AMERICAN COLLEGE OF OCCUPATIONAL AND ENVIRONMENTAL MEDICINE

Initial Approaches to Treatment

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OVERVIEW

The goal of treatment is to optimize the functional recovery of workers with work-related injuries, diseases, and/or disorders. This process includes regaining work-related and non-work related quality of life, thereby minimizing any residual disability. Providers may accelerate functional recovery through setting expectations and goals [1-5] and selecting treatments that are effective in enhancing recovery beginning with the initial consultation visit.

This guideline provides an overview of strategies to optimize patient functional recovery in the early stages after injury in the absence of red-flag symptoms (see Table 1 for summary). Red-flag symptoms,* when present, should prompt evaluation for serious underlying disorder(s) for which the patient may need a referral to another provider for a thorough evaluation of a condition not suspected to be work-related. In the absence of red-flag symptoms, initial treatment of work-related injuries and illnesses is largely focused on managing patient expectations for recovery and utilizing non-invasive or minimally invasive treatments with quality evidence supporting improved patient outcomes.† The following principles apply to most work-related injuries and diseases:

- Musculoskeletal symptoms can be managed with activity modification, such as mitigation of or removal from substantially aggravating exposures. A short period of activities requiring minimal use of the injured body part may be needed for severe injuries. Specific recommendations are also frequently helpful, including: employment, daily activities, home, personal care and recreational activities; short-term pharmacotherapy (usually oral, but sometimes topical medication); a limited course of heat and/or cold therapy for acute but generally not chronic pain management (see specific body part guidelines for detailed information); a limited course of manipulation for spine pain; and a limited course of physical and/or occupational therapy, especially for recovery in subacute to chronic cases.
- Eye injuries may require specific treatment such as removal of foreign bodies and rust rings. Blunt ocular trauma is also managed with evaluation of serious problems, then conservative management. Activity modification and short-term pharmacotherapy (usually topical medication) are occasionally needed. Refer to the Eye Guideline for detailed information.
- Respiratory symptoms can be managed with mitigation of or removal from substantially aggravating exposure(s). Specific recommendations may be provided regarding employment, daily activities, home, personal care and recreational activities; short-term pharmacotherapy (usually inhaled, but sometimes oral medication). Refer to the Work-

Related Asthma and Occupational Interstitial Lung Disease Guidelines for detailed information.

- Most patients will experience decreased symptoms and improved physical functional abilities within days to weeks.‡ If recovery takes longer, the patient and provider should seek to identify other medical conditions, workplace exposures, avocational exposures, and psychosocial factors that may be preventing or delaying improvement or recovery.
- For the conditions discussed in these guidelines, few patients need diagnostic tests to rule out a serious condition within the first several weeks. Aside from trauma and a few other exceptions, advanced diagnostic testing is not useful or cost-effective for most work-related musculoskeletal disorders in the first few days or weeks. In contrast, patients with respiratory disorders, or eye injury often need diagnostic testing at the time of initial evaluation.
- Inactivity and/or immobilization should be limited due to concern for deconditioning, bone loss, and development of incapacity or trend toward disability after relatively short periods of time.
- Progress in therapy or a directed home-exercise or activity program can be used as a means of increasing physical capacity and returning patients to function and work. Many patients benefit from instruction in specific exercises under the direction of a physical therapist or occupational therapist. Progressive exercise may improve physical capacity, returning patients to function and work.
- Return to work safely or work in a modified duty capacity enhances the recovery of injured and ill workers (see Work Disability Prevention and Management guideline).

*Red flags are patient responses and findings which raise the suspicion of serious underlying medical conditions. Examples include signs of fracture, cancer, and infectious diseases. Their absence generally rules out the need for special studies or inpatient care during the first 4 weeks of care when spontaneous recovery is usually expected. They are discussed in the General Approach to Initial Assessment and Documentation guideline, and specific examples are in each body part guideline.

†Alertness for the correct diagnosis and possible need of initial invasive or surgical intervention is required. For some disorders, the initial best treatment may be glucocorticoid injection (e.g., trigger digit, de Quervain's stenosing tenosynovitis). For other disorders, initial best treatment may be surgical repair (e.g., acute complete biceps tendon rupture, open fractures).

‡Duration of disorders and disability is extraordinarily complex. It includes a combination of the severity of the pathophysiological abnormality, speed of healing, workplace accommodations, home and avocational demands, coping and psychosocial factors. For mild disorders, the disease process may be measured in a few days; for severe disorders, the symptoms may persist indefinitely. The critical issue tends to be a focus on function and restoration of function to allow the person to return to their usual tasks.

