International Clinical Educators, inc.

Functional Treatment Ideas & Strategies in Adult Hemiplegia Part A

By Jan Davis, MS, OTR/L

About the Author & Presenter

Jan Davis, MS, OTR/L, is an internationally recognized leader in educational programs developed for health care providers, families and caregivers of stroke survivors. She received her NDT training in Switzerland with Patricia Davies and Berta Bobath. She founded International Clinical Educators in 1983 and since then, over 20,000 therapists have attended her workshops and used her training materials worldwide.

About International Clinical Educators, Inc.

ICE is dedicated to providing high-quality educational programs for occupational therapists, physical therapists, nurses and assistants working with stroke survivors. All programs are designed to give practitioners practical treatment ideas that can be used in acute care, rehabilitation, skilled nursing, outpatient and home health settings.

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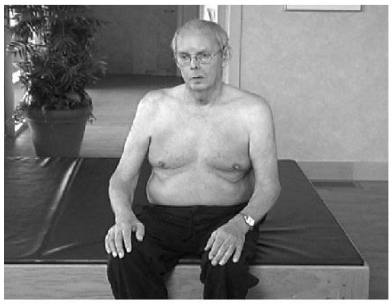
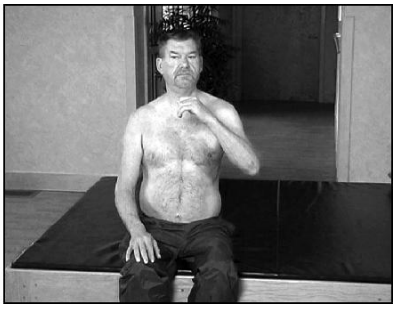
Introduction

This distance learning program takes the learner through a step-by-step process of how to select and use functional activities taken from real life situations to help patients be more independent. The program is designed to be interactive. Watch the videos and follow along in this Workbook. We'll go through this process as we observe four patients:



Tom



Clint

Alice

Dick

You will also see other stroke survivors during the series, each illustrating elements of evaluation and treatment.

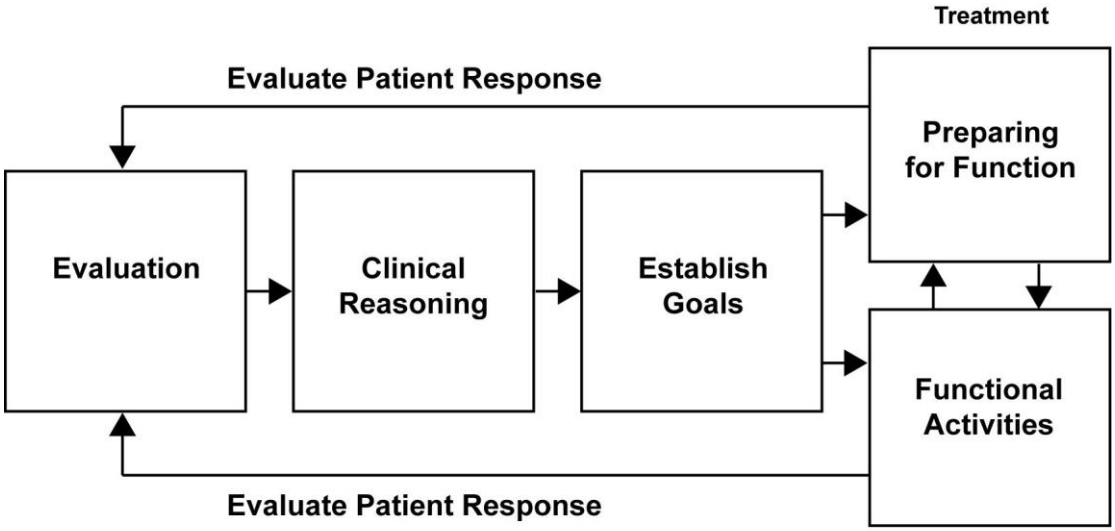
Tom had his stroke four months ago. His upper and lower extremity movements and function are typical of many stroke survivors we see in therapy today.

Clint has made great progress since his stroke four months ago. He's functioning at a high level. He is a good example of the need to continue therapy because pain and edema are limiting his functional abilities.

Alice had her stroke ten years ago. The high tone of her right upper extremity is limiting. By using functional activities we begin to see some nice changes.

Dick illustrates how we can use functional activities to both evaluate and treat problem areas that are specific to trunk control and weight shift.

Process for Utilizing Functional Therapeutic Tasks



Evaluation

The process begins with gathering information. This provides the basis of our *evaluation*. I'll show you how I interact with a patient and help you learn to sharpen your observation skills.

Clinical Reasoning

Next we'll take all of this information and begin problem solving. During *clinical reasoning* we'll determine the patient's key problem areas and prioritize them in a way which will make your therapy the most effective.

Establish Goals

A system will be demonstrated to *establish goals* that are easy to write, have functional outcomes and meet the standards of third party payers.

Treatment

And, finally taking all of the information we've gathered, we'll determine just what to do in *treatment*. A treatment program can either begin by *preparing a patient* for function or, it can begin directly with *functional activities.*

This is where it all comes together. Using activities from everyday living in our therapy program can help the patient bridge the gap between the clinic and home. This is especially true for patients who also have cognitive or perceptual impairments.

