



MDGuidelines® API: Physiological v4 Specification 1.2

Date: July 10th, 2020

1 Overview

1.1 Purpose and Intended Audience

The purpose of this document is to provide detailed descriptions and specifications for the Physiological v4 API for MDGuidelines® Customer technical resources.

The Physiological API is intended to be used by MDGuidelines® customers and partners that have integrated MDGuidelines® into their own products and wish to display Physiological Durations within their application(s).

The Physiological API is part of the MDGuidelines® API product offering for Integration Customers.

1.2 Description

Physiological Durations may be obtained via the Physiological API.

The Physiological API accepts several parameters and returns Physiological Durations, and (optionally) related Topic URLs for a supplied ICD-9-CM, ICD-10-CM, ICD-10-PCS, ICD-10(WHO), CPT medical code.

Terminology

Term	Definition
Physiological Durations	<p>Return to work guidelines based on the Topic and treatment factors. Durations represent elapsed calendar days duration of the patient's recovery from the primary condition and treatment factor.</p> <p>More information about Physiological Durations can be found in the MDGuidelines Help Resources: https://app.mdguidelines.com/help/about-mdguidelines/how-to-interpret-duration-tables</p>
Job Class	<p>The job classes correspond to the Strength Factor classifications described in the U.S. Department of Labor's Dictionary of Occupational Titles. For more information about job class definitions, visit this help resources in MDGuidelines: https://app.mdguidelines.com/Resources/Help/About-Job-Titles</p>

Term	Definition
Topic	<p>A document covering a condition (diagnosis or procedure) from the MDGuidelines® Return-to-Work Guidelines. Topics may have been previously referred to as monographs.</p> <p>An index of Topic-related data (including Topic names and URLs) may be obtained via Topic Search API. Full Topic content may be obtained via Topic API.</p>
Medical Code	<p>An alpha-numeric code representing a diagnosis, procedure, or other condition of a patient. For the purposes of this API, the following types of medical codes are supported: ICD-9-CM, ICD-10-CM, ICD-10-PCS, ICD-10(WHO) and CPT® (with additional license, see Section 2.3 Authorization, below).</p> <p>Medical Codes are limited to the current edition from the code provider. Medical codes are updated annually in the January timeframe.</p> <ul style="list-style-type: none"> • ICD-9-CM(2015 frozen) • ICD-10-CM • ICD-10-PCS • ICD-10(WHO) • CPT®
Minimum Duration	<p>The minimum recovery time most individuals require to return to work at the same performance level as prior to injury or illness. In some cases, individuals may be medically able to return to work in a lesser amount of time (such as with job accommodations provided by the employer, with medical supervision, availability of modified duty assignments, company policies and practices).</p>
Optimum Duration	<p>The point in time when most individuals are likely to be able to return to work, assuming their cases are optimally managed by their provider, and that the individuals do not experience significant complications and/or comorbid medical conditions.</p>

Maximum Duration	The recommended point in time at which (or before) additional case information should be requested from the treating physician to determine when (and if) the disabled individual may be able to return to work. Suggested information to be collected includes specific information on the presence of comorbid conditions or complications, work accommodations available, and medical treatment administered. The maximum length of disability is not a definitive cutoff point beyond which individuals must return to work at the same level of efficiency as prior to their injury or illness.
No durations or Messages When Durations are Unavailable	MDGuidelines' Duration Views only provides disability durations for medical codes when appropriate. When disability durations are not available for a medical code, MDGuidelines now provides users with messages explaining why duration estimates are not available. For examples view- see section 2.8
Treatment Factor	A description of the treatment approach for the condition, such as medical treatment or surgical treatment, or different types of surgery methods, such as (laparoscopic or open).

2 API Specification

This section documents the technical usage of the Physiological v4 API. General information about any of the MDGuidelines APIs can be found at <https://api.mdguidelines.com/help>.

MDGuidelines APIs are RESTful.

Responses may be formatted as XML or JSON (see Section 2.4 Input Parameters, below).

2.1 Endpoint

The Physiological Durations API endpoint is: <https://api.mdguidelines.com/api/v4/durations/physiological>

2.2 Authentication

The Customer's API license key must be provided via the request headers as "RG-LICENSE-KEY". This key will be provided by the Customer's Account Executive at ReedGroup.

