Table of Contents

FIGURES ............................................................................................................................... 5
REVISION HISTORY ............................................................................................................ 8
I. WHAT IS MMRIA? ............................................................................................................. 9
   System Requirements ...................................................................................................... 9
   Additional Resources ...................................................................................................... 9
II. GETTING STARTED: BASIC FUNCTIONS ...................................................................... 10
LOGGING IN ....................................................................................................................... 10
   New User .......................................................................................................................... 12
MMRIA Menus and Submenus ............................................................................................. 13
Common Functions ............................................................................................................. 15
   Saving Your Data ............................................................................................................ 15
   Deleting/Recovering Records ......................................................................................... 15
   Field Types ...................................................................................................................... 16
Left Navigation Pane ........................................................................................................... 17
General Submenu ............................................................................................................... 18
   Manage Account Profile ............................................................................................... 18
   View Aggregate Report ................................................................................................. 19
   View CSV Data Dictionary ............................................................................................ 21
   Print Blank Version ....................................................................................................... 22
III. MANAGE USERS AND JURISDICTIONS ...................................................................... 23
Add New Users .................................................................................................................... 25
Assign and Manage User’s roles ......................................................................................... 26
Update User Role ................................................................................................................. 29
Remove User Role ............................................................................................................... 30
Remove User ....................................................................................................................... 31
Returning to the Main Menu ............................................................................................... 32
Managing the Jurisdiction Tree .......................................................................................... 32
IV. ABSTRACTING CASES INTO MMRIA ............................................................................ 35
Abstractor Submenu ........................................................................................................... 35
   View Case Data .............................................................................................................. 36
De-identifying Your Data:

Data Export

Forms and Grids

Core Elements Report

All Data Elements Report

Export Data

Committee Decisions Form

Case Narrative Form

MMRIA Forms

Death Certificate Form

Birth/Fetal Death Certificate – Parent Section Form

Birth/Fetal Death Certificate – Infant/Fetal Section Form

Autopsy Report

Prenatal Care Record Form

ER Visits and Hospitalizations Form

Other Medical Office Visits Form

Medical Transport Form

Social and Environmental Profile Form

Mental Health Profile Form

Informant Interviews Form

Case Narrative Form

Committee Decisions Form

Data Structure

Forms and Grids

Data Export - Overview

Export Data

All Data Elements Report

Core Elements Report

Relating Your Data:

Data Export: Grids

Analysis of MMRIA Data: Considerations

Example Analyses

VI. REVIEWING CASES

De-identified Fields

VII. FREQUENTLY ASKED QUESTIONS
# FIGURES

Figure 1 - SAMS Login Screen ........................................................................................................10
Figure 2 - SAMS Warning Banner ..................................................................................................11
Figure 3 - SAMS Menu Options .......................................................................................................12
Figure 4 - Jurisdiction Admin Menu ..............................................................................................13
Figure 5 - Abstractor Menu ..............................................................................................................14
Figure 6 - Committee Member Menu ...............................................................................................14
Figure 7 - Line List Summary Showing Case Delete Button ..........................................................16
Figure 8 - Role Assignment listing ..................................................................................................17
Figure 9 - Left Navigation Pane Functions ......................................................................................17
Figure 10 - General Submenu ...........................................................................................................18
Figure 11 - Profile UI .......................................................................................................................18
Figure 12 - Aggregate Report Selection ..........................................................................................19
Figure 13 - Aggregate Report ..........................................................................................................20
Figure 14 - CSV Data Dictionary .....................................................................................................21
Figure 15 - Print Blank Version ........................................................................................................22
Figure 16 - Jurisdiction Admin Submenu .........................................................................................23
Figure 17 - List Users ......................................................................................................................24
Figure 18 - Create New Username Prompt ......................................................................................25
Figure 19 - Username Error Message ..............................................................................................25
Figure 20 - No Role Assigned Error Message ..................................................................................26
Figure 21 - Role Drop-down List ......................................................................................................27
Figure 22 - Jurisdiction Drop-down for Create New Role ...............................................................27
Figure 23 - User List Updated with New User ..................................................................................28
Figure 24 - Update Role "is_active" flag ..........................................................................................29
Figure 25 - Updated Role Record ....................................................................................................29
Figure 26 - Remove User Role .........................................................................................................30
Figure 27 - Confirm Role Deletion Pop-up ......................................................................................30
Figure 28 - Role Removed from User ..............................................................................................30
Figure 29 - Confirm Delete User Pop-up ................................................................. 31
Figure 30 - Return to Home .................................................................................. 32
Figure 31 - Jurisdiction Tree example ................................................................ 32
Figure 32 - Create New Jurisdiction Tree Node .................................................. 33
Figure 33 - New Node Displayed .......................................................................... 33
Figure 34 - Fully Populated 2020 node ................................................................ 34
Figure 35 - Node Deleted from Jurisdiction Tree .................................................. 34
Figure 36 - Abstractor Submenu .......................................................................... 35
Figure 37 - Line Listing Summary ....................................................................... 36
Figure 38 - Add New Case button ...................................................................... 36
Figure 39 - Add New Case Home Record ............................................................ 37
Figure 40 - Forms Drop-down on Left Navigation Pane ........................................ 38
Figure 41 - Quick Edit ......................................................................................... 40
Figure 42 - Edit a Case ...................................................................................... 40
Figure 43 - Line Listing Search Parameters ....................................................... 41
Figure 44 - Case Record, Home Record .............................................................. 42
Figure 45 - Print Drop-down .............................................................................. 43
Figure 46 - Print Home Screen form (Displays a portion of the report) ................... 44
Figure 47 - Print Core Data Elements (displaying a portion of report) .................. 45
Figure 48 - Home Record .................................................................................. 47
Figure 49 – Agency-Based Case Identifier .......................................................... 48
Figure 50 - Primary Abstractor Jurisdiction drop-down ....................................... 49
Figure 51 - Case Narrative drop-down .................................................................. 50
Figure 52 - Retrieve geographic parameters ....................................................... 51
Figure 53 – Birth/Fetal Death certificate Parent Section ....................................... 52
Figure 54 - Location of Residence, Location Parameters ...................................... 53
Figure 55 - Birth/Fetal Death Infant/Fetal Section Functions ................................ 54
Figure 56 - Birth/Fetal Death Infant/Fetal Section, Create New Record .............. 55
Figure 57 - Autopsy Report ................................................................................ 56
Figure 58 - Prenatal Care Record ......................................................................... 57
<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>59</td>
<td>ER Visits and Hospitalizations form</td>
<td>58</td>
</tr>
<tr>
<td>60</td>
<td>Prenatal Care Record</td>
<td>58</td>
</tr>
<tr>
<td>61</td>
<td>Reviewers Notes about this Hospitalizations, Delivery, or ER Visit, Notes Template</td>
<td>60</td>
</tr>
<tr>
<td>62</td>
<td>ER Visits and Hospitalizations Form Graphs</td>
<td>61</td>
</tr>
<tr>
<td>63</td>
<td>Other Medical Office Visits</td>
<td>62</td>
</tr>
<tr>
<td>64</td>
<td>Location of Medical Care Facility</td>
<td>63</td>
</tr>
<tr>
<td>65</td>
<td>Medical Transport Functions</td>
<td>64</td>
</tr>
<tr>
<td>66</td>
<td>Medical Transport, New Record</td>
<td>65</td>
</tr>
<tr>
<td>67</td>
<td>Social and Environmental Profile Form</td>
<td>66</td>
</tr>
<tr>
<td>68</td>
<td>Mental Health Profile Form</td>
<td>67</td>
</tr>
<tr>
<td>69</td>
<td>Informant Interview Form</td>
<td>68</td>
</tr>
<tr>
<td>70</td>
<td>Informant Interview, New Record</td>
<td>68</td>
</tr>
<tr>
<td>71</td>
<td>Case Narrative</td>
<td>69</td>
</tr>
<tr>
<td>72</td>
<td>Committee Decisions Form</td>
<td>70</td>
</tr>
<tr>
<td>73</td>
<td>Committee Decisions Form, continued</td>
<td>71</td>
</tr>
<tr>
<td>74</td>
<td>Export Data Choices</td>
<td>74</td>
</tr>
<tr>
<td>75</td>
<td>Export Request Queued</td>
<td>75</td>
</tr>
<tr>
<td>76</td>
<td>Export Ready for Download</td>
<td>75</td>
</tr>
<tr>
<td>77</td>
<td>Export Zip File</td>
<td>76</td>
</tr>
<tr>
<td>78</td>
<td>All Data Elements Listing</td>
<td>77</td>
</tr>
<tr>
<td>79</td>
<td>Core Elements with De-Identified option</td>
<td>80</td>
</tr>
<tr>
<td>80</td>
<td>Export Request History for Core Elements</td>
<td>81</td>
</tr>
<tr>
<td>81</td>
<td>Core Data Export Files</td>
<td>81</td>
</tr>
<tr>
<td>82</td>
<td>Relating Your Data</td>
<td>82</td>
</tr>
<tr>
<td>83</td>
<td>Committee Reviewer's submenu</td>
<td>84</td>
</tr>
<tr>
<td>84</td>
<td>Committee Review De-Identified Line List Summary</td>
<td>84</td>
</tr>
</tbody>
</table>
## REVISION HISTORY

<table>
<thead>
<tr>
<th>Software Version</th>
<th>Author</th>
<th>Revision Date</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1</td>
<td>Sunanda McGarvey</td>
<td>12/5/2019</td>
<td>Updated to match software release. Added options previously not documented. Rearranged document to improve flow and match submenus for user roles. Added, headers, footer, figures, index, revision history. Reformatted document, updated text to match function except where noted. This was updated from <a href="https://mmria-01-mmria.services-dev.cdc.gov/">https://mmria-01-mmria.services-dev.cdc.gov/</a> and <a href="http://test-mmria.services-dev.cdc.gov/Account/Login/?ReturnUrl=%2F">http://test-mmria.services-dev.cdc.gov/Account/Login/?ReturnUrl=%2F</a> based on what functions were option in each version of the software.</td>
</tr>
</tbody>
</table>
I. WHAT IS MMRIA?

Created by the Centers for Disease Control and Prevention (CDC) and the CDC Foundation, in partnership with maternal mortality review committees, the **Maternal Mortality Review Information Application (MMRIA)** or “Maria”) serves two purposes. First, it provides a repository for the medical and social information needed for maternal mortality review committee (MMRC) case review. Second, MMRIA provides standardized data that can be used for surveillance, monitoring, and research on maternal mortality. MMRIA provides a common language that helps MMRCs collaborate in case review and analysis.

MMRIA is a multi-user data entry system designed to flow like a case review. MMRIA’s abstraction forms and tools help MMRC members understand the story of a woman’s life and the events leading to her death. Devised to accommodate the scope of work and processes of MMRCs, the system supports abstraction and captures committee decisions. MMRIA provides access to semi-automated case narrative templates from which committee members can print easy-to-read case narrative details. Lastly, through the geocoding of addresses, MMRIA captures socio-spatial information to expand case discussions and analyses.

**System Requirements**

- MMRIA is intended for use with Google Chrome browser.
- CDC Secure Access Management System (SAMS) login is required to access SAMS. SAMS access is provided by your SAMS Activity Administrator (AA).
- A MMRIA login and role are required to access MMRIA within SAMS. Your Jurisdiction Administrator, who may also be your SAMS Activity Administrator, will create your MMRIA login and link it to your SAMS login.

**Additional Resources**

The following tools complement MMRIA use and are available on Review to Action.org:

- Reports from MMRCs
- Committee Facilitation Guide
- Model Purpose, Mission, Goals, and Vision for MMRCs
- Overview of State Legislative Support for MMRCs
- Model Case Identification Process
- Model Abstractor Job Description
- Tools for Case Abstraction
- Model Committee Meeting Agenda
- Model Confidentiality Statement
- Committee Decisions Form
II. GETTING STARTED: BASIC FUNCTIONS

The Getting Started section covers basic functions in MMRIA that are applicable to all users. These include:

- Logging on to MMRIA using a SAMS login
- Menu options available based on your Role in MMRIA
- Common functions found throughout the system

LOGGING IN

To access MMRIA you must first log in to SAMS.

1. Visit the SAMS URL at https://sams.cdc.gov. The main SAMS login page will be displayed.
   
   Please note that this URL begins with https, not just http.
   
   Note: When you use the URL above, you are directed to the SAMS logon page.

MMRIA Users

2. Select the first option in the External Partners section “SAMS Credentials.”
3. Log on using your SAMS username and password.

   If you forgot your SAMS password, use the "Forgot Your Password" link below the Login button.
   For additional SAMS help, contact 877-681-2901 or samshelp@cdc.gov

Non-CDC Users
The system will display the following government use warning which must be agreed to in order to proceed.