In either case, whether we prepare the *patient for function* or use *functional activities*, we must go through the entire process to develop a strategy. We must also evaluate the effectiveness of each treatment session. This helps us to modify and refine our therapeutic methods resulting in the highest level of success. The only way we truly know the effectiveness of our treatment methods is by *evaluating our patient's response.*

Learning Objectives

At the completion of this learning module, the participant should be able to:

1. Name the 5 phases described in *"The Process Used to Select Functional Tasks"*.
2. List three necessary therapeutic skills used to identify key problem areas during the *Reasoning* phase.
3. Identify asymmetry of the trunk and limbs in at least two stroke survivors observed *Evaluation* phase.
4. Identify three important components of proper posture you should strive for when working with patient's in a sitting position.
5. Write treatment goals with functional outcomes that meet the standards of third-party payers.
6. List three therapeutic methods demonstrated during the *Preparation for Function* phase.
7. Identify the five stages of muscle re-education in *Preparation for Function*.
8. List the three benefits of using therapeutic tasks taken from real-life situations.
9. List five important factors to consider in choosing a functional therapeutic task.

How to Use this Learning Module

The program is designed to be interactive. Watch the videos and follow along in this Workbook. As you watch, you'll also be participating. Three different symbols will appear in the lower left hand corner of your screen.

When **T** appears in the lower corner of your screen, turn to your Workbook and follow the directions.

When you see **W**, a *worksheet assignment* should be completed. After the video, do the assigned worksheet in the following segment.

Evaluation

A thorough evaluation or assessment provides the foundation for the most effective treatment program.

During the *Evaluation* phase, you will be taking in a lot of visual, auditory and tactile information. The better you are at gathering information, the more effective your treatment will be and the faster your patients will improve.

This includes:

- what you see
- what you hear
- what you feel

Observation: What do you see?

Begin with observation. Observing, or taking in information, should be fairly objective. When we *look* at a patient, we should all see the same things. Just like any other therapeutic skill, with structure and practice you can improve your evaluation skills. After we observe, we begin our interpretations. Interpretation helps us make sense of the information we've gathered. Interpretation is more subjective.

The moment you see your patient your initial evaluation begins. If you are seeing them in their room for the first time, notice how they are positioned. What is their level of awareness? Begin to gather information. If they come to therapy, watch how they enter the room. Are they in a wheelchair or are they ambulatory? Do they need assistance? What is their posture like? What is your general, overall impression of the patient?

Begin by positioning yourself on their weak side. This helps determine if there is any neglect or disregard of their involved side. These are a few of the things to look for:

- Do they turn their head toward you?
- Are they able to establish eye contact?
- Are they aware of their involved side?

Sometimes their neglect is so severe that it hampers further evaluation. In that case, move to their less involved side. Make sure that you are evaluating their ability to respond to the questions, not their visual ability.

The Interview Process: What do you hear?

Observations will continue throughout the Interview Process. Some information will be obvious; other information will be much more subtle.

Develop a rapport with your patient and begin to establish trust before initiating more formal tests. These informal questions help determine their knowledge of their situation and their ability to follow directions.

The kind of questions asked and the way in which they are asked depends on the patient's level of understanding. Follow the patient's flow of conversation. In other words, the order the questions are asked may change, depending on each patient, but the information still needs to be complete.

If the patient has difficulty understanding questions, modify the way the question is asked, according to the patient's level of understanding. First, try simplifying the question. Is your patient's yes/no response accurate? Are gestures helpful? Are visual cues necessary? Make a distinction between their ability to answer a question *appropriately* and their ability to answer a question *accurately*.

Notes:

❖ W1 Patient Interview: Clint

1. **Describe your general impressions of Clint.** *Include level of awareness and his ability to establish eye contact and turn toward his involved side.*

2. **How does Clint describe the onset of his stroke?** *Include sequence of events (hospitalizations) and any physical limitations.*

3. **Does Clint have any complaints of pain?** *Describe onset, location, possible cause, when is there pain, when is he pain free?*

4. **Describe Clint's ability to communicate.** *Any problems related to his ability to understand verbal communication or respond to questions?*

5. **Describe Clint's biggest concern** *(as he explains during the interview).*

6. **Describe how Clint uses his left side** *for functional tasks during the interview i.e., taking off his jacket and shirt.*

7. **Name two functional tasks that Clint wants to do independently.**

8. **How does Clint describe the sensation or 'feeling' in his left hand?**

❖ W2 Patient Interview: Alice

1. **Describe your general impressions of Alice.** *Include how she came into the therapy clinic, cognitive status and awareness of her involved side.*

2. **How does Alice describe the onset of her stroke?** *Include sequence of events (hospitalizations) and any physical limitations.*

3. **Describe Alice's ability to communicate.** *Any problems related to her ability to understand verbal communication or respond to questions?*

4. **Does Alice use any splints or orthotic devices?** *Please describe each one and when she uses each.*

5. **Describe Alice's biggest concern** *(as she explains during the interview).*

6. **Does Alice have any complaints of pain?** *Please describe.*

7. **How does Alice describe the sensation or 'feeling' in her right hand?**

❖ Introduction to Observation Skills

The following information will help you to improve your observation skills, the most important skill in gathering information. Skilled observation begins the moment you see your patient for the first time and continues during every treatment session; throughout the course of therapy. The more skilled you are at observation, the better therapist you will be. Therapists with exceptional observation skills will more readily identify key problem areas as well as incremental changes in progress.

Remove extra layers of clothing

It is much easier to identify asymmetries if you can look at bony prominences or actual creases and folds in the skin. Ask your outpatient to wear a tank top or swim suit under their clothes to make the evaluation easier. It is important to respect your patient's privacy, so the evaluation may take place in their room, behind a curtain in the therapy area or in a quiet evaluation room.