PATIENT EDUCATION AND INVOLVEMENT

Patient education includes succinct information on the diagnosis, prognosis, activity levels, work limitations, and treatment plan. The provider should address fear avoidant beliefs and the necessity of the patient to be involved in his or her recovery plan [5-7].* Most studies of simple educational booklets suggest that they are not effective when used without more

active treatments (see body part guidelines). Structured patient education alone may be less effective than other interventions but may be beneficial when combined with other interventions]. In the absence of symptoms or signs indicating a serious cause (i.e., cancer, infection, or fracture), recently injured workers should be counseled to anticipate improvement in symptoms and functioning within a few days to weeks. Similarly, if the evaluation of a patient with subacute (1 to 3 months' duration) or chronic (>3 months) symptoms does not reveal a serious cause, the patient should be advised of the likelihood of a favorable functional outcome provided he or she adheres to a functional restoration program. Patient participation in self-care active methods is in most cases critical for timely recovery. Active treatments such as exercise and physical conditioning generally offer considerably greater benefits than passive modalities,

Considering the patient's background and educational level, the following information should be provided:

- The natural history of the diagnosis.
- The generally favorable outlook for recovery supported by what is known about the injury or illness (assuming the condition is acute and/or without long term sequelae).
- The timeline for recovery, including goals and expectations of function.
- Testing and treatment options, with an explanation of the sensitivity, specificity, yield, risks, and benefits in lay terms and/or with print or audiovisual aids. (This is particularly necessary for major interventions; for modest options, such as over-the counter medications, ice, heat, etc., detailed discussion is not needed).
- Fear avoidant beliefs and other psychosocial factors.†
- Safe return to work and normal function as primary expectations and collaborative goals. This includes counseling that patients who return early to full or modified work typically have superior short- and long-term outcomes.‡
- It may be helpful to summarize key points in the medical record as information overload is common with electronic medical records systems, especially given the dual nature of the medical and work-related issues of the visit. A general template of information could be created and distributed at the first visit to minimize redundancy with each new patient.

*Conveying the appropriate amount of information to the patient in an understandable manner may foster informed decision-making. Succinctness is generally necessary to avoid information overload and potential for missing the main points. When patients are actively involved in decision-making, it may be easier to avoid inappropriate testing, streamline treatment, and hasten recovery. The need for discussion and information varies among patients and at various stages of care with some patients desiring more detailed information and discussion. It is helpful to discuss the uses and yields of diagnostic tests as well as the effectiveness and risks of proposed treatments in language that the patient will understand. (For a minority of patients who desire to largely or completely abdicate decision-making to the provider, it is recommended that options be simply described and the selection the provider believes most efficacious be prescribed. Information should be tailored so that the amount the patient can understand is relayed in order of importance to avoid information overload.)

†Early intervention addressing psychosocial obstacles to recovery may be effective for reducing absences and improving outcomes. Beliefs about the nature of symptoms, clinical

course, situational distress, depression, poor coping strategies, job dissatisfaction, lack of perceived social support, job inflexibility, and low perceived control are all potential obstacles to recovery. A patient's concern about his or her financial matters, employment security, and family can increase stress and delay recovery. These concerns should be part of the exchange between the provider and patient.

‡See Low Back Disorders guideline and other body part guidelines, particularly discussions on return to work, back schools, participatory ergonomics program, and the following references in the Low Back Disorders guideline: Waddell 2001; Anema 2007; Evjenth 1984; Evjenth 1998; Bernacki 2007; APTA; Hlobil 2005; Steenstra 2006; Steenstra 2003. See also Chronic Pain Guideline, especially the behavioral section.

WORKPLACE ISSUES

Work accommodation and targeted provider communication with the workplace are usually quite helpful for effective early return to work. A provider taking an active role early in the return-to-work process achieves better results, especially by directly contacting the workplace. Work limitations or restrictions are best when they reflect the injured worker's current physical capacity and/or describe activities that should be avoided to reduce risk of harm to the worker or others. A job description from the employer, if available and with sufficiently detailed information regarding the physical and/or chemical demands of job functions and tasks, may help optimize the return to the workplace by providing the physician with information that may allow him/her to make more informed recommendations for specific work restrictions. It can also open the conversation for the potential of returning to or creating modified duty. It is often then helpful to discuss practical strategies for modifying the worksite to accommodate the worker and strategies to reduce the risk of recurrent injury, including addressing toxicological exposures, ergonomic factors, supervision, interpersonal factors, personal protective equipment, and task design. Only rarely do patients need to be removed from work entirely due to the extent of their injuries or the risk posed to themselves or others. In these rare circumstances, it is helpful to frequently re-evaluate the worker's capacity and provide a projected return-to-work date.

Satisfaction with a job, an employer's handling of a claim, and the medical care provided for a work-related injury may influence the patient's return-to-work prospects. Six to 12 months after an injury, patients reporting lower satisfaction with care are more likely to still be receiving lost-wage compensation. In the medical realm, higher levels of satisfaction have been associated with access to timely care, choice of provider, easy access to specialists, interpersonal behaviors during care, and having an occupational medicine orientation to care. Integrated case management improves patient satisfaction, resulting in more rapid return to work and fewer functional limitations at 6 months following injury [10, 11].

MANAGING EXPECTATIONS

Total care management includes managing expectations. The provider sets the expectation for a patient's functional recovery at the initial visit and reinforces that expectation at subsequent visits. General information communicated to the patient about anticipated recovery may include population norms, results of quality treatment studies, and typical patient experiences. This overview should be further complemented by recovery estimates tailored to the individual patient.

Open discussion with the patient is helpful understand the patient's knowledge, beliefs, and expectations about functional recovery. It is important to address misconceptions about the causes and meaning of symptoms, and discuss recovery and preventive measures. Patients may believe that their symptoms signal a serious structural injury and that they will suffer further damage, be permanently disabled, or require surgery if they remain physically active. Addressing these potential misconceptions and fears can facilitate functional recovery. When medications, injections, or surgery are indicated, patients may require additional discussion or information to allay fears.