**WARNING**

- This warning banner provides privacy and security notices consistent with applicable federal laws, directives, and other federal guidance for accessing this Government system, which includes (1) this computer network, (2) all computers connected to this network, and (3) all devices and storage media attached to this network or to a computer on this network.
- This system is provided for Government-authorized use only.
- Unauthorized or improper use of this system is prohibited and may result in disciplinary action and/or civil and criminal penalties.
- Personal use of social media and networking sites on this system is limited as to not interfere with official work duties and is subject to monitoring.
- By using this system, you understand and consent to the following:
  - The Government may monitor, record, and audit your system usage, including usage of personal devices and email systems for official duties or to conduct HHS business. Therefore, you have no reasonable expectation of privacy regarding any communication or data transiting or stored on this system. At any time, and for any lawful Government purpose, the government may monitor, intercept, and search and seize any communication or data transiting or stored on this system.
  - Any communication or data transiting or stored on this system may be disclosed or used for any lawful Government purpose.

**WARNING**

---

4. The SAMS Partner Portal will be displayed. This is the primary SAMS landing page for all users. Here you can navigate to administrative functions or assigned activities. It includes helpful documentation, and an Administrative option if you are a SAM Activity Administrator (AA). AAs will have an additional selection item in the left navigation panel titled SAMS Admin.

5. SAMS Admin functions are described in APPENDIX I: SAMS (SECURE ACCESS MANAGEMENT SYSTEM) details.
New User

If you are a new user, you will need to contact your Jurisdiction Administrator to request a login. They will create your MMRIA login and ensure that your SAMS login is also created. If you do not know who your Jurisdiction Administrator is, contact mmriasupport@cdc.gov.

Once you have logged in, the list of roles assigned to you will appear on the home page. If you do not have a role assigned, contact your Jurisdiction Administrator to assign the appropriate role(s).

Returning User

Once you select the MMRIA option from SAMS your MMRIA menu screens will be displayed.
MMRIA Menus and Submenus

The menu is organized by submenus, and some submenus are included for all roles. These include the General Options, and the List of Roles assigned to your user.

The General Options submenu includes:

- Manage Account Profile
- View Aggregate Report
- Show Metadata Listing
- Print blank version (of report by template)

The General Options are described later in this section.

The remaining sections are available based on your role(s) in MMRIA. MMRIA roles include:

- **Jurisdiction Administrator**: has read/write access to users and jurisdiction. The Jurisdiction Administrator is responsible for creating, maintaining, and deleting user accounts for Abstractors and Committee Members in their jurisdiction. *Note: this is a separate role from the SAMS Activity Administrator, but one person can have both SAMS Activity Administrator and MMRIA Jurisdiction Administrator roles.*

- **Abstractor**: has read/write access to the case database for cases within their assigned jurisdiction. An Abstractor has access to PII.

- **Committee Member**: has read access to a de-identified case database for cases within their assigned jurisdiction. The de-identified case database contains no PII.

Your main menu screen lists your assigned roles in a grid at the bottom of the screen.

If you are a Jurisdiction Administrator, you will see the following menu options:

![Figure 4 - Jurisdiction Admin Menu](image-url)
If you are an Abstractor, you will see the following menu:

![Abstractor Menu](image1)

**Figure 5 - Abstractor Menu**

If you are a Committee member, then you will see the following menu:

![Committee Member Menu](image2)

**Figure 6 - Committee Member Menu**

MMRIA supports three user roles, and the appropriate role is assigned to a user by a Jurisdiction Administrator. Roles are described in the next section – “MMRIA Manage Users & Jurisdictions”.

Common Functions

Saving Your Data

There is a save button available on each form within a record that you may choose to use. However, MMRIA automatically saves all data that is entered. For example, if you enter text and then navigate to another screen, it will automatically save your text. The save button is available for those who choose to use it.

Deleting/Recovering Records

Records can be deleted from MMRIA in various parts of the system:

- **User records** can be deleted by users with the Jurisdiction_Admin role, using the “Manage Users and Jurisdictions” menu option.
  - This option displays a “User List”
  - Click the “Remove User” button
  - You will be prompted to verify the deletion.

- **User Roles** can be deleted by users with the Jurisdiction_Admin role, using the “Manage Users and Jurisdictions” menu option.
  - This option displays a “User List”
  - Click the Role you wish to remove
  - In the role details, select “Remove Role”
  - You will be prompted to verify the deletion.

- **Case records** can be deleted by users with the Abstractor role, using the “View Case Data” menu option.
  - This option displays a “Line Listing Summary” (Figure 7 - Line List Summary Showing Case Delete Button).
  - Double-click on the button to the right of the case to be deleted.
  - The record will be highlighted.
  - If you are sure you wish to delete the case, press “Delete” again.

The deleted case will be excluded from data exports and from aggregate standard reports created within MMRIA. If a case needs to be recovered after being deleted, contact MMRIAsupport@cdc.gov.
Field Types

MMRIA supports multiple types of fields and structures:

- Single select drop-down lists
- Multi-select drop-down lists
- Checkboxes
- Editable lists – allow you to enter an option from a drop-down menu, or type another value if the value is not listed
- Free text fields
- Date and Date+Time Fields
  - Note that dates and times are de-identified when viewed by Committee Reviewers, to protect anonymity. Thus, it is important to enter not only dates and times but also gestational age or days postpartum for all events, which are visible to Committee Reviewers.
- Reviewer’s Notes boxes – these are found at the bottom of each form. They can be expanded by clicking and dragging the bottom right corner of the box. Some of these are populated with text template that can be completed by the user with information specific to the case.
- Grids – used to capture or display related pieces of information in a table format as shown in Figure 8 - Role Assignment listing, below:
- Use the “add item” button to add a new record to the grid. Be sure to use the vertical scroll to view the record you added!

**Left Navigation Pane**

The Left Navigation Pane holds options to navigate to common parts of the application. The options are context aware and change based on where you are in the application. In some parts of the application, such as “Manage Users and Jurisdictions”, there is no left navigation pane.

The left navigation pane may hold options for:

- Home – to return to your main menu
- Summary – to view the summary form
- Quick Edit – to navigate to a specific case record
- Select Case Form – to navigate directly to a case form
General Submenu

The General Options submenu (Figure 10 - General Submenu) includes:

- Manage Account Profile
- View Aggregate Report
- View CSV Data Dictionary
- Print blank version (of report by template)
- View Metadata Listing

![Figure 10 - General Submenu](image)

Manage Account Profile

The Manage Account Profile option is used to view the roles assigned to your user. Selecting this option from the General submenu displays your roles in a grid:

![Figure 11 - Profile UI](image)

- Selecting the “home” hyperlink will return you to the home page.
View Aggregate Report

To view a snapshot of information on the cases you have entered, select “View Aggregate Report”.

- This will launch a new window (Figure 12)
- Use the drop-downs to select the “Year of Death” and the “Date of Case Review” Month and Year.
  - “Month” supports a dropdown of 01-12
  - “Year” supports a dropdown of 1999 – the current year
- Click the “Generate Report” button to display the data

![Aggregate Report Selection](Image)

*Figure 12 - Aggregate Report Selection*
• The Aggregate report lists all cases meeting the filter criteria selected and provides a summary of data, as well as a pie chart showing the pregnancy-related and pregnancy-associated but not related cases.
• Figure 13 - Aggregate Report displays only a portion of the data that is included in the report.

![Aggregate Report](image)

**Figure 13 - Aggregate Report**

• Select the Browser's back function to return to the submenu.
View CSV Data Dictionary

The CSV Data Dictionary describes the properties of all fields contained within the MMRIA application database. This report lists field characteristics such as field types and field values. The data dictionary, including the column names of your exported data, can be found in the exported data file titled “data_dictionary”. This file was previously named “field_mapping”.

![Figure 14 - CSV Data Dictionary](image)
**Print Blank Version**

The Print Blank Version option allows you to select a form to print.

- The drop-down displays all the forms you can select for print.
- Select the form to print, or "All" to print a blank copy of all the forms.
- Select the “Print Blank Version”

![Print Blank Version](image)

**Figure 15 - Print Blank Version**

- A Blank version of the selected form will be displayed in a new window.
- To print this report, right-click.
- Select the print option.
- Close the browser window when finished with printing.
- To return to the previous window, select the tab from the browser.
III. MANAGE USERS AND JURISDICTIONS

The Jurisdiction Admin role assigns user names and passwords to each MMRIA user within a jurisdiction. Through the MMRIA interface, the Jurisdiction Admin can assign any of three user roles to a user: Abstractor, Committee Reviewer, or Committee Member. Users can belong to multiple roles. For example, a user can be assigned to both the role of Jurisdiction Administrator, Abstractor and Committee Member.

Guidelines for assigning roles to users are found later in this section.

**Note:** The initial Jurisdiction Admin role is created during the setup of the MMRIA database. Additional users can be assigned the Jurisdiction Admin role using MMRIA’s Manage Users and Jurisdictions menu option. It is recommended that only trusted people within your jurisdiction are assigned the Jurisdiction Admin role.

If you are a Jurisdiction Admin:

- From the Jurisdiction Admin submenu on the Home Screen, click on the link for “Manage Users and Jurisdictions.”

Within the “Manage Users and Jurisdictions” page (Figure 18), you will see a list of all users in your system, and will have the option to:

- Add new users
- Add or Edit roles for users
- Remove users
- Edit users

At the bottom of the screen, you will see a section that supports defining and updating a Jurisdiction Tree.

- The jurisdiction tree is used to define one or more hierarchies within your jurisdiction, that can be used to assign a role to a specific to a level in the jurisdiction tree, or to assign a specific set of patient records to a user for review.
Details about the jurisdiction tree can be found under the title “Managing the Jurisdiction Tree”

![List Users](image)

*Figure 17 - List Users*
Add New Users

To add a new user, scroll to the bottom right hand side of the page where the Enter New User prompt is displayed:

**USERNAMES MUST MATCH THE SAMS USERNAME CREATED FOR THE USER, AND SHOULD BE THE USER'S EMAIL ADDRESS.**

Enter a username (must be in lower-case). The username must match the SAMS username for the user.

Then click the “Add New User” button

- The username must be unique. If it is not you will receive a warning as shown in Figure 20, below.
- If the username meets the system requirements, the new user will be added to display list.
- You must then assign one or more roles to the user. User role assignment is described in the following section.

![Figure 18 - Create New Username Prompt](Image)

**Figure 18 - Create New Username Prompt**

<table>
<thead>
<tr>
<th>Enter new user name:</th>
<th>add new user</th>
</tr>
</thead>
</table>

**Warning!** invalid user name. user name should be unique and at least 5 characters long.

![Figure 19 - Username Error Message](Image)

**Figure 19 - Username Error Message**
Assign and Manage User's roles

As indicated above, the MMRIA roles include:

- **Jurisdiction Administrator**: has read/write access to users and jurisdiction. The Jurisdiction Administrator is responsible for creating, maintaining, and deleting user accounts for Abstractors and Committee Members in their jurisdiction. *Note: this is a separate role from the SAMS Activity Administrator, but one person can have both SAMS Activity Administrator and MMRIA Jurisdiction Administrator roles.*

- **Abstractor**: has read/write access to the case database for cases within their assigned jurisdiction. An Abstractor has access to PII.

- **Committee Member**: has read access to a de-identified case database for cases within their assigned jurisdiction. The de-identified case database contains no PII.

If you do not assign any roles to a new user, then when they login they will receive the message shown in Figure 21, below:

![Figure 20 - No Role Assigned Error Message](image)
No role assigned message

- To add a new role to a user, navigate to the user’s record and choose the “Add New Role” button.
- On the right-hand side of the row use the role drop-down to assign a role to the user.
- Then use the jurisdiction drop-down to select the jurisdiction where the role applies. The drop-down includes each jurisdiction in the hierarchy you defined and allows you to choose the jurisdiction level for the user. See Figure 32 – Jurisdiction tree example.
- The “effective start date” will default to the current date but can be updated to reflect the date for the role to become active.
- “Effective end date” is left blank by default but can be edited to deactivate the role if needed.
- The “Is Active” flag defaults to True, indicating that the role is active. This flag must be set to Active in order for the role to be recognized.

![Role Drop-down List](image1)

![Jurisdiction Drop-down for Create New Role](image2)
Once you have added a user role, click the “save jurisdiction tree” button. Changes to user roles will take effect immediately.