Determine the base of support

How the patient sits or stands can affect symmetry or asymmetry throughout.

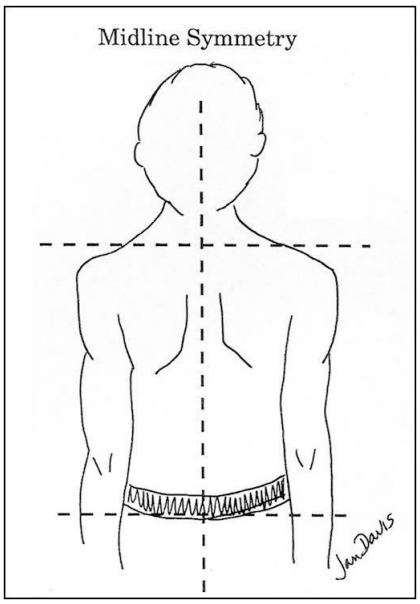
The base of support can include any contact your patient has with a weight-bearing surface.

1. Are both feet flat on the floor?
2. Is their weight evenly distributed or are they sitting or standing with their weight on one side more than the other.
3. Are they resting against the back of the chair or are they seated without a back support.
4. Do they use one or both upper extremities to support themselves?
5. Are they seated on a support surface that is firm or soft?

A more accurate assessment of symmetry in sitting is possible when the patient sits on a firm surface, such as a solid mat table or bench. A patient sitting on a soft, high hospital bed, without support through their feet will demonstrate different problem areas than a patient sitting on a mat table, with their feet flat on the floor.

A wheelchair with a solid seat will encourage more symmetry in sitting than a wheelchair with a 'slung out' seat. A seat with poor support contributes to internal rotation and adduction of the lower extremities. Soft surfaces also impair weight shifts in sitting making lateral movements difficult.

Observations of Asymmetry



Observe the patient from the front, the side and from the back. Begin with the base of support, noting any asymmetry in weight bearing through the hips. In your mind's eye, draw three lines: one at midline, along the spine, one at the pelvis and one at the shoulders.

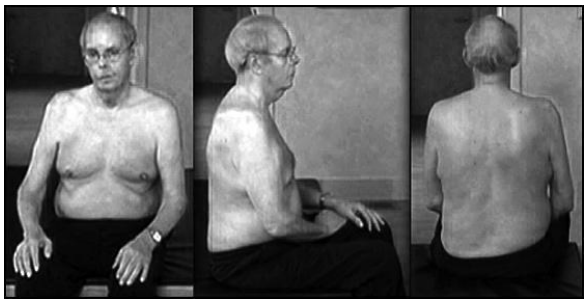
Look for deviations from midline

- Is the head in midline or off to one side?
- Is the medial border of the scapula equal distance to the spine on both sides?
- Is the scapula more pronounced on the involved side?

Look at the position of the pelvis and height of the shoulders to help determine asymmetries. Look for any clues or 'red flags' of asymmetries that help determine problem areas that need to be further investigated. The asymmetry doesn't tell the *cause* of the problem but it does help determine that a problem *exists*.

Evidence of Asymmetry

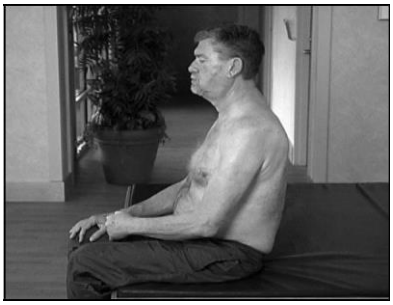
- unilateral creases or skin folds
- bony prominences
- muscle atrophy
- position of head
- height of shoulders
- position of pelvis
- position of upper extremities
- position of lower extremities



❖ Observations of Clint

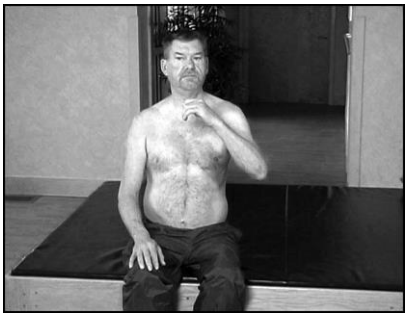
While observing Clint we can gather even more information.

- From the front, Clint looks fairly symmetrical.
- From the side, look at the position of the pelvis. It is not uncommon for stroke survivors to sit in a posterior pelvic tilt. When the pelvis is tipped posteriorly, the head and neck compensate by coming forward. This posture, although common, will affect the patient's symmetry, trunk control and ability to move from sit to stand. It can also affect their breath control, ability to swallow and vital capacity.
- Continue to observe from the back. Observe proximal to distal, noting any asymmetry in the upper or lower extremities. Are the lower extremities positioned symmetrically? Or, is it in abduction with external rotation? How is the upper extremity postured at the shoulder, elbow, forearm, wrist and hand?



Dynamic Observations

Observations made while the patient moves are called *dynamic observations*. If your patient appears fairly symmetrical during static observation, it may be easier to see problems during dynamic observation. Continue to follow the procedure, as before. Complexity increases as more elements are added to the description of how the patient moves. When evaluating your patient during movement, look at both sides. Do they "hold" or "brace" with the non-involved side? Is there any limitation of movement?



Look carefully as you describe your patient's movement components.

1. Identify the starting position (sitting, standing, sidelying or supine).
2. Identify each joint and their direction of movement or combinations of movement.
3. Describe if their movement is through full range or partial range.
4. Describe the quality of movement on the non-involved side.

Describe the quality of movement of the involved side.

