

**Orthopaedic Manual Physical Therapy
Description of
Advanced Specialty Practice**



**American Academy
of
Orthopaedic Manual Physical Therapists
2008**

Dedication to the AAOMPT Founding Members

We dedicate this document to the founding members of the AAOMPT: Dr. Richard Erhard, Dr. Joe Farrell, Ola Grimsby, Dr. Kornelia Kulig, Michael Moore, Dr. Stanley Paris, Michael Rogers, and Dr. Bjorn Svendsen. We would like to give special acknowledgement to Freddy Kaltenborn who facilitated a meeting of these individuals in 1991 which led to the formation of the AAOMPT.

Orthopaedic Manual Physical Therapy

Description of Advanced Specialty Practice

This document was prepared by the Members of the American Academy of Orthopaedic Manual Physical Therapists (AAOMPT) and approved by the Executive of the AAOMPT.

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Introduction

The American Academy of Orthopaedic Manual Physical Therapists (AAOMPT) is a national professional organization that represents physical therapists with clinical practice, education, and/or research interests in orthopaedic manual physical therapy (OMPT). The AAOMPT mission is to “*serve its members by promoting excellence in orthopaedic manual physical therapy practice, education and research, and by collaboration with national and international associations.*”

In 1998, the AAOMPT published the Description of Advanced Clinical Practice (DACP)⁹ for OMPT and it was expected that a significant revision would be appropriate in 10 years. In 2005, the AAOMPT charged the Academy’s Standards Committee to develop a plan for revision of the DACP and in March of 2005 the Core Committee met via teleconference for the first planning meeting. Subsequently, an outside consultant was employed to moderate this process and an Advisory Panel consisting of experts in the field of OMPT was invited to participate in the process. A survey was developed and sent to several hundred OMPT practitioners throughout the United States to gather data regarding current OMPT practice as well as thoughts regarding the future of OMPT practice. The survey was analyzed and several drafts were revised. All members were given an opportunity to provide comments at the 2006 AAOMPT Annual Conference during a breakout session as well as throughout the conference. This document is the final result of many face-to-face meetings, dozens of conference calls, and thousands of e-mails.

Purposes of the DASP

This description of advanced specialty practice (DASP) represents the Academy’s attempt to identify the clinical knowledge, judgment and professional behaviors of a physical therapist who has achieved an advanced level of practice through orthopaedic manual physical therapy fellowship education, post-professional degree work, and/or relevant clinical experience and course work. The purpose of this document is to provide guidelines to facilitate changes in practice and education, to the benefit of patients/clients. This document will also be used by the American Physical Therapy Association (APTA) Clinical Residency and Fellowship Program Credentialing Committee as the basis for assessment of manual physical therapy fellowship programs. In addition, this DASP in OMPT has many other potential uses. For instance, it can

1. Serve as the Core Document for development of Manual Physical Therapy Fellowship programs credentialed by the APTA.
2. Serve as the basis for potential revisions to the *Standards for Orthopaedic Manual Physical Therapy Clinical Residency Education*
3. Serve as the basis for potential revisions to the *Guidelines for Curriculum Development for Post Professional Residencies in Orthopaedic Physical Therapy and Orthopaedic Manual Therapy.*
4. Influence the content of any national certification exam that may be developed in the future relative to the content of orthopaedic manual physical therapy.

5. Assist physical therapy (PT) clinicians interested in becoming advanced OMPT practitioners to establish career goals.
6. Assist employers in working with PT clinicians to develop performance assessments and professional development plans.
7. Describe the practice of OMPT to individuals outside of the PT community such as other health care providers, third party payers, potential patients, etc.

Organization of the DASP Document

To achieve the purposes described above, the document is organized in a specific fashion. To orient the reader (PT and non-PT) Chapter 1 provides a general description of OMPT practice and how one becomes an advanced practitioner in this area of specialty practice. The patient case vignette presented in Chapter 3 is designed to bring to life the clinical practice dimensions of an OMPT practitioner outlined in Chapter 2. The case vignette provides insight into the level of clinical decision making expected of an advanced practitioner.

The OMPT practitioner is not only identified as one with advanced clinical skills, but also having high professional standards. Chapter 4 illustrates professional dimensions associated with an advanced practitioner. For the educator and those interested in investigating the pursuit of fellowship education Chapter 5 lists the foundational knowledge for OMPT practice. The inclusion of objectives tied to evidence based practice in Chapter 6 underscores the commitment to the pursuit of this practice paradigm. These objectives relate not only to levels of clinical practice expected of the advanced practitioner, but also as to what content is taught and how its taught in the fellowship programs.

Chapter 7 completes our document by providing the reader with a description of the steps associated with the document's development. After reading this section, we hope the readers agree that the process was credible and consensus based.

Lastly, Appendices are included to assist the reader by defining terms, clarifying concepts, providing sources of related information and presenting a historical overview of the AAOMPT as an organization.

Chapter 1: Description of Advanced Specialty Practice: An Overview

What is OMPT?

The following description of Orthopaedic Manual Physical Therapy (OMPT) is intended for health care providers other than the OMPT practitioner, including third party payers and potential patients/clients.

OMPT is any “hands-on” treatment provided by the physical therapist. Treatment may include moving joints in specific directions and at different speeds to regain movement (joint mobilization and manipulation), muscle stretching, passive movements of the affected body part, or having the patient move the body part against the therapist’s resistance to improve muscle activation and timing. Selected specific soft tissue techniques may also be used to improve the mobility and function of tissue and muscles.

Orthopaedic manual physical therapists treat acute and chronic symptomatic conditions in body regions including the head, neck, back, arms and legs. Early, consistent and skillful manual physical therapy, combined with exercise and patient education, is central to the OMPT therapist’s practice. Advanced examination, communication and decision making skills that are built on the foundations of professional and scientific education facilitate the provision of effective and efficient care. OMPT practitioners provide patient management, consult with other care providers on neuromusculoskeletal conditions ranging from simple to complex, and provide recommendations and interventions in the area of health and wellness. By selecting an OMPT-trained practitioner, a patient will receive optimal care that is effective and fiscally responsible. This is particularly important if the patient has limited resources, has limited visits covered by health insurance, is seeking conservative treatment that may preclude the need for surgery, or, in cases where surgery is required, is seeking treatment to enhance their outcomes.

When someone suffers from a neuromusculoskeletal disorder, an exercise and movement re-education program may be sufficient to restore full pain free movement, function, and return to full activity. However, in some cases, soft-tissue and joint restrictions are present, resulting in these same interventions being painful or, worse, aggravating to the condition. In these instances, an OMPT therapist can provide hands-on techniques to improve mobility, reduce pain, and restore normal function of the soft tissues and joints. Following these interventions, the OMPT therapist can prescribe and implement the most effective individualized exercise and movement re-education program to maintain and improve health.

The services of an OMPT are recommended if you have muscle, joint, or soft tissue conditions that affect movement, strength, posture, or cause pain. This not only includes common disorders associated with trauma, post-operative recovery, poor posture, overuse, athletic injuries, obesity, arthritis, or congenital conditions, but also disability associated with conditions such as Parkinson’s disease, multiple sclerosis, cerebral palsy, spinal cord injury, diabetes, cancer, heart disease or balance disorders. Patients suffering

from chronic conditions can benefit from skilled OMPT intervention with the goals of attaining optimal health, returning to optimal activity, and minimizing disability associated with disease progression.

How to Become an OMPT Advanced Practitioner

In order to achieve recognition as a Fellow of the AAOMPT, an individual must complete an APTA credentialed and AAOMPT recognized manual therapy fellowship program. Definitions of fellowship education and eligibility requirements of the APTA and the AAOMPT are included in Appendix 3. These requirements may change over time. Individuals and programs should visit the APTA (www.apta.org) and Academy (www.aaompt.org) websites to obtain updated information.

Fellow Renewal Process

Fellow status in the AAOMPT, once achieved, lasts 10 years. Renewal of fellow status requires that the individual demonstrate evidence of involvement in scholarly activity to validate practice and expand the body of knowledge of OMPT, participation in clinical/didactic education and mentoring to increase the skill level of other physical therapists, service to the profession and to the community, and personal professional development. Fellows should visit the Academy website to obtain updated information on requirements and timelines.

The AAOMPT supports the concepts of ongoing professional growth, identified in the APTA Standards of Practice for Physical Therapy (HOD S06-03-09-10) and the Code of Ethics (HOD S06-00-12-23):

“Professional development encompasses the entire scope of a career beginning with pre-professional education and continuing through one’s professional life span. Professional development enables the physical therapist to assume an attitude of inquiry and to engage in an ongoing process of assessment and actions that provide the opportunity for:
Maintaining and expanding knowledge and skills based on current best evidence

- Induction into new responsibilities,
- Self-reflection about and facilitation of professional core values
- Autonomous practice within the context of one’s health care setting
- Creating, anticipating, and actively responding to change in response to an evolving health care system.

“Physical therapists are obligated to participate in professional development:

- To ensure continued competence through the acquisition and maintenance of minimally acceptable standards of practice,
- To strive towards the achievement of excellence in practice and
- To support and advance the profession.”

Chapter 2: Clinical Practice Dimensions Expected of the Orthopaedic Manual Physical Therapy Advanced Practitioner

Orthopaedic Manual Physical Therapist (OMPT) specialist practice is governed and guided by federal and state laws, rules and regulations, and the physical therapy profession's core practice documents. Combined, the *Guide to Physical Therapist Practice*, *Standards of Practice for Physical Therapy and the Criteria*, and *Guide for Professional Conduct*⁵ are the blueprints for the accepted standard for *all* physical therapy practice. The accepted standards promote the provision of an optimal level of service delivery and excellence in clinical practice, as well as maintenance and promotion of ethical practice. As such, this DASP does not include all details found in these guiding documents, but will highlight the elements of practice, knowledge areas and procedures that distinguish the OMPT specialist.

The *Guide to Physical Therapist Practice*⁵ Patient/Client Management Model includes the core practice elements for all physical therapists; examination, evaluation, diagnosis, prognosis, intervention and outcome. The OMPT's advanced knowledge base and skills allow for an efficient, non-linear progression through these elements. The enduring interaction between the patient/client and specialist, marked by ongoing retrospective and prospective analysis of collected patient/client data results in the OMPT being highly effective. One such outcome is that specialists are very likely to arrive at novel and appropriate solutions to patient/client problems.^{7,8} This outcome is critical considering that many patients/clients seen by OMPTs will present with complicated musculoskeletal impairment syndromes, accompanied by complex medical histories. The following attempts to highlight the subtleties or qualitative components of clinical reasoning characteristic of the advanced OMPT.

I. Examination and Evaluation

Expected Outcomes

The outcome of the OMPT's examination and evaluation is the establishment of an accurate and appropriate patient/client diagnosis, prognosis and plan of care. A potential outcome of the evaluation process may be the judicious decision to consult with another health care professional regarding patient/client health status concerns. While the examination is a comprehensive and systematic screening and specific testing process, made up of the patient/client history, systems review and test and measures, the OMPT quickly prioritizes the most important components of the examination scheme based on the initial therapist and patient/client interactions.

Emphasis of the Examination

An emphasis of the OMPT's examination includes procedures that provide detailed information regarding movement-related disorders that are amenable to manual therapy interventions. Evaluation is the ongoing retrospective and prospective analysis that

occurs as the patient/client examination data are being collected. An OMPT's evaluation process will allow for early recognition of clusters of examination findings that direct the OMPT to select from a broad spectrum of manual therapy interventions, combined with exercise and patient education and exercise. Examination and evaluation are not only components of the initial patient/client visit, but also, to some degree, occur during every patient encounter. As such, re-examination and re-evaluation are ongoing and evolve over the entire episode of care.