2.3 Authorization

The Customer's API license key provides access to all API end points without requiring additional configuration. Some of the APIs optionally include content related to CPT[®] treatment codes. To obtain use of APIs for CPT[®] content, an additional licensing agreement is required. The Customer can obtain additional information and licensing through their Account Executive at ReedGroup.

2.4 Version Information

The current stable version of this API is v4.

The currently supported version(s) of this API are:

Version	Support End Date
v2	N/A* - Not announced
v3	N/A* - Not announced

*MDGuidelines[®] will announce end of support at least 6 months in advance of the support end date.

API product enhancements providing new response elements will require customers to upgrade in order to take advantage of the new capabilities. However, additional request parameters and/or enhanced algorithms or data in the response elements will not require an upgrade. Changes to data responses will be communicated at least 30 days in advance of publication.

2.5 Request Parameters

Data Element	Data Type	Req?	Data Element Description	Default Value
medicalCodes	String	Yes	One or more medicalCodes. Include the decimal, if applicable. If sending more than one, send as a comma-delimited list. All codes must be of the same type, as specified in the medicalCodeType parameter. Examples: medicalCodes=G56.01 medicalCodes=354.0,726.32,04.45	N/A
medicalCodeType	String	Yes	The medical code type for the requested medical codes. Not case sensitive. Values: icd9cm (diagnosis and procedure) icd10cm icd10WHO icd10pcs cpt Note: CPT® medical code use requires additional license. See Authorization , above.	N/A
showTopics	Boolean	No	Set this parameter to TRUE to receive a list of related topics and their URLs for the requested medical code(s). Note: This topic related content may also be obtained from the Topic Search API.	false

2.6 Response

Because Physiological Durations can be requested for a list of Medical Codes, the response is formatted as a collection of response data for each requested MedicalCode.

Data can be returned as JSON or XML.

If using XML, the XSD may be found here: <https://api.mdguidelines.com/xsd/DurationsPhysiologicalV4.xsd>

Data Element	Data Type	Req?	Data Element Description
DurationsPhysiological	Complex	Yes	Top level container off the array of Durations by medical code. Elements include: medicalCodes Note: The JSON response does not include the label for this container element.
MedicalCodes	Complex	Yes	An array of the requested Medical Codes. Elements include: medicalCode
MedicalCode	Complex		A collection of data related to each requested medical code. Elements include: code medicalCodeType description durations topics Note: In the case where an invalid or unsupported medical code is requested, the message will be "No information could be found for the supplied medical code(s)" And the Status Code will be 200.. See Response Status , below. Note: The JSON response does not include the label for this container element.
code	String	Yes	A medical code from the requested medicalCodes list.
medicalCodeType	String	Yes	Indicator of medical code type. This code type applies to all medical codes for the request Valid values: ICD-9-CM ICD-10-CM ICD-10(WHO) ICD-10-PCS CPT
description	String	Yes	Description for the medical code. Note: In the case where an invalid or unsupported medical code is requested, the MedicalCode element will be returned with the requested code and medicalCodeType, but the description will be "Medical code not found [code] for medical code type [medicalCodeType]." And the StatusCode will be 206. See Response Status , below.

Data Element	Data Type	Req?	Data Element Description
durations	Complex	No	This element will return zero to many physiological duration tables that are associated to the medical code. Elements included: duration
duration	Complex	No	A single instance of a physiological duration table. For each available table, all available job classes will be returned. Elements included: factor jobClasses Note: in JSON response, the element is not named, but exists as a collection.
factor	String	No	A description of the treatment approach for the duration table. Example: "Medical treatment, carpal tunnel syndrome"
jobClasses	Complex	No	The collection of rows for a single physiological duration table. Elements included: DurationJobClass
DurationJobClass	Complex	No	A single job class row from the physiological duration table. Elements included: jobClass minimum optimum maximum Note: in JSON response, the element is not named, but exists as a collection.
jobClass	String	Yes	The Job Class for the physiological duration table row. Possible values: Sedentary Light Medium Heavy VeryHeavy
minimum	Short	Yes	The duration in days for the minimum recovery time most individuals require. A value of 365 means that the duration is indefinite. A value of 360 means one year. For an example, see medicalCode=478.79 where factor= "Surgical treatment larynx abscess, tracheostomy." (Content example as of MDA v7.6, 05/20/2017)

