FHIR API User Guide

Version 1.0

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General

This guide is written for patients who wish to access their Electronic Health Information ("EHI") using an application of their choosing. This guide is also written for third party developers who are developing software applications for patients, providers and/or systems that wish to access identified EHI.

Tebra Technologies, provides FHIR APIs designed to satisfy the [United States Core Data for Interoperability (USCDI, version 1)](#) requirements set forth by the [Office of the National Coordinator (ONC)](#). The FHIR APIs are based on the [HL7 FHIR US Core Implementation Guide STU3 Release 3.1.1](#) which conform to the [FHIR Version R4](#). Tebra's implementation of R4 version is ongoing and new resources will be added.

Tebra has elected to partner with SmileCDR, a third party provider of FHIR services. At the time of registration, you will be required to accept SmileCDR's terms and conditions.

Getting Started

Terms & Conditions

Acceptance of Terms

You must accept this Tebra Terms of Use ("Agreement") in order to use the Tebra Fast Healthcare Interoperability Resource Application Programming Interface ("FHIR API"). This Agreement describes your rights and your obligations if you use the Tebra FHIR API. It is important that you read the Agreement carefully because you will be legally bound to these terms and your use of the Tebra FHIR API is subject to this Agreement. By accepting this Agreement or by accessing or using the Tebra FHIR API, you agree to be bound by this Agreement.

If you are entering into this Agreement on behalf of a company or other legal entity ("Entity"), you represent that you have the authority to bind such Entity to this Agreement. In that case, the terms "you" or "your" shall also refer to such Entity. If you do not have such authority, or if the Entity does not agree to be bound by this Agreement, the Entity and you may not use the

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Tebra FHIR API. You acknowledge that this Agreement is a contract between you and Tebra, even though it is electronic and is not physically signed by you and Tebra.

API Definitions

a) **Application:** Any software application, website, or product you create, or service you offer, using the Tebra FHIR API;
b) **API Documentation:** The documentation, data and information that Tebra provides regarding use of the Tebra FHIR API through the Developer Site;
c) **Developer Site:** Tebra's MACRA information and tools for developers is found at www.Tebra.com/macra;
d) **Tebra FHIR API:** The publicly available Tebra Fast Healthcare Interoperability Resource Application Programming Interface ("FHIR API") as well as the related FHIR API Documentation;
e) **Tebra Brand:** The Tebra brand and brand assets, including names, logos, trade names and trademarks.

FHIR API License

Tebra hereby grants you a revocable, limited, personal, non-sublicensable, non-exclusive, and non-transferable license to use the FHIR API to develop, test, and support your Application, and to integrate the Tebra FHIR API with your Application. Your license is subject to the limitations set forth in Section 4 and Section 9 below.

Use of FHIR APIs and Tebra Data

4.1   You may not use the Tebra FHIR API in a manner that accesses or uses any information beyond what Tebra allows under this Agreement or the FHIR API Documentation; that changes, breaks or circumvents any of Tebra's technical, administrative, process or security measures; that disrupts or degrees the performance of the Tebra FHIR API; or that tests the vulnerability of Tebra's systems or networks.

4.2   You may not transmit any viruses or other computer programming that may damage, detrimentally interfere with, surreptitiously intercept, or expropriate any system or data.

4.3   You may not attempt to reverse engineer or otherwise derive source code, trade secrets, or know-how in the Tebra FHIR API or any portion thereof.

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4.4   You may not use the Tebra FHIR API to replicate or compete with core products or services offered by Tebra. You acknowledge and agree that Tebra has or may in the future offer products or services that are similar to your Application, and nothing will prevent Tebra from doing so.

4.5   You may charge for your Application, *unless that application provides access for individual patients to their health information. All patients shall have direct access via the FHIR API to their health information, as outlined in the 21st Century Cures Act.* However, you may not sell, rent, lease, sublicense, redistribute, or syndicate access to the Tebra FHIR API.

4.6   You may place advertisements on and around your Application. However, you may not:

        a) place any advertisements that resemble or are reasonably likely to confuse users as being a message from Tebra; or

        b) use any content from Tebra in any advertisements or for purposes of targeting advertisements, in your Application or elsewhere.

