

NRDR NMD Data Exchange

Version 1.9

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NRDR NMD Exam Data Exchange

# Revision History

|  |  |  |
| --- | --- | --- |
| Date | Version | Description |
| 12/10/2018 | 1.0 | Baseline |
| 08/15/2019 | 1.1 | New error code added: N3154 |
| 09/10/2019 | 1.2 | New error code added: N3045 |
| 09/25/2019 | 1.2 | Error message changed for error code: N3131, N3132 |
| 10/01/2019 | 1.2 | Error message changed for error code: N3211New error code added: N3214 |
| 11/13/2019 | 1.2 | New error code added: N3166 |
| 04/15/2020 | 1.3 | Description of NMD 2.2 and 3.2 JSON schema added.New error code added: N3395. |
| 02/23/2021 | 1.4 | Descriptions for NMD JSON versions 2.0, 2.1, 3.0, 3.1, 3.2 deleted. Description of NMD 3.3 JSON schema added. New error codes added: N3155, N3156, N3157, N3168, N3169, N3235, N3236, N3292, N3296, N3298, N3300, N3397, N3400, N3401, N3402, N3403, N3404, N3405, N3406 |
| 04/08/2021 | 1.5 | New error codes added: N3167, N3218 |
| 08/24/2021 | 1.6 | Description of NMD 3.4 JSON schema added.Description of NMD 3.3 JSON schema removed. |
| 09/01/2021 | 1.6 | New error codes added: N3233, N3234 |
| 10/19/2021 | 1.6 | New error codes added: N3460, N3461, N3462 |
| 04/04/2022 | 1.7 | Error codes deleted: N3191, N3192, N3193, N3201, N3460, N3461, N3462 |
| 06/10/2022 | 1.8 | Updated key definition for exams of version 2.x.Updated numbers of supported file versions. |
| 06/01/2023 | 1.9 | Updated composite key for exams of version 3.x.Added new error code N2070 |
| 06/05/2023 | 1.9 | Added API response statuses definitions and examples |

# NMD Data Elements

This document describes the NMD Exam data elements, JSON schema, NRDR NMD APIs and error messages. It also demonstrates how to use the authorization token when consuming the NRDR NMD APIs.

## NMD Exam Data Submission



The diagram below depicts the events that take place in the ACR Connect during the authentication and authorization processes. Please refer to the *ACR Connect Authentication Service.pdf* for a detailed description of ACR Connect.



The NRDR NMD APIs are a set of REST web services. They return an acknowledgement to the caller when submission is received. It is the responsibility of the caller to capture this acknowledgement to ensure the submission has reached the ACR Connect successfully.

The frequency of the data submission is defined by the partner, however, the ACR prefers the submission to happen more frequent so that the facility/physician will have a faster turnaround time for review and be able to resubmit data before the CMS submission deadline if needed.

Partners shall be able to query the status of the submitted transactions by using NRDR NMD API.

## Data Model

The NMD data to be submitted to the ACR NRDR shall be “wrapped” in a transaction. This approach provides the flexibility of submitting multiple exams for a facility within a single transaction. Note, each transaction shall contain exams for one facility.

As the data required by NMD for an exam may be coming from different systems within a facility, the NMD web service will accept transactions with incomplete data and merge them into a single exam record when the rest of the required data elements arrive in subsequent transactions.

There are the following NMD formats available:

* *NMD Version 2.x, based on BI-RADS® 4th Edition (2004)*
* *NMD Version 3.x, based on BI-RADS® 5th Edition (2013)*

You are strongly encouraged to use the Version 3.x format since, at some point, Version 2.x will be considered obsolete and no longer accepted by the NMD. Version 3.x is also a more robust format that captures data for ultrasound, MRI, and combination exams in addition to mammography and supports new fields to designate exams that were delayed particularly due to COVID19 / novel coronavirus issues.

The key identifiers of an exam record are:

For Version 2.x the composite key is:

* Facility ID
* Date of examination
* Indication for examination
* Patient ID(s)
* Modality = 1 (Mammography)

Note: all exams of version 2.x are assumed as mammography exams and though there is no modality field defined among data elements, modality = 1 will be saved in the database.

For Version 3.x the composite key is:

* Facility ID
* Date of examination
* Indication for examination
* Patient ID(s)
* Modality (if null, then consider Modality = 1)
	+ If Combination examinations = 2, then exclude Modality from the composite key

To define if the patient from the uploaded exam exists in the patient dictionary of the facility in the NRDR, the system searches for existing patient by any of the following patient identifiers:

* SSN,
* Old Medicare Beneficiary ID,
* New Medicare Beneficiary ID,
* Other ID (patient’s MRN can be used as the Other ID).

NDRD maintains patient records separately from the NMD Data to minimize duplicate patient information. For each exam record submitted, the system will search for existing patient record (under your facility ID) by any of the following IDs:

* SSN
* Medicare Beneficiary ID
* New Medicare Beneficiary ID
* Other ID (patient’s MRN can be used as the Other ID).

If the patient record already exists, the system will link the NMD exam record to this patient record; otherwise, the system creates a new patient record and ties it to the NMD exam record.

However, the different systems which will provide exam data to NMD must all agree on all common patient identifiers (SSN, Old Medicare Beneficiary ID, New Medicare Beneficiary ID, Other ID) that will be used in the transactions, otherwise we will not be able to merge them into a single exam record automatically.

For each exam in a transaction the API will base on its composite key to determine if it should create a new exam record or update an existing exam record in the database. If the composite key is found in the database, the API will update the existing record; otherwise, it will create a new exam record.

# JSON Schema

To submit a transaction successfully you must provide the following minimum required data elements:

Transaction\_ID,

Transaction\_DateTime,

NMD\_File\_Version\_Num,

Num\_of\_Exam\_Included,

Facility\_ID,

PartnerID,

AppID,

Date\_of\_Examination,

Either Patient\_SSN or Patient\_ID or Medicare Beneficiary ID or New Medicare Beneficiary ID,

Indication\_for\_Examination

## NMD Exam 2.2 JSON Schema

This schema describes the data elements in a transaction for NMD file version 2.2.

