

CMS ACCESS Model API

Operations Manual – Version 0.9.12 DRAFT

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General Guidance

This Operations Manual provides general implementation guidance applicable to all ACCESS Model APIs.

Common Patterns

All ACCESS Model APIs follow consistent asynchronous processing and parameter patterns for ease of implementation. The Alignment API uses an asynchronous request-response pattern to accommodate the processing time required for backend logic. This pattern allows clients to submit requests and subsequently poll for results without maintaining a persistent connection. The pattern uses two sets of operations to support a submit-and-poll workflow:

1. **\$check-eligibility, \$align, \$unalign, \$report-data:** Submits a request to the API
2. **\$submission-status:** Polls for the status of a submitted request

Why Asynchronous?

ACCESS operations can take some time to complete, making a synchronous request-response pattern impractical for real-world implementations.

Processing these operations may require additional steps, such as:

- Conducting additional data validation specific to the ACCESS Model
- Processing complex composition structures with nested sections
- Integrating with multiple backend systems to evaluate ACCESS Model requirements
- Applying control group randomization algorithms

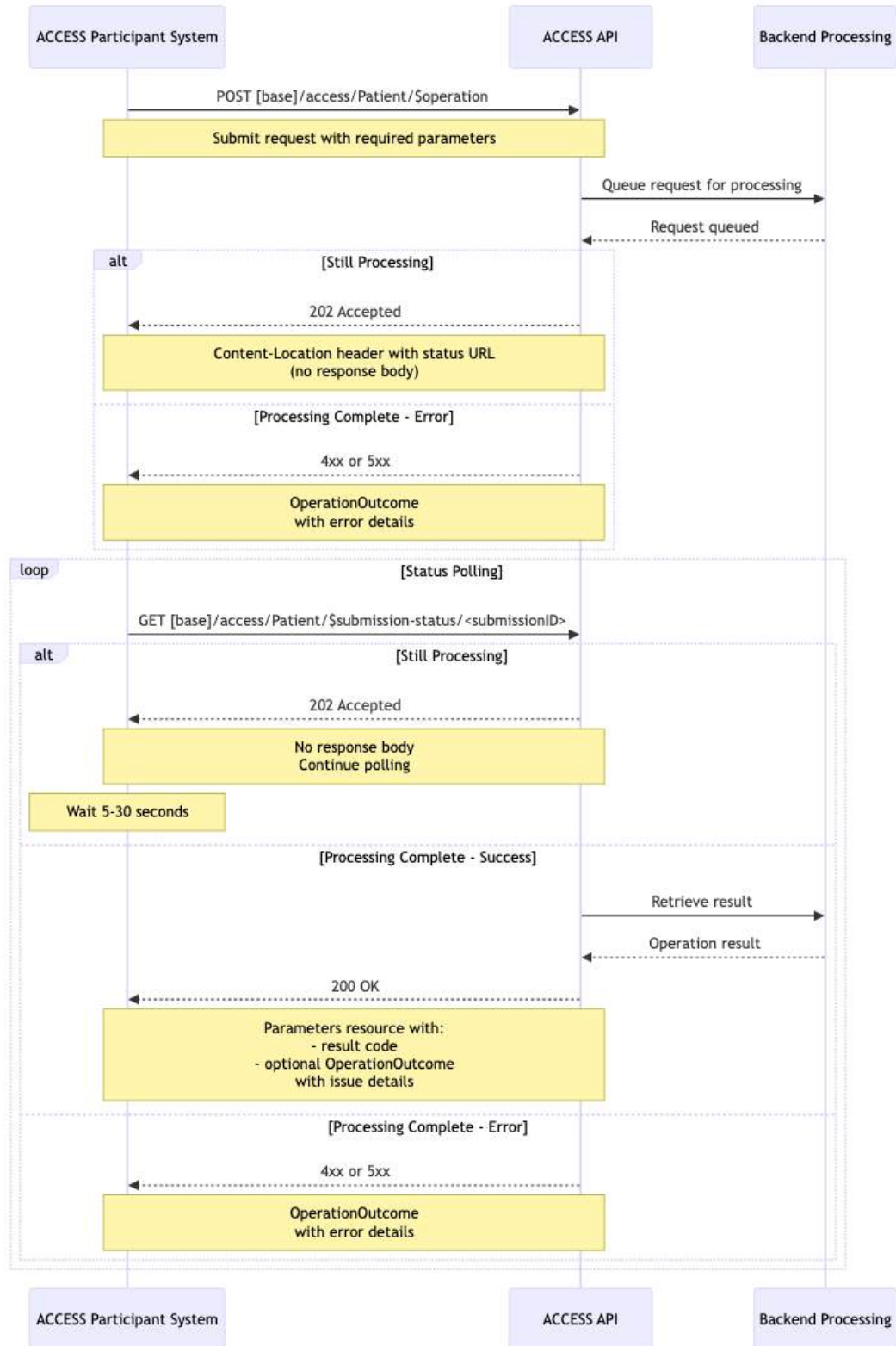
Workflow Overview

The typical workflow consists of the following steps:

1. **Submission:** The client submits a `$check-eligibility`, `$align`, `$unalign`, `$report-data` operation
2. **Acknowledgment:** The server returns `HTTP 202 Accepted` with a `Content-Location` header containing the URL for retrieving submission status
3. **Polling:** The client periodically polls using the `$submission-status` operation through the submission status URL provided
4. **Completion:** When processing completes, the submission status returns `HTTP 200 OK` with the final result

Interaction Pattern:

The following sequence diagram illustrates the general asynchronous pattern used by all ACCESS APIs:



Required Parameters

All primary operations (`$check-eligibility`, `$align`, `$unalign`, `$report-data`) require these common parameters:

- **participantID** - ACCESS participant identifier. This identifier is supplied to the ACCESS participant during the Request for Application (RFA) process and takes the form of "ACCES<5-digit number>" (ACCES00001, ACCES12345)
- **payerID** - The payer ID for the patient. Uses the X12 EDI Payer ID standard (`urn:oid:2.16.840.1.113883.3.221.5`) with [CARIN Blue Button identifier typing] (<http://hl7.org/fhir/us/caribb/CodeSystem/C4BBIIdentifierType>). EDI Payer IDs are 5-character alphanumeric codes widely used in healthcare transactions (e.g., eligibility checks, claims, remittance).
- Patient profile instance, containing the `identifier`, `name`, `gender` of the patient - this information conforms with the US Core Patient Profile requirements. The `$check-eligibility`, `$align`, and `$unalign` operations have a patient parameter. The `$report-data` operation requires the Patient profile instance to be included in the `dataBundle` parameter instead of as a separate top-level parameter.
- **track** - One of the ACCESS Model tracks (eCKM, CKM, MSK, BH)

Some operations may require additional parameters. Please consult the documentation in this guide for information about each specific API.

`$submission-status` Operation

The `$submission-status` operation retrieves the current status of a previously submitted request. This is a **read-only operation** that uses the HTTP GET method. The URL to use to retrieve the submission status is returned by the primary operation (extracted from the `Content-Location` URL).

Submission Status URL: GET <submission status URL>

Output Parameters (when complete):

- **result** (CodeableConcept, required): Result code with descriptive text indicating the status. Actual values depend on the API in use.
- **issues** (OperationOutcome, optional): This parameter **MAY** be included to provide more detail about the context of the result code.

Example Response from a Primary Operation:

```
HTTP/1.1 202 Accepted
Content-Location: https://[base]/access/Patient/$submission-
status/sub-123456
```

(No response body - processing asynchronously)

Implementation Guidance

Base URL

All primary operations are invoked at the resource level:

```
POST https://[base]/access/[resource]/[$operation]?
      entityId=[participantID]
```

Where [base] is the FHIR server base URL provided during participant registration.

Where [resource] is Patient.

Where [\$operation] is the primary dollar sign operation (\$check-eligibility, \$align, \$unalign, \$report-data)

Where [entityId] is the Participant ID (e.g., of the form ACCES#####)

Content Types

- **Request:** application/json
- **Response:** application/json

Patient Identification

All APIs require a US Core Patient profile instance containing an **identifier**. Each API requires the patient's member ID (e.g., for CMS's ACCESS Model, the patient's MBI) in the Patient resource **identifier** data element. For CMS's ACCESS Model only, a patient must be a Medicare beneficiary to be eligible and align to a CMS ACCESS participant:

```
{
  "resourceType": "Patient",
  "identifier": [
    {
      "type": {
        "coding": [
          {
            "system": "http://terminology.hl7.org/CodeSystem/v2-
0203",
            "code": "MC"
          }
        ]
      },
      "system": "http://terminology.hl7.org/NamingSystem/cmsMBI",
      "value": "1EG4TE5MK73"
    }
  ],
  "name": [
    {
      "family": "Doe",
      "given": ["John"]
    }
  ],
  "gender": "male",
```

```
    "birthDate": "1950-01-01"  
  }
```

NOTE: The ACCESS Model leverages the US Core Patient FHIR profile, which has the following additional requirements beyond the Patient identifier:

In addition to an identifier, each Patient must have:

1. Patient name
2. Gender (male, female, other, or unknown)

Each Patient must support the following data elements and SHOULD include them in submissions:

1. Birth date

Please see the documentation on US Core Patient profile at <https://hl7.org/fhir/us/core/STU6.1/StructureDefinition-us-core-patient.html> for more information.

NOTE: The IG will accept any patient identifier and payer identifier so that this IG can be used by other payers looking to align with the ACCESS Model.

Using the Content-Location HTTP Header

ACCESS operations return a Content-Location HTTP header containing the URL to check the status of the submission. Clients should:

1. Extract the Content-Location header value from the HTTP response
2. Use this URL for subsequent \$submission-status calls

Example:

```
Content-Location: https://[base]/access/Patient/$submission-  
status/sub-123456
```

Polling Strategy

Clients should implement an appropriate polling strategy to balance responsiveness with server load:

- **Initial Poll:** Wait 5-10 seconds after submission before the first status check
- **Subsequent Polls:** Poll every 10-30 seconds while receiving HTTP 202 Accepted
- **Maximum Duration:** Implement a timeout (recommended: 5 minutes) after which the client should stop polling and notify the user; the actual timeout duration should be configured based on operational requirements
- **Exponential Backoff:** Consider implementing exponential backoff to reduce server load for long-running requests

Polling Logic:

1. Initiate the ACCESS operation (POST \$<operation> with required parameters)
2. Receive HTTP 202 with Content-Location
3. Wait initial delay (5-10 seconds)
4. While (timeout not exceeded):
 - a. Poll status (GET \$submission-status)
 - b. If HTTP 202: wait and continue loop
 - c. If HTTP 200: process result and exit
 - d. If HTTP 4xx/5xx: handle error and exit
5. If timeout exceeded: handle as error

Interpreting Responses

HTTP 202 Accepted: The request is being processed. No result is available yet. Continue polling.

HTTP 200 OK: Processing is complete. The response body contains a Parameters resource with the result. For example, here is a sample response from a successful request:

```
{
  "resourceType": "Parameters",
  "parameter": [{
    "name": "result",
    "valueCodeableConcept": {
      "coding": [{
        "system": "https://dsacms.github.io/cmml-access-
model/CodeSystem/ACCESSAlignmentResultCS",
        "code": "aligned",
        "display": "Aligned"
      }],
      "text": "Patient is eligible and has been aligned so the
ACCESS participant can now begin providing services to the patient
under the model."
    }
  ]
}
```

Clients should:

1. Extract `parameter[0].valueCodeableConcept` from the Parameters resource
2. Check `coding[0].code` against known alignment result codes
3. Display text element for user-friendly messaging
4. Take appropriate action based on the result code for the particular API. These actions are covered in the documentation for each API.

Error Handling

Clients should be prepared to handle the following conditions:

HTTP Status Code Errors:

- **400 Bad Request:** Malformed request - check Parameters structure and required fields
- **404 Not Found:** Submission ID not found - verify the submission ID is correct
- **500 Internal Server Error:** Server processing error - retry after delay or contact support
- **503 Service Unavailable:** Service temporarily unavailable - implement retry logic

Client-Side Errors:

- **Timeout:** No response received after maximum polling duration - log and notify user
- **Network Error:** Connection failure - implement retry logic with exponential backoff

Best Practice: Always check HTTP status codes before attempting to parse the response body. Only HTTP 200 responses contain the result from the original request.

Security Considerations

- All API interactions **SHALL** use TLS 1.3
- Clients **SHALL** authenticate using approved OAuth 2.0
- Submission identifiers should be treated as sensitive information and protected accordingly
- Clients should implement appropriate audit logging for all requests
- The `Content-Location` HTTP header URL may contain sensitive identifiers and should be handled securely

Best Practices

1. **Idempotency:** Avoid submitting duplicate requests for the same patient
2. **Resource Validation:** Validate input resources against FHIR profiles before submission
3. **MBI Handling:** Ensure Medicare Beneficiary Identifiers (MBIs) are handled according to CMS data sharing policies
4. **Result Code Handling:** Implement robust parsing for all possible result codes
5. **Submission ID Management:** Store submission IDs securely and maintain their association with original requests

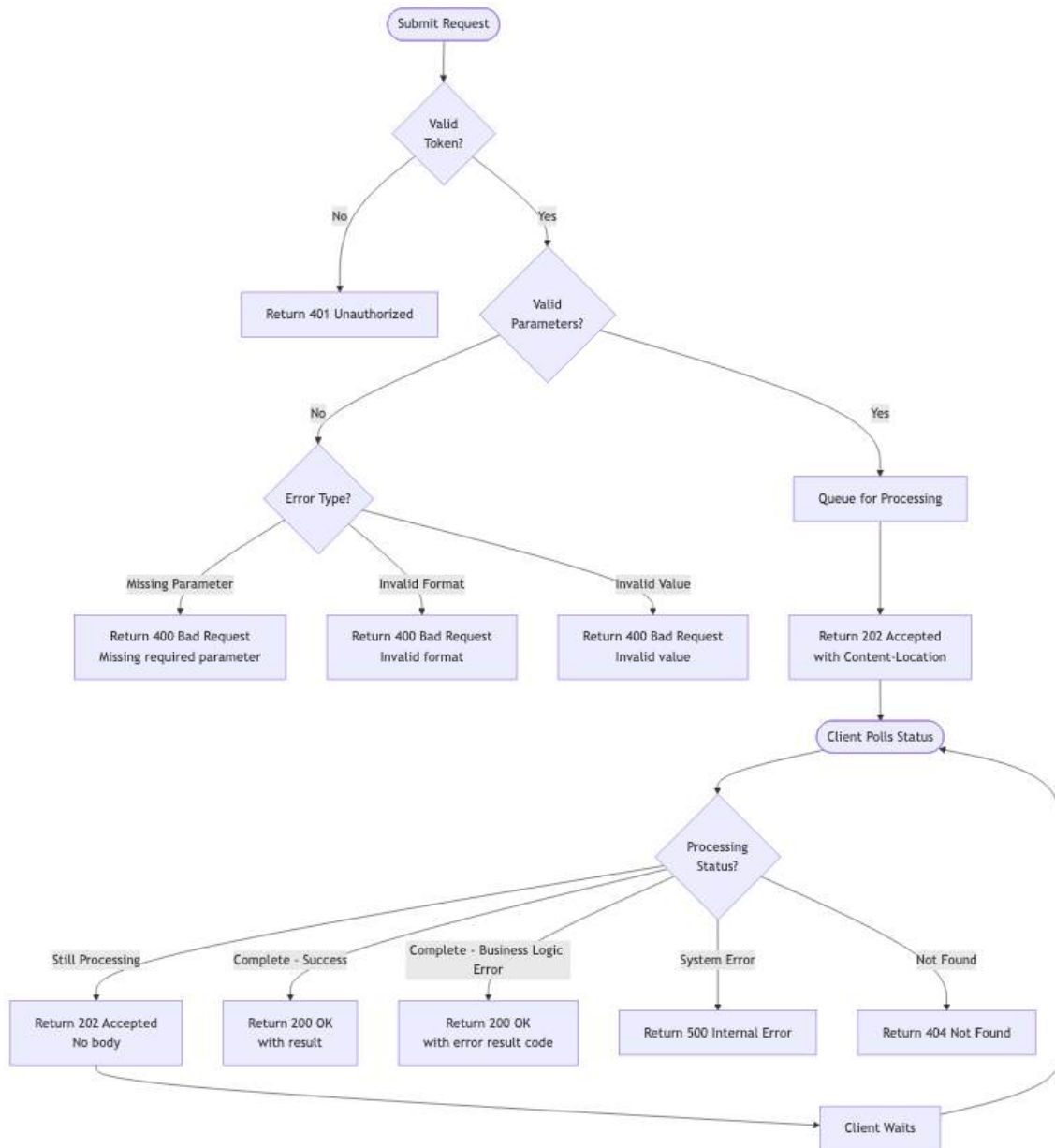
OperationOutcome

Errors are returned using FHIR OperationOutcome resources:

```
{
  "resourceType": "OperationOutcome",
  "issue": [
    {
      "severity": "error",
      "code": "invalid",
      "details": {
        "text": "Missing required parameter: participantID"
      }
    }
  ]
}
```

Error Handling Flow Diagram

The following diagram illustrates the complete error handling flow for ACCESS API interactions:



Key Decision Points:

1. **Authentication:** First check validates the OAuth token
2. **Parameter Validation:** Validates required parameters and their formats

3. **Asynchronous Processing:** Valid requests are queued and return HTTP 202 (Accepted)
4. **Status Polling:** Client repeatedly checks status until completion (returns something other than HTTP 202)
5. **Result Interpretation:**
 - HTTP 200 with success result code = operation succeeded
 - HTTP 200 with issue result code = business logic prevented operation (e.g., not-eligible, already-aligned)
 - HTTP 4xx/5xx = technical error occurred

Common Error Scenarios

Submission Errors (400 Bad Request)

Missing Required Parameter:

POST https://[base]/access/Patient/\$check-eligibility?entityID=ACCES12345

HTTP/1.1 400 Bad Request

Content-Type: application/json

```
{
  "resourceType": "OperationOutcome",
  "issue": [
    {
      "severity": "error",
      "code": "required",
      "details": { "text": "Missing required parameter: patient" }
    }
  ]
}
```

Invalid MBI Format:

HTTP/1.1 400 Bad Request

Content-Type: application/json

```
{
  "resourceType": "OperationOutcome",
  "issue": [
    {
      "severity": "error",
      "code": "invalid",
      "details": { "text": "Invalid Medicare Beneficiary Identifier (MBI)
format" }
    }
  ]
}
```

Invalid Track Code:

HTTP/1.1 400 Bad Request

Content-Type: application/json

```
{
  "resourceType": "OperationOutcome",
  "issue": [
    {
      "severity": "error",
      "code": "code-invalid",
      "details": {
        "text": "Invalid track code. Must be one of: eCKM, CKM, MSK, BH"
      }
    }
  ]
}
```

Malformed Parameters Resource:

HTTP/1.1 400 Bad Request
Content-Type: application/json

```
{
  "resourceType": "OperationOutcome",
  "issue": [
    {
      "severity": "error",
      "code": "structure",
      "details": {
        "text": "Parameters resource structure is invalid"
      },
      "diagnostics": "Expected Parameters.parameter array but received malformed JSON"
    }
  ]
}
```

Invalid Participant ID (400):

HTTP/1.1 400 Bad Request
Content-Type: application/json

```
{
  "resourceType": "OperationOutcome",
  "issue": [
    {
      "severity": "error",
      "code": "invalid",
      "details": {
        "text": "Participant ID is not valid"
      }
    }
  ]
}
```

FHIR Validation Failure:

HTTP/1.1 400 Bad Request
Content-Type: application/json

```
{
  "resourceType": "OperationOutcome",
```

```

"issue": [
  {
    "severity": "error",
    "code": "invalid",
    "details": {
      "text": "FHIR validation failed: Patient.identifier.system is
required when Patient.identifier.value is present"
    },
    "diagnostics": "The Patient resource does not conform to the US
Core Patient profile. MBI identifier must include both 'system'
(http://terminology.hl7.org/NamingSystem/cmsMBI) and 'value' elements."
  }
]
}

```

Status Check Errors

Submission ID Not Found (404):

GET https://[base]/access/Patient/\$submission-status/invalid-sub-id

HTTP/1.1 404 Not Found

Content-Type: application/json

```

{
  "resourceType": "OperationOutcome",
  "issue": [
    {
      "severity": "error",
      "code": "not-found",
      "details": { "text": "Submission ID 'invalid-sub-id' not found" }
    }
  ]
}

```

Authentication and Authorization Errors

Missing or Invalid Token (401):

HTTP/1.1 401 Unauthorized

WWW-Authenticate: Bearer error="invalid_token"

Content-Type: application/json

```

{
  "resourceType": "OperationOutcome",
  "issue": [
    {
      "severity": "error",
      "code": "security",
      "details": {
        "text": "Invalid or expired access token"
      }
    }
  ]
}

```

Insufficient Scope (403):

HTTP/1.1 403 Forbidden
Content-Type: application/json

```
{
  "resourceType": "OperationOutcome",
  "issue": [
    {
      "severity": "error",
      "code": "forbidden",
      "details": {
        "text": "Insufficient scope for requested operation."
      }
    }
  ]
}
```

Server Errors

Service Temporarily Unavailable (503):

HTTP/1.1 503 Service Unavailable
Retry-After: 60
Content-Type: application/json

```
{
  "resourceType": "OperationOutcome",
  "issue": [
    {
      "severity": "error",
      "code": "transient",
      "details": {
        "text": "Service temporarily unavailable. Please retry after 60
seconds."
      }
    }
  ]
}
```

Internal Server Error (500):

HTTP/1.1 500 Internal Server Error
Content-Type: application/json

```
{
  "resourceType": "OperationOutcome",
  "issue": [
    {
      "severity": "error",
      "code": "exception",
      "details": {
        "text": "An unexpected error occurred processing your request.
Please contact support with submission ID if this persists."
      }
    }
  ]
}
```

Example Status Check Request (Processing Complete - Aligned and Switch Approved):

GET https://[base]/access/Patient/\$submission-status/sub-123456

Response:

HTTP/1.1 200 OK

Content-Type: application/json

```
{
  "resourceType": "Parameters",
  "parameter": [
    {
      "name": "result",
      "valueCodeableConcept": {
        "coding": [
          {
            "system": "https://dsacms.github.io/cmmi-access-
model/CodeSystem/ACCESSAlignmentResultCS",
            "code": "aligned-switch-approved",
            "display": "Aligned and switch approved"
          }
        ],
        "text": "The request to switch the patient's alignment from a
different participant after the 90-day lock in period is accepted and the
patient is considered switched and now re-aligned."
      }
    }
  ]
}
```

There are other types of errors specific to each API that may be returned. Please see the section specific to that API in this manual to get more information and examples for those errors.

Standards Alignment

This asynchronous pattern aligns with:

- **FHIR Asynchronous Request Pattern:** Follows FHIR's general guidance for asynchronous operations using HTTP 202 Accepted
- **HTTP Standards:** Uses appropriate HTTP status codes (202 Accepted, 200 OK, 4xx/5xx for errors)
- **FHIR Parameters Resource:** Uses standardized Parameters resources for operation input and output
- **FHIR Operations Framework:** Implements custom operations with proper input/output handling
- **FHIR OperationOutcome:** Uses OperationOutcome for error responses following FHIR conventions
- **US Core Profiles:** Aligns with US Core Patient and Condition profiles for patient data

For additional information about FHIR patterns, see:

- FHIR Asynchronous Request Pattern (<https://hl7.org/fhir/R4/async.html>)
- FHIR Parameters Resource (<https://hl7.org/fhir/R4/parameters.html>)
- FHIR Operations Framework (<https://hl7.org/fhir/R4/operations.html>)
- FHIR OperationOutcome (<https://hl7.org/fhir/R4/operationoutcome.html>)
- US Core Implementation Guide (<https://hl7.org/fhir/us/core/STU6.1/>)

Implementation Notes and Edge Cases

Handling Network Interruptions

Scenario: Network failure occurs during polling

Implementation Guidance:

- Store submission IDs and associated request context before starting to poll
- Implement resume logic that can continue polling after network restoration
- Use exponential backoff when reconnecting after network failure
- Set reasonable timeout limits (5 minutes recommended) to avoid infinite polling loops

Duplicate Submission Prevention

Scenario: User clicks submit button multiple times or system retries unnecessarily

Implementation Guidance:

- Implement client-side button disabling after first click
- Store submission IDs locally to detect duplicates
- Check if a recent submission exists for the same patient/operation before submitting again
- Use idempotency tokens if retrying after uncertain failures

Token Expiration During Long Operations

Scenario: OAuth token expires while waiting for async operation to complete

Implementation Guidance:

- Refresh tokens proactively before expiration (5 minutes before recommended)
- Store token expiration time and check before each status poll
- Implement automatic token refresh in polling loop
- Handle HTTP 401 responses by refreshing token and retrying once

Multiple Diagnoses Across Tracks

Scenario: Patient has conditions qualifying for multiple tracks

Implementation Guidance:

- Patient can be aligned to multiple tracks simultaneously*
- Each track requires a separate alignment request
- Track alignments are independent - success/failure in one does not affect others
- Data reporting is track-specific - submit separate bundles for each track

- Patient can be aligned to different participants or the same participant in different tracks

* **The one exception** to this rule applies to the eCKM and CKM tracks. Patients cannot be enrolled in both tracks at the same time. If a patient is already aligned to the eCKM track and elects to enroll in the CKM track, or vice versa, they can change tracks immediately. In this case the 90-day lock-in period does not apply.

Next Steps and support

- Review the Authentication guidance
- Consult API-specific guidance pages under the API Guidance menu
- Reference the Artifacts page in the ACCESS Model FHIR IG for technical specifications
- Contact the ACCESS Model support team if you have any questions (ACCESSModelTeam@cms.hhs.gov)

Authentication

Authentication Process for ACCESS APIs

This section describes the authentication and authorization process required to access all ACCESS Model API endpoints.

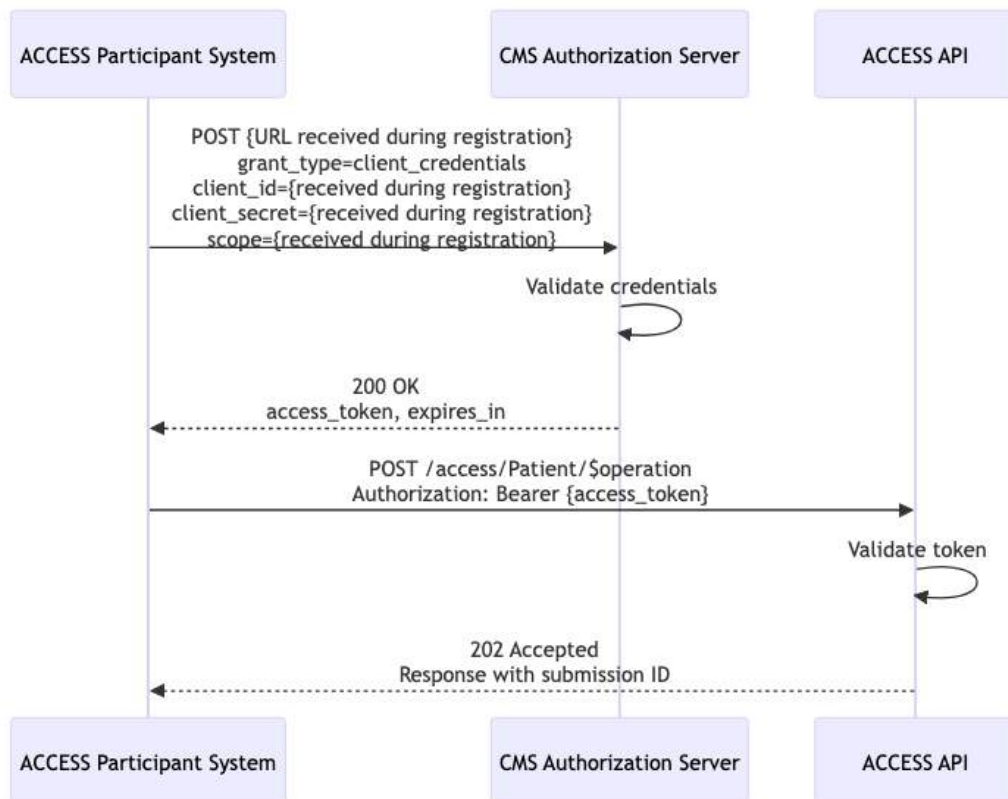
Overview

The ACCESS APIs use OAuth 2.0 for authentication and authorization. All ACCESS participants must complete a registration process and obtain appropriate credentials before accessing any API.

OAuth 2.0 Client Credentials Flow

The ACCESS APIs use the OAuth 2.0 Client Credentials grant type, which is appropriate for server-to-server authentication where the client (ACCESS participant system) is acting on its own behalf.

Authentication Flow



Step 1: Obtain Access Token

Token Endpoint: `POST {URL received during registration}`

Request Headers:

Content-Type: application/x-www-form-urlencoded

Request Body (form-encoded):

```
grant_type=client_credentials
client_id={received during registration}
client_secret={received during registration}
scope={received during registration}
```

Example cURL Request:

```
curl -X POST {URL received during registration} \
  -H "Content-Type: application/x-www-form-urlencoded" \
  -d "grant_type=client_credentials" \
  -d "client_id={received during registration}" \
  -d "client_secret={received during registration}" \
  -d "scope={received during registration}"
```

Successful Response:

```
{
  "access_token": "eyJhbGciOiJSUzI1NiIsInR5cCI6IkpXVCJ9...",
  "token_type": "Bearer",
  "expires_in": 300,
  "scope": "{allowed scope}"
}
```

It is **strongly** recommended to get a new access token for each new request.