- A. Perform targeted patient/client interview/history
- B. Evaluate data from patient/client history
- C. Plan physical examination
- D. Conduct physical examination
- E. Evaluate data from physical examination

A. Perform targeted patient/client interview/history

1. Develop a patient profile
 - a) Physiological and biographical data (age, sex, height, weight, handedness, primary language)
 - b) Review of Body systems/Medical screening
 - (1) Screen for diseases or symptomatology which may mimic the musculoskeletal complaint(s) for which the patient is seeking treatment, (e.g., review of systems integumentary, cardiopulmonary, urogenital)
 - (2) Review growth and development, including hand/foot dominance and developmental history as indicated
 - (3) Assess "red flags" (warning signs that a referral to a health care practitioner other than a physical therapist) which may impact manual physical therapy examination (contraindications/precautions for manual physical therapy examination, such as steroid/anticoagulant use, signs and symptoms suggesting cauda equina, vertebral artery insufficiency, etc.)
 - c) Analyze the relevance of clinical and diagnostic test results
 - (1) Laboratory and diagnostic tests
 - (2) Review of available records (e.g. medical, education, surgical)
 - (3) Review of other findings (e.g. nutrition and hydration)
 - d) Current and prior medical and surgical history
 - (1) Recent medical examinations and treatment
 - (2) Prior hospitalizations, surgeries and pre-existing medical and other health related conditions
 - e) Current medication and usage pattern, and effects (e.g., steroid, anti-coagulation use)
 - f) Activities and participation/functional level data (current and prior work (job/school/play), community and leisure actions, tasks or activities,

movement stresses, other daily living activities) and percentage of performance at the time.

- g) Living environment
 - (1) Devices and equipment (e.g. assistive, adaptive, orthotic, protective, supportive, prosthetic)
 - (2) Living environment and community characteristics
 - h) Interpersonal interactions and relationships/Psychological factors (e.g., family/social systems offering support or stress; mental/behavioral status; cultural influences; financial resources or health insurance factors which influence treatment options; worker's compensation or litigation status)
 - i) Identify potential "yellow flags (e.g., examination findings that may become red flags, but at the moment warrant monitoring including psychosocial factors)
 - (1) General health status (self report, family report, caregiver report)
 - (2) General health perceptions
 - (3) Physical function (e.g., sleep patterns, general level of fatigue)
 - (4) Psychological function (e.g., memory, reasoning ability, anxiety, depression, morale, fear avoidance beliefs)
 - (5) Role function (e.g., worker, student, spouse, grandparent)
 - (6) Community, social and civic life/Social function (e.g., social interaction, social activity, social support)
 - (7) Social habits (past and current)
 - (a) Behavioral health risks (e.g., smoking, substance abuse)
 - (b) Level of physical fitness (self-care, home management, community, work (work, school, play), and leisure activities)
 - j) Family history: familial health risks
 - k) Patient's expectations from orthopaedic manual physical therapy and belief/confidence in their ability to manage their problem
2. Identify patient's major problem(s)/concern(s)
- a) Area(s) of primary and secondary symptoms including recognition of contributions from body functions/structures/multiple sites (e.g., arm pain with spinal, shoulder, and visceral contributions)
 - b) Quality of symptoms (e.g., pain, dysesthesia, weakness, stiffness, incoordination)
 - c) Behavior of symptoms (e.g., constant, intermittent, episodic, change over 24-hour period, including effect on sleep pattern and weekly cycles)
 - d) Aggravating/easing factors (e.g., posture, rest, activity, positions, movements, medications) with associated time to aggravate or ease
 - e) Functional impairments, disabilities and/or limitations:
 - (1) Impairments of body function and/or structure/functional impairment: loss or abnormalities of physiological, psychological, or anatomical structure/function

- (2) Activity limitations/participation restrictions/Functional disability: ability to engage in age-specific, gender-related or sex specific roles in patient's particular social/physical environment
 - (3) Functional limitation: ability to perform at the level of the whole person; ability to perform physical action, activity or task in an efficient, typically expected or competent manner
 - f) Clarify potential symptoms related to vertebral artery, spinal cord, cauda equina or other systemic problems
3. Identify chronological record of presenting symptom for each area of symptoms and/or each dysfunction
 - a) Concerns that led client to seek services of physical therapist
 - b) Concerns or needs of client who requires the services of a physical therapist
 - c) Current therapeutic interventions
 - d) Manner and mechanisms of onset of injury or disease (traumatic or non-traumatic, insidious, time since onset etc.)
 - e) Progression/remission since onset (e.g., changes in area of symptoms; changes in quality, frequency, or intensity of symptoms)
 - f) Previous history relevant to present complaint(s)
 - g) Previous or concurrent therapeutic interventions and response(s)
 - h) Responses to current home exercise programs and/or self-treatment
 - i) Patient/client, family, significant other, and other caregiver expectations and goals for the therapeutic intervention(s)
 - j) Client, family, significant other perceptions of patient/client's emotional response to current clinical situation.
 4. Assess and continuously re-assess the priorities for assessment and intervention in the patient with multiple areas of dysfunction

B. Evaluate Data from Patient/Client History

1. Correlate and analyze relevant, consistent, and useful information, and recognizes common clusters of signs and symptoms that may indicate a serious medical condition or musculoskeletal dysfunction(s).
2. Assess "red flags" and determine need for referral to other providers (e.g., presence of non-musculoskeletal complaints)
3. Identify primary, secondary and multiple complaints and associate or disassociate relationships between complaints
4. Review data and obtain additional information
5. Reflect on patient's interpretation of symptoms
6. Assess the patient's goals, needs, motivations, and expectations
7. Correlate symptoms to movement patterns and function.
8. Analyze data to develop and prioritize working hypothesis(es) of the musculoskeletal physical therapy diagnosis(es), including:
 - a) Nature and severity of problem(s)
 - b) Probable cause(s) of problems(s)
 - c) Anatomical structures potentially involved

- d) Irritability, stage, stability of condition(s)
 - e) Indications, cautions and/or contraindications to manual physical therapy examination and treatment/interventions
 - f) Impairments of structure involving an anomaly, defect loss or other significant deviation in body structure(s)/Pathological sources of symptomatology
 - g) Individual and societal environmental factors/Psychosocial and socioeconomic stressors (e.g., support provided by family unit and/or caregivers) which may affect management [“yellow flags”]
 - h) Patient goals
9. Analyze data to differentiate whether patient demonstrates:
- a) Musculoskeletal impairments/problems responsive to physical therapy intervention: may be temporary, permanent, progressive, regressive or static; intermittent or continuous.
 - b) non-musculoskeletal condition requiring referral to and/or consultation with another health care provider (including other physical therapists)
 - c) Need for consultation with other health care practitioners (including other physical therapists and others for further tests, opinions, etc)
Prioritizing the needs of the different dysfunctions in the patient with multiple areas of dysfunctions

C. Plan Physical Examination

1. Identify red flags for specific tests and measures procedures
2. Analyze history and systems review/body functions to guide selection of tests and measures
3. Select tests and measures based on the literature of evidence of valid and reliable tests that will be precise in the intervention setting and have low risk
4. Include examination techniques with a high probability of contributing to the development and refinement of the working hypothesis(es) and/or negate the hypothesis(es)
5. Be comprehensive with focus and detail appropriate to the working hypothesis and the patient’s problem(s) and concern(s)
6. Judge the extent and vigor of the physical examination which considers the nature, severity, irritability, stage and stability of the symptom(s)/problem(s)
7. Select and prioritize:
 - a) Areas to be examined
 - b) Movements to be examined
 - c) Functional activities to be examined/functional activities/participation
 - d) Examination procedures
 - e) Examination sequence to minimize strain to sensitive areas and maximize efficiency

D. Conduct Physical Examination

1. Prepare area, equipment, and patient to facilitate patient relaxation, soft tissue relaxation, appropriate joint and soft tissue positioning to obtain consistent and accurate measurement(s)
2. Obtain patient/client consent for the examination
3. Facilitate the examination environment by:
 - a) Encouraging a welcoming and respectful atmosphere
 - b) Using firm, professional and caring hand contact
 - c) Being aware of abnormal tissue responses to pressure, force, and temperature
 - d) Being aware of patient's physiognomy and maintaining eye contact
 - e) Utilizing efficient body mechanics for operator safety as well as to allow accurate interpretations of palpatory findings
 - f) Maintaining appropriate communication throughout the examination to facilitate patient understanding of the examination process and agreement by the patient to proceed with the examination
4. Concurrently interpret the data and modify the examination as appropriate, and document relevant normal and abnormal data
5. Select examination test and measures and techniques to differentiate musculoskeletal from non-musculoskeletal problem(s) and to efficiently test the diagnostic hypotheses
6. The examination includes:
 - a) Static posture/alignment
 - b) Active motion
 - c) Passive motion, detailed assessment of:
 - (1) Joints
 - (2) Muscle length/flexibility/extensibility
 - (3) Passive soft tissue (non-contractile) mobility
 - (4) Neural mobility
 - d) Motor function (motor control and motor learning)
 - e) Muscle performance
 - f) Neurological/neurovascular status/mobility of neural elements
 - (1) Nerve function
 - (2) Differentiate upper motor and lower motor neuron dysfunctions
 - (3) Vascular status
 - g) Palpation
 - h) Special tests
 - i) Functional activities and associated movement patterns
7. Outline of Examination Process
 - a) Static alignment
 - (1) Describe general body structures, somatotype, proportional symmetry and fitness level
 - (2) Assess alignment of patient's center of mass over his/her base of support during varying static positions
 - (3) Assess alignment of body structure/segments (e.g., feet, legs, thighs, pelvis, thorax, scapulae, upper extremities, head) during varying static positions

- (4) Identify impairments of body structure/bony anomalies or structural asymmetries and assess relative positions of bony prominence in various positions
- (5) Interpret changes in body contour which suggest underlying musculoskeletal dysfunction (e.g., effusion, atrophy, spasm, structural deformity)
- (6) Analyze changes in skin quality and appearance associated with underlying musculoskeletal dysfunction (e.g., inflammation, adhesion formation, overuse, trauma, vascular insufficiency, systemic disease)
- (7) Assess the appropriateness of adaptive/assistive devices and appliances in use which may affect musculoskeletal system function (e.g., orthotics, supports, braces, eye glasses, hearing aids, specialized devices in use at the patient's job site)
- (8) Incorporate assessment of interpersonal interactions/relationships/behavioral affect and general appearance (e.g., visual cues which may reflect mental, behavioral, cultural background, socioeconomic status and symptoms including pain and weakness)
- (9) Hypothesize potential cause(s) of postural asymmetry (e.g. joint contracture or deformity; muscle flexibility/extensibility, muscle power, endurance and coordination deficits; neurological deficit; habitual or repetitive motor pattern) related to symptoms

b) *Active motion*

- (1) Interpret the amount of available range and quality of active motions
 - (a) Observe available active range and compare with normal range with respect to age, body type, and physical condition
 - (b) Observe for and interpret compensatory movement(s), altered speed of motion, "catches" during motion and inability to return to original starting position
 - (c) Correlate with symptom(s) reproduction or reduction
 - (d) Assess effects of altering the position at associated or adjacent joints, on available active range of motion (AROM) and symptoms (e.g., cervical side-bending (SB) on shoulder abduction)
 - (e) Assess the effect of weight-bearing, non-weight-bearing, loading and unloading on available AROM and symptoms
 - (f) Assess the effects of repeated or sustained movements on AROM and symptoms
 - (g) Assess inability to repetitively achieve a pre-determined point in the range of motion
 - (h) Analyze abnormal patterns of muscle activity during active motion
 - (i) Describe crepitus or sounds associated with active movements and determine relevance