{

 "name": "NMD\_Exam\_Transaction",

 "Properties": {

 "Transaction\_ID": {

 "type": "string",

 "required": true

 },

 "Transaction\_DateTime": {

 "type": "string",

 "required": true

 },

 "Num\_of\_Exam\_Included": {

 "type": "number",

 "required": true

 },

 "Facility\_ID": {

 "type": "string",

 "required": true

 },

 "PartnerID": {

 "type": "string",

 "required": true

 },

 "AppID": {

 "type": "string",

 "required": true

 },

 "Previous\_Transaction\_ID": {

 "type": "string",

 "required": false

 },

 "NMD\_File\_Version\_Num ": {

 "type": "string",

 "required": true

 },

 "Exam": {

 "type": "array",

 "required": true,

 "properties": {

 "Patient\_Last\_Name": {

 "type": "string",

 "required": true

 },

 "Patient\_First\_Name": {

 "type": "string",

 "required": true

 },

 "Patient\_Middle\_Name": {

 "type": "string",

 "required": false

 },

 "Patient\_ID": {

 "type": "string",

 "required": false

 },

 "Patient\_SSN": {

 "type": "string",

 "required": false

 },

 "Patient\_Medicare\_Beneficiary\_ID": {

 "type": "string",

 "required": false

 },

 "Patient\_New\_Medicare\_Beneficiary\_ID": {

 "type": "string",

 "required": false

 },

 "Patient\_ZIP": {

 "type": "string",

 "required": false

 },

 "Date\_of\_Birth": {

 "type": "string",

 "required": false

 },

 "First\_Degree\_Relative\_with\_Breast\_Cancer": {

 "type": "string",

 "required": false

 },

 "Personal\_History\_of\_Breast\_Cancer": {

 "type": "string",

 "required": false

 },

 "Race": {

 "type": "string",

 "required": false

 },

 "Ethnicity": {

 "type": "string",

 "required": false

 },

 "Personal\_History\_of\_Biopsy\_or\_Breast\_Surgery": {

 "type": "string",

 "required": false

 },

 "HRT\_No": {

 "type": "string",

 "required": false

 },

 "HRT\_or\_Tamoxifen": {

 "type": "string",

 "required": false

 },

 "Raloxifene": {

 "type": "string",

 "required": false

 },

 "HRT\_Other": {

 "type": "string",

 "required": false

 },

 "HRT\_Unknown": {

 "type": "string",

 "required": false

 },

 "Height": {

 "type": "string",

 "required": false

 },

 "Weight": {

 "type": "string",

 "required": false

 },

 "Date\_of\_Last\_Natural\_Period": {

 "type": "string",

 "required": false

 },

 "Date\_of\_Examination": {

 "type": "string",

 "required": true

 },

 "Rescheduled\_Exam": {

 "type": "string",

 "required": false

 },

 "Originally\_Scheduled\_Exam\_Date": {

 "type": "string",

 "required": false

 },

 "Reschedule\_Reason": {

 "type": "string",

 "required": false

 },

 "NPI\_of\_Interpreting\_Radiologist": {

 "type": "string",

 "required": false

 },

 "Indication\_for\_Examination": {

 "type": "string",

 "required": true

 },

 "Symptoms": {

 "type": "string",

 "required": false

 },

 "Date\_of\_Previous\_Mammogram": {

 "type": "string",

 "required": false

 },

 "Comparison\_to\_Previous\_Mammogram": {

 "type": "string",

 "required": false

 },

 "Date\_of\_Previous\_Mammogram\_Compared": {

 "type": "string",

 "required": false

 },

 "Breast\_Density": {

 "type": "string",

 "required": true

 },

 "Assessment\_Category": {

 "type": "string",

 "required": true

 },

 "Subcategory\_of\_Assessment\_Category\_4": {

 "type": "string",

 "required": false

 },

 "Normal\_interval\_follow-up\_mammography": {

 "type": "string",

 "required": false

 },

 "Short\_term\_follow-up\_mammography": {

 "type": "string",

 "required": false

 },

 "Additional\_views": {

 "type": "string",

 "required": false

 },

 "Ultrasound": {

 "type": "string",

 "required": false

 },

 "Nuclear\_medicine": {

 "type": "string",

 "required": false

 },

 "MRI": {

 "type": "string",

 "required": false

 },

 "Clinical\_exam": {

 "type": "string",

 "required": false

 },

 "Surgical\_consult": {

 "type": "string",

 "required": false

 },

 "FNA": {

 "type": "string",

 "required": false

 },

 "Biopsy": {

 "type": "string",

 "required": false

 },

 "Compare\_with\_previous\_mammograms": {

 "type": "string",

 "required": false

 },

 "Management\_recommendation\_Other": {

 "type": "string",

 "required": false

 },

 "Most\_Significant\_Mammogram\_Finding": {

 "type": "string",

 "required": false

 },

 "Integrated\_Assessment\_Category": {

 "type": "string",

 "required": false

 },

 "Subcategory\_of\_Integrated\_Assessment\_Category\_4": {

 "type": "string",

 "required": false

 },

 "Final\_assessment": {

 "type": "string",

 "required": false

 },

 "Film\_or\_Digital": {

 "type": "string",

 "required": false

 },

 "Use\_of\_CAD": {

 "type": "string",

 "required": false

 },

 "Double\_Read": {

 "type": "string",

 "required": false

 },

 "Biopsy\_Procedure": {

 "type": "string",

 "required": false

 },

 "Biopsy\_Date": {

 "type": "string",

 "required": false

 },

 "Classification\_of\_lesion": {

 "type": "string",

 "required": false

 },

 "Malignancy\_Type ": {

 "type": "string",

 "required": false

 },

 "Tumor\_Size": {

 "type": "string",

 "required": false

 },

 "Nodal\_Status ": {

 "type": "string",

 "required": false

 },

 "Tumor\_Stage": {

 "type": "string",

 "required": false

 },

 "Gender ": {

 "type": "string",

 "required": false

 },

 }

 }

 }

}

## NMD Exam 3.4 JSON Schema

This schema describes the data elements in a transaction for NMD file version 3.4.