1. Does the patient move with selective, isolated control?
2. Are the movements in a pattern?
3. Describe the pattern of movement.
4. What movements or combinations of movements is the patient able to do?
5. Look proximal first and then more distal.
6. Continue to look from the front, the side and the back.
7. Ask your patient to move their sound side.
8. Compare the movement of the two sides.

Notes

❖ W3 Patient Observation: Clint

1. **Describe Clint's base of support.** *Include weight distribution, surface support, and position of upper and lower extremities.*

2. **Observing Clint from the side, describe the position of his pelvis**.

3. **Describe any asymmetries noted.** *Include creases or folds, position of head, height of shoulders, position of scapula, and upper and lower extremities.*

4. **Describe Clint's movement during dynamic observation.** *Include quality of movement (selective control or synergistic movement)*

   Trunk

   Shoulder

   Elbow

   Forearm

   Wrist

   Hand

5. **Are there any limitations noted in the non-involved side?** *Please describe.*

❖ W4 Patient Observation: Alice

1. **Describe Alice's base of support.** *Include weight distribution, surface support, and position of upper and lower extremities.*

2. **Observing Alice from the side, describe the position of her pelvis.**

3. **Describe any asymmetries noted.** *Include creases or folds, position of head, height of shoulders, position of scapula, and upper and lower extremities.*

4. **Describe Alice's movement during dynamic observation.** *Include quality of movement (selective control or synergistic movement)*

   Trunk

   Shoulder

   Elbow

   Forearm

   Wrist

   Hand

5. **Are there any limitations noted in the non-involved side?** *Please describe.*

❖ Observations of Tom: Dynamic Movement

- As Tom attempts to move his arm, he shifts his weight to his uninvolved side.
- His head position becomes more asymmetrical.
- He uses trunk extension, shoulder elevation and retraction.
- He has some elbow flexion and forearm supination.
- At this time, minimal movement noted of the hand or wrist.
- From the back we can easily see the weight shift off the weak side and the scapular elevation with retraction.
- As Tom brings his strong arm overhead we note the normal positions of the trunk, head and shoulder during movement.
- We can observe the excessive effort Tom uses on both sides, not just his right side.
- When Tom tries to bring both arms overhead the asymmetry becomes even clearer.

Notes (additional observations of Tom)

❖ Tactile Observation

What Do You Feel?

We also gather information to complete our evaluation by handling the patient. This is a very important part of your evaluation. *It is just as important as visual observation.*

Now, as you begin your 'hands on' therapy, you begin to build trust with your patient. This is very important. *Your hands should be firm but never forceful.* Say to your patient: "If anything hurts, let me know."

Palpate

- How does the muscle bulk feel? Firm? Tense? Soft?

Move the limb

- How does it feel? Light? Heavy? Resistive?
- Are you able to move the limb through full passive ROM?

- Are there limitations?
- How does it feel at end range? Blocking? Soft?
- Any complaints of pain?

We've gathered a lot of information. We now have a better idea of our patient's level of awareness, their physical asymmetries, and their ability to move. This will help us to select functional tasks that will be the most beneficial. In your therapy program, you will continue with formal assessments of ROM, sensation and other tests in order for your evaluation to be complete.

Observations Made During Activities

Observation During Activities in Preparation for Function

During treatment activities in *preparing for function*, the complexity increases. Movement requiring combinations of both trunk and limbs requires greater control. Postural changes may be observed. Observations of newly identified asymmetries and problem areas help me to further assess and treat my patient.

Observation During Functional Activities

The most complex and difficult observations are made during functional tasks. Your observations must now include more than their ability to move. Now you will begin to evaluate their skills related to cognition, motor planning and problem solving. Observations made during functional activities provide a wealth of information.

Describe trunk rotation

Most stroke survivors have difficulty with dissociation of pelvic and shoulder girdles. They often move as a unit, unable to separate upper and lower trunk movements during functional tasks. Describe movement components of trunk rotation and any limitations during a functional task.

Describe weight shifts

Weight shifts toward the involved side are often difficult for the patient to perform during activities in sitting and standing. Many underlying factors (see *Clinical Reasoning*) contribute to this problem. How your patient shifts their weight (or, more specifically, how they initiate their weight shift) plays a key role in trunk activity.

What happens when the base of support changes?

Changes in the patient's base of support can either improve or reduce trunk symmetry and stability in sitting or standing. If, during an activity, the base of support becomes more narrow, i.e. both upper extremities leave the table, additional problems of the trunk and lower extremities are often observed. Describe any changes in trunk, upper or lower extremity movement or control.

Describe observations of transitional movements

During transitional movements, when a person changes positions, abnormal patterns of movement of the trunk and involved side occur most often due to the increased effort and complexity of movement. Observe both the involved and non-involved sides as your patient changes position from lying to sitting or from sitting to standing.

Clinical Reasoning

The Problem Solving Begins!
We've gathered a lot of information and now it's time to make sense of it all. With clinical reasoning the problem solving really begins! During *Clinical Reasoning* we need to identify and prioritize key problem areas. We determine the source of each problem based on our observations and interpretations, in order to develop the most effective treatment program.

Identifying the Key Problem Areas

To treat hemiplegia most effectively, it is essential to first identify key problem areas so that the treatment is specific to the primary underlying problem. Evaluating a patient and identifying key problem areas are the equivalent of doing good detective work. Treating a person recovering from a stroke is complex and many problem areas are associated with adult hemiplegia.

