

Evidence of Health Treatment Efficacy Implementation Guide published by Linca Telecomunicações Ltda. This guide is not an authorized publication; it is the continuous build for version 1.0.0. This version is based on the current content of <link> and changes regularly. [See the implementation guide for version fhir r5](#)

1 Introduction

Official URL: https://treatments.telix.health/implementationguide/fhir-r6/home	Version: 1.0.0-draft
IG Standards status: draft updated on 2026-04-10	Computable Name: Telix IG

1 Telix Implementation Guide

Welcome to the Telix Implementation Guide: Evidence of health treatments efficacy!

The Telix Implementation Guide defines profiles and value sets for representing the efficacy of health treatments. This guide is intended for developers of systems using FHIR who need to exchange information about treatment efficacy, as well as for authors of more specialized implementation guides within the healthcare domain.

This implementation guide covers the standardized representation of treatment efficacy, specifically how to convey the efficacy of a specific treatment for a specific condition. The content includes the classification of efficacy using the categories of benefits obtained with the treatments. The use of categories of benefits/outcome measures instead of specific outcome measures (as reduction in the scale of pain, or biomarkers) allows to process and compare data from researches that use different outcome measures.

Efficacy category outcomes include: (1) cure, (2) remission, (3) control, (4) elimination of symptoms, (5) reduction of symptoms, and (6) prevention. The guide also includes information about the total number of participants in the study, the scientific article or research from which the data was derived, and the country where the study was conducted.

1 To Learn about FHIR

This implementation guide is based on the Continuous Integration Build of the HL7 FHIR standard. It uses terminology, notations and design principles that are specific to FHIR. Before reading this implementation guide, it's important to be familiar with some of the basic principles of FHIR as well as general guidance on how to read FHIR specifications.

Readers who are unfamiliar with FHIR are encouraged to review the following R5-based links prior to reading the rest of this implementation guide.

[FHIR overview](#)

[Developer's introduction](#)

([or Clinical introduction](#)).

[FHIR data types](#)

[Using codes](#)

[References between resources](#)

[How to read resource & profile definitions](#)

[Base resource](#)

[FHIR Validation](#)

1 Resources Used in the Telix IG

- Evidence

For simplicity, we decided to use only the Evidence resource, as it is sufficient to convey all the necessary information.

1 Dependencies and Statements

1.1 Dependencies

IG	Package	FHIR Comment
 Telix Implementation Guide	<>	R5
 Evidence based medicine on FHIR	hl7.fhir.uv.ebm.1.0.0-ballot	R5
 HL7 Terminology (THO)	hl7terminology.r5#71.0	R5 Automatically added as a dependency - all IGs depend on HL7 Terminology

1.2 Intellectual Property Statements

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Resource Profile

Page standards status: [Informative](#)

This Resource Profile meets the requirements of the EBM on FHIR Implementation Guide. It sets minimum expectations for the Evidence resource to record, search, and fetch data related to efficacy of health treatments regarding a specific disease, based on scientific articles. It specifies which core elements, extensions, vocabularies, and value sets **SHALL** be present in the resource and constrains how the elements are used. Providing the floor for standards development for specific use cases promotes interoperability and adoption.

Example Usage Scenarios:

The following are example usage scenarios for this profile:

- Query for treatments efficacy for specific disease.
- [Record or update](#) a scientific article about efficacy of a health treatment.

Mandatory and Must Support Data Elements

The following data elements must always be present ([Mandatory](#) definition) or must be supported if the data is present in the sending system ([Must Support](#) definition). They are presented below in a simple human-readable explanation. Profile-specific guidance and examples are provided as well. The [Formal Views](#) below provides the formal summary, definitions, and terminology requirements.

Each Evidence Resource Must Have:

- Treatment
- Disease
- Scientific article stating the efficacy of the treatment for the disease
- Categorized Efficacy Outcomes in accordance to the definitions shown [here](#).
- The entity or person who created this FHIR resource

See guidance below:

Profile Specific Implementation Guidance

This section provides detailed implementation guidance for the Evidence of health treatments efficacy resource to support implementation and certification.

- Only scientific articles that contain the data about efficacy can be inserted in the platform. If the scientific article has not such data it cannot be posted.

- If the scientific articles covers different types of treatments one evidence resource should be created for each treatment.

