

Data Query on Redcap: User Guide

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Introduction

Data Validation

The process of ensuring data has undergone 'cleaning' to generate a data set that is of high quality, is correct, consistent and applicable.

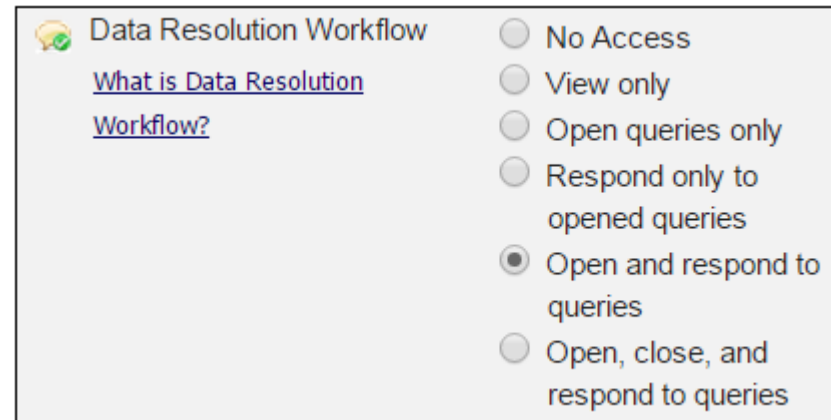


This is achieved by setting up quality/validation rules or edit checks, that check for accuracy, completeness and regularity. These checks can be automated or manual. In REDCap the Data Quality and Data Resolution Workflow module allows the Data Manager/Study Monitor to implement data quality rules (edit checks), raise queries and assign them to other project users. Users can respond to queries and mark the data item with a relevant response. Following review the Data Manager/Study Monitor can close the query. When there are no longer any open queries on an eCRF it can then be locked by the Data Manager/Study Monitor.

User Rights

User Accounts

Access to the REDCap Data Resolution module is controlled via individual user accounts setup by the University of Oxford . All Users are given the following ‘Open and respond to queries’ rights in **Figure 1**.



The image shows a user rights configuration interface. On the left, there is a section titled 'Data Resolution Workflow' with a lightbulb icon. Below the title are two links: 'What is Data Resolution Workflow?' and 'Workflow?'. On the right, there is a list of radio button options for user permissions:

- No Access
- View only
- Open queries only
- Respond only to opened queries
- Open and respond to queries
- Open, close, and respond to queries

Figure 1

Users will need to respond to queries that have been opened by the Data Manager. We have also allowed Users to open/raise queries. Users can use the open/raise query function to annotate the data and add comments that may be useful to the monitor later.

Logging Into REDCap

Open a browser (Google Chrome recommended) and enter the following URL in the address line:

<https://redcap.medsci.ox.ac.uk> Enter your username and password provided to you when you were given access to REDCap as seen in **Figure 2**.

