



CENTERS FOR MEDICARE & MEDICAID SERVICES

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TO: Medicare Advantage Organizations

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SUBJECT: Testing Information for the Medicare Advantage (MA) Provider Directory Data for Use in Medicare Plan Finder (MPF) Initiative

This memo provides information on the plan testing period in support of the MPF MA provider directory initiative. This effort plays a crucial role in ensuring that the provider and facility data supplied by MA organizations is accurate and ready for integration into the Contract Year (CY) 2027 MPF.

The testing window is now open to all Local Coordinated Care Plan (CCP), Regional Preferred Provider Organization (PPO), Medical Savings Account (MSA), and Private Fee-for-Service (PFFS) organizations offering individual (not employer-only) plans. Consultants and third-party vendors are also welcome to participate in testing provided they have a contractual relationship with an applicable MA organization.

[Expectations for Plan Participation](#)

CMS strongly encourages all MA organizations subject to this requirement to participate actively in the testing period as early as possible.

Full and early participation are key factors for securing a successful launch of the CY 2027 MPF populated with MA plan-supplied provider directory data. CMS will monitor plan participation throughout the duration of the testing period to identify and address technical issues well before the production release.

During this time, it is not required nor expected that MA organizations update their provider directory test data on a particular cadence. There is also no expected turnaround timeframe for resolving validation findings identified during the testing period.

Nonetheless, CMS advises MA organizations to address findings in a proactive manner to achieve technical readiness.

Process Overview

In this testing period, CMS is endeavoring to simulate the anticipated production workflow, where the following steps occur **for each MA contract number for a given contract year**:

1. MA organizations build and publish their machine-readable JSON or FHIR-based JSON files on a dedicated, publicly accessible URL.
2. CMS crawls the provider directory URLs reported in HPMS. From each URL, CMS uses the index file to locate and download the machine-readable JSON or FHIR-based JSON files that make up the complete provider directory.
3. CMS validates the provider directory data using a defined set of criteria and produces findings.
4. MA organizations access their validation findings in HPMS, adjust their machine-readable JSON or FHIR-based JSON files, and re-publish the files on a dedicated, publicly accessible URL.

CMS will crawl the provider directory URLs daily, and where changes are found, execute the process described above.

Crawling Cadence

CMS' automated crawling process and ingestion routine will run daily to support iterative testing and rapid remediation.

- **Execution Window.** CMS will run the automated crawling process in the middle of the night (Eastern Time) when lower-traffic periods are anticipated.
- **Processing Time.** The complete ingestion and validation cycle is expected to conclude in approximately two hours.
- **Availability of Results.** Validation results will be posted in the HPMS MPF Provider Directory module by mid-to-late morning.

The timing described above may be adjusted once the process is fully executed using a dataset that simulates a production volume.

Contract Year Reference Data

Some validations are dependent on a particular contract year's data. The following table outlines the reference data that will be used for the MPF MA provider directory validation process.

Phase	Timeframe	Reference Data
Testing Period 1	Until early July 2026	CMS will use approved CY 2026 contract and plan data from HPMS.
Testing Period 2	Early July 2026 until mid-September 2026	CMS will use “as submitted” CY 2027 contract and plan data from HPMS. The “as submitted” reference dataset will contain the last submitted version, which may be the approved version depending upon the date of the data pull.
Production	Starting in mid-September 2026	CMS will use approved CY 2027 contract and plan data from HPMS.

CMS will provide notice prior to each cut-over date.

Validation Process

Throughout May, CMS will perform a modified review as we test and refine the validation routine against real-world MA provider directory data in the format defined for MPF purposes. New findings may be identified as the automated cleaning processes mature, even where the ingested data has not changed. During this time, CMS will provide validation results to the Medicare Compliance Officer, Medicare Coordinator, System, and Interoperability contacts on record in HPMS.

In early June, CMS will transition to the fully automated validation process, where MA organizations can retrieve their results via the HPMS MPF Provider Directory module or API.