Usages

- Examples for this Profile: [Examples](#)
- CapabilityStatements using this Profile: [Profile](#)

Resource Content

Name	Flags	Card	Type	Description & Constraints
Evidence	TU	0	Domain Resource	Single evidence bit + Warning: Name should be usable as an identifier for the module by machine processing applications such as code generation Elements defined in Ancestors: id , meta , implicitRules , language , text , contained , extension , modifierExtension Interfaces Implemented: MetadataResource
extension:studyCountry		1..*	CodeableConcept	Country where the study described in the article was conducted. https://treatments.telix.health/implementationguide/extensions/study-country
url		1..1	uri	https://treatments.telix.health/implementationguide/extensions/study-country
valueCodeableConcept		1..1	UsageContext	Concept - reference to a terminology
coding		1..1	Coding	Country being specified in the article
system		1..1	uri	Identity of the country: https://hl7.org/fhir/valueset-country.html
code		1..1	code	Code used to identify the country by the ISO code
display		1..1	string	Name of the country where the study described in the article was conducted
url	Σ C	1..1	uri	Canonical identifier for this evidence, represented as a globally unique URI + Warning: URL should not contain or # - these characters make processing canonical references problematic
title	Σ T	0..1	string	Name for this summary (human friendly)
status	?Σ	1..1	code	draft active retired unknown Binding: PublicationStatus (Required)
date	Σ	0..1	dateTime	Date last changed - should be altered to be the date of the publication
publisher	Σ T	0..1	string	Name of the publisher/steward (organization or individual)
contact	Σ	1..*	ContactDetail	Contact details for the publisher
author	Σ	1..1	ContactDetail	Who created the resource
classification:population	Σ	1..1	UsageContext	A population (e.g. disease or condition) this Evidence is about
code		1..1	Coding	Type of use context being specified: population
system		1..1	uri	Identity of the terminology system Fixed Value: https://build.fhir.org/ig/HL7/ebm/en/ValueSet-179431.html
code		1..1	code	Value that defines the context Fixed Value: population
display		1..1	string	Text that describes the value that defines the context Fixed Value: Population
valueCodeableConcept		1..1	CodeableConcept	Concept - reference to a terminology
system		1..1	uri	Identity of the terminology system Fixed Value: https://icd.who.int/en/
version		1..1	string	Version of the system - if relevant
code		1..1	code	Code Symbol in syntax defined by the system of the disease of which the fhir resource is about
display		1..1	string	Name in the syntax defined by the system of the disease related to the FHIR resource code
classification:intervention	Σ	1..1	UsageContext	An intervention (e.g. medication or procedure) or exposure this Evidence is about
code		1..1	Coding	Type of use context being specified: intervention
system		1..1	uri	Identity of the terminology system Fixed Value: https://build.fhir.org/ig/HL7/ebm/en/ValueSet-179431.html
code		1..1	code	Symbol in syntax defined by the system Fixed Value: intervention
display		1..1	string	Representation defined by the system Fixed Value: intervention
valueCodeableConcept		1..1	CodeableConcept	ATC is used for drug treatments that specify only the active ingredient of the medication. GTIN is used for drug treatments that specify the brand name and dosage. ICHI is used for non-drug treatments. Use only one concept.
system		1..1	uri	Identity of the terminology system Fixed Value in case of Active Ingredient: http://www.whocc.no/atc Fixed Value in case of medication of a specific brand: https://icd.who.int/dev11j-ichi/en Fixed value in case of non-drug treatment: https://www.gs1.org/industries/healthcare
version		1..1	string	Version of the system - if relevant
code		1..1	code	Code Symbol in syntax defined by the system of the health treatment (intervention) of which the fhir resource is about
display		1..1	string	Name in the syntax defined by the system of the intervention
classification:outcome	Σ	1..1	UsageContext	The outcome measure this Evidence is about
code		1..1	coding	Type of context being specified
system		1..1	uri	Identity of the terminology system Fixed Value: https://build.fhir.org/ig/HL7/ebm/en/ValueSet-179431.html
code		1..1	code	Symbol in syntax defined by the system Fixed Value: outcome-measure
display		1..1	string	Representation defined by the system Fixed Value: Outcome Measure
valueCodeableConcept		1..1	CodeableConcept	Concept - reference to a terminology
system		1..1	uri	Identity of the terminology system Fixed Value: https://terminology.hl7.org/CodeSystem/research-study-purpose-type
version		1..1	string	Version of the system - If relevant
code		1..1	code	Symbol in syntax defined by the system Fixed Value: efficacy
display		1..1	string	Representation defined by the system Fixed Value: Efficacy Study
description	I	1..1	markdown	Description of the particular summary
assertion	Σ	1..1	markdown	Declarative description of the Evidence
relatesTo		1..1	BackboneElement	Relationships to other Resources
type		1..1	CodeableConcept	Fixed value: Citation
target[x]		1..1	CodeableConcept	The artifact that is related to this Evidence
targetUri		1..1	uri	
variableDefinition		1..*	BackboneElement	Evidence variable: Outcome
description		1..1	markdown	A text description or summary of the variable
variableRole		1..1	CodeableConcept	Fixed value: outcome
studyDesign		1..1	CodeableConcept	The design of the study that produced this evidence
system		1..1	uri	Fixed value: https://treatments.telix.health/codesystem/study-design-codeable-concept
code		1..1	code	Code corresponding to the Study Design of the study in the scientific article
display		1..1	string	Text corresponding to the code of the study design
statistic		0..*	BackboneElement	Values and parameters for a single statistic
category		1..1	CodeableConcept	Associated category for categorical variable - see table
system		1..1	uri	Identity of the terminology system Fixed Value: https://treatments.telix.health/codesystem/categorized-efficacy-outcomes
version		1..1	string	Version of the system - if relevant
code		1..1	code	Symbol in syntax defined by the system
display		1..1	string	Representation defined by the system
numberAffected		1..1	unsignedInt	Quantity of people of the study that had the selected benefit (Cure, remission, response, ...)
numberOfEvents		1..1	unsignedInt	Quantity of people of the study that initiated the treatment
sampleSize		1..1	unsignedInt	Count of participants in the study sample
numberOfParticipants		1..1	unsignedInt	Cumulative number of the study, including control or placebo groups, or people who received other treatments.

