

# NCI CTRP Accrual REST Service Guide - Include 20170814

## Topic Links

- [Introduction](#)
- [Service Endpoints](#)
- [Access Requirements](#)
- [XML Schema](#)
- [API Specification](#)
  - [Add/Update Subject \(Patient\) Accruals](#)
    - [Description](#)
    - [HTTP Method](#)
    - [URL](#)
    - [Request Body](#)
    - [Response Body](#)
    - [HTTP Response Codes](#)
    - [Examples](#)
  - [Update Accrual Count](#)
    - [Description](#)
    - [HTTP Method](#)
    - [URL](#)
    - [Request Body](#)
    - [Response Body](#)
    - [HTTP Response Codes](#)
    - [URL Examples](#)
  - [Delete Study Subject](#)
    - [Description](#)
    - [HTTP Method](#)
    - [URL](#)
    - [Request Body](#)
    - [Response Body](#)
    - [HTTP Response Codes](#)
    - [Examples](#)
  - [Submit CDUS Batch File for Asynchronous Processing](#)
    - [Description](#)
    - [HTTP Method](#)
    - [URL](#)
    - [Request Body](#)
    - [Response Body](#)
    - [Example](#)

This section provides instructions for managing subject accruals via the NCI CTRP Accrual REST Service.

## Introduction

The Accrual REST Service is a CTRP Web Service that provides the following operations in a REST-like fashion:

- Add or update trial subject accrual information on a given participating site
- Delete specific trial subject accrual information from a given participating site
- Submit accrual count for a participating site in an Abbreviated trial

The service uses XML for data exchange.

## Service Endpoints

### Inside the NIH Firewall (VPN required)

- DEVINT: <https://trials-int.nci.nih.gov/accrual-services>

### Outside of the NIH Firewall

- STAGE: <https://trials-stage.nci.nih.gov/accrual-services>
- PROD: <https://trials.nci.nih.gov/accrual-services>

## Access Requirements

To use the service, you must have a valid NCI LDAP account and a CTRP account. For instructions, refer to [Creating New NCI CTRP User Accounts](#). All service endpoints require HTTP Basic authentication with your NCI LDAP username and password.

## XML Schema

The service uses XML for data exchange. All XML elements going in or out of the service are defined and validated against the following XML schema:

[accrual\\_ws.xsd](#)

The XML schema is well-annotated with inline documentation that explains the purpose and meaning of various elements, types, and attributes. Specific elements required for service operations are explained in the sections below.

## API Specification

### Add/Update Subject (Patient) Accruals

#### Description

This operation submits subject (patient) accrual information for a specific participating site on a trial. If the subject accrual record already exists for the specified study and participating site, this operation will update that record accordingly. If you submit multiple subject accrual records all with the same subject ID within the same request, the last record in the list will supplant the others. The submitter must have accrual access to the site.

#### HTTP Method

PUT

#### URL

Three options are available:

1. `/sites/{id}`
  - a. `{id}`. CTRP numeric identifier of a participating site
2. `/trials/{idType}/{trialID}/sites/po/{id}`
  - a. `{idType}`. Type of identifier you want to use to identify a trial in CTRP. Possible values: *pa*, *nci*, *ctep*, *dcp*.
  - b. `{trialID}`. Trial identifier value itself
  - c. `{id}`. PO identifier of the organization that is the site on the trial
3. `/trials/{idType}/{trialID}/sites/ctep/{id}`
  - a. `{idType}`. Type of identifier you want to use to identify a trial in CTRP. Possible values: *pa*, *nci*, *ctep*, *dcp*.
  - b. `{trialID}`. Trial identifier value itself
  - c. `{id}`. CTEP identifier of the organization that is the site on the trial

#### Request Body

XML document with `studySubjects` root element (see XML Schema). MIME Type: `application/xml`.

#### Response Body

None (if successful) or an error message. MIME Type: `text/plain`.

