

**REQUIREMENT SPECIFICATION  
FOR THE**

**NRDR**  
**National Mammography Database  
(NMD) Registry Data Transmission**

**Versions 2.0 and 2.1**

**May 1, 2018**

American College of Radiology

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## Change History

Date	Version	Changed by	Description
2/15/08	1.0		Original issue
3/5/08	1.1	King Lo	Incorporated data elements in section 4.
5/15/08	1.2	King Lo	Changed the file naming convention from nmd_<yyyymmdd-hr:mi:ss> to nmd_<yyyymmdd-hrmiss> - dropping the ':' in the timestamp.
9/4/08	1.3	King Lo, Lu Meyer	Major updates section 4. See markups for detail.
9/5/08	1.4	Lu Meyer	Changed usage for "First Name", "Last Name" and "Breast Density" from "Optional" to "Required"
11/7/08	1.5	Lu Meyer	Added a new field for gender. Changed wording for "Most Significant Mammogram Finding". Changed wording for "Indication for Examination".
11/14/08	2.0	Lu Meyer	Moved the gender field to the end of the file. Added a new field for NMD File Version Number. Changed wording for "Symptoms".
6/9/09	2.0	Lu Meyer	Clarified that "HRT / Hormone Use" and "Management Recommendations" allow multiple responses. Clarified meaning of "required" and "optional" fields. Deleted <EOF> from example of record structure.
10/29/09	2.0	Lu Meyer	Added an "Availability" column to the Data Element table.
5/1/18	2.0 2.1	Lu Meyer	<ol style="list-style-type: none"> <li>1. Added 2.1 as a permitted value to "NMD file version number"</li> <li>2. Fields 2-58 renumbered</li> <li>3. "Use" column changed for Patient ID and Patient SSN (for Version 2.1 only)</li> <li>4. Added Facility ID (Version 2.1 only)</li> <li>5. Added Old Patient Medicare Beneficiary ID (Version 2.1 only)</li> <li>6. Added New Patient Medicare Beneficiary ID (Version 2.1 only)</li> <li>7. Changed "Gender" to "Sex at birth"</li> </ol>

## ACR National Mammography Database Registry (NMD) – Data Transmission Specifications

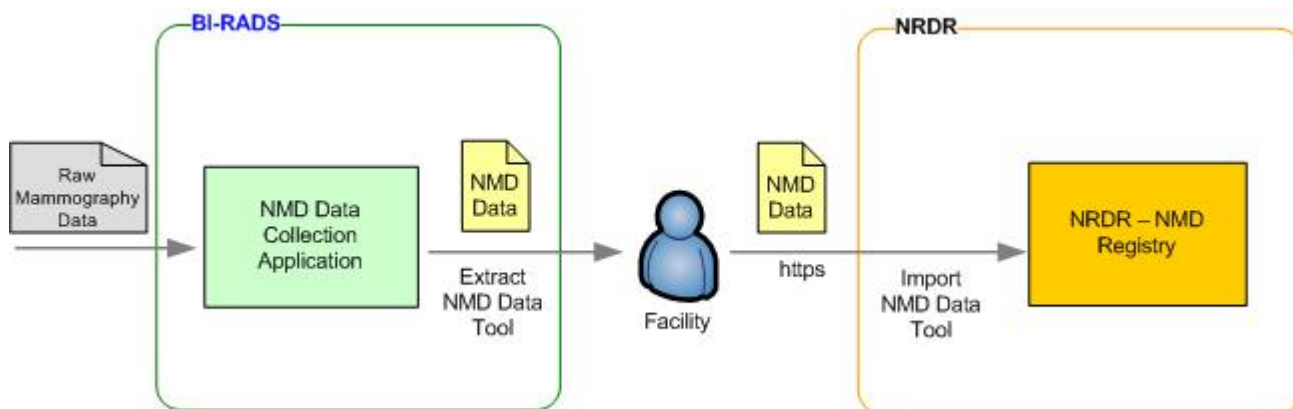
### 1 Background

The ACR National Mammography Database (NMD) is a data registry created for quality improvement purposes which allows facilities to benchmark their results against similar facilities and the nation. Facilities/clinics that wish to participate are required to submit their patients' mammography data to the registry every six months; each submission contains data for the past six months. The system also allows the facilities to submit data more frequently. The BI-RADS® vendor will provide the data in the form of a text file to the facility; the facility will then import the text file into the NMD registry.

The NMD registry is a component of the National Radiology Data Registry (NRDR™). Facilities/clinics will need to become registered users of NRDR in order to gain access to the NMD registry for the purpose of uploading data and viewing reports.

