



# Application of Clinical Algorithms

Optum Health Solutions Musculoskeletal (MSK)  
Utilization Management Policy  
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# Table of Contents

Policy Statement .....	3
Purpose .....	3
Scope .....	3
Definitions .....	3
Clinical Evidence .....	4
Introduction .....	4
High Value MSK Care .....	4
Triage .....	5
Clinical Algorithms .....	9
Figure 1. General MSK Clinical Algorithm: Stage-Based Approach .....	9
Figure 2. General MSK Clinical Algorithm: Risk-Based Approach .....	10
Figure 3. Outcome Assessment and Clinical Decision Making .....	11
Appendix A .....	12
The Keel STarT Back Screening Tool .....	12
Appendix B .....	13
The STarT Back Tool Scoring System .....	13
Appendix C .....	14
The Keele STarT MSK Tool © Self-report version .....	14
References .....	15
Review and Approval History .....	17

# Policy Statement

The application of clinical algorithms in the utilization management process is intended to inform clinical judgments concerning the skilled rehabilitative and habilitative care management of musculoskeletal disorders. Clinical algorithms serve to identify key decision points and criteria that assist with making utilization review medical necessity determinations relating to the plan of care for an individual patient with a musculoskeletal disorder.

## Purpose

This policy summarizes the key components (triage, management, outcome assessment, and clinical decision making) that inform medical necessity determinations concerning skilled rehabilitation/habilitation services made by Optum clinical case reviewers.

## Scope

This policy applies to most musculoskeletal conditions for designated in and out of network programs, involving all provider types, where utilization review (UR) determinations are performed.

## Definitions

**Musculoskeletal Disorders:** Injuries or conditions originating from joints, muscles, ligaments, discs, or other soft tissues in the spine or limbs, and produce clinically relevant symptoms (e.g., pain, numbness, etc.) and functional limitations (e.g., ability to perform daily activities).

**Maximum Therapeutic Benefit (MTB):** Determined following a sufficient course of care, where demonstrable improvement would be expected in a patient's health status and one or more of the following are present:

- The patient has returned to pre-clinical/pre-onset health status
- Meaningful improvement has occurred; however, there is no basis for further meaningful improvement
- The patient no longer demonstrates meaningful clinical improvement, as measured by standardized outcome assessment tools
- Meaningful improvement, as measured by standardized outcome assessment tools, has not been achieved
- There is insufficient information documented in the patient health care record to reliably validate the response to treatment

It is the responsibility of the treating health care provider to maintain a patient health care record that includes periodic measures of treatment response by employing valid, reliable, and relevant outcome assessment tools. Further, it is the responsibility of the treating health care provider to include sufficient data in clinical submissions, so that a peer reviewer can render a reasonable determination on baseline status and/or treatment response.

Once MTB has been determined, the treating health care provider is accountable to either:

- Amend the current plan of care based upon current best-evidence
- Refer the patient for an appropriate therapeutic regimen
- Discharge the patient from the current therapeutic regimen

**Consultive(Supportive Care):** Defined by Optum as brief episodes of skilled care services that take place on an "as needed" (possibly recurring) basis following the discharge of a patient from a course of planned treatment.

Consultative care services may be appropriate for patients who are likely to benefit chronic condition management, where the trajectory is best described in terms of life course vs. episodic.

Once the condition has reached MTB, it is appropriate to consider consultative care if the patient achieved  $\geq 50\%$  improvement in at least one critical outcome (pain, function) and there are persistent clinically relevant residual symptoms (pain) and/or (functional limitations).

Consultative care should be rendered on a PRN (as needed) basis in response to a flare-up (exacerbation). Visits are not prescheduled. Any care beyond that documented as necessary consultative care would be at the option of the patient and would be considered elective care.

Consultative care may be inappropriate when it interferes with other appropriate health care, or when the risk outweighs its benefits, e.g., provider dependence, somatization, illness behavior or secondary gain. Consultative care must require the services of a skilled health care professional (see UM policy 486 – Skilled Care Services).

**Elective and Maintenance Care:** Treatment that is rendered at the option of the patient and will not significantly alter the status of a patient's condition. By definition, medical necessity is absent and therefore, care is considered a non-covered service.

- **Elective Care:** Treatment chosen by the patient after MTB has been reached.
  - Patients may choose to obtain additional treatment in excess of the level determined to be supportive in nature.
  - Patients may choose to obtain ongoing care when their condition does not substantially deteriorate in the absence of supervised intervention.
- **Maintenance Care:** A form of elective care whereby a patient presents with any of the following and chooses to obtain treatment:
  - Absent symptoms and objective findings.
  - With a request for “wellness” care or “preventative services” in order to maximize general health and well-being.
  - With residual complaints, objective findings and functional restrictions that do not substantially deteriorate with an absence of supervised intervention.