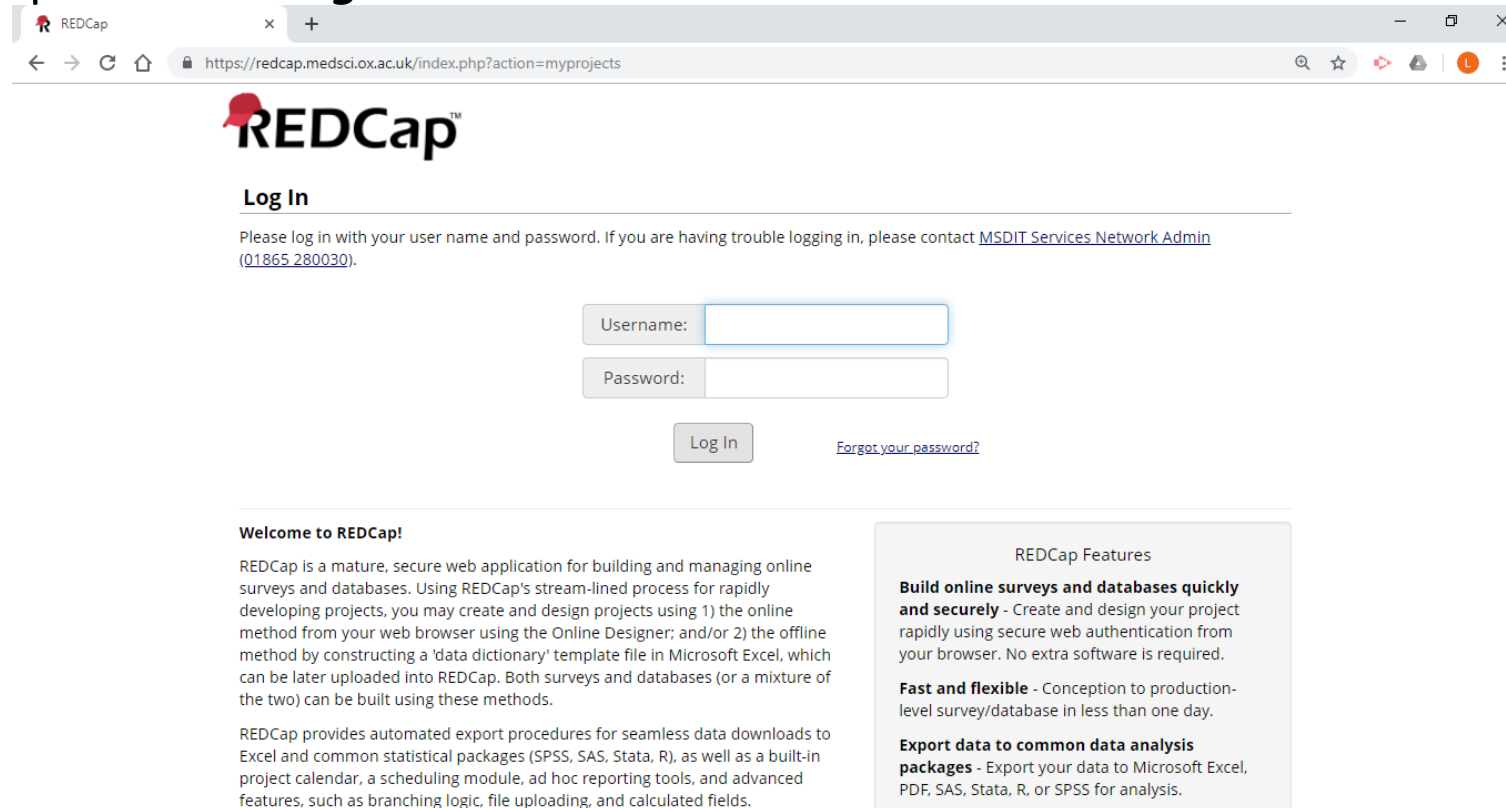


Figure 2

Accessing Your Project

From the REDCap Home Screen select the My Projects tab to see a list of projects you are authorized to access (**Figure 3**). Click on the link to the database for which you will be reviewing data queries. The screen displays database information (**Figure 3a**).

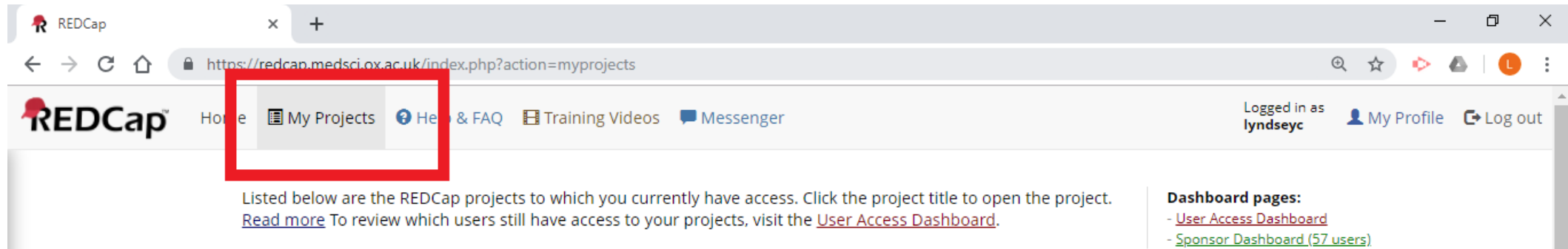


Figure 3

Project Title	Records	Fields	Instrument	Type	Status
SPRINT-SARI-RAPID 	3	49	7 forms		
SPRINT-SARI-CORE	4	282	12 forms		

Figure 3a

Data Query Navigation Panel

On the left hand panel/menu (*Figure 4*) under **Applications** select the **'Resolve Issues'**

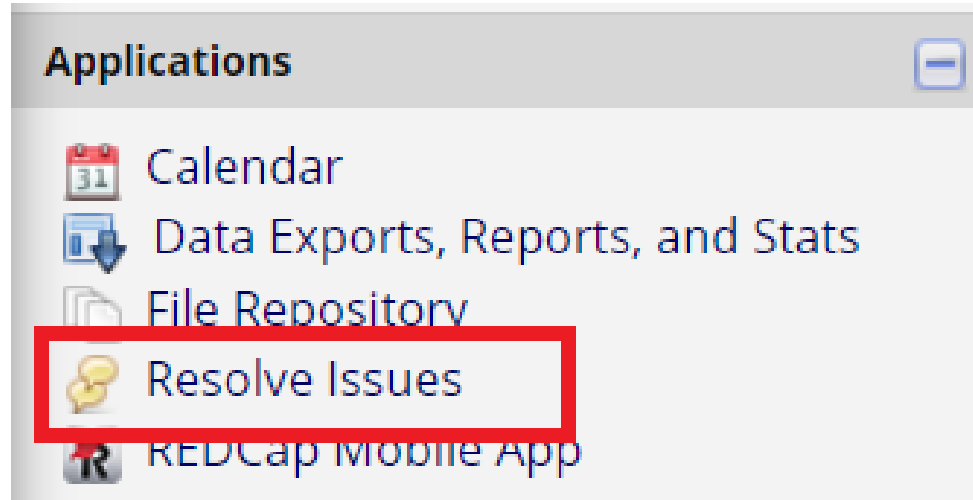


Figure 4

Data Resolution Dashboard

You can view and access the data in the 'Resolves Issues' - 'Data Resolution Dashboard' (Figure 5).