4.7   You will not attempt to exceed or circumvent limitations on access, calls and use of the Tebra FHIR API, or otherwise use the Tebra FHIR API in a manner that exceeds reasonable request volume, constitutes excessive or abusive usage, or otherwise fails to comply or is inconsistent with any part of this Agreement or the Documentation.

4.8   You may not use the Tebra FHIR API in any Application that includes adult content, promotes gambling, involves the sale of tobacco or alcohol to persons under 21 years of age, or otherwise violates any applicable law or regulation.

4.9   You may not distribute or allow access to the Tebra FHIR API to anyone other than, if applicable, the Entity on whose behalf you entered into this Agreement.

<u>Security Measures</u>

5.1   The network, operating system and software of your web servers, databases, and computer systems (collectively, "Your Systems") must be properly configured to securely operate your Application. Your Application must use reasonable security measures to protect your users' information. You must not architect or select Your Systems in a manner to avoid the foregoing obligation.

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5.2   You must promptly report any security deficiencies in, or intrusions to, your Systems to Tebra in writing via email to security@Tebra.com or subsequent contact information posted on the Developer Site. You will work with Tebra to immediately correct any security deficiency, and will immediately disconnect any intrusions or intruders. In the event of any security deficiency or intrusion involving the Application, or the Tebra FHIR API you will make no public statements regarding such deficiencies or intrusions (e.g. press, blogs, social media, bulletin boards, etc.) without prior written and express permission from Tebra in each instance.

Ownership

As between you and Tebra, Tebra owns all right, title, and interest, including all intellectual property rights, in and to, the Tebra FHIR API, Documentation, and all elements and components thereof (collectively, the "Tebra Materials"). Except for the express license granted in this Agreement, Tebra does not grant you any right, title, or interest in or to the Tebra Materials. If you provide any feedback ("Feedback" is defined as any recommendations, enhancements, requests, suggestions or other similar activity) to Tebra regarding the Tebra FHIR API or Documentation, you hereby agree that Tebra will own any such Feedback and you hereby grant Tebra a perpetual, irrevocable, world-wide, and royalty-free license to use the Feedback for the purpose of improving and creating derivative works of Tebra's FHIR API and Documentation.

Term and Termination

7.1   This Agreement will go into effect on the date upon which you agree to them, by accessing or using the Tebra FHIR API, and will continue until terminated as set forth herein.

7.2   You may terminate this Agreement by discontinuing use of the Tebra FHIR API.

7.3   Upon termination of this Agreement

7.3.1   All rights and licenses granted to you will terminate immediately.

7.3.2   You will promptly destroy Documentation and any other Tebra information in your possession or control that was received under this Agreement.

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Modifications to this Agreement

Tebra may change, add to or delete any portion of this Agreement in its sole discretion. If Tebra does so, it will provide you with reasonable notice prior to the changes either by emailing the email address associated with your account or by posting a notice on the Developer Site. Your continued access or use of the Tebra FHIR API will mean that you agree to the changes.

Disclaimer of Warranties; Limitation of Liability; Indemnity

9.1 **NO WARRANTIES**. THE TEBRA FHIR API AND ALL RELATED COMPONENTS ARE PROVIDED ON AN "AS IS'' AND "AS AVAILABLE" BASIS WITHOUT ANY WARRANTIES OF ANY KIND, AND TEBRA EXPRESSLY DISCLAIMS ANY AND ALL WARRANTIES, WHETHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY, TITLE, FITNESS FOR A PARTICULAR PURPOSE, AND NON INFRINGEMENT.

YOU ACKNOWLEDGE THAT Tebra DOES NOT WARRANT THAT THE TEBRA FHIR API WILL BE UNINTERRUPTED, TIMELY, SECURE, ERROR-FREE OR VIRUS-FREE, NOR DOES IT MAKE ANY WARRANTY AS TO THE RESULTS THAT MAY BE OBTAINED FROM USE OF THE TEBRA FHIR API, AND NO INFORMATION, ADVICE OR SERVICES OBTAINED BY YOU FROM TEBRA OR THROUGH THE DEVELOPER SITE SHALL CREATE ANY WARRANTY NOT EXPRESSLY STATED IN THIS AGREEMENT.

