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Managing Data in CommCare

A starter guide to inspecting, cleaning, and exporting data in CommCare

Part 1: Exporting Data

For monitoring and evaluation, one of the most common tasks you will perform in CommCare HQ is exporting data. Exports are a way to download raw data from CommCare HQ in a variety of formats (CSV, Excel, etc.) for use in third-party data analysis tools. In Part 1, *Exporting Data*, you will learn how to download, manage, and interpret exports from CommCare. By the end, you will be able to:

- Distinguish between a form export and a case export
- Generate and download form and case exports
- Manage the exports that you have created
- Interpret data and symbols in an export
- Explain the impacts of application changes on exports

Unit 1.1 Distinguishing between Form and Case Exports

CommCare captures two types of raw data: form data and case data. Each type of raw data can be exported.

A **form export**, consisting of form data, allows you to download submissions from any single form in an application. You should use this feature when you are interested in accessing and understanding changes in the data collected in a single form over time. If your project collects data using the same form at different points in time, the form export will contain each form submission and all of the changes in the data at these different points in time. Each row of the export represents a form submission, and each column represents a question in the form. You may create an export for each form in your application.

Let's say that you want to measure the change in a person's weight over multiple months, and this information is collected regularly through the same monthly follow up form. In order to calculate the change in weight, you would need to use each weight entry in each monthly follow up form completed for that person. A form export would allow you to access this data, and filter or sort by person. However, if you only want to find out the person's current weight, you may want to use a case export instead.

A **case export**, which contains case data, allows you to download all of the data which has been saved as part of a case file, across all forms within the application. A case export is useful if you want to identify the current status of a case, or the status of an indicator related to the case. You also should use this feature when you are interested in using data that is collected through multiple forms over time. Applications that track cases will often collect data in multiple forms at different points in time. The case export will reflect only the latest changes to the data saved to a case. In your export, each row represents a case, and each column represents a case property. You can create an export for each case type in your application.

To illustrate when you might use a case export, let's continue with the example of tracking a person's weight. As mentioned, if you are only interested in seeing a person's current weight, the case export would be the most appropriate tool because the case property for this indicator would only show the most recent weight entry.

You may also use the case export to help understand weight in relation to other indicators saved to the case, such as age, location, or income. For instance, if you are interested in the relationship between a person's weight and household income, and the weight was collected in the follow up form while the household income was collected in the registration form, you would want to use the case export since it allows you to access case data collected across multiple forms.

Consider each export like a data source. In order to select the most appropriate export, you should consider the question you would like to answer, and then reflect on which data source will help you answer that question.

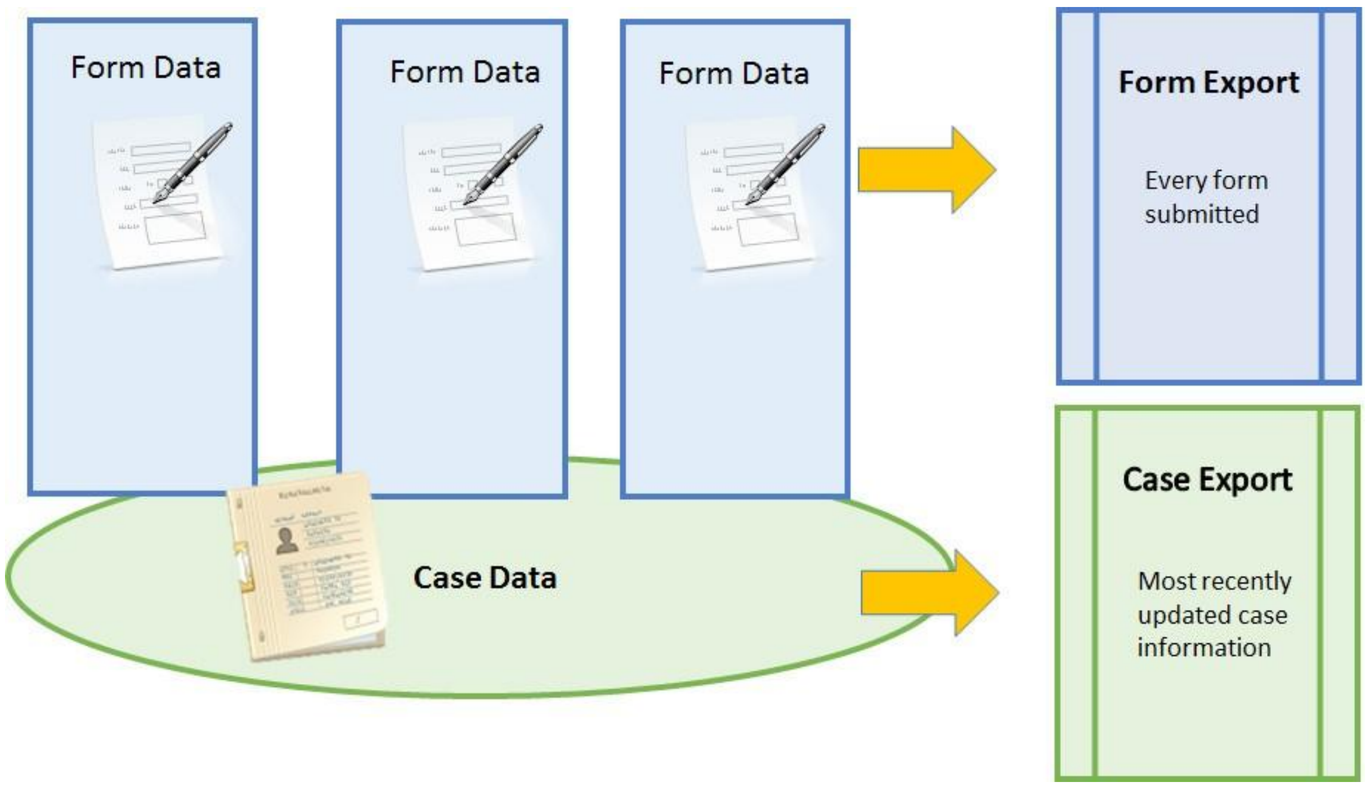


Figure 1: Form and Case Exports Diagram[1,2]

1A case property stores data that has been saved specifically to the case. The data value for a given case property will be provided in that case property's column of the export.
2A case type is the name for the type of case that you are tracking. Think of a case type as a common label for a set of cases. For more information on case types, see page 14.

Unit 1.2 Creating and Downloading Exports

1.2.1 Form Exports

Now that you understand what a form export is, let's walkthrough how to generate and download one.

Follow Along!

If you are connected to the Internet and your project has collected data, log in to CommCare HQ and follow along. If you don't have access to the Internet or haven't yet collected data, no problem - you still can read through the processes outlined below.

Creating a New Form Export

The "Export Forms" functionality is located under the "Data" tab of CommCare HQ. To create a new form export, click on the "Data" tab and then select "Export Forms" from the menu on the left. You will see this option under the category called "Export Data". Alternatively, you may use the down arrow next to the "Data" tab to view a dropdown menu and select "Export Forms".

That is: CommcareHQ --> Data --> Export Data --> Export Forms

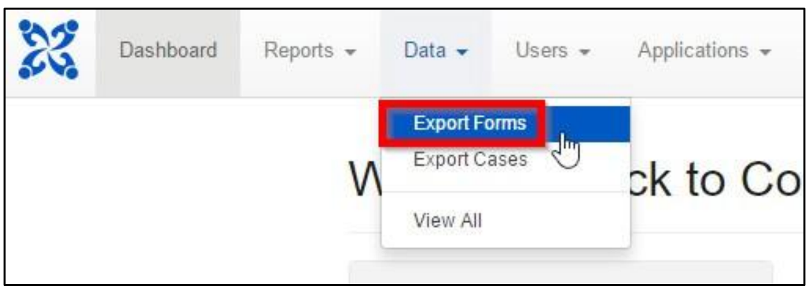


Figure 2: Export Forms Option - Navigation

When you navigate to "Export Forms" for the first time, you will see the screen below (Figure 3). Towards the top of the page, you will see a green button that says "+Create New Export". Below this button, you'll see a section called "Exports". This will be empty since you have not created any exports yet. Once you've generated an export, it will be listed in this area.

Figure 3: Export Forms Page - No Exports Created

Click on the "+ Create New Export" button to begin the process of creating a new export. A pop up window will appear, like the one in Figure 4. Use it to select which form you would like to export. The following filters will be provided to help you select the desired form: Application, Menu, Form. Select the application, menu, and form, in that order. You cannot select the form without first selecting the application and menu.

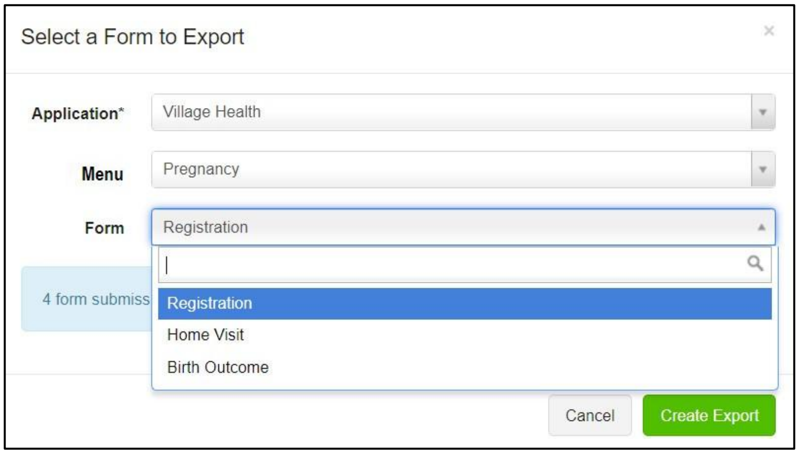


Figure 4: Select a Form to Export

Once you have selected your form, you will see the number of submissions that are associated with that form, highlighted in a light blue box:

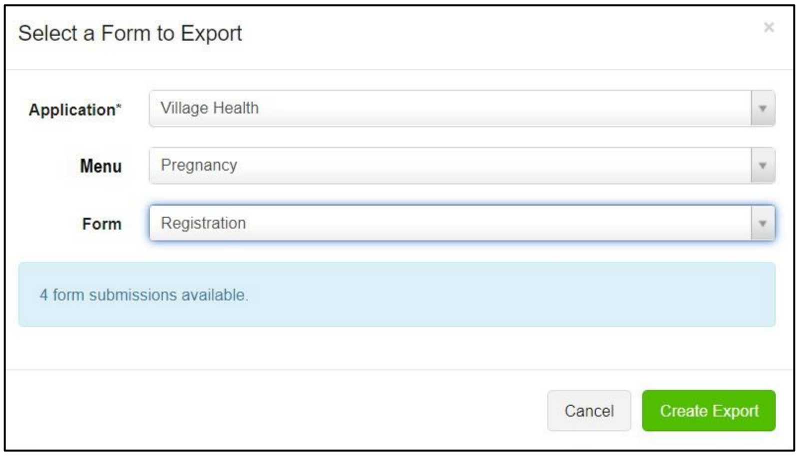


Figure 5: Select a Form to Export - Number of Form Submissions

If everything appears correct, click on "Create Export". CommCare HQ will automatically direct you to the edit page for your new export, where you can customize the export by configuring the settings.