A high level of catastrophizing or kinesiophobia may increase the likelihood of chronic back pain and future disability. There are several screening tools available to assess which patients may have a greater risk of disability and may benefit from early targeted interventions addressing the non-medical issues impacting the injury. Many offices have preliminary screens such ACT-UP or other resources.

1. Activities: how is your pain affecting your life (i.e. sleep, appetite, physical activities, and relationships)?
2. Coping: how do you deal/cope with your pain (what makes it better/worse)?
3. Think: do you think your pain will ever get better?
4. Upset: have you been feeling worried (anxious)/depressed (down, blue)?
5. People: how do people respond when you have pain?

Inadequate assessment by a provider of an injury or ability to return to work can negatively impact the workers' recovery as well. The provider should avoid catastrophizing the situation or promoting a patient's tendencies toward, or overt fear avoidance behavior(s). Motivational interviewing or similar may be an effective means of handling what can be a difficult discussion for many providers [38].

PATIENT COMFORT

Relief of pain is often the injured worker's major concern. Patients usually correlate their degree of discomfort with injury severity, which may lead to reluctance to participate in potentially therapeutic activities. Therefore, the patient may benefit from learning that his or her degree of discomfort may not correlate with the extent of injury for many musculoskeletal disorders. Patient discomfort may be alleviated with:

- Specific activity prescriptions;
- Activity modification(s);
- Activity limitations (which should be conveyed as applying to work and home situations);
- Physical methods (self-treatment and provided by a healthcare worker);
- Medication(s);
- Counseling about the nature of the injury to address concerns and reduce anxiety; and
- Emphasis on recovery of function.

If a patient does not recover as quickly as expected, it is helpful to seek and address the reasons for delay. Patients who do not improve within a few days with appropriate medical treatment and consideration of workplace exacerbating factors (i.e., those with eye symptoms, many with occupational asthma, most with mild low back pain) or weeks (i.e., those with moderate to severe musculoskeletal symptoms) may need additional evaluation

to identify physical factors or medical causes for the delay, treatment non-compliance, a change in treatment strategy, or additional intervention to address psychological or social contributors to the delayed recovery. Besides providing the patient with a realistic set of expectations, one must manage the expectations of the family, employer, insurance carrier, and perhaps a union or lawyer. Written and verbal contact can keep these parties educated and informed.

RELATIVE REST, IMMOBILIZATION, AND ACTIVITY

Elimination of exposure is important in certain discrete conditions (e.g., occupational asthma [allergic] secondary to a specific chemical or allergic contact dermatitis). For most musculoskeletal injuries, however, restrictions of activity and immobilization result in deconditioning and bone loss within a matter of days and often delay recovery. Bone or muscle lost from restriction of activity or immobilization cannot be restored without undertaking exercises, resumption of activity levels, or a formal reconditioning program. Aching, stiffness, and pain will often occur if muscles and joints are not used. Mobilization of painful areas often helps reduce pain. Depending on the condition in question, guided aerobic and specific activities may improve comfort both acutely and as recovery progresses. Early mobilization has not been associated with increased complications, deformity, or increased residual symptoms. Reported benefits of mobilization have included earlier return to work, decreased pain, swelling, and stiffness, and improved range of motion.

GENERAL PRINCIPLES OF TREATMENT

Discussion of specific disorders is provided in each Guideline. However, general principles of treatment apply broadly across all guidelines. These are comprised of “treatment” addressing the workplace, such as workplace interventions, including modified duty assignments and/or hazard control such as in the hierarchy of hazard controls---elimination or substitution, engineering controls, administrative controls and personal protective equipment. Aspects of treatment also focus on the individual. These include: assessment of whether prior medical conditions may impact or be impacted by the current disorder, the numbers of medications to prescribe, generic vs. trade medications, compounded medications, numbers of medications, numbers of treatments and modalities, length of treatments, measures of function, telemedicine indications and home healthcare guidance. These are reviewed here.

WORKPLACE INTERVENTION

Workplace interventions may reduce or eliminate the period of absence among workers with respiratory and dermatological disorders related to toxicological exposures. The effectiveness of workplace interventions on work disability is variable. Workplace interventions may reduce time to RTW and improve pain and functional status in workers with musculoskeletal disorders [12]. Limited evidence indicates that material handling education and training with or without assistive devices does not prevent back pain, back pain-related disability, or reduce sick leave, when compared to no intervention or alternative interventions. However, the absence of quality evidence does not mean that there is a lack of efficacy, and further studies are needed.

Workplace hazard control, mitigation or medical removal from exposure, and use of personal protective equipment, may all be part of a treatment plan. It is important,

especially for occupational diseases, to identify the exposure source and institute hazard control measures to prevent further exposure. Typically, the patient is a good source of information as to how the injury occurred and sometimes a good source for recommendations for the solution. This can be the basis for discussion of recommendations with the employer regarding restrictions or hazard elimination or control. A site visit by a trained professional (e.g., occupational medicine physician, safety professional, ergonomist, industrial hygienist, occupational therapist, physical therapist, or occupational health nurse) may be useful if these resources are available.