9.2 **LIMITATION ON LIABILITY**. UNDER NO CIRCUMSTANCES AND UNDER NO LEGAL THEORY (WHETHER IN CONTRACT, TORT, OR OTHERWISE) SHALL TEBRA BE LIABLE TO YOU OR ANY THIRD PARTY FOR (A) ANY INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, CONSEQUENTIAL OR PUNITIVE DAMAGES, INCLUDING LOST PROFITS, LOST SALES OR BUSINESS, OR LOST DATA, OR (B) ANY MATTER BEYOND TEBRA's REASONABLE CONTROL. THE PROVISIONS OF THIS SECTION ALLOCATE THE RISKS UNDER THIS AGREEMENT BETWEEN THE PARTIES, AND THE PARTIES HAVE RELIED ON THESE LIMITATIONS IN DETERMINING WHETHER TO ENTER INTO THIS AGREEMENT. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OF IMPLIED WARRANTIES OR LIMITATION OF LIABILITY FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES, WHICH MEANS THAT SOME OF THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU. IN THESE JURISDICTIONS, TEBRA'S LIABILITY WILL BE LIMITED TO THE GREATEST EXTENT PERMITTED BY LAW.

9.3 **Indemnity**. You agree to defend, hold harmless and indemnify Tebra, and its subsidiaries, affiliates, officers, agents, employees, and suppliers, from and against any third

party claim arising from or in any way related to your or your users' use of the Application or the Tebra FHIR API, or any violation of this Agreement, including any liability or expense arising from all claims, losses, damages (actual and consequential), suits, judgments, litigation costs and attorneys' fees, of every kind and nature. In such a case, we will provide you with written notice of such claim, suit, or action.

Dispute Resolution

Any claim, cause of action or dispute ("Claim") arising out of or related to this Agreement shall be governed by the laws of the state of California, United States, regardless of your country of origin or where you access the Tebra FHIR API, and notwithstanding any conflicts of law principles and the United Nations Convention for the International Sale of Goods. You and Tebra agree that all Claims arising out of or related to this Agreement must be resolved exclusively in the courts located in the county of Orange, California or the U.S. District Court for the Central District of California. You and Tebra agree to submit to the personal jurisdiction of the courts located within the county of Orange, California or the Central District of California, and agree to waive any and all objections to the exercise of jurisdiction over the parties by such courts and to venue in such courts for the purpose of litigating all such Claims. Notwithstanding the above, you agree that Tebra shall still be allowed to apply for injunctive remedies in any jurisdiction.

General Legal Terms

11.1   If any provision of this Agreement is found to be illegal, void, or unenforceable, the unenforceable provision will be modified so as to render it enforceable to the maximum extent possible in order to effect the intention of the provision; if a term cannot be so modified, it will be severed and the remaining provisions of this Agreement will not be affected in any way.

11.2   You will comply with all applicable law, regulations and third-party rights (including, without limitation, HIPAA regulations and privacy laws).

11.3   Notice and Service of Process. We may notify you via postings on the Developer Site or via the email address associated with your Application. Tebra accepts service of process by mail or courier at the physical address set forth in Section 11.6 below. Any notices that you provide without compliance with this section shall have no legal effect.

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11.4   This Agreement and the FHIR API Documentation, constitute the entire agreement between you and Tebra regarding the Tebra FHIR API and supersedes all prior agreements and understandings, whether written or oral, or whether established by custom, practice, policy or precedent, with respect to the subject matter of this Agreement.

11.5   Our failure to act with respect to a breach of this Agreement by you or others does not waive our right to act with respect to that breach or subsequent similar or other breaches.

Fees

There is no requirement for contracting with Tebra, Inc for the API read (GET) for USCDIv1 data for Patient APIs. There are not fees for patients accessing their health data through FHIR APIs. There is no charge for usage of the read (GET) routes for USCDIv1 data for Patient APIs.

Clinician-focused and system bulk export applications will need to be registered with their practice site and sign necessary business engagement documents and contracts. These applications also require additional fees to enable workflow and system integration. Please contact Tebra for further details.

Registration

Patients

Patients can access their health information by using a patient application that follows the API specifications outlined elsewhere in this document and has been approved by Tebra. Patients are encouraged to consider due diligence when selecting an application. All applications are owned by third party developers and Tebra does not control their design. However, Tebra does encourage all developers to review and implement in accordance with ONC's [2019 Model Privacy Notice](#) guidelines.