Editing Form Export Settings

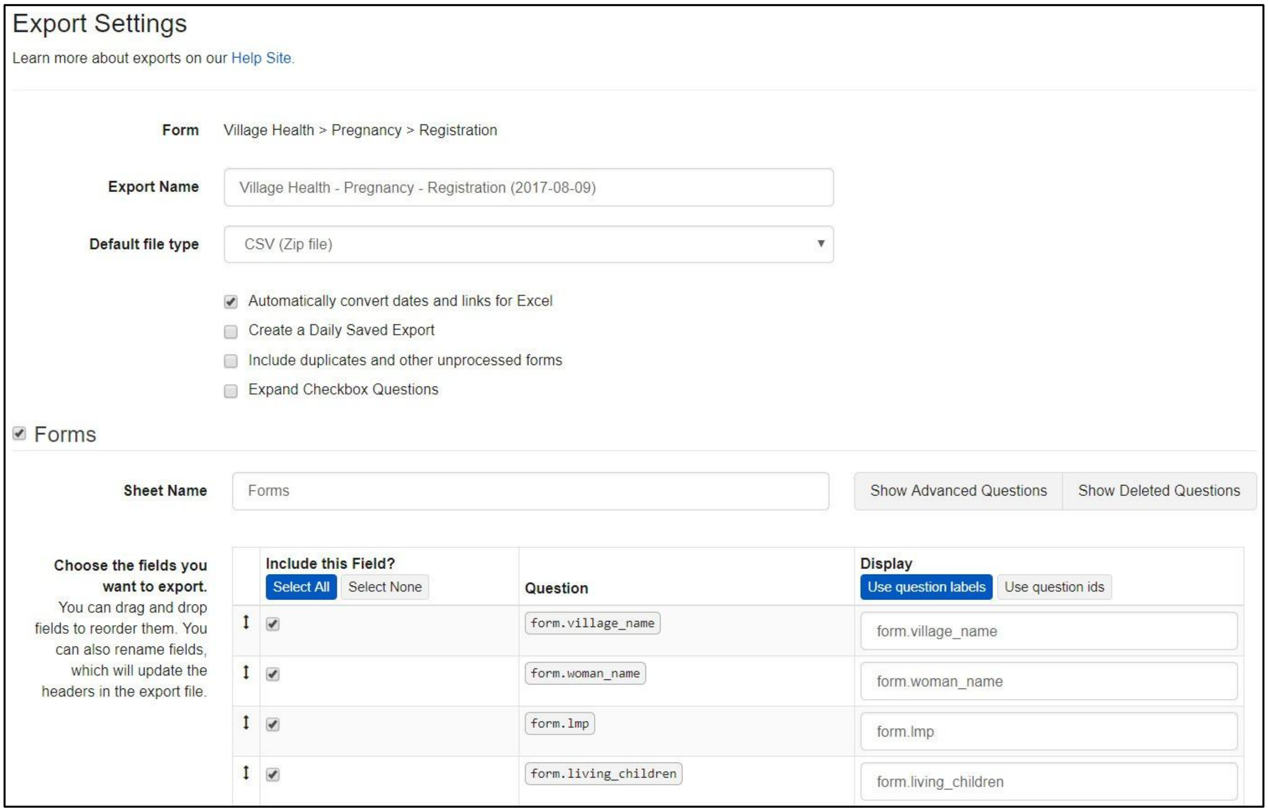


Figure 6: Export Forms Edit Page

The Export Forms edit page is broken down into three main parts:

- Export Settings
- Form Settings
- Privacy Settings (paid feature - Pro Plan or higher)

Export Settings

- **Export Name:** Use this field to change the name of your export. You can think of this as the file name. When you download the export, the file will have the name that you provide in this field. This is also the name that will be listed under the "Exports" section. We recommend that you use keywords that clearly describe the type of information in the export.
- **Default File Type:** Select the desired default file type using the dropdown option. There are three types available: Excel 2007, Excel (older versions), and CSV (Zip file). If you are interested in setting up an Excel Dashboard that is linked to CommCare HQ you can find examples and a tutorial on our Help Site page Create an Excel Dashboard (https://confluence.dimagi.com/x/tJDE) on our Help Site.

question1
item1 item2 item3
item2

Table 1: Sample Export with "Expand Checkbox Questions" Not Selected

If you select "Expand Checkbox Questions", the exported data will look like this:

question1 | item1	question1 | item2	question1 | item3	question1 | extra
1	1	1	
	1		

Table 2: Sample Export with "Expand Checkbox Questions" Selected

- A '1' in the cell indicates that the choice was selected, and a blank cell indicates that the choice was not selected.
- Any choice that is added to the form <u>after</u> the export is created will not have a separate column; instead, that choice will be listed in the "extra" column*
- Deleted choices from prior application versions will be in the "extra" column as well

***Pro Tip:** If a form is updated after creating your export and you don't want the new answer options showing up in the extra column, simply generate a new export and a column will be created for each new answer option.

Form Settings

After configuring the Export Settings, move on to the Form Settings section of the edit page, which also has four main parts:

Figure 8: Export Forms Edit Page - Form Settings

- **Sheet Name:** Use this field to change the name of the sheet (or tab) of your Excel file, which will

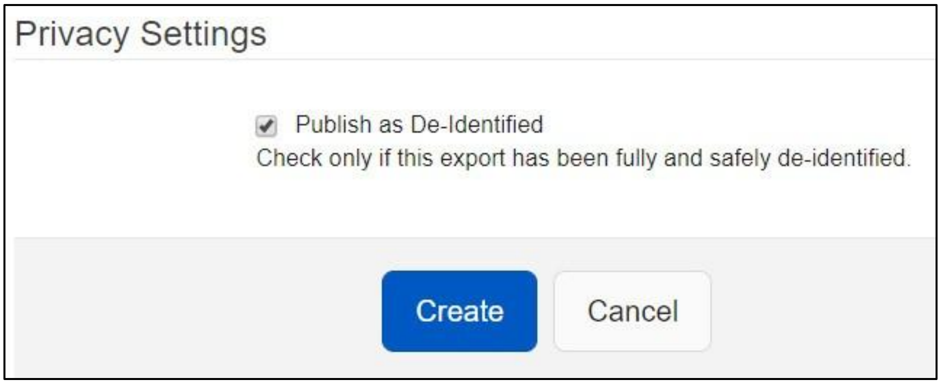


Figure 11: Export Forms - Publish in De-Identified Export

Now that you have configured all the settings: Export Settings, Form Settings, and Privacy Settings, look over everything once more to make sure that the export is setup as desired. Then, click on the “Create” button to finish the export creation process.

That’s it! You have created a form export! The export will now be available on the Export Forms page for download or further editing.

Downloading a Form Export

Once you’ve created a form export, it can be viewed and downloaded from the Export Forms page by you or other members of the project space. As seen in Figure 12, for each export listed, you can take one of three actions:

- **Edit:** Use this button to return to the Export Forms edit page.
- **Export:** Use this button to download the export.
- **Bulk Export:** Check this box if you have more than one export and would like to download some or all of them into one Excel workbook. Each export will be downloaded as an individual sheet in a single Excel workbook. This feature will be discussed later in this unit.

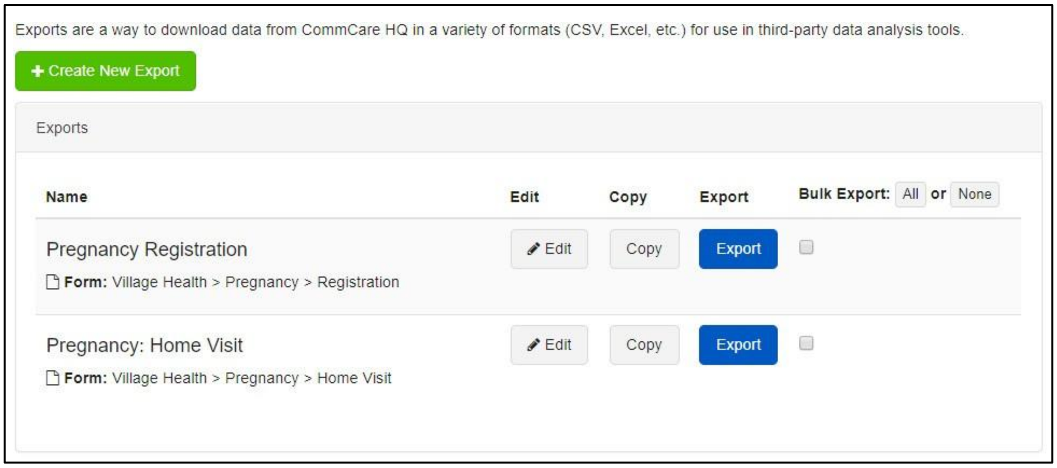


Figure 12: Export Forms Page - List of Exports

In order to download an export, click the "Export" button. You will be navigated to the page shown in Figure 13. Use the filter provided on this page to prepare the export for download. Your export can be filtered by user types or groups, and date range. The first field allows you to select the groups or users whose form data you are interested in exporting. Your export will include only the forms submitted by the chosen users or groups; for example, "all mobile workers". Multiple user types may be selected. You are able to choose "**Groups**" through the dropdown menu of groups (i.e. a subset of all mobile workers) from which to select. The **Date Range** field can be customized to whichever dates you want, between the first date a form was received by CommCare HQ and today's date.

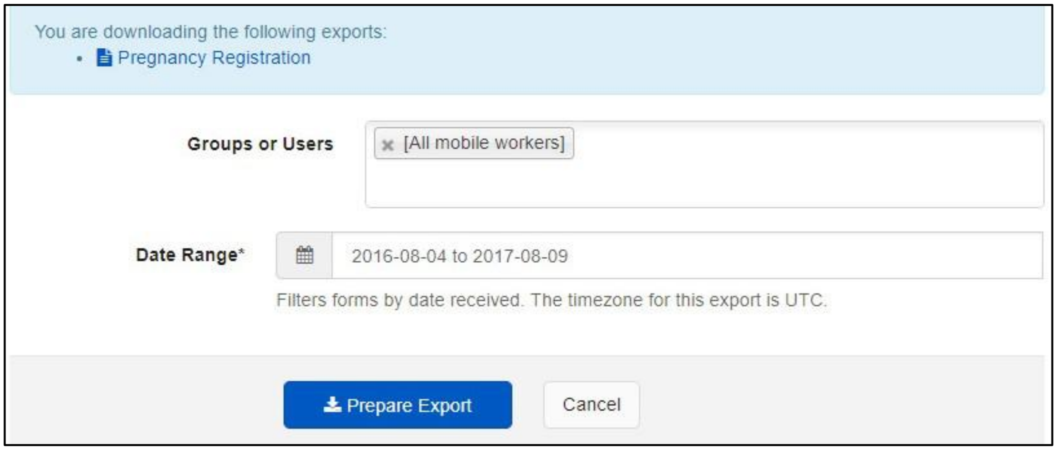


Figure 13: Export Forms Page - Prepare Form Export (User Types Interface)

Once you have selected your filters, click "Prepare Export". If your form collects multimedia, like photographs, the "Prepare Multimedia" button also will be available (Figure 14). Click on this button to download all of the media files attached to the form. Learn more about Multimedia Exports on our Help Site.

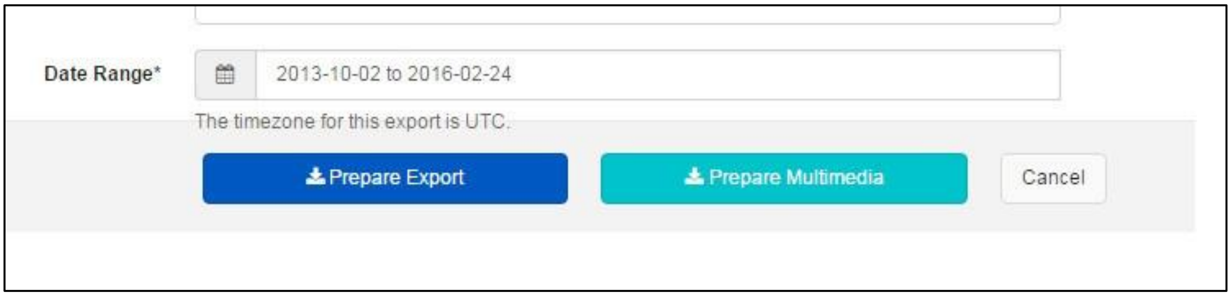


Figure 14: Export Forms Page - "Prepare Export" and "Prepare Multimedia" buttons

Wait for your request to be processed by CommCare. When the green bar next to the "download" button is full, your export is ready for download. Click the "Download" button, and your export, with the filters you have selected, will be downloaded.

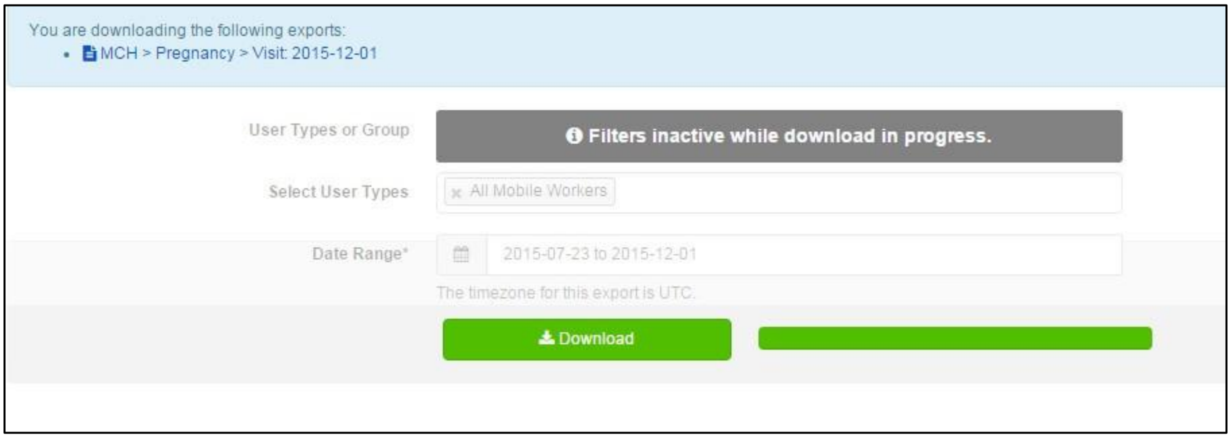


Figure 15: Export Forms Page - Download Form Export

Once downloaded, you can begin conducting analysis on your data!