Step 2: Use Access Token in API Requests

Include the access token in the Authorization header of all API requests:

Request Headers:

Authorization: Bearer {access_token}
Content-Type: application/json

Example Request:

```
POST https://[base]/access/Patient/$check-eligibility?
      entityId=[participantID]
Authorization: Bearer eyJhbGciOiJSUzI1NiIsInR5cCI6IkpXVCJ9...
Content-Type: application/json
{
  "resourceType": "Parameters",
  "parameter": [...]
}
```

Token Management**Token Expiration**

Access tokens have a limited lifetime (typically 5 minutes). Clients must:

1. **Monitor token expiration** - Track the `expires_in` value from the token response
2. **Refresh before expiration** - Request a new token before the current one expires

3. **Handle HTTP 401 responses** - If a token expires mid-use, obtain a new token and retry the request

Token Caching Best Practices

- Cache tokens to avoid unnecessary authentication requests
- Request a new token 2 minutes before expiration to account for clock skew
- Implement thread-safe token management in multi-threaded applications
- Store credentials and tokens securely (never in source code or logs)

Example Token Management (Pseudocode)

```
class TokenManager:
    token = null
    expires_at = null

    function getValidToken():
        if token is null or currentTime() >= expires_at - 5 minutes:
            response = requestNewToken()
            token = response.access_token
            expires_at = currentTime() + response.expires_in
        return token

    function requestNewToken():
        return POST to auth_server with client_credentials
```

Required Scopes

The ACCESS APIs require the OAuth 2.0 scopes provided during the client registration process. Scopes may vary based on which APIs your organization has been approved to access.

Error Handling

Authentication Errors

Invalid Credentials (HTTP 401 Unauthorized):

```
{
  "error": "invalid_client",
  "error_description": "Client authentication failed"
}
```

Action: Verify your `client_id` and `client_secret` are correct.

Invalid Token (HTTP 401 Unauthorized):

```
HTTP/1.1 401 Unauthorized
WWW-Authenticate: Bearer error="invalid_token", error_description="Token
has expired"
```

Action: Request a new access token.

Insufficient Scope (HTTP 403 Forbidden):

```
{
  "resourceType": "OperationOutcome",
  "issue": [
    {
      "severity": "error",
      "code": "forbidden",
      "details": {
        "text": "Insufficient scope for requested operation"
      }
    }
  ]
}
```

Action: Ensure your token includes all required scopes for the API operation you are attempting to access.

Security Requirements

Transport Security

- **TLS 1.3 Required:** All communication must use TLS 1.3
- **Certificate Validation:** Clients must validate server certificates
- **No Insecure Protocols:** HTTP, TLS 1.0, TLS 1.1, TLS 1.2, and SSL are not permitted

Credential Security

- **Secure Storage:** Store client credentials in secure key management systems or vaults
- **No Code Storage:** Never store credentials in source code, configuration files, or version control
- **Environment Variables:** Use environment variables or secure configuration management
- **Rotation:** Implement credential rotation policies (recommended: every 90 days)
- **Audit Logging:** Log all authentication attempts (excluding sensitive credential data)

Token Security

- **Secure Transmission:** Only transmit tokens over TLS connections
- **Limited Lifetime:** Accept token expiration and request new tokens as needed
- **No Sharing:** Never share tokens between different applications or environments
- **Secure Storage:** If caching tokens, use encrypted storage
- **Logging:** Never log tokens in application logs or monitoring systems

Multi-API Access

A single set of credentials may provide access to multiple ACCESS APIs. The OAuth scopes in your access token will determine which operations you can perform.

Troubleshooting

Common Issues

Token Repeatedly Expires Mid-Request

- Check system clock synchronization

- Implement proactive token refresh (2 minutes before expiration)
- Verify network latency is not causing delays

Authentication Works in Test but Fails in Production

- Verify you are using production credentials (not test credentials)
- Check that production endpoint URLs are correct
- Confirm your organization has been approved for production access

HTTP 403 Forbidden Despite Valid Token

- Verify your scope includes the operation you are attempting
- Check that your participant ID is active
- Ensure you are using the correct API endpoints

Additional Resources

- OAuth 2.0 RFC 6749 (<https://tools.ietf.org/html/rfc6749>) - OAuth 2.0 specification
- OAuth 2.0 Client Credentials (<https://tools.ietf.org/html/rfc6749#section-4.4>) - Client credentials grant flow
- JWT RFC 7519 (<https://tools.ietf.org/html/rfc7519>) - JSON Web Token specification
- OAuth 2.0 Security Best Practices (<https://datatracker.ietf.org/doc/html/draft-ietf-oauth-security-topics>) - Security considerations

Eligibility API Guidance

How to Use the API

The ACCESS Eligibility API uses an asynchronous pattern for checking patient eligibility for the CMS ACCESS Model. The pattern uses two operations to support a submit-and-poll workflow:

1. **\$check-eligibility**: Submits an eligibility check request
2. **\$submission-status**: Polls for the status of a submitted request

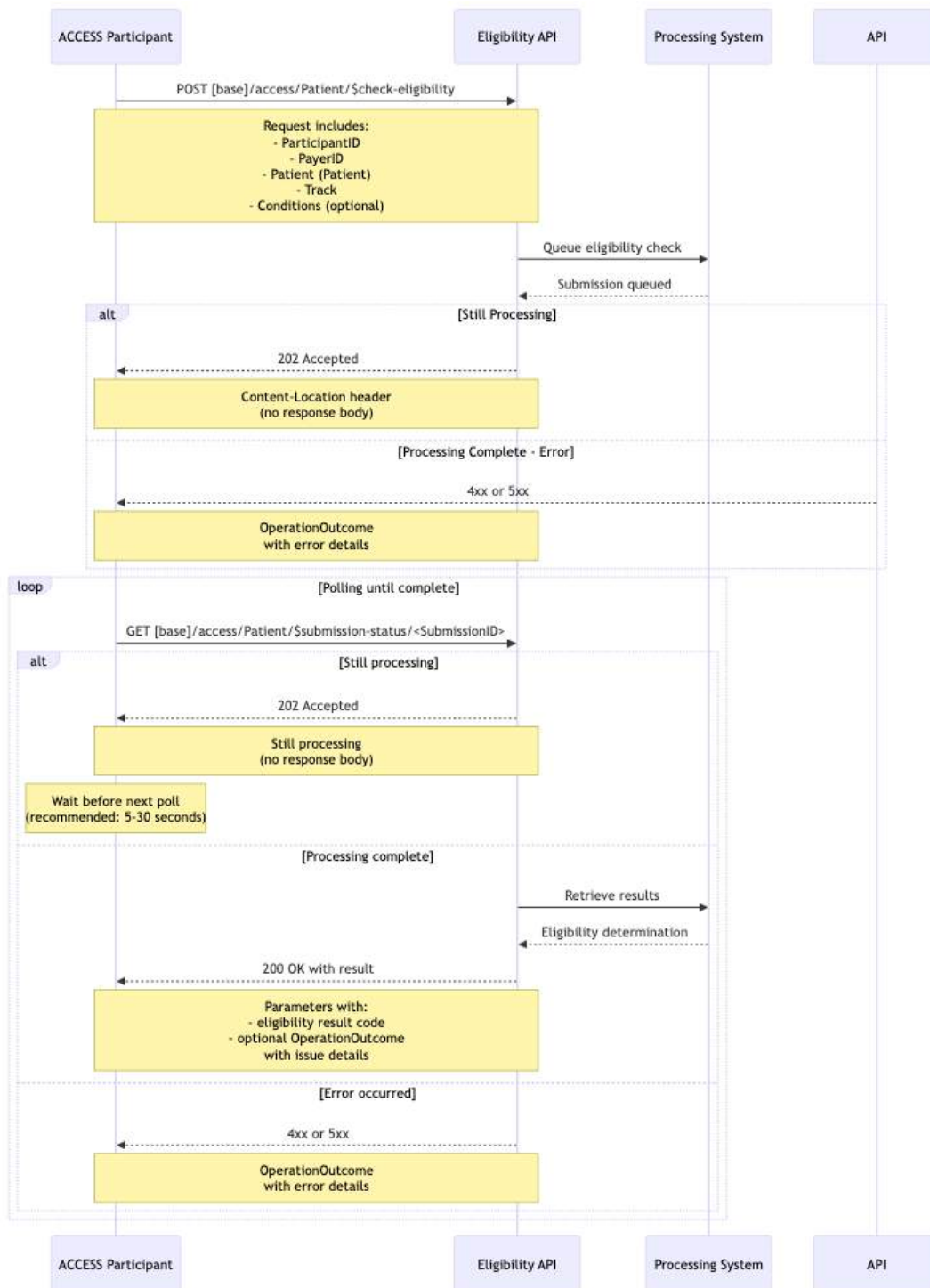
Asynchronous Interaction Pattern

The Eligibility API uses an asynchronous request-response pattern to accommodate the processing time required for eligibility determination. This pattern allows clients to submit eligibility check requests and subsequently poll for results without maintaining a persistent connection.

These operations can take some time to complete, making a synchronous request-response pattern impractical for real-world implementations.

Detailed Interaction Sequence

The following sequence diagram illustrates the complete interaction pattern:



Operation Details

\$check-eligibility Operation

The \$check-eligibility operation initiates an asynchronous eligibility determination request.

Endpoint: POST [base]/access/Patient/\$check-eligibility?
entityId=[participantID]

Input Parameters:

- **participantID** (Identifier, required): The ACCESS ID for the submitting participant
- **payerID** (Identifier, required): The payer ID for the patient. Uses the X12 EDI Payer ID standard (urn:oid:2.16.840.1.113883.3.221.5) with CARIN Blue Button identifier typing (<http://hl7.org/fhir/us/carin-bb/CodeSystem/C4BBIdentifierType>). EDI Payer IDs are 5-character alphanumeric codes widely used in healthcare transactions (e.g., eligibility checks, claims, remittance).
- **patient** (Patient Resource, required): Patient information conforming to US Core Patient Profile. If the payer is Medicare, it **SHALL** contain the Medicare Beneficiary Identifier (MBI). To be eligible and align to a CMS ACCESS participant, a patient must be a Medicare beneficiary.
- **track** (CodeableConcept, required): The ACCESS Model track to check for eligibility
- **conditions** (Condition Resources, optional): Zero or more Condition resources conforming to the ACCESS Condition Profile describing the patient's health concerns. Implementers **SHOULD** use track-specific profiles (ACCESSeCKMCondition, ACCESSCKMCondition, ACCESSMSKCondition, ACCESSSBHCondition) when submitting conditions for a known track. A condition, or diagnosis code, does not need to be included in the eligibility check for it to process. But, if the code is included, it should be an expected code for the track the patient is being considered for.

NOTE: The IG will accept any patient identifier and payer identifier so that this IG can be used by other payers looking to align with the ACCESS Model. However, for a patient to be eligible for the CMS ACCESS Model, they need to have Medicare fee-for-service as their primary insurance and you must submit a valid MBI as the patient identifier.

Expected Response:

- **Status Code:** 202 Accepted
- **HTTP Headers:** Content-Location header containing the URL to check submission status
- **Response Body:** Empty (no body while processing)

Example Request:

```
POST https://[base]/access/Patient/$check-eligibility?entityId=ACCES12345
Content-Type: application/json
```

```
{
```

```

    "resourceType" : "Parameters",
    "id" : "CheckEligibilityRequestExample",
    "meta" : {
      "profile" : ["https://dsacms.github.io/cmmi-access-
model/StructureDefinition/access-check-eligibility-in"]
    },
    "language" : "en",
    "parameter" : [{
      "name" : "participantID",
      "valueIdentifier" : {
        "system" : "https://dsacms.github.io/cmmi-access-model/participant-
id",
        "value" : "ACCES12345"
      }
    },
    {
      "name" : "payerID",
      "valueIdentifier" : {
        "type" : {
          "coding" : [{
            "system" : "http://hl7.org/fhir/us/carinn-
bb/CodeSystem/C4BBIIdentifierType",
            "code" : "payerid",
            "display" : "Payer ID"
          }]
        },
        "system" : "urn:oid:2.16.840.1.113883.3.221.5",
        "value" : "12345"
      }
    },
    {
      "name" : "patient",
      "resource" : {
        "resourceType" : "Patient",
        "id" : "PatientExample",
        "meta" : {
          "profile" : ["http://hl7.org/fhir/us/core/StructureDefinition/us-
core-patient|6.1.0"]
        },
        "language" : "en",
        "text" : {
          "status" : "generated",
          "div" : "<div xml:lang=\"en\"
xmlns=\"http://www.w3.org/1999/xhtml\" lang=\"en\">Patient John Doe,
male, born 1950-01-01, Medicare ID: 1EG4TE5MK73</div>"
        },
        "identifier" : [{
          "type" : {
            "coding" : [{
              "system" : "http://terminology.hl7.org/CodeSystem/v2-0203",
              "code" : "MC"
            }]
          },
          "system" : "http://terminology.hl7.org/NamingSystem/cmsMBI",
          "value" : "1EG4TE5MK73"
        }
      ]
    }
  ]
}

```

```

    }],
    "name" : [{
      "family" : "Doe",
      "given" : ["John"]
    }],
    "gender" : "male",
    "birthDate" : "1950-01-01"
  }
},
{
  "name" : "track",
  "valueCodeableConcept" : {
    "coding" : [{
      "system" : "https://dsacms.github.io/cmmi-access-
model/CodeSystem/ACCESSTrackCS",
      "code" : "CKM",
      "display" : "Cardio-kidney-metabolic track"
    }]
  }
}]
}

```

Example Response:

HTTP/1.1 202 Accepted
 Content-Location: https://[base]/access/Patient/\$submission-status/sub-123456

(No response body - processing asynchronously)

\$submission-status Operation

The \$submission-status operation retrieves the current status of a previously submitted eligibility check request. This is a **read-only operation** that uses the HTTP GET method.

Understanding Response Behavior:

- **HTTP 202 Accepted:** Request is still being processed. Response has **no body**. Continue polling.
- **HTTP 200 OK:** Processing is complete. Response **always** contains a Parameters resource with the `result` parameter indicating the outcome.
- **HTTP 4xx/5xx:** An error occurred. Response contains an OperationOutcome with error details (no Parameters resource).

Eligibility Result Codes:

When processing is complete (HTTP 200), the `result` parameter uses codes from the **ACCESSEligibilityResultVS** value set:

- **eligible:** Patient is eligible for services under the model. This response does not mean the patient has been aligned. It simply means the patient is eligible to be aligned.

- **eligible-pending-diagnosis:** Patient is provisionally eligible for services under the model depending on the diagnosis.
- **eligible-switch-participants:** Patient is eligible to switch participants. This code indicates that the patient is already aligned to another participant, but they are outside of the 90-day lock-in period with that participant.
- **not-eligible-not-medicare:** The patient either: (1) is not enrolled in Medicare Part A and Part B; (2) is not dual eligible for Medicare and Medicaid; or (3) they do not have Medicare as their primary insurance, so they are not eligible for services under the ACCESS Model.
- **not-eligible-services:** The patient is receiving services (including receiving hospice services or dialysis for end stage renal disease (ESRD)) making them ineligible to be part of the ACCESS Model. Patients who are part of the Program of All-Inclusive Care for the Elderly (PACE) Program are also not eligible for the ACCESS Model.
- **not-eligible-diagnoses:** The patient does not have a treating diagnosis that qualifies them for services in the track indicated and therefore cannot get services under the ACCESS Model.
- **not-eligible-control-group:** The patient is technically eligible for the ACCESS Model, but based on the randomized control group algorithm, the patient has been placed in the control group for 12 months and therefore cannot be aligned for 12 months.
- **not-eligible-already-aligned:** The patient is technically eligible, but has already aligned to another participant within the past 90 days and is receiving services under the ACCESS Model in the same track. A patient can only be aligned to one participant in each track.
- **not-eligible-clinical-exclusion:** The patient has a clinical exclusion that prevents them from receiving services under the ACCESS Model.
- **not-eligible-mismatch:** The patient information provided does not match the patient information on record.

Example Responses:

Response:

HTTP/1.1 202 Accepted

(No response body - still processing)

Example Status Check Request (Processing Complete - Eligible):

GET https://[base]/access/Patient/\$submission-status/sub-123456

Response:

HTTP/1.1 200 OK

Content-Type: application/json

```
{
  "resourceType": "Parameters",
  "parameter": [
```

```

{
  "name": "result",
  "valueCodeableConcept": {
    "coding": [
      {
        "system": "https://dsacms.github.io/cmmi-access-
model/CodeSystem/ACCESSEligibilityResultCS",
        "code": "eligible",
        "display": "Eligible"
      }
    ],
    "text": "Patient is eligible for services under the model. This
response does not mean the patient has been aligned. It simply means the
patient is eligible to be aligned."
  }
}
]
}

```

Example Status Check Request (Processing Complete - Not Eligible):

GET https://[base]/access/Patient/\$submission-status/sub-123456

Response:

HTTP/1.1 200 OK

Content-Type: application/json

```

{
  "resourceType": "Parameters",
  "parameter": [
    {
      "name": "result",
      "valueCodeableConcept": {
        "coding": [
          {
            "system": "https://dsacms.github.io/cmmi-access-
model/CodeSystem/ACCESSEligibilityResultCS",
            "code": "not-eligible-control-group",
            "display": "Not eligible - assigned to Control Group"
          }
        ],
        "text": "The patient is technically eligible for the ACCESS
Model, but based on the randomized control group algorithm, the patient
has been placed in the control group for 12 months and therefore cannot
be aligned for 12 months."
      }
    }
  ]
}

```

Example Complete Workflow

The following example demonstrates a complete eligibility check workflow:

Step 1: Submit Eligibility Check

POST https://[base]/access/Patient/\$check-eligibility?entityId=ACCES12345
Content-Type: application/json

```
{
  "resourceType" : "Parameters",
  "id" : "CheckEligibilityRequestExample",
  "meta" : {
    "profile" : ["https://dsacms.github.io/cmmi-access-model/StructureDefinition/access-check-eligibility-in"]
  },
  "language" : "en",
  "parameter" : [{
    "name" : "participantID",
    "valueIdentifier" : {
      "system" : "https://dsacms.github.io/cmmi-access-model/participant-id",
      "value" : "ACCES12345"
    }
  },
  {
    "name" : "payerID",
    "valueIdentifier" : {
      "type" : {
        "coding" : [{
          "system" : "http://hl7.org/fhir/us/caribbean/CodeSystem/C4BBIdentifierType",
          "code" : "payerid",
          "display" : "Payer ID"
        }]
      },
      "system" : "urn:oid:2.16.840.1.113883.3.221.5",
      "value" : "12345"
    }
  },
  {
    "name" : "patient",
    "resource" : {
      "resourceType" : "Patient",
      "id" : "PatientExample",
      "meta" : {
        "profile" : ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-patient|6.1.0"]
      },
      "language" : "en",
      "text" : {
        "status" : "generated",
        "div" : "<div xml:lang=\"en\" xmlns=\"http://www.w3.org/1999/xhtml\" lang=\"en\">Patient John Doe, male, born 1950-01-01, Medicare ID: 1EG4TE5MK73</div>"
      },
      "identifier" : [{
        "type" : {
          "coding" : [{
            "system" : "http://terminology.hl7.org/CodeSystem/v2-0203",
            "code" : "MC"
          }]
        }
      ]
    }
  }
}
```

```

      },
      "system" : "http://terminology.hl7.org/NamingSystem/cmsMBI",
      "value" : "1EG4TE5MK73"
    }],
    "name" : [{
      "family" : "Doe",
      "given" : ["John"]
    }],
    "gender" : "male",
    "birthDate" : "1950-01-01"
  }
},
{
  "name" : "track",
  "valueCodeableConcept" : {
    "coding" : [{
      "system" : "https://dsacms.github.io/cmami-access-
model/CodeSystem/ACCESSTrackCS",
      "code" : "CKM",
      "display" : "Cardio-kidney-metabolic track"
    }]
  }
}]
}

```

Response:

HTTP/1.1 202 Accepted

Content-Location: https://[base]/access/Patient/\$submission-status/sub-123456

Step 2: Extract Submission URL and Wait

- Extract submission URL from Content-Location header
- Wait 5 seconds before first poll

Step 3: First Status Check (after 5 seconds)

GET https://[base]/access/Patient/\$submission-status/sub-123456

Response:

HTTP/1.1 202 Accepted

(Still processing - no body)

Step 4: Second Status Check (after another 15 seconds)

GET https://[base]/access/Patient/\$submission-status/sub-123456

Response:

HTTP/1.1 200 OK
Content-Type: application/json

```
{
  "resourceType": "Parameters",
  "parameter": [
    {
      "name": "result",
      "valueCodeableConcept": {
        "coding": [
          {
            "system": "https://dsacms.github.io/cmml-access-
model/CodeSystem/ACCESSEligibilityResultCS",
            "code": "eligible",
            "display": "Eligible"
          }
        ],
        "text": "Patient is eligible for services under the model. This
response does not mean the patient has been aligned. It simply means the
patient is eligible to be aligned."
      }
    }
  ]
}
```

Step 5: Process Result

- Parse the result code: "eligible"
- Display the text to the user
- Proceed with alignment workflow

API-Specific Response Scenarios

For general response handling guidance and common scenarios (missing parameters, invalid tokens, server errors, etc.), see the Error Handling section in General Guidance.

The following responses are specific to the Eligibility API and are returned as part of normal processing (HTTP 200 with specific result codes):

Not Eligible - Already Aligned

Scenario: Patient is already aligned to another provider in the same track.

GET https://[base]/access/Patient/\$submission-status/sub-123456

HTTP/1.1 200 OK
Content-Type: application/json

```
{
  "resourceType": "Parameters",
  "parameter": [
    {
      "name": "result",
      "valueCodeableConcept": {
        "coding": [
          {

```

```

        "system": "https://dsacms.github.io/cmmi-access-
model/CodeSystem/ACCESSEligibilityResultCS",
        "code": "not-eligible-already-aligned",
        "display": "Not eligible - already aligned to another
participant in the track"
    }
],
    "text": "The patient is technically eligible, but is already
aligned to another participant and receiving services under the ACCESS
Model in the same track. A patient can only be aligned to one participant
in each track."
}
}
]
}

```

Not Eligible - Control Group

Scenario: Patient has been randomized into the control group.

GET https://[base]/access/Patient/\$submission-status/sub-123456

HTTP/1.1 200 OK

Content-Type: application/json

```

{
  "resourceType": "Parameters",
  "parameter": [
    {
      "name": "result",
      "valueCodeableConcept": {
        "coding": [
          {
            "system": "https://dsacms.github.io/cmmi-access-
model/CodeSystem/ACCESSEligibilityResultCS",
            "code": "not-eligible-control-group",
            "display": "Not eligible - assigned to Control Group"
          }
        ],
        "text": "The patient is technically eligible for the ACCESS
Model, but based on the randomized control group algorithm, the patient
has been placed in the control group for 12 months and therefore cannot
be aligned for 12 months."
      }
    }
  ]
}

```

Not Eligible - No Qualifying Diagnosis

Scenario: Patient lacks the required diagnosis for the specified track.

GET https://[base]/access/Patient/\$submission-status/sub-123456

HTTP/1.1 200 OK
Content-Type: application/json

```
{
  "resourceType": "Parameters",
  "parameter": [
    {
      "name": "result",
      "valueCodeableConcept": {
        "coding": [
          {
            "system": "https://dsacms.github.io/cmmi-access-
model/CodeSystem/ACCESSEligibilityResultCS",
            "code": "not-eligible-diagnoses",
            "display": "Not eligible - no qualifying diagnosis"
          }
        ],
        "text": "The patient does not have a treating diagnosis that
qualifies them for services in the track indicated and therefore cannot
get services under the ACCESS Model."
      }
    }
  ]
}
```

Not Eligible - Receiving Exclusionary Services

Scenario: Patient is receiving services that prevent ACCESS participation.

GET https://[base]/access/Patient/\$submission-status/sub-123456

HTTP/1.1 200 OK
Content-Type: application/json

```
{
  "resourceType": "Parameters",
  "parameter": [
    {
      "name": "result",
      "valueCodeableConcept": {
        "coding": [
          {
            "system": "https://dsacms.github.io/cmmi-access-
model/CodeSystem/ACCESSEligibilityResultCS",
            "code": "not-eligible-services",
            "display": "Not eligible - receiving services that prevent
eligibility"
          }
        ],
        "text": "The patient is receiving services (such as hospice, end
stage renal disease (ESRD), etc.) making them ineligible to be part of
the ACCESS Model."
      }
    }
  ]
}
```

Not Eligible - Not Medicare

Scenario: Patient is not receiving Medicare or Medicare is not primary insurance.

GET https://[base]/access/Patient/\$submission-status/sub-123456

HTTP/1.1 200 OK

Content-Type: application/json

```
{
  "resourceType": "Parameters",
  "parameter": [
    {
      "name": "result",
      "valueCodeableConcept": {
        "coding": [
          {
            "system": "https://dsacms.github.io/cmmi-access-
model/CodeSystem/ACCESSEligibilityResultCS",
            "code": "not-eligible-not-medicare",
            "display": "Not eligible - not receiving Medicare"
          }
        ],
        "text": "The patient either is not enrolled in Medicare Part A
and Part B or dual eligible for Medicare and Medicaid, or they do not
have Medicare as their primary insurance, so they are not eligible for
services under the ACCESS Model."
      }
    }
  ]
}
```

Not Eligible – Clinical Exclusion

Scenario: Patient has a clinical condition that prevents them from receiving services under the ACCESS Model.

GET https://[base]/access/Patient/\$submission-status/sub-123456

HTTP/1.1 200 OK

Content-Type: application/json

```
{
  "resourceType": "Parameters",
  "parameter": [
    {
      "name": "result",
      "valueCodeableConcept": {
        "coding": [
          {
            "system": "https://dsacms.github.io/cmmi-access-
model/CodeSystem/ACCESSEligibilityResultCS",
            "code": "not-eligible-clinical-exclusion",
            "display": "Not eligible - clinical exclusion"
          }
        ]
      }
    }
  ],
}
```

```

        "text": "The patient has a clinical exclusion that prevents them
from receiving services under the ACCESS Model."
    }
}
]
}

```

Not Eligible – Mismatch

Scenario: The provided information about the patient does not match the patient information on record.

GET https://[base]/access/Patient/\$submission-status/sub-123456

HTTP/1.1 200 OK

Content-Type: application/json

```

{
  "resourceType": "Parameters",
  "parameter": [
    {
      "name": "result",
      "valueCodeableConcept": {
        "coding": [
          {
            "system": "https://dsacms.github.io/cmmi-access-
model/CodeSystem/ACCESSEligibilityResultCS",
            "code": "not-eligible-mismatch",
            "display": "Not eligible - mismatch"
          }
        ],
        "text": "The patient information provided does not match the
patient information on record."
      }
    }
  ]
}

```

Note: These are successful responses (HTTP 200) that contain business logic results. All of these scenarios represent valid processing outcomes for eligibility checks.

Alignment API Guidance

How to Use the API

The ACCESS Alignment API uses an asynchronous pattern for aligning patients to a track and participant in the CMS ACCESS Model. The pattern uses two operations to support a submit-and-poll workflow:

1. **\$align**: Submits an alignment request
2. **\$submission-status**: Polls for the status of a submitted request

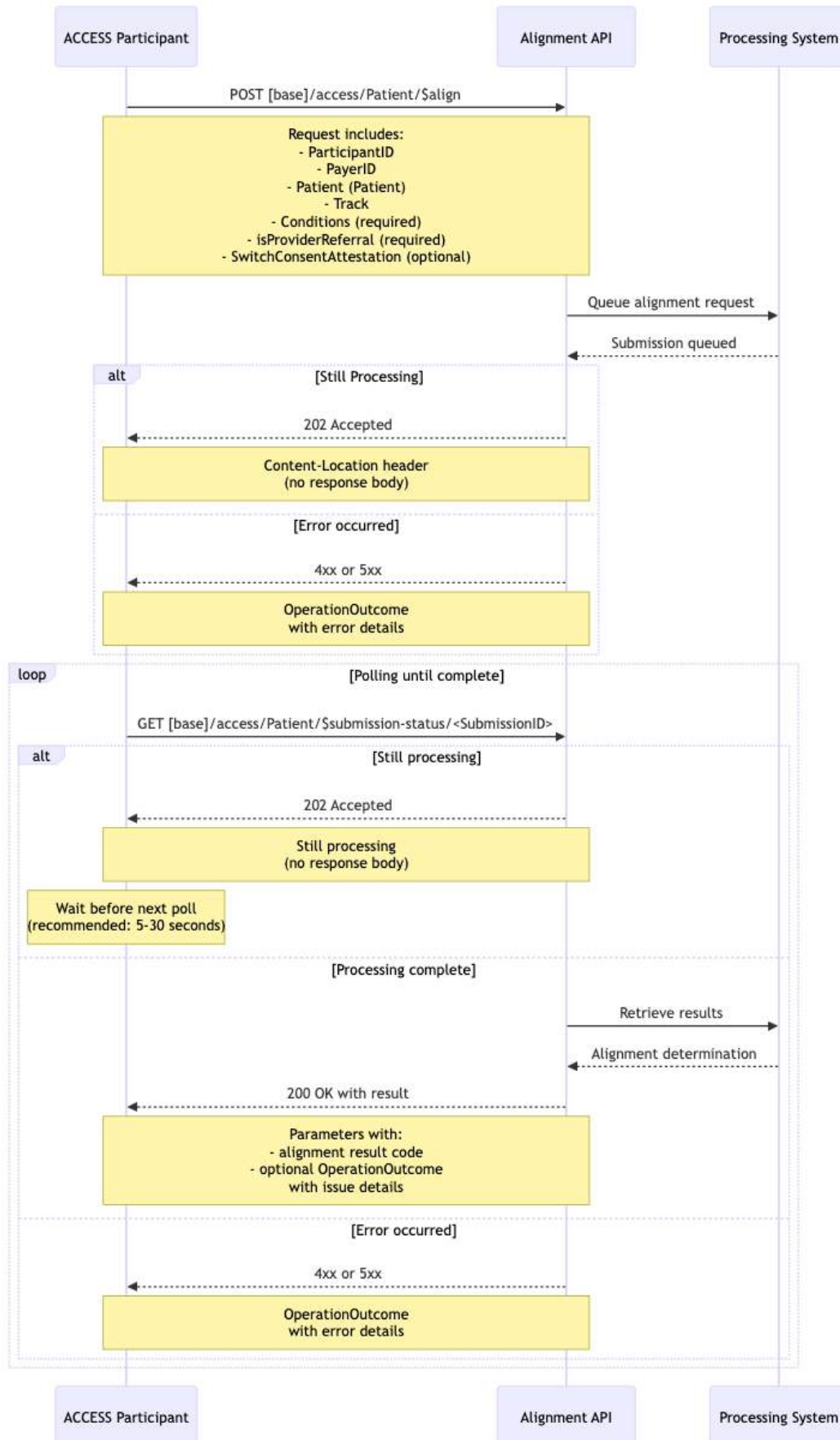
Asynchronous Interaction Pattern

The Alignment API uses an asynchronous request-response pattern to accommodate the processing time required for alignment determination. This pattern allows clients to submit alignment requests and subsequently poll for results without maintaining a persistent connection.

