

GeeseMed FHIR API documentation

Product Name and Version

GeeseMed 7.1

Introduction

This documentation outlines the steps required for authorized access to Protected Health Information (PHI) through the GeeseMed EHR FHIR APIs.

These APIs enable secure and standardized access to healthcare data using FHIR (Fast Healthcare Interoperability Resources), developed by HL7 to support clinical interoperability across systems.

This guide also describes the use of OAuth 2.0 for authentication and authorization, allowing client applications to securely request and access FHIR-based resources.

Application Access Requests

Base URL

All FHIR API requests should be made to:

<https://sandbox-r4.interopengine.com/fhir/r4/mdofficemanager>

Authentication & Authorization

Before accessing FHIR APIs, client applications must obtain an access token from the GeeseMed Authorization Server.

Geesemed supports the following OAuth 2.0 flows:

- **Authorization Code Grant** (for user-facing applications)
- **Client Credentials Grant** (for backend/system integrations)

Client Registration

Third-party application vendors must submit the following details via email itsupport@mdofficemanager.com

1. Application Name
2. Application Type
 - Patient-Specific
 - Provider-Specific
3. Brief Description of the Application

4. Required APIs / Scopes
5. Launch URL (optional)
6. Redirect URL
7. Application Developer Name

After submission:

- The API Subscription Agreement must be signed by the application vendor
- The GeeseMed EHR administrator reviews the request
- Upon approval, a **client_id** is issued to the application

Supported Data Access

GeeseMed currently supports:

- **Read-only access** to FHIR resources
- APIs aligned with the **USCDI v3 core dataset**
- Supported FHIR versions available via the platform

SMART on FHIR Application Types

GeeseMed supports the following SMART on FHIR application types:

1. Standalone Applications

- Operate independently of the EHR UI
- Use Authorization Code flow
- Support:
 - Patient context
 - Refresh tokens
 - OpenID Connect (OIDC) identity tokens

2. EHR Embedded Applications

- Launched directly from within the GeeseMed EHR
- Support SMART on FHIR EHR launch context
- Enable in-workflow access for providers

3. Backend Services Applications (System-to-System)

- Use Client Credentials Grant

- No user interaction required
- Designed for:
 - Bulk data export
 - Multi-patient data access
- Example use case:
 - Export clinical data for a patient population

Authorization Code Flow (User-Based Access)

Endpoint	URL
Authorization	https://sandbox-r4.interopengine.com/oauth/mdofficemanager/authz
Token	https://sandbox-r4.interopengine.com/oauth/mdofficemanager/token
Registration	https://sandbox-r4.interopengine.com/oauth/mdofficemanager/register
Manage	https://sandbox-r4.interopengine.com/oauth/mdofficemanager/manage

1. The client application redirects the user to:

<https://sandbox-r4.interopengine.com/oauth/mdofficemanager/authz>

2. The user logs in using GeeseMed credentials
3. The user grants consent
4. An authorization code is returned to the client
5. The client exchanges the code for an access token at:

<https://sandbox-r4.interopengine.com/oauth/mdofficemanager/token>

6. The API returns an access token for accessing FHIR resources

Client Credentials Flow (Backend Access)

- The client authenticates directly with the token endpoint
- No user interaction is required
- Access tokens are issued for system-level operations

Notes & Constraints

- Only approved and registered applications can access the APIs
- All API access is subject to granted scopes

- Data access is restricted to read operations
- Compliance with applicable healthcare data regulations is required

Token Management & Security

Refresh Tokens

Client applications using the Authorization Code Grant may request a refresh token by including the `offline_access` scope in the initial authorization request.

- The end user may choose to deny this scope during consent.
- If approved, a refresh token will be issued along with the access token, in accordance with RFC 6749.
- Refresh tokens can be used to obtain new access tokens without requiring the user to re-authenticate.

GeeseMed Policy:

- Default refresh token validity: **90 days** (subject to change based on organizational policies)
- Refresh tokens are **single-use only**
- Each successful token refresh returns:
 - A new access token
 - A new refresh token

Client applications must securely store refresh tokens.

Note:

Refresh tokens are **not issued** for applications using the Client Credentials Grant, as these applications can directly request new access tokens from the token endpoint.

PKCE (Proof Key for Code Exchange)

GeeseMed requires Proof Key for Code Exchange (PKCE) for all applications using the Authorization Code Grant, as defined in RFC 7636.

- Only the **S256** code challenge method is supported
- Clients must include:
 - `code_challenge` in the authorization request
 - `code_verifier` in the token request

PKCE enhances security by protecting authorization codes from interception attacks.

Access Token Usage

All API requests must include a valid access token in the HTTP Authorization header using the Bearer token scheme, as defined in RFC 6750.

Example: Authorization: Bearer {access_token}

Error Handling

The API will return standard HTTP status codes in the following scenarios:

- **401 Unauthorized**
Returned when the access token is missing, expired, or invalid
- **403 Forbidden**
Returned when the access token is valid but does not have sufficient permissions (scopes) for the requested resource

External API Documentation

GeeseMed FHIR APIs are powered by the EMR Direct Interoperability Engine platform. For full API specifications, including resource structures and supported operations, refer to: <https://www.interopengine.com/2026/open-api-documentation.html>

Please note:

- This guide documents GeeseMed-**specific endpoints, authentication, and access policies**
- The external documentation provides **standard API behavior and resource definitions** based on FHIR

References:

<https://appstudio.interopengine.com/>

<https://www.interopengine.com/>

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4. Application developer affirmations to Certified API Developers regarding the ability of their applications to secure a refresh token, a client secret, or both, must be treated in a good faith manner