If the source of exposure cannot be identified or controlled, or if the illness is such that immediate elimination of any exposure is necessary, medical removal from the workplace is an option. Personal protective equipment may reduce or prevent exposures, but should ideally be implemented only as an adjunct to engineering and administrative hazard controls. Follow-up after return to work is important to ensure that the worker and employer are complying with restrictions and whether restrictions are sufficient, excessive or unable to be accommodated.

ORAL PHARMACEUTICALS

Oral pharmaceuticals are a first-line palliative method to treat pain and facilitate increased activity. Nonprescription analgesics provide sufficient pain relief for most patients with acute work-related symptoms. Time-limited prescription nonsteroidal anti-inflammatory drugs (NSAIDs) are a reasonable first line option for some patients. Nearly all quality trials utilized scheduled administrations of medication rather than “as needed” prescriptions, thus utility of unscheduled “PRN” doses are of uncertain benefit. If treatment response to oral analgesics is inadequate (i.e., symptoms and activity limitations continue without significant improvement), the provider should re-evaluate the diagnosis, assess whether physical methods (exercise, modalities, etc.) are either in need of implementation or changes, ascertain if the medication is being used as directed, and assess workplace and other physical activity levels. If the over-the-counter (OTC) medication use and activity levels are appropriate, the provider should consider treatment with prescribed pharmaceuticals or physical methods. Consideration of comorbid conditions, adverse effects, cost, efficacy, and patient preferences should guide the treatment recommendations. The provider should discuss the efficacy of medication for the condition, any adverse effects, and any other relevant information to ensure proper use and to manage expectations. Also important is to be aware of the therapeutic dose for the condition under treatment (e.g. gabapentin for neuropathic pain) and individualizing to patient age and body mass. Patients who dislike the use of medications in general, will be easily dissuaded from a medication that has intolerable or unexpected side effects and starting at a lower dose may allow for acclimation. Ongoing use of medication, as with all other interventions, should be guided by objective evidence of functional improvement and should be coupled with an active treatment regimen.

NONSTEROIDAL ANTI-INFLAMMATORY MEDICATIONS AND ACETAMINOPHEN

Quality evidence indicates that nonsteroidal anti-inflammatory drugs (NSAIDs), including aspirin and ibuprofen, are more effective than acetaminophen for many musculoskeletal conditions (see Low Back Disorders and Knee Disorders guidelines), although there are unresolved questions as to whether NSAIDs interfere with the fracture healing process. For

patients with milder pain or medical contraindications for NSAID use, acetaminophen is a good option for pain relief. Acetaminophen can be used in combination with NSAIDs or other pharmacologic methods.

NSAIDs are associated with potential adverse gastrointestinal, cardiovascular, renal, hepatic, and allergic adverse effects. Gastrointestinal adverse effects are particularly problematic for the elderly and may exclude some occupational patients from NSAID use. COX-2 inhibitors have been found to have significantly reduced the risk of major GI events, especially in individuals at risk of NSAID-related adverse effects [13]. Similarly, renal adverse effects may be problematic, but most typically in the elderly or those with systemic diseases such as diabetic nephropathy. A large-scale study has evaluated the safety profile of celecoxib, naproxen and ibuprofen and found that the risk of renal and gastrointestinal events was lower with celecoxib [14]. Providers should weigh the risks (adverse effects and potential drug interactions) and benefits of NSAID use for individual patients (see Hip and Groin Disorders guideline for discussion of adverse NSAID effects and role of cytoprotective agents). These issues tend to be considerably less problematic among employed patients due to younger age, better overall health, and shorter treatment courses than the elderly and others considered at high risk to develop NSAID complications. If any NSAID is to be used for a prolonged period, such as greater than 4 weeks, consider the efficacy for continuation and review potential adverse reactions and monitoring recommendations. For example, diclofenac prescriptions are recommended to be assessed with AST/ALT at 4-8 weeks of treatment initiation, then if long-term, CBC periodically. Cyclo-oxygenase inhibitors, although costlier than the NSAIDs, may be an appropriate choice for some patients.

A recent practice guideline provides an algorithm for prescription of NSAIDs and COX-2 inhibitors and proton pump inhibitors (PPIs) based upon cardiovascular and gastrointestinal risk factors [15]. The use of PPIs should consider not only their benefits, but also their potential harms [16].

OPIOIDS

Opioids appear to be no more effective than safer analgesics for the management of most musculoskeletal symptoms, but are recognized as causing the greatest epidemic of healthcare-related fatalities over the past century. Opioids should be used only if needed for severe pain, and then limited to nocturnal rather than round-the-clock use,* and rarely beyond a short-time frame. Providers should counsel patients on the risks and adverse effects associated with opioid use, including death, motor vehicle crashes, drowsiness, clouded judgment, memory loss, greater risk of disability, constipation, and potential for misuse or dependence (see Opioids guideline). Adverse effects have been reported in up to 80% of patients taking opioid medications.

*The main exceptions are the immediate post-surgical time and severe accidents. However, in both of those examples, it is generally preferential to use lower doses during the day and increase activity at the earliest opportunities.