## Clinical Evidence

### Introduction

These health care algorithms are designed to assist clinicians, including case reviewers, by providing an analytical framework for the assessment and treatment of patients presenting with common musculoskeletal (MSK) complaints to chiropractors, physical therapists, and occupational therapists. They are not intended either to replace a clinician's judgment or establish a protocol for all patients with a particular condition.

These algorithms should not be construed as clinical advice or clinical opinion related to any specific facts or circumstances. Clinicians should refer to the cited clinical guidelines for more condition-specific information.

### High Value MSK Care

A core set of common recommendations for the assessment and treatment of common MSK pain disorders have been identified in a systematic review and synthesis of contemporary high-quality clinical practice guidelines (CPGs) (Lin et al., 2020). These “high-value” care recommendations for MSK disorders have been incorporated within the clinical MSK algorithms:

- **Care should always be patient centered.** Patient-centered care is characterized by effective communication, individualized care, shared decision making, and prioritizing patient preferences.
- **Patients should be screened for serious pathology or “red flag” conditions.** Providers should screen for causes of pain such as infection, malignancy, fracture, inflammation, neurological deficit, as well as conditions that mimic MSK pain.
- **Psychosocial factors should be included in a patient's assessment.** Providers should assess patients for psychosocial factors- such as depression, anxiety, kinesiphobia, and recovery expectations that may affect their prognosis, in order to develop an appropriate plan of care.
- **Radiological imaging is unnecessary in most cases.** Many guidelines discourage the use of radiological imaging, except when a more serious pathology is suspected, the patient is not responding to treatment, or the imaging results are “likely to change management” of the patient's condition.

- **Assessment should include a focused physical examination to assist in diagnosis and classification.** Physical assessments mentioned in the CPGs include tests for mobility/movement, strength, position, and proprioception, and neurological function.
- **Providers should evaluate patient progress and use validated outcome measures.** CPG consistently recommend the use of validated outcome measures to assess patients' pain intensity, functional limitations, and health-related quality of life.
- **Patients should receive individualized education about their condition and treatment options.** CPGs recommend patient education to encourage self-management and inform patients about the condition or management.
- **Treatment should address physical activity and exercise.** CPGs include recommendations for general or specific exercise, physical activity to increase mobility, strength, and flexibility.
- **Manual therapy should be used as a part of a multimodal treatment approach.** Manual therapy was consistently recommended by CPGs as a component of comprehensive care including exercise, psychological therapy, education, and activity advice rather than a stand-alone treatment.
- **Nonsurgical care should be the first line treatment.** Unless a red flag condition indicates otherwise, patients should receive nonsurgical care before considering surgery.
- **Treatment should facilitate work force participation.** Providers should encourage patients to remain active and engage with appropriate social services supports, employers, and health providers to enable a patient to remain at or return to work.

## Triage

Many clinical practice guidelines recommend similar approaches for the assessment and management of MSK disorders. Recommendations include use of a biopsychosocial framework to guide management with initial nonpharmacological treatment, including education that supports self-management and resumption of normal activities and exercise, and psychological programs for those with persistent symptoms. Guidelines recommend the prudent use of medication, imaging, and surgery (Lin et al., 2020).

Clinical guidelines and best practice documents typically recommend that clinicians conduct a focused history and physical examination to help place patients with MSK complaints into diagnostic categories (specific, non-specific, red flags) (Bussi eres et al., 2018; Chou et al., 2007). Red flags are generally recognized as biological markers of elevated risk of possible underlying pathology or fracture (Waddell, 2004). The term red flags was originally associated with back pain. They were actually designed for use in acute low back pain, but the underlying concept can be applied more broadly in any presentation. While most individual red flags tend to have low diagnostic power, combinations of these factors, according to their clinical implication (e.g., risk of malignancy or fracture), improves their accuracy and utility [Table 1] (Bardin et al., 2017; Hartvigsen et al., 2018; Henschke et al., 2013; Jonckheer et al., 2017; Petersen et al., 2017; Ramanayake and Basnayake, 2018; Traeger et al., 2017; Verhagen et al., 2016; Williams et al., 2013).

Even the presence of far less diagnostic red flags does not exclude the possibility of serious pathology. Hence, it is important to remember that they only need to be sufficiently suggestive to compel a clinician to rule out a serious condition (Ramanayake & Basnayake 2018).