This document describes the data transmission process flow, data file specification, and data elements specification of the NMD registry.

### 2 Data Transmission Process Flow



#### Process Flow:

1. Facility requests the NMD Data Collection Application to generate a NMD data extract based on specified input criteria (possibly by a specified date range of the examination date).
2. NMD Data Collection Application produces the output to a text file.
3. Facility saves the text file.
4. Facility logs on to the NMD registry.
5. Facility uses the NMD import tool to import the text file saved in Step 3 into the NMD registry.

### 3 NMD Data File Specification

The NMD data file specifications are listed as follows:

1. The data file is a delimited text file.
2. The maximum recommended file size is 40 M.
3. The filename extension is '.txt'.
4. The file naming convention is `nmd_<yyyymmdd-hrmiss>`; `yyyymmdd-hrmiss` is the time stamp at the time the file is created, where

`yyyy` is the 4 digit year,  
`mm` is the 2 digit month,  
`dd` is the 2 digit day,  
`hr` is the 2 digit hour in military time format,  
`mi` is the 2 digit minute, and  
`ss` is the 2 digit second

**Note:** The NMD import tool will append the facility's internal NRDR facility id to the file name so that the files can be distinguished among facilities.

5. The data file may contain one or more records.
6. Each line contains one and only one record; record delimiter is the CARRIAGE RETURN character followed by the LINE FEED character (CR LF).
7. Each record begins at the first position of a line.
8. Each record contains all the required, conditional and optional data elements (see *Section 4 NMD Data Elements and Mapping*) even if their values are null. Do not use the SPACE character to replace the null value.
9. Each data element is separated by the vertical bar character '|'.

#### Example:

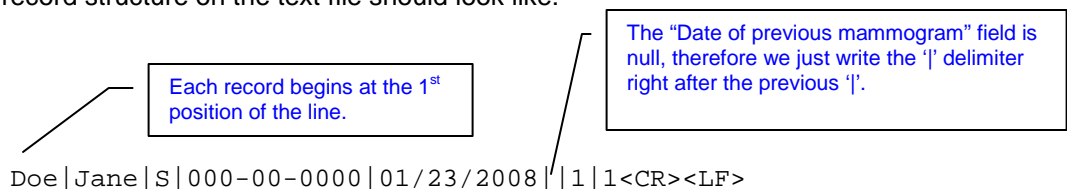
Consider the following hypothetical NMD data elements:

Patient's last name,  
Patient's first name,  
Patient's middle initial,  
Patient's social security number,  
Patient's date of birth,  
Examination date,  
Date of previous mammogram,  
Symptoms, and  
Biopsy result

Let's say we have the following record:

Patient's last name: Doe  
Patient's first name: Jane  
Patient's middle initial: S  
Patient's social security number: 000-00-0000  
Examination data: 01/23/2008  
Date of previous mammogram: <null>  
Symptoms: asymptomatic (will be translated to '1' when output to the text file, see section 4)  
Classification of lesion: high risk (will be translated to '2' when output to the text file, see section 4)

A valid record structure on the text file should look like:



## 4 NMD Data Elements and Mapping

This section describes the NMD data elements. Some of the elements are expected to be in numeric format and their mapping rules are described under the Answer column. Although the output is a delimited text file the data should not exceed the Maximum Length if indicated. In order for a record to be added to NMD, all required fields must be populated. Software that generates NMD files must be capable of populating all fields listed below, including conditional and optional fields.

Field #	Element Name	Definition	Answer	Availability <sup>1</sup>	Use <sup>2</sup>	Format	Max Length
1	NMD File Version Number	2.0: Does not include Field #2 (NRDR Facility ID), Field #8 (Old Patient MBID) or Field #9 (New Patient MBID) 2.1: Includes all fields	Select one: 2.0 2.1	Required	Required	Numeric	5
2	NRDR Facility ID	6-digit facility ID assigned by NRDR		Optional	V 2.0: Not applicable V 2.1: Required	Numeric	6

<sup>1</sup> "Required" in the **Availability** column means that the software must provide users with the ability to populate the field indicated, even if the field is shown as optional in the **Use** column.

<sup>2</sup> "Required" in the **Use** column means that records without valid values in the field indicated should not be included in the NMD file.

