are received. A combina-  
tion of early access and guideline adherence to  
a PT program when compared with delayed PT  
for low back pain (LBP) resulted in a decrease in  
subsequent health care costs ( $\$1828.24$  compared

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with \$3030.53).<sup>8</sup> Another study found that patients receiving adherent PT for neck pain had 3.6 fewer visits and lower charges than nonadherent PT; these patients also utilized 7.6 fewer visits to other health care professionals.<sup>9</sup> Third, where a patient receives care may also be a contributing factor. One study found that corporate PT clinics billed for more total visits (13.1) and total units (66.8) over an episode of care than did other practice settings.<sup>10</sup> Lastly, an important contributing factor to costs and utilization is the diagnosis for which the patient is receiving PT. Interestingly, utilization and costs are higher when there is a specific diagnosis than when there is a nonspecific diagnosis.<sup>11</sup> This suggests that a medical diagnosis and referral before going to PT may be unnecessary and contribute to higher costs and number of visits for the patient.

Utilizing the current health care system of the United States, patients may access PT either via referral from another practitioner or by direct access, also known as self-referral. According to Pendergast et al,<sup>12</sup> PT practice acts in 46 states allow physical therapists to evaluate and treat patients in ambulatory settings without a physician referral (American Physical Therapy Association 2011). Of these, 17 states allow unlimited direct access (ie, evaluation and treatment without physician referral); however, a considerable limitation of direct access is the insurance carrier's requirement for a prescription to reimburse the therapist. As early as the 1980s and 1990s, the health care system concluded that using a physician as a "gatekeeper" in the process of patient care would deliver comprehensive and coordinated care, reduce ineffective and duplicative care, and ultimately reduce health care costs.<sup>12</sup> In contrast to this, many recent studies have demonstrated this mindset to be false. Pendergast et al<sup>12</sup> found that self-referred episodes had fewer PT visits (86% of physician-referred) and lower allowable amounts (\$0.87 for every \$1.00), after covariate adjustment. In 2 different studies, Fritz et al<sup>13,14</sup> concluded that initial PT did not significantly contribute to total health care costs, and the lack of increased costs for patients receiving early PT may relate to the actual care provided. Fritz et al<sup>13,14</sup> also found that when comparing

early advanced imaging with an alternative of PT for patients with LBP, both unadjusted and adjusted comparisons found that early PT was associated with decreased risk of all utilization outcomes and lower LBP-related charges over 1 year. These studies<sup>12-14</sup> clearly contradict the position practitioners take against self-referral to PT care, which is commonly the main form of referral utilized in cash-based PT practice.

To our knowledge, there is no current literature exploring costs and utilization of cash-based PT services. The purpose and intent of this study were to provide descriptive statistics for an emerging and exciting area of PT practice. Here, we report a retrospective descriptive analysis of patients treated at a cash-based PT clinic. This study may also serve to support the growing availability of alternative payment options, so the public can make informed decisions regarding their health care and related costs.

## METHODS

The site utilized for retrospective data collection was a private cash-based PT practice with secured permission from the owner. The clinicians at this practice accept no insurance payment for any services or treatment rendered. While the clinicians do accept referrals from other clinicians, a vast majority of the patients treated are direct access. This study was approved by the institutional review board at the University of Central Florida.

### Participants

All previous patients who had completed a plan of care were eligible for inclusion in this study. A randomly selected sample of 48 patient charts were selected from previous patients, who had been discharged between 2013 and 2016. This was done to ensure a representative sample of gender and affected body regions. To ensure Health Insurance Portability and Accountability Act compliance, the data were deidentified before the researchers began data collection. Because of deidentification before access, informed consent was deemed unnecessary for this study. Charts were reviewed by

2 PT students, and each reviewer collected data from 24 charts.

### Data Collection and Analysis

Specific *International Statistical Classification of Diseases and Related Health Problems (ICD) 9/10* codes were not used for this study. Instead, diagnosis codes were grouped by affected body regions. The previous revision (*ICD-9*) and current revision (*ICD-10*) are codes used to classify disease and symptoms. Symptom duration was defined as 0 to 4 weeks for acute injuries, 4 to 12 weeks for subacute injuries, and more than 12 weeks for chronic injuries.<sup>15</sup> For calculation of the Numeric Pain Rating Scale (NPRS) at evaluation and discharge, only the worst reported pain was recorded, as charts often lacked a complete NPRS (worst, best, current) to calculate the average.