{

 "name": "NMD\_Exam\_Transaction",

 "Properties": {

 "Transaction\_ID": {

 "type": "string",

 "required": true

 },

 "Transaction\_DateTime": {

 "type": "string",

 "required": true

 },

 "Num\_of\_Exam\_Included": {

 "type": "number",

 "required": true

 },

 "Facility\_ID": {

 "type": "string",

 "required": true

 },

 "PartnerID": {

 "type": "string",

 "required": true

 },

 "AppID": {

 "type": "string",

 "required": true

 },

 "Previous\_Transaction\_ID": {

 "type": "string",

 "required": false

 },

 " NMD\_File\_Version\_Num ": {

 "type": "string",

 "required": true

 },

 "Exam": {

 "type": "array",

 "required": true,

 "properties": {

 "Laterality\_of\_Audit\_Data": {

 "type": "string",

 "required": true

 },

 "Combination\_Examinations": {

 "type": "string",

 "required": true

 },

 "Standard\_Screening\_Mammography\_Imaging": {

 "type": "string",

 "required": true

 },

 "Standard\_Screening\_US\_Imaging": {

 "type": "string",

 "required": true

 },

 "Patient\_ID": {

 "type": "string",

 "required": false

 },

 "Patient\_SSN": {

 "type": "string",

 "required": false

 },

 "Patient\_Medicare\_Beneficiary\_ID": {

 "type": "string",

 "required": false

 },

 "Patient\_New\_Medicare\_Beneficiary\_ID": {

 "type": "string",

 "required": false

 },

 "Date\_of\_Birth": {

 "type": "string",

 "required": true

 },

 "Gender": {

 "type": "string",

 "required": true

 },

 "Patient\_Race": {

 "type": "array",

 "required": false

 },

 "Patient\_Ethnicity": {

 "type": "string",

 "required": false

 },

 "Health\_Insurance": {

 "type": "array",

 "required": false

 },

 "Health\_Insurance\_Other": {

 "type": "string",

 "required": false

 },

 "Education\_Level": {

 "type": "string",

 "required": false

 },

 "Education\_Level\_Other": {

 "type": "string",

 "required": false

 },

 "Covid\_Vaccine": {

 "type": "string",

 "required": false

 },

 "Covid\_Vaccine\_Date": {

 "type": "string",

 "required": false

 },

 "Covid\_Vaccine\_Manufacturer": {

 "type": "string",

 "required": false

 },

 "Covid\_Vaccine\_Manufacturer\_Other": {

 "type": "string",

 "required": false

 },

 "Covid\_Vaccination\_Site": {

 "type": "string",

 "required": false

 },

 "Physician\_ID1": {

 "type": "string",

 "required": false

 },

 "Physician\_ID2": {

 "type": "string",

 "required": false

 },

 "Physician\_ID3": {

 "type": "string",

 "required": false

 },

 "Physician\_Level\_Assessm1\_LB": {

 "type": "string",

 "required": false

 },

 "Physician\_Level\_Assessm2\_LB": {

 "type": "string",

 "required": false

 },

 "Physician\_Level\_Assessm3\_LB": {

 "type": "string",

 "required": false

 },

 "Physician\_Level\_Assessm1\_LB\_Sub4": {

 "type": "string",

 "required": false

 },

 "Physician\_Level\_Assessm2\_LB\_Sub4": {

 "type": "string",

 "required": false

 },

 "Physician\_Level\_Assessm3\_LB\_Sub4": {

 "type": "string",

 "required": false

 },

 "Physician\_Level\_Assessm1\_RB": {

 "type": "string",

 "required": false

 },

 "Physician\_Level\_Assessm2\_RB": {

 "type": "string",

 "required": false

 },

 "Physician\_Level\_Assessm3\_RB": {

 "type": "string",

 "required": false

 },

 "Physician\_Level\_Assessm1\_RB\_Sub4": {

 "type": "string",

 "required": false

 },

 "Physician\_Level\_Assessm2\_RB\_Sub4": {

 "type": "string",

 "required": false

 },

 "Physician\_Level\_Assessm3\_RB\_Sub4": {

 "type": "string",

 "required": false

 },

 "Physician\_Level\_Assessm1\_PT": {

 "type": "string",

 "required": false

 },

 "Physician\_Level\_Assessm2\_PT": {

 "type": "string",

 "required": false

 },

 "Physician\_Level\_Assessm3\_PT": {

 "type": "string",

 "required": false

 },

 "Physician\_Level\_Assessm1\_PT\_Sub4": {

 "type": "string",

 "required": false

 },

 "Physician\_Level\_Assessm2\_PT\_Sub4": {

 "type": "string",

 "required": false

 },

 "Physician\_Level\_Assessm3\_PT\_Sub4": {

 "type": "string",

 "required": false

 },

 "First\_Examination\_Ever": {

 "type": "string",

 "required": true

 },

 "Date\_of\_Previous\_Mammogram": {

 "type": "string",

 "required": false

 },

 "Time\_since\_Previous\_Examination": {

 "type": "string",

 "required": false

 },

 "Personal\_History\_Of\_Breast\_Cancer": {

 "type": "string",

 "required": true

 },

 "BC\_in\_First\_Degree\_Relative\_Prem": {

 "type": "string",

 "required": true

 },

 "BC\_in\_First\_Degree\_Relative\_Post": {

 "type": "string",

 "required": true

 },

 "Family\_History\_of\_BC": {

 "type": "string",

 "required": true

 },

 "Personal\_History\_of\_Ovarian\_Cancer": {

 "type": "string",

 "required": true

 },

 "Family\_History\_of\_Ovarian\_Cancer": {

 "type": "string",

 "required": true

 },

 "Previous\_Hyperplasia": {

 "type": "string",

 "required": true

 },

 "Previous\_LCIS": {

 "type": "string",

 "required": true

 },

 "HRT": {

 "type": "string",

 "required": true

 },

 "Date\_of\_Examination": {

 "type": "string",

 "required": true

 },

 "Rescheduled\_Exam": {

 "type": "string",

 "required": false

 },

 "Originally\_Scheduled\_Exam\_Date": {

 "type": "string",

 "required": false

 },

 "Reschedule\_Reason": {

 "type": "string",

 "required": false

 },

 "Indication\_for\_Examination": {

 "type": "string",

 "required": true

 },

 "Modality": {

 "type": "string",

 "required": true

 },

 "Use\_of\_CAD\_Additional\_Views": {

 "type": "string",

 "required": false

 },

 "Use\_of\_Tomosynthesis": {

 "type": "string",

 "required": false

 },

 "Use\_of\_CEM": {

 "type": "string",

 "required": false

 },

 "Use\_of\_CAD\_Standard\_Views": {

 "type": "string",

 "required": false

 },

 "Film\_or\_Digital": {

 "type": "string",

 "required": false

 },

 "Additional\_Imaging": {

 "type": "string",

 "required": false

 },

 "Breast\_Composition\_LB": {

 "type": "string",

 "required": false

 },

 "Breast\_Composition\_RB": {

 "type": "string",

 "required": false

 },

 "Breast\_Composition\_PT": {

 "type": "string",

 "required": false

 },

 "Tissue\_Composition\_LB": {

 "type": "string",

 "required": false

 },

 "Tissue\_Composition\_RB": {

 "type": "string",

 "required": false

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 "Tissue\_Composition\_PT": {

 "type": "string",

 "required": false

 },

 "Amount\_of\_FGT\_LB": {

 "type": "string",

 "required": false

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 "Amount\_of\_FGT\_RB": {

 "type": "string",

 "required": false

 },

 "Amount\_of\_FGT\_PT": {

 "type": "string",

 "required": false

 },

 "BPE\_Level\_LB": {

 "type": "string",

 "required": false

 },

 "BPE\_Level\_RB": {

 "type": "string",

 "required": false

 },

 "BPE\_Level\_PT": {

 "type": "string",

 "required": false

 },

 "BPE\_Symmetric": {

 "type": "string",

 "required": false

 },

 "Assessment\_LB": {

 "type": "string",

 "required": false

 },

 "Assessment\_LB\_Sub4": {

 "type": "string",

 "required": false

 },

 "Assessment\_RB": {

 "type": "string",

 "required": false

 },

 "Assessment\_RB\_Sub4": {

 "type": "string",

 "required": false

 },

 "Assessment\_PT": {

 "type": "string",

 "required": false

 },

 "Assessment\_PT\_Sub4": {

 "type": "string",

 "required": false

 },

 "Overall\_Assessment\_LB": {

 "type": "string",

 "required": false

 },

 "Overall\_Assessment\_LB\_Sub4": {

 "type": "string",

 "required": false

 },

 "Overall\_Assessment\_RB": {

 "type": "string",

 "required": false

 },

 "Overall\_Assessment\_RB\_Sub4": {

 "type": "string",

 "required": false

 },

 "Overall\_Assessment\_PT": {

 "type": "string",

 "required": false

 },

 "Overall\_Assessment\_PT\_Sub4": {

 "type": "string",

 "required": false

 },

 "Management\_LB": {

 "type": "string",

 "required": false

 },

 "Management\_RB": {

 "type": "string",

 "required": false

 },

 "Management\_PT": {

 "type": "string",

 "required": false

 },

 "Biopsy\_Date": {

 "type": "string",

 "required": false

 },

 "Biopsy\_Procedure": {

 "type": "string",

 "required": true

 },

 "Classification\_of\_Lesion": {

 "type": "string",

 "required": true

 },

 "Malignancy\_Type": {

 "type": "string",

 "required": true

 },

 "Tumor\_Size": {

 "type": "string",

 "required": false

 },

 "Histology\_Grade": {

 "type": "string",

 "required": true

 },

 "Nodes\_Removed": {

 "type": "string",

 "required": true

 },

 "Nodes\_Positive": {

 "type": "string",

 "required": false

 },

 "Tumor\_Stage": {

 "type": "string",

 "required": true

 },

 "Primary\_Tumor": {

 "type": "string",

 "required": true

 },

 "Regional\_Lymph\_Nodes": {

 "type": "string",

 "required": true

 },

 "Distant\_Metastases": {

 "type": "string",

 "required": true

 },

 "Method\_of\_Detection": {

 "type": "string",

 "required": true

 },

 }

 }

 }

}

## NMD JSON Mapping Specification

The *NMD\_JSON\_Mapping\_<file version>.xlsx* documents describe the validation rules and format of the JSON data element. Most of the values of the data elements are mapped to either numeric or alpha-numeric codes. The data elements that have a “Y” under the “Required to submit a transaction” column are the minimum set of the data elements that you need to provide in order to create an exam record in the database.

Please note that although Patient\_SSN, Patient\_ID, Medicare\_Beneficiary\_ID and New\_Medicare\_Beneficiary\_ID are “not required” you must provide at least one of them to submit the transaction successfully.

To have a “completed” status on an exam record, you must submit the data elements marked as “Required” or “Conditional Required” under the “Business Rules” column.The data elements that are marked as “Optional” under the “Business Rules” column are not required for submission, that is, a record will not be rejected if an optional field is missing. However, if you do know them, we expect you to provide them. This expectation of complete data is specified in the participation agreement signed by all participating facilities.

## NRDR Web Service Status Schema

NRDR web service transaction status schema describes the data elements and the validation statuses of a transaction, and the exams associated with it.

Parameters: transaction\_id, partner\_id and app\_id initiated by the partner.

You will use the GET request to query the error encountered during the submission process.

Note: the value of the **Error\_Msg** attribute consists of multiple error messages that occurred while validating a transaction. Each message contains the error code-message pair. Messages are separated by the ‘|’ delimiter.