1.2.2 Case Exports

While a form export allows you to download submissions from any single form, a **case export** allows you to download all of the data which has been saved as part of a case file, across all forms within the application. Since the process for generating and downloading a case export is similar to the process for a form export, we won't cover each individual step as before. Instead, this section will highlight some of the key differences you may encounter when downloading a case export.

The "Export Cases" functionality is located directly below the "Export Forms" functionality, under the "Data" tab of CommCare HQ. That is: CommcareHQ --> Data --> Export Data --> Export Cases.

Creating a New Case Export

As with creating a form export, at the top of the Export Cases page you will see a green button that says "+Create New Export". Below this button, you'll see a section called "Exports", which will be empty if you have not yet created any exports, or filled with a list of exports that have been generated.

Click on the "+ Create New Export" button to begin the process of creating a new export. A pop up window will appear, like the one in Figure 16. Use it to select the case type you would like to export. The following filters will be provided to help you select the desired case type: App Type, Application, Case Type. The App Type will be defaulted to "All Applications". For most projects, you should leave this as is. Then, select the application and case type, in that order. You cannot select the case type without first selecting the application.

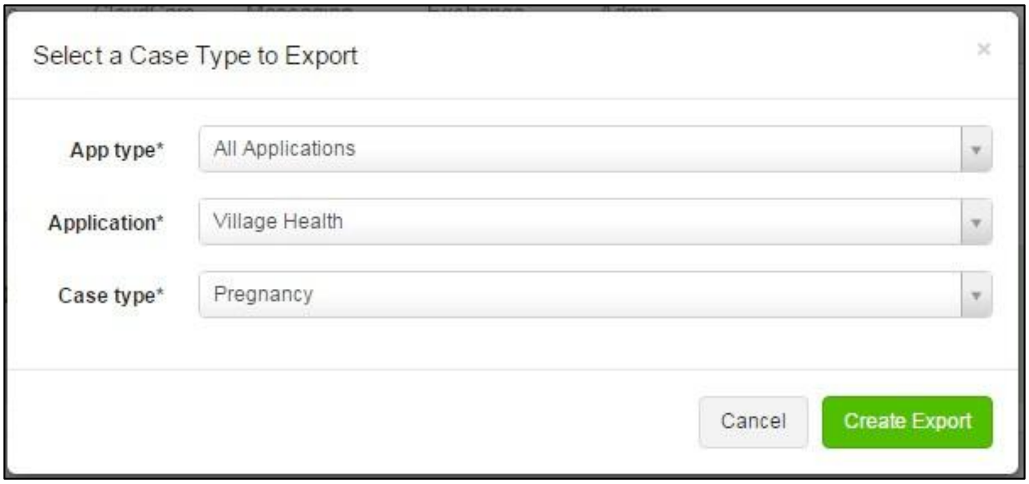


Figure 16: Select a Case Type to Export

What is a case type?

You may recall from CommCare Fundamentals that a case is a record of a person or entity that you want to track over time. A case type is the name for the type of case you are tracking. Think of a case type as a label. Application builders use case types to associate menus and forms with a set of cases. For example, a menu with the case type "pregnancy" has forms that collect and save data to cases that also have the case type "pregnancy". When you filter your export by case type, for instance "pregnancy", you are telling CommCare that you want to export the case data for all cases with the case type (or label) "pregnancy". For more guidance, consult with your project's application builder.

Editing Case Export Settings

After making your selection, click on the "Create Export" button to navigate to that export's edit page, where you can customize the export by configuring the settings.

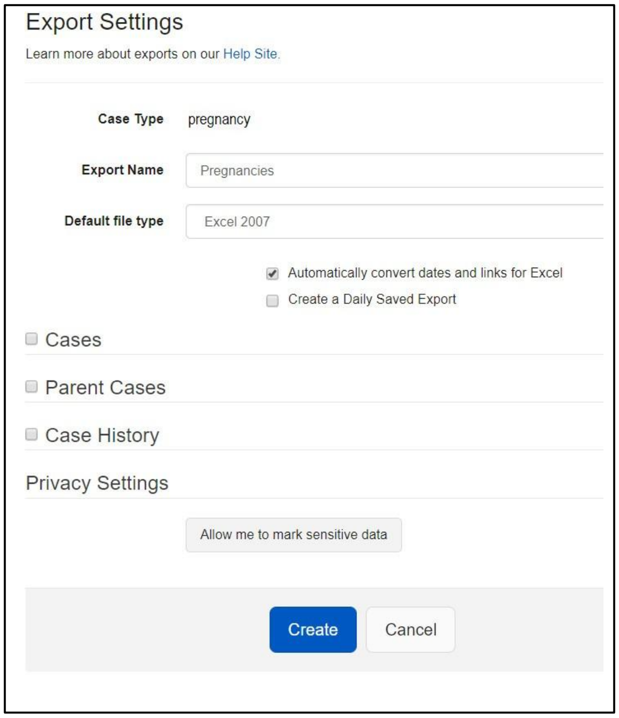


Figure 17: Export Cases Edit Page

The Export Cases edit page consists of four main parts:

The first two parts, **Export Settings** and **Case Settings** (similar to Form Settings), can be configured in the same way as the settings on the Export Forms edit page. One small difference to note is that column 3 of the Case Settings is titled "Property" instead of "Question". Unlike the Form Settings section which lists every question in a given form, the Case Settings section contains only the case properties (or data) that have been saved specifically to the case.

The third part, **Parent Cases**, is specific to case exports and is a more advanced configuration, so we will not cover it in this guide. If you would like to learn more about how to configure parent cases, visit our Help Site page Linking Parent and Child Case Data (https://confluence.dimagi.com/x/KRryAQ) .

Finally, as you saw with Form Exports, if you are dealing with sensitive, personal information, you can de-identify your case data through Privacy Settings.

After configuring the Export Settings and Case Settings as desired, click on the "Create" button to finish the export creation process. The export will be available on the Export Cases page for download or furthering editing.

Downloading a Case Export

On the Export Cases page, click the "Export" button next to the export that you would like to download.

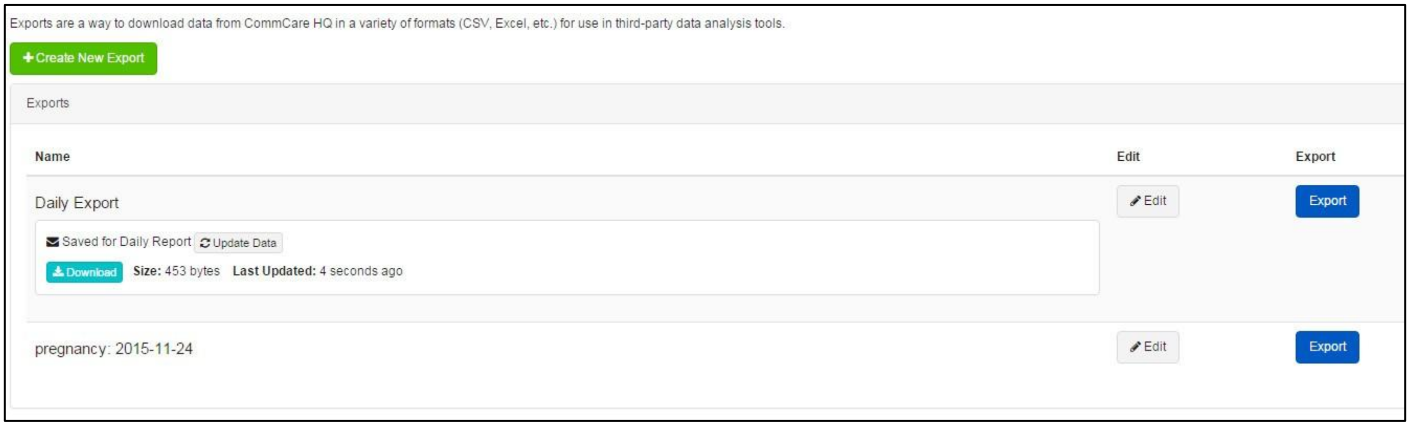


Figure 18: Export Cases Page - List of Exports

You will see the following screen (Figure 19), with options to select by groups or users, and a date range to export only cases modified within that range. Once your filters are set, click “Prepare Export”.

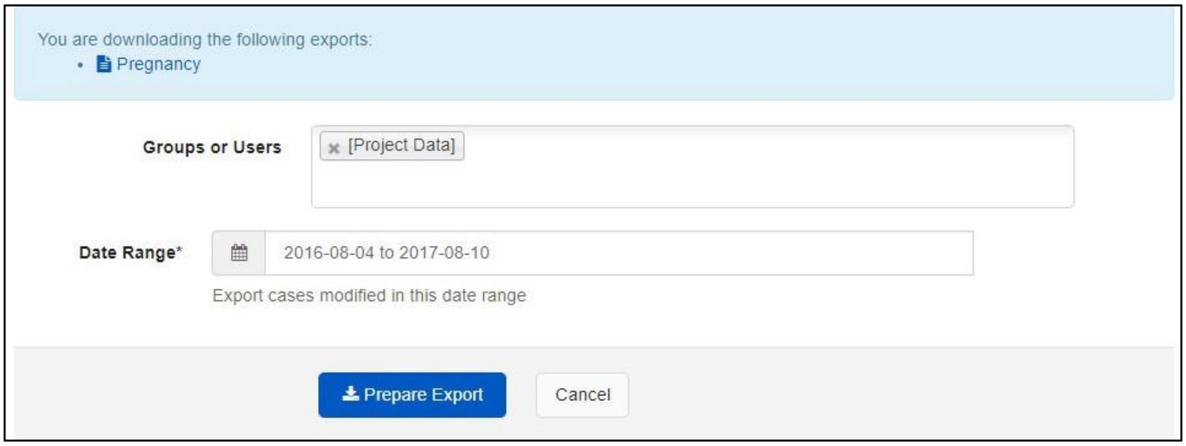


Figure 19: Export Cases Page - Prepare Case Export (User Types Interface)

Click “Download” to download your case export.

Figure 20: Export Case Page - Download Case Export

Part 1 Key Takeaways

CommCare offers 4 main export options: form export, case export, bulk export, and daily saved export. Access to each option and its features will depend on your CommCare subscription.

- **Form Export:** Use the form export to download submissions from any single form in an application, which is useful when you are interested in accessing and understanding changes in the data collected in a single form over time.
- **Case Export:** Use a case export to download all of the case data collected through multiple forms over time; this export is useful if you want to identify the current status of a case or the status of an indicator related to the case.
- **Bulk Export:** Choose a bulk export if you need to download more than one form to carry out an analysis. This option allows multiple form exports to be downloaded into one Excel workbook, with each sheet representing each form export.
- **Daily Saved Export:** Set up a daily saved export if you would like a form or case export to automatically update its data every 24 hours. This export expires after 35 days if not downloaded, but can be restarted easily, without new configurations.

CommCare exports are configurable and accessible to members of the project space.
Before exporting your data, you can use the Exports Settings page to rename and reorder columns and rows, select which data to include, and de-identify private or sensitive information. Once saved, an export will maintain the settings you have configured. If you need to make changes, you may edit the settings at any time. Other members of the project space, with appropriate permissions, can also create and edit exports.

CommCare exports consist of data collected through the application, but also include metadata and symbols designed to support data interpretation and analysis.
Understanding the makeup of a CommCare export is critical to understanding the data that it contains. Exports can include project data (captured by the mobile worker), metadata (automatically captured by the app), empty cells (questions intentionally left unanswered), “---” (skipped questions), and multiple values per cell. Knowing the difference between each of these will support better analysis, but also help you to detect and troubleshoot issues as necessary.