These operations can take some time to complete, making a synchronous request-response pattern impractical for real-world implementations.

Detailed Interaction Sequence

The following sequence diagram illustrates the complete interaction pattern:



Operation Details

\$align Operation

The \$align operation initiates an asynchronous alignment request to align a patient to a specific track and participant.

Endpoint: POST [base]/access/Patient/\$align?
entityId=[participantID]

Input Parameters:

- **participantID** (Identifier, required): The ACCESS ID for the submitting participant
- **payerID** (Identifier, required): The payer ID for the patient. Uses the X12 EDI Payer ID standard (urn:oid:2.16.840.1.113883.3.221.5) with CARIN Blue Button identifier typing (<http://hl7.org/fhir/us/carin-bb/CodeSystem/C4BBIdentifierType>). EDI Payer IDs are 5-character alphanumeric codes widely used in healthcare transactions (e.g., eligibility checks, claims, remittance).
- **patient** (Patient Resource, required): Patient information conforming to US Core Patient Profile. If the payer is Medicare, it **SHALL** contain the Medicare Beneficiary Identifier (MBI). To be eligible and align to a CMS ACCESS participant, a patient must be a Medicare beneficiary.
- **track** (Value set, required): The requested track to align the patient
- **condition** (Condition Resources, required): One or more Condition resources conforming to ACCESS Condition Profile describing the patient's health concerns. Implementers **SHALL** use track-specific profiles (ACCESSeCKMCondition, ACCESSCKMCondition, ACCESSMSKCondition, ACCESSBHKCondition) when aligning to a specific track.
- **isProviderReferral** (boolean, required): Indicates whether the patient was referred to the ACCESS Model by a provider.
- **switchConsentAttestation** (boolean, optional): Boolean flag indicating that the patient has provided consent to switch from another ACCESS participant after the 90-day lock-in period. When `true`, this indicates the participant has obtained and documented the patient's consent to switch participants.

Expected Response:

- **Status Code:** 202 Accepted
- **HTTP Headers:** Content-Location header containing the URL to check submission status
- **Response Body:** Empty (no body while processing)

Example Request:

```
POST https://[base]/access/Patient/$align?entityId=ACCES12345
Content-Type: application/json
```

```

{
  "resourceType" : "Parameters",
  "id" : "AlignmentRequestExample",
  "meta" : {
    "profile" : ["https://dsacms.github.io/cmmi-access-
model/StructureDefinition/access-align-in"]
  },
  "language" : "en",
  "parameter" : [{
    "name" : "participantID",
    "valueIdentifier" : {
      "system" : "https://dsacms.github.io/cmmi-access-model/participant-
id",
      "value" : "ACCES12345"
    }
  },
  {
    "name" : "payerID",
    "valueIdentifier" : {
      "type" : {
        "coding" : [{
          "system" : "http://hl7.org/fhir/us/carinn-
bb/CodeSystem/C4BBIIdentifierType",
          "code" : "payerid",
          "display" : "Payer ID"
        }]
      },
      "system" : "urn:oid:2.16.840.1.113883.3.221.5",
      "value" : "12345"
    }
  },
  {
    "name" : "patient",
    "resource" : {
      "resourceType" : "Patient",
      "id" : "PatientExample",
      "meta" : {
        "profile" : ["http://hl7.org/fhir/us/core/StructureDefinition/us-
core-patient|6.1.0"]
      },
      "language" : "en",
      "text" : {
        "status" : "generated",
        "div" : "<div xml:lang=\"en\"
xmlns=\"http://www.w3.org/1999/xhtml\" lang=\"en\">Patient John Doe,
male, born 1950-01-01, Medicare ID: 1EG4TE5MK73</div>"
      },
      "identifier" : [{
        "type" : {
          "coding" : [{
            "system" : "http://terminology.hl7.org/CodeSystem/v2-0203",
            "code" : "MC"
          }]
        }
      },
      "system" : "http://terminology.hl7.org/NamingSystem/cmsMBI",

```

```

        "value" : "1EG4TE5MK73"
    }],
    "name" : [{
        "family" : "Doe",
        "given" : ["John"]
    }],
    "gender" : "male",
    "birthDate" : "1950-01-01"
}
},
{
    "name" : "track",
    "valueCodeableConcept" : {
        "coding" : [{
            "system" : "https://dsacms.github.io/cmmi-access-
model/CodeSystem/ACCESSTrackCS",
            "code" : "CKM",
            "display" : "Cardio-kidney-metabolic track"
        }]
    }
},
{
    "name" : "condition",
    "resource" : {
        "resourceType" : "Condition",
        "id" : "ConditionDiabetesExample",
        "meta" : {
            "profile" : ["https://dsacms.github.io/cmmi-access-
model/StructureDefinition/access-ckm-condition"]
        },
        "language" : "en",
        "text" : {
            "status" : "generated",
            "div" : "<div xml:lang=\"en\"
xmlns=\"http://www.w3.org/1999/xhtml\" lang=\"en\">Type 2 diabetes
mellitus without complications</div>"
        },
        "clinicalStatus" : {
            "coding" : [{
                "system" : "http://terminology.hl7.org/CodeSystem/condition-
clinical",
                "code" : "active"
            }]
        },
        "verificationStatus" : {
            "coding" : [{
                "system" : "http://terminology.hl7.org/CodeSystem/condition-
ver-status",
                "code" : "confirmed"
            }]
        },
        "category" : [{
            "coding" : [{
                "system" : "http://terminology.hl7.org/CodeSystem/condition-
category",

```

```

        "code" : "problem-list-item"
      }
    ],
    "code" : {
      "coding" : [{
        "system" : "http://hl7.org/fhir/sid/icd-10-cm",
        "code" : "E11.9",
        "display" : "Type 2 diabetes mellitus without complications"
      }]
    },
    "subject" : {
      "reference" : "Patient/PatientExample"
    },
    "onsetDateTime" : "2020-01-15"
  }
},
{
  "name" : "isProviderReferral",
  "valueBoolean" : true
}]
}

```

Example Response:

```

HTTP/1.1 202 Accepted
Content-Location: https://[base]/access/Patient/$submission-status/sub-123456

```

(No response body - processing asynchronously)

\$submission-status Operation

The \$submission-status operation retrieves the current status of a previously submitted alignment request. This is a **read-only operation** that uses the HTTP GET method.

Endpoint: GET [base]/access/Patient/\$submission-status/<submission-id>

Understanding Response Behavior:

- **HTTP 202 Accepted:** Request is still being processed asynchronously (no response body)
- **HTTP 200 OK:** Processing complete - response includes Parameters resource with alignment result
- **HTTP 4xx/5xx:** An error occurred. Response contains an OperationOutcome with error details (no Parameters resource)

Alignment Result Codes:

When processing is complete (HTTP 200), the `result` parameter uses codes from the **ACCESSAlignmentResultVS** value set:

- **aligned:** Patient is eligible and has been aligned so the participant can now begin providing services to the patient under the ACCESS Model.
- **aligned-switch-approved:** The request to switch the patient's alignment from a different participant after the 90-day lock in period is accepted and the patient is considered switched and now re-aligned.
- **not-aligned-control-group:** The patient is technically eligible, but based on the randomized control group algorithm, the patient has been placed in the control group for 12 months and therefore cannot be aligned for 12 months.
- **not-aligned-already-aligned:** The patient is technically eligible, but is already aligned to another participant and receiving services under the ACCESS Model in the same track. A patient can only be aligned to one participant in each track. If a switch consent attestation is submitted, but the patient is still within the 90-day lock-in period, this response will be received.
- **not-aligned-not-medicare:** The patient either: (1) is not enrolled in Medicare Part A and Part B; (2) is not dual eligible for Medicare and Medicaid; or (3) they do not have Medicare as their primary insurance, so they are not eligible for services under the ACCESS Model.
- **not-aligned-services:** The patient is receiving services (including receiving hospice services or dialysis for end stage renal disease (ESRD)) making them ineligible to be part of the ACCESS Model. Patients who are part of the Program of All-Inclusive Care for the Elderly (PACE) Program are also not eligible for the ACCESS Model.
- **not-aligned-diagnoses:** The patient does not have a treating diagnosis that qualifies them for service in the track indicated and therefore cannot get services under the ACCESS Model.
- **not-aligned-clinical-exclusion:** The patient has a clinical exclusion that prevents them from receiving services under the ACCESS Model.
- **not-aligned-mismatch:** The patient information provided does not match the patient information on record.
- **not-aligned-no-switch-attestation:** Participant switch request did not include switch consent attestation.

Parameter Encoding for GET:

The submission ID is passed as part of the URL path:

- Path: GET [base]/access/Patient/\$submission-status/sub-123456

NOTE: If the \$align operation returns **aligned** or **align-switch-approved**, the **submissionID** from that request is used to provide context for push notifications (e.g., emails) related to the alignment, connecting the participant, patient, and track.

That submissionID is provided in the Beneficiary Alignment Report for future reference.

Example Status Check Request (Still Processing):

GET https://[base]/access/Patient/\$submission-status/sub-123456

Response:

HTTP/1.1 202 Accepted

(No response body - still processing)

Example Status Check Request (Processing Complete - Aligned):

GET https://[base]/access/Patient/\$submission-status/sub-123456

Response:

HTTP/1.1 200 OK

Content-Type: application/json

```
{
  "resourceType": "Parameters",
  "parameter": [
    {
      "name": "result",
      "valueCodeableConcept": {
        "coding": [
          {
            "system": "https://dsacms.github.io/cmami-access-
model/CodeSystem/ACCESSAlignmentResultCS",
            "code": "aligned",
            "display": "Aligned"
          }
        ],
        "text": "Patient is eligible and has been aligned so the
participant can now begin providing services to the patient under the
ACCESS Model."
      }
    }
  ]
}
```

Example Status Check Request (Processing Complete - Not Aligned - No Qualifying Diagnosis):

GET https://[base]/access/Patient/\$submission-status/sub-123456

Response:

HTTP/1.1 200 OK

Content-Type: application/json

```
{
  "resourceType": "Parameters",
  "parameter": [
```

```

{
  "name": "result",
  "valueCodeableConcept": {
    "coding": [
      {
        "system": "https://dsacms.github.io/cmmi-access-
model/CodeSystem/ACCESSAlignmentResultCS",
        "code": "not-aligned-diagnoses",
        "display": "Not aligned - no qualifying diagnosis"
      }
    ],
    "text": "The patient does not have a treating diagnosis that
qualifies them for service in the track indicated and therefore cannot
get services under the ACCESS Model."
  }
}
]
}

```

Example Status Check Request (Processing Complete - Not Aligned - Control Group):

GET https://[base]/access/Patient/\$submission-status/sub-123456

Response:

HTTP/1.1 200 OK

Content-Type: application/json

```

{
  "resourceType": "Parameters",
  "parameter": [
    {
      "name": "result",
      "valueCodeableConcept": {
        "coding": [
          {
            "system": "https://dsacms.github.io/cmmi-access-
model/CodeSystem/ACCESSAlignmentResultCS",
            "code": "not-aligned-control-group",
            "display": "Not aligned - assigned to Control Group"
          }
        ],
        "text": "The patient is technically eligible, but based on the
randomized control group algorithm, the patient has been placed in the
control group for 12 months and therefore cannot be aligned for 12
months."
      }
    }
  ]
}

```

Example Status Check Request (Processing Complete - Aligned and Switch Approved):

GET https://[base]/access/Patient/\$submission-status/sub-123456

Response:

HTTP/1.1 200 OK

Content-Type: application/json

```

{
  "resourceType": "Parameters",
  "parameter": [
    {
      "name": "result",
      "valueCodeableConcept": {
        "coding": [
          {
            "system": "https://dsacms.github.io/cmmi-access-
model/CodeSystem/ACCESSAlignmentResultCS",
            "code": "aligned-switch-approved",
            "display": "Aligned and switch approved"
          }
        ],
        "text": "The request to switch the patient's alignment from a
different provider after the 90-day lock in period is accepted and the
patient is considered switched and now re-aligned."
      }
    }
  ]
}

```

ACCESS Participant Switch Workflow

When a patient wishes to switch ACCESS participants after the 90-day lock-in period:

1. **Verify Eligibility to Switch:** First, use the Eligibility API to check if the patient is eligible to switch participants (result code `eligible-switch-participants`)
2. **Obtain Consent:** Obtain and document the patient's consent to switch participants
3. **Submit Switch Request:** Submit an alignment request with the `switchConsentAttestation` parameter set to `true`
4. **Process Result:** If approved, receive result code `aligned-switch-approved`

Important Notes:

- All requirements related to "switching" (switch consent, etc.) are only applicable to switching participants. For MSK and BH tracks, this is switching participants within a track. For the eCKM and CKM tracks this is switching participants within a track or switching participants and moving from eCKM to CKM.
- If a patient is switching participants and moving from the eCKM track to the CKM track, the switch can happen at any time - it is not restricted by the 90-day lock-in period.
- For the other tracks, patients must be aligned for at least 90 days before they can switch participants. If a switch request is submitted before the 90-day lock-in period expires, the result will be `not-aligned-already-aligned`.
- The switch consent attestation must be documented to indicate the patient's explicit consent to change participants.
- When a patient switches participants, the 12-month clock for the period of care restarts with the new alignment date - the date the switch was approved.

- If the patient is staying with the same participant, but moving from the eCKM track to the CKM track due to a change in health status, this will require the participant to first unalign the patient from the eCKM track noting a clinical exclusion. A second API call will then need to be submitted to realign the patient to the CKM track.
- If a participant attempts to submit an alignment request for a patient to the CKM track who is in the eCKM track without first unaligning the patient, they will receive a not-aligned-already-aligned response indicating the patient is already aligned.

Example Switch Request with Consent Attestation:

POST https://[base]/access/Patient/\$align?entityId=ACCES12345

Content-Type: application/json

```
{
  "resourceType" : "Parameters",
  "id" : "AlignmentRequestWithSwitchConsentExample",
  "meta" : {
    "profile" : ["https://dsacms.github.io/cmml-access-model/StructureDefinition/access-align-in"]
  },
  "language" : "en",
  "parameter" : [{
    "name" : "participantID",
    "valueIdentifier" : {
      "system" : "https://dsacms.github.io/cmml-access-model/participant-id",
      "value" : "ACCES12345"
    }
  },
  {
    "name" : "payerID",
    "valueIdentifier" : {
      "type" : {
        "coding" : [{
          "system" : "http://hl7.org/fhir/us/caribbean/CodeSystem/C4BBIdentifierType",
          "code" : "payerid",
          "display" : "Payer ID"
        }]
      },
      "system" : "urn:oid:2.16.840.1.113883.3.221.5",
      "value" : "12345"
    }
  },
  {
    "name" : "patient",
    "resource" : {
      "resourceType" : "Patient",
      "id" : "PatientExample",
      "meta" : {
        "profile" : ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-patient|6.1.0"]
      }
    }
  }
]
```

```

    },
    "language" : "en",
    "text" : {
        "status" : "generated",
        "div" : "<div xml:lang=\"en\" xmlns=\"http://www.w3.org/1999/xhtml\"
lang=\"en\">Patient John Doe, male, born 1950-01-01, Medicare ID:
1EG4TE5MK73</div>"
    },
    "identifier" : [{
        "type" : {
            "coding" : [{
                "system" : "http://terminology.hl7.org/CodeSystem/v2-0203",
                "code" : "MC"
            }]
        },
        "system" : "http://terminology.hl7.org/NamingSystem/cmsMBI",
        "value" : "1EG4TE5MK73"
    }],
    "name" : [{
        "family" : "Doe",
        "given" : ["John"]
    }],
    "gender" : "male",
    "birthDate" : "1950-01-01"
}
},
{
    "name" : "track",
    "valueCodeableConcept" : {
        "coding" : [{
            "system" : "https://dsacms.github.io/cmami-access-
model/CodeSystem/ACCESSTrackCS",
            "code" : "CKM",
            "display" : "Cardio-kidney-metabolic track"
        }]
    }
},
{
    "name" : "condition",
    "resource" : {
        "resourceType" : "Condition",
        "id" : "ConditionDiabetesExample",
        "meta" : {
            "profile" : ["https://dsacms.github.io/cmami-access-
model/StructureDefinition/access-ckm-condition"]
        },
        "language" : "en",
        "text" : {
            "status" : "generated",
            "div" : "<div xml:lang=\"en\" xmlns=\"http://www.w3.org/1999/xhtml\"
lang=\"en\">Type 2 diabetes mellitus without complications</div>"
        },
        "clinicalStatus" : {
            "coding" : [{

```

```

        "system" : "http://terminology.hl7.org/CodeSystem/condition-
clinical",
        "code" : "active"
    }
  ],
  "verificationStatus" : {
    "coding" : [{
      "system" : "http://terminology.hl7.org/CodeSystem/condition-ver-
status",
      "code" : "confirmed"
    }]
  },
  "category" : [{
    "coding" : [{
      "system" : "http://terminology.hl7.org/CodeSystem/condition-
category",
      "code" : "problem-list-item"
    }]
  }],
  "code" : {
    "coding" : [{
      "system" : "http://hl7.org/fhir/sid/icd-10-cm",
      "code" : "E11.9",
      "display" : "Type 2 diabetes mellitus without complications"
    }]
  },
  "subject" : {
    "reference" : "Patient/PatientExample"
  },
  "onsetDateTime" : "2020-01-15"
}
},
{
  "name" : "isProviderReferral",
  "valueBoolean" : false
},
{
  "name" : "switchConsentAttestation",
  "valueBoolean" : true
}
}]
}

```

Response if Switch Approved:

HTTP/1.1 202 Accepted

Content-Location: [https://\[base\]/access/Patient/\\$submission-status/sub-789012](https://[base]/access/Patient/$submission-status/sub-789012)

Then polling \$submission-status would eventually return:

```

{
  "resourceType": "Parameters",
  "parameter": [
    {
      "name": "result",
      "valueCodeableConcept": {

```

```

      "coding": [
        {
          "system": "https://dsacms.github.io/cmmi-access-
model/CodeSystem/ACCESSAlignmentResultCS",
          "code": "aligned-switch-approved",
          "display": "Aligned and switch approved"
        }
      ],
      "text": "The request to switch the patient's alignment from a
different participant after the 90-day lock in period is accepted and the
patient is considered switched and now re-aligned."
    }
  }
]
}

```

- **not-aligned-no-switch-attestation:** Participant switch request did not include switch consent attestation.

Automatic Push Notifications

When an alignment is successful (result codes `aligned` or `aligned-switch-approved`), the system automatically begins sending push notifications via email about important upcoming events and deadlines. This helps ACCESS participants stay informed about critical dates and required actions.

Automatic Email Notifications are Sent for:

1. **Provider Lock-In Period Ending** - Notifications before the 90-day lock-in period ends
2. **Control Group Period Ending** - Notifications before the 12-month control group period ends
3. **Alignment Renewal Due** - Notifications when alignment renewal is approaching when a follow-on year is allowed
4. **Baseline Data Reporting Due** - Notifications when the deadline for baseline data submission is approaching
5. **Quarterly Data Reporting Due** - Notifications when the deadline for quarterly data submission is approaching
6. **End-of-Year Data Reporting Due** - Notifications when the deadline for end-of-year data submission is approaching
7. **Unalignment** - Notification for when a patient has been unaligned from the participant and/or track

What This Means for Implementers:

- **Email Addresses Configured During Onboarding:** Email addresses for receiving notifications are set up during participant registration
- **Automatic Notifications:** Emails are automatically sent when events occur—no additional configuration needed

- **Monitor Email:** Ensure registered email addresses are monitored regularly for time-sensitive notifications
- **Take Timely Action:** Respond to notifications before deadlines to maintain compliance

For complete details on email notification content, event types, and implementation guidance, see the Subscriptions section.

Best Practices

1. **Track Validation:** Verify that the track corresponds to a valid ACCESS track before submission
2. **Diagnosis Validation:** Ensure submitted conditions are relevant to the requested track
3. **Eligibility Pre-Check:** Consider checking eligibility via the Eligibility API before submitting alignment requests

Example Complete Workflow

The following example demonstrates a complete alignment workflow:

Step 1: Submit Alignment Request

POST `https://[base]/access/Patient/$align?entityId=ACCES12345`
 Content-Type: `application/json`

```
{
  "resourceType" : "Parameters",
  "id" : "AlignmentRequestExample",
  "meta" : {
    "profile" : ["https://dsacms.github.io/cmmi-access-model/StructureDefinition/access-align-in"]
  },
  "language" : "en",
  "parameter" : [{
    "name" : "participantID",
    "valueIdentifier" : {
      "system" : "https://dsacms.github.io/cmmi-access-model/participant-id",
      "value" : "ACCES12345"
    }
  },
  {
    "name" : "payerID",
    "valueIdentifier" : {
      "type" : {
        "coding" : [{
          "system" : "http://hl7.org/fhir/us/caribbean/CodeSystem/C4BBIdentifierType",
          "code" : "payerid",
          "display" : "Payer ID"
        }]
      },
      "system" : "urn:oid:2.16.840.1.113883.3.221.5",
      "value" : "12345"
    }
  }
],
  {
    "name" : "patient",
    "resource" : {
      "resourceType" : "Patient",
```

```

        "id" : "PatientExample",
        "meta" : {
            "profile" : ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-patient|6.1.0"]
        },
        "language" : "en",
        "text" : {
            "status" : "generated",
            "div" : "<div xml:lang=\"en\" xmlns=\"http://www.w3.org/1999/xhtml\" lang=\"en\">Patient John Doe, male, born 1950-01-01, Medicare ID: 1EG4TE5MK73</div>"
        },
        "identifier" : [{
            "type" : {
                "coding" : [{
                    "system" : "http://terminology.hl7.org/CodeSystem/v2-0203",
                    "code" : "MC"
                }]
            },
            "system" : "http://terminology.hl7.org/NamingSystem/cmsMBI",
            "value" : "1EG4TE5MK73"
        }],
        "name" : [{
            "family" : "Doe",
            "given" : ["John"]
        }],
        "gender" : "male",
        "birthDate" : "1950-01-01"
    }
},
{
    "name" : "track",
    "valueCodeableConcept" : {
        "coding" : [{
            "system" : "https://dsacms.github.io/cmmi-access-model/CodeSystem/ACCESSTrackCS",
            "code" : "CKM",
            "display" : "Cardio-kidney-metabolic track"
        }]
    }
},
{
    "name" : "condition",
    "resource" : {
        "resourceType" : "Condition",
        "id" : "ConditionDiabetesExample",
        "meta" : {
            "profile" : ["https://dsacms.github.io/cmmi-access-model/StructureDefinition/access-ckm-condition"]
        },
        "language" : "en",
        "text" : {
            "status" : "generated",
            "div" : "<div xml:lang=\"en\" xmlns=\"http://www.w3.org/1999/xhtml\" lang=\"en\">Type 2 diabetes mellitus without complications</div>"
        },
        "clinicalStatus" : {
            "coding" : [{
                "system" : "http://terminology.hl7.org/CodeSystem/condition-clinical",
                "code" : "active"
            }]
        }
    }
},

```

```

        "verificationStatus" : {
          "coding" : [{
            "system" : "http://terminology.hl7.org/CodeSystem/condition-ver-
status",
            "code" : "confirmed"
          }]
        },
        "category" : [{
          "coding" : [{
            "system" : "http://terminology.hl7.org/CodeSystem/condition-
category",
            "code" : "problem-list-item"
          }]
        }],
        "code" : {
          "coding" : [{
            "system" : "http://hl7.org/fhir/sid/icd-10-cm",
            "code" : "E11.9",
            "display" : "Type 2 diabetes mellitus without complications"
          }]
        },
        "subject" : {
          "reference" : "Patient/PatientExample"
        },
        "onsetDateTime" : "2020-01-15"
      }
    },
    {
      "name" : "isProviderReferral",
      "valueBoolean" : true
    }
  ]
}

```

Response:

```

HTTP/1.1 202 Accepted
Content-Location: https://[base]/access/Patient/$submission-status/sub-
123456

```

Step 2: Extract Submission URL and Wait

- Extract submission URL from Content-Location header
- Wait 5 seconds before first poll

Step 3: First Status Check (after 5 seconds)

```
GET https://[base]/access/Patient/$submission-status/sub-123456
```

Response:

```
HTTP/1.1 202 Accepted
```

(Still processing - no body)

Step 4: Second Status Check (after another 15 seconds)

GET https://[base]/access/Patient/\$submission-status/sub-123456

Response:

HTTP/1.1 200 OK

Content-Type: application/json

```
{
  "resourceType": "Parameters",
  "parameter": [
    {
      "name": "result",
      "valueCodeableConcept": {
        "coding": [
          {
            "system": "https://dsacms.github.io/cmmi-access-
model/CodeSystem/ACCESSAlignmentResultCS",
            "code": "aligned",
            "display": "Aligned"
          }
        ],
        "text": "Patient is eligible and has been aligned so the
participant can now begin providing services to the patient under the
ACCESS Model."
      }
    }
  ]
}
```

Step 5: Process Result

- Parse the result code: "aligned"
- Display the text to the user
- Begin providing services to the patient under the ACCESS Model

API-Specific Response Scenarios

For general response handling guidance and common scenarios (missing parameters, invalid tokens, server errors, etc.), see the Error Handling section in General Guidance.

The following responses are specific to the Alignment API and are returned as part of normal processing:

Not Aligned - Already Aligned (Lock-In Period Active)

Scenario: Patient is already aligned to another provider and is still within the 90-day lock-in period.

GET https://[base]/access/Patient/\$submission-status/sub-123456

HTTP/1.1 200 OK
Content-Type: application/json

```
{
  "resourceType": "Parameters",
  "parameter": [
    {
      "name": "result",
      "valueCodeableConcept": {
        "coding": [
          {
            "system": "https://dsacms.github.io/cmml-access-
model/CodeSystem/ACCESSAlignmentResultCS",
            "code": "not-aligned-already-aligned",
            "display": "Not aligned - already aligned to another
participant in the track"
          }
        ],
        "text": "The patient is technically eligible, but is already
aligned to another participant and receiving services under the ACCESS
Model in the same track. A patient can only be aligned to one participant
in each track. If a switch consent attestation is submitted, but the
patient is still within the 90-day lock-in period, this response will be
received."
      }
    }
  ]
}
```

Not Aligned - Missing Required Consent for Switch

Scenario: Patient is attempting to switch providers after lock-in period but consent attestation is missing.

HTTP/1.1 400 Bad Request
Content-Type: application/json

```
{
  "resourceType": "OperationOutcome",
  "issue": [
    {
      "severity": "error",
      "code": "required",
      "details": {
        "text": "Switch consent attestation is required when patient is
switching participants after lock-in period"
      },
      "diagnostics": "Patient is eligible to switch participants but the
'switchConsentAttestation' parameter must be provided."
    }
  ]
}
```

Not Aligned - No Qualifying Diagnosis

Scenario: Patient does not have a diagnosis that qualifies for the requested track.

HTTP/1.1 200 OK
Content-Type: application/json

```
{
  "resourceType": "Parameters",
  "parameter": [
    {
      "name": "result",
      "valueCodeableConcept": {
        "coding": [
          {
            "system": "https://dsacms.github.io/cmml-access-
model/CodeSystem/ACCESSAlignmentResultCS",
            "code": "not-aligned-diagnoses",
            "display": "Not aligned - no qualifying diagnosis"
          }
        ],
        "text": "The patient does not have a treating diagnosis that
qualifies them for service in the track indicated and therefore cannot
get services under the ACCESS Model."
      }
    }
  ]
}
```

Not Aligned – Clinical Exclusion

Scenario: The patient has a clinical exclusion that prevents them from receiving services under the ACCESS Model.

HTTP/1.1 200 OK
Content-Type: application/json

```
{
  "resourceType": "Parameters",
  "parameter": [
    {
      "name": "result",
      "valueCodeableConcept": {
        "coding": [
          {
            "system": "https://dsacms.github.io/cmml-access-
model/CodeSystem/ACCESSAlignmentResultCS",
            "code": "not-aligned-clinical-exclusion",
            "display": "Not aligned - clinical exclusion"
          }
        ],
        "text": "The patient has a clinical exclusion that prevents them
from receiving services under the ACCESS Model."
      }
    }
  ]
}
```

Not Aligned – Mismatch

Scenario: The patient information provided does not match the patient information on record.

HTTP/1.1 200 OK

Content-Type: application/json

```
{
  "resourceType": "Parameters",
  "parameter": [
    {
      "name": "result",
      "valueCodeableConcept": {
        "coding": [
          {
            "system": "https://dsacms.github.io/cmmi-access-
model/CodeSystem/ACCESSAlignmentResultCS",
            "code": "not-aligned-mismatch",
            "display": "Not aligned - mismatch"
          }
        ],
        "text": "The patient information provided does not match the
patient information on record."
      }
    }
  ]
}
```

Missing Required Conditions Parameter

Scenario: Alignment request submitted without required conditions.

POST https://[base]/access/Patient/\$align?entityId=ACCES12345

HTTP/1.1 400 Bad Request

Content-Type: application/json

```
{
  "resourceType": "OperationOutcome",
  "issue": [
    {
      "severity": "error",
      "code": "required",
      "details": {
        "text": "Missing required parameter: conditions"
      },
      "diagnostics": "At least one Condition resource must be provided
for alignment requests. Conditions must conform to the US Core Condition
profile and include ICD-10-CM codes."
    }
  ]
}
```

Note: These scenarios represent a mix of business logic results (HTTP 200 with specific result codes) and technical validation errors (HTTP 400). Always check the HTTP status code first to determine the type of response.