#### HTTP Response Codes

Code	Response
200	Success
400	Validation error
404	Participating site not found
500	Internal server error

#### Examples

URL: `https://trials-stage.nci.nih.gov/accrual-services/sites/121787425`

#### Request XML:

The following XML request shows an example for submitting 5 study subjects to site 121787425 using ICD9 for disease codes. Note that the “siteDisease codeSystem” is not required since the disease code used is ICD9.

```

<tns:studySubjects xmlns:tns="gov.nih.nci.accrual.webservices.types"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="gov.nih.nci.accrual.webservices.types ../../src/resources/ws.xsd ">
  <tns:studySubject>
    <tns:identifier>SU001</tns:identifier>
    <tns:birthDate>2002-01-01</tns:birthDate>
    <tns:gender>Female</tns:gender>
    <tns:race>Black or African American</tns:race>
    <tns:ethnicity>Not Hispanic or Latino</tns:ethnicity>
    <tns:country>USA</tns:country>
    <tns:zipCode>22201</tns:zipCode>
    <tns:registrationDate>2014-01-01</tns:registrationDate>
    <tns:methodOfPayment>MEDICAID_AND_MEDICARE</tns:methodOfPayment>
    <tns:disease codeSystem="ICD9">861.20</tns:disease>
  </tns:studySubject>
  <tns:studySubject>
    <tns:identifier>SU002</tns:identifier>
    <tns:birthDate>2002-01-01</tns:birthDate>
    <tns:gender>Male</tns:gender>
    <tns:race>Native Hawaiian or Other Pacific Islander</tns:race>
    <tns:ethnicity>Not Reported</tns:ethnicity>
    <tns:country>CAN</tns:country>
    <tns:registrationDate>2014-01-01</tns:registrationDate>
    <tns:methodOfPayment>MILITARY_OR_VETERANS</tns:methodOfPayment>
    <tns:disease codeSystem="ICD9">861.20</tns:disease>
  </tns:studySubject>
  <tns:studySubject>
    <tns:identifier>SU003</tns:identifier>
    <tns:birthDate>2002-01-01</tns:birthDate>
    <tns:gender>Unknown</tns:gender>
    <tns:race>American Indian or Alaska Native</tns:race>
    <tns:race>Asian</tns:race>
    <tns:race>Black or African American</tns:race>
    <tns:race>Native Hawaiian or Other Pacific Islander</tns:race>
    <tns:race>Not Reported</tns:race>
    <tns:race>Unknown</tns:race>
    <tns:race>White</tns:race>
    <tns:ethnicity>Unknown</tns:ethnicity>
    <tns:country>CAN</tns:country>
    <tns:registrationDate>2014-01-01</tns:registrationDate>
    <tns:methodOfPayment>NO_MEANS_OF_PAYMENT</tns:methodOfPayment>
    <tns:disease codeSystem="ICD9">861.20</tns:disease>
  </tns:studySubject>
  <tns:studySubject>
    <tns:identifier>SU004</tns:identifier>
    <tns:birthDate>2002-01-01</tns:birthDate>
    <tns:gender>Unspecified</tns:gender>
    <tns:race>Native Hawaiian or Other Pacific Islander</tns:race>
    <tns:ethnicity>Not Reported</tns:ethnicity>
    <tns:country>AFG</tns:country>
    <tns:registrationDate>2011-01-01</tns:registrationDate>
    <tns:methodOfPayment>STATE_SUPPLEMENTAL</tns:methodOfPayment>
    <tns:disease codeSystem="ICD9">861.20</tns:disease>
  </tns:studySubject>
  <tns:studySubject>
    <tns:identifier>SU005</tns:identifier>
    <tns:birthDate>1990-01-01</tns:birthDate>
    <tns:gender>Female</tns:gender>
    <tns:race>American Indian or Alaska Native</tns:race>
    <tns:race>Asian</tns:race>
    <tns:race>Black or African American</tns:race>
    <tns:race>Native Hawaiian or Other Pacific Islander</tns:race>
    <tns:race>Not Reported</tns:race>
    <tns:race>Unknown</tns:race>
    <tns:race>White</tns:race>
    <tns:ethnicity>Hispanic or Latino</tns:ethnicity>
    <tns:country>USA</tns:country>
    <tns:zipCode>22222</tns:zipCode>
    <tns:registrationDate>2014-01-01</tns:registrationDate>
    <tns:methodOfPayment>MANAGED_CARE</tns:methodOfPayment>
    <tns:disease codeSystem="ICD9">011.41</tns:disease>
  </tns:studySubject>

