

# Operon CMS-0057-F Testing Spec

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**Version:** 1.1 **Last verified:** 2026-05-10 **Contact:** sales@operon.cloud **WEDI directory citation:**

Listed in the WEDI CMS-0057-F Interoperability Testing Directory at <https://www.wedi.org/2026/02/11/wedi-testing-directory/>.

### 1. Operon's role

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Operon facilitates sandbox testing of the four CMS-0057-F APIs (Patient Access, Provider Access, Payer-to-Payer, Prior Authorization) and the three Da Vinci workflow Implementation Guides (CRD, DTR, PAS) for organizations preparing for the January 1, 2027 compliance deadline. We integrate underlying UM, claims, member, and PA systems and expose them as conformant FHIR responses across all six WEDI-tracked surfaces. For testing engagements, we provision per-engagement sandbox tenants and produce conformance and readiness evidence scoped to the public-reporting metrics CMS expects.

Operon does not replace the systems it sits in front of. There are no UM, claims, member, or PA vendor retirements required.

### 2. Operon CMS-0057-F readiness matrix

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This matrix mirrors the WEDI directory submission template. Verified 2026-05-10.

| Surface                               | Versions supported                                            | Dev test ready | Provider-payer test ready | Production ready | Sandbox endpoint      |
|---------------------------------------|---------------------------------------------------------------|----------------|---------------------------|------------------|-----------------------|
| Coverage Requirements Discovery (CRD) | 2.0.1 / 2.1.0 / 2.2.1 concurrent                              | Live           | Live                      | Live             | Issued per engagement |
| Document Templates and Rules (DTR)    | 2.0.1 / 2.1.0 / 2.2.0 concurrent (Standard + Adaptive)        | Live           | Live                      | Live             | Issued per engagement |
| Prior Authorization Support (PAS)     | 2.0.1 / 2.1.0 / 2.2.1 concurrent                              | Live           | Live                      | Live             | Issued per engagement |
| Patient Access API                    | CARIN BB IG 2.0.0 + US Core 6.1.0 + USCDI v3                  | Live           | Live                      | Live             | Issued per engagement |
| Provider Access API                   | Da Vinci PDex Provider Access (latest) + FHIR Bulk Data 2.0.0 | Live           | Live                      | Live             | Issued per engagement |
| Payer-to-Payer API                    | Da Vinci PDex Payer-to-Payer (latest)                         | Live           | Live                      | Live             | Issued per engagement |

IG version negotiation is handled via the server `CapabilityStatement` at the base endpoint, so partners can pin to the version their stack supports while Operon runs all supported versions concurrently per tenant.

## 3. API documentation

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### 3.1 Environment

- **Sandbox base URL:** issued per engagement at tenant provisioning.
- **Production base URL:** issued per engagement at tenant provisioning.
- **FHIR version:** R4 (4.0.1).
- **Authentication:** SMART on FHIR 2.0 (OAuth 2.0) with mTLS where required by the IG.
- **Supported scopes:** `patient/*.read`, `user/*.read`, `system/*.read`, `system/*.write`.

## 3.2 Authorization endpoints

- **Authorization endpoint:** issued per engagement (one per tenant).
- **Token endpoint:** issued per engagement (one per tenant).
- **JWKS endpoint:** issued per engagement.

## 3.3 Versioning

Operon publishes a `CapabilityStatement` aligned to each primary IG. Multiple IG versions are exposed concurrently from the same base endpoint. Version negotiation occurs via standard FHIR content negotiation; if no version is specified, the latest-published version is served.

# 4. Per-surface capability detail

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## 4.1 Coverage Requirements Discovery (CRD)

**Operon role:** Operon exposes CDS Hooks services for provider EHR systems so that prior-authorization requirements surface at order-entry or order-sign time, before the claim is submitted.

**IGs and versions:** Da Vinci CRD 2.0.1, 2.1.0, 2.2.1 concurrent. Document type: Standard.

### CDS Hooks supported:

- `order-select` - prompted as a clinician selects an order.
- `order-sign` - prompted at order-sign time.
- `appointment-book` - prompted at appointment booking.

### Operations:

- `GET /cds-services` - service discovery.
- `POST /cds-services/{service-id}` - hook invocation.