Field #	Element Name	Definition	Answer	Availability <sup>1</sup>	Use <sup>2</sup>	Format	Max Length
3	Patient Last Name	Indicate the patient's last name.		Required	Required	Alphanumeric	45
4	Patient First Name	Indicate the patient's first name.		Required	Required	Alphanumeric	45
5	Patient's Middle Name(s)	Indicate the patient's middle name.		Required	Optional	Alphanumeric	45
6	Patient ID	Facility-specific unique patient identifier		Required	Conditional: required if Patient SSN, Old Patient MBID and New Patient MBID are not provided	Alphanumeric	50
7	Patient SSN	Indicate the nine-digit Patient's Social Security Number (SSN).		Required	Conditional: required if Patient ID, Old Patient MBID and New Patient MBID are not provided	nnn-nn-nnnn	11
8	Old Patient Medicare Beneficiary ID	Indicate patient's Medicare Beneficiary ID (MBID) if issued prior to April 1, 2018		Optional	V 2.0: Not applicable V 2.1: Conditional. Required if Patient ID, Patient SSN and New Patient MBID are not provided	Alphanumeric	12
9	New Patient Medicare Beneficiary ID	Indicate patient's Medicare Beneficiary ID (MBID) if issue on or after April 1, 2018		Optional	V 2.0: Not applicable V 2.1: Conditional. Required if Patient ID, Patiend	Alphanumeric xxxx-xxx-xxxx or xxxxxxxxxxx	13

<sup>1</sup> "Required" in the **Availability** column means that the software must provide users with the ability to populate the field indicated, even if the field is shown as optional in the **Use** column.

<sup>2</sup> "Required" in the **Use** column means that records without valid values in the field indicated should not be included in the NMD file.

Field #	Element Name	Definition	Answer	Availability <sup>1</sup>	Use <sup>2</sup>	Format	Max Length
					SSN and Old Patient MBID are not provided		
10	Patients ZIP Code / Postal Code	Indicate U.S. ZIP code or Canadian postal code.		Required	Optional	Alphanumeric	10
11	Date of Birth	Indicate the patient's date of birth.		Required	Optional	mm/dd/yyyy	10
12	First Degree Relative with Breast Cancer	Select "Yes" if there is at least one first degree relative (mother, sister, daughter) who had a breast cancer diagnosis. Select "Unknown" if all answers are unknown; select "No" for any other combination.	Select one: 0-No 1-Yes 9-Unknown	Required	Optional	Numeric	1
13	Personal History of Breast Cancer	Indicate whether the patient has a history of breast cancer.	Select one: 0-No 1-Yes 9-Unknown	Required	Optional	Numeric	1
14	Race	Indicate the patient's race as determined by the patient / family. If more than one apply, select "Other". If patient declines to respond select "Unknown".	Select one: 1-American Indian or Alaska Native 2-Asian 3-Black or African American 4-Native Hawaiian or Pacific Islander 5-White 8-Other 9-Unknown	Required	Optional	Numeric	1
15	Ethnicity	Indicate whether patient is Hispanic. If patient declines to respond select "Unknown".	Select one: 0-No 1-Yes 9-Unknown	Required	Optional	Numeric	1
16	Personal History of Biopsy or Breast Surgery	Indicate whether the patient has had a biopsy (other than FNA or cyst aspiration) or breast surgery (including core biopsy and cryoablation).	Select one: 0-No 1-Yes 9-Unknown	Required	Optional	Numeric	1
-17 - 21	HRT / Hormone Use	Indicate whether the patient currently uses any hormone-related medications or hormone replacement therapy, e.g., Premarin, tamoxifen, raloxifene. Do not include thyroid medications or hormone-based birth control.	Select all that apply: Field 14 - None Field 15 -Hormone-replacement therapy Field 16 - Tamoxifen or raloxifene Field 17 - Other Field 18 - Unknown  <b>Note:</b> If "None" or	Required	Optional	Numeric. Generate 5 output fields with 0 or 1: 0 - selection does not apply 1 - selection applies  Example 1. If	5 fields with a max. length of 1

<sup>1</sup> "Required" in the **Availability** column means that the software must provide users with the ability to populate the field indicated, even if the field is shown as optional in the **Use** column.