Implementation Notes and Edge Cases

Patient Switches Between Participants

Scenario: Patient aligned to ACCESS Participant A wants to switch to Participant B

Implementation Guidance:

1. Participant B checks eligibility (may return `not-eligible-already-aligned` if within 90-day lock-in period)
2. Wait until 90-day lock-in period expires
3. Patient provides consent to switch and Participant documents the consent
4. Participant B submits alignment with `switchConsentAttestation = true`.
5. If approved, patient is automatically unaligned from Participant A
6. Participant A receives unalignment notification automatically

Important Notes:

- Participant A does NOT need to manually unalign the patient
- Participant B handles the entire switch process
- System ensures only one active alignment per track
- Lock-in period prevents frequent participant switching

Unalignment API Guidance

How to Use the API

The ACCESS Unalignment API uses an asynchronous pattern for processing manual unalignment requests for patients in the ACCESS Model. The pattern uses two operations to support a submit-and-poll workflow:

1. **\$unalign**: Submits an unalignment request
2. **\$submission-status**: Polls for the status of a submitted request

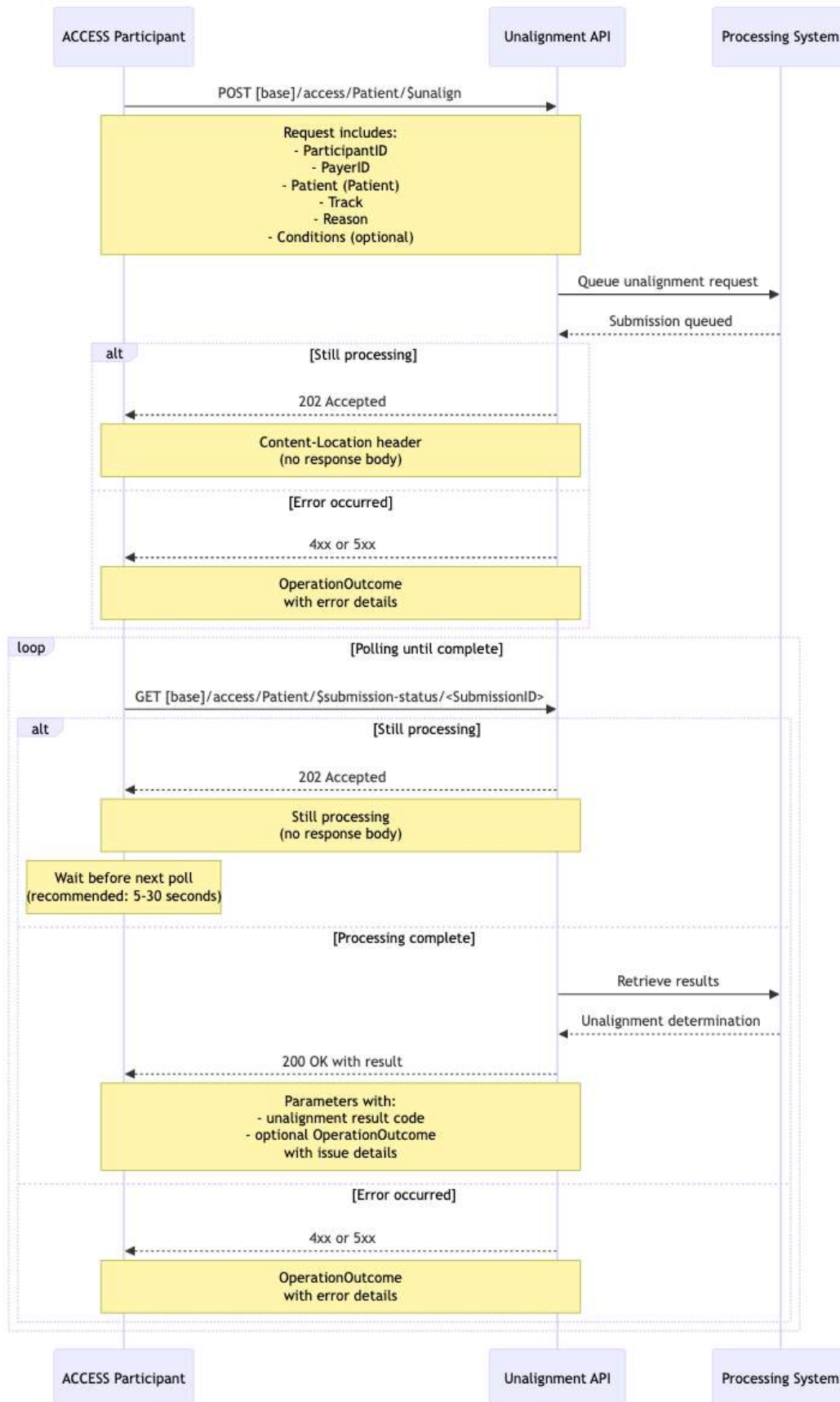
Asynchronous Interaction Pattern

The Unalignment API uses an asynchronous request-response pattern to accommodate the processing time required for unalignment determination. This pattern allows clients to submit unalignment requests and subsequently poll for results without maintaining a persistent connection.

These operations can take some time to complete, making a synchronous request-response pattern impractical for real-world implementations.

Detailed Interaction Sequence

The following sequence diagram illustrates the complete interaction pattern:



Operation Details

\$unalign Operation

The \$unalign operation initiates an asynchronous manual unalignment request.

Endpoint: POST [base]/access/Patient/\$unalign?
entityId=[participantID]

Input Parameters:

- **participantID** (Identifier, required): The ACCESS ID for the submitting participant
- **payerID** (Identifier, required): The payer ID for the patient. Uses the X12 EDI Payer ID standard (urn:oid:2.16.840.1.113883.3.221.5) with CARIN Blue Button identifier typing (<http://hl7.org/fhir/us/carin-bb/CodeSystem/C4BBIdentifierType>). EDI Payer IDs are 5-character alphanumeric codes widely used in healthcare transactions (e.g., eligibility checks, claims, remittance).
- **patient** (Patient Resource, required): Patient information conforming to US Core Patient Profile. **SHOULD** contain the Medicare Beneficiary Identifier (MBI)
- **track** (Identifier, required): The track from which the patient should be unaligned
- **reason** (CodeableConcept, required): The reason for the manual unalignment request. Value from **ACCESSUnalignmentReasonVS** value set
- **conditions** (Condition Resources, conditional): Zero or more Condition resources conforming to the ACCESS Condition Profile describing the patient's health concerns. **NOTE: This parameter is required** when reason is no-longer-clinically-eligible to document the disqualifying diagnosis (enforced by invariant access-unalign-condition-required). The list of clinical exclusions for each track can be found in the IG:
 - **ACCESSCKMClinicalExclusionDiagnosisVS** - clinical exclusions for the eCKM/CKM tracks
 - **ACCESSMSKClinicalExclusionDiagnosisVS** - clinical exclusions for the MSK track
 - **ACCESSBHClinicalExclusionDiagnosisVS** - clinical exclusions for the BH track

These lists are extensible, meaning that if there is a value in these value sets that cover the patient's condition, they must be used. If none of the values in the value set applies, another value can be submitted.

Expected Response:

- **Status Code:** 202 Accepted
- **HTTP Headers:** Content-Location header containing the URL to check submission status

- **Response Body:** Empty (no body while processing)

Example Request:

POST [https://\[base\]/access/Patient/\\$unalign?entityId=ACCES12345](https://[base]/access/Patient/$unalign?entityId=ACCES12345)

Content-Type: application/json

```
{
  "resourceType" : "Parameters",
  "id" : "UnalignmentRequestExample",
  "meta" : {
    "profile" : ["https://dsacms.github.io/cmmi-access-model/StructureDefinition/access-unalign-in"]
  },
  "language" : "en",
  "parameter" : [{
    "name" : "participantID",
    "valueIdentifier" : {
      "system" : "https://dsacms.github.io/cmmi-access-model/participant-id",
      "value" : "ACCES12345"
    }
  },
  {
    "name" : "payerID",
    "valueIdentifier" : {
      "type" : {
        "coding" : [{
          "system" : "http://hl7.org/fhir/us/caribbean/CodeSystem/C4BBIdentifierType",
          "code" : "payerid",
          "display" : "Payer ID"
        }]
      },
      "system" : "urn:oid:2.16.840.1.113883.3.221.5",
      "value" : "12345"
    }
  },
  {
    "name" : "patient",
    "resource" : {
      "resourceType" : "Patient",
      "id" : "PatientExample",
      "meta" : {
        "profile" : ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-patient|6.1.0"]
      },
      "language" : "en",
      "text" : {
        "status" : "generated",
        "div" : "<div xml:lang=\"en\" xmlns=\"http://www.w3.org/1999/xhtml\" lang=\"en\">Patient John Doe, male, born 1950-01-01, Medicare ID: 1EG4TE5MK73</div>"
      }
    }
  },
}
```

```

    "identifier" : [{
      "type" : {
        "coding" : [{
          "system" : "http://terminology.hl7.org/CodeSystem/v2-0203",
          "code" : "MC"
        }]
      },
      "system" : "http://terminology.hl7.org/NamingSystem/cmsMBI",
      "value" : "1EG4TE5MK73"
    }],
    "name" : [{
      "family" : "Doe",
      "given" : ["John"]
    }],
    "gender" : "male",
    "birthDate" : "1950-01-01"
  }
},
{
  "name" : "track",
  "valueCodeableConcept" : {
    "coding" : [{
      "system" : "https://dsacms.github.io/cmami-access-
model/CodeSystem/ACCESSTrackCS",
      "code" : "CKM",
      "display" : "Cardio-kidney-metabolic track"
    }]
  }
},
{
  "name" : "reason",
  "valueCodeableConcept" : {
    "coding" : [{
      "system" : "https://dsacms.github.io/cmami-access-
model/CodeSystem/ACCESSUnalignmentReasonCS",
      "code" : "geographic-relocated",
      "display" : "Geographic relocated"
    }]
  }
}
}]
}

```

Example Response:

HTTP/1.1 202 Accepted

Content-Location: https://[base]/access/Patient/\$submission-status/sub-123456

(No response body - processing asynchronously)

Example Request (No Longer Clinically Eligible):

This example demonstrates unalignment when a patient has developed a new condition that makes them ineligible for the ACCESS Model. In this case, the patient was aligned to the

CKM (Cardio-kidney-metabolic) track for diabetes management, but has now developed end-stage renal disease (ESRD) requiring dialysis, which makes them ineligible for the ACCESS Model per program requirements.

POST https://[base]/access/Patient/\$unalign?entityId=ACCES12345
Content-Type: application/json

```
{
  "resourceType" : "Parameters",
  "id" : "UnalignmentRequestESRDEExample",
  "meta" : {
    "profile" : ["https://dsacms.github.io/cmmi-access-model/StructureDefinition/access-unalign-in"]
  },
  "language" : "en",
  "parameter" : [{
    "name" : "participantID",
    "valueIdentifier" : {
      "system" : "https://dsacms.github.io/cmmi-access-model/participant-id",
      "value" : "ACCES12345"
    }
  },
  {
    "name" : "payerID",
    "valueIdentifier" : {
      "type" : {
        "coding" : [{
          "system" : "http://hl7.org/fhir/us/caribbean/CodeSystem/C4BBIdentifierType",
          "code" : "payerid",
          "display" : "Payer ID"
        }]
      },
      "system" : "urn:oid:2.16.840.1.113883.3.221.5",
      "value" : "12345"
    }
  },
  {
    "name" : "patient",
    "resource" : {
      "resourceType" : "Patient",
      "id" : "PatientESRDEExample",
      "meta" : {
        "profile" : ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-patient|6.1.0"]
      },
      "language" : "en",
      "text" : {
        "status" : "generated",
        "div" : "<div xml:lang='en' xmlns='http://www.w3.org/1999/xhtml' lang='en'>Patient Jane Smith, female, born 1955-06-15, Medicare ID: 9876543210B</div>"
      },
      "identifier" : [{
        "type" : {
          "coding" : [{
            "system" : "http://terminology.hl7.org/CodeSystem/v2-0203",
            "code" : "MC"
          }]
        }
      },
      {
        "system" : "http://terminology.hl7.org/NamingSystem/cmsMBI",

```

```

        "value" : "9876543210B"
    }],
    "name" : [{
        "family" : "Smith",
        "given" : ["Jane"]
    }],
    "gender" : "female",
    "birthDate" : "1955-06-15"
}
},
{
    "name" : "track",
    "valueCodeableConcept" : {
        "coding" : [{
            "system" : "https://dsacms.github.io/cmmi-access-
model/CodeSystem/ACCESSTrackCS",
            "code" : "CKM",
            "display" : "Cardio-kidney-metabolic track"
        }]
    }
},
{
    "name" : "reason",
    "valueCodeableConcept" : {
        "coding" : [{
            "system" : "https://dsacms.github.io/cmmi-access-
model/CodeSystem/ACCESSUnalignmentReasonCS",
            "code" : "no-longer-clinically-eligible",
            "display" : "No longer clinically eligible"
        }],
        "text" : "Patient has developed end-stage renal disease (ESRD) requiring
dialysis, which makes them ineligible for the ACCESS Model."
    }
},
{
    "name" : "condition",
    "resource" : {
        "resourceType" : "Condition",
        "id" : "ESRDConditionExample",
        "meta" : {
            "profile" : ["https://dsacms.github.io/cmmi-access-
model/StructureDefinition/access-clinical-exclusion-condition"]
        },
        "language" : "en",
        "text" : {
            "status" : "generated",
            "div" : "<div xml:lang=\"en\" xmlns=\"http://www.w3.org/1999/xhtml\"
lang=\"en\">End stage renal disease (ESRD)</div>"
        },
        "clinicalStatus" : {
            "coding" : [{
                "system" : "http://terminology.hl7.org/CodeSystem/condition-
clinical",
                "code" : "active",
                "display" : "Active"
            }]
        },
        "verificationStatus" : {
            "coding" : [{
                "system" : "http://terminology.hl7.org/CodeSystem/condition-ver-
status",
                "code" : "confirmed",
                "display" : "Confirmed"
            }]
        }
    }
}

```

```

    ]]
  },
  "category" : [{
    "coding" : [{
      "system" : "http://terminology.hl7.org/CodeSystem/condition-
category",
      "code" : "problem-list-item",
      "display" : "Problem List Item"
    }]
  }],
  "code" : {
    "coding" : [{
      "system" : "http://hl7.org/fhir/sid/icd-10-cm",
      "code" : "N18.6",
      "display" : "End stage renal disease"
    }]
  },
  "subject" : {
    "reference" : "Patient/PatientESRDEExample"
  },
  "onsetDateTime" : "2026-01-15"
}
]]
}

```

Example Response:

```

HTTP/1.1 202 Accepted
Content-Location: https://[base]/access/Patient/$submission-status/sub-
789012

```

(No response body - processing asynchronously)

\$submission-status Operation

The \$submission-status operation retrieves the current status of a previously submitted unalignment request. This is a **read-only operation** that uses the HTTP GET method.

Endpoint: GET [base]/access/Patient/\$submission-status/<submission-id>

Output Parameters (when complete):

- **result** (CodeableConcept, required): Result code with descriptive text indicating unalignment status. Value from **ACCESSUnalignmentResultVS** value set.

HTTP Status Codes:

- **202 Accepted:** Request is still being processed asynchronously (no response body)
- **200 OK:** Processing complete - response includes Parameters resource with unalignment result
- **400 Bad Request:** Invalid request (returns OperationOutcome)
- **404 Not Found:** Submission ID not found (returns OperationOutcome)

- **500 Internal Server Error:** Server error during processing (returns `OperationOutcome`)

Unalignment Result Codes:

When processing is complete (`HTTP 200`), the `result` parameter uses codes from the **ACCESSUnalignmentResultVS** value set:

- **unaligned:** The request to unalign the patient has been accepted and the patient has been successfully unaligned.
- **unalignment-pending:** Additional review is needed and you will receive further information once the manual review of the unalignment request is complete.
- **patient-not-aligned:** Patient is not currently aligned to this participant in the specified track and therefore cannot be unaligned.
- **cannot-unalign-during-lock-in:** Patient is within the 90-day lock-in period and cannot be unaligned.

Unalignment Reason Codes:

The `reason` parameter in the `$unalign` operation uses codes from the **ACCESSUnalignmentReasonVS** value set:

- **geographic-relocated:** Patient has relocated outside of the geographic area in which the aligned participant is licensed to provide services.
- **loss-of-contact:** Despite good faith efforts (defined as making three or more outreach attempts over 30 or more days), contact with the patient has been lost and therefore no longer able to engage with them.
- **no-longer-clinically-eligible:** Patient's conditions have changed such that they are no longer eligible for the ACCESS Model.
- **patient-initiated:** Patient no longer wants to participate in the ACCESS Model after the initial 90-day lock-in period.

Parameter Encoding for GET:

The submission ID is passed as part of the URL path:

- **Path:** `GET https://[base]/access/Patient/$submission-status/sub-123456`

Example Status Check Request (Still Processing):

```
GET https://[base]/access/Patient/$submission-status/sub-123456
```

Response:

```
HTTP/1.1 202 Accepted
```

(No response body - still processing)

Example Status Check Request (Processing Complete - Unaligned):

GET https://[base]/access/Patient/\$submission-status/sub-123456

Response:

HTTP/1.1 200 OK

Content-Type: application/json

```
{
  "resourceType": "Parameters",
  "parameter": [
    {
      "name": "result",
      "valueCodeableConcept": {
        "coding": [
          {
            "system": "https://dsacms.github.io/cmmi-access-
model/CodeSystem/ACCESSUnalignmentResultCS",
            "code": "unaligned",
            "display": "Unaligned"
          }
        ],
        "text": "The request to unalign the patient has been accepted and
the patient has been successfully unaligned."
      }
    }
  ]
}
```

Example Status Check Request (Pending Manual Review):

GET https://[base]/access/Patient/\$submission-status/sub-123456

Response:

HTTP/1.1 200 OK

Content-Type: application/json

```
{
  "resourceType": "Parameters",
  "parameter": [
    {
      "name": "result",
      "valueCodeableConcept": {
        "coding": [
          {
            "system": "https://dsacms.github.io/cmmi-access-
model/CodeSystem/ACCESSUnalignmentResultCS",
            "code": "unalignment-pending",
            "display": "Unalignment pending further review"
          }
        ],
        "text": "Additional review is needed and you will receive further
information once the manual review of the unalignment request is
complete."
      }
    }
  ]
}
```

```
}
]
}
```

Example Status Check Request (Patient Not Aligned):

GET https://[base]/access/Patient/\$submission-status/sub-123456

Response:

HTTP/1.1 200 OK

Content-Type: application/json

```
{
  "resourceType": "Parameters",
  "parameter": [
    {
      "name": "result",
      "valueCodeableConcept": {
        "coding": [
          {
            "system": "https://dsacms.github.io/cmmi-access-
model/CodeSystem/ACCESSUnalignmentResultCS",
            "code": "patient-not-aligned",
            "display": "Patient not aligned"
          }
        ],
        "text": "Patient is not currently aligned to this participant in
the specified track and therefore cannot be unaligned."
      }
    }
  ]
}
```

Example Status Check Request (Cannot Unalign During Lock-in):

GET https://[base]/access/Patient/\$submission-status/sub-123456

Response:

HTTP/1.1 200 OK

Content-Type: application/json

```
{
  "resourceType": "Parameters",
  "parameter": [
    {
      "name": "result",
      "valueCodeableConcept": {
        "coding": [
          {
            "system": "https://dsacms.github.io/cmmi-access-
model/CodeSystem/ACCESSUnalignmentResultCS",
            "code": "cannot-unalign-during-lock-in",
            "display": "Cannot unalign during lock-in"
          }
        ],

```

```

        "text": " Patient is within the 90-day lock-in period and cannot
be unaligned."
    }
}
]
}

```

Automatic Notification Cleanup

When a patient is successfully unaligned (result code `unaligned`), the system automatically stops sending email notifications about that patient. This ensures participants only receive notifications for currently aligned patients.

NOTE: Subscriptions will be maintained until all model obligations are completed for the patient. Some obligations will occur post unalignment.

Unalignment Notification Process:

When the `$unalign` operation completes successfully, the following occurs automatically:

1. **Unalignment Email Sent:** The system sends an email notification to the participant later that day informing them that the patient has been unaligned and the alignment relationship has ended.
2. **Future Notifications Stopped:** The system automatically stops sending future email notifications about events for that patient (e.g., reporting deadlines, renewal reminders) after all model obligations are complete for the patient.

Important Notes:

- **Automatic Process:** Both the unalignment notification delivery and stopping of future notifications happen automatically as part of the unalignment workflow. No additional action is required by the ACCESS participant.
- **Notification Sent First:** An unalignment notification email is sent to inform the participant of the alignment termination before future notifications are stopped.
- **Prevents Future Notifications:** Stopping notifications ensures that participants do not receive future emails about patients who are no longer aligned.
- **Pending Unalignments:** If the unalignment result is `unalignment-pending` (requiring manual review), email notifications continue and no unalignment notification is sent until the unalignment is finalized with an `unaligned` result. Additional information can also be found in the Beneficiary Alignment Report for these cases.
- **Other Patients Unaffected:** Participant will continue to receive notifications for all other aligned patients.

Cross-Reference:

For complete details on the email notifications that are sent during alignment, see the Subscriptions section and the Alignment API documentation.

Example Complete Workflow

The following example demonstrates a complete unalignment request workflow:

Step 1: Submit Unalignment Request

POST [https://\[base\]/access/Patient/\\$unalign?entityId=ACCES12345](https://[base]/access/Patient/$unalign?entityId=ACCES12345)
Content-Type: application/json

```
{
  "resourceType" : "Parameters",
  "id" : "UnalignmentRequestExample",
  "meta" : {
    "profile" : ["https://dsacms.github.io/cmmi-access-model/StructureDefinition/access-unalign-in"]
  },
  "language" : "en",
  "parameter" : [{
    "name" : "participantID",
    "valueIdentifier" : {
      "system" : "https://dsacms.github.io/cmmi-access-model/participant-id",
      "value" : "ACCES12345"
    }
  },
  {
    "name" : "payerID",
    "valueIdentifier" : {
      "type" : {
        "coding" : [{
          "system" : "http://hl7.org/fhir/us/caribbean/CodeSystem/C4BBIdentifierType",
          "code" : "payerid",
          "display" : "Payer ID"
        }]
      },
      "system" : "urn:oid:2.16.840.1.113883.3.221.5",
      "value" : "12345"
    }
  },
  {
    "name" : "patient",
    "resource" : {
      "resourceType" : "Patient",
      "id" : "PatientExample",
      "meta" : {
        "profile" : ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-patient|6.1.0"]
      },
      "language" : "en",
      "text" : {
        "status" : "generated",
```

```

    "div" : "<div xml:lang=\"en\" xmlns=\"http://www.w3.org/1999/xhtml\"
lang=\"en\">Patient John Doe, male, born 1950-01-01, Medicare ID:
1EG4TE5MK73</div>"
  },
  "identifier" : [{
    "type" : {
      "coding" : [{
        "system" : "http://terminology.hl7.org/CodeSystem/v2-0203",
        "code" : "MC"
      }]
    },
    "system" : "http://terminology.hl7.org/NamingSystem/cmsMBI",
    "value" : "1EG4TE5MK73"
  ]},
  "name" : [{
    "family" : "Doe",
    "given" : ["John"]
  }],
  "gender" : "male",
  "birthDate" : "1950-01-01"
}
},
{
  "name" : "track",
  "valueCodeableConcept" : {
    "coding" : [{
      "system" : "https://dsacms.github.io/cmmi-access-
model/CodeSystem/ACCESSTrackCS",
      "code" : "CKM",
      "display" : "Cardio-kidney-metabolic track"
    }]
  }
},
{
  "name" : "reason",
  "valueCodeableConcept" : {
    "coding" : [{
      "system" : "https://dsacms.github.io/cmmi-access-
model/CodeSystem/ACCESSUnalignmentReasonCS",
      "code" : "geographic-relocated",
      "display" : "Geographic relocated"
    }]
  }
}
}]
}

```

Response:

HTTP/1.1 202 Accepted
 Content-Location: https://[base]/access/Patient/\$submission-status/sub-
 123456

Step 2: Extract Submission URL and Wait

- Extract submission URL "sub-123456" from Content-Location header
- Wait 5 seconds before first poll

Step 3: First Status Check (after 5 seconds)

GET https://[base]/access/Patient/\$submission-status/sub-123456

Response:

HTTP/1.1 202 Accepted

(Still processing - no body)

Step 4: Second Status Check (after another 15 seconds)

GET https://[base]/access/Patient/\$submission-status/sub-123456

Response:

HTTP/1.1 200 OK

Content-Type: application/json

```
{
  "resourceType": "Parameters",
  "parameter": [
    {
      "name": "result",
      "valueCodeableConcept": {
        "coding": [
          {
            "system": "https://dsacms.github.io/cmmi-access-
model/CodeSystem/ACCESSUnalignmentResultCS",
            "code": "unaligned",
            "display": "Unaligned"
          }
        ],
        "text": "The request to unalign the patient has been accepted and
the patient has been successfully unaligned."
      }
    }
  ]
}
```

Step 5: Process Result

- Parse the result code: "unaligned"
- Display the text to the user
- Complete unalignment workflow and update internal systems

API-Specific Response Scenarios

For general response handling guidance and common scenarios (missing parameters, invalid tokens, server errors, etc.), see the Error Handling section in General Guidance.

The following responses are specific to the Unalignment API:

Not Unaligned - Patient Not Currently Aligned

Scenario: Attempting to unalign a patient who is not currently aligned to this ACCESS participant.

```
GET https://[base]/access/Patient/$submission-status/sub-123456

HTTP/1.1 200 OK
Content-Type: application/json

{
  "resourceType": "Parameters",
  "parameter": [
    {
      "name": "result",
      "valueCodeableConcept": {
        "coding": [
          {
            "system": "https://dsacms.github.io/cmami-access-
model/CodeSystem/ACCESSUnalignmentResultCS",
            "code": "patient-not-aligned",
            "display": "Patient not aligned"
          }
        ],
        "text": "Patient is not currently aligned to this participant in
the specified track and therefore cannot be unaligned."
      }
    }
  ]
}
```

Invalid Unalignment Reason

Scenario: Unalignment reason code is not recognized or invalid for the situation.

```
HTTP/1.1 400 Bad Request
Content-Type: application/json

{
  "resourceType": "OperationOutcome",
  "issue": [
    {
      "severity": "error",
      "code": "code-invalid",
      "details": {
        "text": "Invalid unalignment reason code"
      },
      "diagnostics": "The reason code 'invalid-reason' is not a valid
value from the ACCESSUnalignmentReasonVS value set. Valid reasons
include: geographic-relocated, loss-of-contact, no-longer-clinically-
eligible, patient-initiated."
    }
  ]
}
```

```

    }
  }
]
}

```

Missing Required Reason Parameter

Scenario: Unalignment request submitted without the required reason parameter.

POST https://[base]/access/Patient/\$unalign?entityId=ACCES12345

HTTP/1.1 400 Bad Request

Content-Type: application/json

```

{
  "resourceType": "OperationOutcome",
  "issue": [
    {
      "severity": "error",
      "code": "required",
      "details": {
        "text": "Missing required parameter: reason"
      },
      "diagnostics": "The 'reason' parameter is required for all
unalignment requests and must contain a CodeableConcept from the
ACCESSUnalignmentReasonVS value set."
    }
  ]
}

```

Note: These scenarios represent a mix of business logic results (HTTP 200 with specific result codes) and technical validation errors (HTTP 400). Always check the HTTP status code first to determine the type of response.

Data Reporting API Guidance

How to Use the API

The ACCESS Data Reporting API uses an asynchronous pattern for submitting clinical data for patients enrolled in the CMS ACCESS Model. For more information about the data reporting requirements, please see the ACCESS Model Payment Amounts and Performance Targets (<https://www.cms.gov/priorities/innovation/files/access-payments-amts-perf-targets.pdf>).