Patients must have access to their provider's patient portal in order to register to use any patient app. Contact your physician's office for details on how to obtain a portal account.

Once a patient has access to their patient portal, the patient will need to consent to sharing their clinical data with the mobile application. Detailed instructions are available at Tebra's Help Center (https://helpme.Tebra.com/). All currently approved apps will be shared after consent.

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Patients will establish their FHIR login credentials through their portal account. After they have elected to opt-in, they will then see a link in their patient portal to the Tebra AppSphere site where they can select any registered and approved FHIR application.

Developer

Tebra FHIR APIs are only available to registered developers. Developers may request access for their applications through our AppSphere registration page: https://fhir.prd.cloud.tebra.com/appsphere/portal/#/login. From there, the developer will select the "Sign Up" to request a developer account.

After creating a developer account, the developer can log into the AppSphere to register the FHIR application. Upon selecting the "Register" button, the developer will be led through a series of questions and data fields regarding the application that they must complete.

After completing and submitting the registration, it will be reviewed by Tebra FHIR solutions team.

In the developer account, developers can also access and use a FHIR My Sandbox to conduct testing of their application.

Creating an appSphere account

Step 1: Log onto https://fhir.prd.cloud.tebra.com/appsphere. Then select the "Developer Portal" module option.

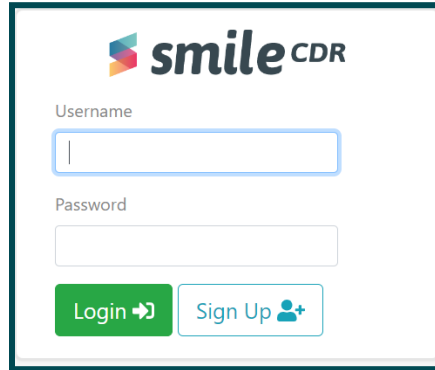**Modules**

- Admin Console
- Developer Portal
- Application Gallery

Note: Admin Console and Developer Portal require different user roles and running them simultaneously in the same browser may cause issues.

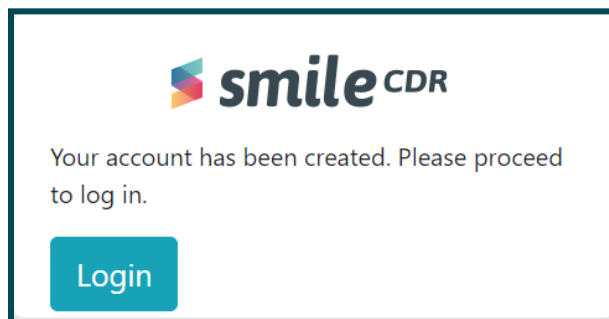Step 2: Click **Get Started** on *Smile appSphere* welcome page.

Step 3: To create an account, click **Sign Up**.

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On the next page, complete the following fields. Once completed click **Sign Up.**
- Username
- Password
- Family Name
- Given Name
- Email Address (must be a valid email address as this is used for communication)

Step 4: You will receive notice that your account has been created and you can click **Login** to return to the original sign-on page. Using your newly created username and password, login your account.

Creating a developer account

Step 1: After logging into your appSphere account, you will need to indicate whether you are an *individual* or a *registered business*. Depending on your selection, there will be an additional 1-3 fields to complete, before clicking **Next.**

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OR

Step 2: The next form will ask for additional information. Once completed, click **Submit** to enter the *Developer Portal.*

- Address
- City
- State
- Zip
- Country
- Work Phone
- Cell Phone
- Website, if applicable.

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Registering an App

From the *Developer Portal*, you will be able to register an App. There are a total of eight (8) steps to the process, and you will be guided through this with easy to read instructions. The asterisk (*) indicates a required field.

Step 1: Enter the **Name*** of the App.