Figure 23 - User List Updated with New User

NOTE: To assign a user more than one role, repeat these Add New Role steps
Update User Role

User roles can be updated

- Both the “Effective_end_date” and the “is_Active” can be updated. However, the system uses the “is_Active” flag to determine if a Role is currently effective.
- To update a user’s existing role, highlight the role row in the user’s record.
- Select the “Update Role” button
  - In the example below, the user’s “is_Active” flag is changed from True to False

![Figure 24 - Update Role “is_active” flag](image)

**Update role “is_active” flag**

- The change in the role is now reflected in the user’s role record:

![Figure 25 - Updated Role Record](image)
Remove User Role

User roles can be deleted

- To delete a user role, highlight the role row in the user’s record.
- Select the “Remove Role” button

The following pop-up will be displayed to confirm the deletion, and you will have to type in the role you wish to remove:

- After entering the role to confirm removal, select the OK button.
- The role is now removed from the user’s role list, as shown in Figure 34 below.
Remove User

Users can be removed from MMRIA

- To delete a user from MMRIA, select the *Remove User* button under the username to be removed.
- The following pop-up will be displayed to confirm the deletion, and you will have to type in the user name to remove from MMRIA:

![Confirm Delete User Pop-up](image)

- After entering the user to confirm removal, select the *OK* button.
- The user is now removed from MMRIA.
Returning to the Main Menu

1. To return to the main menu, click the name of application at the top of the screen:

```
Figure 30 - Return to Home
```

Managing the Jurisdiction Tree

The jurisdiction tree allows hierarchies to be created and applied for multiple purposes within MMRIA. It gives jurisdictions the flexibility to create different hierarchies and apply them as needed. For example, this can be used to model a geographical hierarchy to assign work, or to model a timeline for assignment of work. The Figure 32 below shows both a geographical hierarch and the division of a year into quarters:

```
Figure 31 - Jurisdiction Tree example
```

2. Jurisdiction hierarchies can be applied at multiple points in MMRIA:
   - Adding a role to user
   - Updating user role
   - Assigning a review to a role
3. To add a new hierarchy
   - Navigate to the new hierarchy's parent node
   - Enter the node name

   ![Figure 32 - Create New Jurisdiction Tree Node](image)

   New node entered under top level of hierarchy as 2020, to parallel the 2019 entry
   - Click the "add" button
   - The Figure 34 below shows the new node added to the hierarchy

   ![Figure 33 - New Node Displayed](image)
4. Follow the same steps to add children to the new nodes, this time choosing the new node as the parent:

![Figure 34 - Fully Populated 2020 node](image)

5. To remove a node from the hierarchy
   - Navigate to the node
   - Click the “delete” button
   - In the Figure 35 below, the incorrect Q5 value is removed:

![Figure 35 - Node Deleted from Jurisdiction Tree](image)
IV. ABSTRACTING CASES INTO MMRIA

MMRIA is designed to capture your abstraction notes and help you write a comprehensive case narrative. You may wish to abstract on paper and then enter the data into MMRIA, but it is ideal to enter case data into MMRIA before you present a case to your committee. Why?

1. The templates contained in the Reviewer’s Notes sections of each form and the Case Narrative form itself will aid you in writing and printing a case narrative that can be easily printed for presentation to your committee.

2. Throughout the different forms in MMRIA, you will see fields marked with an asterisk. Fields with asterisks denote core data elements. These fields are not required but were identified by review committees and subject matter experts as important information for both committees and analysts to have accessible. All of the core elements are brought into a Core Elements Report that you may print for presentation to your committee. If you have this data available, make sure you complete the field. If it is not available, you may wish to note that in the Reviewer’s Notes text box at the bottom of each form.

3. If your committee members have MMRIA access, they can view de-identified case information prior to or during committee meetings.

Note: Be sure to exclude any personal identifiers from the Reviewer’s Notes sections of each form. Any identified information entered into Reviewer’s Notes sections of forms will NOT be de-identified for the Committee Reviewer role.

Abstractor Submenu

Users assigned the Abstractor role will see the following submenu. The menu has two options: (1) View case data (2) Export Data

- View case data
- Export data

Figure 36 - Abstractor Submenu
**View Case Data**

This submenu option is where you add new cases, edit cases, or delete cases.

1. **Selecting View Case Data displays:**
   - “Summary List” of cases
   - “Add a New Case” option
   - “Delete a case”

2. **Navigation panel on the left of the screen allows you to return to the home page.**

![Line Listing Summary](image)

**Figure 37 - Line Listing Summary**

**ADD A NEW CASE**

1. To add a new case, click the “Add New Case” button located under the “Line Listing Summary” heading.

![Add New Case button](image)

**Figure 38 - Add New Case button**
2. After clicking on the “Add New Case” button, you will be taken to the Home Record screen shown below. This will be described in further detail in the “Case Forms” below:
3. You can start data entry on any form. To proceed from one form to the next, select the "Case Forms" drop-down menu that is available from the left navigation pane, shown in the Figure 41 below:

![Figure 40 - Forms Drop-down on Left Navigation Pane](Image)
4. The list of available forms is shown below, in Table 1:

<table>
<thead>
<tr>
<th></th>
<th>Other Medical Office Visits*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home Record</td>
<td></td>
</tr>
<tr>
<td>Death Certificate</td>
<td>Medical Transport*</td>
</tr>
<tr>
<td>Birth/Fetal Death Certificate – Parent Section</td>
<td>Social and Environmental Profile</td>
</tr>
<tr>
<td>Birth/Fetal Death Certificate – Infant/Fetal Section*</td>
<td>Mental Health Profile</td>
</tr>
<tr>
<td>Autopsy Report</td>
<td>Informant Interviews*</td>
</tr>
<tr>
<td>Prenatal Care Record</td>
<td>Case Narrative</td>
</tr>
<tr>
<td>ER Visits &amp; Hospitalizations*</td>
<td>Committee Review</td>
</tr>
</tbody>
</table>

*Indicates that for a case, you can enter multiple forms
Note: You may not have information to complete each of these forms for every case. You will have fields within forms that you cannot complete. It is okay to leave fields blank. It is recommended that you note in the Reviewer’s Notes box at the bottom of each form if key information was not available. This will help you write your Case Narrative and help you to explain incomplete information to your committee.

5. The left navigation pane includes a Quick Edit function, that can be used to locate a specific form or case to update:

![Quick Edit](image)

**Figure 41 - Quick Edit**

**EDIT A CASE**

1. The summary list screen displays existing cases on the Line Listing Summary Page as shown in Figure 43 - Edit a Case below.

2. To view or edit a case, click directly on it to open the case’s Home Record page.

![Edit a Case](image)

**Figure 42 - Edit a Case**
3. Use the search options toward the top of the page to search for a case using a search string, to define a sort order, indicate the number of records to display on the page, or to change your sort order from the default of Descending, to Ascending.

![Line Listing Search Parameters](image)

*Figure 43 - Line Listing Search Parameters*

**Tip:** At any point, you can return to the Line Listing Summary by clicking “Summary” on the tool bar.
Case Forms

The following section highlights the fourteen case forms within MMRIA. Data may be entered in any order. You will be directed to the Home Record after selecting “Add New Case” or selecting a previously entered case for review or edit.

Navigation Options

On this set of screens, the Left Navigation Pane includes the options:

- Home – return to home screen
- Summary – returns you to summary page
- Case Forms – displays a drop-down list of forms

The right side of the screen includes a Print drop-down
- Print Home Record – prints the home record for the selected case
- Print Core Elements Only – Prints only the pre-defined core elements from each form
- Print All – enables you to print a completed case or specific completed forms

![Image of Case Record, Home Record]

Figure 44 - Case Record, Home Record
Printing Forms

You have the option to print a copy of all 14 forms, a single record, or an entire case. The print dialog opens in a separate browser window.

You may wish to print only the Case Narrative form for a given case. Using the case narrative templates, your Case Narrative form should contain all of the information your committee needs to review a case. You may also want to print the Core Elements report, which contains additional data that your review committee may need.

- For select cases, you may wish to print graphs from the Prenatal Care and ER Visits/Hospitalizations forms or other forms as appropriate.
- To print any forms besides the Case Narrative and Core Elements for committee review, be aware that within the abstractor role, you will be printing fully identified forms. To print these other forms, you should use a committee reviewer role to ensure information is de-identified.

STEPS FOR PRINTING A CASE

1. From the submenu, navigate to the Line Listing Summary screen.
2. Locate and click on the case report of interest.
3. Its Home Record will display by default.
4. On the right-hand side of the screen choose the drop-down for “Select to print a form”. To see a menu listing all forms.

Figure 45 - Print Drop-down
5. To print the current form, select the option below “Current form”.
   - To change the current form, use the “Select Case Form” drop-down on the left navigation pane.
   - Choose the form you want to print.

6. To print this report, right-click.
   - Select the print option.
   - Close the browser window when finished with printing.

7. To return to the previous window, select the tab from the browser.

![Figure 46 - Print Home Screen form (Displays a portion of the report)]
8. To print only the core data elements, from the print drop-down, select “Print Core Elements Only”. This is under the “Other” option. It opens in another window.
   a. This report prints the core elements from all the forms.
   b. Only a portion of the report is displayed in the Figure 48 below:

![Figure 47 - Print Core Data Elements (displaying a portion of report)](image-url)
9. To print the current form, select the option below “Current form”.
   - To change the current form, use the “Select Case Form” drop-down on the left navigation pane.
   - Choose the form you want to print.

10. To print this report, right-click
   - Select the print option.
   - Close the browser window when finished with printing.

11. To return to the previous window, select the tab from the browser.

12. To print all forms for the case report, select the “Print All” option.

Note: if you would like a set of blank forms with all drop-down values displayed to help you take abstraction notes on paper, contact mmriasupport@cdc.gov
MMRIA Forms
The following sections review each of the 14 forms in MMRIA.

Home Record Form
The Home Record form is divided into three components: Record ID, Date of Death, and Case Progress.

- The Home Record form includes sections in additional to what is shown in the figures below.

RECORD ID
The Record ID is automatically generated once you complete the:

- Last Name,
- Year of Death and
- State of Death

fields and click in the Record ID field (Figure 49). The Record ID consists of your 2-letter state acronym + the year of death + a random 4-digit number.

Figure 48 - Home Record
AGENCY-BASED CASE IDENTIFIER

The Agency-Based Case Identifier field, (Figure 50), is for internal reference and is based on your jurisdiction or state system. If your jurisdiction does not use an internal reference number, you can leave this field blank.

Figure 49 – Agency-Based Case Identifier
- The “Primary Abstractor” field has an associated Jurisdiction ID, with a drop-down. Selecting a value from this drop-down associates the Primary Abstractor to a node in the Jurisdiction Hierarchy. This means the case is associated with the jurisdictional node, and any user assigned to that node or above in the jurisdiction hierarchy can access the case record.

![Image of Primary Abstractor Jurisdiction drop-down]

*Figure 50 - Primary Abstractor Jurisdiction drop-down*

- Refer to page 49 for more information about the Primary Abstractor Jurisdiction drop-down.

- The home record form also includes a “Case Progress Report” section. This section includes each form that is a part of the case with an associated drop-down to specify the status. The abstractor can use this as a way to track progress.

- The Statuses options include:
  - Not Started
  - In Progress
  - Completed
  - Not Available
  - Not Applicable
- These values are only set by the user, the software does not update these entries.
Death Certificate Form

To navigate to the Death Certificate form, click on the "Case Forms" option on the Left Navigation Pane, and select "Death Certificate". The Death Certificate form includes sections in addition to what is shown in the figures below.

Place of Last Residence and Geocoding

This section of the Death Certificate is specific to the address of the deceased, not the location of death, i.e. name of the medical facility where the woman died.

The full address, along with other identifying information will not be visible to the Committee Reviewer role. MMRIA uses geocoding to support social and health system context for case discussion and analysis and to enable distance calculations. A complete address is required to successfully geocode an address. MMRIA’s “Get Coordinates” button is linked to Texas A&M’s Geoservices geocoding system.

1) Enter the full address.
2) Click on “Get Coordinates”.
3) The Matching census tract will be populated

![Place of Last Residence and Geocoding](image)

Figure 52 - Retrieve geographic parameters
Birth/Fetal Death Certificate – Parent Section Form

To navigate to the Birth/Fetal Death Certificate – Parent Section form, click on the “Case Forms” option on the Left Navigation Pane, and select “Birth/Fetal Death Certificate - Parent Section”.

- This form collects information only on the parents, not the infant or fetus. Infant and fetus information is collected on the Birth/Fetal Death Certificate – Infant/Fetal Section form.
- Race and ethnicity of both parents (Figure 54) are captured in the data system just as they are recorded on the source document.

Note: Race Recode. Click on the “Recode” button to code race in accordance with the standards set by the Office of Management and Budget (OMB) Race and Ethnic Standards for Federal Statistics and Administrative Reporting¹. This is used for analysis and aggregate reporting.

In the **Location of Residence** Section of the form:

1) Click on "Get Coordinates" to complete the census fields using the address information.
   - The complete address is required to populate the census fields;
2) Click on “Calculated Distance” to calculate distance in miles from Residence to Place of Delivery (Figure 55).

![Figure 54 - Location of Residence, Location Parameters](image-url)
Birth/Fetal Death Certificate – Infant/Fetal Section Form

To navigate to the Birth/Fetal Death Certificate – Infant/Fetal Section form, click on the "Case Forms" option on the Left Navigation Pane, and select “Birth/Fetal - Infant/Fetal Section” (Figure 56).

1) To add a new record, click on “View Record 1” (Figure 56).
2) To add information for more than one birth or fetal death, click on "add new Birth/Fetal Death Certificate- Infant/Fetal Section form." (Figure 56).

Figure 55 - Birth/Fetal Death Infant/Fetal Section Functions
After you click on “View Record 1,” the form below will appear on the screen (Figure 57).