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1 Extension

Official URL: treatments.telix.health/implementationguide/fhir-r6/extensions/study-country	Version: 1.0.0-draft
IG Standards status: draft updated on 2026-04-10	Computable Name: Telix IG

The artifact being compared to the referenced artifact.

1.1 Context of Use

This extension is used on Evidence.extension to represent the country where the clinical study was conducted.

1.2 Usage info

Usage:

Use this extension when an Evidence resource needs to identify the country where the clinical study was conducted.

- Use this Extension: [Evidence.extension](#)
- Examples for this Extension: [Evidence/example-study-country](#)

The value should be represented as a CodeableConcept using a standardized country code, such as US for United States.

1.2 Formal Views of Extension Content

Description Differentials, Snapshots, and other representations.

Diferencial table	Snapshot Table	Statistics/References	
Name	Card	Type	Description & Constraints
 extension:studyCountry	1..*	CodeableConcept	Country where the study described in the article was conducted. https://treatments.telix.health/implementationguide/fhir-r6/extensions/study-country
 uri	1..1	uri	https://treatments.telix.health/implementationguide/fhir-r6/extensions/study-country
 valueCodeableConcept	1..1	UsageContext	Concept - reference to a terminology
 coding	1..1	Coding	Country being specified in the article
 system	1..1	uri	Identity of the country: https://hl7.org/fhir/valueset-country.html
 code	1..1	code	Code used to identify the country by the ISO code
 display	1..1	string	Name of the country where the study described in the article was conducted

1.3 Examples

```
{
  "extension": [
    {
      "url": "https://treatments.telix.health/implementationguide/extensions/study-country",
      "valueCodeableConcept": {
        "coding": [
          {
            "system": "https://hl7.org/fhir/ValueSet/country",
            "code": "BR",
            "display": "Brazil"
          },
          {
            "system": "https://hl7.org/fhir/ValueSet/country",
            "code": "CN",
            "display": "China"
          },
          {
            "system": "https://hl7.org/fhir/ValueSet/country",
            "code": "DE",
            "display": "Germany"
          },
          {
            "system": "https://hl7.org/fhir/ValueSet/country",
            "code": "IT",
            "display": "Italy"
          },
          {
            "system": "https://hl7.org/fhir/ValueSet/country",
            "code": "GB",
            "display": "United Kingdom"
          }
        ]
      }
    }
  ]
}
```

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Terminologies

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Terminologies

The Categorized Efficacy Outcomes is an externally maintained terminology, copyrighted by Linca Telecomunicações, and published openly by Linca Telecomunicações.

