Huntington’s Disease at Mid-Stage

Nothing may be more challenging than to design a plan of care that allows maximal independence with minimal risk—especially for patients with a disease that not only impairs motor skills but diminishes cognitive abilities and alters personality.

By Suzanne Imbriglio, PT

Huntington’s disease (HD) is a progressive and degenerative genetic condition of the central nervous system that is transmitted through autosomal dominant inheritance. The incidence of HD is one case per 10,000 people in the general population, and the child who has a parent with HD has a 50 percent chance of inheriting the gene and consequently acquiring the disease, which always manifests itself when the individual lives long enough (Huntington’s Disease Society of America 1991).

The age of onset varies considerably, with symptoms generally appearing between 30 and 50 years; however, in some cases, symptoms have been reported as early as 2 years and as late as 70 years (Martin and Gusella 1991).

The HD Triad

Huntington’s disease involves a triad of clinical features: cognitive deficits, motor impairments, and behavioral changes. The time of onset for symptoms in each of these three areas varies from person to person, as does the rate of deterioration. In addition, symptoms progress independently.

Cognitive deficits. Although movement disorders typically are the most conspicuous feature of HD, the cognitive changes that occur in the early stages are the major source of disability (Mayeux et al. 1986). These mental changes are more variable in onset and manifestation than are the movement disorders.

Cognitive deficits in HD may range from forgetfulness and inability to concentrate for long periods of time to severe memory deficits. Early-stage symptoms affect the person’s ability to manage personal finances and occupational skills. As the disease progresses, deficits in recent and remote memory become increasingly apparent. The person may not be able to recall the name of the Vice President of the United States, for example, but may be able to correctly answer a multiple-choice question. Over time, prompting becomes a less and less effective strategy in dealing with information retrieval and other memory deficits (Caine et al. 1977).

Even in the most advanced stages of HD, however, the person may remain cognizant of his or her surroundings. Higher level intellectual functions, such as those involving...
Susanne Imbriglio and her staff follow many patients with HD throughout the final stages. How do they handle the inevitability of their patients' deterioration? Although there currently is no formal support group, the treatment team meets on a quarterly basis with a consulting neurologist/psychiatrist to discuss the end-stages of HD, when, says Imbriglio, "a discussion of feelings usually comes up. We never use the term 'burnout.' We acknowledge that it's okay to cry, that we should feel attachments to these patients. When one of our patients dies, we are prepared for it, both in a professional sense and in a personal sense."

acquired knowledge and insight, usually are well-preserved (McHugh and Folstein 1975; Fisher et al. 1983).

Motor impairments. The earliest signs of movement disorder in HD typically appear as choreic movements in the fingers; as a result, the person with HD may appear nervous or "fidgety." As the disease progresses, coordination deteriorates, resulting in difficulties with self-care activities. Dystonic posturing, bradykinesia, or rigidity and postural instability that severely impairs walking also may exist. Problems with speech and swallowing develop in the later stages, requiring a high level of care to meet the person's daily needs.

Behavioral changes. People with HD typically have a range of psychiatric problems that may be manifested as behavioral problems, such as delusional and paranoid behavior, depression, and other affective disorders. Episodes of isolation may occur, and impulse-control difficulties, apathy, and poor self-esteem may exist. These personality changes create a tremendous burden on the person's social relationships.

Many individuals with early-stage symptoms are able to live at home with a supportive family; however, because of the early onset of psychological problems, many people with HD enter the mental health system at this time. Repeated psychiatric problems and disruption of the family social structure may lead to placement in a psychiatric facility that provides long-term care. This may mean that by the time motor and cognitive problems become apparent, the individual is living in a setting that is poorly equipped to address these symptoms. Even for people whose families are able to continue providing care at home during the early stages, there may be a lack of appropriate long-term care providers to meet the needs of these individuals when they enter the later stages of the disease.

Teamwork: To Ensure a High Quality of Life in the Least Restrictive Setting

Staff at the Christian Hill Rehabilitation and Skilled Nursing Center (CH) in Lowell, Massachusetts, provide medical management, skilled nursing, subacute neurological and psychological treatment, and traditional rehabilitation services for people in the intermediate ("transitional") and advanced stages of HD. Patients range in age from their early 20s to late 60s and early 70s. In all cases, treatment is based on a belief that people with HD should maintain a maximal level of independence for as long as possible.