CMS has defined three levels of findings:

Level	Description
1 - Fatal Errors	<p>A fatal error represents a structural failure in the submission that prevents CMS from reading the file. This usually occurs due to malformed file syntax or hosting issues. The system cannot parse the data, and the entire dataset will be rejected.</p> <p>Data included in a fatal submission will not be shown on MPF until the issue has been resolved.</p>
2 - Record-Level Errors	<p>A record-level error occurs when a specific record contains invalid or incomplete data that prevents information from being displayed accurately. This error could apply to the entire provider record or only a part of the associated data (e.g., an address or specialty). After flagging a record-level error, CMS will continue processing the remainder of the dataset.</p> <p>Records flagged with this finding will not be shown on MPF until the issue has been resolved.</p>

Level	Description
3 - Informational Warnings	<p>An informational warning identifies a potential issue. These items will be reported as findings, but CMS will continue processing the dataset.</p> <p>Issues flagged with this finding will be shown on MPF, though MA organizations should review and remediate the issue as quickly as possible.</p>

CMS will provide the results in a .csv file for each MA contract number using the following record:

Field	Description
Contract Number	CMS-issued contract number to which these results apply.
Error Code	Error code resulting from the validation process. Refer to Appendices A, B, and C for the inventory.
Error Code Description	Description for the reported error code. Refer to Appendices A, B, and C for the inventory.
Contract Number	Supplemental data that will be provided depending upon the associated error code. If the data is not relevant for the error code, this field will be null.
Plan ID	Supplemental data that will be provided depending upon the associated error code. If the data is not relevant for the error code, this field will be null.
SegmentID	Supplemental data that will be provided depending upon the associated error code. If the data is not relevant for the error code, this field will be null.
Omitted Contract ID	Supplemental data that will be provided depending upon the associated error code. If the data is not relevant for the error code, this field will be null.
Omitted Plan ID	Supplemental data that will be provided depending upon the associated error code. If the data is not relevant for the error code, this field will be null.
Omitted Segment ID	Supplemental data that will be provided depending upon the associated error code. If the data is not relevant for the error code, this field will be null.
URL	Supplemental data that will be provided depending upon the associated error code. If the data is not relevant for the error code, this field will be null.
NPI	Supplemental data that will be provided depending upon the associated error code. If the data is not relevant for the error code, this field will be null.
Name	Supplemental data that will be provided depending upon the associated error code. If the data is not relevant for the error code, this field will be null.

Field	Description
Address	Supplemental data that will be provided depending upon the associated error code. If the data is not relevant for the error code, this field will be null.
Zip Code	Supplemental data that will be provided depending upon the associated error code. If the data is not relevant for the error code, this field will be null.
Phone	Supplemental data that will be provided depending upon the associated error code. If the data is not relevant for the error code, this field will be null.
Provider Type	Supplemental data that will be provided depending upon the associated error code. If the data is not relevant for the error code, this field will be null.
Given Provider Type	Supplemental data that will be provided depending upon the associated error code. If the data is not relevant for the error code, this field will be null.
Registry Provider Type	Supplemental data that will be provided depending upon the associated error code. If the data is not relevant for the error code, this field will be null.
Accepting Patients	Supplemental data that will be provided depending upon the associated error code. If the data is not relevant for the error code, this field will be null.
Invalid Year	Supplemental data that will be provided depending upon the associated error code. If the data is not relevant for the error code, this field will be null.
Last Updated	Supplemental data that will be provided depending upon the associated error code. If the data is not relevant for the error code, this field will be null.
ResourceID	Supplemental data that will be provided depending upon the associated error code. If the data is not relevant for the error code, this field will be null.
maPlanID	Supplemental data that will be provided depending upon the associated error code. If the data is not relevant for the error code, this field will be null.

When a provider directory submission completes the validation process with no findings, MA organizations will receive a .csv file with the standard headers, but no rows of data.

Where MA organization-provided data conflicts with the National Plan and Provider Enumeration System (NPPES), CMS will use NPPES to populate the provider's information on MPF. Providers can update their data in NPPES using the instructions outlined [here](#).

Helpful Hints for Preparing Submissions

- Provider directory URLs and the corresponding provider directory data must represent a single MA contract number for a given contract year.
- URLs submitted in HPMS must point to the index.json file that contains the list of prepared machine-readable JSON or FHIR-based JSON files, not a live FHIR endpoint.
- The index.json file must list only the constituent machine-readable JSON or FHIR-based JSON files for the same contract number / contract year combination.
- Ensure provider directory URLs are kept up to date in HPMS.
- Follow the specifications outlined in the technical guide.

Questions

For technical support related to HPMS, please contact the HPMS Help Desk at 1-800-220-2028 or hpms@cms.hhs.gov.

For technical assistance with the machine-readable JSON and FHIR-based JSON files and validation results, please contact support@cms-mapnet.zendesk.com.