The pattern uses two operations to support a submit-and-poll workflow:

1. **\$report-data**: Submits a data reporting bundle for an aligned patient
2. **\$submission-status**: Polls for the status of a submitted data report

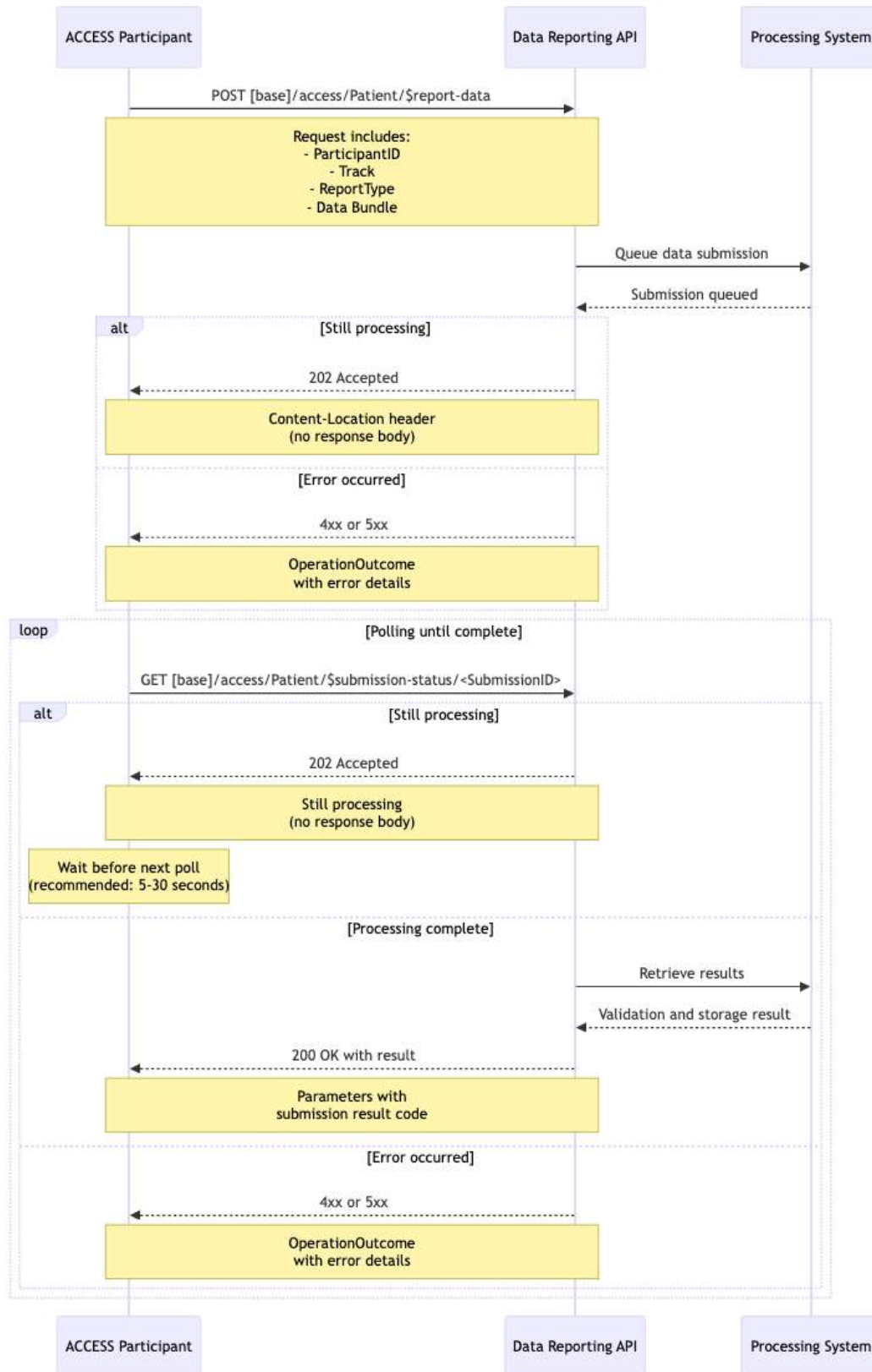
Asynchronous Interaction Pattern

The Data Reporting API uses an asynchronous request-response pattern to accommodate the processing time required for data validation and storage. This pattern allows clients to submit data reports and subsequently poll for results without maintaining a persistent connection.

These operations can take some time to complete, making a synchronous request-response pattern impractical for real-world implementations.

Detailed Interaction Sequence

The following sequence diagram illustrates the complete interaction pattern:



Operation Details

\$report-data Operation

The \$report-data operation initiates an asynchronous data reporting submission for an aligned patient.

Endpoint: POST [base]/access/Patient/\$report-data?
entityId=[participantID]

Input Parameters:

- **participantID** (Identifier, required): The ACCESS ID for the submitting participant
- **payerID** (Identifier, required): The payer ID for the patient. Uses the X12 EDI Payer ID standard (urn:oid:2.16.840.1.113883.3.221.5) with CARIN Blue Button identifier typing (<http://hl7.org/fhir/us/carin-bb/CodeSystem/C4BBIdentifierType>). EDI Payer IDs are 5-character alphanumeric codes widely used in healthcare transactions (e.g., eligibility checks, claims, remittance).
- **track** (CodeableConcept, required): The ACCESS track for this submission (CKM, eCKM, MSK, or BH)
- **reportType** (CodeableConcept, required): The type of report being submitted (baseline, quarterly, end-of-period)
- **dataBundle** (Bundle Resource, required): A document Bundle conforming to ACCESSDataReportingBundle profile containing the data reporting composition and all referenced resources

NOTE: If participants submit the end-of-period data using reportType = end-of-period and resubmit the same data as the baseline for the follow-on period using reportType = baseline, it will not be considered a duplicate submission.

NOTE: Unlike the other ACCESS operations, the Patient resource instance is included within the dataBundle instead of being a separate parameter for the \$report-data operation. The Patient resource instance is central to and referenced by the other data resource instances (e.g., Observations and QuestionnaireResponses) and therefore must be included within the dataBundle.

Expected Response:

- **Status Code:** 202 Accepted
- **HTTP Headers:** Content-Location header containing the URL to check submission status
- **Response Body:** Empty (no body while processing)

Example Request:

POST https://[base]/access/Patient/\$report-data?entityId=ACCES12345
Content-Type: application/json

```
{
  "resourceType" : "Parameters",
  "id" : "CKMReportDataRequestExample",
  "meta" : {
    "profile" : ["https://dsacms.github.io/cmmi-access-
model/StructureDefinition/access-report-data-in"]
  },
  "language" : "en",
  "parameter" : [{
    "name" : "participantID",
    "valueIdentifier" : {
      "system" : "https://dsacms.github.io/cmmi-access-model/participant-
id",
      "value" : "ACCES12345"
    }
  },
  {
    "name" : "payerID",
    "valueIdentifier" : {
      "type" : {
        "coding" : [{
          "system" : "http://hl7.org/fhir/us/carin-
bb/CodeSystem/C4BBIdentifierType",
          "code" : "payerid",
          "display" : "Payer ID"
        }]
      },
      "system" : "urn:oid:2.16.840.1.113883.3.221.5",
      "value" : "12345"
    }
  },
  {
    "name" : "track",
    "valueCodeableConcept" : {
      "coding" : [{
        "system" : "https://dsacms.github.io/cmmi-access-
model/CodeSystem/ACCESSTrackCS",
        "code" : "CKM",
        "display" : "Cardio-Kidney-Metabolic track"
      }]
    }
  },
  {
    "name" : "reportType",
    "valueCodeableConcept" : {
      "coding" : [{
        "system" : "https://dsacms.github.io/cmmi-access-
model/CodeSystem/ACCESSReportTypeCS",
        "code" : "baseline",
        "display" : "Baseline Data Report"
      }]
    }
  }
}
```

```

    },
    {
      "name" : "dataBundle",
      "resource" : {
        "resourceType" : "Bundle",
        "id" : "CKMReportDataBundleExample",
        "meta" : {
          "profile" : ["https://dsacms.github.io/cmmi-access-
model/StructureDefinition/access-data-reporting-bundle"]
        },
        "language" : "en",
        "identifier" : {
          "system" : "http://example.org/data-bundle-id",
          "value" : "bundle-ckm-001"
        },
        "type" : "document",
        "timestamp" : "2026-01-26T12:00:00Z",
        "entry" : [{
          "fullUrl" :
"http://example.org/Composition/CKMReportDataCompositionExample",
          "resource" : {
            "resourceType" : "Composition",
            "id" : "CKMReportDataCompositionExample",
            "meta" : {
              "profile" : ["https://dsacms.github.io/cmmi-access-
model/StructureDefinition/access-data-reporting-composition"]
            },
            "language" : "en",
            "text" : {
              "status" : "generated",
              "div" : "<div xml:lang=\"en\"
xmlns=\"http://www.w3.org/1999/xhtml\" lang=\"en\"><h3>ACCESS CKM Track
Data Report</h3><p>Patient: John Doe (MBI: 1EG4TE5MK73)</p><p>Report
Date: 2026-01-26</p><p>Author: Jane Smith</p></div>"
            },
            "status" : "final",
            "type" : {
              "coding" : [{
                "system" : "http://loinc.org",
                "code" : "74465-6",
                "display" : "Questionnaire response Document"
              }]
            },
            "subject" : {
              "reference" : "Patient/PatientExample"
            },
            "date" : "2026-01-26T12:00:00Z",
            "author" : [{
              "reference" : "Practitioner/PractitionerExample"
            }],
            "title" : "ACCESS CKM Track Data Report",
            "custodian" : {
              "reference" : "Organization/OrganizationExample"
            },
            "section" : [{

```

```

        "title" : "Data reporting for CKM track",
        "code" : {
            "coding" : [{
                "system" : "https://dsacms.github.io/cmami-access-
model/CodeSystem/ACCESSTrackCS",
                "code" : "CKM"
            }]
        },
        "text" : {
            "status" : "generated",
            "div" : "<div xml:lang=\"en\"
xmlns=\"http://www.w3.org/1999/xhtml\" lang=\"en\"><p>Comprehensive CKM
Track Data Reporting including vital signs (blood pressure, body weight,
waist circumference), and laboratory results (HbA1c, eGFR, uACR, lipid
panel).</p></div>"
        },
        "section" : [{
            "title" : "Blood Pressure",
            "code" : {
                "coding" : [{
                    "system" : "http://loinc.org",
                    "code" : "85354-9"
                }]
            },
            "entry" : [{
                "reference" : "Observation/BloodPressureExample"
            },
            {
                "reference" : "Observation/BloodPressureExample2"
            },
            {
                "reference" : "Observation/BloodPressureExample3"
            }
        ]
    },
    {
        "title" : "Weight",
        "code" : {
            "coding" : [{
                "system" : "http://loinc.org",
                "code" : "29463-7"
            }]
        },
        "entry" : [{
            "reference" : "Observation/BodyWeightExample"
        }
    ],
    {
        "title" : "BMI",
        "code" : {
            "coding" : [{
                "system" : "http://loinc.org",
                "code" : "39156-5"
            }]
        },
        "entry" : [{

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        "reference" : "Observation/BMIExample"
    }]
},
{
    "title" : "Waist Circumference",
    "code" : {
        "coding" : [{
            "system" : "http://loinc.org",
            "code" : "8280-0"
        }]
    },
    "entry" : [{
        "reference" : "Observation/WaistCircumferenceExample"
    }]
},
{
    "title" : "HbA1c",
    "code" : {
        "coding" : [{
            "system" : "http://loinc.org",
            "code" : "4548-4"
        }]
    },
    "entry" : [{
        "reference" : "Observation/HbA1cExample"
    }]
},
{
    "title" : "eGFR",
    "code" : {
        "coding" : [{
            "system" : "http://loinc.org",
            "code" : "98979-8"
        }]
    },
    "entry" : [{
        "reference" : "Observation/eGFRExample"
    }]
},
{
    "title" : "uACR",
    "code" : {
        "coding" : [{
            "system" : "http://loinc.org",
            "code" : "14959-1"
        }]
    },
    "entry" : [{
        "reference" : "Observation/uACRExample"
    }]
},
{
    "title" : "Lipids",
    "code" : {
        "coding" : [{

```

```

        "system" : "http://loinc.org",
        "code" : "18262-6"
    }
  ],
  "entry" : [
    {
      "reference" : "Observation/LDLCholesterolExample"
    }
  ]
}
},
{
  "fullUrl" : "http://example.org/Patient/PatientExample",
  "resource" : {
    "resourceType" : "Patient",
    "id" : "PatientExample",
    "meta" : {
      "profile" :
["http://hl7.org/fhir/us/core/StructureDefinition/us-core-patient|6.1.0"]
    },
    "language" : "en",
    "text" : {
      "status" : "generated",
      "div" : "<div xml:lang=\"en\"
xmlns=\"http://www.w3.org/1999/xhtml\" lang=\"en\">Patient John Doe,
male, born 1950-01-01, Medicare ID: 1EG4TE5MK73</div>"
    },
    "identifier" : [
      {
        "type" : {
          "coding" : [
            {
              "system" : "http://terminology.hl7.org/CodeSystem/v2-
0203",
              "code" : "MC"
            }
          ]
        },
        "system" : "http://terminology.hl7.org/NamingSystem/cmsMBI",
        "value" : "1EG4TE5MK73"
      }
    ],
    "name" : [
      {
        "family" : "Doe",
        "given" : ["John"]
      }
    ],
    "gender" : "male",
    "birthDate" : "1950-01-01"
  }
},
{
  "fullUrl" :
"http://example.org/Practitioner/PractitionerExample",
  "resource" : {
    "resourceType" : "Practitioner",
    "id" : "PractitionerExample",
    "meta" : {

```

```

        "profile" :
["http://hl7.org/fhir/us/core/StructureDefinition/us-core-
practitioner|6.1.0"]
    },
    "language" : "en",
    "text" : {
        "status" : "generated",
        "div" : "<div xml:lang=\"en\"
xmlns=\"http://www.w3.org/1999/xhtml\" lang=\"en\">Practitioner Jane
Smith, NPI: 1234567893</div>"
    },
    "identifier" : [{
        "system" : "http://hl7.org/fhir/sid/us-npi",
        "value" : "1234567893"
    }],
    "name" : [{
        "family" : "Smith",
        "given" : ["Jane"]
    }]
    }
},
{
    "fullUrl" :
"http://example.org/Organization/OrganizationExample",
    "resource" : {
        "resourceType" : "Organization",
        "id" : "OrganizationExample",
        "meta" : {
            "profile" :
["http://hl7.org/fhir/us/core/StructureDefinition/us-core-
organization|6.1.0"]
        },
        "language" : "en",
        "text" : {
            "status" : "generated",
            "div" : "<div xml:lang=\"en\"
xmlns=\"http://www.w3.org/1999/xhtml\" lang=\"en\">Example Healthcare
Organization, ACCESS Participant ID: ACCES12345</div>"
        },
        "identifier" : [{
            "system" : "https://dsacms.github.io/cmmi-access-
model/participant-id",
            "value" : "ACCES12345"
        }],
        "active" : true,
        "name" : "Example Healthcare Organization"
    }
},
{
    "fullUrl" :
"http://example.org/Observation/BloodPressureExample",
    "resource" : {
        "resourceType" : "Observation",
        "id" : "BloodPressureExample",
        "meta" : {

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        "profile" :
["http://hl7.org/fhir/us/core/StructureDefinition/us-core-blood-
pressure|6.1.0"]
    },
    "language" : "en",
    "text" : {
        "status" : "generated",
        "div" : "<div xml:lang=\"en\"
xmlns=\"http://www.w3.org/1999/xhtml\" lang=\"en\">Blood Pressure: 138/88
mm[Hg] measured on 2026-01-15</div>"
    },
    "status" : "final",
    "category" : [{
        "coding" : [{
            "system" :
"http://terminology.hl7.org/CodeSystem/observation-category",
            "code" : "vital-signs",
            "display" : "Vital Signs"
        }]
    }],
    "code" : {
        "coding" : [{
            "system" : "http://loinc.org",
            "code" : "85354-9",
            "display" : "Blood pressure panel with all children
optional"
        }]
    },
    "text" : "Blood Pressure"
},
"subject" : {
    "reference" : "Patient/PatientExample"
},
"effectiveDateTime" : "2026-01-15T10:30:00Z",
"component" : [{
    "code" : {
        "coding" : [{
            "system" : "http://loinc.org",
            "code" : "8480-6",
            "display" : "Systolic blood pressure"
        }]
    },
    "valueQuantity" : {
        "value" : 138,
        "unit" : "mm[Hg]",
        "system" : "http://unitsofmeasure.org",
        "code" : "mm[Hg]"
    }
},
{
    "code" : {
        "coding" : [{
            "system" : "http://loinc.org",
            "code" : "8462-4",
            "display" : "Diastolic blood pressure"
        }]
    }
}

```

```

    },
    "valueQuantity" : {
      "value" : 88,
      "unit" : "mm[Hg]",
      "system" : "http://unitsofmeasure.org",
      "code" : "mm[Hg]"
    }
  ]
}
},
{
  "fullUrl" :
"http://example.org/Observation/BloodPressureExample2",
  "resource" : {
    "resourceType" : "Observation",
    "id" : "BloodPressureExample2",
    "meta" : {
      "profile" :
["http://hl7.org/fhir/us/core/StructureDefinition/us-core-blood-
pressure|6.1.0"]
    },
    "language" : "en",
    "text" : {
      "status" : "generated",
      "div" : "<div xml:lang=\\"en\\"
xmlns=\\"http://www.w3.org/1999/xhtml\\" lang=\\"en\\">Blood Pressure: 132/84
mm[Hg] measured on 2026-01-22</div>"
    },
    "status" : "final",
    "category" : [{
      "coding" : [{
        "system" :
"http://terminology.hl7.org/CodeSystem/observation-category",
        "code" : "vital-signs",
        "display" : "Vital Signs"
      }]
    }],
    "code" : {
      "coding" : [{
        "system" : "http://loinc.org",
        "code" : "85354-9",
        "display" : "Blood pressure panel with all children
optional"
      }]
    },
    "text" : "Blood Pressure"
  },
  "subject" : {
    "reference" : "Patient/PatientExample"
  },
  "effectiveDateTime" : "2026-01-22T10:30:00Z",
  "component" : [{
    "code" : {
      "coding" : [{
        "system" : "http://loinc.org",
        "code" : "8480-6",

```

```

        "display" : "Systolic blood pressure"
    }]
},
"valueQuantity" : {
    "value" : 132,
    "unit" : "mm[Hg]",
    "system" : "http://unitsofmeasure.org",
    "code" : "mm[Hg]"
}
},
{
    "code" : {
        "coding" : [{
            "system" : "http://loinc.org",
            "code" : "8462-4",
            "display" : "Diastolic blood pressure"
        }]
    },
    "valueQuantity" : {
        "value" : 84,
        "unit" : "mm[Hg]",
        "system" : "http://unitsofmeasure.org",
        "code" : "mm[Hg]"
    }
}]
}
},
{
    "fullUrl" :
"http://example.org/Observation/BloodPressureExample3",
    "resource" : {
        "resourceType" : "Observation",
        "id" : "BloodPressureExample3",
        "meta" : {
            "profile" :
["http://hl7.org/fhir/us/core/StructureDefinition/us-core-blood-
pressure|6.1.0"]
        },
        "language" : "en",
        "text" : {
            "status" : "generated",
            "div" : "<div xml:lang=\"en\"
xmlns=\"http://www.w3.org/1999/xhtml\" lang=\"en\">Blood Pressure: 140/90
mm[Hg] measured on 2026-02-05</div>"
        },
        "status" : "final",
        "category" : [{
            "coding" : [{
                "system" :
"http://terminology.hl7.org/CodeSystem/observation-category",
                "code" : "vital-signs",
                "display" : "Vital Signs"
            }]
        }],
        "code" : {

```

```

        "coding" : [{
            "system" : "http://loinc.org",
            "code" : "85354-9",
            "display" : "Blood pressure panel with all children
optional"
        }],
        "text" : "Blood Pressure"
    },
    "subject" : {
        "reference" : "Patient/PatientExample"
    },
    "effectiveDateTime" : "2026-02-05T10:30:00Z",
    "component" : [{
        "code" : {
            "coding" : [{
                "system" : "http://loinc.org",
                "code" : "8480-6",
                "display" : "Systolic blood pressure"
            }]
        },
        "valueQuantity" : {
            "value" : 140,
            "unit" : "mm[Hg]",
            "system" : "http://unitsofmeasure.org",
            "code" : "mm[Hg]"
        }
    },
    {
        "code" : {
            "coding" : [{
                "system" : "http://loinc.org",
                "code" : "8462-4",
                "display" : "Diastolic blood pressure"
            }]
        },
        "valueQuantity" : {
            "value" : 90,
            "unit" : "mm[Hg]",
            "system" : "http://unitsofmeasure.org",
            "code" : "mm[Hg]"
        }
    }
    ]
},
{
    "fullUrl" : "http://example.org/Observation/BodyWeightExample",
    "resource" : {
        "resourceType" : "Observation",
        "id" : "BodyWeightExample",
        "meta" : {
            "profile" :
["http://hl7.org/fhir/us/core/StructureDefinition/us-core-body-
weight|6.1.0"]
        },
        "language" : "en",

```

```

      "text" : {
        "status" : "generated",
        "div" : "<div xml:lang=\"en\"
xmlns=\"http://www.w3.org/1999/xhtml\" lang=\"en\">Body Weight: 85 kg
measured on 2026-01-15</div>"
      },
      "status" : "final",
      "category" : [{
        "coding" : [{
          "system" :
"http://terminology.hl7.org/CodeSystem/observation-category",
          "code" : "vital-signs",
          "display" : "Vital Signs"
        }]
      }],
      "code" : {
        "coding" : [{
          "system" : "http://loinc.org",
          "code" : "29463-7",
          "display" : "Body weight"
        }]
      },
      "subject" : {
        "reference" : "Patient/PatientExample"
      },
      "effectiveDateTime" : "2026-01-15T10:30:00Z",
      "valueQuantity" : {
        "value" : 85,
        "unit" : "kg",
        "system" : "http://unitsofmeasure.org",
        "code" : "kg"
      }
    }
  },
  {
    "fullUrl" : "http://example.org/Observation/BMIExample",
    "resource" : {
      "resourceType" : "Observation",
      "id" : "BMIExample",
      "meta" : {
        "profile" :
["http://hl7.org/fhir/us/core/StructureDefinition/us-core-bmi|6.1.0"]
      },
      "language" : "en",
      "text" : {
        "status" : "generated",
        "div" : "<div xml:lang=\"en\"
xmlns=\"http://www.w3.org/1999/xhtml\" lang=\"en\">BMI: 27.5 kg/m2
measured on 2026-01-15</div>"
      },
      "status" : "final",
      "category" : [{
        "coding" : [{
          "system" :
"http://terminology.hl7.org/CodeSystem/observation-category",

```

```

        "code" : "vital-signs",
        "display" : "Vital Signs"
    }]
}],
"code" : {
    "coding" : [{
        "system" : "http://loinc.org",
        "code" : "39156-5",
        "display" : "Body mass index (BMI) [Ratio]"
    }]
},
"subject" : {
    "reference" : "Patient/PatientExample"
},
"effectiveDateTime" : "2026-01-15T10:30:00Z",
"valueQuantity" : {
    "value" : 27.5,
    "unit" : "kg/m2",
    "system" : "http://unitsofmeasure.org",
    "code" : "kg/m2"
}
}
},
{
    "fullUrl" :
"http://example.org/Observation/WaistCircumferenceExample",
    "resource" : {
        "resourceType" : "Observation",
        "id" : "WaistCircumferenceExample",
        "meta" : {
            "profile" :
["http://hl7.org/fhir/us/core/StructureDefinition/us-core-simple-
observation|6.1.0"]
        },
        "language" : "en",
        "text" : {
            "status" : "generated",
            "div" : "<div xml:lang=\"en\"
xmlns=\"http://www.w3.org/1999/xhtml\" lang=\"en\">Waist Circumference:
95 cm measured on 2026-01-15</div>"
        },
        "status" : "final",
        "category" : [{
            "coding" : [{
                "system" :
"http://terminology.hl7.org/CodeSystem/observation-category",
                "code" : "vital-signs",
                "display" : "Vital Signs"
            }]
        }]
    },
    "code" : {
        "coding" : [{
            "system" : "http://loinc.org",
            "code" : "8280-0",

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```

        "display" : "Waist Circumference at umbilicus by Tape
measure"
    }
  },
  "subject" : {
    "reference" : "Patient/PatientExample"
  },
  "effectiveDateTime" : "2026-01-15T10:30:00Z",
  "valueQuantity" : {
    "value" : 95,
    "unit" : "cm",
    "system" : "http://unitsofmeasure.org",
    "code" : "cm"
  }
}
},
{
  "fullUrl" : "http://example.org/Observation/HbA1cExample",
  "resource" : {
    "resourceType" : "Observation",
    "id" : "HbA1cExample",
    "meta" : {
      "profile" :
["http://hl7.org/fhir/us/core/StructureDefinition/us-core-observation-
clinical-result|6.1.0"]
    },
    "language" : "en",
    "text" : {
      "status" : "generated",
      "div" : "<div xml:lang=\"en\"
xmlns=\"http://www.w3.org/1999/xhtml\" lang=\"en\">Hemoglobin A1c: 6.5%
measured on 2026-01-15</div>"
    },
    "status" : "final",
    "category" : [{
      "coding" : [{
        "system" :
"http://terminology.hl7.org/CodeSystem/observation-category",
        "code" : "laboratory",
        "display" : "Laboratory"
      }]
    }],
    "code" : {
      "coding" : [{
        "system" : "http://loinc.org",
        "code" : "4548-4",
        "display" : "Hemoglobin A1c/Hemoglobin.total in Blood"
      }]
    },
    "subject" : {
      "reference" : "Patient/PatientExample"
    },
    "effectiveDateTime" : "2026-01-15T10:30:00Z",
    "valueQuantity" : {
      "value" : 6.5,

```

```

        "unit" : "%",
        "system" : "http://unitsofmeasure.org",
        "code" : "%"
    }
}
},
{
    "fullUrl" : "http://example.org/Observation/eGFRExample",
    "resource" : {
        "resourceType" : "Observation",
        "id" : "eGFRExample",
        "meta" : {
            "profile" :
["http://hl7.org/fhir/us/core/StructureDefinition/us-core-observation-
clinical-result|6.1.0"]
        },
        "language" : "en",
        "text" : {
            "status" : "generated",
            "div" : "<div xml:lang=\\"en\\"
xmlns=\\"http://www.w3.org/1999/xhtml\\" lang=\\"en\\">eGFR: 75 mL/min/1.73m2
measured on 2026-01-15</div>"
        },
        "status" : "final",
        "category" : [{
            "coding" : [{
                "system" :
"http://terminology.hl7.org/CodeSystem/observation-category",
                "code" : "laboratory",
                "display" : "Laboratory"
            }]
        }],
        "code" : {
            "coding" : [{
                "system" : "http://loinc.org",
                "code" : "98979-8",
                "display" : "Glomerular filtration rate [Volume Rate/Area]
in Serum, Plasma or Blood by Creatinine-based formula (CKD-EPI 2021)/1.73
sq M"
            }]
        },
        "subject" : {
            "reference" : "Patient/PatientExample"
        },
        "effectiveDateTime" : "2026-01-15T10:30:00Z",
        "valueQuantity" : {
            "value" : 75,
            "unit" : "mL/min/1.73_m2",
            "system" : "http://unitsofmeasure.org",
            "code" : "mL/min/{1.73_m2}"
        }
    }
}
},
{
    "fullUrl" : "http://example.org/Observation/uACRExample",

```

```

    "resource" : {
      "resourceType" : "Observation",
      "id" : "uACRExample",
      "meta" : {
        "profile" :
["http://hl7.org/fhir/us/core/StructureDefinition/us-core-observation-
clinical-result|6.1.0"]
      },
      "language" : "en",
      "text" : {
        "status" : "generated",
        "div" : "<div xml:lang=\"en\"
xmlns=\"http://www.w3.org/1999/xhtml\" lang=\"en\">Urine Albumin-
Creatinine Ratio: 45 mg/g measured on 2026-01-15</div>"
      },
      "status" : "final",
      "category" : [{
        "coding" : [{
          "system" :
"http://terminology.hl7.org/CodeSystem/observation-category",
          "code" : "laboratory",
          "display" : "Laboratory"
        }]
      }],
      "code" : {
        "coding" : [{
          "system" : "http://loinc.org",
          "code" : "14959-1",
          "display" : "Microalbumin/Creatinine [Mass Ratio] in Urine"
        }]
      },
      "subject" : {
        "reference" : "Patient/PatientExample"
      },
      "effectiveDateTime" : "2026-01-15T10:30:00Z",
      "valueQuantity" : {
        "value" : 45,
        "unit" : "mg/g",
        "system" : "http://unitsofmeasure.org",
        "code" : "mg/g"
      }
    }
  },
  {
    "fullUrl" :
"http://example.org/Observation/LDLCholesterolExample",
    "resource" : {
      "resourceType" : "Observation",
      "id" : "LDLCholesterolExample",
      "meta" : {
        "profile" :
["http://hl7.org/fhir/us/core/StructureDefinition/us-core-observation-
clinical-result|6.1.0"]
      },
      "language" : "en",

```

```

      "text" : {
        "status" : "generated",
        "div" : "<div xml:lang=\"en\"
xmlns=\"http://www.w3.org/1999/xhtml\" lang=\"en\">LDL Cholesterol: 140
mg/dL measured on 2026-01-15</div>"
      },
      "status" : "final",
      "category" : [{
        "coding" : [{
          "system" :
"http://terminology.hl7.org/CodeSystem/observation-category",
          "code" : "laboratory",
          "display" : "Laboratory"
        }]
      }],
      "code" : {
        "coding" : [{
          "system" : "http://loinc.org",
          "code" : "18262-6",
          "display" : "Cholesterol in LDL [Mass/volume] in Serum or
Plasma by Direct assay"
        }]
      },
      "subject" : {
        "reference" : "Patient/PatientExample"
      },
      "effectiveDateTime" : "2026-01-15T10:30:00Z",
      "valueQuantity" : {
        "value" : 140,
        "unit" : "mg/dL",
        "system" : "http://unitsofmeasure.org",
        "code" : "mg/dL"
      }
    }
  ]
}

```

NOTE: The “example.org”-based URLs in the fullUrl data element of data resource instances within the dataBundle should be replaced with the appropriate URL (e.g., the URL for the organization that completed the observation or questionnaire) when submitting the data. The “example.org” is only used as an example URL.

Example Response:

```

HTTP/1.1 202 Accepted
Content-Location: https://[base]/access/Patient/$submission-status/sub-
123456

```

(No response body - processing asynchronously)

\$submission-status Operation

The `$submission-status` operation retrieves the current status of a previously submitted data report. This is a **read-only operation** that uses the `HTTP GET` method.

Data Reporting Result Codes:

When processing is complete (`HTTP 200`), the `result` parameter uses codes from the **ACCESSReportDataResultVS** value set:

- **success**: Data submission was successfully processed and recorded for ACCESS Model evaluation.
- **validation-error**: Data submission failed validation (see `OperationOutcome` for specific errors and details).
- **duplicate**: Data submission is a duplicate of a previously submitted report for this reporting period.
- **patient-not-aligned**: Patient is not currently aligned to this participant in the specified track. Data reporting is only accepted for aligned patients.
- **reporting-period-closed**: The reporting period for this data has closed and no further submissions are accepted.
- **incomplete-data**: Data submission is missing required observations or measurements for the specified track.
- **incorrect-track**: The submitted data does not match the track the patient is aligned to.