Patients may be followed by the treatment team throughout the final
Physical Therapy and HD: From A Social Worker’s Perspective

People with Huntington’s disease know what’s happening to them,” emphasizes social worker Paul Ferreira, MSW. “They may still be ambulatory, but their coordination skills are decreasing. They have less endurance than they used to have, they have difficulty transferring from chair to bed, and they may need safety devices to prevent them from falling or sustaining head injuries... They need a lot of emotional support to help them deal with these losses in physical function. A critical factor in the treatment of these patients is the attitude of the physical therapist, who must have a positive—but realistic—outlook.” Both psychotherapist and case manager, Ferreira coordinates the treatment team that works with patients with HD at the Christian Hill Rehabilitation and Skilled Nursing Center in Lowell, Massachusetts.

“Physical therapy is a major component of the treatment program for people with mid-stage HD,” says Ferreira. “The tricky part is that HD isn’t just a physical problem. It’s the physical therapist’s job to distinguish among changes related to physical deterioration, mental deterioration, and the patient’s emotional state.”

As Suzanne Imbriglio, PT, discusses on these pages, some patients with HD may strongly resist physical therapy. “For these patients, to participate in physical therapy is to admit that they are sick,” explains Ferreira. “Some patients are too deep in denial to do that. In other cases, the disease affects the mind, resulting in a psychotic thought process. Some patients may be depressed—which typically affects their motivation and ‘self-starting’ ability—or may feel guilty for ‘passing the disease on’ to their children. Some studies suggest that the incidence of suicide may be higher among people with HD than among the general population. And then there are patients who want to do anything they can to help themselves.” Ferreira adds that a patient’s preexisting personality traits may be amplified by the disease. “If the patient tends to be anxious or depressed or their onset of HD, he or she will probably have a big problem with anxiety as the disease progresses; if the patient tends to be optimistic, that will be a big help as time goes on.”

How does the social worker help the patient accept physical therapy?

“Patients need to explore their feelings about HD... If they’re in denial, for example, you can’t ‘force’ them out of it. Instead you try to find some window of opportunity. It’s important to talk about the realities of day-to-day life. How are you doing? Are you falling down a lot? Are you able to walk around as much as you used to?” As the patient becomes more comfortable talking about these problems, you can say, “Remember physical therapy? Maybe we could try that. Maybe it could help.”

When Ferreira senses during counseling session that a patient may be ready for physical therapy, he may walk with the patient to the physical therapy department to find out whether a physical therapist can meet with the patient right away. Until the patient becomes familiar with the physical therapist, Ferreira also may “sit in” on the physical therapy sessions.

“This open door policy can be hard on the PTs,” he says. “After all, they’re very busy. In addition to 23 patients who have HD, they also treat geriatric patients and patients with subacute traumatic brain injury. But because of the day-to-day variability among patients with HD, this is the method that works best.” Ferreira pauses. “I guess you could say that PTs have to strike while the iron is hot.”

Psychotropic Medications

In addition to knowing whether a symptom is related to the disease process or to the patient’s anxiety, the physical therapist also must understand the effects of psychotropic medications.

“There are basically four categories of drugs used with patients with HD,” explains Ferreira, “all of which may have an impact on physical therapy treatment. The first includes the neuroleptics, such as Haldol®, which, in low dosages—4 to 10 mg—
A Never-Ending Education Process

Whether it is the education of a new physician on the medical staff or the continuing education of direct-care staff, ongoing training is integral to the success of any treatment program for people with HD—no matter how big or small the facility. To treat the whole person, everyone on staff must have an understanding of the disease process. Classes may be offered for both day and evening shifts on such topics as “What Is HD?,” “What the Person with HD Can Do,” and “How to Walk with a Person with HD.” Classes, which may be scheduled on a quarterly basis, for example, also can be provided on behavior management, restorative services, and feeding protocols. Experienced members of the treatment team may be the best teachers.

Intake and Assessment

Upon admission to the facility, each patient undergoes a comprehensive medical, neurological, and psychological assessment performed by the attending physician and the consulting neurologist/psychiatrist and an intake process (Figure 1) that may be facilitated by any member of the treatment team.
Physical Therapy in the Early Stages of HD: An Update

For many patients with Huntington's disease (HD), decreased physical activity may result in degeneration that occurs too early to be attributed to the disease process alone. This suggests that maintenance or temporary improvement of functional abilities within the limitations of the HD-involved central nervous system may be possible in the early stages (Young 1986). A program of active exercise based on the patient's identified needs is recommended (Hoy, Hicks, and Baraclough 1985; Hayden 1981).