### Anchor scenarios:

1. **Pre-PA notification on order entry.** Trigger: EHR fires `order-select` for a service that requires PA. Request: hook payload with patient + practitioner + draft order. Expected response: CDS card recommending PA submission with required data set. Conformance checkpoints: Da Vinci CRD card profile; PA-required signal accuracy.
2. **DTR launch from CRD card.** Trigger: CDS card on `order-sign` includes a DTR launch link. Expected response: card with `link` of type `smart` to launch DTR with pre-populated context.

**Readiness metrics emitted:** CRD signal accuracy, hook response latency.

## 4.2 Document Templates and Rules (DTR)

**Operon role:** Operon exposes payer-defined Questionnaires (Standard and Adaptive) that the provider EHR can launch from a CRD card, pre-populate from clinical data, and submit as a `QuestionnaireResponse` attached to the subsequent PA `Claim`.

**IGs and versions:** Da Vinci DTR 2.0.1, 2.1.0, 2.2.0 concurrent. Document type: Both (Standard + Adaptive).

### Operations:

- `GET /Questionnaire` and `GET /Questionnaire/{id}` - retrieve payer questionnaires.
- `POST /Questionnaire/$package` - retrieve a questionnaire plus all referenced ValueSets and CodeSystems in one bundle.
- `POST /QuestionnaireResponse` - submit a completed response.
- `POST /QuestionnaireResponse/$next-question` - adaptive flow.

### Anchor scenarios:

1. **Standard questionnaire pre-population.** Trigger: CRD card launches DTR. Request: `GET /Questionnaire/{id}`. Expected response: payer questionnaire with pre-population extensions. Conformance checkpoints: DTR profile validity; pre-population correctness.
2. **Adaptive questionnaire flow.** Trigger: DTR launch for an adaptive form. Request: iterative `POST /QuestionnaireResponse/$next-question`. Expected response: next question based on prior answers. Conformance checkpoints: adaptive flow semantics; partial-response idempotency.

**Readiness metrics emitted:** DTR pre-population coverage; adaptive-flow completion rate.

## 4.3 Prior Authorization Support (PAS)

**Operon role:** Operon proxies and measures UM decisions across the plan's PA vendors and internal review queues, exposing a conformant 278-equivalent FHIR surface.

**IGs and versions:** Da Vinci PAS 2.0.1, 2.1.0, 2.2.1 concurrent.

### Operations:

- `POST /Claim/$submit` - PA submission.
- `POST /Claim/$inquire` - status inquiry.
- `GET /ClaimResponse/{id}` - decision retrieval.

**Companion IGs:** US Core 6.1.0; Da Vinci CRD; Da Vinci DTR.

**Auth:** OAuth 2.0 with system-to-system client-credentials flow.

**Capability matrix (all versions):**

| Resource       | Profile              | Read | Search | Write | Notes         |
|----------------|----------------------|------|--------|-------|---------------|
| Claim          | PAS Claim            | Yes  | Yes    | Yes   | PA submission |
| ClaimResponse  | PAS ClaimResponse    | Yes  | Yes    | No    |               |
| ServiceRequest | PAS ServiceRequest   | Yes  | Yes    | Yes   |               |
| Coverage       | CARIN BB Coverage    | Yes  | Yes    | No    |               |
| Patient        | US Core Patient      | Yes  | Yes    | No    |               |
| Practitioner   | US Core Practitioner | Yes  | Yes    | No    |               |

### Anchor scenarios:

- 1. PA submission (medical or pharmacy).** Trigger: provider submits PA from EHR. Request: POST Claim with \$submit operation. Expected response: ClaimResponse with provisional or final decision. Conformance checkpoints: PAS Claim profile; X12 278 semantic equivalence. Readiness metric emitted: decision-time vs SLA.
- 2. Determination poll.** Trigger: provider polls for pending PA outcome. Request: POST \$inquire with claim correlation id. Expected response: updated ClaimResponse. Conformance checkpoints: polling cadence support; status semantics. Readiness metric emitted: decision-time vs SLA.
- 3. SLA-clock conformance (72-hr expedited / 7-day standard).** Trigger: PA submission with urgency indicator. Request: POST Claim with priority code. Expected response: ClaimResponse delivered within SLA window. Conformance checkpoints: SLA clock start/stop semantics; public-reporting metric emission. Readiness metric emitted: decision-time vs SLA.
- 4. Denial-reason taxonomy emission.** Trigger: PA denied with structured reason. Request: POST Claim. Expected response: ClaimResponse with denial reason aligned to public-reporting taxonomy. Conformance checkpoints: denial-code conformance; public-reporting alignment. Readiness metric emitted: denial-reason taxonomy alignment.