- (j) Palpate bony landmarks during active physiological (osteokinematic) motion
 - (2) Hypothesize relationship of abnormal active motion dysfunction(s) to static alignment variations/faulty alignment and symptoms
- c) *Passive motion*
- OMPT uses manual assessment of motion and resulting provocation or alleviation of symptoms as the pathway to determine irritability of selected body structures/tissues, contribution to the complaint, movement restriction and/or dysfunction
- (1) Interpret physiological (osteokinematic, angular) motions for:
 - (a) Amount of motion
 - (b) Quality of motion at the beginning (neutral zone) and through the available range
 - (c) Quality of movement at end range:
 - i) Normal vs. abnormal for body type
 - ii) Through-range and end range type of resistance:
 - * *normal* tissue approximation (e.g., muscle, cartilage)
 - * *normal* tissue stretch (e.g., capsule, muscle, ligament)
 - * *abnormal* tissue approximation (e.g., abnormal capsule, swelling, bony block, abnormal cartilage, loose body within joint, congenital anomaly)
 - * *abnormal* tissue stretch (e.g., joint adhesion, laxity, muscle spasm)
 - (d) Compensatory movement(s) (e.g., modifying gleno-humeral forward elevation with internal rotation or external rotation to perform passive elevation in comfort)
 - (e) Correlation of symptoms and sign reproduction(s)/reduction(s)
 - (f) Correlation of effects of loading and unloading and altering the position of associated segments on available PROM, and alteration (if any) in type of movement barrier(s) throughout the range
 - (g) Correlation of combined movements to symptom and sign reproduction
 - (2) Analyze the effects of change in speed, amplitude and direction of the passive physiological (osteokinematic) motion on sign and symptom reproduction
 - (3) Perform appropriate stability tests; including spinal and costal joints, shoulder girdle joints, TMJ, pelvic girdle joints and all peripheral/limb joints to assess the integrity of ligaments and related soft tissue structures of the joint complex
 - (4) Examine accessory (arthrokinematic) motions in order to make inferences about potential tissues/structures which may be causing limitation of motion(s). These may include:

- (a) Glides (i.e., following plane of joint surface)
 - (b) Distraction (i.e., perpendicular to joint surface)
 - (c) Compression (i.e., approximation to joint surface)
 - (d) Rotation
 - (e) Combinations of glide, distraction and compression and rotation
- (5) Examine accessory (arthrokinematic) motions for:
- (a) Amount of motion
 - (b) Quality of motion at the beginning (neutral zone) and through the available range
 - (c) Quality of movement at end range:
 - i) Normal vs. abnormal for body type
 - ii) Through and end range type of resistance:
 - * *normal* tissue approximation (e.g., muscle, cartilage)
 - * *normal* tissue stretch (e.g., capsule, muscle, ligament)
 - * *abnormal* tissue approximation (e.g., abnormal capsule, swelling, bony block, abnormal cartilage, loose body within joint)
 - * *abnormal* tissue stretch (e.g., joint adhesion, laxity, muscle spasm)
 - (d) Compensatory movements
 - (e) Correlation of symptoms and sign reproduction(s) /reduction(s)
 - (f) Correlation of effects of loading and unloading on symptom and sign reproduction(s) /reduction(s)
 - (g) Correlation of combined movements to symptom and sign reproduction(s)
- (6) Analyze the effects of speed, amplitude and direction of the accessory (arthrokinematic) motion on sign and symptom reproduction
- (7) Assess and interpret mobility of the neural elements
- (a) Apply appropriate testing to include variations of load, speed, pre-positioning and sequencing to provide the most sensitive test of the neural structures
 - (b) Compare the signs and symptoms with accepted standards of range of motion, subjective responses and intra-patient variances
 - (c) Analyze signs and symptoms associated with nerve entrapment by palpatory provocation of nerve and identify correlation (if any) with patient's reported problems
- (8) Hypothesize relationship between passive motion dysfunction(s) to active motion dysfunction(s), static alignment and symptomatology

- d) *Passive muscle flexibility/extensibility*
 - (1) Assess available range of muscle flexibility/extensibility by use of muscle length tests and compare results with accepted standards. Include single joint and multi-joint myofascial structures.
 - (2) Assess signs and symptoms associated with muscle flexibility/extensibility examination procedures and identify correlation (if any) with the patient's reported problems
 - (3) Assess presence of tonal changes (e.g., hypertonicity or hypotonicity)
 - (4) Assess available range of muscle flexibility/extensibility at adjacent body segments
 - (a) Assess muscle length abnormalities of excessive shortening or lengthening which may cause mechanical compensations at adjacent segments during functional movements
 - (b) Assess muscle length abnormalities which may contribute to abnormal or inefficient movement patterns
 - (5) Hypothesize the relationship between abnormal muscle length and the patient's static postural asymmetries, active and passive motion patterns and related symptomatology
- e) *Passive soft tissue (non-contractile) mobility*
 - (1) Assess soft tissue mobility, (e.g., palpable hypomobilities (restrictions)) including:
 - (a) Fascial
 - (b) Integumentary
 - (c) Neural structures
 - (2) Hypothesize relationship between soft tissue abnormalities, active and passive motion, static posture, passive muscle flexibility, and symptomatology
- f) *Motor function (motor control and motor learning)*
 - (1) Assess ability to learn or demonstrate the skillful and efficient assumption, maintenance, modification and control of voluntary postures and movement patterns
 - (2) Assess the ability of a muscle or group of muscles to function in a coordinated manner
 - (a) Assess the ability of the muscles to perform co-contraction/stability (weight bearing or closed chain) functions around a joint appropriate to the demands of the required movement task
 - (b) Assess the ability of the muscles to perform open chain movement functions (swinging/reaching) of a limb appropriate to the demands of the required movement task
 - (c) Assess appropriate recruitment pattern
 - (d) Assess patient determined effects of cooperation and motivation
 - (e) Assess motor function for segmental (local), regional and global muscles groups

- (3) Hypothesize relationship between motor function and/or symptom reproduction, active and passive motion, soft tissue mobility, passive muscle flexibility, static posture and symptomatology
- g) *Postural control*
 - (1) Assess the influence of normal and abnormal segmental (local), regional and global muscles groups on postural control of the regions close to and remote from the areas of symptoms dysfunctions
- h) *Muscle performance*
 - (1) Assess the ability of a muscle or group of muscles to perform a specific function during a movement task
 - (a) Assess ability of the muscle(s) to perform a high weight, low repetition maximum task (strength)
 - (b) Assess ability of the muscles to perform a high repetition, low weight task (endurance)
 - (c) Assess ability of a muscle given any specific functional task over time (power)
 - (d) Assess ability of a muscle or muscle group to maintain static and dynamic stability at a segment or joint
 - (2) Assess performance of a specific muscle using standard manual or instrumented muscle tests (i.e., resisted tests) and compare results with accepted standards and expected norms with respect to age, sex, body type and physical condition
 - (3) Hypothesize relationship between the muscle performance and/or symptom reproduction with resisted tests and the patient's static posture, active and passive motion, passive muscle flexibility, soft tissue mobility, motor function, and symptomatology
- i) *Neurological status*
 - (1) Perform neurological examination and evaluate results. Include the appropriate tests among the following: reflex, muscle performance, sensation, cranial nerve, upper motor neuron (Clonus, Babinski, Hoffman's, etc.) and muscle tone
 - (a) Analyze the effects of load, patient positioning, repetition on the sensitivity of the test being performed
 - (b) Analyze disorders of the central nervous system (e.g., abnormal reflexes, muscle hypertonicity, coordination deficits, cognitive deficits, central pain mechanisms)
 - (c) Analyze disorders of the peripheral nervous system (e.g., sensory and motor deficits corresponding to a segmental level or an individual nerve) including cranial nerves
 - (d) Analyze disorders of the autonomic nervous system (e.g., vasomotor instability, excessive/absent sweating, pupil constriction, or associated pain mechanisms, such as sympathetic maintained pain syndrome (SMPS))
 - (e) Analyze role of the vestibular system in contributing to the patient's symptom patterns/movement dysfunction(s)

- (2) Hypothesize relationships of the neurological findings and mobility of neural elements to the patient's related and significant examination findings
 - (3) Recognize neurological conditions which require medical/surgical consultations and initiate timely referral, if applicable
 - (4) Perform vascular and neurovascular screening examination and evaluate circulatory conditions
 - (a) Evaluate risk and select and perform special tests and measures to screen for signs and symptoms of vertebral-basilar insufficiency
 - (b) Analyze skin condition, peripheral pulses and perform other special tests (i.e., Homan's test, Allen's test) to screen for circulatory deficiencies in the extremities
 - (5) Hypothesize relationships of the neurological findings, neurovascular findings and mobility of neural elements to the patient's related and significant examination findings
 - (6) Recognize neurological and neurovascular conditions which require medical/surgical consultations and initiate referral, if applicable
- j) *Palpation*
Analyze the following:
- (1) Temperature changes, swelling
 - (2) Tissue texture abnormalities
 - (3) Osseous structures (alignment, asymmetries, anomalies)
 - (4) Soft tissue structures (muscle, ligament, tendon, bursa, neural elements)
 - (5) Symptom response
 - (6) Response to varying force at varying speeds
 - (7) Correlate palpatory findings with patient's other dysfunctions and symptomatology
- k) *Special tests*
- (1) Perform and analyze the results of a specialized regional examination procedures not previously mentioned, as required to contribute to refinement of the working hypothesis of the patient's movement dysfunction (e.g., upper cervical stability testing, lumbar spine segmental stability testing,
 - (2) Correlate with other tests, as appropriate
- l) *Functional activities and associated movement patterns*
- (1) Examine and analyze efficiency and control of locomotion, functional postures and movements associated with ADL, occupational, and recreational activities
 - (2) Hypothesize cause of locomotion and functional limitations (e.g., muscle weakness due to disuse atrophy, antalgic patterns to avoid pain) and relationship to other significant examination findings

E. Evaluate Data from the Physical Examination

1. Correlate history and physical examination findings:
(Note: data evaluation is timely and occurs throughout the physical examination)
 - a) Identify findings from the physical examination which corroborate history
 - b) Identify non-contributory information
 - c) Identify inconsistent information
2. Establish clinical judgment regarding examination findings as related to functional limitations, impairments, disabilities, and patient goals, including:
 - a) Nature and severity of problem(s), associated/disassociated and prioritized
 - b) Location and type of involved structure(s)
 - c) Anatomical structures involved (body structure(s)/anatomical structures involved)
 - d) Irritability, stage and stability of the condition
 - e) Possible indications, cautions and/or contraindications to OMPT techniques and/or physical therapy management
 - f) Pathological sources of symptomatology
 - g) Psychosocial factors affecting management
 - h) Probable cause(s) of problem
3. Analyze data from all parts of examination to differentiate a musculoskeletal from a non-musculoskeletal problem
4. Continuously correct deficiencies in the examination as appropriate
 - a) Clarify/elaborate history
 - b) Complete additional physical examination or test, as necessary
 - c) Identify need for consultation/referral regarding additional diagnostic tests

II. Diagnosis and Prognosis

The established diagnosis and prognosis result in a patient/client plan of care that specifies the anticipated goals and expected outcomes, the predicted level of optimal improvement, specific interventions, and the proposed duration and frequency of interventions required to reach the anticipated goals and expected outcomes. Diagnostic labels used by OMPT (as well as all physical therapists) tend to identify the impact of musculoskeletal conditions on function at the level of body system (with emphasis on the movement system) and the level of the whole person (disability). Working within the framework of the evidence-based practice model the OMPT will quickly establish an accurate diagnosis. The prognosis represents the OMPT's appraisal of the patient's prior level of function and a prediction of the patient's level of improvement in function and the amount of time required to reach that level. In addition, predicted levels of improvement that may be reached at various intervals of time are part of the patient/client prognosis. The OMPT's diagnostic⁴ and prognostic processes and their results are dynamic and evolve over the course of a patient's care. The OMPT will not only quickly establish an accurate prognosis, but through the ongoing re-examination and re-evaluation will also quickly and appropriately modify the patient plan of care including

the prognosis. As with the diagnostic process, the OMPT will utilize current best evidence from prognostic studies to serve as benchmarks for patient improvement.

