NMRS-NDR
DATA TRANSMISSION
USER GUIDE

INTRODUCTION

Transferring patient data via API to the NDR is designed to be progressive as the utility doesn't send the same data more than once from each extraction. This is designed to complement the existing method of uploading zipped patient data to the NDR via the NDR web interface, in order to help partners improve the efficiency of data transmission to the NDR especially for areas with low quality of internet connectivity. Also, the added option to adjust the number of patient data to be transmitted per communication with the NDR can make the payload lighter if lower value is provided.

Prerequisite

To extract and transfer data from the NMRS directly to the NDR via API, an active internet connectivity is compulsory. The utility helps to check for active internet connection whenever a handshake with the NDR is required. It pings the NDR API to ensure it is reachable before commencing data transmission, and continues to do this before it pushes every data batch to the NDR.

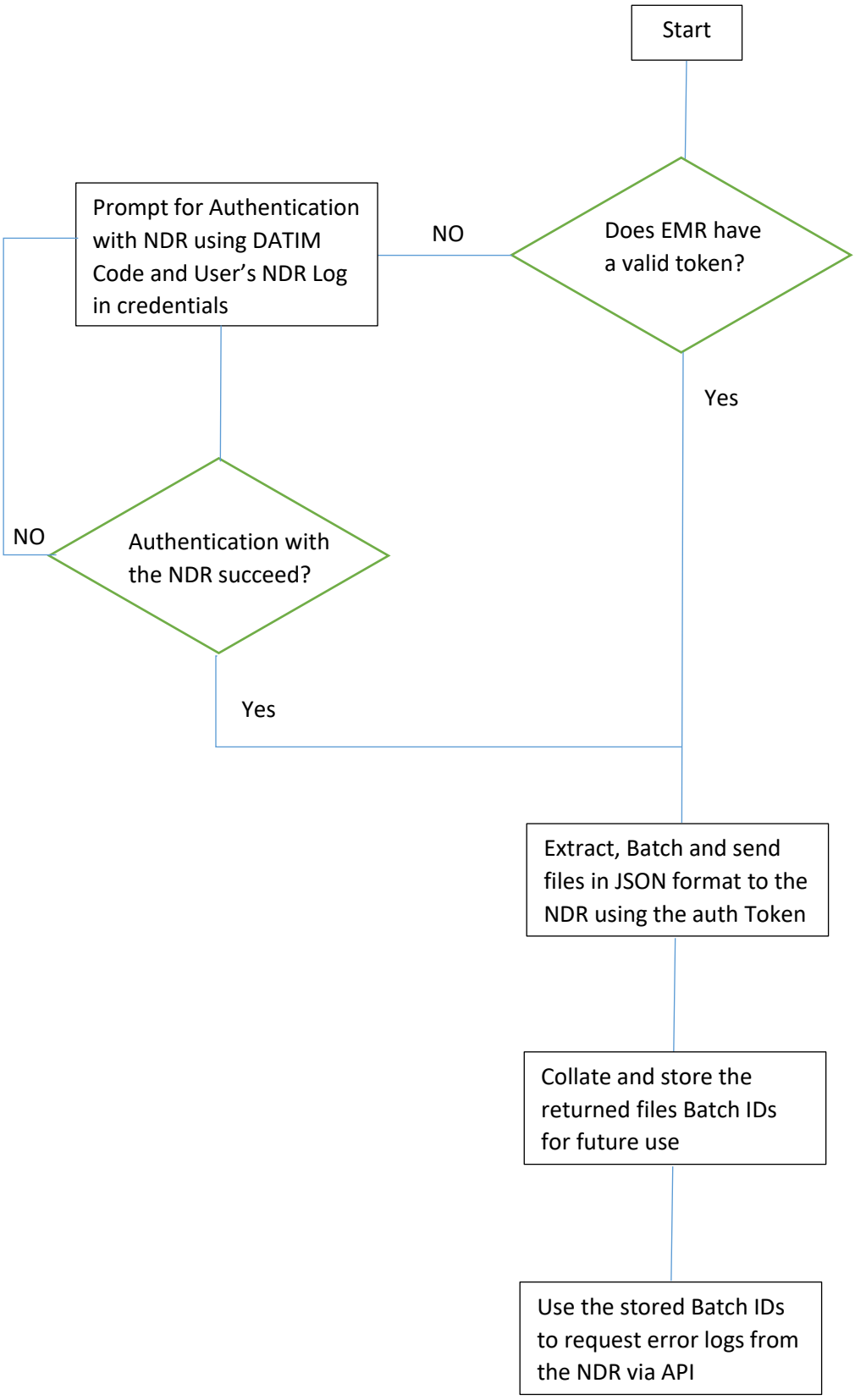
Setup Global Properties

Navigate to the **Global Properties** page **(http://localhost:8081/openmrs/adminui/systemadmin/globalproperties/manageGlobalProperties.page#/list)** ***assuming your NMRS runs on port 8081*** and set the following variables as shown below:

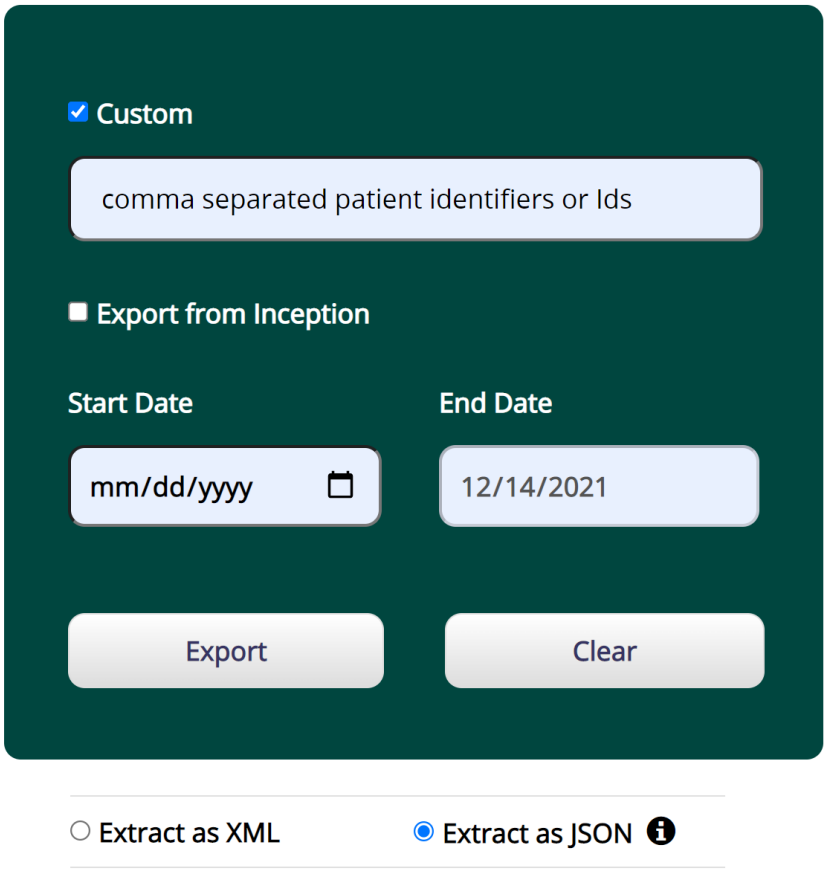
Variable	Description	Value	Required
beep_gate	Base API URL	https://emr-ndrpush.phis3project.org.ng/api/Cronbox	YES
beep_size	Size of patient data per batch	Any valid integer. Defaults to **50** if not provided	NO

Other variables include **beep** and **beep_date** but these are set automatically. Take heed that you don't delete them from Global properties should you see and wonder what they stand for.