CommCare exports may be affected by application changes made after the application has launched.
While adding new indicators is a common and manageable change to exports, other types of changes may have undesirable effects on your exports and data analysis. After deploying an application, in general, we do not recommend that you make changes to choice values, question IDs, and case property names without a compelling reason. Before Making Changes to a Deployed Application (https://confluence.dimagi.com/x/bwwXAg), visit our Help Site to understand how the changes could impact your data.

Part 2: Inspecting and Cleaning Data

In Part 1, we walked through how to export raw data from CommCare HQ. Before analyzing the raw data, it is recommended that you inspect and clean the data. Usually this process requires that you use a variety of techniques and tools within Excel or another third-party software. While these approaches are useful, they will not clean the raw data stored in CommCare HQ, which means that each time you export, you will have to clean the same data all over again. To avoid this, CommCare HQ has built-in tools that can help you inspect and clean your raw data -- as you detect errors in your exports, or before you ever generate and download an export. In this part, *Inspecting and Cleaning Data*, we will introduce 5 basic inspection and cleaning tools and provide guidance on how and when to use each tool.

Follow Along!

If you are connected to the Internet and your project has collected data, log in to CommCare HQ and follow along. If you don't have access to the Internet or haven't yet collected data, no problem - you still can learn how to use the tools by reading through the processes outlined in this part.

Unit 2.1 Inspecting and Cleaning Data

Now that you understand how to access and interpret your raw data, let's learn about 5 basic tools that are available to help you prepare your data for analysis and reporting:

1. **Submit History Report** - use this to inspect any form submitted, across cases
2. **Case List Report** - use this to inspect all forms submitted for an individual case
3. **Edit Form Submissions** - use this to clean individual form submissions
4. **Archive Forms** - use this to remove accidental, erroneous, or fake forms from your data
5. **Close Cases** - use this to close accidental, fake, or old cases

Using these tools will allow you to have consistently cleaner data each time you export.

2.1.1 Submit History Report

Submit History Report (Reports Tab)
Available to all CommCare users

The Submit History Report is an inspection tool and provides the easiest way to view a submitted form. This feature allows you to view individual form submissions, inspect all of the data provided in the form, and understand how that form affects the case. To access this tool:

- Click on the "Reports" tab and select "Submit History" under the "Inspect Data" category.
- Use the filters to find the forms that you would like to inspect. You can filter by groups or users, forms, and date range. You can also filter dates by form completion time or form submission time. By default, this filter will be set to "completion time".
  - **Completion time** is when the form was completed on the phone.

- **Submission time** is when CommCare HQ received the form.
- For more information, see Form Completion versus Form Submission and Timezones on our Help Site.

- After selecting your filters, click “Apply” to generate a Submit History Report.

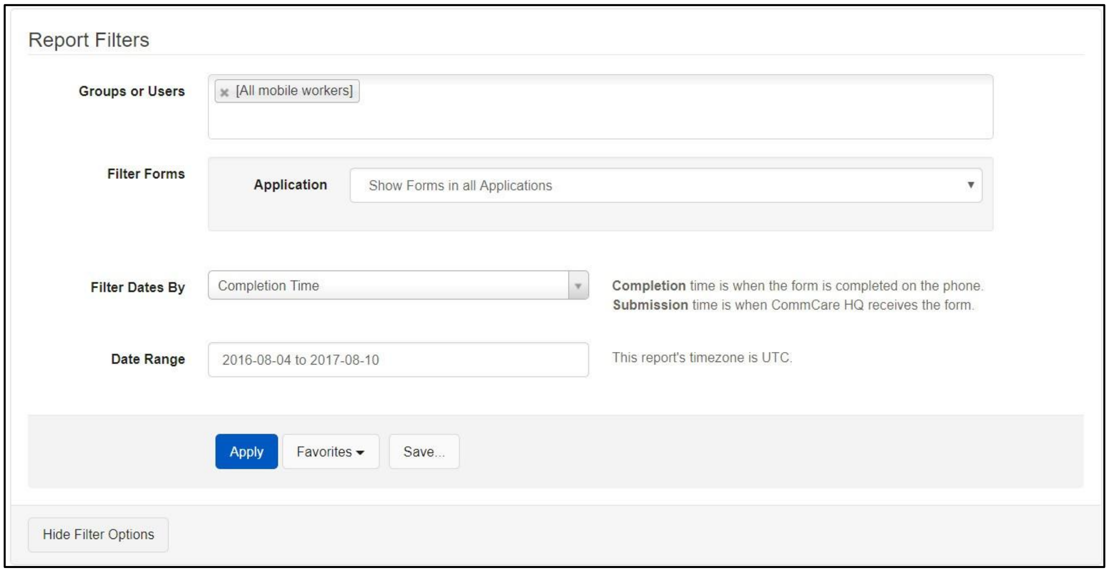


Figure 26: Submit History Report Filters

Form Completion vs. Form Submission

Each form submitted to CommCareHQ has three date-time stamps: Form Start, Form Completion, and Server Received (“Form Submission”). If you are working in an area with very good connectivity, and if the phone time is correct, then Form Completion and Form Submission times will be almost the same. That is, the form will be marked as complete and then immediately sent to the server. However, sometimes the form completion and submission times may be quite far apart, such as if the phone’s time is wrong or if the Internet or WiFi connectivity is limited and forms stay on the phone for a period of time before sending to the server.

You should determine which date-time stamp to use depending upon your project’s situation. In general, if users’ phones are set by the network and tend to be correct, it may be more reliable to use the Form Completion time, especially if mobile users are in an area with poor connectivity. If, for example, a worker fills out 25 forms over the course of a month, and they have to go somewhere at the end of the month to submit the forms, then submission data will not reflect the user’s actual pattern of form completion. If, however, your project is in an area with very good connectivity, it may be generally easier to use Form Submission.

Once the report is generated, you will see a table of form submissions (Figure 27). The forms will be sorted in descending order, from the most recent to least recent date and time, but you can sort the table by any of the columns. To inspect a form, click on “View Form” in the leftmost column.


Submit History

View Form	Username	Completion Time	Form	Sync Log
View Form	test "Test User"	Aug 11, 2016 20:58:19 UTC	Village Health > Pregnancy > Registration	66cd973d58887d6ba45faeaae9cb2c35
View Form	test "Test User"	Aug 08, 2016 16:29:44 UTC	Village Health > Pregnancy > Home Visit	
View Form	test "Test User"	Aug 08, 2016 16:28:25 UTC	Village Health > Pregnancy > Registration	
View Form	test "Test User"	Aug 08, 2016 16:08:57 UTC	Village Health > Pregnancy > Registration	

Figure 27: Submit History Report

Once the form loads, it will look similar to the one in Figure 28. Notice that there are multiple tabs. By default, you will land on the "Form Properties" tab, which shows all of the data collected in that particular form.

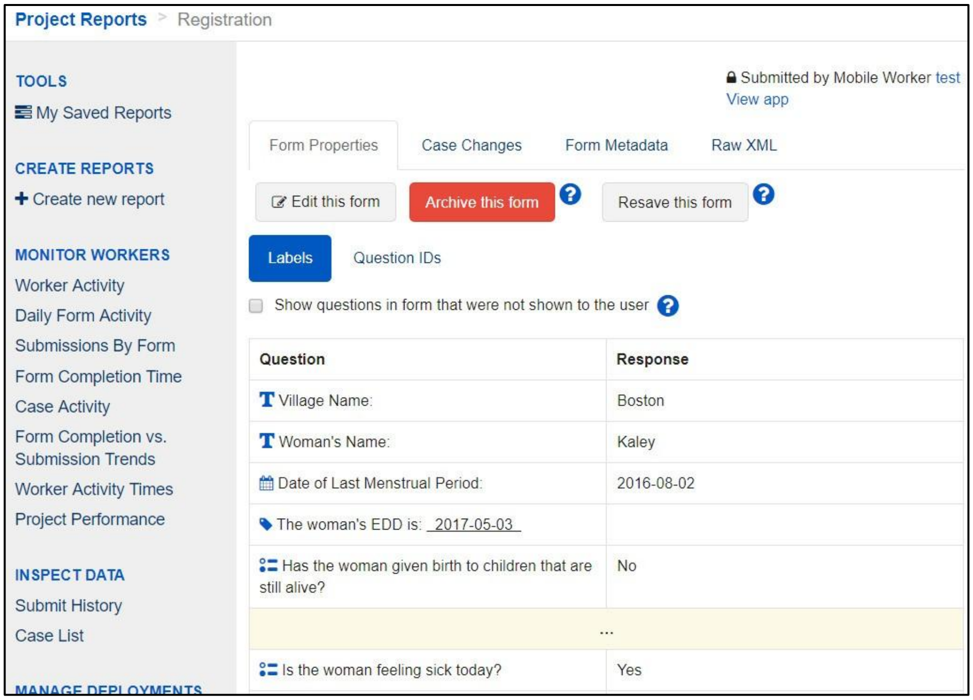


Figure 28: Submit History Report - Form Properties Section

In the center of this tab is a data table (see Figure 29) consisting of two columns, one shows the question and the other shows the response entered by the mobile worker.

☑ Show questions in form that were not shown to the user ?

Question	Response
Village Name:	Boston
Woman's Name:	Kaley
Date of Last Menstrual Period:	2016-08-02
The woman's EDD is: 2017-05-03	
Has the woman given birth to children that are still alive?	No
How many living girls?	
How many living boys?	
Is the woman feeling sick today?	Yes

Figure 29: Submit History Report - Form Properties, Data Table

In the question column, each question has an icon which indicates the question type. These icons are the same as the icons found in the CommCare Form Builder. See Form Builder (https://confluence.dimagi.com/x/twNI).

If the app uses question groups, these question groups will be framed into boxes that set them apart from the rest of the questions and will be titled exactly the same as they are in the Form Builder.

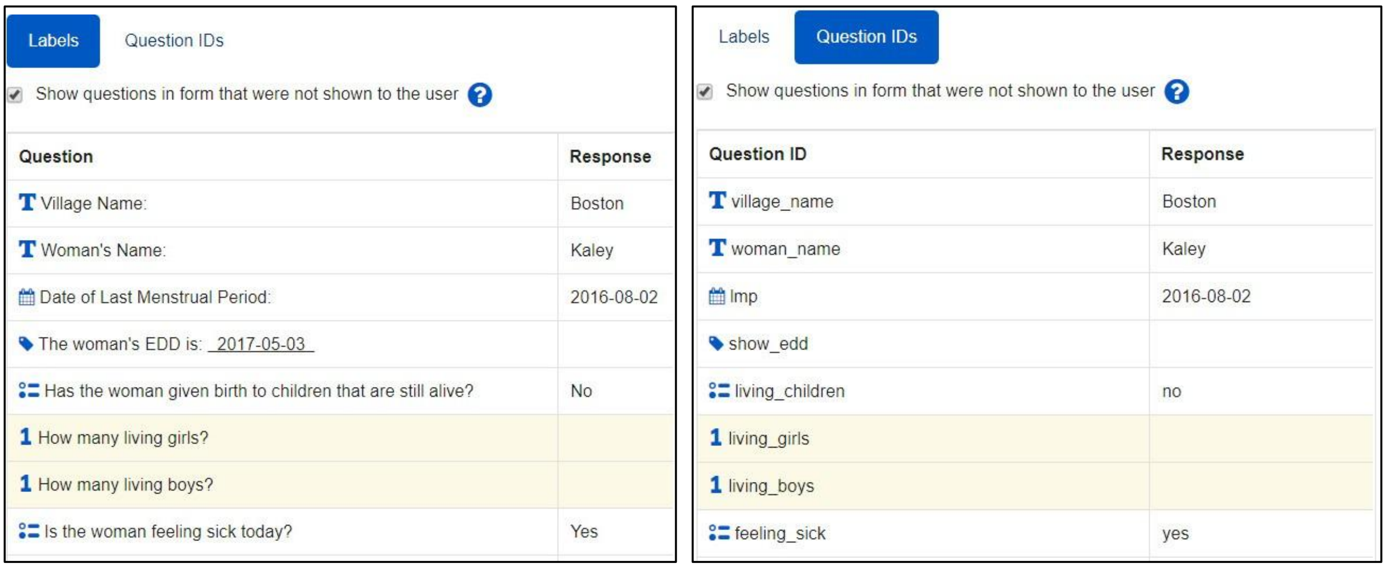
By default, only the questions shown to the mobile worker, as they filled the form, will appear in the data table. If your application uses skip logic such as display conditions, the mobile worker will not see a question for which a display condition was not met. For example, let's say an application includes a subset of questions based on gender, one set for male respondents and another set for female respondents. The mobile worker will only see the subset of questions applicable to the respondent. Within the data table, if you are looking at a form filled for a female respondent, only the subset of questions for females will appear. If you want to see questions that were part of the form, but not shown to the user who filled the form (i.e. those specific to male respondents), check the option: "Show questions in form that were not shown to the user", located above the data table. Questions not shown to the user will be highlighted in light yellow and the response field will have an ellipse ("...").