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Field #	Element Name	Definition	Answer	Availability <sup>1</sup>	Use <sup>2</sup>	Format	Max Length
			"Unknown" is selected, then no other choice should be selected.			"None" is selected the output should be: 1 0 0 0 0  Example 2. If "Tamoxifen or raloxifene" and "Other" are selected the output should be: 0 0 1 1 0	
22	Height	Indicate height to the nearest inch.		Required	Optional	Numeric	2
23	Weight	Indicate weight to the nearest pound.		Required	Optional	Numeric	3
24	Date of Last Natural Period	Indicate date last natural period began. If day is unknown, use 01; if month is unknown, use 01		Required	Optional	mm/dd/yyyy	10
25	Date of Examination	Indicate the date of the mammogram.		Required	Required	mm/dd/yyyy	10
26	NPI of Interpreting Radiologist	Indicate NPI of the MSQA-qualified interpreting radiologist.		Required	Optional	Numeric	10
27	Indication for Examination	Indicate the purpose of the examination. Mammography examinations performed to monitor clip placement after core biopsy, or to assess for success of any other interventional breast procedure, should not be submitted.	Select one: 1-Routine screening 2- Additional evaluation of recent screening mammogram 3-Diagnostic:Short interval follow-up 4- Diagnostic:Evaluation of breast problem 5-Diagnostic:Previous history of breast cancer 9-Unknown	Required	Required	Numeric	1
28	Symptoms	Indicate self-reported symptoms, limited to new symptoms in the past 3 months. Select "Asymptomatic" for patients with no symptoms, breast pain only, or symptoms present for longer than 3 months. Select "Palpable lump" for patients with both lump and other symptoms.	Select one: 1-Asymptomatic 2-Palpable lump 3-Symptoms other than lump	Required	Optional	Numeric	1

<sup>1</sup> "Required" in the **Availability** column means that the software must provide users with the ability to populate the field indicated, even if the field is shown as optional in the **Use** column.

<sup>2</sup> "Required" in the **Use** column means that records without valid values in the field indicated should not be included in the NMD file.

Field #	Element Name	Definition	Answer	Availability <sup>1</sup>	Use <sup>2</sup>	Format	Max Length
29	Date of Previous Mammogram	Indicate the date of the most recent prior mammogram, if known.		Required	Optional	mm/dd/yyyy	10
30	Comparison to Previous Mammogram	Indicate whether the mammogram was compared to a previous mammogram. Do not include comparisons to MRI's or ultrasound.	Select one: 0-No comparison made, or unknown 1-Yes, no significant change 2-Yes, significant change 3- Yes, NOS	Required	Optional	Numeric	1
31	Date of Previous Mammogram Compared	Indicate the date of the most recent prior mammogram compared, if known.		Required	Optional	mm/dd/yyyy	10
32	Breast Density	Indicate breast density based on BI-RADS® scale. If left and right breasts differ, use the higher density. Note: definitions of “almost entirely fat” and “scattered fibroglandular densities” will change with the next edition of BI-RADS®. The NMD definitions will change accordingly.	Select one: 1-Almost entirely fat (<25% fibroglandular) 2-Scattered fibroglandular densities (25-50%) 3-Heterogeneously dense (51-75%) 4-Extremely dense (>75%) 9-Unknown	Required	Required	Numeric	1
33	Assessment Category	Indicate assessment category. If the assessment for each breast is different, indicate the assessment with the higher level of concern. Categories 1-3 indicate the lowest levels of concern; Category 0 indicates the next level, and Categories 4-5 indicate the highest levels. Do not include mammography examinations with final assessments of 6 (Known malignancy).	Select one: 0 - Need additional imaging evaluation 1 - Negative 2 - Benign finding 3 - Probably benign finding 4 - Suspicious abnormality 5 - Highly suggestive of malignancy	Required	Required	Numeric	1

<sup>1</sup> “Required” in the **Availability** column means that the software must provide users with the ability to populate the field indicated, even if the field is shown as optional in the **Use** column.

<sup>2</sup> “Required” in the **Use** column means that records without valid values in the field indicated should not be included in the NMD file.

Field #	Element Name	Definition	Answer	Availability <sup>1</sup>	Use <sup>2</sup>	Format	Max Length
34	Subcategory of Assessment Category 4	Indicate subcategory of Assessment Category 4, if applicable.	Select one: 0-Not applicable 1-4A - Low suspicion level 2-4B - Intermediate suspicion level 3-4C - Moderate suspicion level 9-Unknown	Required	Optional	Numeric	1
-35-46	Management recommendation(s)	Indicate all recommendations that apply.	Select all that apply: Field 32 - Normal interval follow-up mammography Field 33 - Short interval follow-up mammography Field 34 - Additional views Field 35 - Ultrasound Field 36 - Nuclear medicine Field 37 - MRI Field 38 - Clinical exam Field 39 - Surgical consult Field 40 - FNA Field 41 - .Biopsy Field 42 - Compare with previous mammograms Field 43 - Other	Required	Optional	Numeric. Generate 12 fields with 0 and 1: 0-Selection does not apply 1-Selection applies.  Example: if Ultrasound and FNA are selected the output should be: 0 0 0 1 0 0  0 0 1 0 0 0	12 fields with a max. length of 1
47	Most Significant Mammogram Finding	Indicate the most significant mammogram finding.	Select one: 0-None 1-Mass 2-Calcification 3-Architectural distortion 4-Asymmetries 8-Other	Required	Optional	Numeric	1