The Evidence-Based Medicine on FHIR Implementation Guide Code System and the [Evidence Report Section Code Value Set](#) are currently defined within the EBMonFHIR IG.

We are also using the concepts below to determine the type of treatment related to the artifact.

- [ATC](#): International standard for organizing drugs based on their organ system of action, therapeutic purpose, and chemical characteristics. We use ATC to identify drug treatments through their codes in their essence, based on the active ingredient and excluding the brand.
- [ICHI](#): System for standardized reporting and analysis of health interventions across clinical, primary care, and public health settings. We use ICHI to identify non-drug treatments through their codes.
- [GTIN](#): It is a globally unique identifier for products, such as pharmaceuticals and medical devices, used in supply chains to ensure accurate data capture and improve patient safety. We use it to identify the active ingredient of a drug treatment, representing its brand.
- [CID-11](#): The most recent edition of the International Classification of Diseases and Related Health Problems. We use ICD-11 to identify the disease through the code that represents it.

Code Systems

The Categorized Efficacy Outcomes is copyrighted by Linca Telecomunicações and published openly by Linca Telecomunicações.

The Evidence-Based Medicine on FHIR Implementation Guide Code System and the [Evidence Report Section Code Value](#) are currently defined within the EBMonFHIR IG.

See more information about the concept for the disease below:
Disease presented in the article: <https://icd.who.int/dev11/l-ichi/en>

See more information about the concepts for the type of treatment below:

Drug treatments that specify the brand name of the medication: <https://icd.who.int/dev11/l-ichi/en>
Drug treatments that specify the active ingredient and dosage of the medication: <http://www.whocc.no/atc>
Non-drug treatments: <https://www.gs1.org/industries/healthcare>

Value Sets

Category of evidence resources specifying health treatments efficacy in the Telix Implementation Guide:
<https://treatments.telix.health/codesystem/fhir-r6/categorized-efficacy-outcomes>

SEVCO is a standardized terminology used to describe the design of a study in a computable way:
<https://treatments.telix.health/codesystem/fhir-r6/study-design-codeable-concept>

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Examples

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Evidence

```
{
  "resourceType": "Evidence",
  "extension": [
    {
      "url": "https://treatments.telix.health/implementationguide/extensions/study-country",
      "valueCodeableConcept": {
        "coding": [
          {
            "system": "https://hl7.org/fhir/ValueSet/country",
            "code": "BR",
            "display": "Brazil"
          },
          {
            "system": "https://hl7.org/fhir/ValueSet/country",
            "code": "CN",
            "display": "China"
          },
          {
            "system": "https://hl7.org/fhir/ValueSet/country",
            "code": "DE",
            "display": "Germany"
          },
          {
            "system": "https://hl7.org/fhir/ValueSet/country",
            "code": "IT",
            "display": "Italy"
          },
          {
            "system": "https://hl7.org/fhir/ValueSet/country",
            "code": "GB",
            "display": "United Kingdom"
          }
        ]
      }
    }
  ],
  "identifier": [
    {
      "use": "official",
      "system": "https://interneb.org/global-computable-evidence-identifiers",
      "value": "migraine-placebo-10.1002-14651858-cd001218-pub3"
    }
  ],
  "title": "This Evidence resource describes the placebo comparator used in a study evaluating acupuncture for the prevention of episodic migraine.",
  "status": "active",
  "date": "2016-06",
  "publisher": "Linca Telecomunicações Ltda",
  "author": [
    {
      "name": "Diuary Cordeiro Machado",
      "telecom": [
        {
          "system": "email",
          "value": "diuarycm@gmail.com"
        }
      ]
    }
  ],
  "classification": [
    {
      "code": {
        "system": "https://build.fhir.org/ig/HL7/ebm/en/ValueSet-179431.html",
        "code": "population",
        "display": "Population"
      },
      "valueCodeableConcept": {
        "coding": [
          {
            "system": "https://icd.who.int/icd11_mms/en",
            "version": "2026-01",
            "code": "8A80",
            "display": "Migraine"
          }
        ]
      }
    }
  ],
  {
    "code": {
      "system": "https://build.fhir.org/ig/HL7/ebm/en/ValueSet-179431.html",
      "code": "comparator",
      "display": "Comparator"
    },
    "valueCodeableConcept": {
      "coding": [
        {
          "system": "https://atcddd.fhi.no/atc_ddd_index/",
          "code": "V03AX10",
          "display": "Placebo"
        }
      ]
    }
  },
  {
    "code": {
      "system": "https://build.fhir.org/ig/HL7/ebm/en/ValueSet-179431.html",
      "code": "outcome-measure",
      "display": "Outcome Measure"
    },
    "valueCodeableConcept": {
      "coding": [
        {
          "system": "https://terminology.hl7.org/7.1.0/en/ValueSet-research-study-purpose-type.html",
          "code": "efficacy",
          "display": "Efficacy Study"
        }
      ]
    }
  }
],
  "relatesTo": [
    {
      "type": {
        "coding": [
          {
            "system": "https://terminology.hl7.org/7.1.0/en/CodeSystem-artifact-relationship-type.html",
            "code": "citation",
            "display": "Citation"
          }
        ]
      },
      "targetUri": "https://doi.org/10.1002/14651858.CD001218.pub3"
    }
  ],
  "description": "Klaus Linde et al. Cochrane Database of Systematic Reviews, 06 / 2016",
  "assertion": "Placebo comparator for acupuncture in the prevention of episodic migraine",
  "variableDefinition": [
    {
      "variableRole": "outcome",
      "coding": [
        {
          "system": "https://build.fhir.org/valueset-variable-role.html",
          "code": "outcome",
          "display": "Outcome"
        }
      ]
    }
  ],
  "studyDesign": [
    {
      "coding": [
        {
          "system": "https://hl7.org/fhir/codesystem-study-design.html",
          "code": "synthesis-type",
          "display": "Systematic Review and Meta-Analysis"
        }
      ]
    }
  ],
  "statistic": [
    {
      "description": "Efficacy calculated based on participants who achieved at least a 50% reduction in headache frequency in the sham acupuncture comparator group.",
      "category": {
        "coding": [
          {
            "system": "https://treatments.telix.health/codesystem/categorized-efficacy-outcomes",
            "code": "persistent of symptoms",
            "display": "Persistent reduction of symptoms"
          }
        ]
      },
      "numberOfEvents": 770,
      "numberOfAffected": 314,
      "sampleSize": {
        "numberOfParticipants": 1825
      }
    }
  ]
}
```