For example:

N2001:Missing Transaction\_ID|N2011:Missing Transaction\_DateTime

NMD Exam Transaction Status Schema:

{

 "name": "NMD\_Exam\_Transaction\_Status",

 "Properties": {

 "Transaction\_ID": {

 "type": "string",

 "required": true

 },

 "Transaction\_DateTime": {

 "type": "string",

 "required": true

 },

 "Num\_of\_Exam\_Included": {

 "type": "number",

 "required": true

 },

 "Num\_of\_Exam\_In\_Error": {

 "type": "number",

 "required": true

 },

 "PartnerID": {

 "type": "string",

 "required": true

 },

 "AppID": {

 "type": "string",

 "required": true

 },

 "Facility\_ID": {

 "type": "string",

 "required": true

 },

 "Status": {

 "type": "string",

 "required": true

 },

 "Error\_Msg": {

 "type": "string",

 "required": false

 },

 "Exam\_Errors": {

 "type": "array",

 "required": true,

 "properties": {

 "Exam\_Unique\_ID”: {

 “type”: “string”,

 “required”: true

 },

 "Error\_Msg": {

 "type": "string",

 "required": true

 }

 }

 }

 }

}

### Transaction Statuses

The following transaction status is possible:

* **Enqueued** – Transaction has been placed in queue and awaiting to be loaded
* **Received** – Transaction has been received and is pending for validation
* **ValidationFail** – Nothing got loaded. Failed at exam processing
* **ValidationSuccessful** – Validation has complete, pending for loading into database
* **Loading** – Data is loading, transaction is being created
* **Posted** – The entire transaction is loaded successfully
* **PartiallySuccessful** – Some elements are loaded and some are rejected
* **Failed** – Transaction failed to be created due to an error

## NRDR Web Service Error Response Schema

NRDR transaction web service error responseschema describes detailed error information which is returned by all API responses with a status code other than 200:

{

 "name": "NMD\_WebService\_Error",

 "Properties": {

 "error\_code": {

 "type": "string",

 "required": true

 },

 "error\_description": {

 "type": "string",

 "required": true

 }

}

# NRDR Transaction API

## Test Environment

Base URL: <https://nrdr9x.acr.org/NonPQRSapi/nmd/transactions>

Application ID: 10009

Partner ID: to be provided

Facility ID: to be provided

## Authentication

To be able to call API you must add JWT token received from ACR Connect to the “Authorization” request header using the following format:

Bearer <jwt-token>

Responses with a status code 401 indicate errors related to the authentication. Following error codes are used to provide more detailed error:

* ‘invalid\_token’, token is invalid or expired
* ‘missing\_token’, token is not provided in the request header

## Create or Update Transaction

**POST**

POST request is used to upload a new set or update existing NMD exams data.

To update the existing exam, the same composite key must be provided (including patient identifiers). When the existing exam record is updated, not-null existing values will not be replaced with null values from newly submitted transaction.

Please note, submissions take up to 72 hours to process and load to NRDR database.

Acceptable request representations:

* application/json

Possible responses:

* 200, returned when transaction data is uploaded and transaction is created successfully,
* 400, content-type: application/json
	+ error\_code = ‘data\_error’

Transaction data is missing or doesn’t have valid JSON representation

* 403, content-type: application/json
	+ error\_code = ‘no\_permission’

Authenticated user does not have permissions to upload transaction data for a given facility

### Examples POST

Creating transaction:

Sample parameters:

Facility\_ID: "100000"

PartnerID: "10000"

AppID: "10009"

Authorization: “Bearer eyJ0eXAiOiJKV1QiLCJhbGciOiJodHRwOi8vd3d3LnczLm9yZy8yMDAwLzA5L3htbGRzaWcjcnNhLXNoYTEiLCJ4NXQiOiIzWndDNC15STBQQmNHeDAyWlNsQjdaa1NRLUUifQ.eyJpc3MiOiJodHRwczovL1NlY3VyZUF1dGgwMVZNLmFjci5vcmciLCJhdWQiOiJodHRwczovL1NlY3VyZUF1dGgwMVZNLmFjci5vcmciLCJuYmYiOjE0MjIyNzY3ODIsImV4cCI6MTQyMjM2MzE4MiwiY2xpZW50X2lkIjoiMWY1ZjM5NTI0ZjIyNGRmMDg0NTIwYTJmYWE5YTkyNzUiLCJzY29wZSI6WyJvcGVuaWQiLCJwcXJzIl0sInN1YiI6IjEwMDAwMF9udWFuY2UiLCJhbXIiOiJwYXNzd29yZCIsImF1dGhfdGltZSI6IjE0MjIyNzY3NTciLCJpZHAiOiJTZWN1cmVBdXRoNSJ9.AFsoPNtIT8N0N6w1y0OZLokdplfRM2Y8OAvquMXpkoI\_6b9ANEhXY72ubuylt6-4vdJ165aVUXPRDTF37UT9cqv21hRTpOfYYM0tV5gksUbvLzKaPFt6EWbB8ctQnHs1pxyDGSbKDM-dR6upj6x0eZ7O46Zwi8o8Zhkeu0bFZPNmLS7y96\_A9uyGBkbt69Ih0aCBNRvtabqkD3vJsWB4EIfiqJJ2RO8XPCGfSoYAnuosgH5Cm6kMNN7WiX4rgFps20MryBLtutKztcNhaj-l65gzxyrJpgmq8r9dBWiFI6nFc-rKkNr6Gdj2TH9EABloC6aO\_CQQFtgrXFLEchnSPw”

**Note**: the authentication/authorization mechanism in the NMD Exam API adopts the ACR Connect security model which requires an authorization token after authenticated successfully. The token in the sample parameters above is an example.

function createTransaction(transactionData, token) {

    $.ajax({

        type: 'POST',

        url: "https://nrdr9x.acr.org/NonPQRSapi/NMD/transactions",

        data: JSON.stringify(transactionData),

        dataType: "json",

        contentType:"application/json; charset=utf-8",

        headers: { "Authorization": "Bearer " + token },

        success: function (data) {

            // handle data load success

        }

    });

}

This function can be used the following way:

**NMD exam 2.2 transaction example**:
{

 Transaction\_ID: "157179120",

 Transaction\_DateTime: "11/11/2017",

 Num\_of\_Exam\_Included: 1,

 Facility\_ID: "100000",

 PartnerID: "10000",

 AppID: "10009",

 Previous\_Transaction\_ID: null,

 NMD\_File\_Version\_Num: "2.2",

 "Exam": [

 {

 "Patient\_Last\_Name": "lastname",

 "Patient\_First\_Name": "one",

 "Patient\_Middle\_Name": "middle",

 "Patient\_ID": "otherID",

 "Patient\_SSN": "111-11-1111",

 "Patient\_Medicare\_Beneficiary\_ID": "old1110",

 "Patient\_New\_Medicare\_Beneficiary\_ID": null,

 "Patient\_ZIP": "12345",

 "Date\_of\_Birth": "11/04/1968",

 "First\_Degree\_Relative\_with\_Breast\_Cancer": "0",

 "Personal\_History\_of\_Breast\_Cancer": "0",

 "Race": "1",

 "Ethnicity": "0",

 "Personal\_History\_of\_Biopsy\_or\_Breast\_Surgery": "0",

 "HRT\_No": "0",

 "HRT\_or\_Tamoxifen": "0",

 "Raloxifene": "0",

 "HRT\_Other": "0",

 "HRT\_Unknown": "0",

 "Height": "12",

 "Weight": "560",

 "Date\_of\_Last\_Natural\_Period": "02/02/2020",

 "Date\_of\_Examination": "02/02/2020",

 "Rescheduled\_Exam": "0",

 "Originally\_Scheduled\_Exam\_Date": "02/01/2020",

 "Reschedule\_Reason": "1",

 "NPI\_of\_Interpreting\_Radiologist": "78941236",

 "Indication\_for\_Examination": "1",

 "Symptoms": "1",

 "Date\_of\_Previous\_Mammogram": "02/02/2020",

 "Comparison\_to\_Previous\_Mammogram": "0",

 "Date\_of\_Previous\_Mammogram\_Compared": "02/02/2020",

 "Breast\_Density": "1",

 "Assessment\_Category": "0",

 "Subcategory\_of\_Assessment\_Category\_4": "0",

 "Normal\_interval\_follow-up\_mammography": "0",

 "Short\_term\_follow-up\_mammography": "0",

 "Additional\_views": "0",

 "Ultrasound": "0",

 "Nuclear\_medicine": "0",

 "MRI": "0",

 "Clinical\_exam": "0",

 "Surgical\_consult": "0",

 "FNA": "0",

 "Biopsy": "0",

 "Compare\_with\_previous\_mammograms": "0",

 "Management\_recommendation\_Other": "0",

 "Most\_Significant\_Mammogram\_Finding": "0",

 "Integrated\_Assessment\_Category": "0",

 "Subcategory\_of\_Integrated\_Assessment\_Category\_4": "0",

 "Final\_assessment": "1",

 "Film\_or\_Digital": "1",

 "Use\_of\_CAD": "0",

 "Double\_Read": "0",

 "Biopsy\_Procedure": "1",

 "Biopsy\_Date": "02/02/2020",

 "Classification\_of\_lesion": "1",

 "Malignancy\_Type": "1",

 "Tumor\_Size": "147",

 "Nodal\_Status": "1",

 "Tumor\_Stage": "0",

 "Gender": "1"