INJECTIONS

Injections of glucocorticosteroids, local anesthetics, or both should generally be reserved for patients who do not improve with more conservative therapies, although there are rare exceptions where the initial intervention may be an injection, including trigger digit and de Quervain's (see Hand, Wrist, and Forearm Disorders guideline). There is no quality evidence to guide specific glucocorticoid medication selection for therapeutic injections and few quality data comparing doses (see individual body part guidelines). The medication used and frequency of injection should be guided by the goal of the injection (i.e., diagnostic or therapeutic), the underlying musculoskeletal diagnosis, and clinical experience.

ALTERNATIVE MEDICINE

Although a complete review of alternative/complementary medications, such as ginger and turmeric, is beyond the scope of this section, there is some evidence suggesting some may be effective for select disorders (see specific diagnoses). While there may possibly be a better safety profile than NSAIDs in the elderly, at higher doses of these agents, heightened bleeding risks, oxalate stones, and hepatic toxicity have been reported.

PHYSICAL METHODS

Treatment modalities utilized by physical therapists, occupational therapists, chiropractors, and other health care practitioners are sometimes broadly categorized as physical methods. These treatments frequently include exercises, electrotherapy modalities (e.g., transcutaneous electrical nerve stimulation), acupuncture, thermal modalities (e.g., moist heat, ultrasound), and manual therapies (e.g., manipulation, massage, muscle energy techniques, or proprioceptive neuromuscular facilitation). Therapists apply specific modalities and therapeutic exercises based on the stages of healing. A typical therapy protocol progresses sequentially through the following theoretical phases that may overlap – pain control, restoration of range of motion, restoration of strength, neuromuscular retraining, and return to full activity. Chiropractors usually emphasize manipulation, but many also frequently utilize other physical methods including exercise and other modalities.

Some providers relinquish therapy to the physical and/or occupational therapist and are not sufficiently engaged in the process which should be a collaborative approach. Active treatments, especially exercise, have the best evidence for efficacy (see specific body part guidelines). The provider should ascertain that the physical and/or occupational therapy providers' time is spent predominantly in active treatment, engaging the patient and providing an appropriate home exercise program with components shown to be efficacious for that specific condition. Patients should be able to convey and demonstrate to the provider in follow up visits, the treatments they are undergoing and the exercises they are performing. Most passive modalities have either been shown to be unsuccessful or to result in low magnitude benefits. Passive modalities may have a role in acute injury care if they offer sufficient symptom relief to increase participation in active therapy but should be time-limited.

During the acute phase, providers may recommend application of heat and cold (aka, cryotherapies) for temporary amelioration of symptoms to facilitate mobilization and graded exercise. The use of cold in the management of acute soft tissue injuries is widely practiced, but there is insufficient evidence to suggest that it improves clinical outcomes in the management of soft tissue injuries. For treatment of acute low back pain, there is more

quality evidence of efficacy for application of heat than for cryotherapies. Heat and cold treatments appear most effective when applied several times a day as tolerated.

Moderate- to high-quality evidence supports the therapeutic effectiveness of manual therapies, exercise, and acupuncture in the management of some categories of musculoskeletal pain, although magnitudes of benefits for the passive modalities are modest. Manipulative therapy may expedite the recovery of patients with acute low back pain of less than 4 weeks' duration. The evidence is less strong regarding the benefit of spinal manipulation for patients with subacute or chronic low back pain (see Low Back Disorders guideline for extensive review).

The indication for ongoing use of manipulation, mobilization, or modalities should be guided by objective evidence of functional improvement and should be coupled with an active treatment regimen. The value of therapy is believed to considerably increase when there is vigilant attention to the process of rehabilitation on the part of all providers. This also necessitates sufficient communication between the patient's providers to assure the information given to the patient is consistent and without conflict. Communications should generally include development of treatment goals, essential modalities, and an emphasis on training in home-based treatments. Communication with the therapist may also be of assistance to monitor a patient's physical status, psychosocial issues raised with the therapist, motivation, compliance with treatment and home exercise (or respiratory) recommendations, and functional progress. Therapists and providers should periodically have the patient demonstrate exercises to verify correct technique. Providers may then be in an excellent position to firmly reinforce the directions given to the patient and provide substantial encouragement to aid in return to work.

Patient beliefs regarding the potential benefits of physical modalities may influence the effectiveness of these modalities. Providers should counsel and educate patients about the nature and anticipated benefits of modalities to help them understand their role and to enhance outcomes.

OTHER METHODS AND MODALITIES

Specific treatment methods for each disorder are evaluated and discussed in the specific body part guidelines.

HOME HEALTH CARE SERVICES

Home health care is a strategy used to address select patient problems on a short-term basis. This care is functionally based, cost effective in select circumstances involving home-bound patients, and reduces the risk of (re)hospitalization [35-37, 46-48]. Home health care services are usually segregated into skilled and unskilled services.

Skilled services are provided by a licensed medical professional and may include nursing care, physical therapy, occupational therapy, speech therapy, nutritional support, and other related health care services provided to a home bound patient in his/her residence.

Unskilled services include personal care and domestic care. These services commonly include activities of daily living (personal care) and thus do not require a medical professional's skills. Examples of personal care tasks include feeding, bathing, and toileting.