Major components: Utilize evidence-based practices that include research, clinical expertise and patient values to:

- A. Determine the diagnosis through evaluation of examination findings
- B. Determine the prognosis which considers the complexity of the patient/client's dysfunctions/conditions, the level of optimal improvement that may be attained through intervention and the amount of time required to reach predicted levels of improvement during the course of orthopaedic manual physical therapy.
- C. Establish intervention goals with predicted outcomes and time frames, taking into consideration patient's expectations and functional goals
- D. Re-examination

A. Determine diagnosis through evaluation of examination findings

- 1. Establish clinical judgment regarding examination findings as related to functional limitations, impairments, disabilities, and patient goals, for each area of symptoms or function including:
 - a) Nature and severity of problem(s), associate/disassociate and prioritize
 - b) Probable cause(s) of problem
 - c) Location and type of involved structures
 - d) Body structures/ potential anatomical structures involved-
 - (1) Irritability, stage and stability of the condition(s)
 - (2) Possible indications, cautions and/or contraindications to manual physical therapy and/or other physical therapy management
 - (3) Potential impairments in body systems or structures contributing to symptomatology/pathological sources of symptomatology
 - (4) Impairments in individual, societal and environmental factors/psychosocial and socioeconomic stressors (e.g., support provided by family unit and/or caregivers) which may affect management
- 2. Organize examination findings into clusters, syndromes, or categories and establish a diagnosis or diagnoses
- 3. Interpret and analyze examination data with emphasis on relationship of symptoms to movement and tissue irritability
- 4. Compare diagnosis by OMPT with referral diagnosis if present.
- 5. Assess the appropriateness for referral to or consultation with another health care professional, including physical therapist, based on the information gathered
- 6. Provide timely, accurate and clear communication of the nature of the problem and prognosis for the injury/dysfunction(s) to the patient/client and caregivers, taking into consideration functional, psychological, social, and cultural needs and values of the individuals.

7. Provide timely, accurate, clear written and verbal communications to other health care providers and/or community personnel involved in the care of the patient/client.

B. Determine the prognosis which considers the complexity of the patient/client's dysfunctions/conditions, the level of optimal improvement that may be attained through intervention and the amount of time required to reach predicted levels of improvement during the course of orthopaedic manual physical therapy.

C. Establish intervention goals with predicted outcomes and time frames, taking into consideration patient's expectations and functional goals.

1. Correction of existing problems with focus on rank according to patient presentation, including:
 - a) Relief or decrease of symptoms
 - b) Normalization of body structures/Normalization of tissues
 - c) Attainment of optimal movement and functional abilities
2. Management of existing problems which cannot be corrected:
 - a) Self-management of symptoms (e.g., ability to function with established level of postural or repetitive movement stress, ability to perform a specified activity level maintaining an established level of medication intake)
 - b) Maintenance or improvement of function (e.g., acquiring the option to perform a greater amount of movement tasks or perform the same amount of activity with fewer symptoms and established goals for modifying function)
3. Prevention
 - a) Identify predisposing and risk factors for progression and/or recurrence of the problem
 - b) Minimize/manage predisposing and risk factors
 - c) Attainment of improved functional performance and/or fitness level

D. Re-examination.

1. Choose examination measures (to serve as dependent variables) to measure initial response to treatment
 - a) Subjective measures (e.g., evidence-based functional outcome tools including those that document level of pain with performance of a functional task)
 - b) Objective measures (e.g., range of motion) including a functional measure and when indicated, evidenced based outcome tests and measures
 - c) Combined subjective and objective measure (e.g., improved quality of movement with a reduced level of pain)
 - d) Analysis of response to motion and manual intervention and how between-visit symptoms are related to movement

III. Prioritization and Plan of Care

Major components: Examination

- A. Identify OMPT intervention priorities
- B. Plan intervention approach(es)
- C. Plan specific intervention strategies with cautions and contraindications guiding use of OMPT

A. Identify OMPT intervention priorities

- 1. Correlate intervention(s) with identified patient problems, patient goals and/or outcomes and relate to hypothesis
- 2. Assess the order in which each patient problem(s) will be treated
- 3. Assess extent of manual intervention(s) for each patient problem and relate to hypothesis in order to achieve patient goals and outcomes
- 4. Alter manual intervention(s) based on tissue response, signs and symptoms
- 5. Adapt manual intervention(s) based on patient preferences and sensitivities
- 6. Select manual intervention(s) based on the best evidence available for the specific situation.

B. Plan intervention approach

Including the following options:

- 1. Patient education and/or family education for:
 - a) Symptom management (i.e., self mobilization; pain management) joint mobilization/manipulation thrust/non-thrust (all joint and joint complexes of the axial and appendicular systems).
 - b) Assistive devices or immobilization (e.g., collars, taping, splinting)
 - c) Ergonomic instruction
 - d) Activities of daily living (ADL) and activities of nightly living
 - e) Prognosis of the existing condition
 - f) Activities to prevent recurrence of current dysfunction
 - g) Activities to promote health/fitness
- 2. Manual intervention for improvement of home, work and recreational function
- 3. Normalizing range of motion taking into account patient's age, sex, body type, habitual postures, and pertinent histories
 - a) Joint accessory (arthrokinematic) motion
 - b) Passive muscle flexibility
 - c) Connective tissue/soft tissue mobility
 - d) Mobility of neural elements
- 4. Pain inhibition/reduction
- 5. Edema control
- 6. Therapeutic exercise instruction
- 7. Functional retraining/re-education
- 8. Intervention or instruction in the proper use of physical agents with regard to joint position, posture, and desired tissue status

C. Plan specific intervention strategies and identify indications/ contraindications for the following considering the strength of available, relevant evidence

1. Type of manual intervention and exercise
2. Frequency of intervention
3. Intensity of intervention (grade mobilizations, exercise dosage for varied resistance, range, etc.)
4. Duration of intervention

IV. Implementation of Plan of Care

Orthopaedic manual physical therapists (OMPT's) routinely integrate manual techniques into a broad repertoire of intervention options with emphasis on therapeutic exercise and patient education. OMPT's also utilize other interventions such as physical agents and adaptive equipment to promote successful patient outcomes. OMPT's systematically progress intervention strategies judiciously utilizing manual therapy techniques within the framework of evidence-based practice.

Orthopaedic manual physical therapists demonstrate strong communication skills in their professional interactions. All communication, written and verbal, comply with regulatory guidelines governing patient confidentiality.

- A. Educate patient, including education of family and/or supportive personnel as appropriate
- B. Perform procedural interventions
- C. Communicate to other health care providers
- D. Communicate to other professionals, agencies and involved parties as appropriate (e.g. third party payers, case workers, attorneys, etc)

A. Educate patient, including education of family and/or supportive personnel as appropriate

1. Discuss examination findings, diagnosis, and prognosis for various types of intervention outlined in plan of care
2. Outline expected outcomes for designed treatment approach and strategy
3. Discuss/negotiate acceptable treatment goals, treatment plan and responsibilities with the patient
4. Address patient concerns/questions regarding his/her condition in a manner that provides reassurance and helps to allay patient fears surrounding treatment
5. Outline responsibility of patient in order to achieve established treatment goals
6. Actively engage cooperation of the patient, identifying:
 - a) Appropriate methods, style, and level of communication with the patient and with individuals involved with the patient's treatment program (i.e., patient's physician, family, supportive health personnel)

- b) Effect of communication on recipient; enact alternative means of communication
- 7. Educate patient in home care treatment program, providing education/training in strategies:
 - a) For relief of symptoms, normalization of tissues, attainment of optimal functioning
 - b) For maintenance of enhanced function following intervention
 - c) To prevent recurrence of patient's problem
- 8. Obtain appropriate consent as applicable.

B. Perform procedural interventions

- 1. Administer intervention procedures/techniques
 - a) Manual Therapy
 - (1) Joint mobilization/manipulation thrust/non-thrust (all joints and joint complexes of the axial and appendicular system)
 - (2) Soft tissue mobilization/manipulation (fascia, myofascia, integumentary, lymphatics)
 - (3) Mobilization of neural elements
 - b) Therapeutic Exercise, incorporating elements of postural control, motor control, motor learning and coordination
 - (1) Stabilization (segmental, regional, global)
 - (a) Manual
 - (b) Non-manual
 - (2) Muscle performance, including qualities of flexibility, extensibility, strength, power, and endurance
 - (3) Vestibular rehabilitation
 - (4) Functional movement training, utilizing concepts of neuromuscular re-education/proprioceptive training
 - (5) Relaxation exercise/ techniques using manual contacts to increase effectiveness of patient/client response
 - (6) Pain inhibition
 - (7) Edema control
 - (8) Specific – directed at target tissues
 - c) Adaptive/assistive devices and equipment using manual palpation to ensure proper placement, fit, function
 - d) Ergonomic instruction/consultation
 - e) Immobilization procedures (taping, splinting, binders, collars)
 - f) Physical agents
 - (1) To enhance or facilitate the effectiveness of a manual therapy intervention
 - (2) To address pain/symptoms which may be impairing activity level/function

V. Re-examination

Examination and evaluation are not only components of the initial patient/client visit, but also, to some degree, occur during every patient encounter. The clinician continually correlates the examination data with the patient's response to treatment. The patient's response to treatment may be observed at any or all of the following times: during the specific treatment application, immediately upon completion of the specific treatment application, at the conclusion of the entire therapy session, after several therapy sessions and upon conclusion of the episode of care. Re-examination and re-evaluation require both retrospective and prospective analysis over the entire episode of care and demand ongoing interaction between provider and patient. Hands-on treatment techniques are consequently both evaluative and therapeutic in nature in that the OMPT is constantly assessing the value of a treatment technique based on the client's real-time response to the application of said technique.

- A. Assess intervention response
- B. Analyze significance of changes
- C. Assess change
- D. Re-examine/implement modified plan of care
- E. Confirm/modify goals
- F. Make referrals to other providers as needed

A. Assess intervention response

- 1. Detect changes in patient's status in response to intervention, identifying:
 - a) Change in symptoms
 - b) Development of new symptoms
 - c) Changes in patient status:
 - (1) During administration of procedures/techniques
 - (2) At the conclusion of initial intervention
 - (a) Pre- and post- each subsequent intervention session
 - (3) At the conclusion of the course of intervention
 - d) Change or lack of change in tissue response in regard to:
 - (1) Nature/impairment/pathology/hypothesis/etiology
 - (2) Severity
 - (3) Stage of condition
 - (4) Irritability
 - e) Changes in activities/functional level

B. Analyze significance of changes

- 1. Assess the relationship between the anticipated result of implemented intervention and the actual result using:
 - a) Pre-intervention measures chosen to assess intervention responses.)
 - b) Other subjective or objective data arising out of the course of treatment
 - c) Evidence-based outcomes tests and measures

2. Assess cause of change (e.g., effect of last procedure/technique/intervention, result of home program, passage of time, result of activity, progression of disorder, or changes in patient status independent of intervention)

C. Assess change

1. Describe anticipated nature and rate of change
2. Compare and interpret discrepancies between anticipated and observed responses
3. Identify factors or conditions which limit progress (e.g., age, physical condition, psychosocial factors, related/ associated medical and musculoskeletal conditions, cultural or gender issues)
4. Identify adverse changes in individual's status
 - a) Identify red/yellow flag(s)
 - b) Differentiate urgent from non-urgent symptoms?