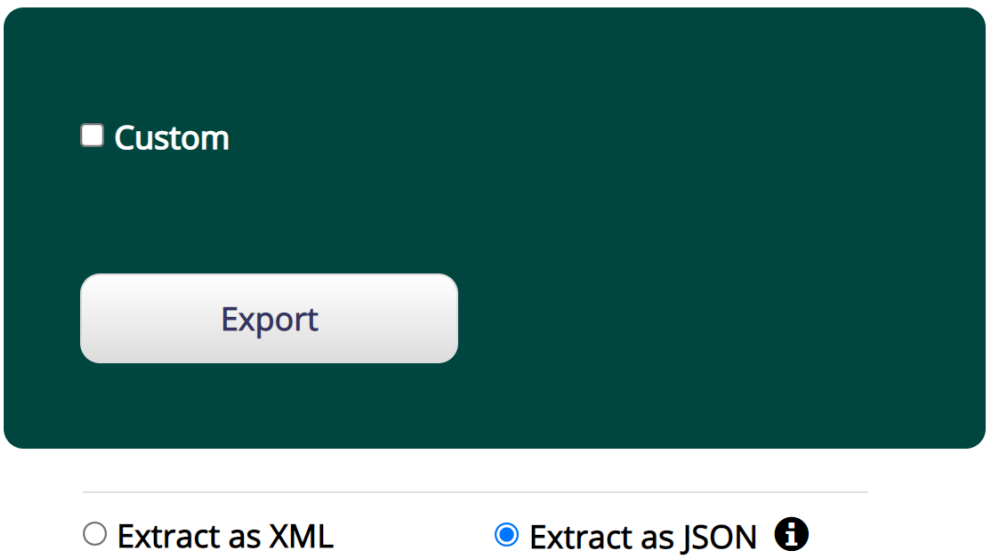
User Authentication and Data Exchange Process Flow



Navigate to the NDR Extraction page. Select **Custom** to perform targeted extraction:

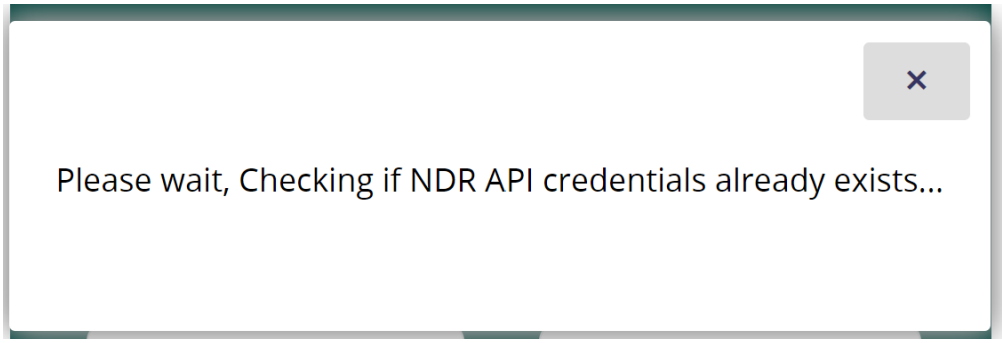


Or chose to continue from the last extraction date:

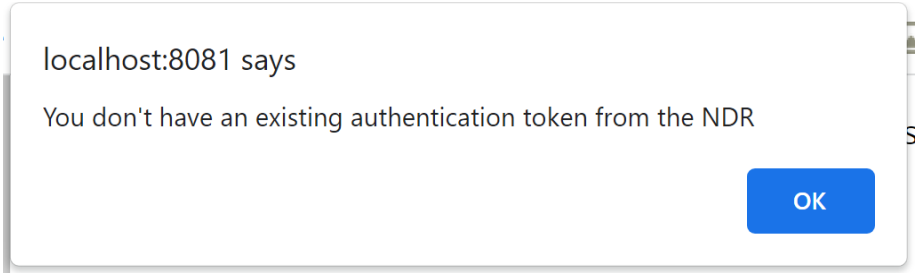


Then ensure that **Extract as JSON** is selected as shown above.

When the **Extract as JSON** control is clicked, a quick background check is made to ascertain if the user has already obtained a valid JSON Web Token (JWT) from the NDR as shown below:

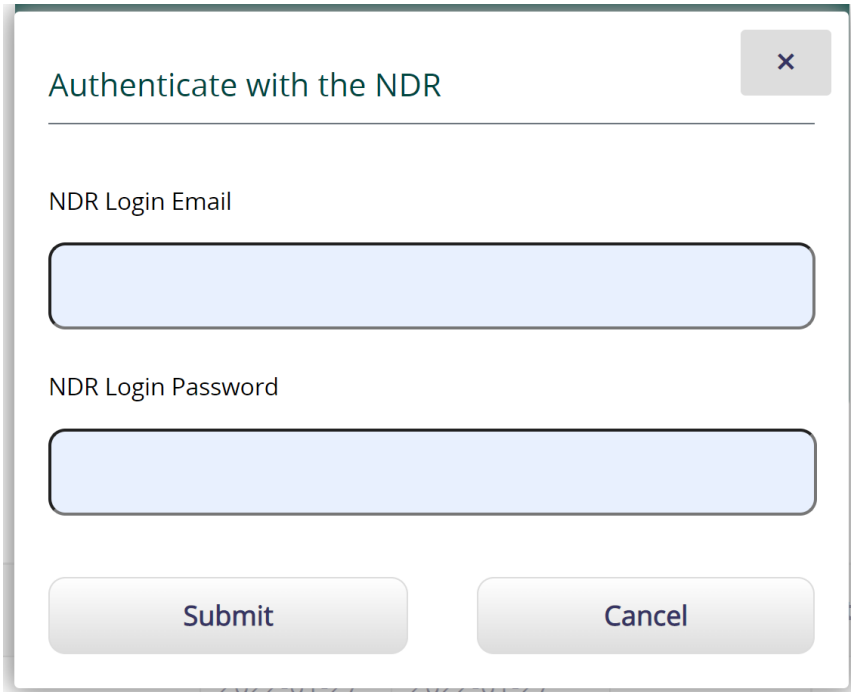


If a valid token is already obtained from the NDR, then no further action will be required with respect to authentication with the NDR. If no valid JWT authentication token is obtained from the NDR, the message shown below will pop up on the screen.



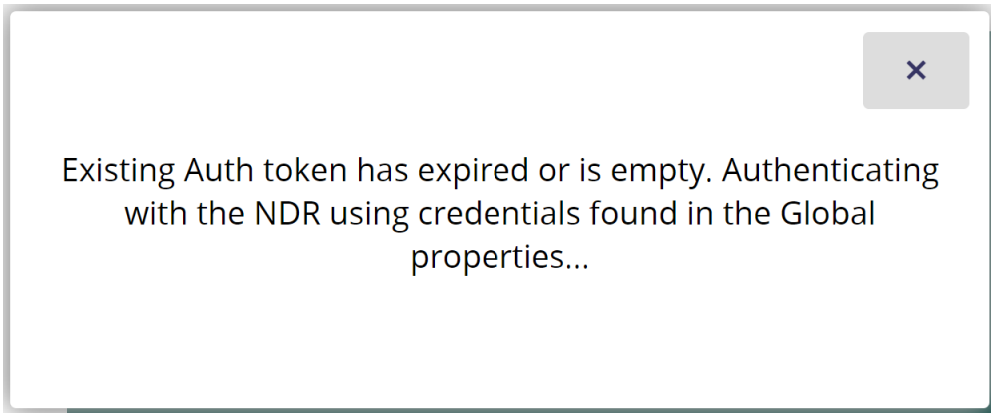
Click the OK button to continue.

An authentication interface will be provided as shown below:

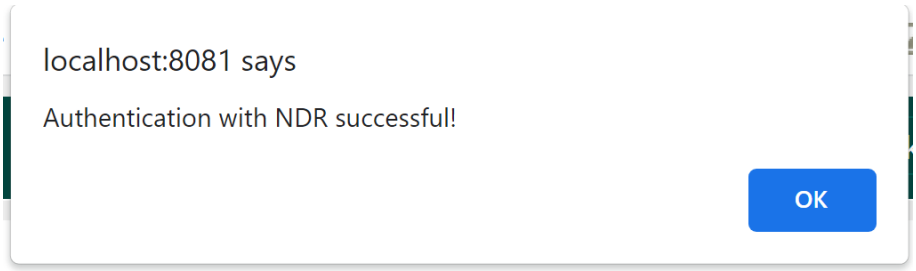


This interface requires that you provide your NDR log in Email and Password (Not Log in credentials for NMRS) because you need to be authenticated with the NDR in order to obtain an authentication (JWT) that will be used for subsequent requests to the NDR.