The history should include an assessment of risk factors (eg, psychosocial, physical, lifestyle, social and work-related) that may predict the risk of a poor outcome. Prognostic risk variables that overlap most common MSK conditions have been identified in systematic reviews [Table 2] (Laisn e et al., 2012; Lakke et al., 2009; Artus et al., 2017). Aside from older age, a demographic variable, the other obstacles to recovery from MSK disorders that have been identified are clinically elicited. Brief screening questionnaires (e.g., the STarT Back Screening Tool (SBST) (Hay et al., 2008), the STarT MSK (Dunn et al., 2017), and the Orebro Musculoskeletal Screening Questionnaire (Gabel et al., 2012) have been developed to help produce an index of treatment modifiable prognostic factors to be used to stratify individuals into appropriate care management. The presence of comorbid conditions that are likely to impact the prognosis and/or warrant modification of certain interventions should also be incorporated within the evaluation.

**Table 1. Red Flags**

**Urgent (immediate)**

**Neurological emergencies**

- Widespread (e.g., in the arms, cranial nerves or bilateral) neurological symptoms (pyramidal signs, coordination problems, motor or sensory disturbances...)
- Progressive neurological symptoms
- Saddle anesthesia /hypoesthesia, urinary retention, fecal or urinary incontinence, isolated sexual dysfunction (cauda equina syndrome)
- Severe motor deficit (MRC score  $\leq 3/5$ ) <48 h

**Traumatic fracture**

- Severe pain following significant/high-energy trauma
- Back pain following trauma with ankylosing spondylitis

**Vascular problems**

- Vascular signs (cold foot, reduced peripheral arterial pulsation) that could indicate a torn aneurysm of the aorta if paired with low back pain or even with shock

**Semi-Urgent (within 48 hrs.)**

**Pathological fracture:** MSK pain following minor trauma or even without awareness of trauma with

- History/risk of osteoporosis
- Chronic corticoid use
- Thoracic pain
- Older age (>65 years)
- Unexplained weight loss, fatigue
- History of cancer

**Infection**

- Objective signs (e.g., nocturnal sweating, fever, chills)
- Intravenous drug use
- Immuno-compromised patient
- Unexplained weight loss
- Known previous or concurrent systemic infection or risk of infection
- Recurrent surgical intervention
- Urinary or cutaneous infection

**Less Urgent**

**Tumor**

- History of cancer (only proven single alerting feature)
- Unexplained weight loss, fatigue
- Severe nocturnal pain
- New onset back pain at age <18 and >55 years of age (weaker risk factor)

**Inflammatory disease (axial spondyloarthritis)**

- Constant progressive non-mechanical pain
- Improvement in back pain with exercise but not with rest
- Severe nocturnal pain
- Morning stiffness > 30 min or nocturnal awakening in younger patients

**Miscellaneous**

- Increasing postoperative pain
- Excruciating and therapy resistant pain (>6 weeks)
- Unilateral pyramid signs

The specificity of the Red Flags, when using a single Red Flag, is limited. Clinicians should focus on clusters of Red Flags indicating a specific serious pathology underlying the MSK pain.

(Bardin et al., 2017; Hartvigsen et al., 2018; Henschke et al., 2013; Jonckheer et al., 2017; Petersen et al., 2017; Ramanayake and Basnayake, 2018; Traeger et al., 2017; Verhagen et al., 2016; Williams et al., 2013).

**Table 2. Prognostic Risk Variables Across MSK Disorders**

Factors associated with an unfavorable prognostic risk
History of previous episodes
Unrealistic recovery expectations
Maladaptive coping and somatization
Multiple comorbidities
Longer duration of episodes at baseline
High pain severity at baseline
Multiple-site pain
Anxiety and/or depression
Low social support
Older age
Significant movement restriction
Poor sleep quality

(Laisné et al., 2012; Lakke et al., 2009; Artus et al., 2017)

## Management

There are two common approaches to categorizing common MSK disorders to help inform care management (Bardin et al., 2017). The traditional approach to the clinical management of common MSK disorders has been informed by a stage-based scheme, where clinically appropriate interventions have been identified given the duration of the complaint [Figure 1].

A stepped model of care is generally applied at all stages of a MSK disorder. Self-care strategies along with education/advice/reassurance typically represent the first step in the management of common MSK complaints. For MSK symptoms that began within the preceding 6 weeks (acute stage), the intensity and type of skilled professional care is usually determined by the severity of complaints (eg, pain level) and the potential for benefit with professional care. Skilled professional services (eg, supervised exercise with or without manual therapy) are typically recommended to re-establish function and mobility to the pre-existing level when complaints have persisted into the subacute stage (6-12 weeks). When complaints have been ongoing for >12 weeks (chronic stage), more complex skilled care may be warranted to actively address barriers to recovery (Walsh et al., 2010).