 }

 ]

}

**NMD 3.4 transaction example**:

{

 Transaction\_ID: "j1406-1036",

 Transaction\_DateTime: "09/22/2017",

 Num\_of\_Exam\_Included: 1,

 Facility\_ID: "100000",

 PartnerID: "10000",

 AppID: "10009",

 Previous\_Transaction\_ID: null,

 NMD\_File\_Version\_Num: "3.4",

 "Exam": [ {

 "Laterality\_of\_Audit\_Data": "1",

 "Combination\_Examinations": "1",

 "Standard\_Screening\_Mammography\_Imaging": "1",

 "Standard\_Screening\_US\_Imaging": "2",

 "Patient\_ID": "otherId",

 "Patient\_SSN": null,

 "Patient\_Medicare\_Beneficiary\_ID": "",

 "Patient\_New\_Medicare\_Beneficiary\_ID": "",

 "Date\_Of\_Birth": "01/01/1900",

 "Gender": "1",

 "Patient\_Race": [1,3,4],

 "Patient\_Ethnicity": "0",

 "Health\_Insurance": [2,7],

 "Health\_Insurance\_Other": "other",

 "Education\_Level": "1",

 "Education\_Level\_Other": null,

 "Covid\_Vaccine": "1",

 "Covid\_Vaccine\_Date": "2/2/2021",

 "Covid\_Vaccine\_Manufacturer": "1",

 "Covid\_Vaccine\_Manufacturer\_Other": null,

 "Covid\_Vaccination\_Site": "2",

 "Physician\_ID1": "1233336",

 "Physician\_ID2": "1233337",

 "Physician\_ID3": "1233338",

 "Physician\_Level\_Assessm1\_LB": "4",

 "Physician\_Level\_Assessm2\_LB": "4",

 "Physician\_Level\_Assessm3\_LB": "3",

 "Physician\_Level\_Assessm1\_LB\_Sub4": "A",

 "Physician\_Level\_Assessm2\_LB\_Sub4": "B",

 "Physician\_Level\_Assessm3\_LB\_Sub4": "",

 "Physician\_Level\_Assessm1\_RB": "4",

 "Physician\_Level\_Assessm2\_RB": "4",

 "Physician\_Level\_Assessm3\_RB": "3",

 "Physician\_Level\_Assessm1\_RB\_Sub4": "A",

 "Physician\_Level\_Assessm2\_RB\_Sub4": "B",

 "Physician\_Level\_Assessm3\_RB\_Sub4": "",

 "Physician\_Level\_Assessm1\_PT": "1",

 "Physician\_Level\_Assessm2\_PT": "2",

 "Physician\_Level\_Assessm3\_PT": "3",

 "Physician\_Level\_Assessm1\_PT\_Sub4": "",

 "Physician\_Level\_Assessm2\_PT\_Sub4": "",

 "Physician\_Level\_Assessm3\_PT\_Sub4": "",

 "First\_Examination\_Ever": "9",

 "Date\_of\_Previous\_Mammogram": "02/02/2016",

 "Time\_since\_Previous\_Examination": "1",

 "Personal\_History\_Of\_Breast\_Cancer": "0",

 "BC\_in\_First\_Degree\_Relative\_Prem": "9",

 "BC\_in\_First\_Degree\_Relative\_Post": "1",

 "Family\_History\_of\_BC": "0",

 "Personal\_History\_of\_Ovarian\_Cancer": "0",

 "Family\_History\_of\_Ovarian\_Cancer": "9",

 "Previous\_Hyperplasia": "9",

 "Previous\_LCIS": "1",

 "HRT": "0",

 "Date\_of\_Examination": "01/01/2000",

 "Rescheduled\_Exam": null,

 "Originally\_Scheduled\_Exam\_Date": null,

 "Reschedule\_Reason": null,

 "Indication\_for\_Examination": "1",

 "Modality": "1",

 "Use\_of\_CAD\_Additiona\_Views": "1",

 "Use\_of\_Tomosynthesis": "0",

 "Use\_of\_CEM": 0,

 "Use\_of\_CAD\_Standard\_Views": "0",

 "Film\_or\_Digital": "1",

 "Additional\_Imaging": "1",

 "Breast\_Composition\_LB": "1",

 "Breast\_Composition\_RB": "2",

 "Breast\_Composition\_PT": "",

 "Tissue\_Composition\_LB": "1",

 "Tissue\_Composition\_RB": "1",

 "Tissue\_Composition\_PT": "",

 "Amount\_of\_FGT\_LB": "2",

 "Amount\_of\_FGT\_RB": "2",

 "Amount\_of\_FGT\_PT": "",

 "BPE\_Level\_LB": "1",

 "BPE\_Level\_RB": "2",

 "BPE\_Level\_PT": "",

 "BPE\_Symmetric": "",

 "Assessment\_LB": "4",

 "Assessment\_LB\_Sub4": "A",

 "Assessment\_RB": "2",

 "Assessment\_RB\_Sub4": "",

 "Assessment\_PT": "3",

 "Assessment\_PT\_Sub4": "",

 "Overall\_Assessment\_LB": "3",

 "Overall\_Assessment\_LB\_Sub4": "",

 "Overall\_Assessment\_RB": "4",

 "Overall\_Assessment\_RB\_Sub4": "A",

 "Overall\_Assessment\_PT": "4",

 "Overall\_Assessment\_PT\_Sub4": "B",

 "Management\_LB": "1",

 "Management\_RB": "",

 "Management\_PT": "",

 "Biopsy\_Date": "03/03/2015",

 "Biopsy\_Procedure": "1",

 "Classification\_of\_Lesion": "2",

 "Malignancy\_Type": "88",

 "Tumor\_Size": "123",

 "Histology\_Grade": "1",

 "Nodes\_Removed": "11",

 "Nodes\_Positive": "11",

 "Tumor\_Stage": "2A",

 "Primary\_Tumor": "5",

 "Regional\_Lymph\_Nodes": "7",

 "Distant\_Metastases": "99",

 “Method\_of\_Detection”: "Sma"

 }

 ]

}

//Get ACR Connect Token

var token = GetAuthorizationToken();

createTransaction(transactionData, token);

## Get Transaction Status

**GET**

GET request is used to get a transaction JSON object for a single transaction.

Possible responses:

* 200,content-type: application/json

Response will contain JSON data according to NRDR web service statusschema

* 400, content-type: application/json
	+ error\_code = ‘missing\_param’

Indicates a missing transaction ID parameter

* 404, content-type: application/json
	+ error\_code = ‘invalid\_param’

Indicates that transaction with a given ID doesn’t exist

### Examples GET

Getting transaction status:

For test use the following values:

https://nrdr9x.acr.org/NonPQRSapi/nmd/transactions?id=<transaction id>&facilityid=<facility id>&partnerid=<partner id>&appid=<app id>

Sample parameters:

 id: “26”     (transaction id)

       FacilityID: "100000"

       PartnerID: "10000"

       AppID: "10009"

**Note**: the authentication/authorization mechanism in the NMD Exam API adopts the ACR Connect security model which requires an authorization token after authenticated successfully.

function getTransaction(transactionId, token, partnerId, appId, facilityId) {

    $.ajax({

        type: 'GET',

        url: "https://nrdr9x.acr.org/NonPQRSapi/nmd/transactions",

        data: { "id": transactionId, "appid": appId, "partnerid":

partnerId,"facilityid": facilityId },

        headers: { "Authorization": "Bearer " + token },

        success: function (data) {

            // handle JSON with transaction data

        }

    });

}

JSON response example:
{

 "Transaction\_ID": "26",

 "Transaction\_DateTime": "2023-02-02T00:00:00",

 "Num\_of\_Exam\_Included": 1,

 "Num\_of\_Exam\_In\_Error": 0,

 "PartnerID": 10000,

 "AppID": 10009,

 "Facility\_ID": "100000",

 "Error\_Msg": "",

 "Exam\_Errors": [

 {

 "Exam\_Unique\_ID": "uniq0001",

 "Error\_Msg": "N3045:Warning. Physician NPI 0000000000 does not exist for this facility ID/registry"

 }

 ],

 "Status": "Posted"

}

# Validation & Error Messages

The Validator will validate the following:

1. JSON syntax
2. Required fields
3. Response value of the data elements based on the business rules stated in the *NMD JSON Mapping\_<version>.xlsx*.