Step 2: Enter the following:
- Supported Operating System* - Web, iOS, Android
- App Homepage URL*
- URL to the App's Privacy Policy*
- URL to the App's Terms of Service*
- Default OAuth Redirect URL*
- Additional OAuth Redirect URLs
- Web App Launch URL* (if Supported Operating System = Web)

Step 3: Enter App Descriptions
- Upload App Icon*
- Short App Description*
- Long App Description*

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Step 4: App Details
- Audience Category* - payer, provider, pharma, patient, developer
- App Use Category* - Health and Therapy Management; Provider Care Coordination; Clinical Applications; Research; Data Monitoring Analysis
- FHIR Versions Supported* - DSTU1, DSTU2,STU3, R4
- Privacy and Security Compliance - HIPAA, GDPR, Carin Code of Conduct, ONC Model Privacy Notice
- Authentication* - Public, Confidential, Confidential with JWKS, Confidential with URL for JWKS (recommended)

Step 5: Bulk Transfer Permissions
- Request All - if this is part of your configuration

Step 6: Request Scopes*
- Developer must type in all the scopes that are required for their application

Step 7: Review Notes
- Please enter notes for the reviewer to help them evaluate this submission. If this is a re-submission, please summarize the changes made.

Step 8: Legal Attestation
- Developers must **accept** the Legal Attestation in order for their application to proceed to review.
- Following is a printed version of the attestation for your reference.
- Click **Submit** once accepted.

Step 9: Once submitted**,** your application will show on the developer portal with a **Status** "In Review". Tebra's staff will review your application and notify you of acceptance.

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Technical Documentation

System Requirements

Apps using the Tebra FHIR API must be able to:

- Support SMART on FHIR authentication framework
- Connect via HTTPS with TLS 1.2 and 1.3
- Store the client_id and client_secret for authentication
- Process JSON response files

Authentication

Tebra FHIR Server uses the SMART Application Launch Framework Implementation Guide (http://hl7.org/fhir/smart-app-launch/1.0.0/) and provides an OAuth 2.0 compliant authorization server to enable patients and providers secure authentication access to their health data. As described by the specification itself, SMART on FHIR:

"Connects third-party applications to Electronic Health Record data, allowing apps to launch from inside or outside the user interface of an EHR system. The framework supports apps for use by clinicians, patients, and others via PHR or Patient Portal or any FHIR system where a user can give permissions to launch an app. It provides a reliable, secure authorization protocol for a variety of app architectures, including apps that run on an end-user's device as well as apps that run on a secure server."

Patient User Access

Through their selected application, patients will be prompted for their FHIR login and credentials which they established in their patient portal accounts. SMART on FHIR enables the user to authenticate themselves with our Tebra FHIR Authorization Server and choose the scope of their patient data which they intend to access and share with their application. This decision provides an access token to their application of choice, and applications which are compliant with SMART on FHIR can then use this access token to access their health data stored on the Tebra FHIR Server. These applications will continue to have access to the patient data until the patient revokes their access permission.

Clinician User Access

Clinician users of Tebra EHR can also use approved SMART on FHIR applications to access patient data in the system. These clinician-focused applications will need to sign the necessary business agreements with the practices to integrate with their provider

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accounts. Once approved and integrated within their practice, clinician users will create or be assigned FHIR login credentials and then be able to use these SMART on FHIR applications to access their Tebra EHR systems.

System or Bulk Data Access

Tebra FHIR Server also supports the FHIR Bulk Data Access framework (http://hl7.org/fhir/uv/bulkdata/STU1/) for system-level access of large volumes of data over FHIR. Like with clinician-focused applications, developers of FHIR Bulk clients must sign any necessary business agreements and do additional integration steps to make the application available to the practice's patient accounts.

Bulk FHIR uses a JSON Web Token (JWT) to enable application authentication and access between the application and the FHIR server. This will be established in the initial setup and registration of the product.

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Function Names & Resources

USCDI Data Classes/Elements	US Core Profiles	FHIR Resources	Scope
Allergies and Intolerances: • Substance (Medication) • Substance (Drug Class) • Reaction	US Core AllergyIntolerance Profile	AllergyIntolerance	Search, Read
Assessment and Plan of Treatment	US Core CarePlan Profile	CarePlan	Search, Read
Care Team Members	US Core CareTeam Profile	CareTeam	Search, Read
Clinical Notes: • Consultation Note • Discharge • Summary Note • History & Physical • Progress Note • Consultation Note	US Core DocumentReference Profile	DocumentReference	Search, Read
Clinical Notes: • Imaging Narrative • Laboratory Report Narrative • Pathology Report Narrative • Procedure Note	US Core Document Reference Profile US Core DiagnosticReport Profile for Report and Note Exchange	DocumentReference Diagnostic Report	Search, Read
Goals: • Patient Goals	US Core Goal Profile	Goal	Search, Read
Goals: • Health Concerns	US Core Condition Profile	Condition	Search, Read