### Readiness metrics emitted:

- **Decision-time vs SLA** - median and p95 decision time vs the 72-hour expedited and 7-day standard targets.
- **Denial-reason taxonomy alignment** - percent of denials whose reason maps to the CMS public-reporting denial taxonomy.
- **Public-reporting metric template** - filled-in template aligned to the CMS public-reporting metrics format for plans.

**Measurement output:** Per-scenario conformance vs Da Vinci PAS, CRD, and DTR, SLA-clock report, denial-reason alignment report, and a pre-filled CMS public-reporting metric template.

## 4.4 Patient Access API

**Operon role:** Operon aggregates member-facing data across UM, claims, member, and clinical systems, and exposes it as conformant FHIR responses to authorized member apps.

**Primary IG:** CARIN BB IG v2.0.0.

### Companion IGs:

- US Core v6.1.0
- Da Vinci PDex v2.x
- USCDI v3

**Auth:** OAuth 2.0 with SMART-on-FHIR launch, member consent, scoped access tokens.

### Capability matrix:

| Resource             | Profile                                                    | Read | Search | Write | Notes                    |
|----------------------|------------------------------------------------------------|------|--------|-------|--------------------------|
| Patient              | US Core Patient                                            | Yes  | Yes    | No    |                          |
| Coverage             | CARIN BB Coverage                                          | Yes  | Yes    | No    |                          |
| ExplanationOfBenefit | CARIN BB EOB<br>Inpatient/Outpatient/Pharmacy/Professional | Yes  | Yes    | No    | Multi-system aggregation |
| Encounter            | US Core Encounter                                          | Yes  | Yes    | No    |                          |
| Condition            | US Core Condition                                          | Yes  | Yes    | No    |                          |
| MedicationRequest    | US Core MedicationRequest                                  | Yes  | Yes    | No    |                          |
| Observation          | US Core Observation                                        | Yes  | Yes    | No    |                          |
| AllergyIntolerance   | US Core AllergyIntolerance                                 | Yes  | Yes    | No    |                          |
| Procedure            | US Core Procedure                                          | Yes  | Yes    | No    |                          |
| DocumentReference    | US Core DocumentReference                                  | Yes  | Yes    | No    |                          |

### Anchor scenarios:

- 1. Member onboarding refresh.** Trigger: new member app authorization with full-history consent. Request: bulk read of Patient + Coverage + last-24mo EOBs and clinical resources. Expected response: Bundle of CARIN BB + US Core resources, paginated. Conformance checkpoints: CARIN BB profile validation; US Core element coverage; pagination link integrity. Readiness metric emitted: USCDI v3 element coverage %.
- 2. 24-month claims pull.** Trigger: authorized app requests historical EOBs. Request: GET ExplanationOfBenefit?patient={id}&\_lastUpdated=ge{24mo-ago} . Expected response: paginated EOB Bundle across underlying claims systems. Conformance checkpoints: cross-system

provenance present on every entry; CARIN BB EOB profile per claim type. Readiness metric emitted: multi-system provenance %.

3. **EOB delta since last sync.** Trigger: app previously synced and requests delta. Request: `GET ExplanationOfBenefit?patient={id}&_lastUpdated=gt{last-sync}` . Expected response: delta Bundle with stable IDs across systems. Conformance checkpoints: ID stability; `_lastUpdated` correctness. Readiness metric emitted: response freshness.
4. **Consent revocation.** Trigger: member revokes consent in member portal. Request: subsequent app token-refresh attempt. Expected response: 401 with conformant OAuth error. Conformance checkpoints: token invalidation propagation; audit trail on revocation. Readiness metric emitted: consent-revocation propagation latency.

**Sample bundles:** Four representative members spanning Medicare Advantage, commercial, and Medicaid lines, each with 24 months of claims and clinical data sourced from at least two underlying systems.

#### **Readiness metrics emitted:**

- **Response freshness** - median age of returned data vs source-of-truth update time.
- **Multi-system provenance %** - share of responses where Operon attributes each resource to a specific underlying system.
- **USCDI v3 element coverage** - percent of USCDI v3 data classes/elements present in returned bundles per scenario.

**Measurement output:** Per-scenario conformance pass/fail vs CARIN BB and US Core, latency p50/p95/p99, error taxonomy aligned to FHIR `OperationOutcome` severity codes, and a USCDI v3 coverage report.