The screenshot shows the 'Data Resolution Dashboard' interface. At the top, there are two tabs: 'Resolve Issues' with a red notification badge containing the number '1', and 'Resolution Metrics'. Below the tabs, there is a video icon followed by the text 'VIDEO: Data Resolution Workflow' and a link 'or Read introduction to Data Resolution Workflow'. A paragraph of text explains that the page displays all data queries that are currently unresolved or have already been resolved using the Data Resolution Workflow. It mentions that issues can be initiated by users on data collection instruments or after executing Data Quality rules. The text also states that the table lists the name of the record, the specific field or Data Quality rule, the user assigned, the number of days the query has been open, and a brief snippet of the query's first and last comment. It notes that results can be filtered by query status type, fields, or users, and that each query can be viewed by clicking a button to its left.

The dashboard includes a table with the following columns: Record, Data Quality rule and/or Field, User Assigned, Days Open, First Update, and Last Up. The first row of data shows a record with ID '004-0005', a field named 'symptoms_jeorres_fever' with a description '(3.1 A history of feverishness or measured fever of ? 38 de...)', assigned to user 'lyndseyc', with 0 days open. The first update is from 'lyndseyc@gmail (28/05/2019 3:47pm): "At least one of the three inclusion criteria need to be yes. Please check and amend accordingly."'.


Click button to view data query	Record	Data Quality rule and/or Field	User Assigned	Days Open	First Update	Last Up
	004-0005	Field: symptoms_jeorres_fever (3.1 A history of feverishness or measured fever of ? 38 de...)	lyndseyc	0	lyndseyc@gmail (28/05/2019 3:47pm): "At least one of the three inclusion criteria need to be yes. Please check and amend accordingly."	[same a

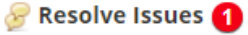
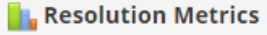
Figure 6


Figure 5

Data Query Resolution: Step 1

1. Ensure the filters are set as the following options.
2. Read over what the query/problem is.
3. Click on the Participant ID to view the eCRF (*Figure 6*).

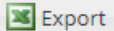
 **Data Quality**

 Resolve Issues **1**  Resolution Metrics

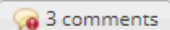


 [VIDEO: Data Resolution Workflow](#) or [Read introduction to Data Resolution Workflow](#)

This page displays all data queries that are currently unresolved or have already been resolved using the Data Resolution Workflow. Some issues may have been initiated by users on data collection instruments, and others may have been initiated after executing Data Quality rules on the Find Issues tab. The table lists the name of the record and the specific field or Data Quality rule to which the data query belongs, as well as the user assigned to the query (if applicable), the number of days the data query has been open, and a brief snippet of the query's first and last comment. The results in the table can be filtered by the query status type (e.g., open, closed), by certain fields or Data Quality rules, and also by users assigned to it. Each data query may be viewed by clicking the button to its left.

Data Resolution Dashboard

 Export

1. Filters: Open / unresolved issues (1) ▾
All fields and rules ▾
User assigned (all users) or not assigned ▾

Click button to view data query	Record	Data Quality rule and/or Field	User Assigned	Days Open	First Update	
 3 comments	004-0005 3.	Field: symptoms_jeorres_fever (3.1 A history of feverishness or measured fever of ? 38 de...)	lyndseyc	1.7	lyndseycgmail (28/05/2019 3:47pm): "At least one of the three inclusion criteria need to be yes. Please check and amend accordingly."	 

2.

Figure 6

Data Query Resolution: Step 2

With the eCRF now open review data query question and complete the following:

1. Check the data recorded on the eCRF against the source/original documents/records (**Figure7**).
2. Discuss with appropriate study staff member or Clinician.
3. Check the eCRF data with medical record data

The screenshot shows an eCRF form titled "Inclusion Criteria". At the top, it says "Editing existing Participant Identification Number (PIN): 1". Below this, the "Event Name" is "Day 1". The "Participant Identification Number (PIN)" is "1". The "Date of Enrolment" is "17-01-2020". The "Site name" is "Lister Hospital". The "Country" is "United Arab Emirates". Below these fields is a section titled "INCLUSION CRITERIA" with a question: "1. Suspected or proven acute novel Coronavirus (nCoV) infection as main cause for admission:". The answer is "No". Below this is another section titled "EPIDEMIOLOGICAL FACTORS - In the 14 days before onset of illness had any of the following:". The first question is "2.A history of travel to an area with documented cases of novel coronavirus infection". The answer is "YES". A red oval highlights the "YES", "NO", and "Not known" options for this question.

Question	YES	NO	Not known
2.A history of travel to an area with documented cases of novel coronavirus infection	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

Does the eCRF record match the patient medical record?