The physical therapy evaluation may indicate that the patient needs to develop an awareness of the differences between muscle tension and muscle relaxation; learn controlled breathing techniques; maintain or improve coordination, flexibility, and balance; and, when applicable, increase muscle strength (Peacock 1987). Routine active exercise for neck, trunk, and extremities and functional activities for balance and coordination are important components of the treatment program; walking should be part of the daily regimen (Chiu 1989).

It is important to begin an ongoing exercise program early in the course of the disease before many patients and families believe there is a need for it. At this point, the patient still may be able to follow directions and establish and maintain a daily routine. In addition, in the early stages, caregivers are less likely to be so protective of the patient that they restrict the patient's activities.

The Small Group

A small group format rather than individual outpatient therapy may have several advantages for patients with HD who are ambulatory. People who accept each other as peers regardless of differences in background, social skills, physical ability, and comprehension skills offer a very real source of support and reinforcement (Peacock 1991). In the small group setting, the patient with HD can establish a personal identity beyond the family members who typically make decisions and speak for the patient.

Meeting expectations. Each group participant is expected to be effective in group activities and is expected to follow instructions as precisely as possible in terms of direction, position, and speed. The cognitive aspect of these activities puts healthy demands on the patient's ability to think, react, and cooperate (Lavers 1982). Group physical therapy sessions may include recreation, such as games that involve throwing, catching, hitting, or kicking a precision teaching method (McGreevy 1984; Pennypacker, Koenig, and Lindsley 1972), in which the therapist or teacher breaks down each task into separate movements within 15-second intervals and records the per-minute rate at which these movements are completed. Both ability and the fluency of movement are assessed, with the goal of increasing the rate at which a patient is able to perform a task. Used primarily in special education settings, this method can be useful with patients with HD because these patients have many of the same deficits that people in special education settings have. In assessing reading skills (Figure 2), for example, the tester wants to determine not only whether the patient understands what he or she reads, but whether eye movements already may have begun to decrease because of the disease, resulting in what may appear to be slowed comprehension.

When the various assessments are brought together to provide a comprehensive functional and clinical picture of the patient's status, the team formulates an individualized plan of care.

"Friendly Persuasion"

Persons in the middle stages of the disease usually are all too aware of a number of losses, both physical and mental. They also may be aware of the degenerative and progressive nature of the disease. They may feel helpless...
bul. Music can accompany movement-pattern exercises, simple dancing, or marching.

Cost containment. Many third-party payers do not reimburse for long-term physical therapy services for patients with progressive conditions such as HD. Patients may be more likely to reimburse for group treatment, which usually is more cost-effective than individual therapy; if not, the lower cost of group sessions may help reduce the drain on the patient’s financial resources.

Behavioral problems. Although behavioral problems may not restrict a patient’s participation in the exercise group, they have been the major reason given for withdrawal from this type of program (Shoulson 1990). Uncontrolled behavior in the home or severe depression eventually may result in the patient’s placement in a nursing home or a care center.

Patient compliance. Patient compliance is vital to any therapy program. One way to help ensure compliance is to provide a list of exercises used in the program, highlighting the exercises to be done at home. All exercises on that list would be performed during the group session; the therapist would regularly review specific home exercises with each individual. Over time, most of these patients do need supervision or encouragement to continue their home exercise programs. Occasional home visits may be helpful, not only to follow up on the home exercise program but to evaluate the patient’s functional level.

Participating in a physical therapy exercise program while still in the early stages of HD and while still living at home may help some patients prolong their independence; however, the reality is that most patients with HD do not receive physical therapy. Physicians, physical therapists, and health care agencies must be educated about the potential benefits of physical therapy, and physical therapists must become involved in research to investigate the nature and scope of these benefits.

Based in Dearborn, Michigan, Inez W. Peacock, PT, is a physical therapy consultant to the Southeastern Michigan Chapter of the Huntington’s Disease Society of America.