More recently, a risk-based approach has been shown to align personal attributes with clinical practice interventions having the greatest potential to optimize patient-important outcomes. The risk-based approach uses validated risk stratification tools, such as the STarT Back Screening Tool (SBST), the STarT MSK, or the Örebro Musculoskeletal

Pain Screening Questionnaire to stream patients into different care pathways [Figure 2]. The SBST (for low back pain) and the STarT MSK (for other common MSK disorders) are brief prognostic questionnaires that guide clinician decisions about stratified care management [Appendix]. These screening tools categorize the risk for levels of pain, disability, and distress as low, medium, or high. A different treatment package is then matched to the patient depending on their risk category. For example, a low-risk category indicates a highly favorable prognosis. Therefore, the matched treatment, aimed at enabling self-management, focuses on dealing with patient concerns and providing information. The medium risk category builds on the low-risk strategies with skilled care services tailored to address physical barriers to recovery. Low and medium interventions along with behavioral strategies are targeted to address both physical and psychological barriers to recovery associated with high-risk individuals.

## Outcome Assessment

Measuring and reporting outcomes is an important component of clinical practice ( American Occupational Therapy Association , 2015; American Physical Therapy Association, 2017; American Speech-Language-Hearing Association, 2015). Regardless of the type of management approach, the assessment of treatment response is critical to inform judgments about any further individual patient care, including determinations about the likely effectiveness of continued treatment and appropriate end-points of care [Figure 3].

Standardized outcome assessment tools that are psychometrically sound provide valid and reliable data, which can be used to evaluate the success of an intervention. The use of standardized outcome assessment tools early in an episode of care establishes the baseline status of the patient. Outcomes measured periodically throughout the episode of care provide a means to quantify changes in patient status, including determinations about whether clinically meaningful progress is being realized.

Multiple outcomes should be considered when evaluating the efficacy and effectiveness of treatments for MSK disorders ( Turk et al., 2008). Core patient-reported outcomes (PROMs) include measures of pain intensity, function/disability, and health-related quality of life. More information about outcomes measurement is described in UM policy 84 (Determination of Maximum Therapeutic Benefit).

Several published CPGs commonly recommend assessment for clinical improvement within 4-6 weeks following an initiation of an episode of care ( AAOS, 2013; Barton et al., 2015; Bier et al., 2018).

## Clinical Decision Making

The response to intervention (i.e., progress towards goals) should be assessed at points in time following the baseline visit, when there is a substantiated basis for anticipating meaningful clinical change. These recovery milestones represent points in care for clinical decision making regarding further care management.

Broadly, individuals can be classified as either a ‘responder’ or a ‘non-responder’ to an intervention approach. A responder can be defined as an individual who demonstrates improvement with intervention as measured by clinically meaningful improvement in  $\geq 1$  of established patient-important outcomes including: PROMs; and/or physical measures; and/or observable changes in skills/capabilities. Non-responders are individuals who have not achieved clinically meaningful improvement in at least 1 patient-important outcome within the expected time period.

An additional period of treatment is supported when:

- an individual demonstrates a favorable response to an intervention approach and there is an opportunity/expectation of further clinically meaningful improvement in  $\geq 1$  patient-important outcome.
- or 2) the plan of care undergoes revision to specifically target modifiable prognostic risk factors for a patient who did not respond favorably to earlier treatment.

Following this additional period of care, treatment response should be once again assessed to inform clinical decision making.

Individuals should be discharged with an appropriate referral if they did not respond to an intervention strategy and the proposed plan of care is not revised to address negative prognostic risk factors. In this circumstance, it is unlikely that a person will respond with a continuation of the same or similar care approach.



Individuals who respond favorably to treatment and achieve maximum therapeutic benefit (MTB) without clinically significant residual pain or functional loss can typically be discharged to self-care. Further skilled professional care would be appropriate on an episodic basis. Patients that reach MTB after a successful response (>50% improvement compared to baseline in one or more patient-important outcome measures) and have persistent clinically significant pain and/or functional deficits are candidates for consultative (supportive) care, which is described in UM policy 84 (Determination of Maximum Therapeutic Benefit).