The Birth/Fetal Death Certificate – Infant/Fetal form includes sections in addition to what is shown in the figures below.

If another birth or fetal death should be added, click on “Case Forms,” navigate to “Birth/Fetal Death Certificate- Infant/Fetal Section,” and repeat steps.

![Birth/Fetal Death Certificate - Infant/Fetal Section](image)

*Figure 56 - Birth/Fetal Death Infant/Fetal Section, Create New Record*
Autopsy Report

To navigate to the Autopsy form, click on the “Case Forms” option on the Left Navigation Pane, and select “Autopsy Report”. Figure 58 illustrates the sections of the Autopsy Report form.

- You may wish to copy and paste sections of the actual Autopsy Report into the Reviewer’s Notes section at the bottom of the form.
- Remember to always exclude any identifying information about people or facilities from Reviewer’s Notes text areas.
- The Autopsy Form includes sections in additional to what is shown in the figures below.

Figure 57 - Autopsy Report
Prenatal Care Record Form

To navigate to the Prenatal Care Record form, click on the “Case Forms” option on the Left Navigation Pane, and select “Prenatal Care Record”. Figure 59 displays the sections of the Prenatal Care Record form.

- The Prenatal Care Record form includes sections in addition to what is shown in the figures below.
PRENATAL CARE RECORD GRAPHS

Below the Routine Monitoring Grid, you will see three graphs: Blood Pressure, Weight Gain, and Hematocrit.

- If you enter data for these values in the Routine Monitoring Grid, you can view it in these graphs.
  To generate the graphs: enter values in the Routine Monitoring Grid above the graphs.
- Navigate to any other form in MMRIA, and then navigate back to the Prenatal Care Record. Values will be displayed in the graphs.

NOTE - If any line within a grid is blank, a default x-axis value of 1/1/1970 and y-axis values of 0 will appear in the graphs. You can correct the graph by deleting the blank line in the grid, navigating to another form, and navigating back to the Prenatal Care Record.

ER Visits and Hospitalizations Form

To navigate to the ER Visits and Hospitalizations form, click on the “Case Forms” option on the Left Navigation Pane, and select “ER Visits and Hospitalizations”.

1) To add a new record, click on “View Record 1” (Figure 60).
2) To add information for more than one birth or fetal death, click on more than one ER visit or hospitalization, click on “add new ER Visits and Hospitalizations form” (Figure 60).

![Figure 59 - ER Visits and Hospitalizations form](image)

- After you click on “View Record 1,” the ER Visits and Hospitalizations form will appear on the screen (Figure 61).
- If there were multiple ER visits or hospitalizations, click on “Case Forms,” navigate to “ER Visits and Hospitalizations,” and repeat steps.
- The Prenatal Care Record form includes sections in additional to what is shown in the figures below.
Figure 6 – Prenatal Care Record
The “Reviewers Notes about this Hospitalizations, Delivery, or ER Visit”, includes a notes template that can be used to capture key points.

(Fill out separate summary for each hospital visit and label each different facility by number or letter to differentiate facilities.)

She presented at ___(weeks gestation) to the ______________(ED or L&D triage or other) in a ____________(hospital level of OB care or trauma /trauma level) via __________(method of transportation) at _________(time). Her chief complaint was ____________________. Her weight on admission was ___________ and her presenting vital signs were ___________________. She was screened for _____________________. (describe type of screening i.e. Embolism, hemorrhage, ectopic, influenza, domestic violence, etc.)

Physical examination on admission found ___________________. Labs performed included ___________________-with____________________ abnormal findings noted. Diagnostic tests performed included ____________________ with the following abnormal findings noted _____________________. Her diagnosis was _____________________ and she was admitted to _____________(describe unit) OR transferred to ______________ OR discharged to _______________.

(If admitted provide brief chronological synopsis of events that occurred during the hospital stay including condition and vital signs when discharged.)

If admission to L&D complete the following template:

She labored for _____________ hours and delivered via _____________(method-if CS describe reason) by a(n) _____________(provider type) under _____________(anesthesia/local). Medications administered during labor and delivery or postpartum included _________________. She received _____________ units of blood products (delete if not applicable). Infant weighed ______________ with Apgars of _______________.

Complications during labor, delivery or postpartum (prior to discharge) include _______________________.

She was discharged home on day ___________. Vitals signs at discharge included _______________. She was instructed to _____________________(special education or follow-up appointments).
ER VISITS AND HOSPITALIZATIONS FORM GRAPHS

Below the Vital Signs Grid, you will see four graphs: Temperature, Pulse, Respiration, and Blood Pressure. If you enter data for these values in the Vital Signs Grid, you can view it in these graphs.

To generate the graphs:

- Enter values in the Vital Signs Grid above the graphs.
- Navigate to any other form in MMRIA, and then navigate back to the ER Visits and Hospitalizations form. Values will be displayed in the graphs.

Tip: Note: If any line within a grid is blank, a default x-axis value of 1/1/1970 00:00:00 and y-axis values of 0 will appear in the graphs. You can correct the graph by deleting the blank line in the grid, navigating to another form, and navigating back to the ER Visits and Hospitalizations form.

Other Medical Office Visits Form

To navigate to the Other Medical Office Visits form, click on the “Case Forms” option on the Left Navigation Pane, and select “Other Medical Office Visits” (Figure 63).

1. To add a new record, click on “View Record 1” (Figure 60).
2. To add information for more than one Other Medical Office Visit, click on “Add New Other Medical Office Visits form” (Figure 63).

Figure 62 - ER Visits and Hospitalizations Form Graphs
After you click on “View Record 1,” the form below will appear on the screen (Figure 64). If there were multiple Other Medical Office Visits, click on “Case Forms,” navigate to “Other Medical Office Visits,” and repeat steps.

![Figure 63 - Other Medical Office Visits]
Location of Medical Care Facility

Remember that within the Reviewer Committee role, complete addresses will be de-identified – only the state will appear.

- Enter the full address.
- Click on “Get Coordinates.”

The “Get Coordinates” button (Figure 65) helps with geocoding for mapping. This is a two-step process involving collecting FIPS block level information.

![Figure 64 - Location of Medical Care Facility](image)
Medical Transport Form

To navigate to the Medical Transport form, click on the “Case Forms” option on the Left Navigation Pane, and select “Medical Transport” (Figure 66).

1. To add a new record, click on “View Record 1” (Figure 66).
2. To add information for more than one Medical Transport, click on “Add New Medical Transport form” (Figure 66).

- After you click “View Record 1,” the form below will appear on the screen (Figure 67)
- If there were multiple Medical Transports, click on “Case Forms,” navigate to “Medical Transport,” and repeat steps above.
Figure 66 - Medical Transport, New Record
Social and Environmental Profile Form

The Social and Environmental Profile should be completed for each case that you abstract and review. To navigate to the Social and Environment Profile form, click on the “Case Forms” option on the Left Navigation Pane, and select the “Social and Environment Profile” form (Figure 68).

![Social and Environmental Profile Form](image)

*Figure 67 - Social and Environmental Profile Form*
Mental Health Profile Form

To navigate to the Mental Health Profile form, click on the “Case Forms” option on the Left Navigation Pane, and select “Mental Health Profile” (Figure 69).

Figure 68 - Mental Health Profile Form
Informant Interviews Form

To navigate to the Informant Interviews form, click on the “Case Forms” option on the Left Navigation Pane, and select “Informant Interviews”.

1. To add a new record, click on “Record 1” (Figure 70).
2. To add information for more than one Informant Interview, click on “Add New Informant Interview form” (Figure 70).

- After you click on “View Record 1,” the form below will appear on the screen (Figure 71).
- If there were multiple Informant Interviews, click on “Case Forms,” navigate to “Informant Interviews,” and repeat steps above.

Figure 69 - Informant Interview Form

Figure 70 - Informant Interview, New Record
Case Narrative Form

To navigate to the Case Narrative form, click on “Case Forms” and select “Case Narrative.”

HOW TO USE THE CASE NARRATIVE FORM

Within the Case Narrative form, you will see the Reviewer’s Notes from the various forms carried over into one place. At the very top is a text box labeled Case Narrative – this is where you can write your case narrative to print for your committee. You may use the template provided and edit it as needed.

- You can copy and paste from the Reviewer’s Notes boxes into the Case Narrative box at the very top to write a comprehensive Case Narrative.
- To copy and paste from the Reviewer’s Notes boxes, highlight the text you wish to copy, right-click, and select Copy. Then place your cursor in the Case Narrative box at the very bottom of the form, right-click, and select Paste.
- You can also copy and paste text from Word, Notepad, or other documents outside of MMRIA. Text may be copied into MMRIA; however, formatting will not be maintained (e.g. bold, italics, and underlines). Pasting images or other file types is not currently supported in MMRIA.
- When you have completed your case narrative, you can preview or print it by going to Print Version and clicking “Case Narrative.” You will see the Case Narrative displayed there (Figure 72).

![Case Narrative Form](image)

**Ortality, Shirley**  
Record ID: GA-2019-0440

Case Narrative:

She was a female, place of birth, race/ethnicity, marriage status, level education, occupation. She was a gravida___ para___ who died of cause of death______ days/months before, during or after delivery. Medical history was significant for____ (Pre-pregnancy risk factors or pre-existing medical conditions). Pre-pregnancy BMI was____ Life course issues significant for____ (psychosocial factors).

Entry into prenatal care was at_____ weeks with # visits at a__ (describe location) with a__ (provider type). Prenatal history was significant for____ (include identified obstetric risk factors). Referrals during prenatal period were to________ at______ weeks gestation.

Health events prior to delivery included_______. She presented to clinic/hospital/other_______ at______ weeks gestation. Delivery was by a (provider titles)___ method was______, with______, anesthesia. Obstetric complications included______. Fetus/infant was______ weeks gestation and weighed______ pounds/ounces. Apgar scores were______ and complications were______. Postpartum period before discharge significant for______. Mother and infant were not discharged (if applicable) to______ At______ weeks postpartum she presented to (describe location)______. Postpartum period (after discharge) significant for______.

(Summarize terminal event). Autopsy was done by a_____ or was not done. Significant findings included______.

(Describe if any bereavement services were offered.)

**Figure 71 - Case Narrative**
Committee Decisions Form

To navigate to the Committee Decisions Form, click on “Case Forms” and select “Committee Decisions.”

HOW TO USE THE COMMITTEE DECISIONS FORM

The Committee Decisions Form is perhaps the most important form within MMRIA, because it captures the findings of your committee and helps your committee prioritize action. It is crucial to assign a person to take notes on the “paper” version of the Committee Decisions Form (Appendix: Committee Decisions Form) BEFORE each case goes for review. This person may or may not be the same person who abstracted the case. You can also give copies of the form to each committee member for each case and collect the forms at the end of each meeting in order to capture all possible input on a case. Once the meeting has finished and a case is closed, an abstractor or other assigned data entry person should enter the findings into the system as soon as possible.

Though the formatting differs, the content of the “paper” version of the form matches the content of the Committee Decisions Form within the system (Figure 73).

![Committee Decisions Form](image-url)

Figure 72 - Committee Decisions Form
Figure 7.3 - Committee Decisions Form, continued
V. DATA ANALYSIS

Data Structure

The MMRIA data structure is a hierarchical database with two levels in the hierarchy. The first level is comprised of forms for which you can have only one per case (Single Forms) and forms for which you can have more than one per case (Multiple Forms). The second level is composed of grids that exist within the Single and Multiple Forms.

Forms and Grids

<table>
<thead>
<tr>
<th>SINGLE FORMS</th>
<th>MULTIPLE FORMS</th>
<th>GRIDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home Record</td>
<td>Birth/Fetal Death</td>
<td>Grids exist within single and multiple forms. See Field Types for more details.</td>
</tr>
<tr>
<td>Death Certificate</td>
<td>Death Certificate - Parent Section</td>
<td></td>
</tr>
<tr>
<td>Birth/Fetal Death</td>
<td>ER Visits and Hospitalizations</td>
<td></td>
</tr>
<tr>
<td>Certificate</td>
<td>Medical Transport</td>
<td></td>
</tr>
<tr>
<td>Infant/Fetal Section</td>
<td>Informant Interviews</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other Medical Office Visits</td>
<td></td>
</tr>
<tr>
<td>Autopsy Report</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prenatal Care Records</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mental Health Profile</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social and Environmental Profile</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Committee Decisions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Case Narrative</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The data is stored by MMRIA in JSON (JavaScript Object Notation) format. While it is possible to import JSON-formatted data directly into some data analysis tools, MMRIA also has a data export function that provides CSV files for analysis. These data files are structured like a relational database.
Data Export - Overview

Data tables are exported from MMRIA as CSV files and the Export interface allows you to filter on a number of parameters. Two key parameters are to export:

- **All Data**
- **Core Data**

The Core Data export generates four files, while the All Data export generates one file per table in the system. The core data/all data filter, as well as the remaining filters are described below.

Export Data

From the Abstractor submenu, select “Export Data”.