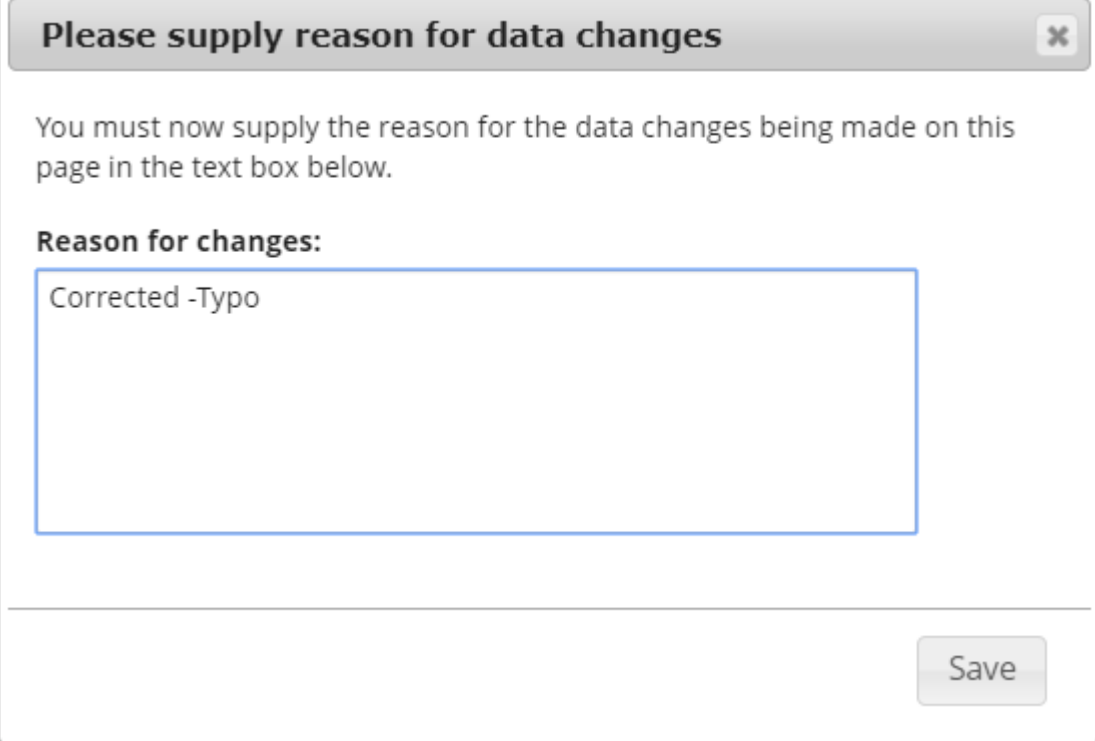
Figure 7

Data Query Resolution: Step 3

Staff member (with REDCap data entry role – view edit and open and respond to open queries rights) will resolve query by completing one of the following to the eCRF (**Figure 8**):

1. Amend to the correct value or information (due to typo errors or wrong source document used).
2. Add new or missing information.
3. Verify as correct information.

Figure 8



Please supply reason for data changes

You must now supply the reason for the data changes being made on this page in the text box below.

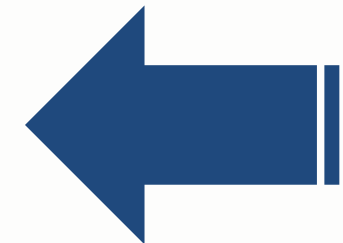
Reason for changes:

Corrected -Typo

Save

Supply the reason for change as one of the following (**Figure 8**):