## Clinical Algorithms

Figure 1. General MSK Clinical Algorithm: Stage-Based Approach

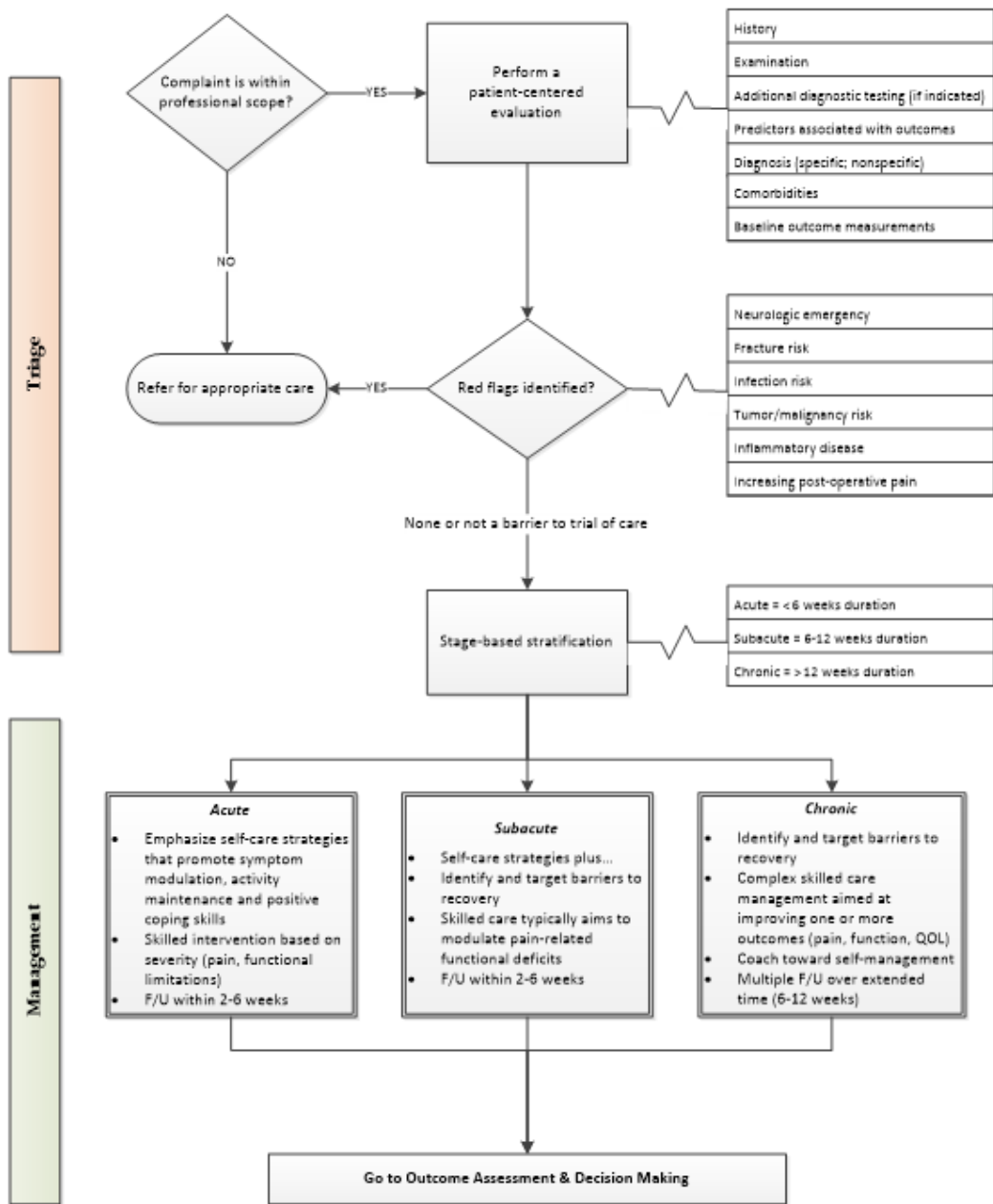