To qualify for the study, the patient's charts must have contained all characteristics below to be extracted from the patient's/client's charts. These characteristics included age, gender, referral source, prior treatments (medical doctor (MD), chiropractic, PT, acupuncture, massage therapy (MT), other), NPRS at initial and discharge, duration of symptoms (acute, subacute, chronic), number of visits, total cost of care in US dollars, and average cost per PT session. Descriptive statistics were analyzed using SPSS Statistics for Macintosh, Version 24.0 (IBM Corp, Armonk, New York). Means and SDs were calculated for all nominal data, and frequency distribution was calculated for all ordinal data. Descriptive statistics were calculated for age, gender, referral source, prior treatment (medical doctor, chiropractic, PT, acupuncture, massage therapy, other), NPRS at initial and discharge, duration of symptoms, number of visits per episode of care, and the average cost per session.

### RESULTS

Of the participants, 100% were self-referral, or direct access, to PT. Patients had previously received treatment from a host of other professionals regarding their chief complaints, including 54.2% (n = 26) from a physician, 16.7% (n = 8)

from previous PT, 10.4% (n = 5) from massage and acupuncture, and 2.1% (n = 1) from podiatry and other practitioners (n = 1).

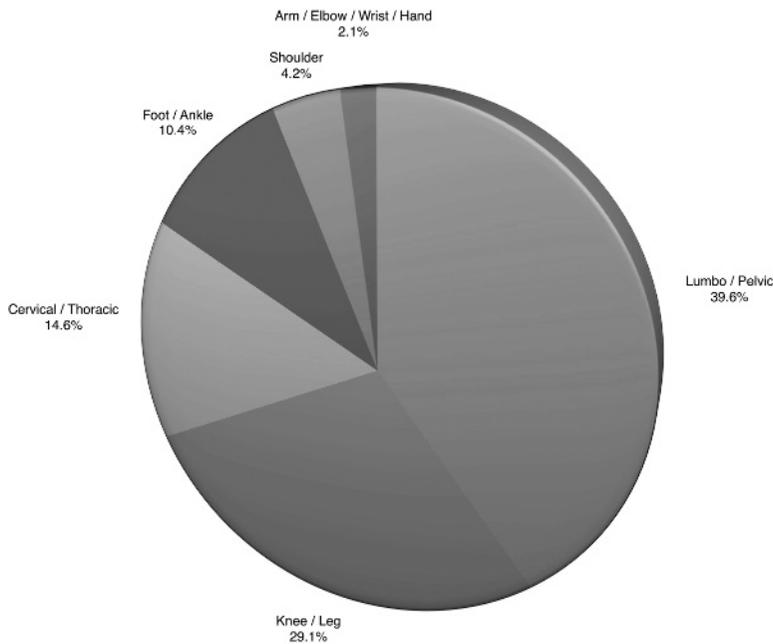
In our sample, there were more males (n = 27) than females (n = 21). Chronic conditions were the most prevalent in terms of symptom duration (n = 28), followed by acute (n = 12) and subacute (n = 8). The lumbo/pelvic (39.6%) and knee/leg regions (29.2%) encompassed the majority of the diagnoses in our study. The number of cases per diagnosis region is shown in Figure.

Demographic information is listed in Table 1. The mean NPRS at initial evaluation and discharge was  $6.9 \pm 1.9$  and  $1.1 \pm 1.9$ , respectively. All 48 subjects met the minimal detectable change or minimum clinically important difference (MCID) in regard to the change in NPRS from initial to discharge. To conclude, the mean PT utilization for the entire cohort was  $8.0 \pm 8.1$  visits per episode of care,  $\$780.19 \pm \$530.30$  per episode of care, and  $\$97.52$  per visit. The total costs and utilization per diagnosis region are listed in Table 2.