The table below lists the possible messages generated by the validator during the validation process for a transaction:

| **Error Code** | **Error** | **Error Message** |
| --- | --- | --- |
| N0000 | TransactionReceived | Transaction is loaded successfully |
| N0001 | TransactionPending | Transaction has been received and is pending for validation |
| N0002 | TransactionLoading | Validation has been completed, pending for loading to database |
| N0003 | TransactionLoadedPartially | Transaction was partially loaded. Some elements did not pass validation and were rejected. |
| N0004 | TransactionRejected | The entire transaction was rejected due to failure in validation |
| N0005 | TransactionReplaced | This transaction has been replaced with another transaction |
| N1003 | DataDoesNotMatchSchema | Unable to import data submitted. Data does not match schema |
| N1004 | DataIsEmpty | Unable to import data submitted. Data is empty or null |
| N1005 | OtherDataError | Error importing data <exception message> |
| N1010 | NotAuthorized | User account is not authorized to submit data to NMD |
| N1012 | PartnerNotAuthorizedForFacilityApplication | Partner <Partner ID> is not authorized to submit data for facility <facility ID> and/or application <application> |
| N2001 | TransactionIdMissing | Missing Transaction\_ID |
| N2002 | TransactionIdInvalid | Invalid Transaction\_ID. Maximum length is 50 characters |
| N2011 | TransactionDateTimeMissing | Missing Transaction\_DateTime |
| N2012 | TransactionDateTimeInvalidFormat | Transaction\_DateTime is not a valid date time format |
| N2013 | TransactionDateTimeFuture | Transaction\_DateTime is a future date |
| N2014 | TransactionIdMustBeUniqie | Transaction\_ID must be unique. <transaction\_id> has been submitted in a previous transaction |
| N2021 | NumOfExamIncludedMissing | Missing Num\_of\_Exam\_Included |
| N2022 | NumOfExamIncludedInvalidFormat | Num\_of\_Exam\_Included is not an integer |
| N2031 | PartnerIdMissing | Missing PartnerID |
| N2032 | PartnerIdInvalid | Invalid PartnerID |
| N2041 | AppIdMissing | Missing AppID |
| N2042  | AppIdInvalid | Invalid AppID |
| N2051 | FacilityIdMissing | Missing Facility\_ID |
| N2052 | FacilityIdInvalid | Invalid Facility\_ID |
| N2053 | FacilityNotRegistered | Facility has not registered for NMD. Submission aborted |
| N2054 | FacilityNotAccepted | Facility has not been accepted to NMD. Submission aborted |
| N2057 | FacilityNotAccessible | Invalid FacilityID. User has no access to the registry of the facility. |
| N2062 | PreviousTransactionIdInvalid | Invalid Prev\_Transaction\_ID. No transactions with Transaction ID <prev\_transaction\_id> was received till now |
| N2070 | ExamDuplicate | More than one matching exam record found |
| N2071 | ExamsMissing | Missing exam object information |
| N2072 | ExamsIncludedNumberIncorrect | Data in tag Num\_of\_Exams\_Included <num\_of\_exams\_included> does not match with exam received <total # exam received> |
| N2081 | ExamsPartiallyRejected | Some of the exams did not pass validation and were rejected |
| N2091 | HasUnknownFieldsInvalid | Transaction has unknown element(s): <unknown\_elements\_list> |
| N2092 | HasForbiddenSymbolInFieldsInvalid | Forbidden symbol ‘|’ in field(s): <fields\_names> |
| N2101 | MissingNmdFileVersionNumber | Missing NMD\_File\_Version\_Num |
| N2102 | InvalidNmdFileVersionNumber | Invalid NMD\_File\_Version\_Num |
| N3001 | FieldMissing | Invalid. Missing {0} |
| N3002 | FieldNotApplicableInvalid | Invalid. {0} is not applicable |
| N3003 | FieldsCountInvalid  | Invalid record. {0} entries expected. {1} read. |
| N3004 | VersionNumberInvalid  | Invalid Record. File version number must be {0}. {1} read. |
| N3005 | VersionNumberFormatInvalid | Invalid version number. Version number must be 3 digit with at most 1 decimal place. Field read: {0} |
| N3007 | FieldFormatInvalid | Invalid {0} format |
| N3009 | NumberOutOfRangeInvalid | Invalid {0}. Possible values between {2} and {3} |
| N3010 | UniqueWithinArrayInvalid | Invalid {0}. Values should be unique within array |
| N3011 | MaximumArrayLengthInvalid | Invalid {0}. Maximum array length is {1} elements |
| N3020 | RequiredFieldIsNullInvalid | Invalid. Required field {0} is null |
| N3021 | RequiredWhenFieldIsNullInvalid | Invalid. Field {0} is required when field {1} is null |
| N3022 | RequiredWhenFieldIsNotNullInvalid | Invalid. Field {0} is required when field {1} is not null |
| N3030 | FieldIsOfDifferentVersionInvalid | Invalid field. Field is of different version |
| N3032 | VersionNumberNotSupported | Invalid version number. Version {0} not supported |
| N3045 | RadiologistNotExists | Warning. Physician NPI does not exist for this facility ID/registry |
| N3062 | DateInvalidFormat | Invalid {0} format. Valid format is mm/dd/yyyy or m/d/yyyy |
| N3110 | CharacterLengthInvalid | Invalid {0}. Maximum character length is {1} character(s) |
| N3111 | NumericFieldInvalid | Invalid {0}. Field must contain only the characters 0-9 |
| N3112 | DecimalInvalid | Invalid {0}. Field must contain only the characters 0-9. Field may contain a decimal point |
| N3113 | NumDigitsAfterDecimalPointInvalid | Invalid {0}. Field must be number with up to {1} digits after the decimal point |
| N3114 | AlphaNumInvalid | Invalid. Field {0} must contain only the characters a-z, A-Z, 0-9, '-' and white spaces |
| N3116 | SelectionFieldInvalid | Invalid {0}. Values {1} expected |
| N3117 | MonthFormatInvalid | Invalid {0}. Month must be in a 1 or 2 digit format |
| N3118 | MonthValueInvalid | Invalid {0}. Month must be between 1 and 12 |
| N3119 | MonthTypeInvalid  | Invalid {0}. Month must be a numeric value |
| N3120 | DayFormatInvalid  | Invalid {0}. Day must be in a 1 or 2 digit format |
| N3121 | DayValueInvalid | Invalid {0}. Day must be between 1 and 31 |
| N3122 | DayTypeInvalid  | Invalid {0}. Day must be a numeric value |
| N3123 | YearFormatInvalid | Invalid {0}. Year must be in a 4 digit yyyy format |
| N3124 | YearValueInvalid | Invalid {0}. Year must be between {1} and {2} |
| N3125 | YearTypeInvalid  | Invalid {0}. Year must be a numeric value |
| N3126 | DateInFutureInvalid | Invalid {0}. Date must be before or on present date |
| N3128 | DatesInLeapYearInvalid | Invalid {0}. Dates in a leap year in the month of February must have day values between 1 and 29 |
| N3129 | DatesInFebruaryInvalid  | Invalid {0}. Dates in the month of February must have day values between 1 and 28 |
| N3130 | MonthDatesInvalid | Invalid {0}. Dates in the months of April, June, September, and November must have day values between 1 and 30 |
| N3131 | ManyPatientsFoundInvalid | Invalid. More than one patient found with the same set of provided identifiers (SSN/Old MBID/New MBID/Other ID). Existing NRDR patient ID – conflicting patient identifier: <NRDR Patient ID1> - <ID1>, <ID2>; <NRDR Patient ID2> - <ID1>, <ID2>…<NRDR Patient IDn>-<ID1>, <ID2>…<IDn> |