Other Notes:

- **Blank Lines:** If a question's label included an "output value" expression (i.e. it showed the output to a hidden value or other question), the expression will be shown as a blank line, such as: . If it is possible to figure out what was displayed to the worker, the line will be populated with the output value, for example, 8 years old ; otherwise, you will see a question mark, like this: ? .
- **Hidden Values** (i.e. form calculations) will be shown in a separate section at the bottom of the data table.

Viewing Options

Above the data table, you have the option of either viewing the form properties as **Labels** or **Question IDs**. If you choose Labels, you will see the same text that the mobile worker saw while completing the form. If you choose Question IDs, you will see the question IDs and item values rather than the actual text that mobile worker viewed. You can easily toggle between these two views.



Labels | Question IDs

Show questions in form that were not shown to the user

Question	Response
Village Name:	Boston
Woman's Name:	Kaley
Date of Last Menstrual Period:	2016-08-02
The woman's EDD is: 2017-05-03	
Has the woman given birth to children that are still alive?	No
How many living girls?	
How many living boys?	
Is the woman feeling sick today?	Yes

Labels | Question IDs

Show questions in form that were not shown to the user

Question ID	Response
village_name	Boston
woman_name	Kaley
lmp	2016-08-02
show_edd	
living_children	no
living_girls	
living_boys	
feeling_sick	yes

Figure 30: Submit History Report - Form Properties, Data Table - Labels, Question IDs

Buttons

At the very top of the tab, you will see one or two buttons, depending on your CommCare software subscription.

- **Edit this form -** this button will allow you to make modifications to a form submission. This button will only appear for CommCare users on a Pro Plan or higher. To learn how to use the form editing functionality, see the "Edit Form Submissions" section of this guide.
- **Archive this form -** this button will allow you to remove a form submission from your data. See the "Archive Forms" section of this guide to learn more on how to use the archiving functionality.

Other Tabs

Additional tabs may be available in the Submit History Report. The tabs that are visible will vary based on the type of form you are viewing.

- **Case Changes -** Only visible for forms that use case management. Use this to see how the form affected any cases that it modified.
    - Along the top, you will see the name of the case and the date it was opened
    - If the form opened a case, the top section will show any properties used in the creation of a case (for instance, case type, owner_id, and case name)

- The next section shows any case properties that were updated and the value with which they were updated.
- At the bottom of this tab, the metadata related to the case, like the case_id and the date_ modified, are provided.

- **Form Metadata -** Contains data captured passively by the application, phone, or server. For more information on CommCare metadata, refer back to Module 2 or visit the CommCare Data (https://confluence.dimagi.com/x/XZPE) page on our Help Site.
- **Attachments -** Only visible for forms that capture multimedia files. Multimedia files, such as a photo, signature, audio clip, or video clip, that were captured through the form will be available for download from this tab.
- **Raw XML -** Contains the actual XML of the submitted form, which you can view or copy into a text-editor for further analysis.

2.1.2 Case List Report

Case List Report (Reports Tab)
Available to all CommCare users

The Case List Report is a inspection tool which allows access to a rich repository of information and history about your project's cases. This feature is useful if you want to inspect a mobile worker's case list (i.e. verify the cases assigned to that worker). It is also useful if you would like to see the current status of a particular case or conduct an in-depth review of the case. To support in-depth inspection, this report is connected to the Submit History Report to provide easy navigation and exploration of each form submitted to the case and its effect on the case. For example, let's say that you are looking at a case export and notice a case property value that's higher than expected, you can use this report to identify the form in which this value was collected and use a cleaning tool to fix the error or reach out to the mobile worker for more information.

Note: The Case List Report is only useful for projects that use case management. If your project does not use case management, i.e. it does not create cases to track persons or entities, you should use the Submit History Report to inspect your data.

The Case List Report has two major components:

1. **Case List View,** which displays a list of cases, according to your filters, and allows you to find a specific case.
2. **Case Details View,** which displays detailed information about an individual case, including a summary of the case status, the current value of all case properties, a history of forms submitted to the case, and links to related cases.

To access this tool:

- Click on the "Reports" tab and select "Case List" under the "Inspect Data" category.
- Use the filters to find the cases that you would like to inspect. You can filter by groups or users, case type, and opened/closed status. You may also use the search box for a more targeted query.
    - **Groups or Users:** Use this to filter by the group or user that owns the case. Select any combination of users and groups, or use the default option "Project Data" to show cases

owned by all users. If you are using case sharing in your project, you may need to select the group that owns the case.

- **Case Type:** Use this to filter by case type. If your app uses multiple case types, then you can select either one case type or all case types.
- **Opened/Closed:** Use this to filter by open or closed cases. By default the report will show both open and closed cases; if you want to see only the cases that are currently open, you can change the filter to "Only Open".
- **Search:** Use this to filter even further, or to perform an advanced search, for instance by name or date modified. See "Using the Search Box" for more guidance.

Using the Search Box:

Often times, using the groups or users, case type, and opened/closed filters will be enough to find the cases that you want to inspect. However, if you need to do an advanced case search for a particular name or all the cases modified on a certain day, use the search box. Below is some guidance and common syntax.

- Type the case name or case ID to narrow your search
- Use AND and OR to join search terms (must be capitalized). For example: "mary OR maryam".
- Use "modified_on:" for the modified date and "opened_on:" for the created date. For example, opened_on: [2015-10-01]
- Put an asterisk (i.e. a star) after the date if you do not have the exact timestamp. This will return every case touched on or after the given date. For example: 2015-10-01*
- Use TO in between date ranges (must be capitalized). For example: 2015-10-01 TO 2015-12-31. You can also use an asterisk to open the range to capture every case that was touched on or after the given date. For instance, 2015-10-01 TO *
- Combine these for more complex queries, for instance: mary AND modified_on: [2015-10-01 TO 2015-12-31]

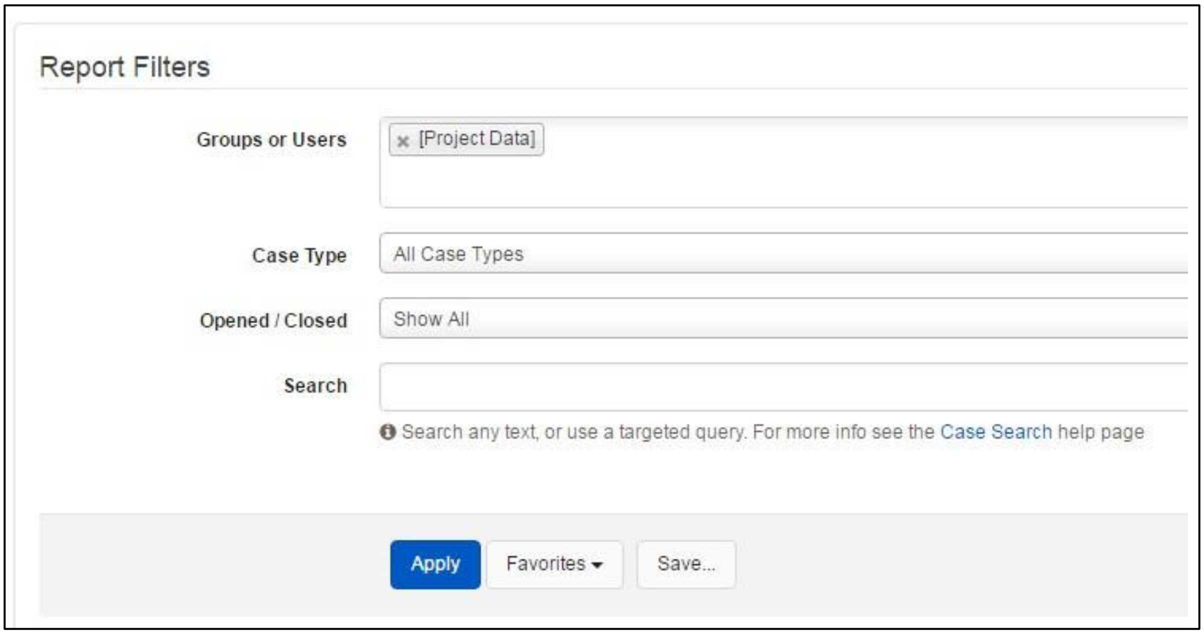


Figure 31: Case List Report Filters

After selecting your filters, click “Apply” to generate a Case List Report. The Case List View will appear (Figure 32).

Case List View

Case List

Case Type	Name	Owner	^ Created Date	Created By	Modified Date	Status
features	Rajiv	test	2016-03-23 10:16:13	test	2016-03-23 10:16:13	open
features	marissa	test	2016-03-23 09:59:36	test	2016-03-23 09:59:36	open
features	samuel	test	2016-03-23 09:56:59	test	2016-03-23 09:56:59	open
features	seena	test	2016-02-24 14:21:13	test	2016-03-23 04:42:18	closed

Figure 32: Case List Report - Case List View

In the Case List View (Figure 32), you will see a table with a list of your cases along with some other useful information, including:

- **Case Type** - the case type of the case in the given row
- **Name** - the name of the case. Clicking on the name will direct you to the Case Details View (see below)
- **Owner** - the name of the mobile worker or group that owns the case.
- **Created Date** - the date when the case was created
- **Created By** - the username of the mobile worker that created the case. May not be the same as the owner of the case.
- **Modified Date** - the last date a mobile worker filled out a form which updated the case
- **Status** - the current case status, either open or closed

To sort this table, click on the header of a column. Sorting works for the following columns: Case Type, Name, Created Date, Modified Date, and Status.

Try It Out in CommCare HQ!

Imagine that you want to view the case details for a case that was recently updated by one of your mobile workers. Your project has dozens, perhaps hundreds, of cases, so you don’t want to click through the list until you find it.

1. Use the filters! You already know a lot of information. You can specify the mobile worker name, choose the case type, and set the case status to open.
2. Try the search box! If you know the actual name of the case, or if you know the date it was updated, you can use those values in the search box.

Case Details View

Once you locate the desired case, select the case by clicking on the name of the case to be navigated to the Case Details View. This view allows you to see several components which provide additional information:

- **Case Summary Box** - provides a quick overview of generic case properties like name, case type, and owner.
- **Case Properties Tab** - allows you to see the current status of all case properties
- **Case History Tab** - allows you to see each form submission related to the case; selecting a form from this list allows you to see the submit history for that form

In addition, sometimes an additional tab will be visible:

- **Related Cases Tab** - allows you to view a list of associated cases; if your application has parent and child, or case and subcase, linkages, this tab will appear, allowing you to view the case details of the related cases

Case Summary Box

At the top of the Case Details View is the Case Summary Box. This box contains generic case properties,
i.e. those that are captured for every case in CommCare HQ, regardless of the specific application or project configurations. You may recognize some of these case properties from the Case List View. Here, a couple others are included: Last Submitter and Case ID.

- **The last submitter** is the last mobile worker to submit a form to the case. This person is sometimes the same as the owner, but not always. For example, if the application uses case sharing, the owner will be a group not an individual user. You can click on the hyperlinked user/group name in either "Last Submitter" or "Owner" to manage the account of that user or group.
- **The case ID** is a unique identifier, a long alphanumeric code, which CommCare HQ uses to distinguish among cases. A case ID is included with each case in your case exports. When searching for a particular case in your exports, rather than use the name - which can sometimes be the same for more than one case - you can use the unique case ID to find the case instead.

Name	Maria Gonzalvez	**Opened On**	Aug 08, 2016 16:28 UTC	**Modified On**	Aug 08, 2016 16:28 UTC	**Closed On**	---
Case Type	Pregnancy	**Last Submitter**	Mobile Worker test	**Owner**	Mobile Worker test	**Case ID**	5b447e1581a14e1ba5abae611d650568

Figure 33: Case List Report - Case Summary Box

Case Properties Tab

Located below the Case Summary Box is a section with two tabs: Case Properties and Case History. By default, the Case Properties tab will be selected (as seen in Figure 34). This tab shows each case property that is unique to your application and the current value of each case property. The current value reflects the most recent value recorded in a form. For example, in Figure 34, we can see that the case property "referral_given" is currently "no", which means that no referral was given during the most recent visit, but this value could change to "yes" if a referral is made during a later visit. If no value has been recorded, you will see "---" instead of a value.