## **4.5 Provider Access API**

**Operon role:** Operon performs group-based attribution and bulk export of clinical, claims, and encounter data to provider organizations under attribution agreement.

**Primary IG:** Da Vinci PDex Provider Access IG, latest published.

#### **Companion IGs:**

- US Core v6.1.0
- FHIR Bulk Data Access v2.0.0

**Auth:** OAuth 2.0 with attribution-based authorization. Provider system credentials scoped to attributed Group(s).

#### **Capability matrix:**

| Resource             | Profile                        | Read | Search | Write | Notes             |
|----------------------|--------------------------------|------|--------|-------|-------------------|
| Group                | Da Vinci Provider Access Group | Yes  | Yes    | No    | Attribution group |
| Patient              | US Core Patient                | Yes  | Yes    | No    |                   |
| Coverage             | CARIN BB Coverage              | Yes  | Yes    | No    |                   |
| ExplanationOfBenefit | CARIN BB EOB                   | Yes  | Yes    | No    |                   |
| Encounter            | US Core Encounter              | Yes  | Yes    | No    |                   |
| Condition            | US Core Condition              | Yes  | Yes    | No    |                   |
| MedicationRequest    | US Core MedicationRequest      | Yes  | Yes    | No    |                   |
| Observation          | US Core Observation            | Yes  | Yes    | No    |                   |
| Procedure            | US Core Procedure              | Yes  | Yes    | No    |                   |

#### Anchor scenarios:

- 1. Group attribution sync.** Trigger: provider system polls for current attribution membership.  
Request: GET Group/{provider-group-id} . Expected response: Group resource with member references. Conformance checkpoints: attribution accuracy; profile compliance. Readiness metric emitted: attribution accuracy.
- 2. Bulk export kickoff/poll/download.** Trigger: provider requests Group-scoped \$export . Request: POST Group/{id}/\$export with type filters. Expected response: async kickoff + status poll + ndjson manifest. Conformance checkpoints: Bulk Data v2.0.0 spec compliance; manifest integrity; NDJSON profile validity. Readiness metric emitted: export latency.
- 3. Delta export.** Trigger: provider requests \$export with \_since . Request: POST Group/{id}/\$export?\_since={timestamp} . Expected response: delta-only ndjson manifest. Conformance checkpoints: \_since boundary correctness; stable resource IDs. Readiness metric emitted: export latency.
- 4. Permission-scoped resource filtering.** Trigger: provider has attribution for subset of available types. Request: POST Group/{id}/\$export?\_type=Encounter,Condition . Expected response: manifest containing only authorized types. Conformance checkpoints: scope honoring; no leakage of unauthorized resource types. Readiness metric emitted: scope-honoring rate.

**Sample bundles:** Provider attribution Group of 50 members across two specialties, with 12 months of clinical and claims data; designed to exercise full and delta exports.

#### Readiness metrics emitted:

- **Export latency** - wall-clock time from \$export kickoff to manifest available.

- **Attribution accuracy** - match between attributed Group membership and the plan's source-of-truth attribution roster.
- **Scope-honoring rate** - share of exports returning only resource types the provider was authorized for.

**Measurement output:** Per-scenario conformance vs Da Vinci PDex Provider Access IG and Bulk Data v2.0.0, export latency distribution, scope-honoring report.

## 4.6 Payer-to-Payer API

**Operon role:** Operon coordinates `$member-match` and historical-data exchange between concurrent and prior payers, normalizing bundles across underlying systems.

**Primary IG:** Da Vinci PDex Payer-to-Payer IG, latest published.

**Companion IGs:**

- US Core v6.1.0
- Da Vinci PDex v2.x

**Auth:** OAuth 2.0 inside the payer-to-payer trust framework with mutual-TLS plus client-credentials flow.

**Capability matrix:**

| Resource             | Profile                   | Read | Search | Write | Notes                                                     |
|----------------------|---------------------------|------|--------|-------|-----------------------------------------------------------|
| Patient              | US Core Patient           | Yes  | Yes    | No    |                                                           |
| Coverage             | CARIN BB Coverage         | Yes  | Yes    | No    |                                                           |
| ExplanationOfBenefit | CARIN BB EOB              | Yes  | Yes    | No    |                                                           |
| Encounter            | US Core Encounter         | Yes  | Yes    | No    |                                                           |
| Condition            | US Core Condition         | Yes  | Yes    | No    |                                                           |
| MedicationRequest    | US Core MedicationRequest | Yes  | Yes    | No    | Used in <code>\$member-match</code> and historical bundle |

**Anchor scenarios:**

1. **`$member-match` happy path.** Trigger: new plan onboards member previously covered by prior plan. Request: `POST $member-match` with `Patient` + `Coverage` seed. Expected response: member identity bundle confirming match. Conformance checkpoints: `$member-match` operation profile; identity match precision. Readiness metric emitted: `$member-match` precision/recall.