D. Re-examine/implement modified plan of care

1. If the anticipated results are not achieved, decide if:
 - a) The appropriate hypothesis and potential structure(s)/ tissues at fault have been identified
 - b) The appropriate exam procedure was chosen and performed correctly
 - c) The specific intervention strategy is appropriate and has been implemented correctly
 - d) The intervention approach is appropriate for addressing the patient's problem
 - e) Manual intervention is appropriate for addressing the patient's problem
 - f) Referral to another health care provider is appropriate
 - g) The patient has been given sufficient education to report confidence in their ability to follow through with self-care instructions
 - h) Implement modified plan of care to address initial or revised hypothesis

E. Confirm/modify goals

1. Assess the extent of goal achievement
 - a) If goals achieved, plan disposition/discharge
 - b) If goals are not achieved, reassess treatment strategy/approach and/or working hypothesis
 - c) If patient reaches maximum therapeutic benefit, discharge
2. Assess if intervention goals are realistic
3. Re-evaluate and modify hypothesis to set a new program
4. Modify treatment goals and plan of care based upon re-examination data including patient's ability to participate in recommended plan of care

F. Make referrals to other providers as needed

1. Make referral to appropriate health care provider for non-musculoskeletal condition
 - a) Changes in patient status:
 - (1) During administration of procedures/techniques

- (2) At the conclusion of initial treatment
- (3) Pre- and post- each subsequent treatment session
- 2. Make referral to other providers for additional testing
 - a) Diagnostic imaging
 - b) Psychological screening
 - c) Nutrition screening
- 3. Communicate as appropriate with other health care providers regarding patient prognosis, treatment plan and response to treatment.

VI. Outcomes

The OMPT evaluates the outcome of the intervention during and at the completion of each episode of care. Outcomes includes the impact of OMPT interventions in the domains of pathology/pathophysiology (disease, disorder or condition), functional impairments, limitations in activity/participation, risk reduction/prevention, health and wellness, fitness, societal resources, and patient/client satisfaction (Guide). This outcome must be measurable and must be reconciled with the anticipated goals and anticipated outcomes that had been established by the OMPT during the Diagnosis and Prognosis phase of intervention. Outcomes analysis allows comparison of data across regions, healthcare providers, patient cultures, and scientific literature, and assists the provider in determining when to terminate intervention. This analysis also assists the provider in re-assessing diagnosis, discharge planning, assessing patient satisfaction, and assessing the quality of his or her own intervention. Outcome is measured from five perspectives; patient, referral source, provider, payer, and evidence-based expected outcomes. Within the ICF framework, the OMPT considers the physical therapy's impact on the following areas: body function, activity and participation.

The OMPT collects data and quickly analyzes outcomes in order to determine if optimal care was provided. The OMPT also assess barriers to progress and develop alternate treatment plans to achieve the expected outcome. If barriers cannot be overcome by physical therapy intervention alone, patient will be referred to the appropriate resource or provider.

A. Measure the impact of the OMPT interventions at the end of episode of care on the following:

- 1. Pathology/pathophysiology
- 2. Impairments
- 3. Functional limitations
- 4. Disability
- 5. Risk reduction/prevention
- 6. Health, wellness and fitness
- 7. Societal resources
- 8. Patient/client satisfaction

B. Discharge (end OMPT services) when the anticipated goals and expected outcomes have been achieved.

C. Discontinue services when:

1. The patient/client declines to continue care
2. The patient/client is unable to continue due to medical or psychosocial complications
3. The OMPT determines that the patient/client will no longer benefit from services

D. Document and discuss the rationale for discontinuation of services with the patient/client, family members and other relevant health care providers.

E. Provide for appropriate patient referral or follow-up.

VII. Documentation

A. “Physical therapy examination, evaluation, diagnosis, prognosis and intervention shall be documented, dated, and authenticated by the physical therapist who performs the service. Intervention provided by the physical therapist or selected interventions provided by the physical therapists assistant is documented, dated and authenticated by the physical therapist, or when permissible by law, the physical therapist assistant.” (APTA Guidelines: Physical Therapist Documentation of Patient/Client Management, June 2005 (P06-00-20-05))

B. Select correct description and billing codes in relation to orthopaedic manual physical therapy services. (APTA Professional Fees for Physical Therapy Services HOD P06-00-22-34)

C. Comply with state practice acts regarding scope of practice and accepted terminology related to orthopaedic manual physical therapy related to all elements of patient/client management. (Manipulation Education Manual 2004, p 9)¹

D. Accurately document all elements of patient/client management:

1. Referral for physical therapy
2. History and physical examination findings and data from outcomes instruments
3. Physical therapy diagnosis/hypothes(es)
4. Indications and contraindications of OMPT examination and management
5. Informed consent as applicable.
6. Prognosis
7. Goals and plan of care and modifications to plan of care and goals
8. Progress reports and summaries as required by physicians, other caregivers and payers

9. Summaries of relevant data following conclusion of current episode of care, including reason for discharge, current status, degree of goal achievement, and discharge plan
10. Additional information (including diagnostic labels) from other health professionals, and referral, when appropriate, to appropriate practitioners or resources. (HOD P06-97-06-19)
11. Peer review findings, record reviews, case conferences, patient care rounds, and patient/client family meetings ⁵

Chapter 3: Patient Case Vignette to Demonstrate Clinical Reasoning Characteristics of an Advanced Practitioner

Case Introduction

Purpose

This example is intended to illustrate one style of management that may be used for a particular patient/client by an OMPT practitioner. The goal is to provide the reader with a picture of how the patient/client interaction may evolve while utilizing the competencies in OMPT specialty practice.

Introduction to the Patient/Client

Catherine Jones (CJ), a 43 year old, mother of two (ages 16 months and 3 years), comes to PT complaining of left elbow pain. Her elbow has been giving her trouble off and on for the past two years, but has been significantly worse the last two to three months. She works as an administrative assistant, a job that requires significant phone and computer work, and she is often under stress when trying to meet deadlines set by her demanding boss. Between the demands of the job and raising two young children, she has gained about 15 lbs in the last year. In an effort to lose weight and get in shape, CJ joined a gym three months ago. She does about 20-30 minutes of aerobic exercise three times a week and an upper extremity weight training program twice a week. Recently she has been unable to continue with the upper extremity weights because of increased left elbow pain.

CJ indicates that over the last two years she has had several elbow-related medical appointments and although has had bouts of temporary relief (via injections, medication and supportive braces), the problem has never completely resolved. Since the condition has been progressively worsening, her physician referred her to an orthopaedic surgeon who suggested a 'debridement'. Although CJ questions whether PT will be of much help, she is willing to try it as a last resort with the hope of avoiding surgery. Her ultimate goals are to be able to work, take care of her kids and exercise regularly without limitations due to elbow pain.

Plan of Care

Following the history and physical examination, the OMPT plan of care for this patient included the following:

1. Manipulative treatment of the elbow, wrist and cervical spine
2. Referral to her primary care provider for suspected GI disorders.
3. Soft tissue and neural mobility assessment and treatment.
4. Exercise prescription targeting local tissues, muscle performance, motor function, neuromuscular control, as well as improvement of overall fitness.
5. Patient education for proper posture at work and leisure, as well as self-management and prevention of future recurrence.

Questions:

1. What led the OMPT to treat the cervical and wrist regions?
2. How does the OMPT decide where to begin with treatment?
3. How will the treatment be modified throughout the course of care?
4. What is the patient's prognosis?
5. What outcomes will help the OMPT evaluate the results of intervention?

I. Examination and Evaluation

This section is a greatly abbreviated summary of some of the thoughts and findings. The information demonstrates the complexity of an advanced OMPT practitioner's history/interview and physical examination.

A. Summary of Data from Patient/Client History

Throughout the history/interview the practitioner is looking for a common cluster of findings that may suggest the presence of a medical condition that warrants communication with a physician. During a review of systems (the systems review does not include the GI system per the Guide), CJ describes frequent heartburn especially during the night leading to daily use of antacids. She has used NSAID daily for 2 years, with increased use in the last 2 months. She had not discussed these symptoms with her physicians, and therefore a physician consult is indicated. The practitioner will note the presence or absence of "red flags" and/or "yellow flags" for example:

1. CJ denied headaches, dizziness, extremity numbness or tingling;
2. Non-smoker, who describes herself to be in good health, had a recent mammogram, is menstruating and has no risk factors for osteoporosis;
3. No diabetes nor thyroid disorder;
4. No past nor recent occurrences of major trauma; and
5. Currently takes no prescription medication and uses over the counter NSAIDS, antacids and a multi-vitamin;
6. Work satisfaction
7. Family dynamics and support

To summarize, CJ reported the following information that may be relevant to this case.

1. Primary complaints:
 - a) Left dorsal and proximal forearm pain (of dominant arm) interfering with work and exercise; and
 - b) Currently in very poor physical condition and wishes to "get in shape" without increased pain.
2. Secondary & multiple complaints (solicited not offered):
 - a) Neck stiffness;
 - b) Lower thoracic ache; and
 - c) Heartburn.

3. Associate and/or disassociate relationships: (These are simply potential relationships that must be further explored).
 - a) Neck and thoracic stiffness and ache associated with spinal posture
 - b) Neck stiffness associated with upper extremity dysfunction
 - c) Thoracic ache associated with gastro-intestinal disease
 - d) Forearm pain associated with:
 - (1) elbow and/or wrist joint or soft tissue dysfunction maintained by repetitive use and/or degenerative condition
 - (2) referral of pain from the cervical spine
 - (3) chronic spinal pain
 - (4) peripheral nerve pathology

Evaluation summary of the history findings related to planning the physical examination, and the ultimate decision to refer and/or treat

1. Epicondylgia/tendinopathy has variable response to other intervention (CJ has received no OMPT intervention applied to the neck and elbow simultaneously);
2. Non-musculoskeletal involvement – possible gastro-intestinal disorder requiring a physician referral;
3. Need for consultation – Referral to a hand therapist not indicated. Stress does not appear to be major factor, no need for referral to a clinical psychologist;
4. Yellow flags -pacing repetitive work and home activities may be needed for self-management
5. Prioritize the approach of tests and measures and trial intervention, however CJ's main complaint is the forearm pain, so this area requires early and complete examination.

B. Summary of Data from Physical Examination

1. The primary findings of the physical examination include the following:
 - a) Forearm pain/epicondylgia: The examination of the elbow and forearm regions showed clear signs of dysfunction in the area that could be contributing to the symptoms.
 - b) Neck stiffness: Segmental cervical dysfunction at C5/6/7, which could be contributing to the elbow symptoms. Poor posture and muscle control, possibly requiring increase resting activity of the muscle and hence giving her a sense of stiffness.
 - c) Thoracic ache: Abdominal tenderness and no major thoracic segmental findings suggest a non-musculoskeletal dysfunction. Current and previous long term use of NSAIDs, possibly giving gastric dysfunction.
2. Throughout the examination the following were occurring:
 - a) CJ consented to the examination and did not demonstrate excessive reaction to palpation nor exaggerated motions, corroborating the impression that there were no “yellow flags” (i.e., her job satisfaction was good and she has been exploring additional help with the care of her

children) associated with her presentation. There was continual dialogue and communication of findings during the examination and assessment

- b) The advanced OMPT practitioner will modify the examination in response to emerging data without straying from their clinical hypotheses or omitting key examination components.
- c) The OMPT expects a certain response to each intervention and will immediately review the relevant history or perform additional tests in response to unusual responses or the discovery of a new finding when a dysfunction has been corrected (i.e., a joint may appear stiff, but have a covert hypermobility or instability in a plane of motion that was hidden by the joint posture or soft tissue guarding).

II. Diagnosis and Prognosis

A. Diagnosis

- 1. The evaluation of the patient data resulted in the following:
 - a) Diagnosis: lateral epicondylalgia, possible tendinopathy
 - b) Impaired Joint Mobility, Motor Function, Muscle Performance, and Range of Motion With Connective Tissue Dysfunction (Guide-Preferred Practice Pattern 4-D)
 - c) Contributing factors:
 - (1) Cervical spine joint dysfunction
 - (2) Cervico-thoracic spine joint dysfunction
 - (3) Elbow/wrist joint dysfunction
 - (4) Adverse neural mobility
 - (5) Impaired posture (Guide-Preferred Practice Pattern 4-B)
 - d) Possible gastrointestinal system involvement associated with NSAID use.