### DISCUSSION

As out-of-pocket costs associated with high deductible health plans continue to climb in the United States,<sup>16</sup> utilization of PT services has been affected.<sup>6</sup> High deductible health plans reduce utilization of preventive services and office visits significantly.<sup>17</sup> It is because of this recent trend that cash-based PT clinics have become increasingly popular. Costs and utilization associated with PT services have been reported elsewhere and currently involve only insurance-based services.<sup>8,13,18</sup> To our knowledge, the present study was the first to report descriptive statistics concerning costs, utilization, and patient demographics for an outpatient, cash-based PT clinic.

In our study cohort, the mean number of visits per episode of care was 8.0 (median, 5), and total cost was  $\$780.19$  (median,  $\$600$ ). Riley et al,<sup>11</sup> who performed a similar study with a traditional insurance-based model, reported the mean number of visits to be 7.3 and total cost to be  $\$936.30$ . An interesting comparison between our study and Riley et al<sup>11</sup> is that while the total number of visits for the cash-based clinic is relatively



**Figure.** Frequency of conditions based on body region.

higher, the total health care costs per episode of care are lower. This is the first time in the current literature that costs and visits between a cash-based clinic and insurance-based clinic have been compared. While comparison of the results of our study with Riley et al<sup>11</sup> provides interesting discussion, there are significant differences in the size and demographics of the cohorts. By presenting this comparison, we hope to start a debate on the values of a cash-based PT business model.

Lower back pain is currently one of the most popular reasons to seek medical treatment and has been reported by approximately 25% of the population within the last 3 months.<sup>8</sup> It has been reported that the overall costs for treatment of LBP in the United States are between \$85 billion and \$238 billion annually.<sup>19</sup> Lower back pain is also one of the most common reasons to seek PT treatment.<sup>20</sup> The percentage of

patients seeking treatment for LBP in our cohort is in agreement with these previous studies. A majority of patients in our study (39.6%) were seeking treatment for LBP. The second and third most common diagnoses in our study were leg/knee (29.2%) and cervical/thoracic (14.6%). This is somewhat in contrast to a study by Di Fabio and Boissonnault,<sup>21</sup> who reported regions of diagnosis to be lumbar/sacral (49.7%), cervical (26.5%), shoulder (14.8%), and knee (10.0%).

It is important to note that all patients (n = 48) of our cohort were direct access patients. This is important because direct access to PT services has been reported in the literature as a means to decrease costs and utilization when compared to referral by a physician.<sup>12,22-24</sup> The clinicians do accept referrals from a few physicians, but this does not occur often. This is consistent with our report of the total cost of care as

**Table 1.** Patient Demographics

	Total No.	Average Age, y	Average Visits	Average Cost
Male	27	41.2 ± 16.6	8.3 ± 9.1	\$790.74 ± \$569.55
Female	21	47.4 ± 12.0	7.6 ± 6.6	\$766.62 ± \$488.69

**Table 2.** Cost for Services Based on Body Region

	Cervical/ Thoracic	Shoulder	Arm/Elbow/Wrist/ Hand	Lumbar/ Pelvic	Knee/ Leg	Foot/ Ankle	Overall
Average cost	\$846.29	\$1550	\$1050	\$685.53	\$596.43	\$1200	\$780.19
Average visits	8.7	18.5	8	6.6	4.6	18.0	8.0
Average cost/visit	\$97.27	\$88.78	\$131.25	\$103.87	\$129.66	\$66.67	\$97.52

reported earlier for patients in our study. People with LBP presenting to PT through direct access are continuing to steadily increase.<sup>25</sup>

While 100% of our cohort were direct access patients, a vast majority of them had received previous treatment for their condition from another practitioner. In our cohort, patients had received treatment for their specific diagnosis from massage therapy, podiatry, acupuncture, PT, and physician; 54.2% (n = 26) of our cohort had received treatment from a physician, 16.7% (n = 8) from PT, 10.4% (n = 5) from both massage and acupuncture, and 2.1% (n = 1) from both podiatry and other practitioners. Eisenberg et al<sup>26</sup> examined unconventional medicine use in the United States and found that approximately 11% of the participants who visited a physician for a medical condition also visited a provider of unconventional therapy. In this study, unconventional therapies were described as medical interventions not taught widely at US medical schools or generally available at US hospitals, which include acupuncture, chiropractic, and massage therapy. The participants averaged 19 visits at a cost of \$27.60 per visit to these unconventional therapy practitioners.<sup>26</sup> Of those who visited a provider of unconventional therapy, acupuncture (91%), chiropractic (70%), hypnosis (52%), and massage (41%) were the most popular.<sup>26</sup>