REFERENCES
Young AB. A Neurologist Speaks About Huntington’s Disease. Excerpts from Dr. Young’s speech to the annual workshop. New York, NY: Huntington’s Disease Society of America; 1986.
Knowing that I would prefer to have at least some control over every situation, I try to allow the patient some element of control in finding solutions. This differs somewhat from the traditional role of therapist as I've experienced it in the past. In many traditional settings, the therapist makes most of the treatment decisions, such as choosing the treatment regimen and setting the goals. But then, in many traditional settings, the patient is going to get better—or, at the very least, learn to compensate for a disability and get on with life, and therefore might not take life-threatening risks. But when you know you're going to become more and more ill and eventually die from this debilitating disease, you might think, 'Why not take a walk without my helmet? So what if I fall and get a hematoma?' It's our challenge to convince the patient that there are alternatives.

—Suzanne Imbriglio

which in turn help to bolster self-esteem. After meeting with some level of success, the patient may be more open to discussing the aspects of physical functioning with which he or she is having the most difficulty. The therapist and patient together can adapt the environment or provide alternatives to compensate for the loss of function. A 'hard sell.' The process described above often is a slow one. By the time patients reach the middle stages of the disease, they already have had to deal with a multitude of "failures," and—because of disease-related cognitive losses and emotional imbalance—their ability to cope with these failures may be severely compromised. At this point, many people with HD isolate themselves. However, a patient may seek out one person from the primary caregiving staff and continue to respond well to this person, as in the case described below.

LH's Story

LH had had a series of near falls, and her therapist had begun to discuss some safety guidelines with her. LH became angry with her therapist and stated that she would not see him again for "any kind of therapy." LH clearly was unable to cope with the deterioration in her physical functioning and furthermore associated her therapist with this deterioration. LH eventually turned her back on her speech therapist and occupational therapist as well, becoming reclusive and withdrawn; however, she did maintain a relationship with one of the health education teachers. This teacher became very important in the care and treatment of LH.

LH's treatment plan was revised to allow much of the physical therapy, occupational therapy, and speech therapy to be provided by the one person LH trusted. Although this strategy was far from the traditional delivery of service in many skilled nursing centers, the outcome was successful: LH's dignity was preserved because she was provided with a way to continue functioning at her optimal level.

LH now is much less reclusive and allows her therapists to observe her periodically so that her progress can be charted and her program can be updated.

Issues of Safety and Self-Determination

Because of the nature of the HD process, faulty judgment and impulsivity may result in difficult or unsafe situations. For some patients, the fear of self-injury is enough to motivate them to adapt to their new limitations. These patients may more readily accept the idea of wearing knee and elbow pads or a protective helmet, for example, because using these aids means maintaining the ability to walk without help or supervision. Patients who deny their limitations or who are not intimidated by the possibility of self-injury, however, pose difficult challenges to the treatment team.

Although it is the responsibility of all staff to ensure the safety of patients, the physical therapist typically is the one who assesses the condition of a patient when physical functioning and safety are in question. It may be very difficult to convince the person whose judgment has become faulty or whose physical functioning has deteriorated that he or she now needs assistance. There is nothing more challenging, however, than developing a plan of care that allows maximal independence with minimal risk to safety and well-being.

There are no easy or set "cookbook" answers to the problems of HD. In developing approaches to solve these problems, it may help the therapist to envision himself or herself in the patient's situation. How important is it for you to have control over a given situation in your life?
The patient may go through a period of anger or depression or both as changes occur in physical status. With counseling and support, however, these changes can be "turned around" into something more positive. The patient may learn that he still can go out to the donut shop as long as he wears a helmet or knee pads for protection or that using a wheelchair does not prevent him from going out to the Monday night bingo game. Helping the patient maintain a normal routine while adjusting to physical changes is essential.

The Family as Future Patient

Because of the genetic component of HD, many family members of patients are at risk for HD and therefore may be patients themselves in the future.

Family members must deal with many emotions when placing a patient in long-term care. When the patient is a child of an unaffected parent, the parent's concerns primarily revolve around obtaining high-quality care for the child, and the parent feels some relief when this care is found. When the patient is a parent, the children are themselves at risk for HD and therefore have additional concerns. The children of patients with HD require support and the opportunity to talk in-depth about the type of care the patient will receive, partly because they know they may need that care themselves one day.