```

```
</tns:studySubject>
</tns:studySubjects>
```

#### Request XML (Specifying Topography and Morphology codes using ICD-O-3)

The following XML request shows an example for submitting one study subject to site 121787425 using ICD-O-3 for the Topography code. Note that when the Topography <codeSystem> = "ICD-O-3", both the <disease> and the <siteDisease> are mandatory.

```
<tns:studySubjects xmlns:tns="gov.nih.nci accrual.webservices.types"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="gov.nih.nci accrual.webservices.types ../../src/resources/ws.xsd ">
  <tns:studySubject>
    <tns:identifier>SU006</tns:identifier>
    <tns:birthDate>2002-01-01</tns:birthDate>
    <tns:gender>Female</tns:gender>
    <tns:race>Black or African American</tns:race>
    <tns:ethnicity>Not Hispanic or Latino</tns:ethnicity>
    <tns:country>USA</tns:country>
    <tns:zipCode>22201</tns:zipCode>
    <tns:registrationDate>2014-01-01</tns:registrationDate>
    <tns:methodOfPayment>MEDICAID_AND_MEDICARE</tns:methodOfPayment>
    <tns:disease codeSystem="ICD-O-3">8012/3</tns:disease>
    <tns:siteDisease codeSystem="ICD-O-3">C34.1</tns:siteDisease>
  </tns:studySubject>
</tns:studySubjects>
```

#### Request XML (Specifying Disease and Site Disease codes using Legacy Codes - CTEP)

The following XML request shows an example for submitting one study subject to site 121787425 using Legacy Codes - CTEP for the disease code.

```
<tns:studySubjects xmlns:tns="gov.nih.nci accrual.webservices.types"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="gov.nih.nci accrual.webservices.types ../../src/resources/ws.xsd ">
  <tns:studySubject>
    <tns:identifier>SU007</tns:identifier>
    <tns:birthDate>2002-01-01</tns:birthDate>
    <tns:gender>Female</tns:gender>
    <tns:race>American Indian or Alaska Native</tns:race>
    <tns:ethnicity>Not Hispanic or Latino</tns:ethnicity>
    <tns:country>USA</tns:country>
    <tns:zipCode>22201</tns:zipCode>
    <tns:registrationDate>2014-01-01</tns:registrationDate>
    <tns:methodOfPayment>MANAGED_CARE</tns:methodOfPayment>
    <tns:disease codeSystem="Legacy Codes - CTEP">10001418</tns:disease>
  </tns:studySubject>
</tns:studySubjects>
```

## Update Accrual Count

### Description

This operation updates accrual counts for a participating site on an Abbreviated (Industrial) trial.

### HTTP Method

PUT

### URL

Three options are available:

1. `/sites/{siteID}/count?count={count}&cutOffDt={cutOffDate}`

- a. **{siteID}**. CTRP numeric identifier of a participating site.
- b. **{count}**. Mandatory parameter. The accrual count for the site.
- c. **{cutOffDate}**. The cut-off date for the accrual count, in the format MM-DD-YYYY.
- 2. **/trials/{idType}/{trialID}/sites/po/{poid}/ count?count={count}&cutOffDt={cutOffDate}**
  - a. **{idType}**. Type of identifier you want to use to identify a trial in CTRP. Possible values: *pa, nci, ctep, dcp*.
  - b. **{trialID}**. Trial identifier value itself.
  - c. **{poid}**. PO identifier of the organization that is the site on the trial.
  - d. **{count}**. Mandatory parameter. The accrual count for the site.
  - e. **{cutOffDate}**. The cut-off date for the accrual count, in the format MM-DD-YYYY.
- 3. **/trials/{idType}/{trialID}/sites/ctep/{id}/ count?count={count}&cutOffDt={cutOffDate}**
  - a. **{idType}**. Type of identifier you want to use to identify a trial in CTRP. Possible values: *pa, nci, ctep, dcp*.
  - b. **{trialID}**. Trial identifier value itself.
  - c. **{id}**. CTEP identifier of the organization that is the site on the trial.
  - d. **{count}**. Mandatory parameter. The accrual count for the site.
  - e. **{cutOffDate}**. The cut-off date for the accrual count, in the format MM-DD-YYYY.

## Request Body

None.

## Response Body

None (if successful) or an error message. MIME Type: `text/plain`.

## HTTP Response Codes

Code	Response
200	Success
400	Validation error
401	Authentication/Authorization Failure: invalid username/password or insufficient permissions to access the service
404	Participating site/study subject not found
500	Internal server error (includes the condition of updating/deleting a study subject that you don't have accrual access to)

## URL Examples

<https://trials-stage.nci.nih.gov/accrual-services/accrual-services/sites/28577/count?count=10&cutOffDt=03-10-2015>

<https://trials-stage.nci.nih.gov/accrual-services/trials/nci/NCI-2009-00939/sites/po/24567/count?count=10&cutOffDt=03-10-2015>

<https://trials-stage.nci.nih.gov/accrual-services/trials/nci/NCI-2009-00939/sites/ctep/CA067/count?count=135&cutOffDt=03-10-2015>

## Delete Study Subject

### Description

Deletes specific study subject (patient) accrual information from a participating site.