Data Element	Data Type	Req?	Data Element Description
optimum	Short	Yes	<p>The duration in days that most people will likely require for recovery.</p> <p>A value of 365 means that the duration is indefinite. A value of 360 means one year. For an example, see medicalCode=478.79 where factor= "Surgical treatment larynx abscess, tracheostomy." (<i>Content example as of MDA v7.6, 05/20/2017</i>)</p>
maximum	Short	Yes	<p>The duration in days at which additional case information should be requested from the physician if the patient has not recovered.</p> <p>A value of 365 means that the duration is indefinite. A value of 360 means one year. For an example, see medicalCode=478.79 where factor= "Surgical treatment larynx abscess, tracheostomy." (<i>Content example as of MDA v7.6, 05/20/2017</i>)</p>
topics	Complex	No	<p>When showTopics is TRUE, this element will return zero to many topics related to the medicalCode (the value of code in the MedicalCode element).</p> <p>Elements included: documentName documentURL</p>
documentName	String	Yes	<p>The title of the Topic.</p> <p>Example: Carpal Tunnel Syndrome</p>
documentUrl	String	Yes	<p>The relative URL path for the topic in the website.</p> <p>Example: carpal-tunnel-syndrome</p> <p>This value can be appended to https://app.mdguidelines.com/content/ to construct the full URL for user navigation. It can also be appended to /content/ to provide a relative path that will work in both:</p> <p>UAT (base URL: https://uat.mdguidelines.com) Production (base URL: https://app.mdguidelines.com)</p> <p>Note that the /content/ area is specific to the location of topic pages and must be included when building a full topic URL.</p> <p>To obtain a fully built URL for the current environment, consider using the <i>Topic Search API</i>.</p>

2.7 Exception Conditions and Troubleshooting

The service may provide response codes, for success or errors. The common response codes implemented in the MDGuidelines® API are documented at <https://api.mdguidelines.com/help>.

Response Status

Status Code	Cause(s)
200	<p>Message: SUCCESS: "OK"</p> <ul style="list-style-type: none"> "No information could be found for the supplied medical code(s)" <p>This response will be returned in the following scenarios:</p> <ul style="list-style-type: none"> Unrecognized medical code: In the case where an invalid or unsupported medical code is requested <p>Examples could be nonsense codes ("asdfasdf") or unsupported codes (NDC).</p> <ul style="list-style-type: none"> A mismatch of code and code type. Example could be medical code "176.0" with code type ICD10CM
400	<p>Message:</p> <ul style="list-style-type: none"> 400 Bad Request: {"Message": "medicalcodes is a required field"} <p>This response will be returned in the following scenario:</p> <ul style="list-style-type: none"> The MedicalCodes parameter is missing. <p>Message:</p> <ul style="list-style-type: none"> 400 Bad Request: {"Message": "medicalcodetype is invalid. Valid values include icd9cm, icd10cm, icd10who, icd10pcs, cpt." } <p>This response will be returned in the following scenario:</p> <ul style="list-style-type: none"> An invalid value is used for MedicalCodeType

Status Code	Cause(s)
401	<p>Message:</p> <ul style="list-style-type: none"> 401 error: "License key is not verified" <p>This response will be returned in the following scenarios:</p> <ul style="list-style-type: none"> License key is expired License key is missing License key is otherwise invalid
403	<p>Message:</p> <ul style="list-style-type: none"> License does not provide access to the requested resource <p>This response will be returned in the following scenarios:</p> <ul style="list-style-type: none"> A CPT® medical code type is requested, but the Customer's license does not support CPT® usage. See Authorization, above.
500	<p>Server error.</p> <p>If the server, API site, or this service failed, the response will be a 500 Server error.</p> <p>Server outages are monitored by ReedGroup Information Technology.</p>