Example Responses:

Example Status Check Request (Still Processing):

```
GET https://[base]/access/Patient/$submission-status/sub-123456
```

Response:

```
HTTP/1.1 202 Accepted
```

(No response body - still processing)

Example Status Check Request (Processing Complete - Success):

```
GET https://[base]/access/Patient/$submission-status/sub-123456
```

Response:

```

HTTP/1.1 200 OK
Content-Type: application/json

{
  "resourceType": "Parameters",
  "parameter": [
    {
      "name": "result",
      "valueCodeableConcept": {
        "coding": [
          {
            "system":
"https://globalalliantinc.com/access/CodeSystem/ACCESSReportDataResultCS"
,
            "code": "success",
            "display": "Success"
          }
        ],
        "text": "Data submission was successfully processed and recorded
for ACCESS Model evaluation."
      }
    }
  ]
}

```

Example Status Check Request (Incomplete Data with Detailed Issues):

```
GET https://[base]/access/Patient/$submission-status/sub-123456
```

Response:

```

HTTP/1.1 200 OK
Content-Type: application/json

{
  "resourceType": "Parameters",
  "parameter": [
    {
      "name": "result",
      "valueCodeableConcept": {
        "coding": [
          {
            "system": "https://dsacms.github.io/cmmi-access-
model/CodeSystem/ACCESSReportDataResultCS",
            "code": "incomplete-data",
            "display": "Incomplete data"
          }
        ],
        "text": "Data submission is missing required observations or
measurements for the specified track. When this result is returned, the
response MAY include an 'issues' parameter containing an OperationOutcome

```

```
resource with detailed, structured information about specific missing
information and how to correct it."
    }
  },
  {
    "name": "issues",
    "resource": {
      "resourceType": "OperationOutcome",
      "issue": [
        {
          "severity": "warning",
          "code": "required",
          "details": {
            "text": "Missing required observation: Hemoglobin A1c
(HbA1c) is required for CKM track quarterly reporting"
          },
          "expression": [
            "Bundle.entry[2].resource.section.where(code.coding.code='CKM').section.w
here(code.coding.code='4548-4') "
          ]
        }
      ]
    }
  }
]
}
```

Example Status Check Request (Patient Not Aligned):

```
GET https://[base]/access/Patient/$submission-status/sub-123456
```

Response:

HTTP/1.1 200 OK

Content-Type: application/json

```
{
  "resourceType": "Parameters",
  "parameter": [
    {
      "name": "result",
      "valueCodeableConcept": {
        "coding": [
          {
            "system": "https://dsacms.github.io/cmami-access-model/CodeSystem/ACCESSReportDataResultCS",
            "code": "patient-not-aligned",
            "display": "Patient Not Aligned"
          }
        ]
      },
      "text": "Patient is not currently aligned to this participant in the specified track. Data reporting is only accepted for aligned
```

```

patients."
    }
  }
]
}

```

Implementation Guidance

Data Bundle Structure

The data bundle submitted via the `DataBundle` parameter must conform to the **ACCESSDataReportingBundle** profile, which requires:

1. **Bundle Type:** Must be "document"
2. **Composition Entry:** First entry must be an `ACCESSDataReportingComposition`
3. **Patient Entry:** Must include the patient resource referenced by the composition
4. **Clinical Data:** Must include all `Observation` and `QuestionnaireResponse` resources (and any other resources) referenced by the composition sections

Track-Specific Sections:

Each ACCESS track has specific data requirements organized into composition sections. For more information about what data is required or optional for each of the report types, please see the Model Payment Amounts and Performance Targets (<https://www.cms.gov/priorities/innovation/files/access-payments-amts-perf-targets.pdf>).

CKM (Cardio-Kidney-Metabolic) Track:

- Blood Pressure observations
- Lipid panel results (LDL-C required, others optional)
- Body weight and BMI
- Waist circumference
- HbA1c results
- eGFR (estimated Glomerular Filtration Rate)
- uACR (urine Albumin-to-Creatinine Ratio)

Although eGFR and uACR are only required to be reported during baseline reporting for each period of care, if a patient will be immediately continuing for a follow-on period, it is recommended that eGFR and uACR data be included in the `end-of-period` reporting for the initial period as this `end-of-period` reporting can count as the baseline reporting for the follow-on period. Do make sure the clinical relevant dates align with the period of care.

- If eGFR and uACR are not included in `end-of-period` reporting for the initial period of care and the patient does continue with a follow-on period, all

required CKM measures must be submitted within 60 days of the start of the follow-on period (up to 6 total measures depending on the patient's diagnosis). Please note that eGFR and uACR data cannot be submitted alone even if all other measures were submitted for the initial period end-of-period reporting.

eCKM (Early Cardio-Kidney-Metabolic) Track:

- Blood Pressure observations
- Lipid panel results (LDL-C required, others optional)
- Body weight and BMI
- Waist circumference
- HbA1c results

MSK (Musculoskeletal) Track:

- PROMIS Physical Function (PF) Short Form 6b (PROMIS-PF)
- PROMIS Pain Interference (PI) Short Form 6a (PROMIS-PI)
- Oswestry Disability Index (ODI)
- Neck Disability Index (NDI)
- QuickDASH (Quick Disabilities of the Arm, Shoulder and Hand)
- PROMIS Version 2.0 Computer Adaptive Test (CAT)
- Patient's Global Impression of Change (PGIC)
- Knee Injury and Osteoarthritis Outcome Score for Joint Replacement (KOOS JR)
- Hip Dysfunction and Osteoarthritis Outcome Score for Joint Replacement (HOOS JR)
- PROMIS Pain Intensity NRS v1.0 (NRS or PROMIS NRS)

BH (Behavioral Health) Track:

- Depression screening (PHQ-9) scores
- Anxiety screening (GAD-7) scores
- Overall function (WHODAS 2.0) scores
- Patient's Global Impression of Change (PGIC)

[Including Additional Information](#)

The **ACCESSDataReportingComposition** profile supports an optional **additional-information** section that allows participants to include supplementary resources beyond the required track-specific data elements. This section enables more comprehensive data reporting while maintaining a clear separation between required and optional data.

IMPORTANT: The **additional-information** section must appear after the required track section within the **ACCESSDataReportingComposition**.

Section Details:

- **Section Code:** `ACCESSReportDataCompositionSectionCS#additional-information`
- **Cardinality:** `0..1` (optional)
- **Entry References:** `0..*` references to any FHIR Resource
- **Purpose:** Include supplemental information that provides additional context or detail about the data being reported

Common Use Cases:

1. **Supporting Documentation:** Include `DiagnosticReport` or `DocumentReference` resources that provide additional clinical context
2. **Care Plan Information:** Include `CarePlan` resources that describe the treatment approach for tracked conditions
3. **Supplementary Observations:** Include additional measurements or assessments not explicitly required by the track but relevant to patient care

Important Considerations:

- All resources referenced in the `additional-information` section must be included in the Bundle
- The section is optional - only use it when you have meaningful supplementary data to provide
- Validation focuses on required track-specific data; additional information is not validated against track requirements
- The section uses standard `Composition.section` pattern, making it familiar to FHIR implementers

For a complete example, see [MSK Data Reporting Bundle with Additional Information Example](#).

Data Quality Requirements

To ensure successful data submission:

Completeness:

- Include all required data elements for the reporting period
- Ensure all referenced resources are included in the bundle
- Provide complete patient demographics including the patient ID

Accuracy:

- Verify clinical data reflects current patient status
- Use appropriate LOINC codes for observations
- Include proper units of measure (UCUM)

Conformance:

- Validate bundle against `ACCESSDataReportingBundle` profile
- Ensure composition conforms to the `ACCESSDataReportingComposition` profile
- Use US Core profiles for all clinical resources

Timeliness:

- Submit data within the required reporting windows
- Follow the reporting schedule in the participant agreement

Handling Incomplete Data

When an `incomplete-data` result is returned, the response includes an optional `issues` parameter containing an `OperationOutcome` resource with detailed, structured information about what information is missing. This allows implementers to programmatically identify and correct errors.

Response Structure:

The validation error response contains two parameters:

1. ``result``: `CodeableConcept` with code "validation-error" and descriptive text
2. ``issues`` (optional): `OperationOutcome` resource with detailed error information

Using the OperationOutcome:

The `OperationOutcome` follows standard FHIR conventions and includes:

- ``issue[].severity``: Error severity (error, warning, information)
- ``issue[].code``: FHIR issue type code (e.g., required, value, structure)
- ``issue[].details.text``: Human-readable description of the issue
- ``issue[].expression``: FHIRPath expression pointing to the problematic element

Processing Incomplete Data:

1. **Check for the ``issues`` parameter:** When result code is "incomplete-data", look for the optional `issues` parameter
2. **Parse `OperationOutcome`:** Extract the `issue` array from the `OperationOutcome` resource
3. **Identify errors:** Review each issue with `severity` of "error"
4. **Locate problems:** Use the `expression` element to find the exact location in your Bundle
5. **Correct and resubmit:** Fix identified issues and submit the corrected data

Common Validation Errors

- **Incorrect LOINC codes:** Observations use wrong LOINC codes for the data element
- **Invalid values:** Observation values outside valid ranges
- **Missing or invalid patient ID:** Patient resource missing Patient ID or other required identifiers
- **Bundle structure errors:** Bundle not conforming to `ACCESSDataReportingBundle` profile
- **Broken references:** Composition references resources not included in bundle
- **Profile violations:** Resources don't conform to required US Core or ACCESS profiles

Best Practices:

1. **Validate locally first:** Use a FHIR validator to check your bundle before submission
2. **Parse all issues:** Process all issues in the `OperationOutcome`, not just the first one
3. **Use expression paths:** The `expression` element helps locate problems in complex bundles
4. **Check warnings:** Review `warning` severity issues for optional improvements
5. **Maintain error logs:** Keep records of validation errors for quality improvement

Example Complete Workflows

MSK Track Workflow Example

The following example demonstrates a complete data reporting workflow for an MSK track patient:

Step 1: Submit MSK Data Report

POST `https://[base]/access/Patient/$report-data?entityId=ACCES12345`
Content-Type: `application/json`

```
{
  "resourceType" : "Parameters",
  "id" : "MSKReportDataRequestExample",
  "meta" : {
    "profile" : ["https://dsacms.github.io/cmmi-access-model/StructureDefinition/access-report-data-in"]
  },
  "language" : "en",
  "parameter" : [{
    "name" : "participantID",
    "valueIdentifier" : {
      "system" : "https://dsacms.github.io/cmmi-access-model/participant-id",
      "value" : "ACCES12345"
    }
  }
],
}
```

```

{
  "name" : "payerID",
  "valueIdentifier" : {
    "type" : {
      "coding" : [{
        "system" : "http://hl7.org/fhir/us/carin-
bb/CodeSystem/C4BBIdentifierType",
        "code" : "payerid",
        "display" : "Payer ID"
      }]
    },
    "system" : "urn:oid:2.16.840.1.113883.3.221.5",
    "value" : "12345"
  }
},
{
  "name" : "track",
  "valueCodeableConcept" : {
    "coding" : [{
      "system" : "https://dsacms.github.io/cmami-access-
model/CodeSystem/ACCESSTrackCS",
      "code" : "MSK",
      "display" : "Musculoskeletal track"
    }]
  }
},
{
  "name" : "reportType",
  "valueCodeableConcept" : {
    "coding" : [{
      "system" : "https://dsacms.github.io/cmami-access-
model/CodeSystem/ACCESSReportTypeCS",
      "code" : "quarterly",
      "display" : "Quarterly Data Report"
    }]
  }
},
{
  "name" : "dataBundle",
  "resource" : {
    "resourceType" : "Bundle",
    "id" : "MSKReportDataBundleExample",
    "meta" : {
      "profile" : ["https://dsacms.github.io/cmami-access-
model/StructureDefinition/access-data-reporting-bundle"]
    },
    "language" : "en",
    "identifier" : {
      "system" : "http://example.org/data-bundle-id",
      "value" : "bundle-msk-001"
    },
    "type" : "document",
    "timestamp" : "2026-01-26T12:00:00Z",
    "entry" : [{

```

```

    "fullUrl" :
"http://example.org/Composition/MSKReportDataCompositionExample",
    "resource" : {
      "resourceType" : "Composition",
      "id" : "MSKReportDataCompositionExample",
      "meta" : {
        "profile" : ["https://dsacms.github.io/cmmi-access-
model/StructureDefinition/access-data-reporting-composition"]
      },
      "language" : "en",
      "text" : {
        "status" : "generated",
        "div" : "<div xml:lang=\"en\"
xmlns=\"http://www.w3.org/1999/xhtml\" lang=\"en\"><h3>ACCESS MSK Track
Data Report</h3><p>Patient: John Doe (MBI: 1EG4TE5MK73)</p><p>Report
Date: 2026-01-26</p><p>Author: Jane Smith</p></div>"
      },
      "status" : "final",
      "type" : {
        "coding" : [{
          "system" : "http://loinc.org",
          "code" : "74465-6",
          "display" : "Questionnaire response Document"
        }]
      },
      "subject" : {
        "reference" : "Patient/PatientExample"
      },
      "date" : "2026-01-26T12:00:00Z",
      "author" : [{
        "reference" : "Practitioner/PractitionerExample"
      }],
      "title" : "ACCESS MSK Track Data Report",
      "custodian" : {
        "reference" : "Organization/OrganizationExample"
      },
      "section" : [{
        "title" : "Data reporting for MSK track",
        "code" : {
          "coding" : [{
            "system" : "https://dsacms.github.io/cmmi-access-
model/CodeSystem/ACCESSTrackCS",
            "code" : "MSK"
          }]
        }
      }],
      "text" : {
        "status" : "generated",
        "div" : "<div xml:lang=\"en\"
xmlns=\"http://www.w3.org/1999/xhtml\" lang=\"en\"><p>Musculoskeletal
Track Data Reporting including pain assessments and patient-reported
outcomes.</p></div>"
      },
      "section" : [{
        "title" : "PROMIS Physical Function Short Form 6b",
        "code" : {

```

```

        "coding" : [{
            "system" : "http://loinc.org",
            "code" : "76804-4"
        }]
    },
    "entry" : [{
        "reference" :
"QuestionnaireResponse/PROMISPhysicalFunctionExample"
    }]
},
{
    "title" : "PROMIS Physical Function CAT",
    "code" : {
        "coding" : [{
            "system" : "http://loinc.org",
            "code" : "91722-9"
        }]
    },
    "entry" : [{
        "reference" :
"QuestionnaireResponse/PROMISPhysicalFunctionCATEXample"
    }]
},
{
    "title" : "PROMIS Pain Interference Short Form 6a",
    "code" : {
        "coding" : [{
            "system" : "http://loinc.org",
            "code" : "90973-9"
        }]
    },
    "entry" : [{
        "reference" :
"QuestionnaireResponse/PROMISPainInterferenceSFExample"
    }]
},
{
    "title" : "PROMIS Pain Interference CAT",
    "code" : {
        "coding" : [{
            "system" : "http://loinc.org",
            "code" : "89923-7"
        }]
    },
    "entry" : [{
        "reference" :
"QuestionnaireResponse/PROMISPainInterferenceCATEXample"
    }]
},
{
    "title" : "Oswestry Disability Index",
    "code" : {
        "coding" : [{
            "system" : "http://loinc.org",
            "code" : "97908-8"
        }]
    }
}

```

```

        }}
    },
    "entry" : [{
        "reference" :
"QuestionnaireResponse/OswestryDisabilityIndexExample"
    }]
},
{
    "title" : "Neck Disability Index",
    "code" : {
        "coding" : [{
            "system" : "http://loinc.org",
            "code" : "82226-2"
        }]
    },
    "entry" : [{
        "reference" :
"QuestionnaireResponse/NeckDisabilityIndexExample"
    }]
},
{
    "title" : "QuickDASH",
    "code" : {
        "coding" : [{
            "system" : "https://dsacms.github.io/cmmi-access-
model/CodeSystem/ACCESSReportDataCompositionSectionCS",
            "code" : "QuickDASH"
        }]
    },
    "entry" : [{
        "reference" : "QuestionnaireResponse/QuickDASHEXample"
    }]
},
{
    "title" : "Patient's Global Impression of Change",
    "code" : {
        "coding" : [{
            "system" : "https://dsacms.github.io/cmmi-access-
model/CodeSystem/ACCESSReportDataCompositionSectionCS",
            "code" : "PGIC"
        }]
    },
    "entry" : [{
        "reference" : "QuestionnaireResponse/MSKPGICExample"
    }]
},
{
    "title" : "KOOS JR",
    "code" : {
        "coding" : [{
            "system" : "http://loinc.org",
            "code" : "82324-5"
        }]
    },
    "entry" : [{

```

```

        "reference" : "QuestionnaireResponse/KOOSJRExample"
    }]
},
{
    "title" : "HOOS JR",
    "code" : {
        "coding" : [{
            "system" : "http://loinc.org",
            "code" : "82316-1"
        }]
    },
    "entry" : [{
        "reference" : "QuestionnaireResponse/HOOSJRExample"
    }]
},
{
    "title" : "PROMIS Pain Intensity NRS",
    "code" : {
        "coding" : [{
            "system" : "http://loinc.org",
            "code" : "72514-3"
        }]
    },
    "entry" : [{
        "reference" : "QuestionnaireResponse/PROMISNRSExample"
    }]
}]
}
},
{
    "fullUrl" : "http://example.org/Patient/PatientExample",
    "resource" : {
        "resourceType" : "Patient",
        "id" : "PatientExample",
        "meta" : {
            "profile" :
["http://hl7.org/fhir/us/core/StructureDefinition/us-core-patient|6.1.0"]
        },
        "language" : "en",
        "text" : {
            "status" : "generated",
            "div" : "<div xml:lang=\"en\"
xmlns=\"http://www.w3.org/1999/xhtml\" lang=\"en\">Patient John Doe,
male, born 1950-01-01, Medicare ID: 1EG4TE5MK73</div>"
        },
        "identifier" : [{
            "type" : {
                "coding" : [{
                    "system" : "http://terminology.hl7.org/CodeSystem/v2-
0203",
                    "code" : "MC"
                }]
            },
            "system" : "http://terminology.hl7.org/NamingSystem/cmsMBI",

```

```

        "value" : "1EG4TE5MK73"
    }],
    "name" : [{
        "family" : "Doe",
        "given" : ["John"]
    }],
    "gender" : "male",
    "birthDate" : "1950-01-01"
}
},
{
    "fullUrl" :
"http://example.org/Practitioner/PractitionerExample",
    "resource" : {
        "resourceType" : "Practitioner",
        "id" : "PractitionerExample",
        "meta" : {
            "profile" :
["http://hl7.org/fhir/us/core/StructureDefinition/us-core-
practitioner|6.1.0"]
        },
        "language" : "en",
        "text" : {
            "status" : "generated",
            "div" : "<div xml:lang=\"en\"
xmlns=\"http://www.w3.org/1999/xhtml\" lang=\"en\">Practitioner Jane
Smith, NPI: 1234567893</div>"
        },
        "identifier" : [{
            "system" : "http://hl7.org/fhir/sid/us-npi",
            "value" : "1234567893"
        }],
        "name" : [{
            "family" : "Smith",
            "given" : ["Jane"]
        }]
    }
},
{
    "fullUrl" :
"http://example.org/Organization/OrganizationExample",
    "resource" : {
        "resourceType" : "Organization",
        "id" : "OrganizationExample",
        "meta" : {
            "profile" :
["http://hl7.org/fhir/us/core/StructureDefinition/us-core-
organization|6.1.0"]
        },
        "language" : "en",
        "text" : {
            "status" : "generated",
            "div" : "<div xml:lang=\"en\"
xmlns=\"http://www.w3.org/1999/xhtml\" lang=\"en\">Example Healthcare
Organization, ACCESS Participant ID: ACCES12345</div>"
        }
    }
}
}

```

```

    },
    "identifier" : [{
        "system" : "https://dsacms.github.io/cmmi-access-
model/participant-id",
        "value" : "ACCES12345"
    }],
    "active" : true,
    "name" : "Example Healthcare Organization"
}
},
{
    "fullUrl" :
"http://example.org/QuestionnaireResponse/PROMISPhysicalFunctionExample",
    "resource" : {
        "resourceType" : "QuestionnaireResponse",
        "id" : "PROMISPhysicalFunctionExample",
        "meta" : {
            "profile" :
["http://hl7.org/fhir/us/core/StructureDefinition/us-core-
questionnaireresponse|6.1.0"]
        },
        "language" : "en",
        "text" : {
            "status" : "generated",
            "div" : "<div xml:lang=\\"en\\"
xmlns=\\"http://www.w3.org/1999/xhtml\\" lang=\\"en\\"><p>PROMIS Physical
Function (Short Form 6b) QuestionnaireResponse for John Doe. T-score:
36.8.</p></div>"
        },
        "questionnaire" :
"http://example.org/Questionnaire/PROMISPhysicalFunctionQuestionnaire",
        "status" : "completed",
        "subject" : {
            "reference" : "Patient/PatientExample"
        },
        "authored" : "2026-01-15T10:30:00Z",
        "author" : {
            "reference" : "Patient/PatientExample"
        },
        "item" : [{
            "linkId" : "pf6b-1",
            "text" : "Are you able to do chores such as vacuuming or yard
work?",
            "answer" : [{
                "valueCoding" : {
                    "extension" : [{
                        "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
                        "valueDecimal" : 4
                    }],
                    "system" : "http://loinc.org",
                    "code" : "LA13918-0",
                    "display" : "With a little difficulty"
                }
            }]
        }
    ]
}

```

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    },
    {
      "linkId" : "pf6b-2",
      "text" : "Are you able to go up and down stairs at a normal
pace?",
      "answer" : [{
        "valueCoding" : {
          "extension" : [{
            "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
            "valueDecimal" : 3
          }],
          "system" : "http://loinc.org",
          "code" : "LA13920-6",
          "display" : "With some difficulty"
        }
      }]
    },
    {
      "linkId" : "pf6b-3",
      "text" : "Are you able to go for a walk of at least 15
minutes?",
      "answer" : [{
        "valueCoding" : {
          "extension" : [{
            "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
            "valueDecimal" : 3
          }],
          "system" : "http://loinc.org",
          "code" : "LA13920-6",
          "display" : "With some difficulty"
        }
      }]
    },
    {
      "linkId" : "pf6b-4",
      "text" : "Are you able to run errands and shop?",
      "answer" : [{
        "valueCoding" : {
          "extension" : [{
            "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
            "valueDecimal" : 4
          }],
          "system" : "http://loinc.org",
          "code" : "LA13918-0",
          "display" : "With a little difficulty"
        }
      }]
    },
    {
      "linkId" : "pf6b-5",
      "text" : "Does your health now limit you in doing two hours
of physical labor?",

```

```

      "answer" : [{
        "valueCoding" : {
          "extension" : [{
            "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
            "valueDecimal" : 1
          }],
          "system" : "http://loinc.org",
          "code" : "LA13868-7",
          "display" : "Cannot do"
        }
      }]
    },
    {
      "linkId" : "pf6b-6",
      "text" : "Does your health now limit you in doing moderate
work around the house like vacuuming, sweeping floors or carrying in
groceries?",
      "answer" : [{
        "valueCoding" : {
          "extension" : [{
            "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
            "valueDecimal" : 2
          }],
          "system" : "http://loinc.org",
          "code" : "LA11911-7",
          "display" : "Quite a lot"
        }
      }]
    },
    {
      "linkId" : "raw_score",
      "answer" : [{
        "valueDecimal" : 17
      }]
    },
    {
      "linkId" : "tscore",
      "answer" : [{
        "valueDecimal" : 36.8
      }]
    }
  ]
},
{
  "fullUrl" :
"http://example.org/QuestionnaireResponse/PROMISPhysicalFunctionCATExampl
e",
  "resource" : {
    "resourceType" : "QuestionnaireResponse",
    "id" : "PROMISPhysicalFunctionCATExample",
    "meta" : {

```

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        "profile" :
["http://hl7.org/fhir/us/core/StructureDefinition/us-core-
questionnaireresponse|6.1.0"]
    },
    "language" : "en",
    "text" : {
        "status" : "generated",
        "div" : "<div xml:lang=\"en\"
xmlns=\"http://www.w3.org/1999/xhtml\" lang=\"en\"><p>PROMIS Physical
Function (CAT) QuestionnaireResponse for John Doe. T-score:
38.</p></div>"
    },
    "questionnaire" :
"http://example.org/Questionnaire/PROMISPhysicalFunctionCATQuestionnaire"
,
    "status" : "completed",
    "subject" : {
        "reference" : "Patient/PatientExample"
    },
    "authored" : "2026-01-15T10:30:00Z",
    "author" : {
        "reference" : "Patient/PatientExample"
    },
    "item" : [{
        "linkId" : "pf-cat-1",
        "text" : "Does your health now limit you in doing two hours
of physical labor?",
        "answer" : [{
            "valueCoding" : {
                "extension" : [{
                    "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
                    "valueDecimal" : 2
                }],
                "system" : "http://loinc.org",
                "code" : "LA11911-7",
                "display" : "Quite a lot"
            }
        }],
    },
    {
        "linkId" : "pf-cat-2",
        "text" : "Are you able to do chores such as vacuuming or yard
work?",
        "answer" : [{
            "valueCoding" : {
                "extension" : [{
                    "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
                    "valueDecimal" : 3
                }],
                "system" : "http://loinc.org",
                "code" : "LA13920-6",
                "display" : "With some difficulty"
            }
        }
    }
]
}

```

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    ]]
  },
  {
    "linkId" : "pf-cat-3",
    "text" : "To what extent are you able to carry out your
everyday physical activities such as walking, climbing stairs, carrying
groceries, or moving a chair?",
    "answer" : [{
      "valueCoding" : {
        "extension" : [{
          "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
          "valueDecimal" : 3
        }],
        "system" : "http://loinc.org",
        "code" : "LA13939-6",
        "display" : "Moderately"
      }
    }]
  },
  {
    "linkId" : "pf-cat-4",
    "text" : "Does your health now limit you in walking more than
a mile?",
    "answer" : [{
      "valueCoding" : {
        "extension" : [{
          "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
          "valueDecimal" : 2
        }],
        "system" : "http://loinc.org",
        "code" : "LA11911-7",
        "display" : "Quite a lot"
      }
    }]
  },
  {
    "linkId" : "tscore",
    "answer" : [{
      "valueDecimal" : 38
    }]
  }
},
{
  "fullUrl" :
"http://example.org/QuestionnaireResponse/PROMISPainInterferenceSFExample",
  "resource" : {
    "resourceType" : "QuestionnaireResponse",
    "id" : "PROMISPainInterferenceSFExample",
    "meta" : {

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        "profile" :
["http://hl7.org/fhir/us/core/StructureDefinition/us-core-
questionnaireresponse|6.1.0"]
    },
    "language" : "en",
    "text" : {
        "status" : "generated",
        "div" : "<div xml:lang=\"en\"
xmlns=\"http://www.w3.org/1999/xhtml\" lang=\"en\"><p>PROMIS Pain
Interference (Short Form 6a) QuestionnaireResponse for John Doe. T-score:
58.6.</p></div>"
    },
    "questionnaire" :
"http://example.org/Questionnaire/PROMISPainInterferenceSFQuestionnaire",
    "status" : "completed",
    "subject" : {
        "reference" : "Patient/PatientExample"
    },
    "authored" : "2026-01-15T10:30:00Z",
    "author" : {
        "reference" : "Patient/PatientExample"
    },
    "item" : [{
        "linkId" : "pi6a-1",
        "text" : "In the past 7 days: How much did pain interfere
with your day to day activities?",
        "answer" : [{
            "valueCoding" : {
                "extension" : [{
                    "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
                    "valueDecimal" : 2
                }],
                "system" : "http://loinc.org",
                "code" : "LA13863-8",
                "display" : "A little bit"
            }
        }]
    },
    {
        "linkId" : "pi6a-2",
        "text" : "In the past 7 days: How much did pain interfere
with work around the home?",
        "answer" : [{
            "valueCoding" : {
                "extension" : [{
                    "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
                    "valueDecimal" : 2
                }],
                "system" : "http://loinc.org",
                "code" : "LA13863-8",
                "display" : "A little bit"
            }
        }]
    }
    ]
}

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    },
    {
      "linkId" : "pi6a-3",
      "text" : "In the past 7 days: How much did pain interfere
with your ability to participate in social activities?",
      "answer" : [{
        "valueCoding" : {
          "extension" : [{
            "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
            "valueDecimal" : 3
          }],
          "system" : "http://loinc.org",
          "code" : "LA13909-9",
          "display" : "Somewhat"
        }
      }]
    },
    {
      "linkId" : "pi6a-4",
      "text" : "In the past 7 days: How much did pain interfere
with your household chores?",
      "answer" : [{
        "valueCoding" : {
          "extension" : [{
            "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
            "valueDecimal" : 2
          }],
          "system" : "http://loinc.org",
          "code" : "LA13863-8",
          "display" : "A little bit"
        }
      }]
    },
    {
      "linkId" : "pi6a-5",
      "text" : "In the past 7 days: How much did pain interfere
with the things you usually do for fun?",
      "answer" : [{
        "valueCoding" : {
          "extension" : [{
            "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
            "valueDecimal" : 3
          }],
          "system" : "http://loinc.org",
          "code" : "LA13909-9",
          "display" : "Somewhat"
        }
      }]
    },
    {
      "linkId" : "pi6a-6",

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        "text" : "In the past 7 days: How much did pain interfere
with your enjoyment of social activities?",
        "answer" : [{
            "valueCoding" : {
                "extension" : [{
                    "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
                    "valueDecimal" : 3
                }],
                "system" : "http://loinc.org",
                "code" : "LA13909-9",
                "display" : "Somewhat"
            }
        }],
    },
    {
        "linkId" : "raw_score",
        "answer" : [{
            "valueDecimal" : 15
        }]
    },
    {
        "linkId" : "tscore",
        "answer" : [{
            "valueDecimal" : 58.6
        }]
    }
]
},
{
    "fullUrl" :
"http://example.org/QuestionnaireResponse/PROMISPainInterferenceCATExampl
e",
    "resource" : {
        "resourceType" : "QuestionnaireResponse",
        "id" : "PROMISPainInterferenceCATExample",
        "meta" : {
            "profile" :
["http://hl7.org/fhir/us/core/StructureDefinition/us-core-
questionnaireresponse|6.1.0"]
        },
        "language" : "en",
        "text" : {
            "status" : "generated",
            "div" : "<div xml:lang=\"en\"
xmlns=\"http://www.w3.org/1999/xhtml\" lang=\"en\"><p>PROMIS Pain
Interference (CAT) QuestionnaireResponse for John Doe. T-score:
70.</p></div>"
        },
        "questionnaire" :
"http://example.org/Questionnaire/PROMISPainInterferenceCATQuestionnaire"
    },
    "status" : "completed",
    "subject" : {
        "reference" : "Patient/PatientExample"
    }
}