Figure 34: Case List Report - Case Properties Tab

If you are interested in inspecting more than current status of all of the case properties, you can go into greater detail by exploring all of the submitted forms which updated the case. This is accomplished in the Case History Tab.

Case History Tab

When you click on the Case History Tab, you will see a table with a list of forms, one row for each form that updated the case (Figure 35). The table is organized using some basic metadata: the date the form was received by CommCare HQ, the name of the form, and the user who submitted the form. Forms are listed from most recent to least recent, in the order they were received by CommCare HQ.

Figure 35: Case List Report - Case History Tab

By clicking on any row, you can reveal the details of the submitted form (Figure 36):

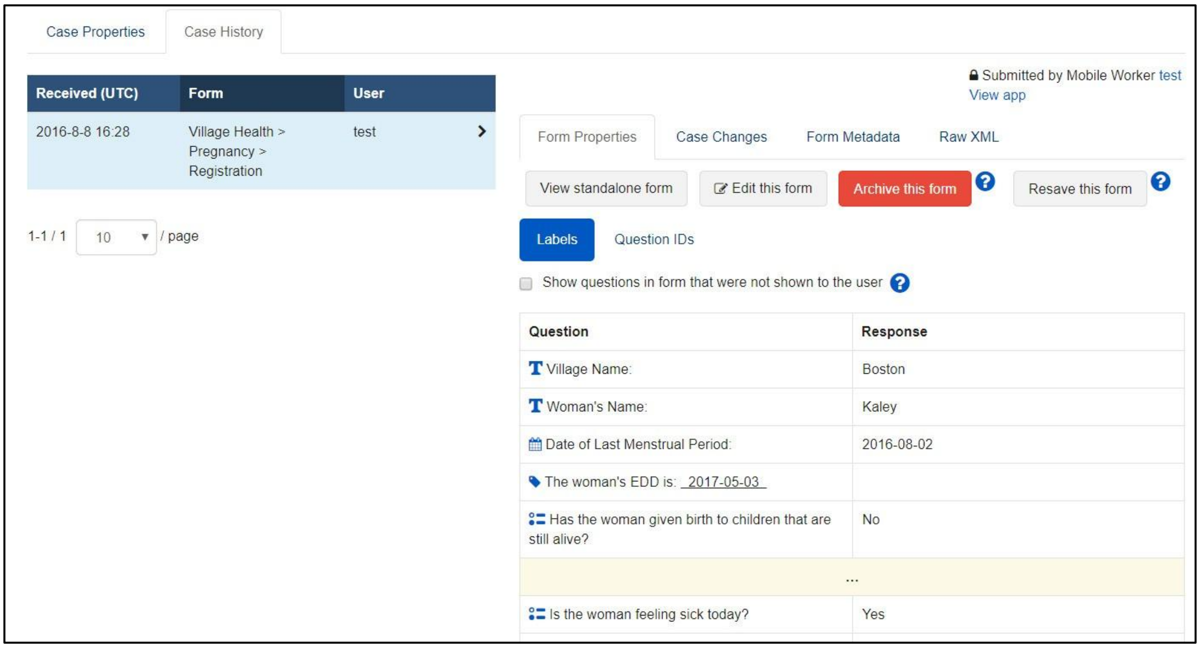


Figure 36: Case List Report - Case History Tab Expanded

You may notice that this looks very similar to another inspection tool - the Submit History Report. Like in the Submit History Report, this expanded view allows you to review the Form Properties, Case Changes, and Metadata. If you want to view the form by itself, click “View standalone form” to be routed to the Submit History Report. Follow the guidance in the previous section to inspect the submitted form.

Related Cases

As mentioned earlier, some applications have a hierarchy of related cases and subcases, like parent and child, or school and student, or farmer and farm. If a case is connected to another case, then you will also see the Related Cases Tab (Figure 37):

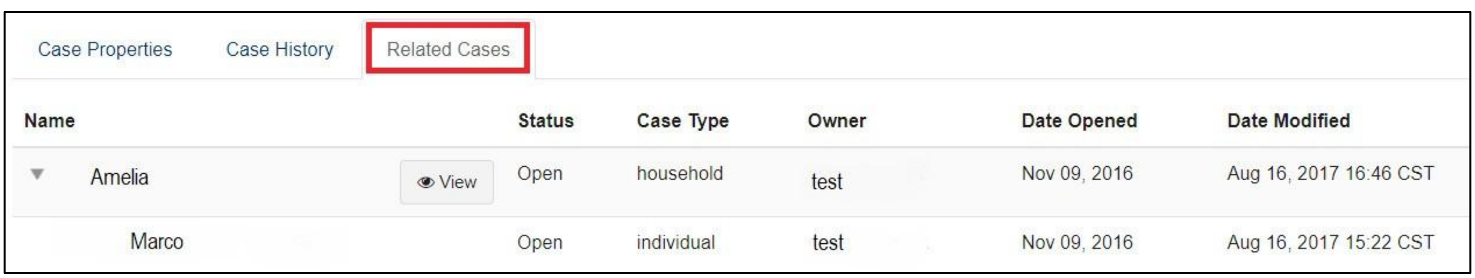


Figure 37: Case List Report - Related Cases Tab

This tab allows you to view the hierarchy. In the figure above, for example, the selected case is named Marco, and Marco is related to a different case called Amelia. To view the related Amelia case, you can click on the “View” button to be shown the case, and inspect it within the Case Details View.

A Brief Note on CommCare HQ Case List and Case Details vs. CommCare Mobile Case List and Case Details

If you are familiar with the CommCare mobile application, then you may recall that there is also a Case List View and a Case Details View on CommCare Mobile. This overlap in names can be confusing, but they actually serve a very similar purpose. In both platforms, the Case List provides you with a searchable list of cases, and Case Details provides details about the case.

2.1.3 Edit Form Submissions

Edit Form Submissions (Reports Tab)
Available to CommCare users with a Pro Plan or higher

The Edit Form Submissions feature is a cleaning tool that allows you to modify the responses in a form submission. This feature is useful if you need to correct an error in a form submitted by a mobile worker. In order to edit a form:

- Navigate to the Submit History Report page and use the filters to generate a report.
- Once the report is available, find the form that you want to edit and click "View Form".
- Click the "Edit this form" button, located above the data table (see Figure 38). This action will direct you to the "Edit Submission" page, which will allow you modify and re-submit the form.

Important: Editing a form can impact case data. Before using the Edit Form Submissions feature, please read the information in the "Other Things You Should Know" box at the end of this section.

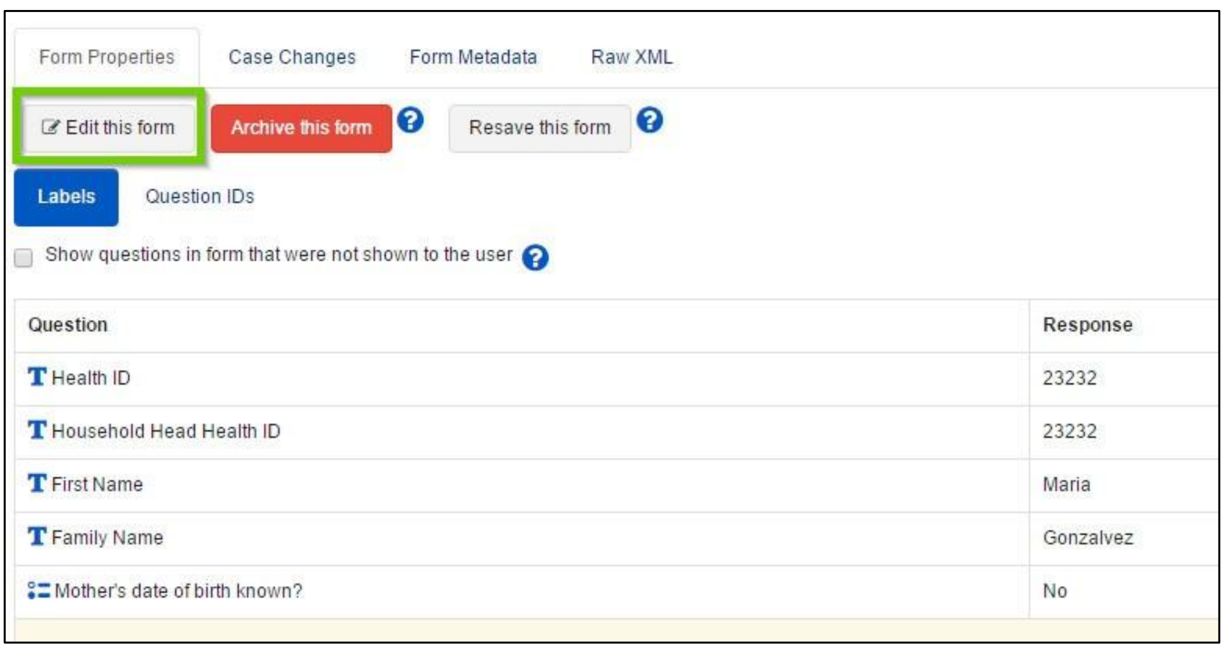


Figure 38: Edit This Form Button

Let's use a Post Harvest Visit form as one example of how to use this feature. In Figure 39, you can see a form which has three blank questions. This is visible in the data table of the Form Properties tab.

What crops did you harvest this year?	Wheat
Were you satisfied with your crop yields?	
Were you satisfied with the market prices you earned for your crops?	
What actions would you take to improve your crop yields?	
When would you like to schedule the next household visit ?	2017-10-09

Figure 39: Form Properties Tab, Form with Blank Questions

Click the "Edit this form" button to be directed to the Edit Submission page (Figure 40), where you can fill in responses to the blank questions, or modify previously submitted responses.

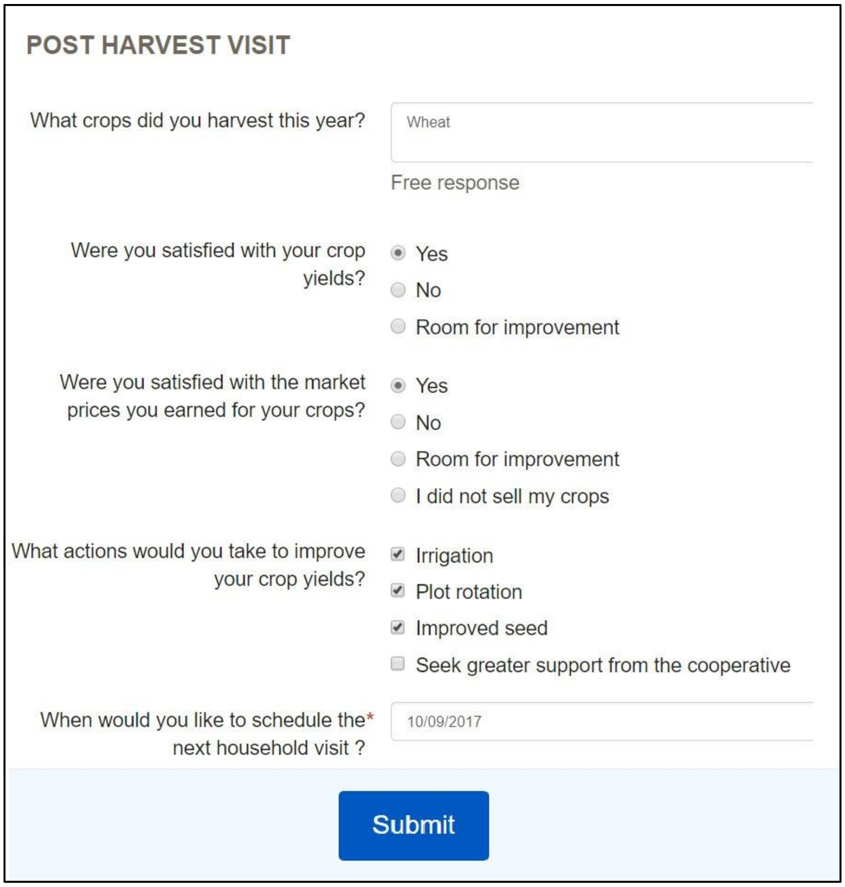


Figure 40: Edit Submission page

Once finished, press the "Submit" button. Your form data, and any associated case data, will be updated and viewable in the data table.