Domestic care may be deemed medically necessary if the patient is receiving skilled care and / or personal care and his / her injury results in an inability to perform essential

domestic tasks such as shopping, cleaning and laundry due to the illness or injury. These services do not require a medical professional

The authorization for home health care services should document the medical necessity for the care and include:

- the medical condition(s) requiring home health care services; and
- objective functional deficits; and
- specific activities precluded by such deficits; and
- necessity of skilled or unskilled services; and
- duration and frequency(ies) of home healthcare service required (e.g., per day, week).

A home evaluation is necessary to develop the home health care treatment plan. The evaluation is performed by a qualified home health care professional (e.g. registered nurse, physical therapist, occupational therapist, and/or other qualified licensed medical professional). The evaluation assesses patient safety, equipment need, and care requirements to help prevent (re)hospitalization. Re-assessment of the medical necessity of home health care services should be conducted at regular intervals by the treating provider and may include a repeat home evaluation.

URGENT SURGERY

Patients with certain injuries may need urgent surgical repair. In these cases, surgical repair may become increasingly difficult and/or functional results may decrease if surgery is delayed after injury. Complications may arise due to the tendency of the muscle to retract, which makes surgical repair more difficult (if not impossible). Conditions requiring urgent surgical repair include (but are not limited to) complete tendon lacerations, completely torn myotendinous junction strains (e.g., distal biceps, quadriceps, hamstring), brachial plexus injuries, Achilles tendon ruptures, and unstable fractures and other fractures requiring surgical fixation or repair. These injuries often need to be surgically treated within a few days or weeks to avoid complications.

Applicable conditions covered in the ACOEM guidelines include (but are not limited to) the following:

- Achilles tendon rupture
- Biceps ruptures
- Brachial plexus injuries
- Diabetic ulcers
- Gluteus medius tears
- Hamstring or hip flexor strains
- Hand lacerations
- Hip osteonecrosis
- Lateral collateral ligament (LCL) tears
- Medial collateral ligament (MCL) tears
- Ocular chemical burns
- Ocular thermal burns
- Osteochondral lesions of the talus
- Paronychia
- Pectoralis insertion tears/ruptures

TREATMENT RECOMMENDATIONS

MEDICATIONS

Recommended

Generally, a trial of one medication for a specific goal (e.g. pain reduction) should be provided at a time. Medications should be selected with quality evidence of efficacy. In select cases and especially for acute evaluations, two medications and infrequently three may be reasonable. Quality evidence in support of combination(s) of medications and/or other treatments is(are) generally quite rare in evidence-based medicine (see specific conditions for exceptions).

Strength of evidence Recommended, Evidence (C)
Level of confidence High

Indications

Patients should be provided a medication with evidence of efficacy. Patients should be provided limited medications. The effects of a medication should be documented, with attention to objective and/or functional improvements. Ineffective medication(s) should be discontinued prior to provision of alternate medication(s). Multiple medications should not be simultaneously provided at the same visit except with some acute patients and occasionally when there is a change of provider with a need to institute efficacious medications from a non-evidence-based regimen.

Benefits

Improved ability to assess efficacy. Improved ability to define adverse drug reactions that develop.

Harms

Negligible

Frequency/Dose/Duration

Observe for functional gains after a prescription. There is no specific limit to treatment duration, yet one should be cognizant of adverse effects that may develop with prolonged use. Additional medication(s) are reasonable provided there is further, incremental functional gain that should be assessed for each. Medication use should cease when there is end of healing, non-compliance, and/or plateau. Resumption of medication may be reasonable if there is demonstrated need after cessation. Observations should emphasize objective measures of functional gain in preference to subjective measures and/or subjective functional instruments (see Table 2).

Indications for discontinuation

Resolution of the injury or disease; lack of efficacy, adverse effects, medication-medication interactions.

Rationale

Evidence suggests age and the numbers of medications are associated with adverse drug reactions [17-21] with large datasets suggesting risks of adverse effects with more medications are exponential [19, 22]. Data have been developed from hospitalized patients, outpatients, and from adverse reactions which are reportedly sufficiently severe to result in hospitalization [8, 17, 19-23]. The number of prescribers is also a reported risk for adverse drug reactions [24]. Limiting numbers of medications and discontinuing ineffective medications is not invasive, results in reductions in risk, lowers costs and thus is recommended.

Evidence

Comprehensive literature searches have been conducted using PubMed, Scopus, CINAHL, Cochrane Library, and Google Scholar without date limits following a standardized methodology. Searches were conducted for various evidence-based practice guidelines and medications (e.g., acetaminophen, selective serotonin reuptake inhibitors, NSAIDs). Detailed search term write-ups are included in the respective evidence-based practice guidelines.

Generics First Over Trade

Generic medications are nearly always thought to have identical components and thus efficacy [25, 26]. When there are cost differences, the lower cost option is **Recommended, Insufficient Evidence (I).**

Compounded Medications

Individual generic (or trade medication(s) if necessary) are **Recommended, Insufficient Evidence (I)** as preferential to compounded medications which are generally more expensive and without quality evidence of efficacy.

Drug Class Level of Efficacy

Evidence of efficacy for a medication in the ACOEM Guidelines and in general medical practice is developed based on the drug class of the pharmaceutical. In the absence of evidence to the contrary, it is **Recommended, Insufficient Evidence (I)** that there is a reasonable presumption that drugs within the same class have the same degree of efficacy.