2. **\$member-match ambiguous-match.** Trigger: multiple potential matches in prior plan. Request: POST \$member-match with insufficient demographics. Expected response: `OperationOutcome` with multiple-match diagnosis or graceful no-match. Conformance checkpoints: ambiguity handling; no PII leakage on no-match. Readiness metric emitted: \$member-match precision/recall.
3. **Historical bundle handoff.** Trigger: after successful match, new plan requests history. Request: GET historical bundle for matched member. Expected response: Bundle of CARIN BB + US Core resources. Conformance checkpoints: profile validity; cross-system provenance. Readiness metric emitted: end-to-end exchange latency.
4. **Reconciliation/idempotency replay.** Trigger: new plan replays request after partial failure. Request: repeat historical bundle request with original correlation id. Expected response: identical bundle (idempotent) or conformant continuation. Conformance checkpoints: idempotency; resource ID stability. Readiness metric emitted: end-to-end exchange latency.

**Sample bundles:** Two prior-plan members with five-year historical coverage spanning multiple plans, designed to exercise both clean and ambiguous match paths.

**Readiness metrics emitted:**

- **\$member-match precision/recall** - match accuracy across happy-path and ambiguous scenarios.
- **End-to-end exchange latency** - wall-clock from match request to historical bundle delivery.

**Measurement output:** Per-scenario conformance vs Da Vinci PDex Payer-to-Payer IG, match precision/recall report, latency distribution, and idempotency verification.

## 5. Testing engagement runbook

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1. Submit intake at <https://www.operon.cloud/cms-0057-f-testing-intake>.
2. Sandbox tenant provisioned within 2 business days. Per-engagement isolation; sample data scoped to your scenarios.
3. 60-minute joint kickoff. Confirm scenarios, conformance targets, success criteria, data shape.
4. Testing window of 1 to 4 weeks. Live testing with our integration engineer on call. Daily conformance and latency telemetry shared.
5. Final conformance and readiness report. Formats map to the public-reporting metrics CMS requires.

## 6. Sample readiness-report template

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| Section                    | Field                                                                                                                     | Source                   |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------|--------------------------|
| Identification             | Engagement ID, counterparty, APIs, scenarios                                                                              | Intake form              |
| Conformance                | Per-resource pass/fail vs IG; CapabilityStatement diff per IG version                                                     | Operon test runner       |
| SLA telemetry              | Decision time vs SLA (PAS), response freshness (Patient Access), export latency (Provider Access), exchange latency (P2P) | Operon measurement layer |
| Public-reporting alignment | CMS metric template fields filled in for the engagement window                                                            | Operon measurement layer |
| Cross-system provenance    | Per-request attribution to underlying system                                                                              | Operon gateway logs      |
| CRD/DTR                    | CDS Hooks signal accuracy; DTR pre-population coverage; adaptive flow completion                                          | Operon test runner       |

## 7. Contact

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- Engineering and scheduling: [sales@operon.cloud](mailto:sales@operon.cloud)
- Request a testing window: <https://www.operon.cloud/cms-0057-f-testing-intake>
- Schedule a readiness review: <https://www.operon.cloud/cms-0057-f-testing-intake?kind=readiness-review>
- WEDI directory citation: Operon is listed in the WEDI CMS-0057-F Interoperability Testing Directory at <https://www.wedi.org/2026/02/11/wedi-testing-directory/>.

## 8. Revision history

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| Version | Date       | Changes                                                                                                                                                                                       |
|---------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.0     | 2026-05-10 | Initial release.                                                                                                                                                                              |
| 1.1     | 2026-05-10 | Lead with WEDI-template readiness matrix. Added CRD and DTR as standalone surfaces. Declared all six surfaces live across dev/provider-payer/production. Added authorization-endpoint detail. |