B. Prognosis

- 1. The evaluation of the patient data resulted in the following:
 - a) Prognosis is somewhat guarded secondary to the chronic and recurrent nature of the elbow complaints, the patient's "low" expectations for physical therapy management, and the repetitive nature of work and home-related mechanical stresses on the involved areas.
 - b) Expect that in 4-6 weeks consistent functional improvements are noted per the visual analogue scales and the Disability of Arm, Shoulder and Hand (DASH), with the patient able to control/alleviate symptoms with postural adjustments and exercise.
 - c) By 12 weeks patient will be at full function, including independent fitness program, with intermittent symptoms that are easily controlled by patient.

III. Implementation of Plan of Care

Based on the diagnosis and prognosis, the OMPT selects appropriate physical therapy interventions based on current best evidence, clinical judgment and patient preferences. Examination and evaluation take place on a continuous basis throughout each physical therapy encounter. Intervention is divided into three phases as described below:

Phase I (Week 1-2):

1. The OMPT refers CJ to her physician for further assessment of those symptoms that do not correlate with a mechanical condition (the thoracic pain, tenderness in the abdominal region, and heartburn). Education about the use of ice and/or heat to provide tools to control symptoms.
2. The OMPT provides individualized patient education to CJ throughout all three phases of the intervention. The following objectives will be emphasized in Phase I.
3. At the completion of Week 1-2 CJ will be able to:
 - a) Demonstrate awareness of the multiple components of her diagnosis, specifically the possible relationship between the elbow condition and the cervical spine dysfunction.
 - b) Identify the negative consequences of improper exercise.
 - c) Adopt safe body mechanics for home, work, and gym activities.
 - d) Recognize the effect of poor posture on her specific conditions while developing strategies to remodel/change her posture.
4. The OMPT will perform a variety of manipulative techniques to CJ. The clinical reasoning for the techniques are outlined below:
 - a) The first manipulative technique is a unilateral left cervical thrust glide (lateral glide) at the C₅₋₆ level to determine if a relationship exists between the cervical spine and the elbow condition. If a manipulative technique to the C₅₋₆ level changes CJ's signs or symptoms at the elbow, a relationship exists.
 - b) Prior to a cervical manipulative technique, we ruled out conditions that would contraindicate manipulation. CJ had no contraindications. If the cervical manipulative technique reduces symptoms or improved functional movement, the technique will be repeated during the first phase of the intervention.
 - c) The second manipulative technique is to the elbow region to improve the lateral glide of the ulna and/or to diminish pain within the region.
 - d) The third manipulative technique is to the wrist region to improve the volar glide of the scaphoid and/or decrease pain to the elbow region.
 - e) The last manipulative technique will be traction to the cervical/thoracic junction to improve CJ's posture as well as reduce strain to the mid cervical region.
5. The OMPT will perform soft tissue techniques to decrease excessive cervical and forearm muscle activity. The specific muscles identified during the examination that require this intervention:
 - a) Cervical- longus colli bilaterally, left anterior and middle scalene, left semispinalis capitis bilaterally, the inferior and superior oblique

- bilaterally, splenius cervicis bilateral, left longus capitus, left upper trapezius, and left levator scapulae.
- b) Elbow- left extensor carpi radialis brevis, left extensor carpi radialis longus, left brachioradialis, left extensor digitorum, and left extensor indicis.
6. The OMPT will instruct CJ in the performance of therapeutic-exercises with the goal to affect varying components of movement (i.e., vascularization, endurance, coordination, strength, power, speed, etc). The exercise dosage is developed to specifically address the treatment goals including:
 - a) Cervical stabilization exercises to begin the process of regaining dynamic stability of the cervical spine during normal functional activities, particularly when using the upper extremities.
 - b) Eccentric exercise directed to the extensor carpi radialis brevis tendon to restore the biomechanical properties of the tendon.
 - c) Exercise focused on activating and strengthening the muscular infrastructure to improve her posture.
 - d) Instruction in how she can safely continue with physical activity such as cardiovascular and relaxation exercises.

Phase II (Week 3-6):

1. The OMPT continues to perform re-examination/re-evaluation to determine if CJ's condition is changing. Components of the clinical re-examination may include assessment of passive accessory movements, pain on VAS, functional measures, neural mobility tests, and handgrip strength. Interventions are modified based on the findings of the re-examination/re-evaluation.
2. Reinforce patient education to insure that CJ is performing activities safely. Involve CJ in shared decision making by answering her questions and problem solving regarding how she should function within the various components of her daily activities.
3. Provide manipulative and/or soft tissue techniques as appropriate based on re-examination findings.
4. Therapeutic exercise continues as initiated in Phase I. Throughout Phase II, modifications are made to match the patient's tissue requirements and functional levels, keeping in mind the specific treatment goals.
 - a) Continue with progression of cervical stabilization exercise to increase cervical spine stability during functional activities.
 - b) Continue exercises aimed at restoring normal posture during static and dynamic movements.
 - c) Continue eccentric exercise to the tissues around the elbow to restore normal functional tolerances.
 - d) Continue with physical activity to maintain cardiovascular status, reduce stress, maintain/control body weight, etc.
5. Following assessment of neural tissue dynamics, therapeutic movements and exercises directed to the neural structures will be incorporated into the exercise program.

Phase III (Week 7-12):

1. CJ will continue to receive education with focus on discharge planning including:
 - a) How to recognize warning signs of a relapse and how to manage a flare
 - b) When she should seek professional assistance for flare-ups, and who she should see (i.e., return to physical therapy as first entry point for assessment, see a physician if signs of gastrointestinal problems return).
 - c) How to progress exercise safely and effectively at home or her gym to achieve the goals set forth in her plan of care.
 - d) Establish a follow-up appointment; scheduled 3 months post discharge, to assess her status.

IV. Outcomes

CJ's chief concern motivating her decision to seek medical care was disabling lateral elbow pain causing altered family, social and work participation. The outcome measures are at the level of body function (pain and grip strength), self-reported disability (e.g. Disabilities of the ARM, Shoulder and Hand DASH) and participation (identified by the patient). The outcome measures and their goals are assessed at the chosen time points. For normative purposes, the clinically minimally significant difference is listed below.

BODY FUNCTION	ACTIVITY	PARTICIPATION
Pain at lateral elbow assessed by VAS (0-100 mm) Present ³ At best; upon waking ³ At worst; after 2 hours of typing ³ Self positioned ULTT ⁴	(DASH, normalized 0-100) ¹	Followed up with Primary Physician regarding symptoms of NSAID
Grip Strength (lb) ²		Able to take care of younger daughter ¹
		Able to work 8 hours/day ¹
		Able to engage in a fitness program at the gym ¹

Frequency of testing:

1. Entry into care, monthly, at the completion of care, at 6-month follow-up
2. Weekly
3. Each session
4. Daily

Outcome goals:

Pain at best: VAS = 0; at the end of phase II

Pain at worst: VAS decreased by at least 50%; e.g., from the original 60-80/100 to 30-40/100. This change exceeds the minimally clinically significant difference of $= < 15$ mm; at the completion of phase III

Pain with self-positioned ULTT: VAS decreased by at least 50%; e.g., from the original $\sim 80/100$ to $\sim 40/100$. This change exceeds the minimally clinically significant difference of $= < 15$ mm; at the completion of phase III

Grip strength: 90% of the non-involved side at the completion of Phase III

Self-reported Disability: DASH below 24% (from original 40%)

Clinically meaningful difference:

VAS = > 15 mm. This value exceeds the values identified in [(Bird (2001); Gallagher EJ (2001); Kelly AM (1998), and Kelly AM (2001)]

Grip Strength = 1SD of the norms for her age group, i.e., 10-12 lb. This value was experientially derived.

A 10-point difference in individual scores represents a clinically meaningful differences for the DASH.^{12,13}

Chapter 4: Professional Practice Dimensions Expected of the Orthopaedic Manual Physical Therapist Advanced Practitioner

The practice dimensions outlined in this section will assist professionals in their career planning. Selected components identified below are requirements for recertification as a Fellow of the AAOMPT. Fellows should contact the AAOMPT website to determine current requirements.

I. Professional Association Membership:

- A. Maintain current membership, or eligibility for membership, in the AAOMPT, APTA, and APTA Sections.

II. Patient Care:

- A. Direct or indirect patient care of 2000 hours over ten years (effective 2005).
- B. Contribute to hospital or clinic data base on delivery of PT services in OMPT settings (e.g., assist in gathering relevant data related to outcomes of PT services such as productivity, quality, and service measures).
- C. Maintain/advance level of knowledge of current legislative/regulatory/medical-legal issues pertaining to OMPT practice and education.

III. Educational Development

- A. Advance knowledge of current best evidence in diagnostic, prognostic, and intervention techniques, methods and theories relevant to the practice of OMPT through:
 - 1. Attendance at professional education inservices, seminars, and conferences.
 - 2. Attendance at university academic courses.
 - 3. Structured independent study.
 - 4. Reading current literature, including ‘classic’ literature which has contributed to the evolution of OMPT.

IV. Teaching

- A. Contribute to the professional development of OMPTs or PT students through teaching in a university or clinical setting, serving as a clinical instructor, or serving as a mentor.
- B. Educate other health care professionals/administrators as to the scope and role of the OMPT theory and practice.

V. Scholarly Activity

- A. Contribute to the OMPT body of knowledge by publishing case reports, single case study design studies, clinical trials, or other clinically relevant research in peer-reviewed publications
- B. Contribute to the OMPT body of knowledge by participation in scientific (e.g., platform or poster presentations)
- C. Contribute to the OMPT body of knowledge by sharing observations/expertise through the writing of textbooks and book chapters, publishing in non-peer-reviewed publications, the creation of videos or other related activities .

VI. Professional Service

- A. Contribute to the development of the profession and community by completing one or more of the following community services: teaching, health fairs, or provision of pro bono care.
- B. Contribute to the advancement of the profession by completing one or more of the following professional services: participation in the legislative process on issues related to OMPT, or assuming a leadership role(s) within the AAOMPT, APTA, APTA components, including Sections (Orthopaedics, Sports, etc.), and state chapters/districts

VII. Consultant

- A. Consult with peers, colleagues, other health care professionals, other community agencies, legislative, legal, and/or regulatory organizations.

Chapter 5: Foundational Knowledge Underlying Orthopaedic Manual Physical Therapist Practice

I. Human Anatomy and Physiology

A. Body functions and body structures

1. Musculoskeletal system
2. Neuromuscular system
3. Cardiovascular and pulmonary systems.
4. Integumentary systems.
5. Other systems: endocrine, reproductive, and digestive.
6. Histology (e.g. connective tissue, muscle, nerve, bone).
7. Physiology of exercise and physiological demands

B. Movement Science

1. Biomechanics and kinesiology.
2. Exercise physiology
3. Motor learning and control.

II. Pathophysiology

A. Symptoms/signs of injury/disease.

B. Disease epidemiology.

C. Trauma, immobilization, inflammation, tissue healing and repair, and aging

D. Pathomechanics/pathokinesiology

III. Orthopaedic Medical/Surgical Interventions:

Selected Aspects of Medical Management in the Following Areas:

- A. Orthopaedics
- B. Rheumatology
- C. Medicine
- D. Neurology
- E. Dentistry
- F. Surgical procedures
- G. Pharmacology
- H. Radiology - Imaging studies
- I. Ancillary tests (e.g. EMG, EKG, lab studies)

IV. Behavioral Sciences

- A. Communication skills with patients, families, and providers
- B. Pain and disability
- C. Chronic pain management
- D. Knowledge of selected interventions/procedures related to psychiatry/psychology

V. Orthopaedic Manipulative Therapy Theory and Practice

- A. OMPT theory of assessment, diagnosis
 1. Management: selection and application of OMPT interventions
 2. Indications/contra-indications to OMPT
 3. Professional issues relevant to OMPT practice
 4. Knowledge of manipulative therapy approaches practiced within physical therapy, medicine and osteopathy and chiropractic

VI. Critical Inquiry for Evidence-Based Practice

- A. Evidence-based orthopaedic physical therapy and orthopaedic manual physical therapy practice. Refer to Appendix 4 for examples of behavioral objectives for critical inquiry.