2.8 Messages When Durations are Unavailable

MDGuidelines® Duration Views only provides disability durations for medical codes when appropriate. When disability durations are not available for a medical code, MDGuidelines now provides users with messages explaining why duration estimates are not available. Unavailable durations were grouped into messages in the following order:

External Cause of Injury > MdaText > Healthcare Encounter > Cancer > Benign > Unknown Neoplasms > Child-Specific > Death > Abortion > Pregnancy Complication > Birth Complication > Perinatal > Chronic > Symptom > Infection > Surgical Complication > Rare Diagnosis > Rare Procedure > Nonspecific Diagnosis > Nonspecific Procedure > All remaining

For example, an external cause of injury code was assigned the corresponding no-duration message and not categorized further. The remaining codes were then examined to determine which ones had MDA text and assigned those messages. The health status codes were identified from the remaining codes, and so forth. Below are the examples.

1. External Cause of Injury

- Message: Specific duration estimates are not available. This medical code provides only supplemental details on the cause of injury but not the injury itself. To receive a duration estimate, please try searching again using a specific diagnosis code.
- Definition: All codes starting between E000 – E999
- Example: Walking, marching and hiking (E001.0)

2. MDA Text, Factors Influencing Duration

- Message: Specific duration estimates are not available for this medical code. Please read the following information about the factors that influence duration (see below):
[Insert “Factors Influencing Duration Text”]
- Definition: Codes that are associated with a topic, but not a duration table, for which “Factors Influencing Durations” text is available.
- Example: Kaposi’s Sarcoma (176.0, 176.1, 176.3, 176.5, 176.8).
 - Message: Specific duration estimates are not available for this medical code. Please read the following information about the factors that influence duration (see below):
Factors influencing the length of disability include the type and stage of disease at initial presentation, the presence of concurrent infection and general health, the type of treatment pursued, and the presence of complications.

3. Health Status and Contact with Healthcare Services

- **Message:** Specific duration estimates are not available. This medical code identifies circumstances for a health care encounter other than disease or injury. To receive a duration estimate, please try searching again using a specific diagnosis code.
- **Definition:** Codes starting with V (V01 – V91)
- **Example:** Contact with or exposure to communicable diseases, Cholera (V01.0)

4. Malignant Neoplasms

- **Message:** Specific duration estimates are not available. This medical code is associated with a cancer diagnosis. The length of disability for this diagnosis is dependent on the specific cancer type and stage, the presence of metastases, the individual's overall health and immune system status, the treatment type(s), any adverse effects from treatment, and other complications.
- **Definition:** Codes between 140-209
- **Example:** Malignant neoplasm, Parotid Gland (142.0)

5. Neoplasms of Uncertain Behavior

- **Message:** Specific duration estimates are not available. This medical code is associated with a neoplasm of uncertain behavior. This means that the neoplasm is currently benign but have characteristics that make it possible for the tumor to become malignant (cancerous). The length of disability depends on the type and location of the tumor, whether the tumor is asymptomatic or symptomatic, whether treatment is required, and the individual's response to treatment.
- **Definition:** Codes between 235-238
- **Example:** Neoplasm of Uncertain Behavior of Lip, Oral Cavity and Pharynx; Gingiva, Hypopharynx, Minor Salivary Glands, Mouth, Nasopharynx, Oropharynx, Tongue (235.1)

6. Newborn- or Pediatric-Specific

- **Message:** Specific duration estimates are not available. This medical code applies to a newborn or pediatric patient only. To receive a duration estimate, please try searching again using a different medical code applicable to the working age population.
- **Definition:** Identified as a Newborn/Pediatric Code in MDG table (created by Christine Warga).
 - Description includes keywords: "fetus", "fetal", "newborn", "immaturity", "infant", "childhood", "neonatal", "prematurity", "postnatal", "gestation"
 - Code *not* between 630-679 or 760-779
- **Example:** Bacterial Diseases, Other; Infant Botulism (040.41)