Family members who are themselves at risk for HD typically have been caregivers in the past and therefore may have some very helpful ideas about how to deal with the patient. This information can be vital, particularly upon admission. This transfer of information also is a good way for that family member to become accustomed to the notion that the patient will be cared for by someone else. Very often the "at-risk" family member is especially interested in the therapeutic interventions available to the patient, and that family member sometimes looks to the therapist for hope that treatment will delay or prevent the inevitable degeneration. Working with families who are at risk takes a great deal of sensitivity on the part of the therapist. In addition to meeting the needs of the patient, the therapist must provide counseling, teaching, and support to the family, making appropriate counseling referrals as needed.

It has been well-documented that the quality of care given to patients with HD—as perceived by the patients' children—deeply affects the children's ability to face their own illness. The perception of the quality of care also influences their ability to make use of professional services (Martindale 1987). A slogan commonly used in the HD community underscores this need for quality care: "Until there's a cure, there's only care."

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For more information about Huntington's disease, call the Huntington's Disease Society of America, 212/242-1968.

REFERENCES


SUGGESTED READINGS


Intake: Regarding your family member's care while home with family—

1. Who assisted with self-care? ____________________________________________
   
   With which tasks?
   
   **Bathing:**
   - Upper body __
   - Lower body __
   - Hands/face __
   - Underclothes only __
   
   **Dressing:**
   - Upper body __
   - Lower body __
   - Socks/shoes __
   
   **Grooming:**
   - Brushing hair ___
   - Shaving ___
   - Makeup ___
   - Nail care ___
   
   **Toileting:**
   - Assist with pants up/down ___
   - Help complete task ___
   
 Which tasks were the most difficult? Why? ____________________________________________

2. When did assistance with homemaking skills become necessary? ________________
   
   Which chores could your family member still perform independently? ________________
   
   Which chores could he or she perform part of? ________________________________

3. Who assisted your family member with eating? ____________________________
   
   Were there any “tricks” that made this task easier? (such as using special cups or utensils, avoiding certain types of food, using special chairs or clothes)
   
4. Please describe the position used by your family member while he or she was eating or being fed:
   
   **Head:**
   - Up ___
   - Down ___
   - Forward ___
   - Straight ahead ___
   - Other (please describe): __________________________
   
   **Trunk (chest):**
   - Forward ___
   - Backward ___
   - Sideways right/left ___
   - Upright ___
   - Other (please describe): __________________________
   
   **Hips:**
   - Back in chair ___
   - To one side left/right ___
   - Forward in chair ___
   
   **Legs (feet):**
   - Flat on floor ___
   - Resting on stool ___
   - In constant motion ___
   - Under buttocks ___
   - Other (please describe): __________________________

5. Did your family member have any difficulty sitting in a chair? Yes ___ No ___
   
   Which type of chairs did he or she use? Sling back chair ___ Straight backed chair ___
   - Wheelchair ___ Lounge chair ___ Rocking chair ___ Recliner (e.g., Lazy Boy®) ___ Didn’t use a chair ___
   
   Did you use anything to help your family member stay in the chair?
   - A sheet tied around the chair ___ A tray placed over chair ___ Never used anything ___
   
   When did you use something to help your family member stay in the chair?
   - During meals ___ In the morning ___ In the afternoon ___ In the evening ___ In the middle of the night ___

6. Did you need to help your family member walk? Yes ___ No ___
   
   Did you provide a wheelchair? Yes ___ No ___
   
   How did you help your family member walk?
   - One person held onto belt ___ One person held onto hips ___ One person held onto arm ___
   - Didn’t let him/her walk ___ Two people on each arm ___ Two people held hands ___ Two people held onto belt ___

7. Is there anything you used during your family member's stay at home that made his or her stay easier for you? __________

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*Figure 1. Sample intake form used by the Huntington's disease treatment team to help assess the patient's functional levels—and as part of a strategy to help ensure family involvement in the patient's care.*
Huntington's Disease Assessment—Movements to Monitor

I. ADL Screening and Assessment—ADL screening and assessment will be completed.
II. "The Big Six"—Specific movements will be targeted based on the information obtained through these assessments.
III. Augmentative Communication—Movements used in communication will be assessed.
IV. Nutrition—Movements used in the written and verbal expression of nutritional knowledge will be assessed.