- The Export Data form will be displayed (Figure 75 - Export Data Choices).
- You will be prompted to answer five questions:
  1) Enter a jurisdiction name to prepend to each file, with a default value displayed below the prompt.
  2) Do you want to export All Data or only Core Data?
     a. The All Data option is described below, and the Core Data option is described in the section titled “Core Elements Report”.
  3) Would you like to password protect the file?
  4) What fields do you want to deidentify? With choices on None, Standard, or Custom.
  5) Please select which cases you want to include in the export? With choices of All or Custom.

- The cases retrieved from the filters will be displayed in the Search Results.
  o Choosing the checkbox beside a case will include it under the “Cases to be Included in the Export”.
- Your data export choices are displayed under “Summary of your Exported Data Choices”
  o If the options are correct select the button, “Confirm and Start Export”.
  o If the options are not correct, then modify your selections.
    ▪ Modifying the selections should update the summary display.
In the following figure, the user chose the All Data option for filter #2. The All Data report output is described in the section "All Data Elements Report".

Figure 74 - Export Data Choices
• Once you select "Confirm and Start Export", a row will be added to the “Export Request History” section of the form for your requested download (Figure 76 - Export Request Queued).
  o The initial status will be “Creating Export”.

<table>
<thead>
<tr>
<th>date_created</th>
<th>created_by</th>
<th>date_last_updated</th>
<th>last_updated_by</th>
<th>file_name</th>
<th>export_type</th>
<th>status</th>
<th>action</th>
</tr>
</thead>
</table>

Figure 75 - Export Request Queued

• When the queued export is ready for download, the status will change to “Download”. Two buttons with appear:
  o Delete the request by selecting the “Delete” button.
    ▪ We recommend that you delete previous exports from your Export Request History to improve the speed of future exports.
    ▪ Save copies of any previous data exports to a secure location, before use the “Delete” button to remove them from your Export Request History.
  o Download the file by selecting the “Download” button.
    ▪ This process can take several minutes and may be slower or faster depending on the number of cases you have in MMRIA.
    ▪ The core export is generally faster than the export of all data.

<table>
<thead>
<tr>
<th>date_created</th>
<th>created_by</th>
<th>date_last_updated</th>
<th>last_updated_by</th>
<th>file_name</th>
<th>export_type</th>
<th>status</th>
<th>action</th>
</tr>
</thead>
</table>

Figure 76 – Export Ready for Download
• The download will generate a zip file (Figure 78 - Export Zip File)
  o The name of the zip file is formatted as an ISO Date and Time String: YYYY-MM-DD T hh:mm:ss Z.
    ▪ It may be necessary to clear your browsing history prior to downloading the files. To do so in Google Chrome, select Settings. Under Advanced, select Privacy and Security, then select Clear Browsing Data.
  o Open the zip file to view the individual csv files.
  o Once the file is opened, you can then Save the zip file to your local computer for offline access. You can also re-run the download of any export later.

![Figure 77 - Export Zip File](image)

• By default, all files are exported into a folder called “Downloads” which is located at
  ![This PC > Downloads > 2019-09-28T17-05-01.560Z.zip](image)
All Data Elements Report

- When an Export for All data elements is unzipped, the zip file includes:
  - A Data-dictionary of data elements (data-dictionary.csv) and includes the following columns:
    - Metadata version
    - File name
    - Column name
    - MMRIA Path
    - MMRIA Prompt
    - Field Description
  - A Data-dictionary-lookup (data-dictionary-lookup.csv) is generated to show all fields with associated lists of values, and includes the values in each list. The columns in this file include:
    - Item value
    - Item display
    - Item Description
  - All 1st-level Single Forms are merged and put out as one file, named mmria_case_export.
  - A separate CSV file is also created for each of the five 1st-level Multiple Forms and each of the 53 grids. The CSV files are named to reflect the forms from which they originated and the contents of the grid.
  - A file including any text fields that exceed the over-the-qualitative-limit length of 32k.
  - Individual files for each table in the MMRIA system.

![Figure 78 - All Data Elements Listing](image-url)
Once exported, these files are ready for analysis. Some analyses may require you to merge multiple exported CSV files. Guidance on merging multiple exported CSV files is found in the section “Relating Your Data.”
Core Elements Report

The Core Elements Report is now a report rather than a data entry form as it was in MMRDS. The data used to create this report comes from the other forms in MMRIA. You can print this report from the Export menu, to support case review processes or you can export it as a data table to support MMRC analyses. Directions for printing are found in the section PRINTING FORMS. Directions for exporting the Core Elements report are described here.

The Core Elements Report is run by selecting the “Core Data” option from export filter #2 below:

- You will be prompted to answer five questions:
  1) Enter a jurisdiction name to prepend to each file, with a default value displayed below the prompt
  2) Do you want to export All Data or only Core Data? Figure 79 - Core Elements with De-Identified option (1)
  3) Would you like to password protect the file?
  4) What fields do you want to deidentify? With choices on None, Standard, or Custom.
  5) Please select which cases you want to include in the export? With choices of All or Custom.

- There are differences between the files generated by this export and those generated when the “All Data” option is selected, and these will be described later in this section.
  - In Figure 79 - Core Elements with De-Identified option (2), the standard de-identified option is selected for filter question #4.
  - Selection of the de-identification option results in a summary listing of the fields to be de-identified.
  - A right-hand scroll bar allows you to review the list of data elements to be de-identified.

- In Figure 79 - Core Elements with De-Identified option (3), filter question #5 was used to select a custom set of cases for inclusion. This option allows the user to:
  - Enter a year as the search parameters.
  - Specify the sort field to be used and to indicate sort order (descending or ascending).
  - Indicate the pagination (number of records) for display.
  - Select “Apply Filters” to retrieve the cases that match the filter parameters.

- The records returned from the query are displayed in the form just below the filter criteria.
  - The checkbox to the left of each case can be used to select it for inclusion in the export.

- Like the All Data option, the “Confirm and Start Export” button is used to initiate the download.
  - This adds a row to the Export Request History, where the type columns reflects Core CSV instead of All CSV.

- The subsequent steps in the download are the same as the steps for the All Data export option.
Figure 79 - Core Elements with De-identified option
When an Export for Core Data Elements is unzipped it includes the files shown in Figure 81 – Core Data Export Files:

- A Data-dictionary of core data elements is generated in its own file that includes columns for:
  - Metadata version
  - File name
  - Column name
  - MMRIA Path
  - MMRIA Prompt
  - Field Description

- A Data-dictionary-lookup is generated to show all core fields with associated lists of values, and includes the values in each list. The columns in this file include:
  - Item value
  - Item display
  - Item Description

- All Core Data Elements are output in one file, named core_mmria_export.

- A file including any text fields that exceed the over-the-qualitative-limit length of 32k.

The section below describes guidelines on relating data, which is informative for all downloads, but written to be used when your data export was for All Data Elements.
Relating Your Data:

Any of the csv files can be imported into the software of your choice for analysis. There will be times that you will want to relate two or more of the csv files.

<table>
<thead>
<tr>
<th>Relating Your Data</th>
<th>1st level to 1st level</th>
<th>1 key used</th>
<th>Key is _id in both sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single-Single</td>
<td>1st level to 1st level</td>
<td>1 key used</td>
<td>Key is _id in both sources</td>
</tr>
<tr>
<td>Single-Multiple</td>
<td>1st level to 2nd level</td>
<td>1 key used</td>
<td>Key is _id in both sources</td>
</tr>
<tr>
<td>Single-Grid</td>
<td>1st level to 2nd level</td>
<td>3 keys used</td>
<td>Keys in Multiple Form Files are _id and record_index, and in the Grid Files are _id and parent_record_index.</td>
</tr>
</tbody>
</table>

Data Export: Grids

Grids are used to capture data in cases where users have more than one entry per form and the entry has related fields. One example is the Toxicology Grid on the Autopsy Report form.

You can input multiple substances and indicate characteristics for each substance, such as concentration, unit, and level, as illustrated below.

TOXICOLOGY GRID ON THE AUTOPSY REPORT FORM

<table>
<thead>
<tr>
<th>Substance</th>
<th>Concentration</th>
<th>Unit of Measure</th>
<th>Level</th>
<th>Comment(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Below is a list of each form that contains at least one grid, and the numbers of grids contained within that form.

SINGLE FORMS:

- Death Certificate
- Autopsy Report
- Prenatal Care Record
- Social and Environmental Profile
- Mental Health Profile
- Committee Decisions

MULTIPLE FORMS:

- Birth/Fetal Death Certificate – Infant/Fetal section [1 Grid]
- ER Visits and Hospitalizations [13 Grids]
- Other Medical Office Visits [10 Grids]
- Medical Transport [1 Grid]
Analysis of MMRIA Data: Considerations

- Most analyses will only require the use of one to three data files at a time. The mmria_case_export file, along with its associated grids, provides most of the data an analyst would need to support both routine and topic-specific analyses.

- Variables in the CSV output data files were named in most cases using the following algorithm:
  - The first letter of each word of the form name +
  - The first letter of each word in the MMRIA path +
  - The first letter of each word following the last slash and first five letters of the last word in the MMRIA path

  For example, the variable for place type of the medical care facility on the Other Medical Office Visits form would be found at the following path:
  `other_medical_office_visits/medical_care_facility/place_type` and the variable name is `omovmcf_p_type`

  The path and variable names are located in the data_dictionary.csv file.

  If there is a duplicate variable name based on this algorithm, MMRIA creates a unique alphanumeric name. In future releases of MMRIA, these alphanumeric names will be replaced with a descriptive name.

Example Analyses

Below are some examples of questions that you might pursue, along with the required data files.

- What proportion of pregnancy-associated deaths are pregnancy-related?
  - Data file: mmria_case_export file

- What are the leading underlying causes of pregnancy-related death? How do they vary?
  - Data file: mmria_case_export file

- What are the most and least preventable underlying causes of pregnancy-related death?
  - Data file: mmria_case_export file

- What are the common contributing factors of the leading causes of pregnancy-related death?
  - Data files: mmria_case_export file merged with Contributing Factors and Committee Recommendations Grid

- What recommendations for action were made for the leading causes of pregnancy-related death?
  - Data files: mmria_case_export file merged with Contributing Factors and Committee Recommendations Grid

- What recommendations for action for the leading causes of pregnancy-related death would have the largest impact?
  - Data files: mmria_case_export file merged with Contributing Factors and Committee Recommendations Grid
VI. REVIEWING CASES

As a Committee Member your submenu option allows you to view de-identified case data (Figure 82 - Committee Reviewer's submenu)

This option allows you to see cases in MMRIA, but they are deidentified.

“View de-identified case data” will display a Line Listing Summary page listing all cases that have been entered into MMRIA by your committee’s abstractors. Note that the first and last names have been redacted and replaced with “de-identified” for each case.

Note: As a committee reviewer, you can only view cases. You cannot edit or delete cases.

To view a case, click directly on a case to open its Home Record page. To learn more about the contents each case form, refer to the Case Forms section of this User Guide.
De-identified Fields

Within each case, you will see all of the forms that your committee’s abstractors can access. However, you will see that the following fields are de-identified:

Table 2 - De-identified Fields

<table>
<thead>
<tr>
<th>Form</th>
<th>Fields</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home Record</td>
<td>First Name, Middle Name, Last Name</td>
</tr>
<tr>
<td>Death Certificate</td>
<td>Local File No.</td>
</tr>
<tr>
<td></td>
<td>Place of Last Residence - City, Zip Code, County</td>
</tr>
<tr>
<td></td>
<td>City of Birth</td>
</tr>
<tr>
<td></td>
<td>Place of Injury (Place Name)</td>
</tr>
<tr>
<td>Location Where Injury Occurred - City, Zip Code, County</td>
<td></td>
</tr>
<tr>
<td>------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Place of Death - Facility Name, City, Zip Code, County</td>
<td></td>
</tr>
<tr>
<td><strong>Birth/Fetal Death Certificate- Parent Section</strong></td>
<td></td>
</tr>
<tr>
<td>Delivery Facility Name</td>
<td></td>
</tr>
<tr>
<td>Name of Facility Mother Transferred From</td>
<td></td>
</tr>
<tr>
<td>Facility of Delivery Location - City, Zip Code, County</td>
<td></td>
</tr>
<tr>
<td>Father's First Name, Middle Name, Last Name</td>
<td></td>
</tr>
<tr>
<td>Father's Day of Birth</td>
<td></td>
</tr>
<tr>
<td>Father's City of Birth</td>
<td></td>
</tr>
<tr>
<td>Mother’s First Name, Middle Name, Last Name, Maiden Name, Medical Record Number</td>
<td></td>
</tr>
<tr>
<td>Mother’s City of Birth</td>
<td></td>
</tr>
<tr>
<td>Location of Residence - City, Zip Code, County</td>
<td></td>
</tr>
<tr>
<td>Last Normal Menses</td>
<td></td>
</tr>
<tr>
<td><strong>Birth/Fetal Death Certificate- Infant/Fetal Section</strong></td>
<td></td>
</tr>
<tr>
<td>Newborn/Fetus First Name, Middle Name, Last Name</td>
<td></td>
</tr>
<tr>
<td>State File No., Local File No., Medical Record No.</td>
<td></td>
</tr>
<tr>
<td>Facility- Name, City and State</td>
<td></td>
</tr>
<tr>
<td><strong>Autopsy Report</strong></td>
<td></td>
</tr>
<tr>
<td>Month and Day of Autopsy</td>
<td></td>
</tr>
<tr>
<td>Jurisdiction</td>
<td></td>
</tr>
<tr>
<td><strong>Prenatal Care Record</strong></td>
<td></td>
</tr>
<tr>
<td>Prenatal Care Record No.</td>
<td></td>
</tr>
<tr>
<td>Location of Primary Prenatal Care Facility - City, Zip Code, County</td>
<td></td>
</tr>
<tr>
<td>Month and Day that Birth Control was Discontinued</td>
<td></td>
</tr>
<tr>
<td>Event Type</td>
<td>Details</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Month and Day of: Last Normal Menses, Estimated Date of Confinement (Estimated Date of Delivery), First Prenatal Visit, First Ultrasound, Last Prenatal Visit</td>
<td></td>
</tr>
<tr>
<td>Name, City and State of Intended Birthing Facility</td>
<td></td>
</tr>
<tr>
<td><strong>ER Visits and Hospitalizations</strong></td>
<td>First Name, Middle Name, Last Name, Maiden Name</td>
</tr>
<tr>
<td>Medical Record Number</td>
<td></td>
</tr>
<tr>
<td>Month and Day of Arrival at Hospital/ER, Admission to Hospital, Discharge from ER/Hospital</td>
<td></td>
</tr>
<tr>
<td>Facility Name, City, Zip Code, County</td>
<td></td>
</tr>
<tr>
<td><strong>Other Medical Office Visits</strong></td>
<td>Medical Record No</td>
</tr>
<tr>
<td>Location of Medical Care Facility - City, Zip Code, County</td>
<td></td>
</tr>
<tr>
<td><strong>Medical Transport</strong></td>
<td>Month and Day of Medical Transport</td>
</tr>
<tr>
<td>Date/Times of: Transport Vital Signs, Departure, Arrival, Patient Contact</td>
<td></td>
</tr>
<tr>
<td>Place of Destination</td>
<td></td>
</tr>
<tr>
<td><strong>Informant Interviews</strong></td>
<td>Informant Name</td>
</tr>
<tr>
<td>Month and Day of Interview</td>
<td></td>
</tr>
</tbody>
</table>
**Note on Display:**

All de-identified Times display as "12:00 AM."

All de-identified Dates within grids display as “2001-01-01.”

All de-identified Date/Time fields within grids display as “0001-01-01 00:00:00.”

All de-identified text fields display as “de-identified.”

**Note:** because dates are de-identified, it is important that your committee’s abstractor(s) enter **gestational ages or days postpartum** for all events.
VII. FREQUENTLY ASKED QUESTIONS

I accidentally deleted a record – can it be recovered?

Deleted records do not get exported to a data set and are marked for deletion; contact MMRIA_support@cdc.gov if you need assistance to recover a deleted record.

How should I handle a “false positive” case?

False positives, or cases where a woman was not in fact pregnant within one year of her death, should be entered into MMRIA. They can help your state monitor the number of false positives you encounter and analyze the characteristics of these false positives. To enter a false positive, complete all of the data on the Home Record and the Death Certificate form. Then, on the Committee Decisions Form, select “Not Pregnancy-Related or Associated (i.e. False Positive).”

Can CDC or other states see my state’s data?

No, CDC and other states cannot view your data unless you choose to share it.

Why does MMRIA ask for the same information multiple times on various forms (i.e. death certificate, birth certificate, and prenatal care)?

Names and demographic information are often inconsistent across source documents. Names can also change from event to event. Names may be misspelled or get reversed – this can be especially true with uncommon names. Inconsistencies in names and demographic information, or missing demographic information, across source documents can provide context around an event in a woman’s life. For this reason, CDC recommends that information should always be abstracted exactly as it is on the source document. Do not cut and paste from previous entries.
APPENDIX I: SAMS (SECURE ACCESS MANAGEMENT SYSTEM) DETAILS

MMRIA uses CDC’s Secure Access Management System (SAMS) for user authentication.

SAMS Activity Administrator (AAs) are designated to perform user identity management and application access authorization functions for MMRIA. Jurisdictions should designate at least two SAMS AAs.

AA tasks include:

- Inviting new users
- Viewing user account attributes (non-sensitive registration information, account status, proofing level / status, credentials, etc.)
- Tracking selected users, and requesting SAMS administrative actions (e.g. user account suspension, reinstatement, etc.)
- Annual or periodic user auditing and clean-up

The AA roll is ultimately responsible for the invitation and final user approvals that allow users access to MMRIA. As such proper care should be taken to ensure only appropriate users have access.
SAMS AA Login

To access the SAMS AA administrative console you must first log in to SAMS.

1. Visit the SAMS URL at [https://sams.cdc.gov](https://sams.cdc.gov). The main SAMS login page will be displayed.

2. Select the External Partners option on the far-left side. Enter your SAMS username and password.

3. The system will display the following government use warning which must be agreed to in order to proceed.
The SAMS Partner Portal will be displayed. This is the primary SAMS landing page for all users. Here you can navigate to administrative functions or assigned activities.
SAMS Partner Portal

When a user logs into SAMS, a personalized portal screen is displayed called the Partner Portal. This screen displays the activities the user has access to, helpful documentation, and AA options if applicable. AAs will have an additional selection item in the left side navigation labeled as SAMS Admin.

Once the SAMS Admin button is selected, the screen moves to an administrative screen with a navigation section on the left and a main information screen on the right. The AA Welcome screen is shown below.

When an AA accesses this screen, all Work Items in the AA’s work list will be displayed in the right-hand, main section of the screen labeled “SAMS”. Work items are actions that require attention by the AA. In the above screenshot no work items are pending.

The tasks or options available to the AA are displayed on the navigation panel on the left side of the screen labeled “Tasks” and may be accessed by clicking on the item name. A screenshot of the available AA menu options is included below.
**Home Tasks**

**VIEW MY ROLES**

1. From the SAMS Welcome screen, click the “Home” ➕ “View My Roles” option.

2. Under the “Groups” tab, each activity to which you are assigned is displayed along with details about the activity. The data provided is membership in the activity, administrator of the activity, activity name, activity description, minimum proofing level, minimum credential required, activity display name, activity ID, and the associated activity URL. A check in the Member and/or Administrator column checkbox specifies the role(s) you are assigned for the activity.

3. Under the “Admin Roles” tab, each role you are assigned is displayed, for an AA, the standard roles are “Activity Admin” and “User”. A user’s standard roles are “user” and “Email address change”.

4. Click the Close button to return to the Welcome screen.

**VIEW MY SUBMITTED TASKS**

1. From the Welcome screen, click the “Home” ➕ “View My Submitted Tasks” option.
2. The following search screen will be displayed:

![Search Screen](image)

3. From this screen, you can search all tasks submitted by you – for example, a user activity approval. You can filter on all options provided on the screen. To use a particular criterion, place a check in the checkbox to the left of the item.
   a. The “Approval tasks performed by” takes a SAMS user account name (email address). The validate button validates that the user entered is in the SAMS user store.
   b. The “Where task name” has a drop down with equals, contains, starts with, ends with” and a text field to enter your criteria.
   c. The “Where task status equals” allows you to select any status in the drop-down list. They are: Completed, In progress, Partially completed, Failed, Rejected, Cancelled, Scheduled, and Audited.
   d. The “Where task priority equals” allows you to select a priority from the drop-down list. They are: Low, Medium, and High.
   e. The “Submitted between” takes a set of dates.
   f. The last 3 filter types are simply checked or unchecked.

4. Once the filter is filled out with your search criteria, click the Search button to display the search results. The screen shown below displays the tasks whose name contains the specified word “invite”:

Results of filtered Submitted Task Search:

![Submitted Tasks](image)

5. Click the Search Tasks button to perform another search, or click Close to return to the Welcome screen.
VIEW MY WORK LIST

Work items are listed as pending tasks for AAs and will always be related to the final AA approval of an end user’s account. After final approval a user’s status changes to ‘active’ in SAMS and they are able to login to MMRIA.

There are two ways to access a work list for review and approval of pending tasks. The first, pending tasks will be displayed as soon as you login to the AA administrative console in SAMS as seen in the screenshot below. Simply link on the hyperlink text under the ‘Name’ section to review the record.

You can also navigate to your worklist using the menu within the AA administrative console.

1. From the Welcome screen, click the “Home” ➕ “View My Work List” option. Pending work list items are also displayed in the right side panel of the AA administration console immediately following login.

The following image is an example of a Work List item.
2. Click the item name to display the appropriate work item page. In the example below, the Approve Applicant screen is displayed.

![Approve Applicant Screen]

3. Four action options are available and are outlined in further detail below.

- **Approve** – approves the user. Makes them active in SAMS and allows them to authenticate for access to an authorized SAMS protected application.

- **Reject** – rejects the workflow and ends the user’s on-boarding process to SAMS. If rejected the AA should notify the end user of why, as the SAMS system does not notify the end user of the rejection.

- **Reserve Item** – allows a specific Program AA to reserve this item for their exclusive review. The item is removed from the general pool of Program AA’s at the time it is reserved.

- **Close** – closes the Approve Applicant window with no action. The applicant’s pending approval will remain in the worklist of all authorized Program AAs.
4. If the work item is approved the following screen will be displayed.

5. Click the OK button. You may select another option from the menu on the left.
SAMS Administration Tasks

User Report AA

The ‘User Report AA’ is designed to give AA’s visibility into the historical activity of a selected user including their activity associations.

1. From the Welcome screen, click “User Administration” → “User Report AA”.

2. On the ‘User Profile’ tab enter appropriate criteria to allow you to search for a particular user.

3. Click the ‘History’ tab to review the results of your search.
View User AA

This function allows MMRIA AAs to view a subset of the profile information available for users in SAMS. This function can be extremely helpful if an AA needs to determine the status of a user who is on-boarding to SAMS or determine if they are the correct person for assignment of a particular activity.

There are three major user states in SAMS – candidate, applicant, and active. Each of them is outlined quickly below. If a user has a status other than active, they will be unable to login to SAMS for access to a protected application.

- **Candidate** – User has been invited to SAMS but has not yet registered. Only activity available to the user through SAMS is registration.
- **Applicant** – User has registered in SAMS and final AA approval for access is pending.
- **Active** – User has successfully completed SAMS on-boarding activities and has access to approved SAMS protected applications or Programs.

1. From the Welcome screen, click “User Administration”  “View User AA”.

2. Enter the details of the user to search and click the 'search' button.
3. Search results (example) display as shown below:

4. Click the radio button to the left of the user you want to display and click the Select button to see the user profile information.

Four tabs will be visible at the top of the user profile summary screen and are described below.

**User Profile** – Selected by default and displays general information related to the user

**Sponsor** – This tab is only used for international users who must leverage a sponsor as part of the SAMS on-boarding process. This tab can be disregarded except for when an international user is being on-boarded.

**Activities** – This tab will display the current activities assigned to the user along with activity specific information.

**History** – This tab will display historical information related to the user based on their email address.
Invite User

Inviting users to SAMS is a primary function of MMRIA AAs.

1. From the Welcome screen, click “Activity Administration” ➔ “Invite user”.

2. The Invite a User screen is displayed as shown below. Enter the candidate’s information in the fields displayed. (★ denotes a required field.)

Three tabs will be visible at the top of the user profile summary screen and are described below.

**Candidate Profile** – Selected by default and where the AA should enter user details required for invitation.

*Note: The invitation should be to the user’s full legal first and last name. Nicknames or abbreviations should not be used as this might cause issues with ID proofing later in the SAMS on-boarding process. Also, the AA should confirm the user is not already in SAMS with the same or a different email address. This will help avoid the same user receiving multiple SAMS invitations to different email addresses.*

**Sponsor** – This tab is only used for international users who must leverage a sponsor as part of the SAMS on-boarding process. This tab can be disregarded except for when an international user is being on-boarded. Refer to the International on-boarding portion of this document for more information.

**Activities** – This tab allows the AA to select the application or Program activities required by the user. User’s cannot be invited to SAMS without an activity association therefore, specific to new users, this activity association justifies their invitation to the SAMS system.
3. Click the **Activities** tab.

![Image of SAMS interface with activities tab selected]

4. Click the **Add a group** button to display the list of current activities in SAMS.

5. Insert a check in the checkbox to the left of MMRIA.

![Image of SAMS interface with MMRIA selected]

6. Click the **Select** button. The candidate’s Activities tab displays with the selected application in the list.

![Image of SAMS interface with selected application]

7. When the candidate’s information is complete on the Candidate Profile and Activities tabs, click **Submit**.
8. A task confirmation message displays.

*Note:* An Alert message means the action has been submitted for processing and is not considered an error. In addition, if an Error is displayed stating the User is a duplicate; the user already exists in the SAMS system and should have the activity added through the “Assign/Revoke Activity Access” process in previous section.