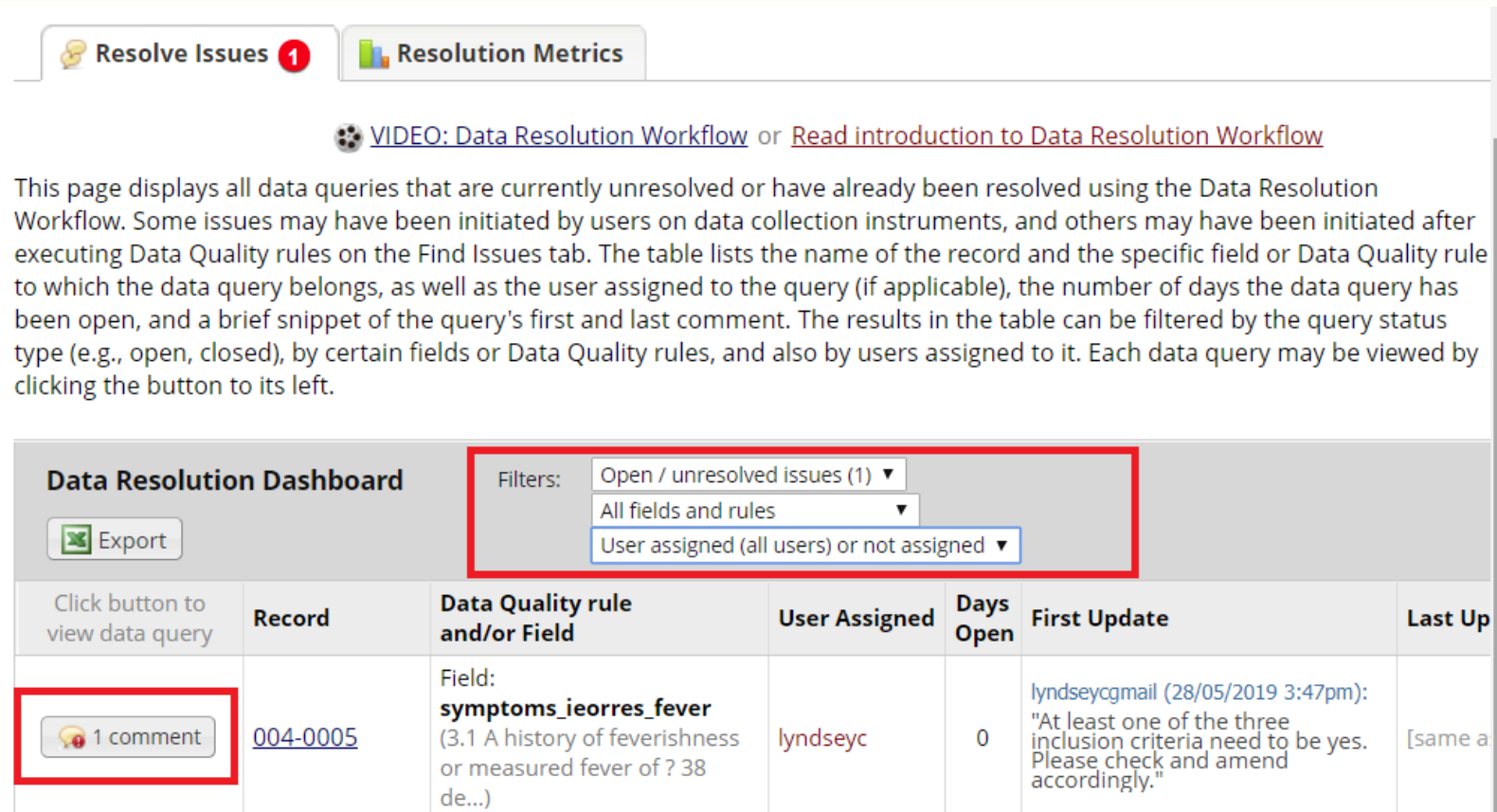
- Corrected – Data missing
- Corrected – Typo
- Corrected - Wrong source used
- Verified – Correct information



Click on Save

Data Query Resolution: Step 4

Relocate the query in the **Data Resolution Dashboard (Slide 8)**. Ensure the filters are set as the following options. Then click on the comment button to view the query (**Figure 9**).



The screenshot shows the 'Data Resolution Dashboard' interface. At the top, there are two tabs: 'Resolve Issues' (with a red notification icon) and 'Resolution Metrics'. Below the tabs, there are two links: 'VIDEO: Data Resolution Workflow' and 'Read introduction to Data Resolution Workflow'. A paragraph of text explains that the page displays all data queries, whether unresolved or resolved, and lists their details in a table. The table has columns for 'Record', 'Data Quality rule and/or Field', 'User Assigned', 'Days Open', 'First Update', and 'Last Up'. The first row of the table is highlighted with a red box, showing a query with record ID '004-0005' and field 'symptoms_jeorres_fever'. A '1 comment' button is visible in the first column of this row. Above the table, there is a 'Filters' section with three dropdown menus: 'Open / unresolved issues (1)', 'All fields and rules', and 'User assigned (all users) or not assigned'. An 'Export' button is also present in the top left of the dashboard area.

Data Resolution Dashboard

Filters: Open / unresolved issues (1) ▾
All fields and rules ▾
User assigned (all users) or not assigned ▾

Export


Click button to view data query	Record	Data Quality rule and/or Field	User Assigned	Days Open	First Update	Last Up
 1 comment	004-0005	Field: symptoms_jeorres_fever (3.1 A history of feverishness or measured fever of ? 38 de...)	lyndseyc	0	lyndseycgmail (28/05/2019 3:47pm): "At least one of the three inclusion criteria need to be yes. Please check and amend accordingly."	[same a

Figure 9

Data Query Resolution: Step 5

Select the relevant query response from the drop down menu (**Figure 10**) and confirm descriptive response in comments box. Finally click on 'Respond to query'

 [VIDEO: Data Resolution Workflow](#)

This pop-up displays the Data Resolution Workflow for the specified record for a given field and/or Data Quality rule. Users with appropriate user privileges may open data queries to begin a documented process of resolving an issue with the data. Opened data queries may thus be responded to by users with appropriate privileges, and then they may be closed once the issue has been resolved. All data queries can also be viewed on the Resolve Issues page in this project.