Figure 2. General MSK Clinical Algorithm: Risk-Based Approach

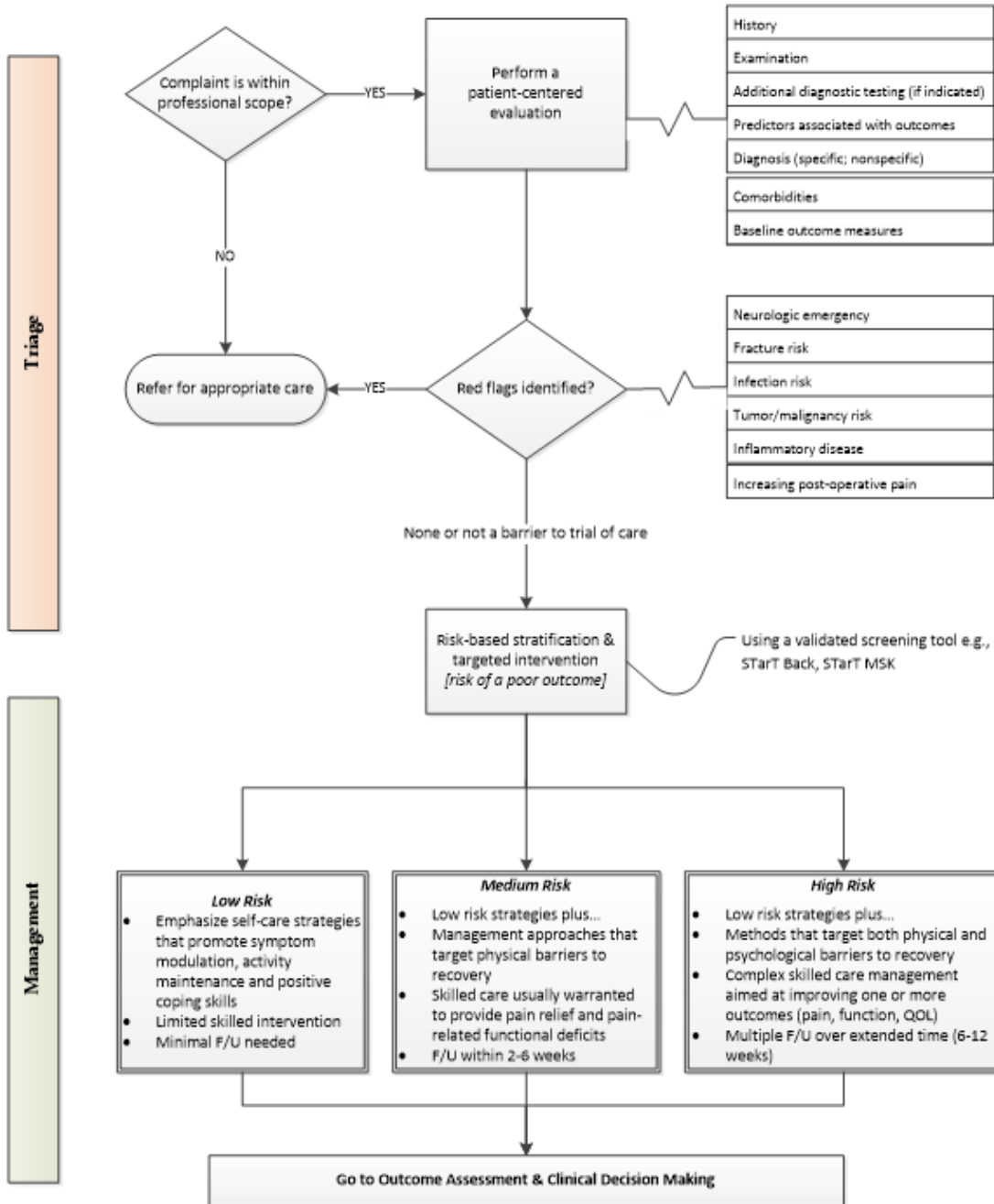
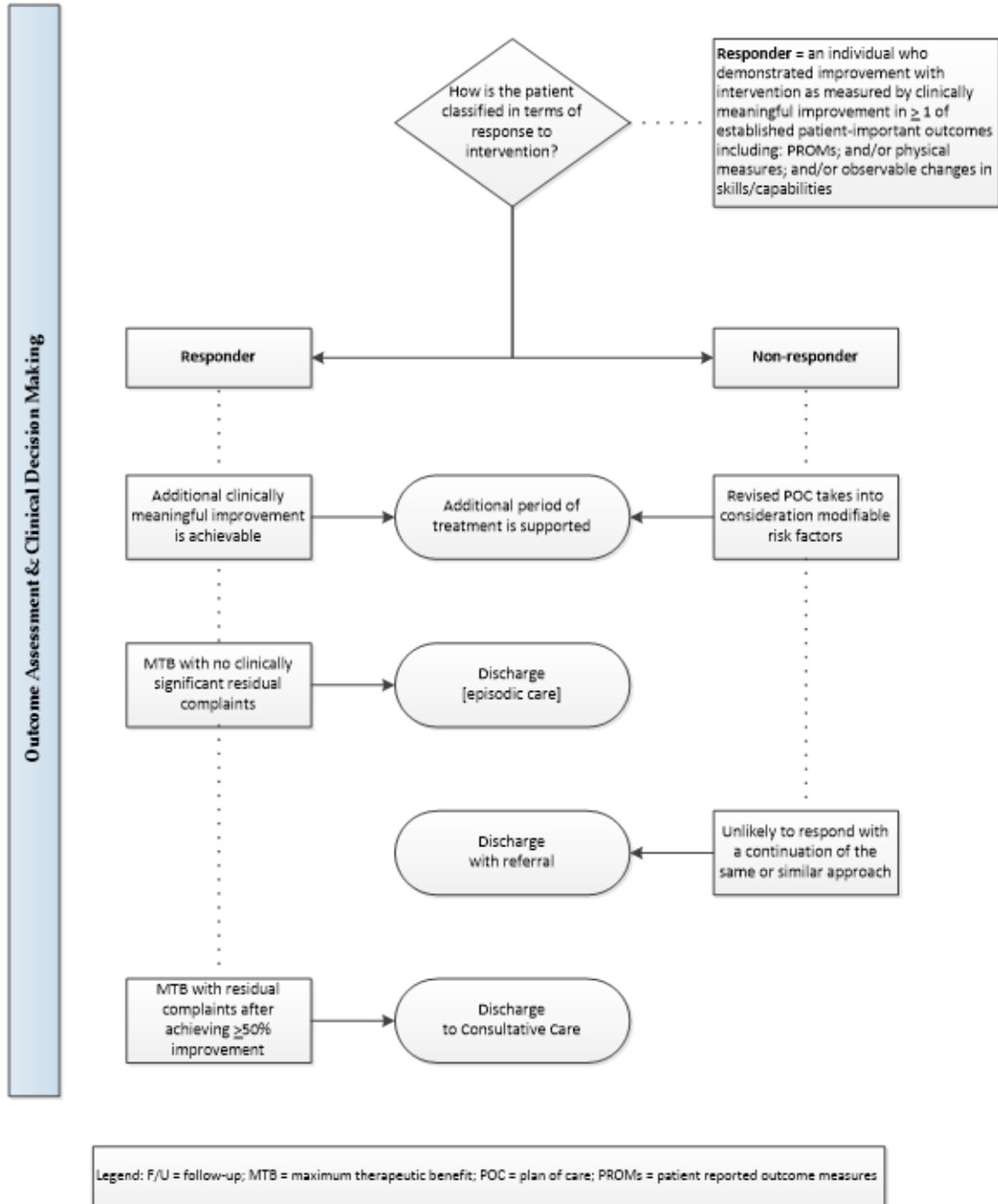