What crops did you harvest this year?	Wheat
Were you satisfied with your crop yields?	Yes
Were you satisfied with the market prices you earned for your crops?	Yes
What actions would you take to improve your crop yields?	Irrigation Plot rotation Improved seed
When would you like to schedule the next household visit ?	2017-10-09

Figure 41: Form Properties Tab, Form with Edited Responses

If you ever revisit this form, you will see the edited form in the data table, but will also have the option to view the original form. At the top of the Submit History Report, you will see a message that indicates the form you are viewing has been modified (Figure 42). To view the original submission, or previous version, click on the blue hyperlinked text.

Figure 42: Modified Form Submission Message

Reversing Form Edits:

You can reverse edits that were made to a form by restoring the previous version.

- Navigate to the form that was edited. At the top of the page, click on the blue hyperlinked text to be directed to the previous version of the form.
- Review the form contents to confirm that it is the version that you want to restore.
- After reviewing, click on the “Restore this form” button, a large red button, to reverse all edits.

Other Things You Should Know about Editing Forms:

- The web-based form that opens when clicking on "Edit this form" will use the exact same version of the form that was used by the mobile worker during the original submission. This means that if a new version of the form has been released for mobile workers to use, none of the updates (e.g. additional questions) will be visible. You cannot use this feature to answer a question that did not exist when the mobile worker completed the form.
- When editing a submission, CommCare HQ will attribute the modification to the mobile worker who originally submitted the form, not the web user who is making the modification.
- The submission date and time of the form will not change.
- You cannot change the specific case that the form references.
- Basic case property loading into hidden values will reflect the state of the case at the time the form was submitted, not the value at the time you are editing the form.
- Case management is supported. Any updates to the case that are made will be applied in the order the submission was originally received. This means that if you are changing the response to a question that updates a case property, and that same property has since been updated through a form that was submitted after the one you are editing, the change you are making will not be reflected in the final case state. It will not be reflected because your change will not be the most recent update.

Limitations

- Any lookup table references will reflect the current user tables, not the tables at the time the form was filled in. This includes groups and product/location tables.
- Forms that reference a User Case property cannot be modified using this feature.
- Any advanced case operations (e.g. hard-coded XML or case database references) may not behave as expected. They are likely to reflect the latest state of the case and not the state when the form was filled in.
- This feature is not designed to support forms submitted with CommCare Supply apps or with ledger references; using it in these cases could result in unexpected behavior and is not recommended.

2.1.4 Archiving Forms

The Archive Form feature is a cleaning tool that allows you to remove form submissions from your data. This feature is useful if a mobile worker has submitted accidental, erroneous, or fake forms. For example, you could use this feature to remove a "follow up" form that was filled and submitted twice during the same visit, or you could use it to remove a form that was submitted to close a case which should remain open, in order to reopen the case. Archiving a form will remove the data that had been collected and reverse any changes made to the case through that form. Changes will be reflected immediately in form data, case data, reports, and exports. For Daily Saved Exports, the changes will be reflected only after the report regenerates, within 24 hours or upon a manual update.

Important: Archiving a form can impact case data. Before using the Archive Form feature, please read the information in the "Other Things You Should Know" box at the end of this section.
1. **Single Form** (one form at a time), which is available to all CommCare users in the "Reports" Tab
CommCare HQ provides two ways to archive forms:

2. **Multiple Forms** (many forms at a time), which is available to CommCare users with a Pro Plan or higher in the "Data" Tab

Option 1: Single Form

Archive a Single Form (Reports Tab)

Available to all CommCare users

You can access the Archive Form feature in three ways:

#1: Submit History Report

- Navigate to the Submit History Report page and use the filters to generate a report.
- Once the report is available, find the form that you want to archive and click "View Form".
- Click the "Archive this form" button, which is the red button located above the data table (see Figure 43). This action will remove the form and reverse any changes that the form caused in the case history.

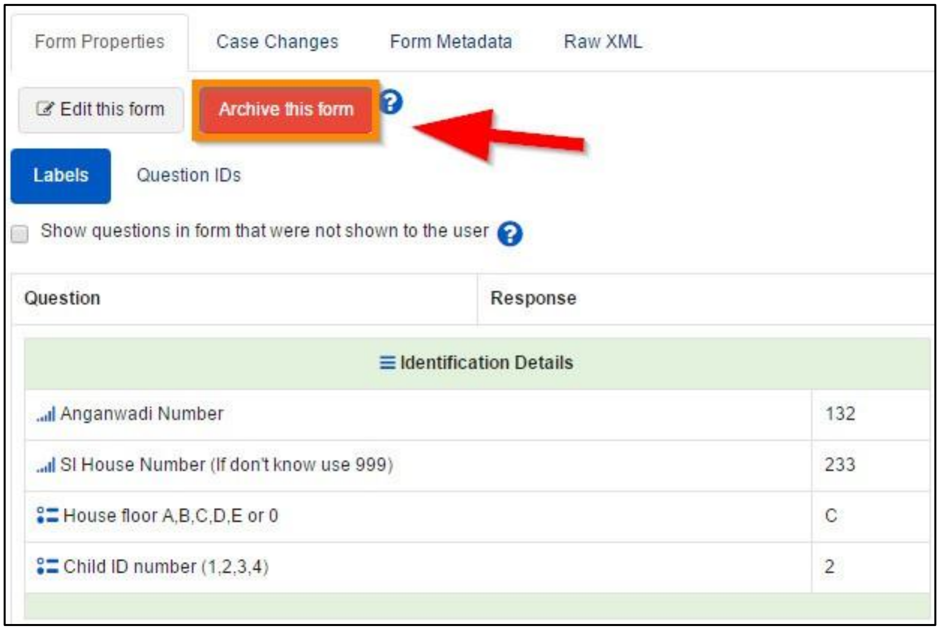


Figure 43: Archive a Single Form through the Submit History Report

#2: Case List Report

You can also archive forms from the Case List Report.

- Navigate to the Case List Report page and use the filters to generate a report.
- Once the report is available, select the case. You should choose the case for which you know a form was submitted that you would like to archive.
- Click on the "Case History" tab, locate the form you would like to archive, and click the "Archive this form" button (see Figure 44).

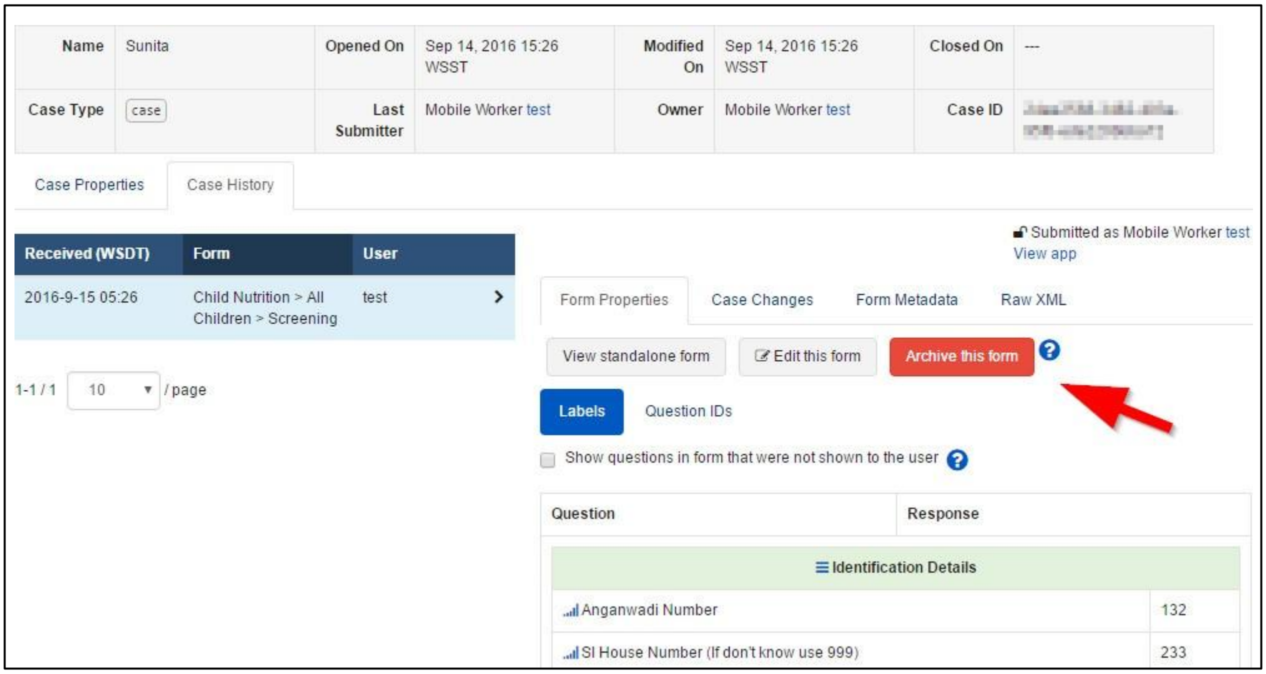


Figure 44: Archive a Single Form through the Case List Report

#3: Quick Find via Unique ID (Advanced)

If you have already exported your form data and need to find a particular form to archive, you can use the form ID to query the form from the address bar of your web browser. To do this:

- In your export, find the form ID of the form that you would like to archive. This is a long, alphanumeric, such as: ab01cd22-33e3-444f-5ggg-12h34i56j789, that is unique to every form and located in the "info.formid" column of your export.
- Open a new tab in your web browser and type: commcarehq.org
- Press the "tab" button on your keyboard.
- Type or paste the form ID (info.formid) and press enter to be navigated to the page where you can archive the form.

If you receive an error message, make sure that you have entered the form ID correctly. If you are not logged into CommCare HQ, you will be required to log in before viewing the page. Note that you will be allowed to navigate only to forms in project spaces in which you are a web user.

You can follow these same steps to search for a particular case in the Case List Report by pasting the case ID (that is, "info.caseid") instead of the form ID.

Restore a Single Form (Reports Tab)

Available to all CommCare users

If you archive a form by mistake, you can unarchive the form at any time by using the Restore feature.

When you restore a form, it is considered a “normal” form again, and the data contained in the form will reappear in the form data, case data, reports, and exports. To restore a form:

- Navigate to the “Raw Forms, Errors & Duplicates” Report page, located under the “Manage Deployments” category under the “Reports” tab
- Filter by “Archived Forms”
- Click the “Restore this Form” button to unarchive the form and restore the changes this form made to the case

Option 2: Multiple Forms

Archive Multiple Forms (Data Tab)

Available to CommCare users with a Pro Plan or higher

Archive Multiple Forms, also known as bulk archiving, is a feature that is useful when you need to remove a large number of form submissions at one time, for instance, after conducting a training or field testing an application, or when a worker has submitted a batch of forms erroneously. To use this feature:

- Navigate to the “Data” tab of your project space
- Choose “Manage Forms” from the left panel, and use the filters to generate a report
    - **Important:** Leave the “Archived/Restored” filter set to “Normal Forms”

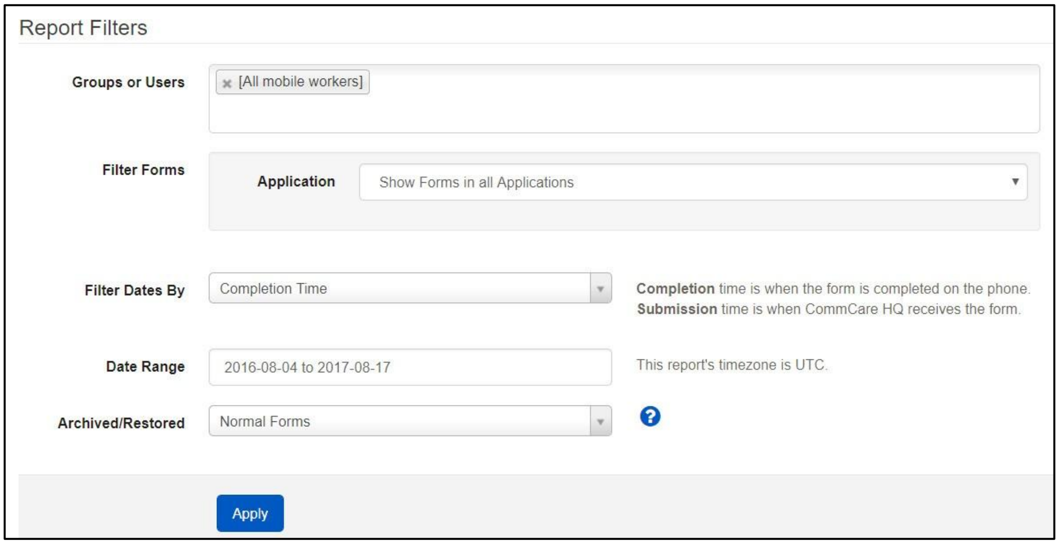


Figure 45: Manage Forms Page - Report Filters

Once your filters are set, click “Apply”, and a report will be generated with a list of forms (Figure 46). This report will look similar to the Submit History Report, except that the leftmost column will provide a checkbox for each form. Use the checkboxes to select the specific forms you would like to archive, or use the “Select all” option to choose every form.