II. "The Big Six": Hand Usage
Reach for 9" target
Reach for 6" target
Reach for 3" target
Point to 9" target within 12" of target
Point to 6" target within 12" of target
Point to 3" target within 12" of target
Touch 9" target
Touch 6" target
Touch 3" target

Grasp release ("Hook")
Grasp release ("Cylindrical")—left and right
Grasp release ("Lateral")—hands for all
Grasp release ("Three Jaw Chuck")—grasps
Grasp release ("Fincer")
Grasp release ("Tip Pinch")

Aim place object onto 8"-by-11" target
Aim place object onto 6" by 8" target
Aim place object onto 4" by 6" target

Twist doorknob
Twist 1/2" nut onto bolt
Grasp pull cards from holder

III. Movements Used in Augmentative Communication (to prepare patient to use communication board)
Imitate therapist as therapist reaches for target
Point to 1" squares left to right—top to bottom
Point to 1" colored squares on 9"-X-11" grid
Point to requested picture and to picture of the requested size
Point to letters in name
Write words from word list
Read words with picture
Read word list
Type name

IV. Movements Used in the Written and Verbal Expression of Nutrition Knowledge
Write list of high-calorie food
Say list of high-calorie food
Circle high-calorie food choices

Huntington's Disease—Worksheet for the Assessment of Motor Coordination and Hand Usage

Record the number of times patient can reach within a 15-second time period

<table>
<thead>
<tr>
<th>MOVEMENT CYCLE</th>
<th>Left</th>
<th>Right</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reach (Gross Motor)</td>
<td>Arm length + 10&quot;</td>
<td>Arm length + 5&quot;</td>
</tr>
<tr>
<td>Point</td>
<td>9&quot;</td>
<td>9&quot;</td>
</tr>
<tr>
<td>Touch (Fine Motor)</td>
<td>9&quot;</td>
<td>9&quot;</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SIX GRASPS</th>
<th>Left</th>
<th>Right</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1 Hook (block and white gripper)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#2 Cylindrical (sponges—specify no.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#3 Lateral (click-top pen or click toy alligator)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#4 Three Jaw Chuck (spinner—pinwheel)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#5 Fincer (clothespin)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#6 Tip Pinch (pin or swab stick with tension on one end)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 2. A form that may be used in assessing coordination and hand usage among patients with Huntington's disease. Based on the precision teaching method of monitoring functional performance (McGreevy 1984; Pennypacker, Koenig, and Lindsley 1972).
Figure 3. The therapist or teacher may use this form in assessing the cognitive skills of patients with Huntington’s disease. In this example, reading comprehension skills are to be tested. (Adapted with permission of Precision Teaching and Management Systems, Newton, MA).

<table>
<thead>
<tr>
<th>Coin Combinations</th>
<th>Patient Identifies</th>
<th>Item Costs</th>
<th>“You Pay with”</th>
<th>“You Get Change Back”</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. nickel, penny</td>
<td></td>
<td>$1.89</td>
<td>$5.00 bill</td>
<td></td>
</tr>
<tr>
<td>2. dime, 2 pennies</td>
<td></td>
<td>$0.25</td>
<td>$1.00 bill</td>
<td></td>
</tr>
<tr>
<td>3. dime, nickel</td>
<td></td>
<td>$4.85</td>
<td>$10.00 bill</td>
<td></td>
</tr>
<tr>
<td>4. quarter, dime</td>
<td></td>
<td>$6.75</td>
<td>$10.00 bill</td>
<td></td>
</tr>
<tr>
<td>5. quarter, penny</td>
<td></td>
<td>$7.95</td>
<td>$20.00 bill</td>
<td></td>
</tr>
<tr>
<td>6. quarter, dime, nickel</td>
<td></td>
<td>$11.64</td>
<td>$20.00 bill</td>
<td></td>
</tr>
<tr>
<td>7. 2 dimes, 3 nickels</td>
<td></td>
<td>$18.65</td>
<td>$20.00 bill</td>
<td></td>
</tr>
<tr>
<td>8. 3 quarters, 2 dimes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. 1 quarter, 2 dimes, 3 nickels, 1 penny</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. 3 dimes, 4 pennies</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 4. The therapist or teacher may use this form in assessing the patient’s ability to use money—both in terms of functional motor skills and in terms of cognitive ability—with a goal of helping the patient remain as independent as possible.

Clinical Management