Participant Identification Number:: [004-0005](#)

Field: **symptoms_ieorres_fever** ("3.1 A history of feverishness or measured fever of ? 38 deg C")

Status:  **Open / Unresolved** (unresponded)

Date/Time	User	Comments and Details
28/05/2019 3:46pm	lyndseycgmail	Data Changes Made: symptoms_ieorres_fever = 'NO (2)'
28/05/2019 3:47pm	lyndseycgmail	Action: Opened query Assigned to user: lyndseyc (Lyndsey Castle) Comment: "At least one of the three inclusion criteria need to be yes. Please check and amend accordingly."
30/05/2019 10:07am	lyndseycgmail	Reply with response: <input type="text" value="-- choose response --"/> Upload file (optional): <input type="text"/> Comment: <input type="text"/> Response options: -- choose response -- Corrected - Data missing Corrected - Typographical error Corrected - Wrong source used Verified - Confirmed correct (no error) Other





Figure 10

Data Query Resolution: Step 6

Once you have completed entering the query response information, you will be returned to the Data Resolution Dashboard (**Figure 11**).

Query Status is identified by the color of the Comment ! =Reponses given !=Pending Responses

 [VIDEO: Data Resolution Workflow](#) or [Read introduction to Data Resolution Workflow](#)

This page displays all data queries that are currently unresolved or have already been resolved using the Data Resolution Workflow. Some issues may have been initiated by users on data collection instruments, and others may have been initiated after executing Data Quality rules on the Find Issues tab. The table lists the name of the record and the specific field or Data Quality rule to which the data query belongs, as well as the user assigned to the query (if applicable), the number of days the data query has been open, and a brief snippet of the query's first and last comment. The results in the table can be filtered by the query status type (e.g., open, closed), by certain fields or Data Quality rules, and also by users assigned to it. Each data query may be viewed by clicking the button to its left.

Data Resolution Dashboard Filters:

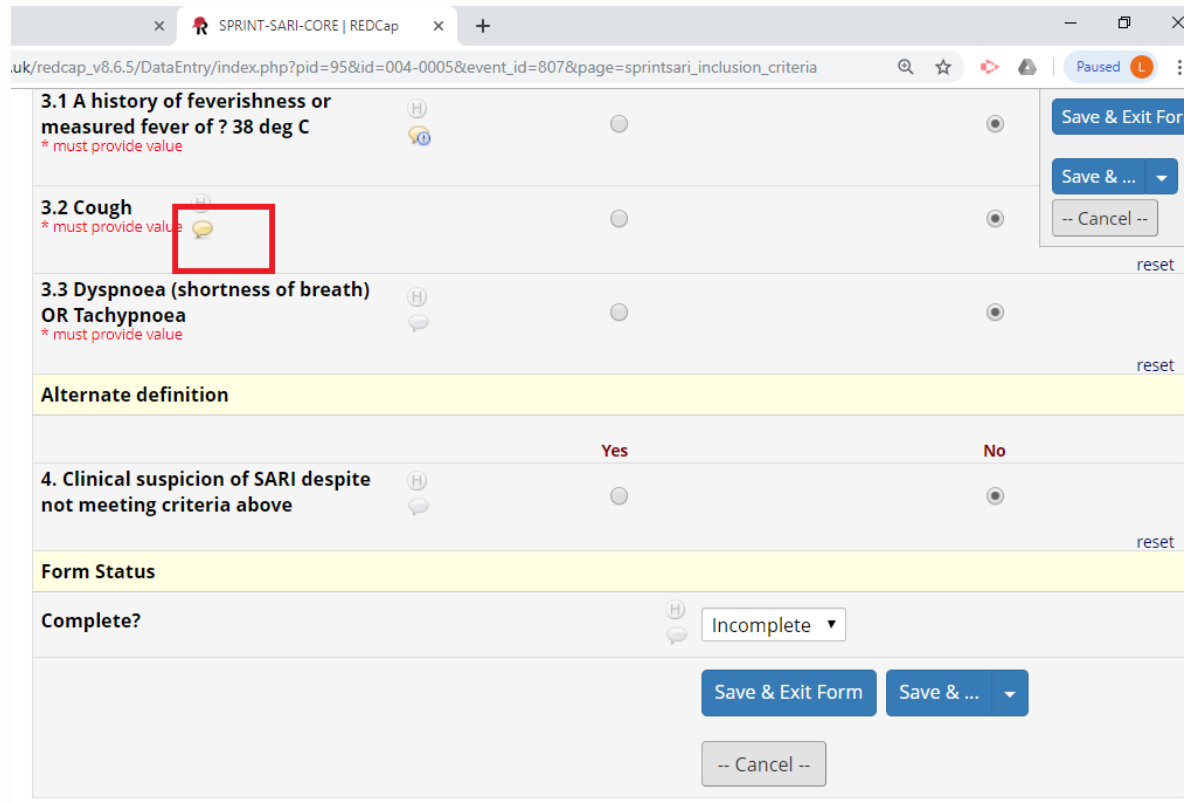
Click button to view data query	Record	Data Quality rule and/or Field	User Assigned	Days Open	First Update	Last Up
<input type="button" value="2 comments"/>	004-0005	Field: symptoms_ieorres_fever (3.1 A history of feverishness or measured fever of ? 38 de...)	lyndseyc	0	lyndseycgmail (28/05/2019 3:47pm): "At least one of the three inclusion criteria need to be yes. Please check and amend accordingly."	lyndseyc "Questi yes."