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Immunizations	US Core Immunizations Profile	Immunization	Search, Read
Laboratory: ● Tests ● Values/Results	US Core Laboratory Result Observation Profile US Core DiagnosticReport Profile for Report and Note Exchange	Observation Diagnostic Report	Search, Read
Medications	US Core Medication Profile US Core Medication Request Profile	Medication Medication Request	Search, Read
Patient Demographics: ● First Name ● Last Name ● Previous Name ● Middle Name/Initial ● Suffix ● Birth Sex ● Date of Birth ● Race ● Ethnicity ● Preferred Language ● Address ● Phone Number	US Core Patient Profile	Patient.name.given Patient.name.family Patient.name Patient.name.given Patient name.suffix US Core Birth Sex Ext. Patient.birthDate US Core Race Extension US Core Ethnicity Ext Patient.communication Patient.address Patient.telecom	Search, Read
Problems	US Core Condition Profile	Condition	Search, Read
Procedures	US Core Procedure Profile	Procedure	Search, Read
Provenance: ● Author Time Stamp ● Author Organization	US Core Provenance Profile	Provenance Provenance.recorded Provenance.agent	Search, Read
Smoking Status	US Core Smoking Status Observation	Observation	Search, Read

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	Profile		
<u>Implantable Device</u>	US Core <u>Implantable Device</u> Profile	Device	Search, Read
<u>Vitals</u>: ● Diastolic blood pressure ● Systolic blood pressure ● Body height ● Body weight ● Heart rate ● Respiratory rate ● Body temperature ● Pulse oximetry ● Inhaled oxygen concentration ● BMI Percentile (ages 2-20) ● Weight-for-length (0-36mos) ● Occipital-frontal Head Circumference (0-36mos)	<u>B/P systolic and diastolic</u> <u>B/P systolic and diastolic</u> <u>Body Height</u> <u>Body Weight</u> <u>Heart Rate</u> <u>Respiratory Rate</u> <u>Body Temperature</u> US Core <u>Pulse Oximetry</u> Profile US Core <u>Pulse Oximetry</u> Profile US Core <u>Pediatric BMI for Age</u> US Core <u>Pediatric Weight for Height</u> US Core <u>Pediatric Head Circumference</u>	Observation	Search, Read

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API Information

Supported Product: Tebra (Kareo)EHR version 5.0
Production Base URL: https://fhir.prd.cloud.tebra.com/
Authorization Endpoint: https://fhir.prd.cloud.tebra.com/smartauth/
FHIR Base URL: https://fhir.prd.cloud.tebra.com/fhir-request

Patient

Patient	Retrieves a patient	
Request	https://fhir.prd.cloud.tebra.com/fhir-request/Patient	
Method	GET	

Parameters	Description	Required
id	The id of the patient	Yes
identifier	Identifier such as a MPI	No
name	Match any part of the name	No
birthdate + name	Specified birthdate and name	No
gender + name	Specified gender and name	No

AllergyIntolerance

AllergyIntolerance	Retrieves allergies/adverse reactions for a patient	
Request	https://fhir.prd.cloud.tebra.com/fhir-request/AllergyIntolerance	
Method	GET	

Parameters	Description	Required
patient	All allergy and intolerances for a patient	Yes

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CarePlan

CarePlan	Retrieves assessment and plan of treatment for a patient	
CarePlan	Retrieves assessment and plan of treatment for a patient	
Request	https://fhir.prd.cloud.tebra.com/fhir-request/CarePlan	
Method	GET	
Parameters	**Description**	**Required**
Patient + category	All CarePlan resources by category	Yes

CareTeam

CareTeam	Retrieves persons who participate in patient's care	
CareTeam	Retrieves persons who participate in patient's care	
Request	https://fhir.prd.cloud.tebra.com/fhir-request/CareTeam	
Method	GET	
Parameters	**Description**	**Required**
Patient + status	All member of care team for patients of an identified status (i.e active)	Yes

Condition

Condition	Retrieves problems, health concerns and encounter diagnosis	
Condition	Retrieves problems, health concerns and encounter diagnosis	
Request	https://fhir.prd.cloud.tebra.com/fhir-request/Condition	
Method	GET	
Parameters	**Description**	**Required**
patient	All conditions resources for a patient	Yes