Key problem areas are determined through interview, specific observations, handling and moving the patient. I make sure that I compare and contrast the patient's movement with normal movement. As a therapist, your ability to analyze normal movement and the components of normal movement within a functional context are essential to good evaluation and effective treatment. Be specific in your analysis and description of problem areas.

Prioritizing Key Problem Areas

Next, prioritize the identified problem areas. Select two or three key problems that, if remedied, would have the greatest overall impact on your patient's functional status. Determine which key problem areas can be realistically treated in your setting. Keep in mind time constraints such as the patient's tolerance to activity, length of stay and financial considerations.

Do not assume that the loss of motor control will always have the greatest impact. Sensory loss, fear, neglect or cognitive impairment also could be key problem areas. *The two most important prognostic indicators in determining my patient's ability to function are cognition and sensation.* If my patient has good cognition and good sensation, they have a much better chance at becoming independent. If my patient has good motor recovery but poor cognition and sensation, they are less likely to be safe and independent.

With the following patients we'll combine *what we see, what we hear* and *what we feel* and begin the clinical reasoning process.

Interpretation: Determining Underlying Factors (Impairments)

It's important to separate interpretation from observation. All of us should have seen basically the same things when we observed Clint and Alice. However, how we interpret what we have seen can be very different. How we interpret the information we've gathered is based largely on our knowledge and experience. If you have one year of experience in the acute care hospital and seldom see a stroke patient more than one week post stroke, your interpretations will be very different from a therapist who has ten years of experience working with a stroke patient over a period of several months in inpatient, outpatient and home health.

Look at movement patterns that are deviations from normal and begin to ask yourself "Why?" The same holds true for asymmetries noted. Asymmetry tells us there's a problem but doesn't tell us the cause. We need to determine the source or the cause of each problem before we can plan an effective treatment program. The source of the problem can also be described as the underlying factor or impairment. Once underlying factors are identified it is much easier to plan our treatment strategies.

Underlying factors or impairments related to stroke

- motor control
- sensation
- perception
- cognition
- communication
- environmental factors

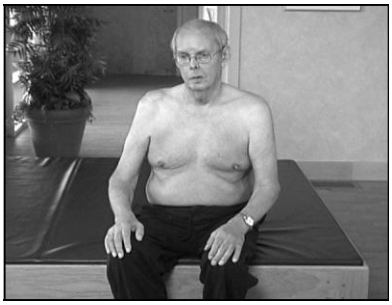
Impairments that occurred prior to the stroke may include:

- surgical procedures
- previous injuries
- secondary diagnosis

Examples of Observation and Interpretation

We noticed in the Evaluation segment that Tom's head was not in midline and that Clint had a winged scapula. I take these observations and think "why?" What could be some possible reasons? What are the underlying factors? We should all see the same problems but we may each think of different reasons why the problems exist.
The answers to "Why?" help me to interpret my observations and form the basis of my clinical reasoning.

The following could be reasons why a stroke survivor's head would not be in midline:



- tightness of the upper trapezius
- compensation for visual field deficit
- neglect or disregard
- midline orientation deficit
- uneven weight bearing and the head 'rights' to one side as a result

Let's take another example of a problem that is not uncommon in hemiplegia; winging of the scapula. We've all learned in school that the most common reason for a winged scapula is weakness of the serratus anterior. This may be true of a patient with orthopedic involvement, however, in hemiplegia, winging of the scapula is often be caused by increased tone of the internal rotators of the humerus. Abnormal tone of the subscapularis is a likely cause of internal rotation of the humerus resulting in winging of the scapula.

Why is it important to know the cause? It's important because how we interpret or determine the underlying factor as the source of the problem will affect the kind of therapy we do in treatment. If the patient has weakness of the serratus anterior, then we need to facilitate and strengthen that muscle. However, if the underlying factor is related more to high tone of the subscapularis, then, in therapy, we need to work on reducing tone of the subscapularis in order to be the most effective.

Observations and interpretations During Function

Some observations of problem areas are seen within a functional context. A patient might have difficulty standing up. The problem has already been identified, but the source of the problem hasn't. So, I begin the problem solving process again. I think "why"? If I can identify the source of the problem or the 'underlying factor', then I will have a much better idea of specifically what to do in therapy.

What are some factors which could contribute to the difficulty in coming from sit to stand?

- Is it the patient's inability to come forward?
- Are they limited in hip or trunk flexion?
- Is the patient fearful?
- Is it the position of their feet?
- Do they have limited ankle dorsiflexion? If so, what is the cause of that limitation?
- Do they have a shortened Achilles tendon? Why?
- Are they wearing an orthotic device? Is it limited to 90˚, which would limit dorsiflexion?

Structured Observations (Examples)

Areas Observed	Observation	Possible Causes of Problem*
Head	Lateral flexion to affected side	Shortened upper trapezius Poor head righting Midline orientation deficit
Shoulder	Hemiplegic shoulder lower	Weak trunk with lateral flexion to the hemiplegic side Low tone in shoulder girdle with arm hanging to the side Increased tone in depression and downward rotation of the scapula
	Unaffected shoulder higher	Bracing or holding with strong side caused by poor sitting balance, weak trunk control, or fear
Scapular position	Downward rotation of scapula	Increased tone of muscles acting on scapular downward rotation (rhomboids, levator scapulae, serratus anterior) Decreased tone of stabilizing muscles of the scapula allowing it to fall into downward rotation
	Winging of the scapula	Weakness of serratus anterior Increased tone of the subscapularis pulling the scapula and causing it to wing
Trunk	Unilateral crease on affected side	Lateral flexion of trunk caused by weak abdominals or increased tone in scapular retraction and depression with pelvic retraction and elevation causing shortening on the hemiplegic side

*These are some examples. A problem may have one or more causes.