Figure 3. Outcome Assessment and Clinical Decision Making



# Appendix A

## The Keel STarT Back Screening Tool

### The Keele STarT Back Screening Tool

Patient name: \_\_\_\_\_ Date: \_\_\_\_\_

Thinking about the **last 2 weeks** tick your response to the following questions:

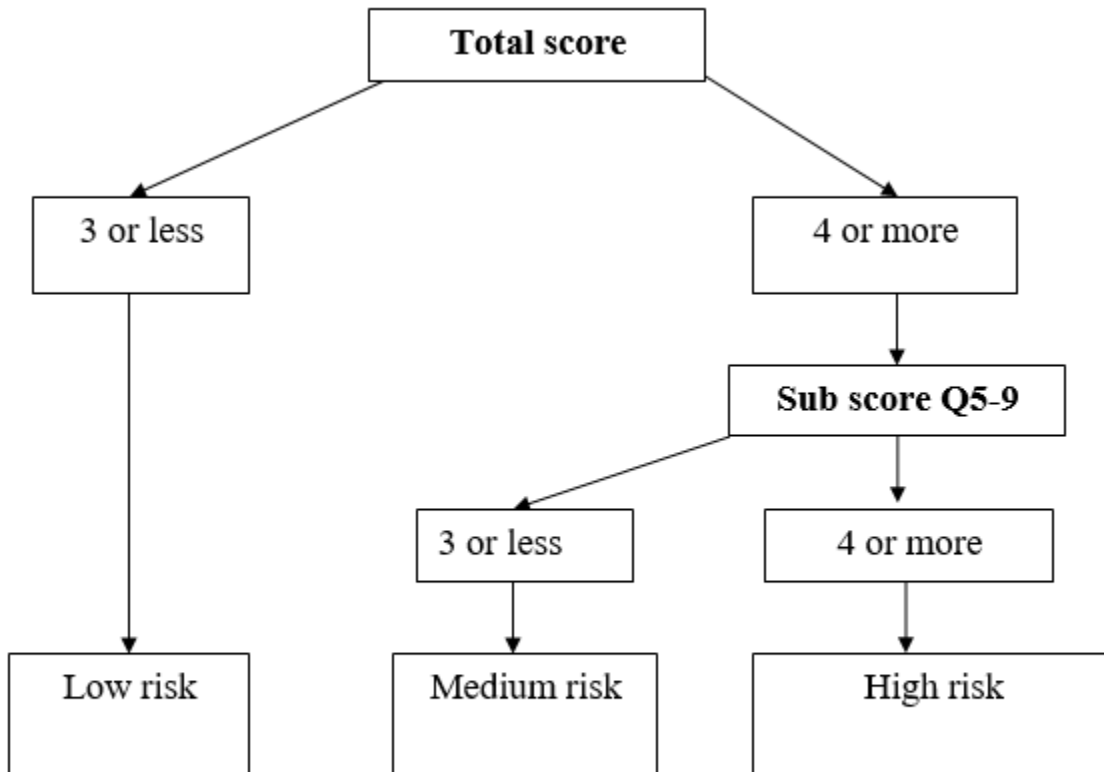
		No	Yes		
		0	1		
1	Has your back pain spread down your leg(s) at some time in the last 2 weeks?	<input type="checkbox"/>	<input type="checkbox"/>		
2	Have you had pain in the shoulder or neck at some time in the last 2 weeks?	<input type="checkbox"/>	<input type="checkbox"/>		
3	Have you only walked short distances because of your back pain?	<input type="checkbox"/>	<input type="checkbox"/>		
4	In the last 2 weeks, have you dressed more slowly than usual because of back pain?	<input type="checkbox"/>	<input type="checkbox"/>		
5	Do you think it's not really safe for a person with a condition like yours to be physically active?	<input type="checkbox"/>	<input type="checkbox"/>		
6	Have worrying thoughts been going through your mind a lot of the time?	<input type="checkbox"/>	<input type="checkbox"/>		
7	Do you feel that your back pain is terrible and it's never going to get any better?	<input type="checkbox"/>	<input type="checkbox"/>		
8	In general have you stopped enjoying all the things you usually enjoy?	<input type="checkbox"/>	<input type="checkbox"/>		
9.	Overall, how <b>bothersome</b> has your back pain been in the last 2 weeks? <input type="checkbox"/>				
	Not at all	Slightly	Moderately	Very much	Extremely
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	0	0	0	1	1