### HTTP Method

DELETE

### URL

Three options are available:

- 1. **/sites/{siteID}/subjects/{subjectID}**
  - a. **{siteID}**. CTRP numeric identifier of a participating site
  - b. **{subjectID}**. Study subject identifier
- 2. **/trials/{idType}/{trialID}/sites/po/{poid}/subjects/{subjectID}**
  - a. **{idType}**. Type of identifier you want to use to identify a trial in CTRP. Possible values: *pa, nci, ctep, dcp*.
  - b. **{trialID}**. Trial identifier value itself
  - c. **{poid}**. PO identifier of the organization that is the site on the trial
  - d. **{subjectID}**. Study subject identifier
- 3. **/trials/{idType}/{trialID}/sites/ctep/{ctepID}/subjects/{subjectID}**
  - a. **{idType}**. Type of identifier you want to use to identify a trial in CTRP. Possible values: *pa, nci, ctep, dcp*.
  - b. **{trialID}**. Trial identifier value itself
  - c. **{ctepID}**. CTEP identifier of the organization that is the site on the trial

d. **{subjectID}**. Study subject identifier

### Request Body

NONE

## Response Body

None (if successful) or an error message. MIME Type: text/plain.

## HTTP Response Codes

Code	Response
200	Success
400	Validation error
404	Study subject not found
500	Internal server error

## Examples

URL: <https://trials-stage.nci.nih.gov/accrual-services/trials/nci/NCI-2014-00233/sites/po/12733422/subjects/SU001>

## Submit CDUS Batch File for Asynchronous Processing

### Description

With this operation, you can upload a CDUS batch file. The system processes this file asynchronously and sends the results of processing by email to the submitting user.

## HTTP Method

Post

## URL

/batch

### Request Body

XML document with batchFile root element.

## Response Body

None (if successful) or an error message. MIME Type: text/plain.

### Example

URL: <https://trials-stage.nci.nih.gov/accrual-services/batch>

Content-Type: application/xml

Accept: application/xml

Body:

In this example, consider the following CDUS Accrual information for a typical CDUS Accrual file:

```
"COLLECTIONS", "NCI-2014-02593",,,,,,,,,,
"PATIENTS", "NCI-2014-02593", "g2", "20850", "US", "198003", "Male", "Not Reported", "Medicaid and Medicare", "
20140930", "120894",,,,,,,,,, "250.02",,
"PATIENT_RACES", "NCI-2014-02593", "g2", "White"
```

### How to Construct the Body:

1. Convert the CDUS Accrual information to Base64 encoding. You can do so using Base64 Encoding feature in the Notepad++ application. (Other tools can be found here: <https://www.google.com/#q=base64+encoding+tool>.) If you convert the above example information, the result would be as follows:

```
IknPTExFQ1RJt05TiiwiTkNJLTIwMTQtMDI1OTMiLCwSLCwSLCwSDQoiUEFUSUVOVFMiLCJOQ0ktMjAxNC0wMjU5MyIsImcyIiwiMjA4N  
TAiLCJVUyIsIjE5ODAwMyIsIk1hbGUiLCJOY3QgUmVwb3J0ZWQiLCJNZWRpY2FpZCBhbmQgTWVkaWNhcmUiLCIyMDE0MDkzMCIzLCIxMj  
A4OTQiLCwSLCwSLCwSLCIyNTAuMDIiLCwNCiJQQVRJRjU5UX1JBQ0VTIiwiTkNJLTIwMTQtMDI1OTMiLCJnMiIsIldoaXRlIg==
```

2. Insert the Base64 encoded text between <batchFile xmlns="gov.nih.nci accrual.webservices.types"> and </batchFile> tags, as follows:

```
<batchFile xmlns="gov.nih.nci accrual.webservices.types"  
>IknPTExFQ1RJt05TiiwiTkNJLTIwMTQtMDI1OTMiLCwSLCwSLCwSDQoiUEFUSUVOVFMiLCJOQ0ktMjAxNC0wMjU5MyIsImcyIiwiMjA4N  
NTAiLCJVUyIsIjE5ODAwMyIsIk1hbGUiLCJOY3QgUmVwb3J0ZWQiLCJNZWRpY2FpZCBhbmQgTWVkaWNhcmUiLCIyMDE0MDkzMCIzLCIxM  
jA4OTQiLCwSLCwSLCwSLCIyNTAuMDIiLCwNCiJQQVRJRjU5UX1JBQ0VTIiwiTkNJLTIwMTQtMDI1OTMiLCJnMiIsIldoaXRlIg==<  
/batchFile>
```