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Field #	Element Name	Definition	Answer	Availability <sup>1</sup>	Use <sup>2</sup>	Format	Max Length
48	Integrated Assessment Category	Indicate integrated assessment category; i.e., assessment category incorporating the findings of both mammography and ultrasound if performed on the same day. If the assessment for each breast is different, indicate the assessment with the higher level of concern. Categories 1-3 indicate the lowest levels of concern; Category 0 indicates the next level, and Categories 4-5 indicate the highest levels. Do not include mammography examinations with final assessments of 6 (Known malignancy).	Select one: 0 - Need additional imaging evaluation 1 - Negative 2 - Benign finding 3 - Probably benign finding 4 - Suspicious abnormality 5 - Highly suggestive of malignancy 9 - Unknown	Required	Optional	Numeric	1
49	Subcategory of Integrated Assessment Category 4	Indicate subcategory of Integrated Assessment Category 4, if applicable.	Select one: 0-Not applicable 1-4A - Low suspicion level 2-4B - Intermediate suspicion level 3-4C - Moderate suspicion level 9-Unknown	Required	Optional	Numeric	1
50	Final assessment, if recorded assessment is 0	Indicate final assessment if the recorded assessment is 0. Do not include mammography examinations with final assessments of 6 (Known malignancy). Indicate final assessments of 0 as "Unknown".	Select one: 1 - Negative 2 - Benign finding 3 - Probably benign finding 4 - Suspicious abnormality 5 - Highly suggestive of malignancy 9 - Unknown	Required	Optional	Numeric	1
51	Film or Digital	Indicate whether the image was recorded on film or digitally. If unknown, indicate "film".	Select one: 1-Film 2-Digital	Required	Optional	Numeric	1
52	Use of Computer Aided Detection (CAD)	Indicate whether Computer Aided Detection (CAD) was used.	Select one: 0-No 1-Yes - standard views 2-Yes - additional views 3-Yes - both standard and additional views 4-Yes - NOS 9-Unknown	Required	Optional	Numeric	1

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Field #	Element Name	Definition	Answer	Availability <sup>1</sup>	Use <sup>2</sup>	Format	Max Length
53	Double Read	Indicate whether the mammogram was read by more than one radiologist, as part of double-read process.	Select one: 0-No 1-Yes - standard views 2-Yes - additional views 3-Yes - both standard and additional views 4-Yes - NOS 9-Unknown	Required	Optional	Numeric	1
54	Biopsy procedure	Indicate the type of biopsy procedure, if biopsy is performed. Enter a choice only if biopsy was performed. If more than one biopsy was performed, report only on the biopsy of the most severe assessment.	Select one: 1-Excisional biopsy 2-Core biopsy 3-Fine needle aspiration 8-Other 9-Biopsy performed, type unknown	Required	Optional	Numeric	1
55	Biopsy date	Indicate the date the biopsy was performed.		Required	Optional	mm/dd/yyyy	10
56	Classification of lesion	Indicate the biopsy result. Use BI-RADS® classification of benign, high risk and malignant.	Select one: 1-Benign 2-High risk 3-Malignant 9-Unknown	Required	Optional	Numeric	1
57	Malignancy Type	Indicate malignancy type.	Select one: 1-Invasive carcinoma 2-DCIS 8-Other	Required	Optional	Numeric	1
58	Tumor Size	Indicate tumor size to the nearest mm. If more than one tumor is found, indicate the size of the largest tumor. Use histopathology tumor size, or if unavailable, then use tumor size at imaging.		Required	Optional	Numeric	3
59	Nodal Status	Indicate nodal status.	Select one: 1-Negative 2-Positive 9-Unknown	Required	Optional	Numeric	1
60	Tumor Stage	Indicate tumor stage. If more than one tumor is found, indicate the stage of the largest tumor.	Select one: 0-Stage 0 1-Stage I 2-Stage II 3-Stage III 4-Stage IV	Required	Optional	Numeric	1
61	Sex	Indicate patient's sex at birth	Select one: 1-Male 2-Female	Required	Optional	Numeric	1

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<sup>2</sup> "Required" in the **Use** column means that records without valid values in the field indicated should not be included in the NMD file.