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Downloads

Page standards status: [Informative](#)

Definition

Format-specific definitions of the FHIR resources used in this Implementation Guide can be downloaded here.

- [XML](#) 
- [JSON](#) 

Examples

Examples of the efficacy resource of Telix Implementation Guide can be downloaded here.

- <https://treatments.telix.health/implementationguide/fhir-r6/examples> 

Full Implementation Guide

The full implementation guide can be downloaded here.

- [Full IG](#) 

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Changes

Page standards status: [Informative](#)

1. Changes

The FHIR R5 is the official version, you can see the FHIR R6 version [here](#)

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Ofical URL: https://treatments.telix.health/codesystem/fhir-r6/categorized-efficacy-outcomes	Version: 1.0.0 draft
IG Standards status: draft updated on 2026-04-10	Computable Name: Telix IG
Flags: CaseSensitive, Complete.	

This Code system is used in the following value sets:

- Value set: category of evidence resources specifying health treatments efficacy in the Telix Implementation Guide.

Definition

Efficacy is calculated as the number of people who had a specific benefit from the treatment divided by the number of people who used or underwent the treatment. The specific benefits are categorized as the code system below.

Content

This code system <https://treatments.telix.health/codesystem/fhir-r6/categorized-efficacy-outcomes> defines the following codes:

NarrativeXMLJSON

code	display	definition
persistent-reduction	Persistent reduction of symptoms/indicators	Efficacy calculated based on patients who achieved a persistent reduction in the intensity, frequency, or variety of symptoms with the use of the treatment.
temporary-elimination	Temporary symptom elimination	Efficacy calculated based on patients who achieved temporary 100% elimination of symptoms within a short period after using the treatment, with the possibility of symptoms returning after some time.
temporary-reduction	Temporary reduction of symptoms/indicators	Efficacy calculated based on patients who experienced a temporary reduction in symptoms with the use of a given treatment, regardless of the extent of that reduction.
prophylaxis	Prophylaxis	Efficacy calculated based on patients who achieved a positive outcome when using the treatment as a preventive measure against the disease.
cure	Cure	Efficacy calculated based on patients who achieved complete remission of the disease.
remission	Remission	Efficacy calculated based on patients who achieved persistent elimination of symptoms after continuous use of the treatment.