Figure 11

Data queries can also be raised during data entry of eCRFs or whilst reviewing eCRFs e.g. during source data verification (these are manual data queries). All Site Users have rights to do this and manual queries can be raised in the following way:

Data Query Raising: Step 1

Click on the comment button to raise the query (*Figure 12*).



The screenshot shows a web browser window with the URL `.../redcap_v8.6.5/DataEntry/index.php?pid=95&id=004-0005&event_id=807&page=sprintsari_inclusion_criteria`. The form contains several sections:

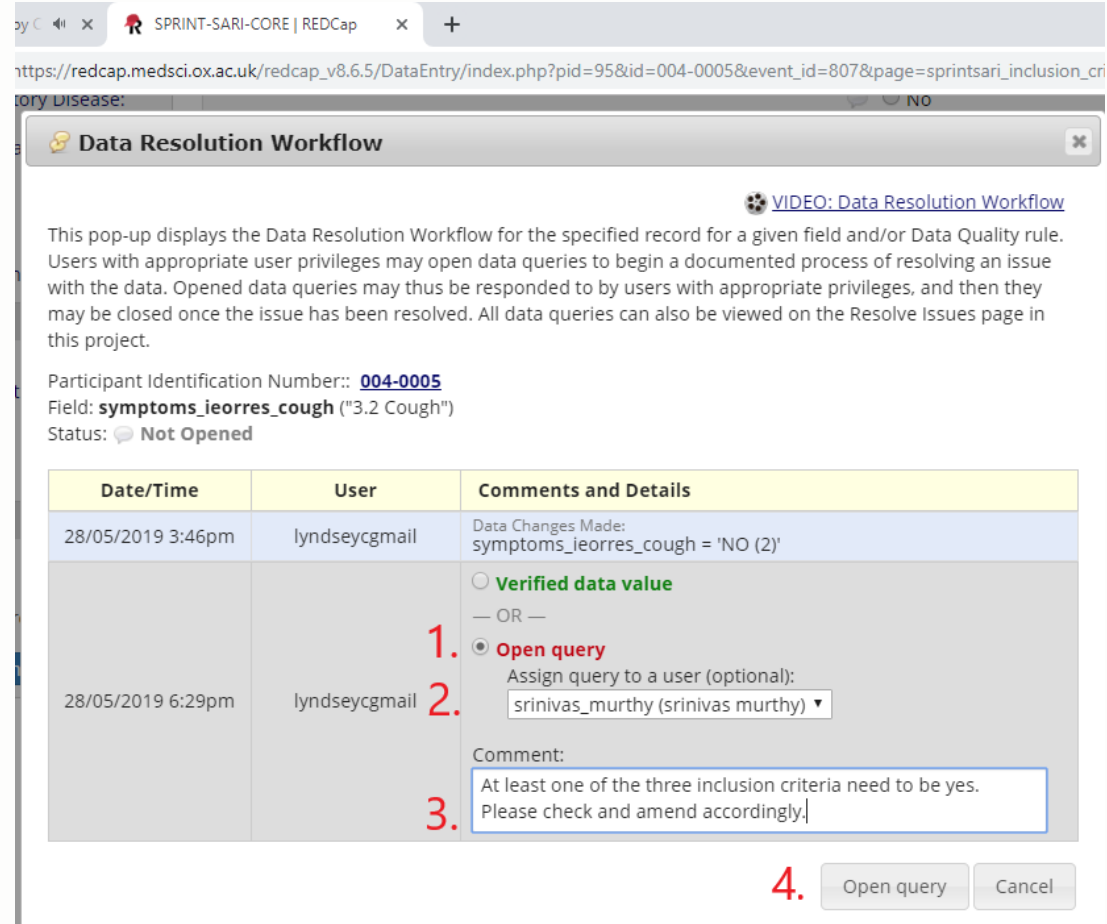
- 3.1 A history of feverishness or measured fever of ? 38 deg C**: Includes a comment icon and a "Save & Exit Form" button.
- 3.2 Cough**: Includes a comment icon (highlighted with a red box) and a "Save & ..." button.
- 3.3 Dyspnoea (shortness of breath) OR Tachypnoea**: Includes a comment icon and a "reset" button.
- Alternate definition**: A yellow highlighted section.
- 4. Clinical suspicion of SARI despite not meeting criteria above**: Includes a comment icon and a "reset" button.
- Form Status**: A yellow highlighted section.
- Complete?**: Includes a dropdown menu set to "Incomplete" and a "reset" button.

At the bottom of the form are buttons for "Save & Exit Form", "Save & ...", and "-- Cancel --".