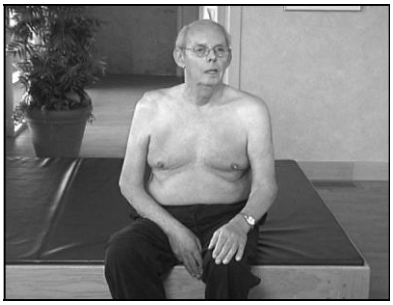
❖ Clinical Reasoning with Tom

Information Gathered During the Interview

- His memory of the onset of his stroke isn't complete.
  We may want to further evaluate memory and other cognitive skills.
- He isn't happy with his heavy brace.
  A different orthotic device is a much better choice for him.
- He is beginning to walk.
- He has some shoulder pain.
- He has movement in his hand but he can't use it because his shoulder is weak.

Information Gathered During Observations

Static Observation



1. *How is he sitting?*

   He sits independently on a firm surface, a mat table. His base of support is through his hips and his feet. He appears to be sitting with more weight on his left side than his right. His right foot and left foot are not positioned symmetrically.

2. *What could be some possible reasons?*

   Is the asymmetry neurologically, orthopedically or environmentally based?

With Tom's shirt off, it is easy to see the asymmetry of the shoulders.

- The right shoulder has less muscle bulk.
- The head of the humerus and boney structures of the scapula are more pronounced.
- He appears to have a winged scapula.
- We can see subluxation of the glenohumeral joint.

Dynamic Observation

As he attempts to move his arm, more distal return is observed than proximal. Shoulder movement appears to be limited to some scapular elevation and retraction. There is some elbow flexion with forearm pronation. In sitting it doesn't appear to be isolated selective movement.

To further evaluate elbow flexion and extension Tom needs to be positioned in sidelying in order to eliminate the shoulder component. He has some isolated wrist extension and finger flexion and extension.

Remember, half of my observation is visual and half is tactile. So, now I begin to move Tom's arm. He complains of pain during passive shoulder flexion and scapular protraction. He has limited shoulder ROM. Why? What is the cause of the pain and limitation in ROM?

Start by evaluating scapular elevation. Scapular elevation is the safest position to begin with. If tightness is noted, ask "why"? Is it due to increased tone of the muscles around the scapula? Or, is it due to immobility over the past several months? I feel resistance leading me to believe he has some increased tone proximally.

Summary of Problems Observed with Tom

- unequal weight distribution in sitting
- limited passive ROM in shoulder flexion and protraction
- scapular instability
- limited movement of the shoulder, elbow, forearm and hand
- shoulder pain

Key Problem Areas

- inability to weight shift toward the involved side
- limited movement of the shoulder, elbow, forearm and hand

In treatment it is important to focus on Tom's trunk to improve stability, weight shift and upper and lower extremity function.

❖ W5 Clinical Reasoning: Tom

1. **List 4 important things learned during Tom's interview.**

2. **Describe 3 areas of asymmetry noted during his position in sitting.**

   What could be possible underlying factors?

3. **Describe any isolated, controlled movements of the upper extremity.**

4. **Where does Tom illustrate increased tone of the upper extremity?**

5. **Summarize Tom's problem areas.**

6. **List Tom's 2 key problems.**

❖ W6 Clinical Reasoning: Clint

1. **Which two key problem areas, that left untreated, could limit Clint's future functional gains?**

   What could be possible underlying factors?

2. **Describe the asymmetry noted while Clint moves from standing to sitting.**

   What could be possible underlying factors?

3. **List Clint's 5 problem areas identified during *Clinical Reasoning***

   1.

   2.

   3.

   4.

   5.

4. **How would you prioritize Clint's problem areas if he were your patient?**

5. **Which would you treat first? Why?**

❖ W7 Clinical Reasoning: Alice

1. **Identify Alice's key problem area:**

2. **List 3 underlying factors which contribute to Alice's key problem area.**

   1.

   2.

   3.

3. **How does this key problem affect Alice's ability to function at this time?**

4. **In order for Alice to function at a higher level, what problem areas would you address and what changes would you expect during therapy?**

❖ W8 Patient Observation: Dick

1. **How does Dick move from standing to sitting?**
   Describe weight shift, trunk rotation, forward flexion, and any equipment used.

2. **How does Dick come from sitting to standing?**
   Describe weight shift, trunk rotation, forward flexion, and any equipment used.

3. **Describe Dick's base of support.**
   Include weight distribution, position of upper and lower extremities and surface support.

   In Sitting: In

   Standing:

4. **Describe how Dick uses his left upper extremity for functional tasks during the interview i.e., taking off his jacket.**

5. **Describe Clint's movement during dynamic observation.**
   Include quality of movement (selective control or synergistic movement).

   Trunk

   Shoulder

   Elbow

   Forearm Supination, Pronation

   Wrist

   Hand

6. **Describe the Tactile Observations that Jan explains while moving Dick's upper extremity.**
   Is there resistance? Is it heavy?

❖ W9 Patient Interview Form: Dick

1. **Describe your general impressions of Dick.** *Include level of awareness and his ability to establish eye contact and turn toward his involved side.*

2. **How does Dick describe the onset of his stroke?** *Include sequence of events (hospitalizations) and any physical limitations.*

3. **Describe Dick's ability to communicate.** *Any problems related to his ability to understand verbal communication or respond to questions?*

4. **How does Dick describe his problem areas?** *(as he explains during the interview).*

5. **Name two functional tasks that Dick wants to do independently.**

6. **How does Dick describe the sensation or 'feeling' in his left hand?**

❖ W10 Clinical Reasoning: Dick

1. **Describe the first key problem area identified with Dick:**

   During what functional movements was it observed?