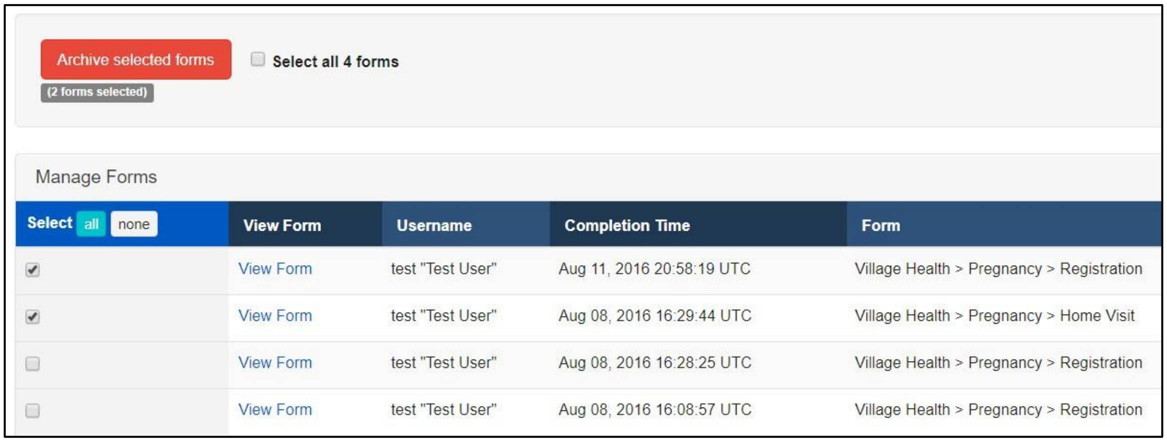


Figure 46: Manage Forms Page - Archive Multiple Forms

Once you have selected the forms, verify that you have only selected the ones that you want to archive. Remember, archiving forms can change your case data, so you want to use this functionality carefully. After verifying, click the “Archive selected forms” button. A progress bar will appear to show you the status of the archiving process. Once complete, your forms will be archived.

Restore Multiple Forms (Data Tab)
Available to CommCare users with a Pro Plan or higher

You can use this same report to restore forms that you have archived.

- Navigate to the “Data” tab of your project space
- Choose “Manage Forms” from the left panel, and use the filters to generate a report
- Important: Leave the Archived/Restored filter set to “Archived Forms”
- Click “Apply” and a report will be generated (Figure 47)

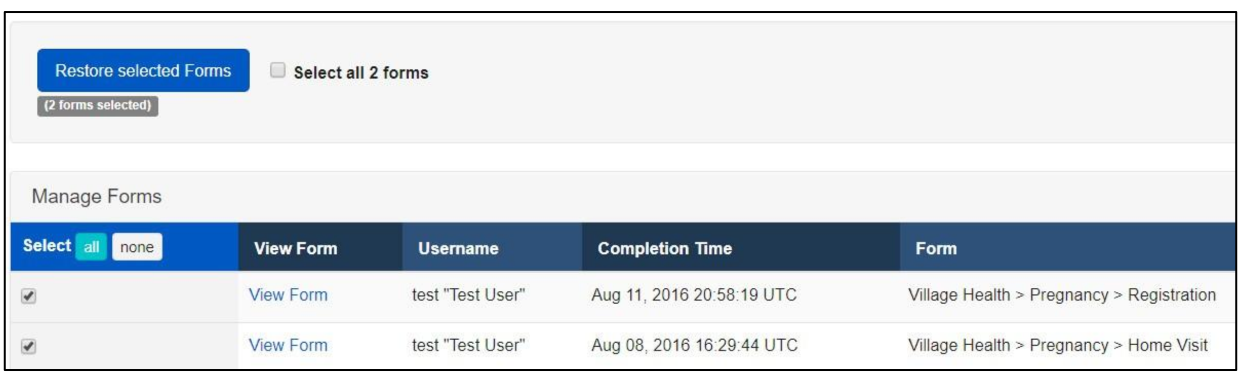


Figure 47: Manage Forms Page - Restore Multiple Archived Forms

Use the checkboxes to select the forms you would like to restore. Like before, verify your selections. Then click the “Restore selected Forms” button. A progress bar will appear to show you the status of the restoration process. Once complete, your forms will be restored, and the data contained in those forms will reappear in your form data, case data, reports, and exports.

Other Things You Should Know about Archiving Forms:

Before archiving a form, read the notes below about how archiving a form can affect cases:

- If the form is the only form submitted to the case (e.g. a form that registers or opens a case), archiving it will cause the case to be deleted.
- If the form was used to create or update multiple cases, archiving it will affect the main (parent) case and all of its subcases (child cases).
- If the form was used to close a case, archiving it will reopen the case.
- Archiving a form does not impact the metadata field "date last modified" for a case. It will still reflect the date the case was modified by the archived form.
- Changes resulting from archived forms will not appear on a phone until the phone syncs with the server. In some circumstances, you may need to clear user data, log in the mobile worker, and resync the data to the device. For more on how to reset user data, visit the CommCare Android Troubleshooting (https://confluence.dimagi.com/x/OQla) page on our Help Site.

2.1.5 Close Cases

The Close Case feature is a cleaning tool that enables you to stop tracking a case and remove the case from a worker's case list. This feature is useful if you have accidental, fake, or old cases that are no longer in use. Remember, a case is a record of a person or entity that you want to track over time. When tracking a case is no longer relevant to your project, the case should be closed. In most instances, mobile workers will close cases through the application. However, sometimes a mobile worker forgets to do this, which could muddy your data and impact analysis. For instance, if cases for community members that have moved away are not closed, the total number of people being served by the mobile worker will be inaccurate, as will any calculation of the percentage of people served in a given month.

After closing a case, a mobile worker will not be able to submit any additional forms to the case. However, it is important to note that closing a case does not affect the forms already submitted to the case. Any form previously submitted will still be included in your reports and exports.

Close a Single Case (Reports Tab)
Available to all CommCare users

- Navigate to the Case List Report and use the filters to generate a report
- Once the report is available, find the case that you want to close and click on the name of the case.
- Review the case details to ensure that you have selected the correct case.
- Click the "Close Case" button (Figure 48) to close the case.

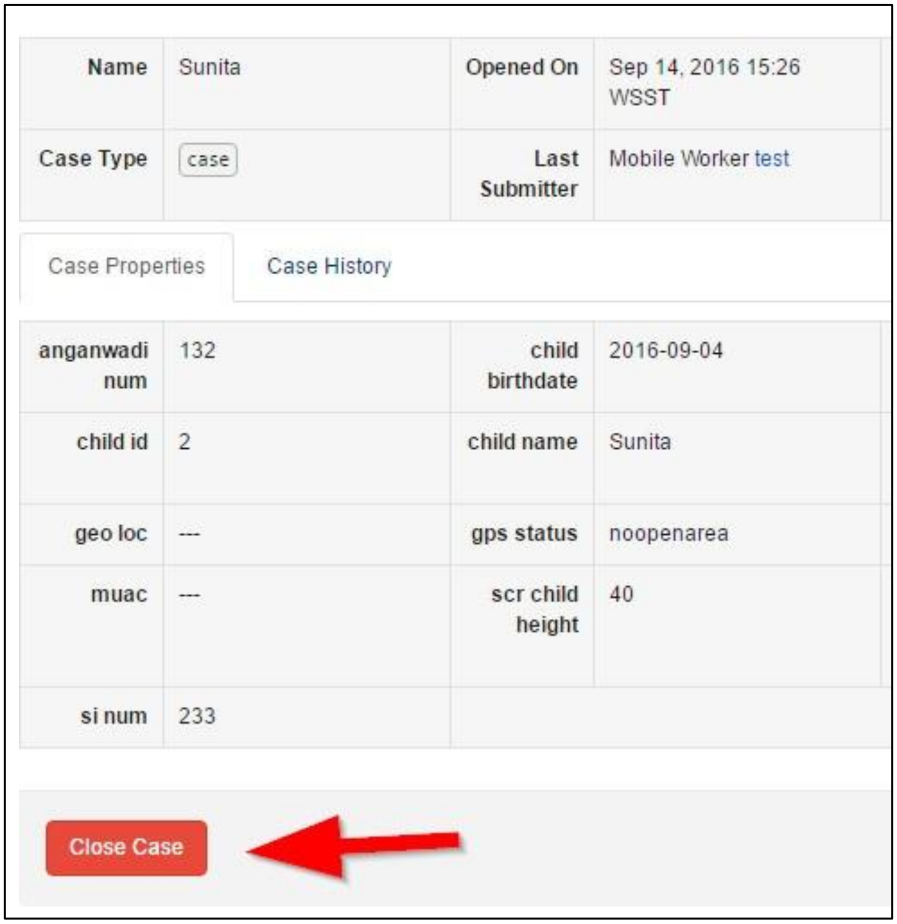


Figure 48: Close Case – Close a Single Case

When you close a case through CommCare HQ, the system creates a form representing the close case action. If you accidentally close a case, find the case again using the Case List Report and archive the last form submitted to the case. This action will reopen the case. For more on archiving forms, see the previous section, “Archive Forms”.

Close Multiple Cases

If you need to close a large number of cases, refer to the Closing Cases (https://confluence.dimagi.com/x/MQB2AQ) page on our Help Site for guidance.

Part 2 Key Takeaways

CommCare HQ has 5 built-in tools that can help you inspect and clean your raw data -- as you detect errors in your exports, or before you ever generate and download an export. Access to each tool and its capabilities will depend on your CommCare subscription.

Before analyzing raw data, it is recommended that you inspect and clean the data using a variety of techniques and tools within Excel or another third-party software. While these approaches are useful, they will not clean the raw data stored in CommCare HQ, which means that each time you export, you will have to clean the same data all over again. Use our tools to avoid this and to ensure that you have consistently cleaner data each time you export.

Inspection tools can be used to review data submitted through a form or saved to a case.

- **Submit History Report:** Use the Submit History Report to view individual form submissions, inspect all of the data provided in the form, and understand how that form affects the case. When viewing a form, you will have access to cleaning tools that can be used to correct errors.
- **Case List Report:** Use the Case List Report to inspect a mobile worker's case list, see the current status of a particular case, or conduct an in-depth review of a case. The Case List View helps you find a specific case, while the Case Details View allows you to see detailed information about the individual case.

Cleaning tools can be used to correct errors in data collection, or to stop tracking a case and remove the case from a mobile worker's case list. These tools should be used carefully, as they can alter your data and reports, and affect active cases.

- **Edit Form Submissions:** Accessible via the Submit History Report, use this tool to modify the responses in a form submission, which is useful if you need to correct an error in a form submitted by a mobile worker.
- **Archive Form:** Use this tool to remove form submissions from your data if a mobile worker has submitted accidental, erroneous, or fake forms. Archiving a form will remove the data that had been collected and reverse any changes made to the case through that form.
- **Close Case:** Use this tool to stop tracking a case and remove the case from a worker's case list. This is useful if you have accidental, fake, or old cases that are no longer in use. After closing a case, a mobile worker will not be able to submit any additional forms to the case. Closing a case does not affect the forms already submitted to the case, and any form previously submitted will continue to be included in your reports and exports. If you accidentally close a case, find the case again using the Case List Report and archive the last form submitted to the case. This action will reopen the case.

About Dimagi

Dimagi is a social enterprise that develops software to improve service delivery in underserved communities. Dimagi operates on the belief that enabling high-quality mobile solutions at scale can impact millions of people's lives by transforming frontline programs' ability to deliver high-value services at the last mile. Dimagi has offices in Cambridge, Massachusetts (HQ), New Delhi, Cape Town, and Dakar, with additional staff around the world. Dimagi is a recognized social enterprise and certified Benefit Corporation, reflecting our commitment to making an impact.

About CommCare

Dimagi's technology platform, CommCare, is a free, open-source mobile platform that enables anyone to build mobile apps. By replacing paper-based forms with mobile applications, frontline workers can use CommCare to track and support clients with registration forms, checklists, SMS reminders, multimedia and more.

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