VII. Health Promotion and Preventative Care Programs

A. Nutrition

B. Psychological issues relating to health and wellness

C. Basic parameters of fitness

Chapter 6: Evidence Based Practice: Examples of Objectives for Teaching Critical Analysis of the Scientific and Clinical Literature

The following behavioral objectives may assist fellowship programs in designing course work related to evidence based practice and assist clinicians in selecting course work and/or programs to advance their skills in critical inquiry

A. Describe the characteristics and principles that determine the credibility of an experimental research report

1. Identify and assess the significance of the experimental question
2. Assess the relevance of the reviewed literature
3. Assess the clarity and appropriateness of a testable hypothesis
4. Discuss sampling and the use of control subjects
5. Assess the chosen research design
6. Assess the appropriateness of key methods
7. Assess the performed analysis (data processing and statistical analysis)
8. Assess the appropriateness of the conclusions drawn from the results of this experiment
9. Assess the contribution of the major findings to the existing literature

B. Describe characteristics that determine the credibility of a clinical case report

1. Identify the unique characteristics of the clinical problem
2. Assess the relevance of the supporting literature
3. Assess the choice of patient/subject selection and description
4. Assess the appropriateness of the evaluation and treatment choices
5. Analyze the chosen outcome measures
6. Discuss the interpretation of the finding
7. Assess the appropriateness of the conclusions
8. Assess the contribution of the findings to the existing literature

C. Collect, examine and critically analyze a body of clinical and scientific literature

1. Define the question
2. Describe and summarize a chosen compilation of published report
3. Identify appropriate strengths and limitations of the selected published reports
4. Draw appropriate defensible conclusions about the chosen published reports
5. Synthesis the literature, provide a conclusive summary and relate it to the original question

D. Assess the relevance of a published report to practice

1. Describe and discuss the Levels of Evidence, used in clinical research and apply it to a particular study

2. Assess if a published report has sufficient credibility and utility for application to practice
3. Describe the patient populations to whom the results are applicable
4. Describe the circumstances necessary for valid application of the results to a patient

E. Contribute to OMPT literature including:

1. Independently or as a part of a research team, contribute to components or to the complete research process. That is; develop a research question, proposal, implement, collect data, analyze data, present results, discussions and conclusions, disseminate the findings.(e.g., present at state or national conference , submit to peer reviewed journal)
2. Submit a case report
3. Submit literature review of meaningful clinical topic
4. Submit a “theory paper” or perspectives
5. Develop computer/AV technology to be used PT education or direct patient care delivery

Chapter 7: Summary of Practice Analysis

The 2006 OMPT Description of Advanced Specialty Practice (DASP) was developed by a special task force appointed by the AAOMPT Standards Committee. The effort was coordinated by a Core Group of seven members, all physical therapists. The Core Group and a consultant determined the practice analysis plan. All procedures were reviewed with the Executive of the AAOMPT.

Review and Revision of the DACP for Orthopaedic Manual Physical Therapy

The starting point was the Description of Advanced Clinical Practice (DACP) of Orthopaedic Manual Physical Therapy, developed and published by the AAOMPT in 1998.⁹ In March 2005, having been charged with developing a plan for revising the DACP, the Core Group met via teleconference and developed a set of goals and timelines, along with a pro forma outline of the development plan. In September 2005 an outside consultant was hired to finalize and facilitate the plan.

An Advisory Team of 13 AAOMPT members was selected to join the Core Team to serve as an Expert Panel on content and to suggest initial revisions to the DACP. The Advisory Team members were chosen based on a number of criteria:

1. regional or geographic distribution
2. practice setting diversity
3. number of years practicing OMPT
4. ethnic and gender diversity
5. clinicians and academic educators
6. residency graduate or residency director with exposure to residency curriculum

A meeting of the Expert Panel was convened in Salt Lake City in October, 2005. During this meeting, detailed suggestions for revision to the DACP were solicited and recorded. In addition, an initial attempt was made to differentiate Advanced Specialty Practice in OMPT from other forms of practice, which launched a dialogue and work stream throughout the development process. It was ultimately decided that an overview of Advanced Specialty Practice would be written (Chapter 1 of the DASP); the competencies would reflect the entire range of Advanced Specialty Practice; and a case example would be developed to illustrate Advanced Specialty Practice in OMPT.

The Expert Panel also determined that revisions should be examined both in light of current practice and in anticipation of future practice. Thus, an extensive semi-Delphi exchange via email and teleconference calls occurred, resulting in a consensus image of future OMPT practice. This image was shared with the AAOMPT Executive, and served as a launching point for the Executive's Strategic Planning process.

The Core Group convened a meeting in San Diego in February 2006 for the purpose of completing the revision of the DASP competencies, to plan for the survey, and to begin an extensive consensual process of writing the various chapters and Appendices of the

DASP. Each Chapter or Appendix was initially co-authored by at least two Core Group members, and was read for feedback by all Core Group members and several Advisory Team members as well.

Survey

The primary purpose of the survey was to serve as a reality check on the work of the Expert Panel. Was the Panel's consensus view representative in fact, or did they inadvertently wind up with a skewed perspective on OMPT? Each item on the clinical competencies list was converted into an independently understandable statement, with which respondents were invited to agree or disagree. There were over 300 competencies, and it seemed unlikely that many AAOMPT members would respond to a survey questionnaire that took over 2 hours to fill out. Accordingly, six questionnaires were constructed, each with exactly the same instructions and format, each with about 58 items obtained by taking every sixth item from the competencies list, each of which took 20-30 minutes to complete.

An email invitation was sent to the entire AAOMPT membership in July 2006, inviting them to complete an on-line survey. A total of 447 responded, and the results were unmistakable: all but 10 items were agreed to by over 90% of respondents. Of the 10, eight were agreed to by over 75%; of the two remaining items, one was re-worded to eliminate an ambiguity, and the other was eliminated. The statistical likelihood of false positive from this sample is vanishingly small ($< .001$); thus, we could safely conclude that the Expert Panel's views are widely supported by the profession at large, as represented by the membership of AAOMPT.

Case Example

The Core Group convened for a weekend-long meeting in northern California in July 2006 to assess the survey results and finish the DASP Chapters and Appendices. In the course of the meeting, the Core Group decided to create a Case Example (NOT a Case Study) which illustrates the distinctive character of treatment by an Advanced OMPT Practitioner. The Example was created through an extensive iterative process that saw every Core Group member authoring at least one section, co-authoring another, and giving critical feedback on every section.

Review and Approval

The final DASP document was distributed to all Core Group and Advisory Team members for review in late September 2006. It was presented to the AAOMPT membership at the annual AAOMPT Conference in October 2006 for review and comment. Based on this, it was submitted to the AAOMPT Executive for review and approval.

Appendix 1: Glossary

Assessment The measurement or quantification of a variable or placement of a value on something. Assessment should not be confused with *examination* or *evaluation*.²

Clients Individuals who are not necessarily sick or injured but who can benefit from a physical therapist's consultation, professional advice, or services. Clients are also businesses, school systems and others to whom physical therapists offer services.²

Competence Possessing the requisite knowledge, abilities, and qualities to be a physical Therapist.²

Diagnosis Is both a process and a label. The diagnostic process performed by the physical therapist includes integrating and evaluating data that are obtained during the examination to describe the patient/client condition in terms that will guide the prognosis, the plan of care, and intervention strategies. Physical therapists use diagnostic labels that identify the impact of a condition on function at the level of the system (especially the movement system) and at the level of the whole person.⁵

Disability (1) The inability to perform or a limitation in the performance of actions, tasks, and activities expected in specific social roles that are customary for the individual or expected for the person's status or role in a specific sociocultural context and physical environment.² Impairments, activity limitations and participation restrictions in the context of what an individual can do in a standard environment and in their usual environment. (**WHO International Classification of Functioning, Disability and Health**)¹⁶

Disease A pathological condition or abnormal entity with a characteristic group of signs and symptoms affecting the body with known or unknown etiology.⁵

Disorder Derangement or abnormality of function (anatomic or physiologic); Pathology.⁵

Dysfunction Disturbance, impairment, or abnormality of function of an organ.⁵

Episode of Physical Therapy Care All physical therapy services that are 1) provided by a physical therapist, 2) provided in an unbroken sequence, and 3) related to the physical therapy intervention for a given condition or problem or related to a request from the patient/client, family, or other health care providers.⁵

Examination A comprehensive and specific testing process performed by a physical therapist that leads to diagnostic classification or, as appropriate, to a referral to another practitioner. The examination has three components: the patient/client history, the systems review, and tests and measures.⁵

Evaluation A dynamic process in which the physical therapist makes clinical judgments based on data gathered during the examination. No defined number or range of visits is established for this type of episode. ⁵

Evidenced-based Practice Integration of the best possible research evidence with clinical expertise and patient values, to optimize patient/client outcomes and quality of life to achieve the highest level of excellence in clinical practice. ¹¹

Fellowship Education A post-professional, funded, and planned learning experience in a focused area of physical therapist clinical practice, education, or research (not infrequently post-doctoral, post-residency prepared or board-certified physical therapists). (www.apta.org)

Functional Limitation A restriction of the ability to perform a physical action, activity, or task in a typically expected, efficient, or competent manner. ⁵

Functioning Refers to all body functions, activities and participation in the context of what an individual can do in a standard environment and in their usual environment. ¹⁵

History A systematic gathering of data-from both the past and the present-related to why the patient/client is seeking services of the physical therapist. The data that are obtained (e.g. through interview, through review of the patient/client record, or from other sources) include demographic information, social history, employment and work (job/school/play), growth and development, living environments, general health status, social and health habits (past and current), family history, medical/surgical history, current conditions or chief complaints, functional status and activity level, medications, and other clinical tests. While taking the history, the physical therapist also identifies health restoration and prevention needs and coexisting health problems that may have implications for intervention. ⁵

Informed Consent The voluntary and revocable agreement of a competent individual to participate in a therapeutic or research procedure, based on an adequate understanding of its nature, purpose and implication. ¹⁴

Impairment A loss or abnormality of physiological, psychological, or anatomical structure or function. ⁵

Intervention The purposeful interaction of the physical therapist with the patient/client, and when appropriate, with other individuals involved in patient/client care, using various physical therapy procedures and techniques to produce changes in the condition. ⁵

Manual Therapy Techniques Skilled hand movements intended to improve tissue extensibility; increase range of motion; induce relaxation; mobilize or manipulate soft tissues and joints; modulate pain; and reduce soft tissue swelling, inflammation, or restriction. ⁵

Mobilization/Manipulation A manual therapy technique comprising a continuum of skilled passive movements to the joints and/or soft tissues that are applied at varying speeds and amplitudes, including a small amplitude/high velocity therapeutic movement⁵

Motor Control The ability of the central nervous system to control or direct the neuromotor system in purposeful movement and postural adjustments by selective allocation of muscle tension across appropriate joint segments.⁵

Motor Deficit A lack or deficiency of normal motor function (motor control and motor function) that may be result of pathology or other disorders. Weakness, paralysis, abnormal movement patterns, abnormal timing, coordination, clumsiness, involuntary movements, or abnormal postures may be manifestations of impaired motor function (motor control and motor learning).⁵

Motor Function (motor control and motor learning) The ability to learn or demonstrate the skillful and efficient assumption, maintenance, modification, and control of voluntary postures and movement patterns.⁵

Muscle Tone The velocity-dependent resistance to stretch that muscle exhibits.⁵

Neural Mobility The ability of the nervous system to adapt to tensile loads including, 1) gross movements of elements of the nervous system in relation to anatomic interfaces with other structures, and 2) intraneural movements consisting of neural tissue elements moving in relation to the connective tissue components of nerve tissue (e.g. endoneurium, perineurium).³

OMPT Advanced Practitioner A physical therapist who demonstrates professional behaviors and advanced clinical knowledge, judgment and level of practice, achieved through orthopaedic manual physical therapy fellowship education, post-professional degree work, and/or relevant clinical experience and course work.