**Total score (all 9):** \_\_\_\_\_ **Sub Score (Q5-9):** \_\_\_\_\_

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# Appendix B

## The STarT Back Tool Scoring System



# Appendix C

## The Keele STarT MSK Tool © Self-report version

### Pain intensity

1) On average, how intense was your pain [where 0 is “no pain” and 10 is “pain as bad as it could be”]?

0	1	2	3	4	5	6	7	8	9	10
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please cross one box for each question below

	Yes	No
2) Do you often feel unsure about how to manage your pain condition?	<input type="checkbox"/>	<input type="checkbox"/>
3) Over the last two weeks, have you been bothered a lot by your pain?	<input type="checkbox"/>	<input type="checkbox"/>
4) Have you only been able to walk short distances because of your pain?	<input type="checkbox"/>	<input type="checkbox"/>
5) Have you had troublesome joint or muscle pain in more than one part of your body?	<input type="checkbox"/>	<input type="checkbox"/>
6) Do you think your condition will last a long time?	<input type="checkbox"/>	<input type="checkbox"/>
7) Do you have other important health problems?	<input type="checkbox"/>	<input type="checkbox"/>
8) Has pain made you feel down or depressed in the last two weeks?	<input type="checkbox"/>	<input type="checkbox"/>
9) Do you feel it is unsafe for a person with a condition like yours to be physically active?	<input type="checkbox"/>	<input type="checkbox"/>
10) Have you had your current pain problem for 6 months or more?	<input type="checkbox"/>	<input type="checkbox"/>

### SCORING

Red text represents coding applied if box ticked

Total maximum score = 12

0 – 4 = Low Risk, 5-8 = Medium Risk, 9 – 12 High Risk

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# Review and Approval History

Date	Description
2/23/2000	Original effective date
3/7/2001	Annual review and approval completed
9/20/2002	Annual review and approval completed
11/11/2003	Annual review and approval completed
10/18/2004	Annual review and approval completed
2/14/2006	Annual review and approval completed
12/04/2006	Update and approval: Background section, algorithms, and references updated
4/10/2008	Annual review and approval completed
1/15/2009	Policy reformatted
4/30/2009	Annual review and approval completed
4/8/2010	Annual review and approval completed
10/26/2010	Policy rebranded to "OptumHealth Care Solutions, Inc. (OptumHealth)"
4/07/2011	Annual review and approval completed
4/19/2012	Annual review and approval completed
4/18/2013	Annual review and approval completed
4/17/2014	Annual review and approval completed; Policy rebranded "Optum* by OptumHealth Care Solutions, Inc."
4/16/2015	Annual review and approval completed
4/21/2016	Annual review and approval completed
4/20/2017	Annual review and approval completed; Legal entity name changed from "OptumHealth Care Solutions, Inc." to "OptumHealth Care Solutions, LLC."
4/26/2018	Annual review and approval completed; no significant changes made to the document
4/25/2019	Annual review and approval completed; no significant changes made to the document
4/23/2020	Annual review and approval completed; The policy content was revised to reflect new guidance concerning triage, management, outcome assessment, clinical decision making.
4/22/2021	Annual review and approval completed; no significant changes made to the document
5/03/2022	Annual review and approval completed; no significant changes made to the document
6/29/2022	Updated legal entity name "OptumHealth Care Solutions, LLC." to *Optum™ Physical Health ("Optum") includes OptumHealth Care Solutions, LLC; ACN Group IPA of New York, Inc.; ACN Group IPA of California, Inc. d/b/a OptumHealth Physical Health of California; Managed Physical Network, Inc.; and OrthoNet Holdings, Inc. which includes OrthoNet New York IPA, Inc., OrthoNet West, Inc., OrthoNet, LLC, OrthoNet of the South, Inc.

**3/6/2024** Annual review; no substantive changes. Approved by Optum Clinical Guideline Advisory Committee.

**4/25/2024** Annual review and approval completed. Document content transitioned to new policy template. No significant changes made to the document.