| N3132 | PatientIsDuplicateInvalid | Invalid. Cannot create/update patient. At least one of provided patient identifiers (SSN/Old MBID/New MBID/Other ID) already used by other existing patient(s). NRDR Patient ID of conflicting patient(s): <Patient ID, Patient ID>.Patient identifier already in use for a different existing patient. Existing NRDR patient ID – conflicting patient identifier: <NRDR Patient ID1> - <ID1>, <ID2>; <NRDR Patient ID2> - <ID1>, <ID2>…<NRDR Patient IDn>-<ID1>, <ID2>…<IDn> |
| N3133 | ManyExamsFoundInvalid | Invalid. More than one exam found. Exam ID(s): <Exam ID, Exam ID>. |
| N3142 | PatientIdentificationRequiredInvalid | Invalid. At least one patient identifier must be provided: SSN, Other ID, Old Medicare Beneficiary ID or New Medicare Beneficiary ID |
| N3151 | SSNFormatInvalid | Invalid Patient\_SSN format. Valid format is nnn-nn-nnnn |
| N3152 | SSNSegmentFormatInvalid | Invalid SSN field. {0} segment must be a {1}-digit number |
| N3154 | SSNOfOneDigitInvalid | Invalid Patient\_SSN. SSN cannot be numeric sequence of one digit |
| N3155 | HealthInsuranceOtherApplicableInvalid | Invalid. Health Insurance Other is only applicable when Health Insurance is ‘Other, specify’. Otherwise, should be blank |
| N3156 | HealthInsuranceOtherRequiredInvalid | Invalid. Health Insurance Other is required, if Health Insurance is ‘Other, specify’ |
| N3157 | UnknownHealthInsuranceCannotBeSelectedInvalid | Invalid. Health Insurance invalid options selected. If 'Unknown' option selected, no other options can be selected |
| N3161 | PatientIdV2RequiredInvalid | Invalid. If this SSN is in dummy SSNs list (000-00-0000, 111-11-1111, etc.), then Patient Other ID can't be blank |
| N3165 | NewMedicareIdFormatInvalid | Invalid New\_Medicare\_Beneficiary\_ID format. Valid format is xxxx-xxx-xxxx or xxxxxxxxxxx. Must be alphanumeric in the predefined format |
| N3166 | DifferentNewMBIDInOldAndNewMBIDInvalid | Invalid. Different New Medicare Beneficiary ID values provided in Old\_Medicare\_Beneficiary\_ID and New\_Medicare\_Beneficiary\_ID fields |
| N3167 | PatientAgeInvalid | Invalid. Patient date of birth must be less than current date |
| N3168 | EducationLevelOtherSpecApplicableInvalid | Invalid. Education Level Other is only applicable if Education Level is 'Other, specify'. Otherwise should be blank |
| N3169 | EducationLevelOtherSpecRequiredInvalid | Invalid. Education Level Other is required, if Education Level is 'Other, specify' |
| N3171 | HRTOtherFieldsSelectedInvalid | Invalid HRT/Hormone Use field. If 'No' or 'Unknown' fields are selected, no other fields in this category may be selected |
| N3175 | HRTNoUnknownAcceptedInvalid | Invalid HRT/Hormone Use field. Either 'No' or 'Unknown' is accepted |
| N3181 | StandartScreenMammogrImgRequiredInvalid | Invalid. Standard screening mammography imaging required if Modality is 'Mammography', 'Mammography/Ultrasound', 'Mammography/MRI' or 'Mammography/Ultrasound/MRI' |
| N3185 | StandartScreenUltrasoundImgRequiredInvalid | Invalid. Standard screening ultrasound imaging required if Modality is 'Ultrasound', 'Mammography/Ultrasound', 'Ultrasound/MRI' or 'Mammography/Ultrasound/MRI' |
| N3205 | AssessmSubApplicableInvalid | Invalid. {0} - Subcategory of category 4 only applicable if {0} is 'Suspicious' |
| N3211 | DateOfPrevExamApplicableInvalid | Invalid. Date of previous examination only applicable if First examination ever is 'No', ‘Patient is unsure’ or 'Unknown' |
| N3214 | FirstExamOrTimeSincePrevExamRequiredInvalid | Invalid. Either First examination ever or Time since previous examination is required if Date of previous examination is not reported |
| N3218 | ExamDateMustBeLaterThenBirthInvalid | Invalid. Date of exam must be later than birth date |
| N3221 | ModalityValueInvalid | Invalid Modality. If field is {0}, then Combination examinations must be 2 |
| N3231 | FieldDependsOnModalityMammogrApplicableInvalid | Invalid. {0} only applicable if Modality is 'Mammography', 'Mammography/Ultrasound', 'Mammography/MRI' or 'Mammography/Ultrasound/MRI' |
| N3233 | UseOfTomosynthesisRequiredInvalid | Invalid. Use of tomosynthesis is required, if Modality is ‘Mammography’, ‘Mammography/Ultrasound’, ‘Mammography/MRI’ or ‘Mammography/Ultrasound/MRI’ |
| N3234 | UseOfTomosynthesisApplicableInvalid | Invalid. Use of tomosynthesis is only applicable when Modality is ‘Mammography’, ‘Mammography/Ultrasound’, ‘Mammography/MRI’ or ‘Mammography/Ultrasound/MRI’ |
| N3235 | UseOfCEMRequiredInvalid | Invalid. Use of contrast-enhanced mammography (CEM) is required, if Modality is ‘Mammography’, ‘Mammography/Ultrasound’, ‘Mammography/MRI’ or ‘Mammography/Ultrasound/MRI’ |
| N3236 | UseOfCEMApplicableInvalid | Invalid. Use of contrast-enhanced mammography (CEM) is only applicable when Modality is ‘Mammography’, ‘Mammography/Ultrasound’, ‘Mammography/MRI’ or ‘Mammography/Ultrasound/MRI’ |
| N3241 | CADStandardViewsApplicableInvalid  | Invalid. Use of CAD - Standard views only applicable if Modality is 'Mammography', 'Mammography/Ultrasound', 'Mammography/MRI', 'Ultrasound/MRI' or 'Mammography/Ultrasound/MRI' |
| N3251 | AdditionalImagingRequiredInvalid | Invalid. Additional Imaging required if Modality is 'Mammography', 'Ultrasound', 'Mammography/Ultrasound', 'Mammography/MRI', 'Ultrasound/MRI', 'Mammography/Ultrasound/MRI' and Indication for examination is 'Screening' |
| N3261 | BreastCompositionLBRequiredInvalid | Invalid. Breast composition - LB required if Modality is 'Mammography', 'Mammography/Ultrasound', 'Mammography/MRI' or 'Mammography/Ultrasound/MRI' and Laterality of audit data is 'Separate-breast assessment data' and Breast composition - RB is null |
| N3265 | BreastCompositionRBRequiredInvalid | Invalid. Breast composition - RB required if Modality is 'Mammography', 'Mammography/Ultrasound', 'Mammography/MRI' or 'Mammography/Ultrasound/MRI' and Laterality of audit data is 'Separate-breast assessment data' and Breast composition - LB is null |
| N3267 | BreastCompositionPLRequiredInvalid | Invalid. Breast composition - PL required if Modality is 'Mammography', 'Mammography/Ultrasound', 'Mammography/MRI' or 'Mammography/Ultrasound/MRI' and Laterality of audit data is 'Patient-level assessment data' |
| N3271 | TissueCompositionLBRequiredInvalid | Invalid. Tissue composition - LB required if Modality is 'Ultrasound', 'Mammography/Ultrasound', 'Ultrasound/MRI' or 'Mammography/Ultrasound/MRI' and Laterality of audit data is 'Separate-breast assessment data' and Tissue composition - RB is null |
| N3275 | TissueCompositionRBRequiredInvalid | Invalid. Tissue composition - RB required if Modality is 'Ultrasound', 'Mammography/Ultrasound', 'Ultrasound/MRI' or 'Mammography/Ultrasound/MRI' and Laterality of audit data is 'Separate-breast assessment data' and Tissue composition - LB is null |