   What could be some possible causes?

2. **Describe the second key problem area identified with Dick:**

   During what functional movements was it observed?

   What could be some possible causes?

3. **Describe the second key problem area identified with Dick:**

   During what functional movements was it observed?

   What could be some possible causes?

4. **What is your "best guess" at Dick's long term prognosis for function of the involved side?**

Establish Goals

The information gathered during the *Evaluation* phase and the key problem areas identified during the *Clinical Reasoning* phase allow us to *Establish Goals* for our patient's therapy program. As we establish goals for our patient and document them for reimbursement of services, it is important to remember that documentation is the only tangible evidence of the critical link between our clinical reasoning and the patient's functional performance outcome. In addition, improper documentation can result in a claim being denied or returned to the provider for additional information, jeopardizing the patient's access to further treatment.

It's important to write goals with functional outcomes that meet Medicare guidelines. Most third-party payers use Medicare guidelines as a standard. Remember: the people who review your documentation, the people who decide whether to reimburse for your services, are only required to have a high school diploma. Make sure the terms you use and your documentation are easily understood. Be clear and concise. Avoid the use of excessive jargon that is difficult for the non clinician to understand.

Each discipline (PT or OT), each state,
and each therapy setting (acute, inpatient rehabilitation,
outpatient rehabilitation, and home health)
have specific requirements re: documentation.

It is every therapist's responsibility
to know the requirements of their specific
state, work setting, and discipline.

Insurance companies and third-party payers are looking for the same thing in terms of patient progress: *changes in function*. If you follow this format (modified to any specifications that your facility requires), you should be able to write goals that are easy to measure and that are written with functional outcomes.

Nearly all third-party payers require documentation of patient goals that include four components:

1. **Functional Outcome**
   What function will your patient be able to do when the goal is accomplished?
2. **Skill or Behavior**
   What must the patient be able to do in order to reach that goal? What movement components are necessary for the function? A common mistake in writing goals is that the therapist describes what they will do. Instead, describe what the ***patient*** will do, not what the ***therapist*** will do.
3. **Measure**
   How will you be able to measure changes to show patient progress? There are many ways to measure improvement. Improvement can be characterized by the patient needing less assistance or needing less equipment for functional tasks. Improvement can also be measured by distance, time, verbal cues, consistency (number of trials), amount of assistance required from the therapist, or the amount of assistance required from the caregiver.

4. **Time Frame**
   You must include how much time you anticipate your patient will need in order to accomplish this goal. This could include short-term goals and/or long-term goals. The amount of time needed will depend on the complexity of the goal or functional outcome, the level of the patient (cognitive, perceptual, and sensory, as well as motor control), and your skill level. Use your best professional judgment. The more experience you have, the better you'll be at your prognosis. It helps to break long-term goals into smaller increments in order to document progress.

I've simplified this process and reduced the time you need to spend in documentation.

- Substitute the words *"functional outcome"* with **"in order to"**
- Substitute *"skill or behavior"* with the words **"the patient will"**
- Substitute *"measure"* with the word **"with"**
- And substitute *"time frame"* with the word **"in"**

Now let's try it out with a very common goal related to ADLs.

- **In order to** donn his pants
- **the patient will** be able to come from sit to stand
- **with** moderate assistance
- **in** two weeks.

Easy, isn't it?

Let's try another example.

- **In order to** lock her wheelchair brakes
- **the patient will** be able to shift weight toward the affected side
- **with** three verbal cues
- **in** one week.

Now, depending on your setting, you may need to make slight modifications. If you work in home health or outpatient, you may state the time frame in number of treatment sessions instead of weeks. You should also check with the person reviewing the charts at your facility to see if there are any additional requirements.

You may choose to measure progress in other ways:

- The amount of equipment required (less equipment means improvement)
- Time or distance is a common way to measure change, as well as number of trials. Don't say 50% of the time; instead say that in 3-out-of-6 attempts your patient was able to lock their wheelchair brake.

I also like the flexibility of this plan, you can write your goals with the four components in any order, even backwards: **"Within one week, with three verbal cues, the patient will shift weight to the affected side in order to lock her wheelchair brakes."**

❖ Goal Components: Examples

Functional Outcome [in order to…]	Skill/Behavior [the patient will…]	Measurement [with…]	Time Frame [in…]
• Donn pants	• Come from sit to stand	• Moderate assist • Verbal cues • Height of surface	• 2 weeks *pants over feet* *pants over knees* *pants over hips*
• Lock wheelchair brakes	• Weight shift to affected side with active trunk control	• Verbal cues • Brake extension • 5-of-10 attempts	• 1 week
• Stabilize objects during functional tasks	• Be able to bring affected arm onto table surface	• Without verbal cues	• 1 week

Notes

❖ W11 Goal Components for Tom and Clint

Patient: Tom			
Functional Outcome [in order to…]	**Skill/Behavior [the patient will…]**	**Measurement [with…]**	**Time Frame [in…]**
Goal 1			
Goal 2			

Patient: Clint			
Functional Outcome [in order to…]	**Skill/Behavior [the patient will…]**	**Measurement [with…]**	**Time Frame [in…]**
Goal 1			
Goal 2			

❖ W11 Goal Components for Alice and Dick (cont.)