Gender, along with many other predisposing factors, may be associated with the incidence of many injuries, illnesses, and diseases. A simple example of a well-known gender disparity and its attributes is demonstrated while comparing anterior cruciate ligament injury prevalence to gender. It is known that female athletes encounter more noncontact anterior cruciate ligament injuries in comparison to males.<sup>27,28</sup> To continue, the factors surrounding this plausible cause of injury compared with this gender disparity

have been widely investigated.<sup>29</sup> Thus, gender disparities may also shed light on current data collected within this study. Interestingly, there was a higher utilization of cash-based PT services for males (n = 27) than females (n = 21), which is in contradiction to current research.<sup>27,30</sup>

Based on the data collected within this study, diagnosis region comparative to gender revealed intriguing outcomes. According to these data, male subjects (n = 15) were most commonly seen in cash-based PT for complaints concerning the lumbopelvic region compared with their female counterparts (n = 4). In current literature, it has been shown that factors attributing to this gender disparity could stem from increased prevalence of dominant limb dependency causing pain avoidant postural control strategies<sup>30</sup> or decreased maximum isometric back extension strength<sup>31</sup> in male subjects. However, the most common chief complaint for female subjects (n = 8) was the knee and leg region compared with their male counterparts. There is a plethora of research linking concepts such as Q-angle<sup>32</sup> and lower extremity strength asymmetries<sup>33</sup> to the presence of knee and leg injuries within female patients.

As most common diagnosis regions treated differ between genders in this study, injury acuity associated with gender seems to be parallel. The injuries to be treated for both male (n = 18) and female subjects (n = 10) were chronic at time of evaluation. This could be due to the data provided demonstrating that multiple health professionals were seen for the subjects' chief complaint before seeking cash-based PT services as treatment.

Upon assessing the results of the NPRS, a trend developed in which the mean score at initial evaluation (6.89) was reduced at time of discharge (1.11). While an overall trend toward patient-reported pain reduction is meaningful

to assess positive outcomes related to patient care, information regarding the MCID adds additional important information. According to current research, the most important clinimetric property for interpreting change over time is the MCID.<sup>34,35</sup> According to a study by Abbott and Schmitt,<sup>34</sup> the MCID for the NPRS was -1.5 to -3.5 for 1708 patients within 5 PT clinics with musculoskeletal disorders. Another study by Childs et al<sup>36</sup> states that “clinicians can be confident a 2-point change on the NPRS represents clinically meaningful change that exceeds the bounds of measurement error.” The commonly reported MCID for the NPRS is consistent with the research Childs et al<sup>36</sup> proposed, 2 points, which was also utilized in this study. In our cohort, 95.8% met or exceeded the MCID for the NPRS. This demonstrates that 95.8% of the subjects being treated by this cash-based PT office were able to obtain a significant improvement in self-perceived pain.

This study had several limitations. First, our sample size (n = 48) was small when compared with similar studies looking at costs and utilization of PT services.<sup>11</sup> At the time of data collection, there were approximately 600 patient files available for review, which means we collected only 8% of the available data. This was

largely due to time constraints secondary to the researchers' status as full-time students in a doctor of physical therapy program. Also, while our data were randomly selected, it can only be applied to the local area, as utilization and costs can vary depending on geographic location.<sup>7</sup> Lastly, this is a report of descriptive statistics. While it provides a foundation for further research, no conclusions regarding cost effectiveness when compared with insurance payment for PT services can be drawn.

To our knowledge, this is the first study to explore cost and utilization associated with the growing industry of cash-based PT services. This research is the first to provide descriptive statistics for a cash-based PT clinic. Our data supports the possibility of increased cost effectiveness when compared with traditional insurance-based PT services. However, because of the limitations of this study and the lack of current evidence, further research is needed surrounding the topic of cash-based PT. Fee schedules and outcome measures used when comparing outcomes across multiple cash-based services are necessary areas of future research to be able to fully compare cash-based practice to insurance-based services.

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