7. Cause of Death

- **Message:** Specific duration estimates are not available. This medical code describes a cause of death. Disability durations are not applicable.
- **Definition:** Code = 761.6 (Maternal Death)
 - Description includes keyword: "death"
 - Not a fetal death code: 632, 674.90, 674.92, 674.94, 656.40, 656.41, 656.43, 768.1, 779.6, 768.0
- **Example:** Unattended Death; Death in Circumstances Where the Body of the Deceased Was Found and No Cause Could Be Discovered; Found Dead (798.9)

8. Pregnancy Complications, Resulting in Termination of Pregnancy

- **Message:** Specific duration estimates are not available. The length of disability for this diagnosis may be influenced by the stage of pregnancy, treatment type, and the development of complications.
- **Definition:** Code between 630-639 OR 761.4, 74.3
- **Example:** Legally Induced Abortion, Complicated by Delayed or Excessive Hemorrhage, Complete (365.12)

9. Pregnancy Complications, Other

- **Message:** Specific duration estimates are not available. This medical code is associated with a pregnancy complication. The length of disability will be influenced by the presence of any maternal comorbidities and the response to treatment.
- **Definition:** Code between 640-649 OR 678-679
 - Not 678.00, 678.01, 678.03, 678.10, 678.11, 678.13, 678.13, 679.10 - 679.14
- **Example:** Hemorrhage in Early Pregnancy, Unspecified, Antepartum Condition or Complication (10)

10. Complications During Childbirth

- **Message:** Specific duration estimates are not available. This medical code is associated with a complication of childbirth. The length of disability may be influenced by the presence of a high-risk pregnancy, any additional maternal or fetal complications, and job requirements.
- **Definition:** Code between 650-677
- **Example:** Unspecified Malposition or Malpresentation, Antepartum Condition or Complication (652.93)

11. Conditions Originating in the Perinatal Period

- **Message:** Specific duration estimates are not available. This medical code is associated with a maternal cause of perinatal morbidity. The length of disability will be influenced by the stage of pregnancy in which the condition occurs, any maternal comorbidities, the need for and response to treatment, and the presence of complications.
- **Definition:** Code between 760-779
 - Not 761.6 (Maternal Death)
- **Example:** Maternal Hypertensive Disorders (760.0)

12. Chronic Conditions

- **Message:** Specific duration estimates are not available. This medical code is associated with a chronic condition. The length of disability is influenced by disease severity, any associated medical conditions, the development and persistence of complications, the individual's response to treatment, and job requirements.
- **Definition:** Diagnosis codes classified as a chronic by AHRQ Chronic Condition Indicator (CCI) OR 728.3
 - Description includes keywords: "chronic", "postinflammatory pulmonary fibrosis", "progressive"
- **Example:** Secondary diabetes mellitus without mention of complication, not stated as uncontrolled, or unspecified (249.00)

13. Symptoms

- **Message:** Specific duration estimates are not available. This medical code describes a symptom rather than a diagnosis. To receive a duration estimate, please try searching again using a clinical diagnosis code rather than a symptom code.
- **Definition:** Code between 780-799 OR starts with 338
 - Description includes keywords: “pain”, “swelling”, “hypertrophy”, “vomiting”, “symptom”, “double vision”, “difficulty in walking”, “sciatica”, “discomfort”
 - Not a code for a neoplasm and *does not* contain the keyword “asymptomatic”
- **Example:** Acute Pain, Other (338.19)

14. Infections

- **Message:** Specific duration estimates are not available. Length of disability is dependent on the type and severity of the infection, any underlying disease or complications, the type of treatment, and the individual's response to treatment.
- **Definition:** Code between 001-139
- **Example:** Protozoal Intestinal Diseases, Other; Coccidiosis; Infection by *Isospora belli* and *Isospora hominis*; Isosporiasis (007.2)

15. Complications of Medical Care

- **Message:** Specific duration estimates are not available. This code is associated with a complication of medical care. The length of disability will be influenced by the underlying condition, treatment type, and the presence of further complications.
 - **Definition:** Code between 996-999 OR 611.83, 612.0, 612.1
 - Description includes keywords: “other complications”
- **Example:** Other complications of gastric band procedure (539.09)

16. Rare Diagnosis

- **Message:** Specific duration estimates are not available. This medical code is associated with a rare diagnosis. There is insufficient data to support an accurate duration estimate for this condition.
- **Definition:** Diagnosis codes with less than 20 records in Population
- **Example:** Hemorrhage and Infarction of Thyroid (246.3)