9. Click the **OK** button to acknowledge the confirmation message. The user will receive the SAMS Invitation (to Users) email shown in Appendix A.

The Invitation is valid for **30** days. The user may register at any time during the 30-day period. If the user begins to register but does not complete the task by clicking the Submit button, the user may enter the system again later, but any information entered previously is not saved.

The user may authenticate to SAMS an unlimited number of times within the 30-day time period using the temporary password included in their invitation email. Within this time period, the user will be sent the Invitation Reminder email contained in Appendix B if he/she does not register. If the user does not register within the 30 day period, the user’s account is removed from the system and the appropriate AA is notified.

*Note:* When an AA establishes a new account in SAMS and issues an invitation to the new user, the recipient’s account is assigned a status of Candidate. The only function allowed for a Candidate user is to register in the system. Users cannot be assigned an activity if they are in the Candidate status. Use the View User function to determine if the user is in fact in Candidate, Applicant, or Active state.

A Candidate account shifts to the Applicant status once the recipient of a SAMS invitation has successfully completed the registration process. At this point the user is not allowed to login to the SAMS system. An Active state is assigned once the user is accepted and approved for access to one or more SAMS’ applications. At this point a user can log into SAMS.

The account of a user who has a current invitation to SAMS and has not yet registered is in a Candidate state. An AA may not be aware that the user he/she wishes to invite exists in the SAMS system.
APPENDIX II: SAMS INVITATION TO USERS

Subject:
U.S. Centers for Disease Control: SAMS Partner Portal - Invitation to Register

Message:
Hello Johnny Test,

You have been invited to register with the SAMS Public Health Partner Portal. This invitation was requested for you based on your specific role in public health and will enable you to access the following CDC computer application(s):

- Maternal Mortality Review Information Application: MMRIA

A registration account has already been created for you. A link to this account and a temporary password are provided below. This invitation is valid for 30 days.

SAMS Partner Portal Registration

Registration consists of the following steps:

1. Online Registration
2. Identity Verification (if required for your application)
3. Access Approval

Online registration with the SAMS portal takes about 5 minutes. Please have the following available before you begin:

- Your home address - This must match the documentation you intend to use for proofing if applicable.
- Your organization / employer and their address
- Your telephone number

Should you have questions about the SAMS Partner Portal or the registration process, please contact our Help Desk for assistance or refer to the SAMS User FAQ.

Thank you,

The SAMS Team

To register with the SAMS Partner Portal, please click the following link or cut and paste it into your browser:

https://im-int.cdc.gov/iam/im/SAMS/ui/index.jsp?task.tag=SAMSRegistration
When prompted, please enter:

- Your Email/User Name: JohnnyTest@Test.com
- Temporary Password: XXXXXXX

and click the Login button.

***Note:*** In order to access the SAMS Partner Portal, your browser **must** be configured to use TLS 1.0 encryption. If your computer is not configured for TLS, or if you are unsure, please contact your local IT System Administrator for assistance.

For more information and assistance, please see the SAMS FAQ located here, or contact the SAMS Help Desk between the hours of 8:00 AM and 6:00 PM EST Monday through Friday (excluding U.S. Federal holidays) at the following:

Toll Free: (877) 681-2901
Email: samshelp@cdc.gov

***Note: This email has been sent from an unmonitored mailbox. DO NOT REPLY TO THIS EMAIL. Please direct all inquiries to the Help Desk as listed above.***
APPENDIX III: SAMS INVITATION REMINDER

Subject:

U.S. Centers for Disease Control: SAMS Partner Portal - Invitation Reminder

Message:

Hello Johnny Test,

This email is a reminder that your invitation to register with the SAMS Partner Portal will expire in fifteen (15) days. If you have recently completed SAMS’ registration, please disregard this email.

To register with the SAMS Partner Portal, please click the following link or cut and paste it into your browser:

https://im.cdc.gov/idm/sams/imcss/index.jsp?task.tag=SAMSRegistration

When prompted, please enter your SAMS Partner Portal account User name (JohnnyTest@Test.com) and the temporary password supplied in your original invitation email. If you did not receive an invitation email or if it has become lost, please contact the SAMS Help Desk for assistance using the information provided below.

***Note: Access to the individual activities for which you have been invited may take up to two hours to propagate to the application’s authorization system. In addition, if you have been invited to an activity that requires Level 3 id-proofing, the activities you have been invited to will not show up in the SAMS portal until you have been issued your Grid Card. Grid Cards will be mailed to the home address specified during registration and will usually arrive 2-5 business days after you receive your SAMS Welcome email. In order to access the SAMS Partner Portal, your browser must be configured to use TLS 1.0 encryption. If your computer is not configured for TLS, or if you are unsure, please contact your local IT System Administrator for assistance.

Thank you,

The SAMS Team

For more information and assistance, please see the SAMS FAQ located here, or contact the SAMS Help Desk between the hours of 8:00 AM and 6:00 PM EST Monday through Friday (excluding U.S. Federal holidays) at the following:

Toll Free: (877) 681-2901
Email: samshelp@cdc.gov

***Note: This email has been sent from an unmonitored mailbox. DO NOT REPLY TO THIS EMAIL. Please direct all inquiries to the Help Desk as listed above.
APPENDIX IV: SAMS ACCOUNT ACTIVATION NOTIFICATION TO USERS

Subject:

U.S. Centers for Disease Control: SAMS Partner Portal - SAMS Account Activation

Message:

Welcome! Your access to the SAMS Partner Portal has been approved. Inside this site you'll find links that provide access to applications and information designed to assist you in the performance of your role in Public Health.

The SAMS Partner Portal may be reached by clicking here.

When prompted,

For External Partners:

Your Email/User Name: (johnnytest@test.com) and the password you chose during registration. Then click the Login button.

If you've forgotten your password, you may reset it by following the 'Forgotten Password' link on the SAMS log in page.

Thank you,

The SAMS Team

***Note: In order to access the SAMS Partner Portal, your browser must be configured to use TLS 1.2 encryption. If TLS 1.2 encryption is not possible, TLS 1.1 or 1.0 may be selected. If your computer is not configured for TLS, or if you are unsure, please contact your local IT System Administrator for assistance.

For more information and assistance, please see the SAMS FAQ located here, or contact the SAMS Help Desk between the hours of 8:00 AM and 6:00 PM EST Monday through Friday (excluding U.S. Federal holidays) at the following:

Toll Free: (877) 681-2901
Email: samshelp@cdc.gov

***Note: This email has been sent from an unmonitored mailbox. DO NOT REPLY TO THIS EMAIL. Please direct all inquiries to the Help Desk as listed above.
APPENDIX V: SAMS NEW ACTIVITY ACCESS AUTHORIZATION NOTIFICATION TO USERS

Subject:

U.S. Centers for Disease Control: SAMS Partner Portal - SAMS Activity Authorization

Message:

Welcome!

You have been authorized for access to:

- Maternal Mortality Review Information Application: MMRIA

For External Partners:

While your SAMS registration is complete, the security policy of the application you will be accessing requires the use of an Entrust Grid card during login. If you do not already have an Entrust card assigned to you, one will be automatically mailed to your registered home address in SAMS within 5-7 business days.

Once the card is received you can reach the activity home page directly by clicking ‘activity URL’.

For HHS Staff:

On the SAMS homepage, click on ‘AMS Login’ and use the HSPD-12 PIV card option to login.

***Note: In order to access the SAMS Partner Portal, your browser must be configured to use TLS 1.2 encryption. If TLS 1.2 encryption is not possible, TLS 1.1 or 1.0 may be selected. If your computer is not configured for TLS, or if you are unsure, please contact your local IT System Administrator for assistance.

Thank you,

The SAMS Team

For more information and assistance, please see the SAMS FAQ located here, or contact the SAMS Help Desk between the hours of 8:00 AM and 6:00 PM EST Monday through Friday (excluding U.S. Federal holidays) at the following:

Toll Free: (877) 681-2901
Email: samshelp@cdc.gov

***Note: This email has been sent from an unmonitored mailbox. DO NOT REPLY TO THIS EMAIL. Please direct all inquiries to the Help Desk as listed above.
APPENDIX VI: SAMS ACCOUNT REMOVAL WARNING NOTIFICATION (TO ACTIVE USERS)

Removal notifications are issued 30, 15, 1, and day of expiration.

Subject:

U.S. Centers for Disease Control: SAMS Partner Portal - SAMS Account Notification

Message:

Dear SAMS User,

You are receiving this email from CDC’s SAMS Partner Portal to notify you that your account, identified by username JohnnyTest@Test.com, will soon expire.

Your SAMS Portal account has not been active for an extended period of time. If you would like to keep your account open and maintain your access to CDC applications, you must log into SAMS and reset your password within the next thirty (30) days.

The SAMS Partner Portal may be reached by clicking https://sams.cdc.gov.

If you feel that this notification is in error or if you have any questions or concerns, please contact the SAMS Help Desk.

Thank you,

The SAMS Team

For more information or assistance, please contact the SAMS Help Desk between the hours of 8:00 AM and 8:00 PM EST Monday through Friday (excluding U.S. Federal holidays) at the following:

Toll Free: 1-877-681-2901
Email: samshelp@cdc.gov

***Note: This email has been sent from an unmonitored mailbox. DO NOT REPLY TO THIS EMAIL. Please direct all inquiries to the Help Desk as listed above.***
APPENDIX VII: SAMS PASSWORD RESET NOTIFICATION TO USERS

Subject:

U.S. Centers for Disease Control: SAMS Partner Portal - Notification of Password Reset

Message:

Dear SAMS User,

You are receiving this email from CDC’s SAMS Partner Portal to confirm that you recently reset your account password. If you performed this action, there is nothing further for you to do and you may disregard this email.

If you did not initiate this reset action, please contact the SAMS Help Desk as soon as possible so that they can verify the integrity and security of your account.

Thank you,

The SAMS Team

For more information or assistance, please contact the SAMS Help Desk between the hours of 8:00 AM and 6:00 PM EST Monday through Friday (excepting U.S. Federal holidays) at the following:

Toll Free: 877-681-2901
Email: samshelp@cdc.gov

***Note: This email has been sent from an unmonitored mailbox. DO NOT REPLY TO THIS EMAIL. Please direct all inquiries to the Help Desk as listed above.
APPENDIX VIII: CDC SAMS RULES OF BEHAVIOR

Overview

Secure Access Management Service (SAMS) is a United States federal government computer system that provides secure external access to non-public CDC applications for use by authorized personnel. Users should be aware that they have no expectation of privacy when using SAMS or SAMS-protected program applications. All user actions are recorded and may be reviewed by CDC officials with a legitimate reason to do so as authorized by CDC's Office of the Chief Information Security Officer. The following rules of behavior apply to all SAMS' users.

Because written guidance cannot cover every contingency, users are asked to go beyond the stated rules, using their best judgment and highest ethical standards to guide their actions. These rules are based on federal laws and regulations and on applicable agency directives. As such, there are consequences for non-compliance. Based on the severity of the violation and through due process of the law, consequences can include, but are not limited to: suspension or loss of access privileges and/or civil and criminal penalties. Use of SAMS, and the applications it protects, is restricted to users that have been specifically authorized and granted access by CDC or its designated agents.

SAMS User Accounts

All SAMS' user accounts are uniquely identified by a username and protected with a password. Passwords automatically expire every sixty (60) days. SAMS will prompt users to update expired passwords on their next login. If a user feels their password may have been compromised, they must change it immediately. In addition, the user must report any suspected misuse or unauthorized access to the SAMS Help Desk as quickly as possible.

SAMS allows users to reset a forgotten password using a set of secret security questions they select and complete during registration. Selected questions and answers should be easy for a user to remember but difficult for others to guess. Since question and answer combinations can provide access to a user's account, they must be protected in the same way as a password.

If a user fails to enter the correct username and password combination three (3) times in a row, their account will be locked for one (1) hour, after which, the user may try again. If the user cannot recall their password, they can follow the 'forgotten password' link on the SAMS login page to reset it. If a user does not remember their password and is unable to successfully answer their security questions, a new account must be created.

User Responsibilities and Rules of Behavior

- SAMS' users are uniquely identified through their SAMS user account. Once a user's request for access has been granted and their account is active, the user is responsible for all actions taken using that account. Therefore, every effort should be made to protect the account password and related security information. To help prevent account compromise, users agree:
  - To keep their account private and not share their password with anyone.
  - To securely store and protect any written copy of their user name and/or password.
  - To make every effort to prevent others from watching password entry.
  - To choose passwords that are difficult to guess by avoiding the use of well-known personal information.
  - To log off of the system when finished or whenever leaving their computer unattended.
• Users must not access SAMS or Program applications using an account that belongs to another person.
• Users must not attempt to circumvent any SAMS' security control mechanism.
• SAMS' users are provided access to sensitive and/or non-public information to assist them in performing their duties and for the betterment of national, state, and local public health services. Users must take positive steps to protect this information, the people this information may represent, and the systems designed to protect it. Users must report improper or suspicious activities involving SAMS' information and systems to the SAMS Help Desk.