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    },
    "authored" : "2026-01-15T10:30:00Z",
    "author" : {
      "reference" : "Patient/PatientExample"
    },
    "item" : [{
      "linkId" : "pi-cat-1",
      "text" : "In the past 7 days: How much did pain interfere
with your day to day activities?",
      "answer" : [{
        "valueCoding" : {
          "extension" : [{
            "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
            "valueDecimal" : 4
          }],
          "system" : "http://loinc.org",
          "code" : "LA13902-4",
          "display" : "Quite a bit"
        }
      }]
    },
    {
      "linkId" : "pi-cat-2",
      "text" : "In the past 7 days: How much did pain interfere
with your ability to participate in social activities?",
      "answer" : [{
        "valueCoding" : {
          "extension" : [{
            "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
            "valueDecimal" : 5
          }],
          "system" : "http://loinc.org",
          "code" : "LA13914-9",
          "display" : "Very much"
        }
      }]
    },
    {
      "linkId" : "pi-cat-3",
      "text" : "In the past 7 days: How much did pain interfere
with your enjoyment of social activities?",
      "answer" : [{
        "valueCoding" : {
          "extension" : [{
            "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
            "valueDecimal" : 4
          }],
          "system" : "http://loinc.org",
          "code" : "LA13902-4",
          "display" : "Quite a bit"
        }
      }]
    }
  ]
}

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    },
    {
      "linkId" : "pi-cat-4",
      "text" : "In the past 7 days: How much did pain interfere
with work around the home?",
      "answer" : [{
        "valueCoding" : {
          "extension" : [{
            "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
            "valueDecimal" : 5
          }],
          "system" : "http://loinc.org",
          "code" : "LA13914-9",
          "display" : "Very much"
        }
      }]
    },
    {
      "linkId" : "tscore",
      "answer" : [{
        "valueDecimal" : 70
      }]
    }
  ],
  {
    "fullUrl" :
"http://example.org/QuestionnaireResponse/OswestryDisabilityIndexExample"
  },
  {
    "resource" : {
      "resourceType" : "QuestionnaireResponse",
      "id" : "OswestryDisabilityIndexExample",
      "meta" : {
        "profile" :
["http://hl7.org/fhir/us/core/StructureDefinition/us-core-
questionnaireresponse|6.1.0"]
      },
      "language" : "en",
      "text" : {
        "status" : "generated",
        "div" : "<div xml:lang=\"en\"
xmlns=\"http://www.w3.org/1999/xhtml\" lang=\"en\"><p>Oswestry Disability
Index QuestionnaireResponse for John Doe. Score: 36.</p></div>"
      },
      "questionnaire" :
"http://example.org/Questionnaire/OswestryDisabilityIndexQuestionnaire",
      "status" : "completed",
      "subject" : {
        "reference" : "Patient/PatientExample"
      },
      "authored" : "2026-01-15T10:30:00Z",
      "author" : {
        "reference" : "Patient/PatientExample"
      }
    }
  }
}

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    "item" : [{
      "linkId" : "odi-1",
      "text" : "Pain intensity",
      "answer" : [{
        "valueCoding" : {
          "extension" : [{
            "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
            "valueDecimal" : 2
          }],
          "display" : "The pain is moderate at the moment."
        }
      ]
    }],
  },
  {
    "linkId" : "odi-2",
    "text" : "Personal care (washing, dressing, etc.)",
    "answer" : [{
      "valueCoding" : {
        "extension" : [{
          "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
          "valueDecimal" : 1
        }],
        "display" : "I can look after myself normally but it is
very painful."
      }
    ]
  },
  {
    "linkId" : "odi-3",
    "text" : "Lifting",
    "answer" : [{
      "valueCoding" : {
        "extension" : [{
          "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
          "valueDecimal" : 3
        }],
        "display" : "Pain prevents me lifting heavy weights off
the floor, but I can manage if they are conveniently placed e.g. on a
table."
      }
    ]
  },
  {
    "linkId" : "odi-4",
    "text" : "Walking",
    "answer" : [{
      "valueCoding" : {
        "extension" : [{
          "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
          "valueDecimal" : 1
        }],

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        "display" : "Pain prevents me from walking more than one
mile."
    }
  ]
},
{
  "linkId" : "odi-5",
  "text" : "Sitting",
  "answer" : [{
    "valueCoding" : {
      "extension" : [{
        "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
        "valueDecimal" : 2
      }],
      "display" : "Pain prevents me from sitting for more than
one hour."
    }
  ]
},
{
  "linkId" : "odi-6",
  "text" : "Standing",
  "answer" : [{
    "valueCoding" : {
      "extension" : [{
        "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
        "valueDecimal" : 2
      }],
      "display" : "Pain prevents me from standing for more than
1 hour."
    }
  ]
},
{
  "linkId" : "odi-7",
  "text" : "Sleeping",
  "answer" : [{
    "valueCoding" : {
      "extension" : [{
        "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
        "valueDecimal" : 1
      }],
      "display" : "My sleep is occasionally interrupted by
pain."
    }
  ]
},
{
  "linkId" : "odi-8",
  "text" : "Sex life (if applicable)",
  "answer" : [{
    "valueCoding" : {

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        "extension" : [{
            "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
            "valueDecimal" : 2
        }],
        "display" : "My sex life is nearly normal but is very
painful."
    }
}
},
{
    "linkId" : "odi-9",
    "text" : "Social life",
    "answer" : [{
        "valueCoding" : {
            "extension" : [{
                "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
                "valueDecimal" : 3
            }],
            "display" : "Pain has restricted my social life and I do
not go out as often."
        }
    }
}],
},
{
    "linkId" : "odi-10",
    "text" : "Traveling",
    "answer" : [{
        "valueCoding" : {
            "extension" : [{
                "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
                "valueDecimal" : 2
            }],
            "display" : "Pain is bad but I am able to manage trips
over two hours."
        }
    }
}],
},
{
    "linkId" : "score",
    "answer" : [{
        "valueDecimal" : 38
    }
}]
}
},
{
    "fullUrl" :
"http://example.org/QuestionnaireResponse/NeckDisabilityIndexExample",
    "resource" : {
        "resourceType" : "QuestionnaireResponse",
        "id" : "NeckDisabilityIndexExample",
        "meta" : {

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        "profile" :
["http://hl7.org/fhir/us/core/StructureDefinition/us-core-
questionnaireresponse|6.1.0"]
    },
    "language" : "en",
    "text" : {
        "status" : "generated",
        "div" : "<div xml:lang=\"en\"
xmlns=\"http://www.w3.org/1999/xhtml\" lang=\"en\"><p>Neck Disability
Index QuestionnaireResponse for John Doe. Total score: 40.</p></div>"
    },
    "questionnaire" :
"http://example.org/Questionnaire/NeckDisabilityIndexQuestionnaire",
    "status" : "completed",
    "subject" : {
        "reference" : "Patient/PatientExample"
    },
    "authored" : "2026-01-15T10:30:00Z",
    "author" : {
        "reference" : "Patient/PatientExample"
    },
    "item" : [{
        "linkId" : "ndi-1",
        "text" : "Pain intensity",
        "answer" : [{
            "valueCoding" : {
                "extension" : [{
                    "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
                    "valueDecimal" : 2
                }],
                "system" : "http://loinc.org",
                "code" : "LA25855-0",
                "display" : "The pain is moderate at the moment."
            }
        ]
    },
    {
        "linkId" : "ndi-2",
        "text" : "Personal care (washing, dressing, etc.)",
        "answer" : [{
            "valueCoding" : {
                "extension" : [{
                    "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
                    "valueDecimal" : 1
                }],
                "system" : "http://loinc.org",
                "code" : "LA25860-0",
                "display" : "I can look after myself normally but it
causes extra pain."
            }
        ]
    },
    {

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        "linkId" : "ndi-3",
        "text" : "Lifting",
        "answer" : [{
            "valueCoding" : {
                "extension" : [{
                    "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
                    "valueDecimal" : 2
                }],
                "system" : "http://loinc.org",
                "code" : "LA25867-5",
                "display" : "Pain prevents me lifting heavy weights off
the floor, but I can manage if they are conveniently placed, for example
on a table."
            }
        }]
    },
    {
        "linkId" : "ndi-4",
        "text" : "Reading",
        "answer" : [{
            "valueCoding" : {
                "extension" : [{
                    "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
                    "valueDecimal" : 2
                }],
                "system" : "http://loinc.org",
                "code" : "LA25873-3",
                "display" : "I can read as much as I want with moderate
pain in my neck."
            }
        }]
    },
    {
        "linkId" : "ndi-5",
        "text" : "Headaches",
        "answer" : [{
            "valueCoding" : {
                "extension" : [{
                    "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
                    "valueDecimal" : 3
                }],
                "system" : "http://loinc.org",
                "code" : "LA26367-5",
                "display" : "I have moderate headaches, which come
frequently."
            }
        }]
    },
    {
        "linkId" : "ndi-6",
        "text" : "Concentration",
        "answer" : [{

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        "valueCoding" : {
            "extension" : [{
                "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
                "valueDecimal" : 2
            }],
            "system" : "http://loinc.org",
            "code" : "LA25880-8",
            "display" : "I have a fair degree of difficulty in
concentrating when I want to."
        }
    ]],
    },
    {
        "linkId" : "ndi-7",
        "text" : "Work",
        "answer" : [{
            "valueCoding" : {
                "extension" : [{
                    "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
                    "valueDecimal" : 2
                }],
                "system" : "http://loinc.org",
                "code" : "LA25886-5",
                "display" : "I can do most of my usual work, but no
more."
            }
        }
    ]],
    },
    {
        "linkId" : "ndi-8",
        "text" : "Driving",
        "answer" : [{
            "valueCoding" : {
                "extension" : [{
                    "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
                    "valueDecimal" : 2
                }],
                "system" : "http://loinc.org",
                "code" : "LA25892-3",
                "display" : "I can drive my car as long as I want with
moderate pain in my neck."
            }
        }
    ]],
    },
    {
        "linkId" : "ndi-9",
        "text" : "Sleeping",
        "answer" : [{
            "valueCoding" : {
                "extension" : [{
                    "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",

```

```

        "valueDecimal" : 2
      }],
      "system" : "http://loinc.org",
      "code" : "LA25898-0",
      "display" : "My sleep is mildly disturbed (1-2 hrs
sleepless)."
```

}

]]

},

{

"linkId" : "ndi-10",

"text" : "Recreation",

"answer" : [{

"valueCoding" : {

"extension" : [{

"url" :

"http://hl7.org/fhir/StructureDefinition/ordinalValue",

"valueDecimal" : 2

}],

"system" : "http://loinc.org",

"code" : "LA25904-6",

"display" : "I am able to engage in most, but not all of

my usual recreation activities because of pain in my neck."

}

]]

},

{

"linkId" : "total-score",

"answer" : [{

"valueDecimal" : 40

]]

}]

}

},

{

"fullUrl" :

"http://example.org/QuestionnaireResponse/QuickDASHExample",

"resource" : {

"resourceType" : "QuestionnaireResponse",

"id" : "QuickDASHExample",

"meta" : {

"profile" :

["http://hl7.org/fhir/us/core/StructureDefinition/us-core-

questionnaireresponse|6.1.0"]

},

"language" : "en",

"text" : {

"status" : "generated",

"div" : "<div xml:lang=\"en\"

xmlns=\"http://www.w3.org/1999/xhtml\" lang=\"en\"><p>QuickDASH

QuestionnaireResponse for John Doe. Score: 50.</p></div>"

},

"questionnaire" :

"http://example.org/Questionnaire/QuickDASHQuestionnaire",

"status" : "completed",

```

"subject" : {
  "reference" : "Patient/PatientExample"
},
"authored" : "2026-01-15T10:30:00Z",
"author" : {
  "reference" : "Patient/PatientExample"
},
"item" : [{
  "linkId" : "qd-1",
  "text" : "Open a tight or new jar.",
  "answer" : [{
    "valueCoding" : {
      "extension" : [{
        "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
        "valueDecimal" : 3
      }],
      "display" : "Moderate difficulty"
    }
  ]
},
{
  "linkId" : "qd-2",
  "text" : "Do heavy household chores (e.g., wash walls, wash
floors).",
  "answer" : [{
    "valueCoding" : {
      "extension" : [{
        "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
        "valueDecimal" : 4
      }],
      "display" : "Severe difficulty"
    }
  ]
},
{
  "linkId" : "qd-3",
  "text" : "Carry a shopping bag or briefcase.",
  "answer" : [{
    "valueCoding" : {
      "extension" : [{
        "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
        "valueDecimal" : 3
      }],
      "display" : "Moderate difficulty"
    }
  ]
},
{
  "linkId" : "qd-4",
  "text" : "Wash your back.",
  "answer" : [{
    "valueCoding" : {

```

```

        "extension" : [{
            "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
            "valueDecimal" : 2
        }],
        "display" : "Mild difficulty"
    }
}]]
},
{
    "linkId" : "qd-5",
    "text" : "Use a knife to cut food.",
    "answer" : [{
        "valueCoding" : {
            "extension" : [{
                "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
                "valueDecimal" : 2
            }],
            "display" : "Mild difficulty"
        }
    }]]
},
{
    "linkId" : "qd-6",
    "text" : "Recreational activities in which you take some
force or impact through your arm, shoulder, or hand (e.g., golf,
hammering, tennis, etc.).",
    "answer" : [{
        "valueCoding" : {
            "extension" : [{
                "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
                "valueDecimal" : 4
            }],
            "display" : "Severe difficulty"
        }
    }]]
},
{
    "linkId" : "qd-7",
    "text" : "During the past week, to what extent has your arm,
shoulder, or hand problem interfered with your normal social activities
with family, friends, neighbors, or groups?",
    "answer" : [{
        "valueCoding" : {
            "extension" : [{
                "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
                "valueDecimal" : 3
            }],
            "display" : "Moderately"
        }
    }]]
},

```

```

    {
      "linkId" : "qd-8",
      "text" : "During the past week, were you limited in your work
or other regular daily activities as a result of your arm, shoulder, or
hand problem?",
      "answer" : [{
        "valueCoding" : {
          "extension" : [{
            "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
            "valueDecimal" : 4
          }],
          "display" : "Very limited"
        }
      }]
    },
    {
      "linkId" : "qd-9",
      "text" : "Arm, shoulder, or hand pain",
      "answer" : [{
        "valueCoding" : {
          "extension" : [{
            "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
            "valueDecimal" : 3
          }],
          "display" : "Moderate"
        }
      }]
    },
    {
      "linkId" : "qd-10",
      "text" : "Tingling (pins and needles) in your arm, shoulder,
or hand",
      "answer" : [{
        "valueCoding" : {
          "extension" : [{
            "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
            "valueDecimal" : 2
          }],
          "display" : "Mild"
        }
      }]
    },
    {
      "linkId" : "qd-11",
      "text" : "During the past week, how much difficulty have you
had sleeping because of the pain in your arm, shoulder, or hand?",
      "answer" : [{
        "valueCoding" : {
          "extension" : [{
            "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
            "valueDecimal" : 3

```

```

        }],
        "display" : "Moderate difficulty"
    }
}
}],
{
    "linkId" : "score",
    "answer" : [{
        "valueDecimal" : 50
    }]
}
}
},
{
    "fullUrl" :
"http://example.org/QuestionnaireResponse/MSKPGICExample",
    "resource" : {
        "resourceType" : "QuestionnaireResponse",
        "id" : "MSKPGICExample",
        "meta" : {
            "profile" :
["http://hl7.org/fhir/us/core/StructureDefinition/us-core-
questionnaireresponse|6.1.0"]
        },
        "language" : "en",
        "text" : {
            "status" : "generated",
            "div" : "<div xml:lang=\"en\"
xmlns=\"http://www.w3.org/1999/xhtml\" lang=\"en\"><p>PGIC
QuestionnaireResponse for John Doe. Response: Very much
improved.</p></div>"
        },
        "questionnaire" :
"http://example.org/Questionnaire/MSKPGICQuestionnaire",
        "status" : "completed",
        "subject" : {
            "reference" : "Patient/PatientExample"
        },
        "authored" : "2026-01-15T10:30:00Z",
        "author" : {
            "reference" : "Patient/PatientExample"
        },
        "item" : [{
            "linkId" : "pgic-1",
            "text" : "Since beginning treatment, how would you describe
your overall change in pain, function, and quality of life?",
            "answer" : [{
                "valueCoding" : {
                    "extension" : [{
                        "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
                        "valueDecimal" : 1
                    }],
                    "display" : "Very much improved"
                }
            ]
        }
    ]
}

```

```

        ]]
    ]]
}
},
{
    "fullUrl" :
"http://example.org/QuestionnaireResponse/KOOSJRExample",
    "resource" : {
        "resourceType" : "QuestionnaireResponse",
        "id" : "KOOSJRExample",
        "meta" : {
            "profile" :
["http://hl7.org/fhir/us/core/StructureDefinition/us-core-
questionnaireresponse|6.1.0"]
        },
        "language" : "en",
        "text" : {
            "status" : "generated",
            "div" : "<div xml:lang=\"en\"
xmlns=\"http://www.w3.org/1999/xhtml\" lang=\"en\"><p>KOOS JR
QuestionnaireResponse for John Doe. Total interval score:
50.012.</p></div>"
        },
        "questionnaire" :
"http://example.org/Questionnaire/KOOSJRQuestionnaire",
        "status" : "completed",
        "subject" : {
            "reference" : "Patient/PatientExample"
        },
        "authored" : "2026-01-15T10:30:00Z",
        "author" : {
            "reference" : "Patient/PatientExample"
        },
        "item" : [{
            "linkId" : "koosjr-1",
            "text" : "How severe is your knee stiffness after first
wakening in the morning?",
            "answer" : [{
                "valueCoding" : {
                    "extension" : [{
                        "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
                        "valueDecimal" : 2
                    }],
                    "system" : "http://loinc.org",
                    "code" : "LA6751-7",
                    "display" : "Moderate"
                }
            }
        ]
    },
    {
        "linkId" : "koosjr-2",
        "text" : "Twisting/pivoting on your knee",
        "answer" : [{
            "valueCoding" : {

```

```

        "extension" : [{
            "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
            "valueDecimal" : 2
        }],
        "system" : "http://loinc.org",
        "code" : "LA6751-7",
        "display" : "Moderate"
    }
}]]
},
{
    "linkId" : "koosjr-3",
    "text" : "Straightening knee fully",
    "answer" : [{
        "valueCoding" : {
            "extension" : [{
                "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
                "valueDecimal" : 1
            }],
            "system" : "http://loinc.org",
            "code" : "LA6752-5",
            "display" : "Mild"
        }
    }]]
},
{
    "linkId" : "koosjr-4",
    "text" : "Going up or down stairs",
    "answer" : [{
        "valueCoding" : {
            "extension" : [{
                "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
                "valueDecimal" : 3
            }],
            "system" : "http://loinc.org",
            "code" : "LA6750-9",
            "display" : "Severe"
        }
    }]]
},
{
    "linkId" : "koosjr-5",
    "text" : "Standing upright",
    "answer" : [{
        "valueCoding" : {
            "extension" : [{
                "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
                "valueDecimal" : 2
            }],
            "system" : "http://loinc.org",
            "code" : "LA6751-7",

```

```

        "display" : "Moderate"
    }
  ]
},
{
  "linkId" : "koosjr-6",
  "text" : "Rising from sitting",
  "answer" : [{
    "valueCoding" : {
      "extension" : [{
        "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
        "valueDecimal" : 2
      }],
      "system" : "http://loinc.org",
      "code" : "LA6751-7",
      "display" : "Moderate"
    }
  ]
},
{
  "linkId" : "koosjr-7",
  "text" : "Bending to floor/picking up an object",
  "answer" : [{
    "valueCoding" : {
      "extension" : [{
        "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
        "valueDecimal" : 3
      }],
      "system" : "http://loinc.org",
      "code" : "LA6750-9",
      "display" : "Severe"
    }
  ]
},
{
  "linkId" : "total-interval-score",
  "answer" : [{
    "valueDecimal" : 50.012
  }
]
}
},
{
  "fullUrl" :
"http://example.org/QuestionnaireResponse/HOOSJRExample",
  "resource" : {
    "resourceType" : "QuestionnaireResponse",
    "id" : "HOOSJRExample",
    "meta" : {
      "profile" :
["http://hl7.org/fhir/us/core/StructureDefinition/us-core-
questionnaireresponse|6.1.0"]
    }
  },

```

```

    "language" : "en",
    "text" : {
      "status" : "generated",
      "div" : "<div xml:lang=\"en\"
xmlns=\"http://www.w3.org/1999/xhtml\" lang=\"en\"><p>HOOS JR
QuestionnaireResponse for John Doe. Total interval score:
55.985.</p></div>"
    },
    "questionnaire" :
"http://example.org/Questionnaire/HOOSJRQuestionnaire",
    "status" : "completed",
    "subject" : {
      "reference" : "Patient/PatientExample"
    },
    "authored" : "2026-01-15T10:30:00Z",
    "author" : {
      "reference" : "Patient/PatientExample"
    },
    "item" : [{
      "linkId" : "hoosjr-1",
      "text" : "Going up or down stairs",
      "answer" : [{
        "valueCoding" : {
          "extension" : [{
            "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
            "valueDecimal" : 2
          }],
          "system" : "http://loinc.org",
          "code" : "LA6751-7",
          "display" : "Moderate"
        }
      ]
    },
    {
      "linkId" : "hoosjr-2",
      "text" : "Walking on an uneven surface",
      "answer" : [{
        "valueCoding" : {
          "extension" : [{
            "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
            "valueDecimal" : 2
          }],
          "system" : "http://loinc.org",
          "code" : "LA6751-7",
          "display" : "Moderate"
        }
      ]
    },
    {
      "linkId" : "hoosjr-3",
      "text" : "Rising from sitting",
      "answer" : [{
        "valueCoding" : {

```

```

        "extension" : [{
            "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
            "valueDecimal" : 2
        }],
        "system" : "http://loinc.org",
        "code" : "LA6751-7",
        "display" : "Moderate"
    }
}]]
},
{
    "linkId" : "hoosjr-4",
    "text" : "Bending to the floor/picking up an object",
    "answer" : [{
        "valueCoding" : {
            "extension" : [{
                "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
                "valueDecimal" : 3
            }],
            "system" : "http://loinc.org",
            "code" : "LA6750-9",
            "display" : "Severe"
        }
    }]]
},
{
    "linkId" : "hoosjr-5",
    "text" : "Lying in bed",
    "answer" : [{
        "valueCoding" : {
            "extension" : [{
                "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
                "valueDecimal" : 1
            }],
            "system" : "http://loinc.org",
            "code" : "LA6752-5",
            "display" : "Mild"
        }
    }]]
},
{
    "linkId" : "hoosjr-6",
    "text" : "Sitting",
    "answer" : [{
        "valueCoding" : {
            "extension" : [{
                "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
                "valueDecimal" : 1
            }],
            "system" : "http://loinc.org",
            "code" : "LA6752-5",

```


Response:

```
HTTP/1.1 202 Accepted
Content-Location: https://[base]/access/Patient/$submission-status/sub-123456
```

Step 2: Extract Submission URL and Wait

- Extract submission URL from Content-Location header
- Wait 5 seconds before first poll

Step 3: First Status Check (after 5 seconds)

```
GET https://[base]/access/Patient/$submission-status/sub-123456
```

Response:

```
HTTP/1.1 202 Accepted
```

(Still processing - no body)

Step 4: Second Status Check (after another 15 seconds)

```
GET https://[base]/access/Patient/$submission-status/sub-123456
```

Response:

```
HTTP/1.1 200 OK
Content-Type: application/json

{
  "resourceType": "Parameters",
  "parameter": [
    {
      "name": "result",
      "valueCodeableConcept": {
        "coding": [
          {
            "system":
"https://globalalliantinc.com/access/CodeSystem/ACCESSReportDataResultCS"
,
            "code": "success",
            "display": "Success"
          }
        ],
        "text": "Data submission was successfully processed and recorded"
      }
    }
  ]
}
```

```

for ACCESS Model evaluation."
    }
}
]
}

```

Step 5: Process Result

- Parse the result code: "success"
- Display the text to the user
- Log successful submission for record-keeping

BH Track Workflow Example

The following example demonstrates a complete data reporting workflow for a BH track patient:

Step 1: Submit BH Data Report

POST [https://\[base\]/access/Patient/\\$report-data?entityId=ACCES67890](https://[base]/access/Patient/$report-data?entityId=ACCES67890)
 Content-Type: application/json

```

{
  "resourceType" : "Parameters",
  "id" : "BHReportDataRequestExample",
  "meta" : {
    "profile" : ["https://dsacms.github.io/cmmi-access-
model/StructureDefinition/access-report-data-in"]
  },
  "language" : "en",
  "parameter" : [{
    "name" : "participantID",
    "valueIdentifier" : {
      "system" : "https://dsacms.github.io/cmmi-access-
model/participant-id",
      "value" : "ACCES12345"
    }
  },
  {
    "name" : "payerID",
    "valueIdentifier" : {
      "type" : {
        "coding" : [{
          "system" : "http://hl7.org/fhir/us/carin-
bb/CodeSystem/C4BBIdentifierType",
          "code" : "payerid",
          "display" : "Payer ID"
        }]
      }
    }
  }
],

```

```

        "system" : "urn:oid:2.16.840.1.113883.3.221.5",
        "value" : "12345"
    }
},
{
    "name" : "track",
    "valueCodeableConcept" : {
        "coding" : [{
            "system" : "https://dsacms.github.io/cmmi-access-
model/CodeSystem/ACCESSTrackCS",
            "code" : "BH",
            "display" : "Behavioral Health track"
        }]
    }
},
{
    "name" : "reportType",
    "valueCodeableConcept" : {
        "coding" : [{
            "system" : "https://dsacms.github.io/cmmi-access-
model/CodeSystem/ACCESSReportTypeCS",
            "code" : "baseline",
            "display" : "Baseline Data Report"
        }]
    }
},
{
    "name" : "dataBundle",
    "resource" : {
        "resourceType" : "Bundle",
        "id" : "BHReportDataBundleExample",
        "meta" : {
            "profile" : ["https://dsacms.github.io/cmmi-access-
model/StructureDefinition/access-data-reporting-bundle"]
        },
        "language" : "en",
        "identifier" : {
            "system" : "http://example.org/data-bundle-id",
            "value" : "bundle-bh-001"
        },
        "type" : "document",
        "timestamp" : "2026-01-26T12:00:00Z",
        "entry" : [{
            "fullUrl" :
"http://example.org/Composition/BHReportDataCompositionExample",
            "resource" : {
                "resourceType" : "Composition",
                "id" : "BHReportDataCompositionExample",
                "meta" : {
                    "profile" : ["https://dsacms.github.io/cmmi-access-
model/StructureDefinition/access-data-reporting-composition"]
                },
                "language" : "en",
                "text" : {
                    "status" : "generated",
                    "div" : "<div xml:lang=\"en\"
xmlns=\"http://www.w3.org/1999/xhtml\" lang=\"en\"><h3>ACCESS BH Track

```

```

Data Report</h3><p>Patient: John Doe (MBI: 1EG4TE5MK73)</p><p>Report
Date: 2026-01-26</p><p>Author: Jane Smith</p></div>"
    },
    "status" : "final",
    "type" : {
        "coding" : [{
            "system" : "http://loinc.org",
            "code" : "74465-6",
            "display" : "Questionnaire response Document"
        }]
    },
    "subject" : {
        "reference" : "Patient/PatientExample"
    },
    "date" : "2026-01-26T12:00:00Z",
    "author" : [{
        "reference" : "Practitioner/PractitionerExample"
    }],
    "title" : "ACCESS BH Track Data Report",
    "custodian" : {
        "reference" : "Organization/OrganizationExample"
    },
    "section" : [{
        "title" : "Data reporting for BH track",
        "code" : {
            "coding" : [{
                "system" : "https://dsacms.github.io/cmmi-access-
model/CodeSystem/ACCESSTrackCS",
                "code" : "BH"
            }]
        }
    }],
    "text" : {
        "status" : "generated",
        "div" : "<div xml:lang=\"en\"
xmlns=\"http://www.w3.org/1999/xhtml\" lang=\"en\"><p>Behavioral Health
Track Data Reporting including depression and anxiety assessments and
patient-reported outcomes.</p></div>"
    },
    "section" : [{
        "title" : "Depression (PHQ-9)",
        "code" : {
            "coding" : [{
                "system" : "http://loinc.org",
                "code" : "44249-1"
            }]
        }
    }],
    "entry" : [{
        "reference" :
"QuestionnaireResponse/DepressionPHQ9Example"
    }]
    },
    {
        "title" : "Anxiety (GAD-7)",
        "code" : {
            "coding" : [{
                "system" : "http://loinc.org",
                "code" : "69737-5"
            }]
        }
    }
]

```

```

        ]]
      },
      "entry" : [{
        "reference" :
"QuestionnaireResponse/AnxietyGAD7Example"
      }]
    },
    {
      "title" : "Overall Function (WHODAS 2.0)",
      "code" : {
        "coding" : [{
          "system" : "https://dsacms.github.io/cmmi-access-
model/CodeSystem/ACCESSReportDataCompositionSectionCS",
          "code" : "WHODAS"
        }]
      },
      "entry" : [{
        "reference" : "QuestionnaireResponse/WHODASExample"
      }]
    },
    {
      "title" : "Patient's Global Impression of Change",
      "code" : {
        "coding" : [{
          "system" : "https://dsacms.github.io/cmmi-access-
model/CodeSystem/ACCESSReportDataCompositionSectionCS",
          "code" : "PGIC"
        }]
      },
      "entry" : [{
        "reference" : "QuestionnaireResponse/BHPGICExample"
      }]
    }
  ]
},
{
  "fullUrl" : "http://example.org/Patient/PatientExample",
  "resource" : {
    "resourceType" : "Patient",
    "id" : "PatientExample",
    "meta" : {
      "profile" :
["http://hl7.org/fhir/us/core/StructureDefinition/us-core-
patient|6.1.0"]
    },
    "language" : "en",
    "text" : {
      "status" : "generated",
      "div" : "<div xml:lang=\"en\"
xmlns=\"http://www.w3.org/1999/xhtml\" lang=\"en\">Patient John Doe,
male, born 1950-01-01, Medicare ID: 1EG4TE5MK73</div>"
    },
    "identifier" : [{
      "type" : {
        "coding" : [{

```