Patient: Alice			
Functional Outcome [in order to…]	**Skill/Behavior [the patient will…]**	**Measurement [with…]**	**Time Frame [in…]**
Goal 1			
Goal 2			

Patient: Dick			
Functional Outcome [in order to…]	**Skill/Behavior [the patient will…]**	**Measurement [with…]**	**Time Frame [in…]**
Goal 1			
Goal 2			

Evidence Report for:
"Functional Treatment Ideas & Strategies in Adult Hemiplegia"

Evidence based practice (EBP) includes a review of current research results and is a part of our overall critical thinking process. EBP also includes use of creativity and reflection on previous experiences.

The research report below is not intended to be an all-inclusive, systematic review of the literature. Information is provided to promote evidence-based practice and strengthen our research discussion. Database searches will be expanded and additional resources will be added in future versions of this product.

Preparing for Function

Research indicates that therapy received from the very beginning of hospitalization following a stroke can lead to better outcomes for our clients. This information is described in the following studies:

- Early and intensive out-of-bed activity following stroke may fast-track return to unassisted walking and improvefunctional recovery (Cumming etal., 2011)
- Positioning affected shoulder in maximum external rotation reduces the development of contractures following stroke (Ada, etal., 2005)
- Higher dose of exercise-based therapy may enhance motor recovery after stroke for comfortable walking speed, maximum walking speed & upper limb muscle function (Cooke, et al., 2010)
- Continuous passive motion or neuromuscular stimulation along with elevation was more effective at reducing hand edema compared to elevation alone in stroke survivors (Barreca, et al., 2003)
- Lifting the hemiplegic arm by holding the humerus under the axilla and maintaining external rotation produces greater range of flexion at the hemiplegic shoulder than a 'distal hold' (Tyson & Chissom, 2002)

Use of Functional Activities

Occupational embeddedness—the incorporation of activities or tasks that are relevant or meaningful to your client during intervention—promotes better movement quality and encourages normal movement patterns in a hemiplegic upper extremity following a stroke. This information is reported in the following studies:

- A task that provides abundant and familiar perceptual information may provide more meaning to a client, thereby eliciting more appropriate and efficient movement (Gasser-Wieland & Rice, 2002)
- Following a stroke, individuals moved more efficiently and smoothly during a task incorporating occupational embeddedness (Gasser-Wieland & Rice, 2002)
- Task related training improved post-stroke performance of seated distance reaching, and load carried/muscle activation of affected lower leg (Dean & Shepherd, 1997)
- Intensive task practice focused on preventing compensatory trunk movements while promoting the coordination of shoulder flexion-elbow extension may reinforce the development of "normal" reach patterns post-stroke (Woodbury, et al., 2009)
- Earlier improvement is noted for clients receiving therapy in their home environment that focused on typical activities and tasks. (Björkdahl, A., Nilsson, A. L., Grimby, G., & Sunnerhagen, K. S, 2006).
- Functional tasks completed with a hemiplegic upper extremity with restriction of compensatory trunk movements, can lead to better quality and function of movement in the impaired arm (Michaelsen S. TM., Dannenbaum, R. & Levin, M. F. , 2005)

References

Ada, L., Goddard, E., McCully, J., Stavrinos, T. &Bampton, J. (2005). Thirty minutes of positioning reduces the development of shoulder external rotation contracture after stroke: A randomized controlled trial. Archives of Physical Medicine and Rehabilitation, 86, 230-234.

Barreca, S., Wolf, S.L., Fasoli, S., & Bohannon, R. (2003). Treatmentinterventions for the paretic upper limb of stroke survivors: a critical review. Neurorehabilitation & Neural Repair, 17(4), 220-226..

Björkdahl, A., Nilsson, A. L,Grimby, G., &Sunnerhagen, K. S. (2006). Does a short period of rehabilitation in the home setting facilitate functioning after stroke? A randomized controlled trial. Clinical Rehabilitation, 20, 1037-1049.

Cooke, E.V., Mares, K., Clark, A., Tallis, R.C. & Pomeroy, V.M. (2010). The effects of increased dose of exercise-based therapies to enhance motor recovery after stroke: a systematic review and meta-analysis. BMC Medicine, 8, 1-13.

Cumming, T.B., Thrift, A.G., Collier, J.M., Churilov, L., Dewey, H.M., Donnan, G.A., & Bernhardt, J. (2011). Very early mobilization after stroke fast-tracks return to walking: further results from the phase II AVERT randomized controlled trial. Stroke, 42, 153-158.

Dean, C.M. & Shepherd, R.B. (1997). Task-related training improves performance of seated reaching tasks after stroke. A randomized controlled trial. Stroke, 28, 722-728.

Gasser-Wieland, T., & Rice, M. S. (2002). Occupational embeddedness nuring a reaching and placing task with survivors of cerebral vascular accident. OTJR, 22(4), 153-160.

Michaelsen S. TM., Dannenbaum, R. & Levin, M. F. (2005). Task-specific training with trunk restraint on arm recovery in stroke: Randomized control trial. Stroke, 37, 186-192,doi:10.1161/01.STR0000196940.20446.c9.

Tyson, S.F. & Chissim, C. (2002). The immediate effect of handling technique on range of movement in the hemiplegic shoulder. Clinical Rehabilitation, 16, 137-140.

Woodbury, M.L., Howland, D.R., McGuirk, T.E., Davis, S.B., Senesac, C.R., Kautz, S., & Richards, L.G. (2009). Effects of trunk restraint combined with intensive task practice on poststroke upper extremity reach and function: A pilot study. Neurorehabilitation and Neural Repair, 23(1), 78-91.