User Acknowledgement and Agreement

I have read the SAMS User Rules of Behavior, agree to its terms, and understand my responsibilities for the use and protection of my account username and password. Further, I understand the consequences that may result from the disclosure or inappropriate use of SAMS' information or access privileges. If I fail to adhere to the terms of this statement, my account may be revoked without notice and CDC and/or its agents may take other actions as appropriate up to and including prosecution under federal law.

Your acceptance below and your continued use of the SAMS system constitute your acknowledgement that you understand these rules and your agreement to abide by them.

For questions concerning these rules and your responsibilities regarding them, please contact the SAMS Help Desk between the hours of 8:00 AM and 6:00 PM EST Monday through Friday (excluding U.S. Federal holidays) at the following:

Toll Free: 877-681-2901
Email: samshelp@cdc.gov

Please click 'Accept' button below to assert your acknowledgement and acceptance of the SAMS User Rules of Behavior and continue with the registration process.
# APPENDIX IX: COMMITTEE DECISIONS FORM

<table>
<thead>
<tr>
<th>REVIEW DATE</th>
<th>RECORD ID</th>
</tr>
</thead>
</table>

## PREGNANCY-RELATEDNESS: SELECT ONE

- [ ] PREGNANCY-RELATED
  - The death of a woman during pregnancy or within one year of the end of pregnancy from a pregnancy complication, a chain of events initiated by pregnancy, or the aggravation of an unrelated condition by the physiologic effects of pregnancy.

- [ ] PREGNANCY-ASSOCIATED, BUT NOT RELATED
  - The death of a woman during pregnancy or within one year of the end of pregnancy from a cause that is not related to pregnancy.

- [ ] PREGNANCY-ASSOCIATED BUT UNABLE TO DETERMINE PREGNANCY-RELATEDNESS
  - (i.e. false positive, woman was not pregnant within one year of her death)

## COMMITTEE DETERMINATION OF CAUSE(S) OF DEATH

<table>
<thead>
<tr>
<th>TYPE</th>
<th>CAUSE (DESCRIPTIVE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMMEDIATE</td>
<td></td>
</tr>
<tr>
<td>CONTRIBUTING</td>
<td></td>
</tr>
<tr>
<td>UNDERLYING</td>
<td></td>
</tr>
<tr>
<td>OTHER SIGNIFICANT</td>
<td></td>
</tr>
</tbody>
</table>

IF PREGNANCY-RELATED, COMMITTEE DETERMINATION OF UNDERLYING CAUSE OF DEATH refer to page 3 for MMRS-MM cause of death list. If more than one is selected, list in order of importance beginning with the most compelling (1-5; no more than 5 may be selected in the system).

## ESTIMATE THE DEGREE OF RELEVANT INFORMATION (RECORDS) AVAILABLE FOR THIS CASE:

- [ ] COMPLETE
  - All records necessary for adequate review of the case were available.

- [ ] MOSTLY COMPLETE
  - Minor gaps (i.e., information that would have been beneficial but was not essential to the review of the case).

- [ ] SOMEWHAT COMPLETE
  - Major gaps (i.e., information that would have been crucial to the review of the case).

- [ ] NOT COMPLETE
  - Minimal records available for review (i.e., death certificate and no additional records).

- [ ] N/A

## DID OBESITY CONTRIBUTE TO THE DEATH?

- [ ] YES
- [ ] PROBABLE
- [ ] NO
- [ ] UNKNOWN

## DID MENTAL HEALTH CONDITIONS CONTRIBUTE TO THE DEATH?

- [ ] YES
- [ ] PROBABLE
- [ ] NO
- [ ] UNKNOWN

## DID SUBSTANCE USE DISORDER CONTRIBUTE TO THE DEATH?

- [ ] YES
- [ ] PROBABLE
- [ ] NO
- [ ] UNKNOWN

## WAS THIS DEATH A SUICIDE?

- [ ] YES
- [ ] PROBABLE
- [ ] NO
- [ ] UNKNOWN

## WAS THIS A HOMICIDE?

- [ ] YES
- [ ] PROBABLE
- [ ] NO
- [ ] UNKNOWN

## IF HOMICIDE, SUICIDE, OR ACCIDENTAL DEATH, LIST THE MEANS OF FATAL INJURY:

- [ ] FIREARM
- [ ] SHARP INSTRUMENT
- [ ] BLUNT INSTRUMENT
- [ ] POISONING/OVERDOSE
- [ ] HANGING/STRANGULATION/SUFFOCATION
- [ ] FALL
- [ ] PUNCHING/KICKING/BWATING
- [ ] EXPLOSIVE
- [ ] DROWNING
- [ ] FIRE OR BURNS
- [ ] MOTOR VEHICLE
- [ ] INTENTIONAL NEGLECT
- [ ] OTHER, SPECIFY:
- [ ] UNKNOWN
- [ ] NOT APPLICABLE

## IF HOMICIDE, WHAT WAS THE RELATIONSHIP OF THE PERPETRATOR TO THE DECEASED?

- [ ] NO RELATIONSHIP
- [ ] SPOTHER
- [ ] EX-PARTNER
- [ ] OTHER RELATIVE
- [ ] OTHER, SPECIFY:
- [ ] UNKNOWN
- [ ] NOT APPLICABLE

## DOES THE COMMITTEE AGREE WITH THE UNDERLYING CAUSE OF DEATH LISTED ON DEATH CERTIFICATE?

- [ ] YES
- [ ] NO
## COMMITTEE DETERMINATION OF PREVENTABILITY

A death is considered preventable if the committee determines that there was at least some chance of the death being averted by one or more reasonable changes to patient, family, provider, facility, system and/or community factors.

## CONTRIBUTING FACTORS WORKSHEET

What were the factors that contributed to this death? Multiple contributing factors may be present at each level.

<table>
<thead>
<tr>
<th>CONTRIBUTING FACTOR LEVEL</th>
<th>CONTRIBUTING FACTOR (SEE BELOW) AND DESCRIPTION OF ISSUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>PATIENT/FAMILY</td>
<td></td>
</tr>
<tr>
<td>PROVIDER</td>
<td></td>
</tr>
<tr>
<td>FACILITY</td>
<td></td>
</tr>
<tr>
<td>SYSTEM</td>
<td></td>
</tr>
<tr>
<td>COMMUNITY</td>
<td></td>
</tr>
</tbody>
</table>

### CONTRIBUTING FACTOR KEY (DESCRIPTIONS ON PAGE 1)

- Delay
- Adherence
- Knowledge
- Cultural/religious
- Environmental
- Violence
- Mental health conditions
- Substance use disorder - alcohol, illicit prescription drugs

- Tobacco use
- Chronic disease
- Childhood abuse/trauma
- Access/financial
- Unstable housing
- Social support/lethality
- Equipment/technology
- Policies/procedures
- Communication

- Continuity of care/care coordination
- Clinical skill/quality of care
- Outreach
- Law enforcement
- Referral
- Assessment
- Legal
- Other

## RECOMMENDATIONS OF THE COMMITTEE

If there was at least some chance that the death could have been averted, what were the specific and feasible actions that, if implemented or altered, might have changed the course of events? (Who?) should (do what?) (when?)

<table>
<thead>
<tr>
<th>RECOMMENDATIONS OF THE COMMITTEE</th>
<th>LEVEL OF PREVENTION (SEE BELOW)</th>
<th>LEVEL OF IMPACT (SEE BELOW)</th>
</tr>
</thead>
</table>

### PREVENTION LEVEL

- **PRIMARY**: Prevents the contributing factor before it even occurs.
- **SECONDARY**: Reduces the impact of the contributing factor once it has occurred (ie, treatment).
- **TERTIARY**: Reduces the impact or progression of what has become an ongoing contributing factor (ie, management of complications).

### EXPECTED IMPACT LEVEL

- **SMALL**: Education/counseling (community- and/or provider-based health promotion and education activities).
- **MEDIUM**: Clinical intervention and coordination of care across continuum of wellness/wellness visits (protocols, prescriptions).
- **LARGE**: Long-lasting protective interventions (improve readiness, recognition and response to obstetric emergencies/LAMC).
- **EXTRA LARGE**: Change in context (promote environments that support health living/are available and accessible).
**If pregnancy-related, committee determination of underlying cause of death**

If more than one is selected, please list them in order of importance beginning with the most compelling (1-2; no more than 2 may be selected in the system).

*Pregnancy-related death: the death of a woman during pregnancy or within one year of the end of pregnancy from a pregnancy complication, a chain of events initiated by pregnancy, or the aggravation of an unrelated condition by the physiologic effects of pregnancy.*

| 10 | Hemorrhage (excludes aneurysm or CVA) |
| 10.1 | Hemorrhage – rupture/laceration/intra-abdominal bleeding |
| 10.2 | Placental abruption |
| 10.3 | Placenta previa |
| 10.4 | Ruptured ectopic pregnancy |
| 10.5 | Hemorrhage – uterine atony/postpartum hemorrhage |
| 10.6 | Placenta accreta/increta/percreta |
| 10.7 | Hemorrhage due to retained placenta |
| 10.8 | Hemorrhage due to primary DIC |
| 10.9 | Other hemorrhage/NOS |
| 20 | Infection |
| 20.1 | Postpartum (genital tract e.g. of the uterus/pelvis/perineum/necrotizing fasciitis) |
| 20.2 | Septic/septic shock |
| 20.4 | Chorioamnionitis/ante partum infection |
| 20.5 | Non-pelvic infections (e.g. pneumonia, TR, meningitis, IV) |
| 20.6 | Urinary tract infection |
| 20.9 | Other infections/NOS |
| 30 | Embolism - thrombotic (non-cerebral) |
| 30.6 | Other emboli/NOS |
| 31 | Embolism - amniotic fluid |
| 40 | Preeclampsia |
| 50 | Edema |
| 60 | Chronic hypertension with superimposed preeclampsia |
| 70 | Anesthesia complications |
| 80 | Cardiomyopathy |
| 80.1 | Postpartum/peripartum cardiomyopathy |
| 80.2 | Hypertrophic cardiomyopathy |
| 80.9 | Other cardiomyopathy/NOS |
| 82 | Hematologic |
| 82.1 | Sickle cell anemia |
| 82.9 | Other hematologic conditions including thrombophilia/TP/HTUS/NOS |
| 83 | Collagen vascular/autoimmune diseases |
| 83.1 | Systemic lupus erythematosus (SLE) |
| 83.9 | Other collagen vascular diseases/NOS |
| 85 | Conditions unique to pregnancy (e.g. gestational diabetes, hyperemesis, liver disease of pregnancy) |
| 85.1 | Injury |
| 85.1.1 | Intentional (homicide) |
| 85.2 | Unintentional |
| 85.5 | Unknown/NOS |
| 85.9 | Cancer |
| 85.3 | Gestational trophoblastic disease (GTD) |
| 85.9.5 | Other malignancies/NOS |
| 90 | Cardiovascular conditions |
| 90.1 | Coronary artery disease/myocardial infarction (MI)/atherosclerotic cardiovascular disease |
| 90.2 | Pulmonary hypertension |
| 90.3 | Valvular heart disease congenital and acquired |
| 90.4 | Vascular aneurysms/dissection (non-cerebral) |
| 90.5 | Hypertensive cardiovascular disease |
| 90.6 | Marfan Syndrome |
| 90.7 | Conduction defects/arrhythmias |
| 90.8 | Vascular malformations outside head and coronary arteries |
| 90.9 | Other cardiovascular disease, including CHF, cardiomegaly, cardiac hypertrophy, cardiac fibrosis, non-acute myocardial/NOS |
| 91 | Pulmonary conditions (excludes ARDS-Adult respiratory distress syndrome) |
| 91.0 | Chronic lung disease |
| 91.1 | Cystic fibrosis |
| 91.2 | Asthma |
| 91.9 | Other pulmonary disease/NOS |
| 92 | Neurologic/neurovascular conditions (excluding CVAs) |
| 92.1 | Epilepsy/seizure disorder |
| 92.9 | Other neurologic diseases/NOS |
| 93 | Renal disease |
| 93.1 | Chronic renal failure/end-stage renal disease (ESRD) |
| 93.9 | Other renal disease/NOS |
| 95 | Venous thromboembolism (hemothage/thrombosis/anamysm/malformation) |
| 95.0 | not secondary to hypertensive disease |
| 96 | Metabolic/endocrine |
| 96.1 | Obesity |
| 96.2 | Diabetes mellitus |
| 96.9 | Other metabolic/endocrine disorders |
| 97 | Gastrointestinal disorders |
| 97.1 | Crohn’s disease/collaborative colitis |
| 97.2 | Liver disease/failure/transplant |
| 97.9 | Other gastrointestinal diseases/NOS |
| 98 | Other medical conditions/NOS |
| 99 | Mental health conditions |
| 99.1 | Depression |
| 99.9 | Other psychiatric conditions/NOS |
| 999 | Unknown COD |