Appendix A: Fatal Errors

Level	Error Code	Validation Name	Description	Fields Provided on Error Report	Suggested Plan Action
1	C4001	HTTPCommunicationsError	Networking issue occurred while talking to remote host.	ContractID, URL	Verify the source URL is public and accessible.
1	C4002	X509CertError	The HTTPS certification is invalid or has a broken signature chain,	ContractID, URL	Verify the source URL is public and accessible.
1	C4003	FileRetrievalError	System was unable to retrieve the file from the source.	ContractID, URL	Verify the source URL is public and accessible.
1	C4004	InvalidJSONSyntax	Encountered a syntax error. It contains an invalid character at the provided location during crawl.	ContractID, URL	Validate the JSON file against standard syntax rules and re-upload.
1	C4011	MissingURL	URL for hosted files is missing.	ContractID	Provide a URL that hosts the prepared index JSON file.
1	P1017	NoProvidersFound	File is valid, but contains zero provider records.	ContractID, URL	Verify file contains the expected provider data records.
1	N3006	OmittedContractID	Contract ID was expected in the dataset, but was not found.	OmittedContractID	Provide all expected contract IDs and associated data.
1	N3015	InvalidJSONSyntax	Encountered a syntax error. It contains an invalid character at the provided location inside the data file.	ContractID, URL	Validate the JSON file against standard syntax rules and re-upload.
1	C4012	MissingFileDownloadURL	No downloadable files found.	ContractID, URL	Populate index file with prepared file URLs.
1	C4013	InvalidIndexFileFormat	Incorrect JSON syntax at the index URL.	ContractID, URL	Refer to the CMS technical guide for instructions on hosting index files.

Appendix B: Record-Level Errors

Level	Error Code	Validation Name	Description	Fields Provided on Error Report	Suggested Plan Action
2	A2001	MissingProviderAddresses	No addresses were provided for an NPI.	ContractID, NPI	Provide valid address.
2	A2008	InvalidAddress	Address cannot be geolocated.	ContractID, NPI, Address	Provide valid address.
2	F5001	MissingNetworkReference	Network Reference ID is missing from resource.	ContractID, ResourceID, NPI	Update the FHIR JSON file to include the required reference ID.
2	F5002	MissingOrganizationReference	Organization Reference ID is missing from resource.	ContractID, ResourceID	Update the FHIR JSON file to include the required reference ID.
2	F5003	MissingPractitionerReference	Practitioner Reference ID is missing from resource.	ContractID, ResourceID	Update the FHIR JSON file to include the required reference ID.
2	F5004	MissingLocationReference	Location Reference ID is missing from resource.	ContractID, ResourceID, NPI	Update the FHIR JSON file to include the required reference ID.
2	F5005	BrokenNetworkReference	Network Resource not found within dataset.	ContractID, ResourceID, NPI	Verify the reference Resource ID exists and is active in the files.
2	F5006	BrokenOrganizationReference	Organization Resource not found within dataset.	ContractID, ResourceID, NPI	Verify the reference Resource ID exists and is active in the files.
2	F5007	BrokenPractitionerReference	Practitioner Resource not found within dataset.	ContractID, ResourceID, NPI	Verify the reference Resource ID exists and is active in the files.
2	F5008	BrokenLocationReference	Location Resource not found within dataset.	ContractID, ResourceID, NPI	Verify the reference Resource ID exists and is active in the files.
2	N3001	MissingPlanID	Plan ID is missing or blank.	ContractID, NPI, maPlanID	Provide valid contract/plan/segment ID.
2	N3002	InvalidMAPlanID	Plan ID format is invalid (must be [CMS Contract Number]-[CMS Plan ID]-[CMS Segment ID])	ContractID, NPI, maPlanID	Provide valid contract/plan/segment ID.
2	N3003	PlanNotAssociated	Plan not associated with any providers.	ContractID, NPI, PlanID	Verify file contains the expected provider data records.

Level	Error Code	Validation Name	Description	Fields Provided on Error Report	Suggested Plan Action
2	N3004	MissingContractYear	Each plan must have a contract year listed.	ContractID, NPI, PlanID, SegmentID	Provide valid Contract Year.
2	N3005	InvalidContractYear	Contract year is not in a 4-digit year format.	ContractID, NPI, PlanID, SegmentID, InvalidYear	Provide valid Contract Year.
2	N3011	UnknownContractID	From the MAPlanID combination, the contract ID is unknown to the HPMS registry dataset.	ContractID, maPlanID	Provide a valid contract ID.
2	N3012	UnknownPlanID	From the MAPlanID combination, the plan ID is unknown to the HPMS registry dataset.	ContractID, maPlanID, PlanID	Provide a valid plan ID.
2	N3013	UnknownSegmentID	From the MAPlanID combination, the segment ID is unknown to the HPMS registry dataset.	ContractID, maPlanID, SegmentID	Provide a valid segment ID.
2	N3014	MismatchContractID	MAPlanID does not match the contract ID in HPMS.	ContractID, maPlanID, URL	Match contract ID to the MAPlanID.
2	P1001	MissingProviderNPI	NPI is missing or blank.	ContractID, name	Provide valid NPI.
2	P1002	UnknownProviderNPI	NPI not found in the registry dataset.	ContractID, NPI	Provide valid NPI.
2	P1003	DeactivatedProviderNPI	NPI is listed as deactivated in registry dataset.	ContractID, NPI	System rejects the record; data cannot be validated without a valid NPI.
2	P1016	ProviderNotAssociated	Provider must be associated with at least one plan ID.	ContractID, NPI	Associate the provider with at least one valid plan ID.