PHYSICAL METHODS

Recommended

Generally, a trial of one treatment (e.g., iontophoresis, manipulation, acupuncture, ultrasound) should be provided at a time. In select cases and especially for acute evaluations, two treatments may be reasonable. Quality evidence in support of combination(s) of medications and/or other treatments is(are) generally quite rare in evidence-based medicine (see specific conditions for exceptions).

Strength of evidence Recommended, Insufficient Evidence (I)
Level of confidence High

Indications

Patients should be provided a treatment that has quality evidence of efficacy. The effects of a treatment should be documented, with attention to functional improvements. Ineffective treatment(s) should be discontinued prior to provision of alternate treatment(s). Multiple treatments should not be simultaneously provided at the same visit except with some acute patients and occasionally when there is a change of provider with a need to institute efficacious treatments from a non-evidence-based regimen.

Benefits

Improved ability to assess efficacy. Improved ability to define failure to improve and/or regression.

Harms

Negligible

Frequency/Dose/Duration

Prescribe approximately 4 to 6 appointments and observe for functional gain. There is no specific limit to numbers of appointments or treatments. Additional sets of 4 to 6 appointments are reasonable provided there is further, incremental functional gain. Additional appointments should cease when there is end of healing, non-compliance, and/or plateau. Observations should emphasize objective measures of functional gain in preference to subjective measures and/or subjective functional instruments (see Table 2).

Indications for discontinuation

Resolution of the injury or disease; lack of efficacy, adverse treatment effects.

Rationale

There is no quality evidence. However, failure to track improvements is believed to result in needless suffering, delayed recovery and delayed return to work. Limiting numbers of treatments and discontinuing ineffective treatments results in reductions in risk, lowers costs, and thus is recommended.

Evidence

Comprehensive literature searches have been conducted using PubMed, Scopus, CINAHL, Cochrane Library, and Google Scholar without date limits following a standardized methodology. Searches were conducted for various evidence-based practice guidelines and

medications (e.g., acetaminophen, selective serotonin reuptake inhibitors, NSAIDs). Detailed search term write-ups are included in the respective evidence-based practice guidelines.

DISTANCE-BASED SERVICES (TELEHEALTH)

Sometimes Recommended

Distance-based (telehealth) services are selectively recommended.

Strength of evidence Recommended, Insufficient Evidence (I)
Level of confidence Low

Rationale

It is generally preferable to take in-person histories and perform physical examinations, especially for acute injury care or for conditions where physical examination and/or manual treatment is(are) essential. However, in-person evaluations are not always convenient or even possible, particularly with the challenges of the COVID-19 pandemic. In response, federal Health and Human Services policies have been changed to foster telehealth under the COVID-19 Public Health Emergency Declaration (29), although these may not be directly applicable to some or all worker's compensation systems. Whether these policies remain after the pandemic has yet to be determined.

Simultaneously, there is growing evidence of efficacy of select, distance-based services (i.e., telemedicine, telehealth) (30-36). These particularly include management of chronic or ongoing disorders. Examples of conditions where evidence indicates that telehealth is as effective as in-person evaluations include depression (37), chronic low back pain (38), stroke rehabilitation, including motor and cortical dysfunction (39), knee and hip arthroplasty (40, 41), and cardiac (41) and (vi) chronic wound management (42).
Thus, telehealth is believed to be better used for the monitoring and ongoing care of chronic conditions (43). It is thought to be less useful for initial evaluations of acute injuries and for quickly evolving conditions.

There are additional circumstances when the provision of distance-based health may be preferable, if not necessary. These include long travel distances relative to the value obtained during an office visit. Another concern is the potential risk of aerosolized virus transmission in a medical office environment. Yet, there are no quality trials of services for worker's compensation patients or for commonly evaluated, potentially work-related injuries and diseases. Thus, telehealth is selectively recommended.

Medicare has established policies for telehealth (43, 44), which may be used as an example (see Table 3). However, there may be jurisdictional issues, such as licensure requirements with considerable variations affecting the availability and use of distance-based services. Also, CMS's telehealth policy may not be applicable and adaptable to worker's compensation in some jurisdictions.

HOME HEALTH CARE SERVICES

Sometimes Recommended

Home healthcare is selectively recommended on a short-term basis following hospitalization and major surgical procedures. It is also selectively recommended to prevent (re)hospitalization, to overcome deficits in activities of daily living (ADLs), and/or to provide nursing, therapy and/or supportive care services for those who would otherwise require inpatient care.

Strength of evidence Recommended, Insufficient Evidence (I)
Level of confidence Moderate

Indications

Due to the occupational injury or illness:

- the patient is unable to leave the home without major assistance (e.g., requiring wheelchair, walker, third-party transportation); or
- leaving home is not medically advised because of the occupational illness or injury; and
- the patient is normally unable to leave home and leaving home is a major effort.

Benefits

Earlier recovery among those who are home bound, earlier attainment of functional goals. Prevention of (re)hospitalization.

Harms

Negligible.