```

        "system" : "http://terminology.hl7.org/CodeSystem/v2-
0203",
        "code" : "MC"
    }],
    },
    "system" :
"http://terminology.hl7.org/NamingSystem/cmsMBI",
    "value" : "1EG4TE5MK73"
}],
    "name" : [{
        "family" : "Doe",
        "given" : ["John"]
    }],
    "gender" : "male",
    "birthDate" : "1950-01-01"
}
},
{
    "fullUrl" :
"http://example.org/Practitioner/PractitionerExample",
    "resource" : {
        "resourceType" : "Practitioner",
        "id" : "PractitionerExample",
        "meta" : {
            "profile" :
["http://hl7.org/fhir/us/core/StructureDefinition/us-core-
practitioner|6.1.0"]
        },
        "language" : "en",
        "text" : {
            "status" : "generated",
            "div" : "<div xml:lang=\"en\"
xmlns=\"http://www.w3.org/1999/xhtml\" lang=\"en\">Practitioner Jane
Smith, NPI: 1234567893</div>"
        },
        "identifier" : [{
            "system" : "http://hl7.org/fhir/sid/us-npi",
            "value" : "1234567893"
        }],
        "name" : [{
            "family" : "Smith",
            "given" : ["Jane"]
        }]
    }
},
{
    "fullUrl" :
"http://example.org/Organization/OrganizationExample",
    "resource" : {
        "resourceType" : "Organization",
        "id" : "OrganizationExample",
        "meta" : {
            "profile" :
["http://hl7.org/fhir/us/core/StructureDefinition/us-core-
organization|6.1.0"]
        },
        "language" : "en",

```

```

        "text" : {
            "status" : "generated",
            "div" : "<div xml:lang=\"en\"
xmlns=\"http://www.w3.org/1999/xhtml\" lang=\"en\">Example Healthcare
Organization, ACCESS Participant ID: ACCES12345</div>"
        },
        "identifier" : [{
            "system" : "https://dsacms.github.io/cmmi-access-
model/participant-id",
            "value" : "ACCES12345"
        }],
        "active" : true,
        "name" : "Example Healthcare Organization"
    }
},
{
    "fullUrl" :
"http://example.org/QuestionnaireResponse/DepressionPHQ9Example",
    "resource" : {
        "resourceType" : "QuestionnaireResponse",
        "id" : "DepressionPHQ9Example",
        "meta" : {
            "profile" :
["http://hl7.org/fhir/us/core/StructureDefinition/us-core-
questionnaireresponse|6.1.0"]
        },
        "language" : "en",
        "text" : {
            "status" : "generated",
            "div" : "<div xml:lang=\"en\"
xmlns=\"http://www.w3.org/1999/xhtml\" lang=\"en\"><p>PHQ-9
QuestionnaireResponse for John Doe. Total score: 7.</p></div>"
        },
        "questionnaire" :
"http://example.org/Questionnaire/PHQ9Questionnaire",
        "status" : "completed",
        "subject" : {
            "reference" : "Patient/PatientExample"
        },
        "authored" : "2026-01-15T10:30:00Z",
        "author" : {
            "reference" : "Patient/PatientExample"
        },
        "item" : [{
            "linkId" : "phq9-1",
            "text" : "Little interest or pleasure in doing things",
            "answer" : [{
                "valueCoding" : {
                    "extension" : [{
                        "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
                        "valueDecimal" : 1
                    }],
                    "system" : "http://loinc.org",
                    "code" : "LA6569-3",
                    "display" : "Several days"
                }
            ]
        }
    ]
}

```

```

    ]]
  },
  {
    "linkId" : "phq9-2",
    "text" : "Feeling down, depressed, or hopeless",
    "answer" : [{
      "valueCoding" : {
        "extension" : [{
          "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
          "valueDecimal" : 1
        }],
        "system" : "http://loinc.org",
        "code" : "LA6569-3",
        "display" : "Several days"
      }
    }]
  },
  {
    "linkId" : "phq9-3",
    "text" : "Trouble falling or staying asleep, or sleeping
too much",
    "answer" : [{
      "valueCoding" : {
        "extension" : [{
          "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
          "valueDecimal" : 2
        }],
        "system" : "http://loinc.org",
        "code" : "LA6570-1",
        "display" : "More than half the days"
      }
    }]
  },
  {
    "linkId" : "phq9-4",
    "text" : "Feeling tired or having little energy",
    "answer" : [{
      "valueCoding" : {
        "extension" : [{
          "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
          "valueDecimal" : 1
        }],
        "system" : "http://loinc.org",
        "code" : "LA6569-3",
        "display" : "Several days"
      }
    }]
  },
  {
    "linkId" : "phq9-5",
    "text" : "Poor appetite or overeating",
    "answer" : [{
      "valueCoding" : {
        "extension" : [{

```

```

        "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
        "valueDecimal" : 0
    }],
    "system" : "http://loinc.org",
    "code" : "LA6568-5",
    "display" : "Not at all"
}
    ]],
},
{
    "linkId" : "phq9-6",
    "text" : "Feeling bad about yourself – or that you are a
failure or have let yourself or your family down",
    "answer" : [{
        "valueCoding" : {
            "extension" : [{
                "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
                "valueDecimal" : 1
            }],
            "system" : "http://loinc.org",
            "code" : "LA6569-3",
            "display" : "Several days"
        }
    }
    ]],
},
{
    "linkId" : "phq9-7",
    "text" : "Trouble concentrating on things, such as reading
the newspaper or watching television",
    "answer" : [{
        "valueCoding" : {
            "extension" : [{
                "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
                "valueDecimal" : 1
            }],
            "system" : "http://loinc.org",
            "code" : "LA6569-3",
            "display" : "Several days"
        }
    }
    ]],
},
{
    "linkId" : "phq9-8",
    "text" : "Moving or speaking so slowly that other people
could have noticed? Or the opposite – being so fidgety or restless that
you have been moving around a lot more than usual",
    "answer" : [{
        "valueCoding" : {
            "extension" : [{
                "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
                "valueDecimal" : 0
            }],
            "system" : "http://loinc.org",

```

```

        "code" : "LA6568-5",
        "display" : "Not at all"
    }
}
},
{
    "linkId" : "phq9-9",
    "text" : "Thoughts that you would be better off dead, or of
hurting yourself in some way",
    "answer" : [{
        "valueCoding" : {
            "extension" : [{
                "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
                "valueDecimal" : 0
            }],
            "system" : "http://loinc.org",
            "code" : "LA6568-5",
            "display" : "Not at all"
        }
    }]
},
{
    "linkId" : "phq9-10",
    "text" : "How difficult have these made it for you to do
your work, take care of things at home, or get along with other
people?",
    "answer" : [{
        "valueCoding" : {
            "extension" : [{
                "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
                "valueDecimal" : 1
            }],
            "system" : "http://loinc.org",
            "code" : "LA6573-5",
            "display" : "Somewhat difficult"
        }
    }]
},
{
    "linkId" : "total-score",
    "answer" : [{
        "valueDecimal" : 7
    }]
}
},
{
    "fullUrl" :
"http://example.org/QuestionnaireResponse/AnxietyGAD7Example",
    "resource" : {
        "resourceType" : "QuestionnaireResponse",
        "id" : "AnxietyGAD7Example",
        "meta" : {

```

```

        "profile" :
["http://hl7.org/fhir/us/core/StructureDefinition/us-core-
questionnaireresponse|6.1.0"]
    },
    "language" : "en",
    "text" : {
        "status" : "generated",
        "div" : "<div xml:lang=\"en\"
xmlns=\"http://www.w3.org/1999/xhtml\" lang=\"en\"><p>GAD-7
QuestionnaireResponse for John Doe. Total score: 6.</p></div>"
    },
    "questionnaire" :
"http://example.org/Questionnaire/GAD7Questionnaire",
    "status" : "completed",
    "subject" : {
        "reference" : "Patient/PatientExample"
    },
    "authored" : "2026-01-15T10:30:00Z",
    "author" : {
        "reference" : "Patient/PatientExample"
    },
    "item" : [{
        "linkId" : "gad7-1",
        "text" : "Feeling nervous, anxious, or on edge",
        "answer" : [{
            "valueCoding" : {
                "extension" : [{
                    "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
                    "valueDecimal" : 1
                }],
                "system" : "http://loinc.org",
                "code" : "LA6569-3",
                "display" : "Several days"
            }
        ]
    },
    {
        "linkId" : "gad7-2",
        "text" : "Not being able to stop or control worrying",
        "answer" : [{
            "valueCoding" : {
                "extension" : [{
                    "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
                    "valueDecimal" : 1
                }],
                "system" : "http://loinc.org",
                "code" : "LA6569-3",
                "display" : "Several days"
            }
        ]
    },
    {
        "linkId" : "gad7-3",
        "text" : "Worrying too much about different things",
        "answer" : [{

```

```

        "valueCoding" : {
          "extension" : [{
            "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
            "valueDecimal" : 1
          }],
          "system" : "http://loinc.org",
          "code" : "LA6569-3",
          "display" : "Several days"
        }
      }
    },
    {
      "linkId" : "gad7-4",
      "text" : "Trouble relaxing",
      "answer" : [{
        "valueCoding" : {
          "extension" : [{
            "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
            "valueDecimal" : 1
          }],
          "system" : "http://loinc.org",
          "code" : "LA6569-3",
          "display" : "Several days"
        }
      }
    ],
    {
      "linkId" : "gad7-5",
      "text" : "Being so restless that it is hard to sit still",
      "answer" : [{
        "valueCoding" : {
          "extension" : [{
            "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
            "valueDecimal" : 0
          }],
          "system" : "http://loinc.org",
          "code" : "LA6568-5",
          "display" : "Not at all"
        }
      }
    ],
    {
      "linkId" : "gad7-6",
      "text" : "Becoming easily annoyed or irritable",
      "answer" : [{
        "valueCoding" : {
          "extension" : [{
            "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
            "valueDecimal" : 1
          }],
          "system" : "http://loinc.org",
          "code" : "LA6569-3",
          "display" : "Several days"
        }
      }
    ]
  }
}

```

```

        }
      }
    },
    {
      "linkId" : "gad7-7",
      "text" : "Feeling afraid as if something awful might
happen",
      "answer" : [{
        "valueCoding" : {
          "extension" : [{
            "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
            "valueDecimal" : 1
          }],
          "system" : "http://loinc.org",
          "code" : "LA6569-3",
          "display" : "Several days"
        }
      }],
    },
    {
      "linkId" : "total-score",
      "answer" : [{
        "valueDecimal" : 6
      }],
    }
  ],
  {
    "fullUrl" :
"http://example.org/QuestionnaireResponse/WHODASExample",
    "resource" : {
      "resourceType" : "QuestionnaireResponse",
      "id" : "WHODASExample",
      "meta" : {
        "profile" :
["http://hl7.org/fhir/us/core/StructureDefinition/us-core-
questionnaireresponse|6.1.0"]
      },
      "language" : "en",
      "text" : {
        "status" : "generated",
        "div" : "<div xml:lang=\"en\"
xmlns=\"http://www.w3.org/1999/xhtml\" lang=\"en\"><p>WHODAS 2.0 (12-
item) QuestionnaireResponse for John Doe. Total score: 26.</p></div>"
      },
      "questionnaire" :
"http://example.org/Questionnaire/WHODASQuestionnaire",
      "status" : "completed",
      "subject" : {
        "reference" : "Patient/PatientExample"
      },
      "authored" : "2026-01-15T10:30:00Z",
      "author" : {
        "reference" : "Patient/PatientExample"
      },
      "item" : [{

```

```

        "linkId" : "whodas-s1",
        "text" : "Standing for long periods such as 30 minutes",
        "answer" : [{
            "valueCoding" : {
                "extension" : [{
                    "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
                    "valueDecimal" : 2
                }],
                "display" : "Mild"
            }
        }]
    },
    {
        "linkId" : "whodas-s2",
        "text" : "Taking care of household responsibilities",
        "answer" : [{
            "valueCoding" : {
                "extension" : [{
                    "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
                    "valueDecimal" : 3
                }],
                "display" : "Moderate"
            }
        }]
    },
    {
        "linkId" : "whodas-s3",
        "text" : "Learning a new task, for example learning how to
get to a new place",
        "answer" : [{
            "valueCoding" : {
                "extension" : [{
                    "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
                    "valueDecimal" : 2
                }],
                "display" : "Mild"
            }
        }]
    },
    {
        "linkId" : "whodas-s4",
        "text" : "How much of a problem did you have joining in
community activities (for example, festivities, religious or other
activities) in the same way as anyone else can?",
        "answer" : [{
            "valueCoding" : {
                "extension" : [{
                    "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
                    "valueDecimal" : 2
                }],
                "display" : "Mild"
            }
        }]
    }
]

```

```

    },
    {
      "linkId" : "whodas-s5",
      "text" : "How much of a problem did you have with being
emotionally affected by your health problems?",
      "answer" : [{
        "valueCoding" : {
          "extension" : [{
            "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
            "valueDecimal" : 3
          }],
          "display" : "Moderate"
        }
      }]
    },
    {
      "linkId" : "whodas-s6",
      "text" : "Concentrating on doing something for ten
minutes?",
      "answer" : [{
        "valueCoding" : {
          "extension" : [{
            "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
            "valueDecimal" : 2
          }],
          "display" : "Mild"
        }
      }]
    },
    {
      "linkId" : "whodas-s7",
      "text" : "Walking a long distance such as a kilometer [or
equivalent]?",
      "answer" : [{
        "valueCoding" : {
          "extension" : [{
            "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
            "valueDecimal" : 3
          }],
          "display" : "Moderate"
        }
      }]
    },
    {
      "linkId" : "whodas-s8",
      "text" : "Washing your whole body?",
      "answer" : [{
        "valueCoding" : {
          "extension" : [{
            "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
            "valueDecimal" : 1
          }],
          "display" : "None"
        }
      }]
    }
  ]
}

```

```

        }
    }
},
{
    "linkId" : "whodas-s9",
    "text" : "Getting dressed?",
    "answer" : [{
        "valueCoding" : {
            "extension" : [{
                "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
                "valueDecimal" : 1
            }],
            "display" : "None"
        }
    }]
},
{
    "linkId" : "whodas-s10",
    "text" : "Dealing with people you do not know",
    "answer" : [{
        "valueCoding" : {
            "extension" : [{
                "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
                "valueDecimal" : 2
            }],
            "display" : "Mild"
        }
    }]
},
{
    "linkId" : "whodas-s11",
    "text" : "Maintaining a friendship",
    "answer" : [{
        "valueCoding" : {
            "extension" : [{
                "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
                "valueDecimal" : 2
            }],
            "display" : "Mild"
        }
    }]
},
{
    "linkId" : "whodas-s12",
    "text" : "Your day-to-day work",
    "answer" : [{
        "valueCoding" : {
            "extension" : [{
                "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
                "valueDecimal" : 3
            }],
            "display" : "Moderate"
        }
    }]
}

```

```

        ]]
      },
      {
        "linkId" : "whodas-h1",
        "text" : "Overall, in the past 30 days, how many days were
these difficulties present?",
        "answer" : [{
          "valueDecimal" : 3
        }]
      },
      {
        "linkId" : "whodas-h2",
        "text" : "In the past 30 days, for how many days were you
totally unable to carry out your usual activities or work because of
any health condition?",
        "answer" : [{
          "valueDecimal" : 3
        }]
      },
      {
        "linkId" : "whodas-h3",
        "text" : "In the past 30 days, not counting the days that
you were totally unable, for how many days did you cut back or reduce
your usual activities or work because of any health condition?",
        "answer" : [{
          "valueDecimal" : 3
        }]
      },
      {
        "linkId" : "total-score",
        "answer" : [{
          "valueDecimal" : 26
        }]
      }
    ]
  },
  {
    "fullUrl" :
"http://example.org/QuestionnaireResponse/BHPGICExample",
    "resource" : {
      "resourceType" : "QuestionnaireResponse",
      "id" : "BHPGICExample",
      "meta" : {
        "profile" :
["http://hl7.org/fhir/us/core/StructureDefinition/us-core-
questionnaireresponse|6.1.0"]
      },
      "language" : "en",
      "text" : {
        "status" : "generated",
        "div" : "<div xml:lang=\"en\"
xmlns=\"http://www.w3.org/1999/xhtml\" lang=\"en\"><p>PGIC
QuestionnaireResponse for John Doe. Response: Very much
improved.</p></div>"
      },
      "questionnaire" :
"http://example.org/Questionnaire/BHPGICQuestionnaire",

```

```

    "status" : "completed",
    "subject" : {
      "reference" : "Patient/PatientExample"
    },
    "authored" : "2026-01-15T10:30:00Z",
    "author" : {
      "reference" : "Patient/PatientExample"
    },
    "item" : [{
      "linkId" : "pgic-1",
      "text" : "Since beginning treatment, how would you describe
your overall change in activity limitations, symptoms, emotions, and
quality of life?",
      "answer" : [{
        "valueCoding" : {
          "extension" : [{
            "url" :
"http://hl7.org/fhir/StructureDefinition/ordinalValue",
            "valueDecimal" : 1
          }],
          "display" : "Very much improved"
        }
      }]
    }]
  }
}

```

Response:

```

HTTP/1.1 202 Accepted
Content-Location: https://[base]/access/Patient/$submission-status/sub-
789012

```

Step 2-5: Follow the same polling pattern as MSK example above until receiving success response.

API-Specific Error Scenarios

For general error handling guidance and common error scenarios (missing parameters, invalid tokens, server errors, etc.), see the Error Handling section in General Guidance.

The following errors are specific to the Data Reporting API:

Patient Not Aligned

Scenario: Attempting to report data for a patient who is not currently aligned to this provider.

```
GET https://[base]/access/Patient/$submission-status/sub-123456
```

```

HTTP/1.1 200 OK
Content-Type: application/json

{
  "resourceType": "Parameters",
  "parameter": [
    {
      "name": "result",
      "valueCodeableConcept": {
        "coding": [
          {
            "system":
"https://globalalliantinc.com/access/CodeSystem/ACCESSReportDataResultCS"
,
            "code": "patient-not-aligned",
            "display": "Patient not aligned"
          }
        ],
        "text": "Patient is not currently aligned to this participant in
the specified track. Data reporting is only accepted for aligned
patients."
      }
    }
  ]
}

```

Missing Required Data Bundle Parameter

Scenario: Data reporting request submitted without the required dataBundle parameter.

```

POST https://[base]/access/Patient/$report-data?entityId=ACCES67890

HTTP/1.1 400 Bad Request
Content-Type: application/json

{
  "resourceType": "OperationOutcome",
  "issue": [
    {
      "severity": "error",
      "code": "required",
      "details": {
        "text": "Missing required parameter: dataBundle"
      },
      "diagnostics": "At least one 'dataBundle' parameter containing an
ACCESS Data Reporting Bundle is required. The bundle must conform to the
ACCESSDataReportingBundle profile."
    }
  ]
}

```

Invalid Composition Structure

Scenario: Data reporting bundle contains an invalid Composition structure.

HTTP/1.1 400 Bad Request
Content-Type: application/json

```
{
  "resourceType": "OperationOutcome",
  "issue": [
    {
      "severity": "error",
      "code": "structure",
      "details": {
        "text": "Invalid Composition structure in data reporting bundle"
      },
      "diagnostics": "The Composition resource must include the dateTime
data element."
    }
  ]
}
```

Missing Required Track Section

Scenario: Composition is missing required section for the specified track.

HTTP/1.1 400 Bad Request
Content-Type: application/json

```
{
  "resourceType": "OperationOutcome",
  "issue": [
    {
      "severity": "error",
      "code": "required",
      "details": {
        "text": "Missing required track section in Composition"
      },
      "diagnostics": "For submitting data to the BH track, the
Composition must include the BH section."
    }
  ]
}
```

Invalid Resource Reference

Scenario: Composition references resources that are not included in the bundle.

HTTP/1.1 400 Bad Request
Content-Type: application/json

```
{
  "resourceType": "OperationOutcome",
  "issue": [
    {
      "severity": "error",
      "code": "invariant",
```

```

      "details": {
        "text": "Invalid resource reference in Composition"
      },
      "diagnostics": "Composition.section[blood-pressure].entry
references 'Observation/bp-reading-123' but this resource is not included
in the Bundle. All referenced resources must be included in the bundle."
    }
  ]
}

```

Multiple Track Sections Submitted

Scenario: Composition has more than one track section specified.

HTTP/1.1 400 Bad Request
Content-Type: application/json

```

{
  "resourceType": "OperationOutcome",
  "issue": [
    {
      "severity": "error",
      "code": "invariant",
      "details": {
        "text": "Invalid resource reference in Composition"
      },
      "diagnostics": "Composition contains data for both the CKM and BH
tracks. Only data for one track can be provided."
    }
  ]
}

```

Duplicate Data Submission

Scenario: Attempting to submit data that was already reported in a previous submission.

HTTP/1.1 200 OK
Content-Type: application/json

```

{
  "resourceType": "Parameters",
  "parameter": [
    {
      "name": "result",
      "valueCodeableConcept": {
        "coding": [
          {
            "system":
"https://globalalliantinc.com/access/CodeSystem/ACCESSReportDataResultCS"
,
            "code": "duplicate",
            "display": "Duplicate submission"
          }
        ]
      }
    }
  ]
}

```

```

    }
  ],
  "text": "Data submission is a duplicate of a previously submitted
report for this reporting period."
}
}
]
}

```

Incomplete Data Submission

Scenario: Attempting to submit data that was already reported in a previous submission.

HTTP/1.1 200 OK

Content-Type: application/json

```

{
  "resourceType": "Parameters",
  "parameter": [
    {
      "name": "result",
      "valueCodeableConcept": {
        "coding": [
          {
            "system":
"https://globalalliantinc.com/access/CodeSystem/ACCESSReportDataResultCS"
,
            "code": "incomplete-data",
            "display": "Data submission is missing required observations
or measurements for the specified track (see the 'issues' parameter for
specific issues and details)."
          }
        ],
        "text": "PHQ-9 questionnaire response has more than two missing
answers."
      }
    },
    {
      "resourceType": "OperationOutcome",
      "issue": [
        {
          "severity": "warning",
          "code": "incomplete",
          "expression": "Composition.section.where(title =
'BH').section.where(title = 'PHQ-9') "
        }
      ]
    }
  ]
}

```

NOTE: These scenarios represent a mix of business logic results (HTTP 200 with specific result codes) and technical validation errors (HTTP 400). Always check the HTTP status code first to determine the type of response.

Subscriptions Guidance

The ACCESS Model provides automatic email notifications for important events during the patient ACCESS Model lifecycle.

Overview

Upon successful patient alignment, participants are automatically enrolled to receive email notifications about upcoming deadlines and events that require action or awareness. These email notifications are automatically stopped when a patient is unaligned, either manually or through the ACCESS Model system.

Event Types

The following event types trigger email notifications to ACCESS participants:

Event Name	Event Code	Description	When Triggered
Unalignment Notice	<code>unalignment</code>	The patient has been unaligned from the ACCESS Model due to a change in eligibility status.	When patient is unaligned by the ACCESS Model system

Email Notification Enrollment

Email notifications are automatically configured during the participant onboarding process. The email addresses registered during onboarding will receive notifications for all relevant events related to aligned patients.

Key Points:

- Email addresses are configured during participant onboarding
- Notifications are sent automatically for all events
- No additional configuration needed during alignment

What Happens After Alignment:

Upon successful alignment (HTTP 200 with result code `aligned` or `aligned-switch-approved`), the system automatically:

1. Begins monitoring for upcoming events that require notification
2. Sends email notifications to registered addresses when events occur
3. Continues notifications throughout the alignment period
4. Stops notifications when the patient is unaligned

You do not need to manually configure or manage these notifications - they are handled automatically by the system based on your registered email addresses.

Email Notification Content

Email notifications include:

- **Event Type:** Clear description of what is happening (e.g., "General Unalignment Notice")
- **Submission ID:** Submission ID from the successful alignment for the patient, provided in the Beneficiary Alignment Report
- **Participant ID:** Your ACCESS participant identifier
- **Deadline Date:** When action is required or event occurs
- **Action Required:** Specific steps you need to take
- **Additional Information:** Relevant details and guidance

Example Email Notification

Subject: [ACCESS] Model Notification

Dear ACCESS Participant,

Event Type: General Unalignment Notification
Submission ID: sub-123456
Participant ID: ACCES12345
Deadline Date: N/A

Action Required:

The beneficiary has been unaligned from the ACCESS Model.

Additional Information:

The beneficiary was previous marked as pending unalignment by the unalignment API and has now been moved to aligned status.

This is an auto-generated email. Please do not reply. For assistance with ACCESS, contact the Help Desk at ACCESSModelTeam@cms.hhs.gov or 1-888-734-6433 (select Option 3).

Notification Lifecycle

Enrollment

- Automatic upon successful alignment
- Uses email addresses from participant onboarding
- Notifications sent for all relevant events

Active Period

- Remains active for duration of alignment
- Triggers email notifications at appropriate times

Cancellation

- Automatic upon successful unalignment

- No further notifications sent for that patient
- Participant continues to receive notifications for other aligned patients

Implementation Guidance

Receiving Notifications

Your email system should:

- Accept emails from ACCESS Model notification service
- Configure spam filters to allow ACCESS emails
- Set up forwarding rules if needed for team distribution
- Monitor inbox regularly for time-sensitive notifications

Processing Notifications

When you receive a notification email:

1. **Review Event Details** - Understand what is happening
2. **Check Deadline** - Note when action is required
3. **Update Internal Systems** - Record event in your system
4. **Take Appropriate Action** - Follow up with patient if needed
5. **Complete Required Actions** - Perform required tasks before deadline

Security Considerations

- Email notifications contain limited patient information for privacy
- Use secure email systems with encryption
- Train staff on handling Personally Identifiable Information (PII) and/or Protected Health Information (PHI) in emails
- Follow your organization's email security policies
- Do not forward notification emails outside your organization

Related Artifacts

- `ACCESSEventTypeCS` CodeSystem
- `ACCESSEventTypeVS` ValueSet

Testing Guide

This page provides detailed testing guidance to ensure implementations conform to ACCESS Model requirements before production deployment.

Testing Checklist

Before deploying to production, implementers should complete the following validation steps:

FHIR Conformance Validation:

- All resource instances validate against their declared profiles
- All Must Support elements are properly populated when data is available
- All required elements are present in submissions
- Value set bindings use codes from the correct code systems
- Patient resources include valid MBI in correct format

Operation Testing:

- All four operations (`$check-eligibility`, `$align`, `$unalign`, `$report-data`) successfully submit requests
- `Content-Location` header is correctly parsed and used for polling
- `$submission-status` correctly returns HTTP 202 Accepted while processing
- `$submission-status` correctly returns HTTP 200 OK with result when complete
- All result codes are correctly handled

Authentication & Security:

- OAuth 2.0 token acquisition succeeds
- Token is correctly included in Authorization header
- Token refresh works before expiration
- TLS 1.3 is enforced
- MBI and PII/PHI are encrypted in transit and storage

Error Handling:

- HTTP 400 errors are handled without retry
- HTTP 401 errors trigger token refresh
- HTTP 500/503 errors implement exponential backoff retry
- Network errors implement retry logic
- Timeout scenarios are handled gracefully

Asynchronous Pattern:

- Polling implements appropriate wait intervals (5-30 seconds)
- Polling includes timeout mechanism
- Submission IDs are stored and associated with original requests
- Polling continues after network interruption

Test Scenarios by API

Eligibility API Test Scenarios

Scenario	Input	Expected Result	Validation
Eligible Patient	Valid patient with qualifying diagnosis	HTTP 200, result "eligible"	Can proceed to alignment
Control Group	Patient randomized to control	HTTP 200, result "not-eligible-control-group"	12-month wait documented
Already Aligned	Patient aligned to another provider	HTTP 200, result "not-eligible-already-aligned"	Cannot align
Missing Parameter	Request without patient	HTTP 400, OperationOutcome	Error identifies missing parameter
Invalid Track	Track code not in value set	HTTP 400, OperationOutcome	Error identifies invalid track

Alignment API Test Scenarios

Scenario	Input	Expected Result	Validation
Successful Alignment	Eligible patient with conditions	HTTP 200, result "aligned"	Subscriptions created
Provider Switch	Alignment with switch consent after 90 days	HTTP 200, result "aligned-switch-approved"	Previous subscriptions cancelled
Lock-In Active	Switch attempt within 90 days	HTTP 200, result "not-aligned-already-aligned"	Switch rejected
Missing Conditions	Alignment without conditions	HTTP 400, OperationOutcome	Error identifies missing conditions
No Qualifying Diagnosis	Conditions don't match track	HTTP 200, result "not-aligned-diagnoses"	Specific requirements noted

Unalignment API Test Scenarios

Scenario	Input	Expected Result	Validation
Successful Unalignment	Valid reason (geographic-relocated)	HTTP 200, result "unaligned"	Subscriptions cancelled
Manual Review	Unalignment requiring review	HTTP 200, result "unalignment-pending"	Subscriptions remain active
Not Aligned	Patient not currently aligned	HTTP 200, result "not-unaligned-not-aligned"	Cannot unalign

Missing Reason	Unalignment without reason	HTTP 400, OperationOutcome	Error identifies missing reason
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Validation Tools and Resources

FHIR Validation:

- Online validator: <https://validator.fhir.org/>