Appendix C: Informational Warnings

Level	Error Code	Validation Name	Description	Fields Provided on Error Report	Suggested Plan Action
3	P1004	InvalidProviderType	Must be individual or facility.	ContractID, NPI, ProviderType	Provide valid provider type.
3	P1005	MismatchProviderType	Type does not match NPI Registry record.	ContractID, NPI, GivenProviderType, RegistryProviderType	Provide valid provider type.
3	P1006	MissingProviderFirstName	Missing first name.	ContractID, NPI	Supply the missing first name for the NPI record.
3	P1007	MissingProviderLastName	Missing last name.	ContractID, NPI	Supply the missing last name for the NPI record.
3	P1008	MissingFacilityName	Missing facility.	ContractID, NPI	Supply missing facility name for the NPI record.
3	P1009	MissingSpecialty	Provider requires at least one specialty.	ContractID, NPI	Update the record with the missing specialty.
3	P1010	MissingSex	Provider sex is not listed.	ContractID, NPI	Update the record with the missing sex.
3	P1011	MissingLanguage	Provider language is not listed.	ContractID, NPI	Update the record with the missing language.
3	P1012	MissingAcceptingPatients	Provider accepting patients status not listed.	ContractID, NPI	Update the record with the missing accepting patients status.
3	P1013	InvalidDateFormat	Date does not follow the required YYYY-MM-DD format.	ContractID, NPI, LastUpdated	Reformat date to YYYY-MM-DD.
3	P1014	FutureDate	LastUpdated date is in the future relative to crawl date.	ContractID, NPI, LastUpdated	Update last updated date to current or prior date from today's date.

Level	Error Code	Validation Name	Description	Fields Provided on Error Report	Suggested Plan Action
3	P1018	InvalidAcceptingPatientsType	Accepting Patients format is invalid.	ContractID, NPI, AcceptingPatients	Update field to the required format.
3	A2002	MissingProviderCity	City entry is missing or blank.	ContractID, NPI	Provide valid city.
3	A2003	MissingProviderState	State entry is missing or blank.	ContractID, NPI	Provide valid state.
3	A2004	InvalidProviderState	State format is invalid.	ContractID, NPI, State	Provide valid state.
3	A2005	MissingProviderZip	Zip code is missing or blank.	ContractID, NPI	Provide valid zip code.
3	A2006	InvalidProviderZip	Zip code format is invalid.	ContractID, NPI, Zip	Provide valid zip code.
3	A2007	MissingProviderStreetAddresses	Address line 1 is missing or blank.	ContractID, NPI	Provide valid address.
3	A2009	MissingProviderPhoneNumber	10 digit phone number is missing.	ContractID, NPI	Provide valid phone number.
3	A2010	InvalidProviderPhoneNumber	Phone number contains non-numeric characters or is the wrong length.	ContractID, NPI, Phone	Provide valid phone number.
3	N3007	OmittedSegmentID	Segment ID was expected in dataset, but not found.	OmittedSegmentID	Provide all expected segment IDs and associated data.
3	N3008	OmittedPlanID	Plan ID was expected in dataset, but not found.	OmittedPlanID	Provide all expected plan IDs and associated data.
3	C4005	HeadRequestFailed	File is missing header information.	ContractID, URL	Configure the server to return standard HTTP headers.
3	C4006	MissingLastModifiedHeader	Header is missing the last modified date.	ContractID, URL	Configure the server to return standard HTTP headers.

Level	Error Code	Validation Name	Description	Fields Provided on Error Report	Suggested Plan Action
3	C4007	MissingContentLengthHeader	Header is missing the content length.	ContractID, URL	Configure the server to return standard HTTP headers.
3	C4008	MissingContentTypeHeader	Header is missing the content type.	ContractID, URL	Configure the server to return standard HTTP headers.
3	C4009	MissingETagHeader	Header is missing the ETag.	ContractID, URL	Configure the server to return standard HTTP headers.
3	C4010	StaleDataWarning	Last updated date is older than 30 days from crawl date.	ContractID, NPI, LastUpdated	Confirm provider directory data updates are not needed.