| N3277 | TissueCompositionPLRequiredInvalid | Invalid. Tissue composition - PL required if Modality is 'Ultrasound', 'Mammography/Ultrasound', 'Ultrasound/MRI' or 'Mammography/Ultrasound/MRI' and Laterality of audit data is 'Patient-level assessment data' |
| N3281 | AmountOfFGTLBRequiredInvalid | Invalid. Amount of FGT - LB required if Modality is 'MRI', 'Mammography/MRI', 'Ultrasound/MRI' or 'Mammography/Ultrasound/MRI' and Laterality of audit data is 'Separate-breast assessment data' and Amount of FGT - RB is null |
| N3285 | AmountOfFGTRBRequiredInvalid | Invalid. Amount of FGT - RB required if Modality is 'MRI', 'Mammography/MRI', 'Ultrasound/MRI' or 'Mammography/Ultrasound/MRI' and Laterality of audit data is 'Separate-breast assessment data' and Amount of FGT - LB is null |
| N3287 | AmountOfFGTPLRequiredInvalid | Invalid. Amount of FGT - PL required if Modality is 'MRI', 'Mammography/MRI', 'Ultrasound/MRI' or 'Mammography/Ultrasound/MRI' and Laterality of audit data is 'Patient-level assessment data' |
| N3291 | BPELBRequiredInvalid | Invalid. BPE - LB required if Modality is 'MRI', 'Mammography/MRI', 'Ultrasound/MRI' or 'Mammography/Ultrasound/MRI' and Laterality of audit data is 'Separate-breast assessment data' and BPE - RB is null |
| N3292 | BPELBRequiredInvalidV33 | Invalid. BPE - LB required if Modality is 'MRI', 'Mammography/MRI', 'Ultrasound/MRI' or 'Mammography/Ultrasound/MRI' and Laterality of audit data is 'Separate-breast assessment data' and BPE - RB is null.BPE - LB required if Laterality of audit data is ‘Separate-breast assessment data’ and BPE - RB is null and Use of contrast-enhanced mammography (CEM) is ‘Contrast-enhanced mammography used’ |
| N3295 | BPERBRequiredInvalid | Invalid. BPE - RB required if Modality is 'MRI', 'Mammography/MRI', 'Ultrasound/MRI' or 'Mammography/Ultrasound/MRI' and Laterality of audit data is 'Separate-breast assessment data' and BPE - LB is null |
| N3296 | BPERBRequiredInvalidV33 | Invalid. BPE - RB required if Modality is 'MRI', 'Mammography/MRI', 'Ultrasound/MRI' or 'Mammography/Ultrasound/MRI' and Laterality of audit data is 'Separate-breast assessment data' and BPE - LB is null.BPE – RB required if Laterality of audit data' is ‘Separate-breast assessment data’ BPE - LB is null and Use of contrast-enhanced mammography (CEM) is ‘Contrast-enhanced mammography used’ |
| N3297 | BPEPLRequiredInvalid | Invalid. BPE - PL required if Modality is 'MRI', 'Mammography/MRI', 'Ultrasound/MRI' or 'Mammography/Ultrasound/MRI' and Laterality of audit data is 'Patient-level assessment data' |
| N3298 | BPEPLRequiredInvalidV33 | Invalid. BPE - PL required if Modality is 'MRI', 'Mammography/MRI', 'Ultrasound/MRI' or 'Mammography/Ultrasound/MRI' and Laterality of audit data is 'Patient-level assessment data'.BPE - PL required if Laterality of audit data is ‘Patient-level assessment data’ and Use of contrast-enhanced mammography (CEM) is ‘Contrast-enhanced mammography used’ |
| N3299 | BPESummAsummApplicableInvalid | Invalid. BPE - Symmetric or asymmetric only applicable if Modality is 'MRI', 'Mammography/MRI', 'Ultrasound/MRI' or 'Mammography/Ultrasound/MRI' |
| N3300 | BPESummAsummApplicableInvalidV33 | Invalid. BPE - Symmetric or asymmetric only applicable if Modality is 'MRI', 'Mammography/MRI', 'Ultrasound/MRI' or 'Mammography/Ultrasound/MRI' or Use of contrast-enhanced mammography (CEM) is ‘Contrast-enhanced mammography used’ |
| N3321 | ManagementLBRequiredInvalid | Invalid. Management - LB required if Laterality of audit data is 'Separate-breast assessment data' and Management - RB is null |
| N3325 | ManagementRBRequiredInvalid | Invalid. Management - RB required if Laterality of audit data is 'Separate-breast assessment data' and Management - LB is null |
| N3327 | ManagementPLRequiredInvalid | Invalid. Management - PL required if Laterality of audit data is 'Patient-level assessment data' |
| N3341 | NodesPositiveValueInvalid | Invalid Nodes positive. Field must be 0 or null, if Nodes removed is 0 |
| N3342 | NodesPositiveLessOrEqualNodesRemovedInvalid | Invalid Nodes positive. Must be less than or equal to Nodes removed |
| N3351 | BreastCancerInFirstDegreeValueInvalid | Invalid. If <Breast cancer in first-degree relative - postmenopausal / Breast cancer in first-degree relative - premenopausal> is 0, <Breast cancer in first-degree relative - premenopausal / Breast cancer in first-degree relative - postmenopausal> must be 0 or 1; if 1 - must be 0, 1 or 2; if 2 - must be 1 or 2; if 9 - must be 9 |
| N3395 | OriginallyScheduledExamDateBeforeExamDateWarning | Warning. Originally Scheduled Exam Date must be before current Date of Examination |
| N3397 | OtherRaceCannotBeSelectedInvalid | Invalid Patient Race. If 'Not Reported' or 'Unknown' is selected than any other options cannot be selected |
| N3400 | CovidVaccineDateApplicableInvalid | Invalid. Covid Vaccine Date is applicable when Covid Vaccine is ‘Yes’. Otherwise should be blank |
| N3401 | CovidVaccineManufacturerApplicableInvalid | Invalid. Covid Vaccine Manufacturer is only applicable when Covid Vaccine is ‘Yes’. Otherwise should be blank |
| N3402 | CovidVaccineManufacturerRequiredInvalid | Invalid. Covid Vaccine Manufacturer is required, if Covid Vaccine is ‘Yes’ |
| N3403 | CovidVaccineManufacturerOtherApplicableInvalid | Invalid. Covid Vaccine Manufacturer Other is only applicable when Covid Vaccine Manufacturer is ‘Other’. Otherwise should be blank |
| N3404 | CovidVaccineManufacturerOtherRequiredInvalid | Invalid. Covid Vaccine Manufacturer Other is required, if Covid Vaccine Manufacturer is ‘Other’ |
| N3405 | CovidVaccinationSiteApplicableInvalid | Invalid. Covid Vaccination Site is only applicable when Covid Vaccine is ‘Yes. Otherwise should be blank |
| N3406 | CovidVaccinationSiteApplicableInvalid | Invalid. Covid Vaccination Site is required, if Covid Vaccine is ‘Yes’ |
| N3460*For v3.3 only* | AssessmentLeftBreastIsRequired | Invalid. Assessment\_LB is required if 'Laterality of audit data' is ‘Separate-breast assessment data’ and 'Assessment - Right breast' is null OR 'Assessment - Left breast - Subcategory of category 4' is not null |
| N3461*For v3.3 only* | AssessmentRightBreastIsRequired | Invalid. Assessment\_RB is required if 'Laterality of audit data' is ‘Separate-breast assessment data’ and 'Assessment - Left breast' is null OR 'Assessment - Right breast - Subcategory of category 4' is not null |
| N3462*For v3.3 only* | AssessmentPatientLevelIsRequired | Invalid. 'Assessment - Patient level' is required if 'Laterality of audit data' is ‘Patient-level assessment data’ OR 'Assessment - Patient Level - Subcategory of category 4' is not null |
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