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Diagnostic Report for Lab Results

DiagnosticReport	Retrieves lab tests and results for a patient
Request	https://fhir.prd.cloud.tebra.com/fhir-request/DiagnosticReport
Method	GET

Parameters	Description	Required
patient	All DiagnosticReport results	Yes
patient + category	All DiagnosticReport results from a particular category (i.e. lab)	No
patient + code	All DiagnosticReport results and a specific code	No
patient + category + date	All DiagnosticReport results within a particular category and for a specific date	No

Diagnostic Report for Report and Note

DiagnosticReport	Retrieves DiagnosticReport results
Request	https://fhir.prd.cloud.tebra.com/fhir-request/DiagnosticReport
Method	GET

Parameters	Description	Required
patient	All DiagnosticReport resources	Yes
patient + category	All DiagnosticReport resources identified by a category code (i.e. LP29684-5 for all radiology reports)	No

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| patient + code | All DiagnosticReport resources identified by a category code (i.e. 24323-8 for all CMP) | No |
| patient + category + date | All DiagnosticReport resources within a category and having a specific code | No |

DocumentReference

DocumentReference	Retrieves patient documents, including clinical notes
Request	https://fhir.prd.cloud.tebra.com/fhir-request/DocumentReference
Method	GET

Parameters	Description	Required
id	The id of a single document	No
patient	All documents for a specific patient	Yes
patient + category	All documents identified by a category code (i.e. clinical-note)	No
Patient + category + date	All documents within a category and for a specific date	No
Patient + type	All documents for a specific patient and type (i.e. 18842-5 for a discharge summary)	No

Encounter

Encounter	Retrieves basic encounter information for a patient
Request	https://fhir.prd.cloud.tebra.com/fhir-request/Encounter
Method	GET

Parameters	Description	Required
id	All encounter information for a specific patient	No

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patient	All encounter information for a specific patient	Yes
date + patient	All encounter information for a specific patient on a specific date	No

Goal

Goal	Retrieves all goal information for a patient
Request	https://fhir.prd.cloud.tebra.com/fhir-request/Goal
Method	GET

Parameters	Description	Required
patient	All goal information for a specific patient	Yes

Immunization

Immunization	Retrieves immunization history for a patient
Request	https://fhir.prd.cloud.tebra.com/fhir-request/Immunization
Method	GET

Parameters	Description	Required
patient	All immunization history for a patient	Yes

Implantable Device

Device	Retrieves all Implantable Device information for a patient
Request	https://fhir.prd.cloud.tebra.com/fhir-request/Device
Method	GET

Parameters	Description	Required

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patient	All UDI information for a specific patient	Yes

Laboratory Result Observation

Observation | Laboratory	Retrieves all results for a patient under the laboratory category
Request	https://fhir.prd.cloud.tebra.com/fhir-request/Observation
Method	GET

Parameters	Description	Required
patient + category	All lab results identified by laboratory category	Yes
Patient + category + date	All lab results within laboratory category and for a specific date	No
Patient + code	All lab results for a specific observation code (i.e. ketones)	No

Location

Location	Retrieves a location associated with a patient
Request	https://fhir.prd.cloud.tebra.com/fhir-request/Location
Method	GET

Parameters	Description	Required
name	All location resources that match a name	Yes
address	All location resources that match the address	no

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Medication

MedicationRequest	Retrieves medication, in conjunction with MedicationRequest query
Request	https://fhir.prd.cloud.tebra.com/fhir-request/Medication
Method	GET

Parameters	Description	Required
N/A	N/A	N/A

MedicationRequest

MedicationRequest	Retrieves medication history for a patient
Request	https://fhir.prd.cloud.tebra.com/fhir-request/MedicationRequest
Method	GET

Parameters	Description	Required
patient + intent	All medications with a specific intent code (i.e. order)	Yes
patient + intent + status	All medications with a specific intent code and status code (i.e. active)	No