17. Rare Procedure

- **Message:** Specific duration estimates are not available. This medical code is associated with a procedure rarely reported in work disability claims. There is insufficient data to support an accurate duration estimate for this procedure.
- **Definition:** Procedure codes with less than 20 records in Population
- **Example:** Intravascular pressure measurement of coronary arteries (00.59)

18. Nonspecific Diagnosis

- **Message:** Specific duration estimates are not available. The medical code is associated with a nonspecific diagnosis. To receive a duration estimate, please try searching again using a more specific diagnosis code.
- **Definition:** Code in diagnostic subcategory with keyword: “other”

- Diagnosis code description contains the keywords: “NEC”, “NOS”, “unspecified site”, “site unspecified”, “not specified”, “classified elsewhere”, “not elsewhere”, “generalized”, “unspecified”, “unspecific”, “mixed disorders”, “late effects of”, “other causes”, “other specified”, “other inflammatory”, “other fibromatoses”, “other disorders”, “injury to”
- Example: Neoplasms of Unspecified Nature; Site unspecified (239.9)

19. Nonspecific Procedure

- Message: Specific duration estimates are not available. The length of disability for this procedure is related to the underlying medical condition. To receive a duration estimate, please try searching again using a specific diagnosis code.
- Definition: Procedure code description contains the keywords: “NEC”, “NOS”, “unspecified site”, “site unspecified”, “not specified”, “classified elsewhere”, “not elsewhere”, “generalized”, “unspecified”, “unspecific”, “late effects of”, “other causes”, “other specified”, “other inflammatory”, “other fibromatoses”, “injury to”
- Example: Other Operations on Adrenal Glands, Nerves, and Vessels, Other (07.49)

20. Other

- Message: Specific duration estimates are not available. Please try another code.
- Definition: Remaining codes not yet categorized
- Example: Disorders of Thyrocalcitonin Secretion; Hypersecretion of Calcitonin or Thyrocalcitonin (246.0)

2.9 Testing

MDGuidelines® offers two methods for integration testing:

1. User Acceptance Testing (UAT) Environment

- a. Notify Reed Group Account Management so that support resources can be made available for Customer testing. This will also ensure that the environment status is communicated to the Customer.
- b. The UAT environment requires UAT license key configuration (RG-LICENSE-KEY).
- c. Set the UAT endpoint to
<https://uat.api.mdguidelines.com/api/v4/durations/physiological>.
- d. UAT website environment and base URL is <https://uat.mdguidelines.com>.
- e. The UAT environment is the only non-production environment available for Customer testing.
- f. The Customer may configure multiple test environments to point to UAT.

2. Test Harness Page

- a. <https://api.mdguidelines.com/help/durationsPhysiological-v4.html>

- b. Requires production license key configuration (RG-LICENSE-KEY)
- 3. API Testing tool, such as Postman
 - a. <https://www.getpostman.com/apps>

2.10 Sample Code

JQUERY

```
var uri = "https://api.mdguidelines.com/api/v4/durations/physiological";
uri += "?";
uri += "medicalCodes=354.0";
uri += "&medicalCodeType=icd9cm";
uri += "&showTopics=true";

$.ajax({ url:
uri, type:
'GET', dataType:
'json',
headers: { 'RG-LICENSE-KEY': 'XXXXXXXX-XXXX-XXXX-XXXX-XXXXXXXXXXXX', },
success: function (data) { handleData(data) },
error: function (xhr, status, error) { handleError(xhr, status, error) }
})
```

Document Revision History

Date	Reason For Changes	Document Version
09/11/2017	Initial Specification <ul style="list-style-type: none"> New version (v4) created to add top level element (DurationsPhysiological) to contain the array of records. Revised XSD to remove namespace references. 	1.0
10/13/2017	Added Medical Code version information (Section 1.2, Terminology); update to CPT® copyright text.	1.1
7/10/2020	Added Error messages when durations are not available (Section 2.8) Added ICD-10WHO and ICD-10-PCS and updated response codes	1.2