Pain A disturbed sensation that causes suffering or distress.⁵

Plan of Care Statements that specify the anticipated goals and the expected outcomes, predicted level of optimal improvement, specific interventions to be used, and proposed duration and frequency of the interventions that are required to reach the goals and outcomes. The plan of care includes the anticipated discharge plans.⁵

Posture The alignment and positioning of the body in relation to gravity, center of mass, and base of support.⁵

Prognosis The determination by the physical therapist of the predicted optimal level of improvement in function and the amount of time needed to reach that level.⁵

Psychomotor Refers to motor activity that is preceded by or related to mental activity.²

Residency Education A planned program of post-professional clinical and didactic education that is designed to advance significantly the physical therapist's preparation as a provider of patient care services in a defined area of clinical practice. (www.apta.org)

Screening Determining the need for further examination or consultation by a physical therapist or for referral to another health professional.⁵

Symptoms Any subjective evidence of disease or of a patient/client's condition.^{5, 9}

Tests and Measures Specific standardized methods and techniques used to gather data about the patient/client after the history and systems review have been performed.⁵

Thrust Manipulation A high velocity, low amplitude therapeutic movement within or at end range of motion.¹

Treatment The sum of all interventions provided by the physical therapist to a patient/client during an episode of care.⁵

Appendix 2: References

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Appendix 3: Curriculum Requirements for APTA Credentialed Orthopaedic Manual Physical Therapy (OMPT) Fellowships

The American Physical Therapy Association credentials post-professional orthopaedic manual physical therapy fellowship programs that meet the standards for organization, resources, curriculum, and performance measures.

Post-professional clinical residency and fellowship programs are one of the primary means of training physical therapists to develop superior post-professional clinical skills, advanced knowledge in a specialized area of clinical practice, and the ability to function as clinical educators, consultants and advocates for their peers, patients and clients.

Residency or Fellowship?

Residency or fellowship training is designed to significantly advance the licensed physical therapist's preparation as a provider of patient care services in a defined area of clinical practice. There are multiple residencies and fellowships within a variety of specialty and subspecialty areas of practice. Orthopaedic manual physical therapy is considered an advanced sub-specialty of orthopaedics, and therefore a fellowship program.

Clinical Fellowship Programs

A clinical fellowship program^{1,2} is a post-professional planned learning experience in a focused area of clinical practice (not infrequently for post-residency prepared or board-certified therapists.)

To be eligible for credentialing as a clinical fellowship program for physical therapists, a clinical fellowship program must possess a curriculum that:

1. is focused, with advanced clinical and didactic instruction within a subspecialty area of practice;
2. is intensive and includes extensive clinical experience; and
3. provides a sufficient and appropriate patient population to create an environment for advanced clinical skill building.

A fellowship program is designed to provide greater depth in a specialty or subspecialty area than that which is covered in a residency program. Additionally, applicants of a clinical fellowship program must be licensed as a physical therapist and must possess one or more of the following qualifications on intake into the fellowship program:

1. specialist certification or completion of residency in specialty area
2. substantial clinical experiences in a specialty area
3. demonstrable clinical skills within a particular specialty area

International and National Standards of Orthopaedic Manual Physical Therapy (OMPT)

The International Federation of Orthopaedic Manipulative Therapists (IFOMT) is an

organization of specialist physiotherapists/ physical therapists with an internationally recognized post-graduate qualification. IFOMT is a member organization of the World Confederation of Physical Therapy (WCPT).

The national physical therapy association (APTA) recognizes the American Academy of Orthopaedic Manual Physical Therapists (AAOMPT) as its representative body in the international organization. The AAOMPT is a member organization (MO) of IFOMT. Member organizations are admitted if their standards meet or exceed IFOMT standards.³

The OMPT fellowship programs in the US that are currently approved by AAOMPT and credentialed by APTA meet standards set by all three organizations^{1, 3, 4, 5} (i.e. AAOMPT, APTA and IFOMT). The organizations also have regular review and re-credentialing processes and formal reviews of the standards.

SPECIFIC CURRICULUM REQUIREMENTS FOR ORTHOPAEDIC MANUAL PHYSICAL THERAPY (OMPT) FELLOWSHIP PROGRAMS

DASP

The curriculum of the OMPT Fellowship Program is based on the Description of Advanced Specialty Practice in Orthopaedic Manual Physical Therapy (DASP-OMPT, formerly DACP) developed by AAOMPT. The Fellowship Program must illustrate how the curriculum addresses each practice dimension in the DASP and which dimensions are strengths versus an area of future growth.

OMPT Curricular Elements

National and international standards for OMPT programs contain a combination of prescriptive elements plus outcome measures. These elements are dynamic in nature. Therefore, to view the current curriculum requirements to become a manual therapy fellowship credentialed by the APTA and recognized by the AAOMPT, visit the websites outlined below.

BIBLIOGRAPHY AND RESOURCES

The websites of the following organizations will provide current information on standards of OMPT programs. Key words: fellowship, OMPT, standards, education

www.apta.org

www.aaompt.org

www.ifomt.org

1. Post-professional Clinical Residency and Fellowship Program Credentialing Application. Alexandria, Va. American Physical Therapy Association; 2006.
www.apta.org

2. Clinical Residency and Fellowship Program Credentialing—Frequently Asked Questions. Alexandria, Va. American Physical Therapy Association; 2006 www.apta.org
3. IFOMT Standards Document, appendix 2. (2000) International Federation of Manipulative Therapists. www.ifomt.org
4. Additional Requirements for Postprofessional Clinical Fellowship Programs In Orthopaedic Manual Physical Therapy. Alexandria, Va. American Physical Therapy Association; 2006. www.apta.org
5. Standards for Orthopaedic Manual Physical Therapy Residency Education (rev 1999, preliminary document 1993) American Academy of Orthopaedic Manual Physical Therapists. www.aaompt.org

Resources to assist in the design of a manual therapy fellowship:

Guidelines for Curriculum Development for Postprofessional Residencies in Orthopaedic Physical Therapy and Orthopaedic Manual Physical Therapy. February 2001. Orthopaedic Section of APTA and AAOMPT.

Appendix 4 : History of AAOMPT

Established in 1991, the AAOMPT is an organization of physical therapists who specialize in manual physical therapy with membership from across the United States and overseas. Physical therapists published in manual therapy in the 1920's and several were major players in the formation of the APTA Orthopaedic Section in 1974. However, manual therapy education and practice did not have a common national voice in the United States. During the summer 1991, at the urging of Norwegian manual therapist Freddy Kaltenborn, a group of U.S. based manual therapists met at Oakland University in Rochester, Michigan to discuss common issues facing orthopaedic manual physical therapy in the United States. Recognizing their common interests in advancing orthopaedic manual physical therapy in the United States, they founded the AAOMPT in 1992. The founding members are Dr. Richard Erhard, Dr. Joe Farrell, Ola Grimsby, Dr. Kornelia Kulig, Michael Moore, Dr. Stanley Paris, Michael Rogers, and Dr. Bjorn Svendsen.

The original objective of the AAOMPT included:

- To provide a mechanism of national accreditation and approval of orthopaedic manual physical therapy residency programs.
- To provide a forum where persons having a common interest in orthopaedic manual physical therapy may meet, confer and promote their research, practice and patient care.
- To seek membership of the Academy in the International Federation of Orthopaedic Manipulative Therapists (IFOMT).
- To seek cooperation with APTA in furthering the goals of the physical therapy profession.

Since its inception, the Academy has advocated for and worked toward the establishment of standards for competency of residency/fellowship trained physical therapists. Towards this end, the AAOMPT, in 1993, developed the document, *Standards for Orthopaedic Manual Physical Therapy Residency Training*.¹⁵ The AAOMPT created and implemented a process to recognize clinical OMPT residencies in 1994 and continued with that task until 2001, when the AAOMPT and the American Physical Therapy Association (APTA) agreed that the APTA would take over responsibility of credentialing clinical OMPT residency/fellowship programs. The APTA accepted the core components from the AAOMPT Standards for Orthopaedic Manual Physical Therapy Residency Training as "critical elements," i.e. the items that must be in place for a program to be credentialed (e.g. supervised clinical hours, examinations including practical examinations), and the APTA agreed to allow the AAOMPT to name a representative to serve on the APTA Credentialing Committee for at least 2 three-year terms.

The APTA has two levels of recognition of post-professional clinical training: residency and fellowship. The residency is an advanced level of clinical training that is available to individuals interested in improving their psychomotor skill and knowledge within a specific area of practice. The fellowship is an advanced level of training for individuals with prior expertise within an area to gain further psychomotor skill and knowledge within a specific area of clinical practice. At the core of clinical residency and fellowship curriculum is an *extended period of mentoring* with highly skilled clinicians, combined with clinical course work and course work in the basic and applied sciences. During the early conversations the APTA recognized that the AAOMPT clinical residencies were actually more in line with the criteria and standards for a fellowship. Therefore all AAOMPT credentialed clinical OMPT residencies were given the opportunity to be recognized as APTA manual therapy fellowships during the conversion in December 2001. The AAOMPT continues to support the development of clinical manual therapy fellowship programs to advance skill level and knowledge of physical therapists in OMPT.

A distinctive relationship exists among the AAOMPT, the International Federation of Orthopaedic Manipulative Therapists (IFOMT) and the APTA. IFOMT is a specialty subgroup of the World Confederation of Physical Therapy (WCPT) and is the organization that oversees OMPT at the international level in terms of educational standards, practice guidelines, etc. To become a member organization of IFOMT, a manual therapy organization must be able to meet IFOMT education standards by demonstrating a quality educational training program in manual physical therapy and also must be recognized by the country's parent professional association as the spokesperson for manual physical therapy in that country. The APTA is a member organization of the WCPT and is the parent organization responsible for recognizing the representative from the United States as a member organization of IFOMT. Therefore the APTA has recognized the AAOMPT as the United States member organization to IFOMT.

For many years there has been a tremendous level of synergy and collaboration between the AAOMPT, the APTA, and APTA Orthopaedic Section with the goal of improving the quality of care provided to patients by physical therapy practitioners. Eighty-seven percent of the AAOMPT membership are also members of the APTA, so there is a tremendous amount of carry over between the membership of the two organizations. There are many examples of the collaborative efforts between the AAOMPT, the APTA and the APTA Orthopaedic Section which include the following:

- Creation of the APTA Manipulation Task Force.
- Legislative networking as it relates to Manual Therapy across all Chapters and Sections.
- Development of consistent terminology related to manual therapy and manipulation in APTA and AAOMPT consensus documents.
- Development of criteria for Residency and Fellowship programs in Manual Therapy.
- The AAOMPT has a representative member on the APTA Committee on Clinical Residency and Fellowship Program Credentialing.
- Development of the Manipulation Education Manual (MEM).¹

- Passage of PROCEDURAL INTERVENTIONS EXCLUSIVELY PERFORMED BY PHYSICAL THERAPISTS HOD P06-00-30-36 (Program 32) [Position]
- Passage of CLINICAL CONTINUING EDUCATION FOR INDIVIDUALS OTHER THAN PHYSICAL THERAPISTS AND PHYSICAL THERAPIST ASSISTANTS HOD 06-02-26-49 (Program 65) [Initial HOD 06-01-28-28]
- Educational programming aimed at training individuals on mechanics of establishing a clinical residency and/or fellowship.

The AAOMPT continues to work with the APTA and Orthopaedic Section in legislative, regulatory and educational activities common to these organizations.