Observation

Observation	Retrieves observations for a specific patient; may include any of the following: ● Diastolic Blood Pressure - Blood pressure systolic and diastolic (FHIR Core Profile) ● Systolic Blood Pressure - Blood pressure systolic and diastolic (FHIR Core Profile) ● Body Height - Body height (FHIR Core Profile) ● Body Weight - Body weight (FHIR Core Profile) ● Heart Rate - Heart rate (FHIR Core Profile) ● Respiratory Rate - Body temperature (FHIR Core Profile)

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	- Body Temperature - Body temperature (FHIR Core Profile) - Pulse Oximetry - US Core Pulse Oximetry Profile (Builds on FHIR Core Profile) - Inhaled Oxygen Concentration - US Core Pulse Oximetry Profile (Builds on FHIR Core Profile) - BMI Percentile (2-20 years old) - US Core Pediatric BMI for Age Observation Profile (Builds on FHIR Core Profile) - Weight-for-Length Percentile (Birth-36 months) - US Core Pediatric Weight for Height Observation Profile (Builds on FHIR Core Profile) - Occipital-frontal Head Circumference Percentile (Birth-36 months) - US Core Pediatric Head Occipital Frontal Circumference Observation Profile (Builds on FHIR Core Profile) - Smoking Status
Request	https://fhir.prd.cloud.tebra.com/fhir-request/Observation
Method	GET

Parameters	Description	Required
patient	All observations for a specific patient	Yes
patient + code	All observations for a specific patient with a specific code (85354-9 for blood pressure)	No
patient + category	All observation for a specific patient within a specific category (i.e. vital signs)	No
patient + category + date	All observation for a specific patient within a specific category (i.e. vital signs) and a specific date	No

Organization

Organization	Retrieves organization associated with a patient or a provider
Request	https://fhir.prd.cloud.tebra.com/fhir-request/Organization
Method	GET

Parameters	Description	Required
name	All organization resources matched to an organization's name	Yes
address	All organization resources matched to an organization's address	No

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Practitioner

Practitioner	Retrieves basic demographics about a practitioner	
Request	https://fhir.prd.cloud.tebra.com/fhir-request/Practitioner	
Method	GET	

Parameters	Description	Required
name	All demographics for a practitioner identified by name	Yes
identifier	All demographics for a practitioner identified by an identified (i.e. NPI)	No

PractitionerRole

PractitionerRole	Retrieves the role of a practitioner	
Request	https://fhir.prd.cloud.tebra.com/fhir-request/PractitionerRole	
Method	GET	

Parameters	Description	Required
specialty	Practitioner identified by specialty	No
practitioner	Practitioner identified by any part of a name	No

Procedure

Procedure	Retrieves procedures associated with a patient	
Request	https://fhir.prd.cloud.tebra.com/fhir-request/Procedure	
Method	GET	
Parameters	Description	Required

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patient	All procedures for a specific patient	Yes
patient + date	All procedures for a specific patient and a specific date	No

Provenance

Provenance	Retrieves author and date information for elements of a patient's EHI
Request	https://fhir.prd.cloud.tebra.com/fhir-request/Provenance
Method	GET

Parameters	Description	Required
patient + revinclude= Provenance	Retrieves resources for a specific patient	Yes
id + revinclude= Provenance	Retrieves resources for a specific US Core Profile resource type	No

Common Error Codes

Tebra makes every effort to ensure the FHI API works correctly. If there is an issue, the FHIR API will return standard HTTP error messages. The most common are listed below.

Client Errors

Code		
400	Bad Request	The server cannot process the request due to an apparent client error.
401	Unauthorized	The required authentication failed or was not provided.
403	Forbidden	A valid request was received, but refused by the

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		server. Typically, this is due to the user not having the necessary permissions for the specified resource.
404	Not Found	The requested resource could not be found.
408	Request Timeout	The server timed out waiting for the request.
429	Too Many Requests	Too many requests have been sent in a given time period.

- Check your API request for misspellings and other incorrect syntax.
- Make sure the request has a valid token and matches the request.
- Compare the request with the list of supported FHIR resources and scopes.

Server Errors

Code		
500	Internal Server Error	A generic error message for an unexpected condition
502	Bad Gateway	The gateway proxy server received an invalid response from the upstream server
503	Service Unavailable	The server cannot handle the request, typically because it is overloaded or down for maintenance.
504	Gateway Timeout	The gateway/proxy server did not receive a timely response from the upstream server.

- In case of a server error, first wait a few minutes before sending another request

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