Figure 12

Data Query Raising: Step 2

1. Click on 'Open query' (**Figure 13**)
2. Select the User you would like to assign the query to
3. Confirm descriptive query response in the comments box
4. Click on 'Open query' button



The screenshot shows a web browser window with the URL https://redcap.medsci.ox.ac.uk/redcap_v8.6.5/DataEntry/index.php?pid=95&id=004-0005&event_id=807&page=sprintsari_inclusion_criteria. The page title is "SPRINT-SARI-CORE | REDCap". A "Data Resolution Workflow" pop-up is displayed, containing a video link, explanatory text, and a table of data changes. The table has columns for "Date/Time", "User", and "Comments and Details". The second row shows a data change for "symptoms_ieorres_cough" on 28/05/2019 at 6:29pm by user "lyndseycgmail". The "Comments and Details" for this row include radio buttons for "Verified data value" and "Open query", a dropdown menu for assigning a user (currently showing "srinivas_murthy"), and a text area for a comment. The comment text is "At least one of the three inclusion criteria need to be yes. Please check and amend accordingly." Below the table, there are two buttons: "Open query" and "Cancel".

[VIDEO: Data Resolution Workflow](#)

This pop-up displays the Data Resolution Workflow for the specified record for a given field and/or Data Quality rule. Users with appropriate user privileges may open data queries to begin a documented process of resolving an issue with the data. Opened data queries may thus be responded to by users with appropriate privileges, and then they may be closed once the issue has been resolved. All data queries can also be viewed on the Resolve Issues page in this project.

Participant Identification Number:: [004-0005](#)
Field: **symptoms_ieorres_cough** ("3.2 Cough")
Status: Not Opened

Date/Time	User	Comments and Details
28/05/2019 3:46pm	lyndseycgmail	Data Changes Made: symptoms_ieorres_cough = 'NO (2)'
28/05/2019 6:29pm	lyndseycgmail	<input type="radio"/> Verified data value — OR — <input checked="" type="radio"/> Open query Assign query to a user (optional): srinivas_murthy (srinivas murthy) ▼ Comment: At least one of the three inclusion criteria need to be yes. Please check and amend accordingly.

4.

Figure 13

Accessing your data query export

Users can export all data queries from the nCov project(s) within the 'Resolve Issues' panel by clicking on the 'Export' button on the **Data Resolution Dashboard**. Data is exported as a CSV file (**Figure 14**).

The screenshot shows the 'Data Resolution Dashboard' for 'SPRINT-SARI-CORE'. It features a 'Data Quality' section with 'Resolve Issues' (1) and 'Resolution Metrics' tabs. Below these are links for a video and an introduction. A paragraph explains that the page displays unresolved or resolved data queries, listing record names, fields, users, and days open. At the bottom, a table lists a specific query with an 'Export' button highlighted in a red box.

SPRINT-SARI-CORE

Data Quality

Resolve Issues **1** Resolution Metrics

[VIDEO: Data Resolution Workflow](#) or [Read introduction to Data Resolution Workflow](#)

This page displays all data queries that are currently unresolved or have already been resolved using the Data Resolution Workflow. Some issues may have been initiated by users on data collection instruments, and others may have been initiated after executing Data Quality rules on the Find Issues tab. The table lists the name of the record and the specific field or Data Quality rule to which the data query belongs, as well as the user assigned to the query (if applicable), the number of days the data query has been open, and a brief snippet of the query's first and last comment. The results in the table can be filtered by the query status type (e.g., open, closed), by certain fields or Data Quality rules, and also by users assigned to it. Each data query may be viewed by clicking the button to its left.

Data Resolution Dashboard Filters: Open / unresolved issues (1) All fields and rules User assigned (all users) or not assigned

Record	Data Quality rule and/or Field	User Assigned	Days Open	First Update	Last Update
004-0005	Field: symptoms_ieorres_fever (3.1 A history of feverishness or measured fever of ? 38 de...)	lyndseyc	1.7	lyndseycgmail (28/05/2019 3:47pm): "At least one of the three inclusion criteria need to be yes. Please check and amend accordingly."	lyndseyc (29/05/2019 3:36pm): "Please review"

Figure 14

REDCap Messenger

A communication platform is built directly into REDCap, allowing users to communicate easily, efficiently, and securely with other users. REDCap Messenger is a chat application that supports one-on-one direct messages and group conversations, as well as project-linking, document and image sharing. Please feel free to use this should you require assistance (**Figure 15**).

The screenshot displays the REDCap Messenger interface. On the left, a sidebar contains a 'Conversations' list with various project-related items. At the bottom of this sidebar, a button labeled '2 Create new conversation' is highlighted with a red box. The main content area shows the REDCap logo, user information ('Logged in as m.george'), and project navigation options. A red box highlights the 'REDCap Messenger' link in the navigation menu, with a yellow box containing the number '1' next to it. Below this, the 'Data Collection' section is visible, listing various data collection instruments. On the right side of the interface, the 'SPRINT-SARI-CORE' project name is displayed, along with navigation buttons for 'Project Home', 'Project Setup', and 'Other Functionalit'. A 'Quick Tasks' section is also present, listing tasks such as 'Codebook', 'Export data', 'Create a report', 'Check data quality', 'User Rights', 'Online Designer and Data Dictionary Upload', and 'Data Access Groups'.

Figure 15

Where can I get REDCap training?

REDCap offers video training online.

These are a must for anyone beginning to use REDCap for the first time.

Training videos are available at <http://projectredcap.org/resources/videos/>



What if I need further information or support?

Direct all data enquiries to :

ncov@isaric.org