Frequency/Dose/Duration

Frequency is individualized by the provider's assessment and evaluation of the patient's healthcare needs and is detailed in a treatment plan. The authorization should include estimated services, hours, and duration of services on a daily / weekly basis. Reassessment of the medical necessity of the home health care services should be performed at regular intervals.

Indications for discontinuation

Sufficient recovery to no longer be home bound. Resolution of the injury or disease; lack of efficacy.

Rationale

There is no quality evidence of efficacy of home healthcare in workers' compensation patients. However, there is experience with efficacy of home healthcare in general, and there is a lack of plausible alternatives in some circumstances. Home healthcare is not invasive, has negligible adverse effects, is high cost, but in the absence of plausible alternatives, is selectively recommended.

Evidence

Comprehensive literature searches have been conducted using PubMed, Scopus, CINAHL, Cochrane Library, and Google Scholar without date limits following a standardized methodology. Searches were conducted for various evidence-based practice guidelines and medications (e.g., acetaminophen, selective serotonin reuptake inhibitors, NSAIDs). Detailed search term write-ups are included in the respective evidence-based practice guidelines.

SUMMARY

Optimal management of the patient's initial treatment encounter facilitates functional recovery that includes reducing or eliminating symptoms. Emphasizing functional recovery starting with the first appointment is believed to enhance and speed recovery as well as prevent long-term disability that impairs quality of life. The provider can set patient expectations for regaining quality of life and quality of work-life ideally from the time of initial injury. Clear communication and coordination of care with the patient and employer are critical and thought to help prevent disability. Collaborative interventions and integrated care are often helpful especially for complex cases and chronic pain. Selecting appropriate, judicious tests and implementing optimal treatments with quality evidence of efficacy further enhances recovery. A few tenets include avoiding or reducing substantially aggravating exposures, returning to work promptly and safely, and encouraging active over passive treatments and exercise regimens. Patient education and active involvement are valuable cornerstones. Thoughtful integration of knowledge from the entirety of these Guidelines' treatment guidelines is encouraged.

CONTRIBUTORS

Editor-in-Chief

Kurt T. Hegmann, MD, MPH, FACOEM, FACP

Evidence-based Practice Initial Assessment Panel Chair:

Julia E. Klees, MD, MPH

Evidence-based Practice Initial Treatment Panel Members:

Debra Milek, MD, MPH

Deborah M. Ratliff, MD, MPH

Lora Regan, MD, MPH, FACOEM

Specialty Society and Society Representative Listing:

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American Association of Occupational Health Nurses
David A. Allcott MS, RN, ARNP, ANP-BC, FAAOHN

American Board of Independent Medical Examiners
Mohammed I. Ranavaya, MD, JD

American Physical Therapy Association
Lorena Pettet Payne, PT, MPA, OCS

The American Occupational Therapy Association, Inc.
Denise Finch, OTD, OTR/L, CHT

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TABLE 1. SUMMARY OF RECOMMENDATIONS ON INITIAL APPROACHES TO TREATMENT

Treatment	Recommended	Optional	Not Recommended
Patient discussion education, and involvement	Patient discussion Patient involvement		
Medication	Acetaminophen NSAIDs	Opioids, short course Steroid injections	Muscle relaxants Opioids 1 week Topical medications
Physical treatment methods	Early physical intervention	Self-application of heat or cold Manipulation without radiculopathy Manipulation, radiculopathy present	Manipulation, with progressive or severe neurologic deficits

TABLE 2. EXAMPLES OF OBJECTIVE FUNCTION-BASED GOALS AND SECONDARY GOALS TO TRACK DURING TREATMENT

Primary Functional Goals

1. Return to work from non-working status
2. Return to full duty work from modified working status
3. Advancement of activity, especially observed in therapy
    a. Increased weight lifted
    b. Increased numbers of repetitions
    c. Increased distance walked

Secondary Goals

1. Resumptions of activities of daily living (e.g., clothing, bathing, showering)
2. Resumption of household chores
3. Resumption of sports
4. Validated functional instruments. *

*Generally, functional instruments are subjective and lack objective measures.

TABLE 3. EXAMPLE OF TELEHEALTH GUIDANCE, ADAPTED FROM MEDICARE

Patient Location (aka, "originating site")**.** It is recommended that a patient is eligible for telehealth services:

- With no geographic limitations during the COVID-19 pandemic, particularly when there is high local disease transmission.
- Other than with the above circumstances, then telehealth for worker's compensation patients should generally be for those meeting any of the following:
  - In a rural Health Professional Shortage Area (HPSA) located either outside of a Metropolitan Statistical Area (MSA) or in a rural census tract
  - In a county outside of an MSA
  - Where there is severe, impassible weather

Eligible Sites include:

- The homes and offices of physicians or practitioners
- Hospitals
- Skilled Nursing Facilities (SNFs)
- Community Mental Health Centers (CMHCs)

Distant-site practitioners include:

- Physicians
- Nurse practitioners (NPs)
- Physician assistants (PAs)
- Certified registered nurse anesthetists
- Clinical psychologists (CPs) and clinical social workers (CSWs).
- Occupational therapists
- Physical therapists
- Other healthcare providers

It is recommended there must be use of an interactive audio and video telecommunications system that permits real-time communications between the provider and patient. There are select circumstances where the use of only audio/telephone is acceptable for certain E/M codes (45).