Providing your NDR Log In credentials is one-off. The application will use the provided credentials to automatically re-authenticate with the NDR to renew the authentication toke whenever it expires. This is shown below:

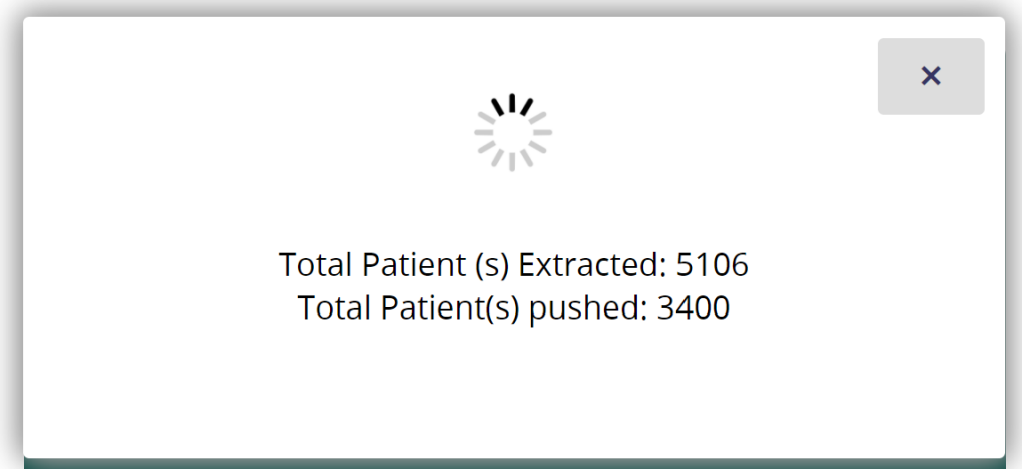


If the authentication process succeeds, then a success message will be displayed on the screen:

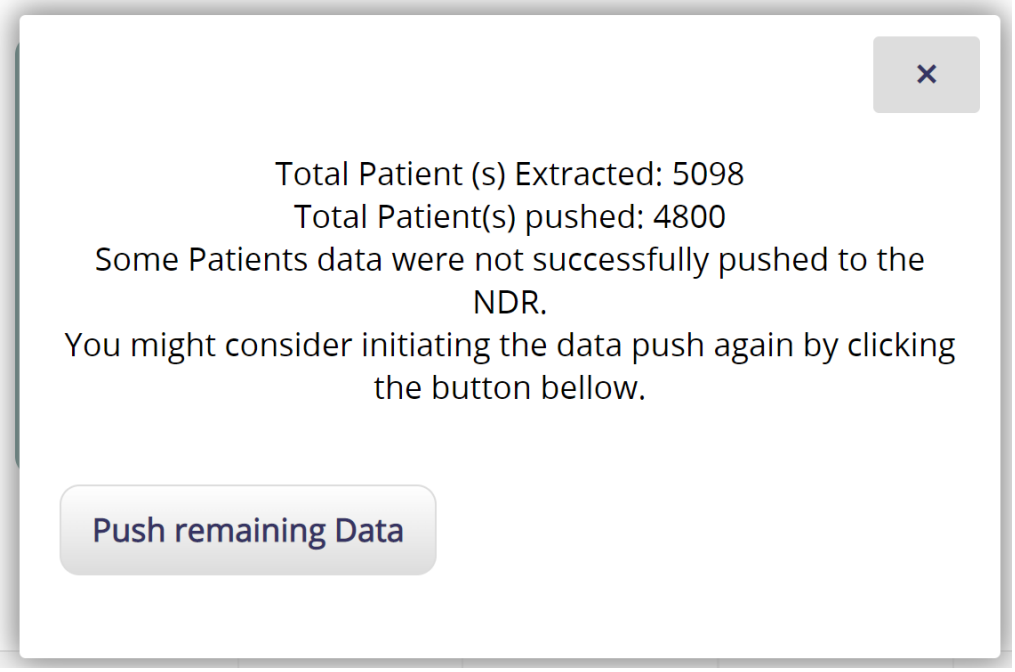


Any issued token has a lifespan of 7 days. When the token expires, a fresh token must be obtained from the NDR by providing NDR log in details again as shown above.

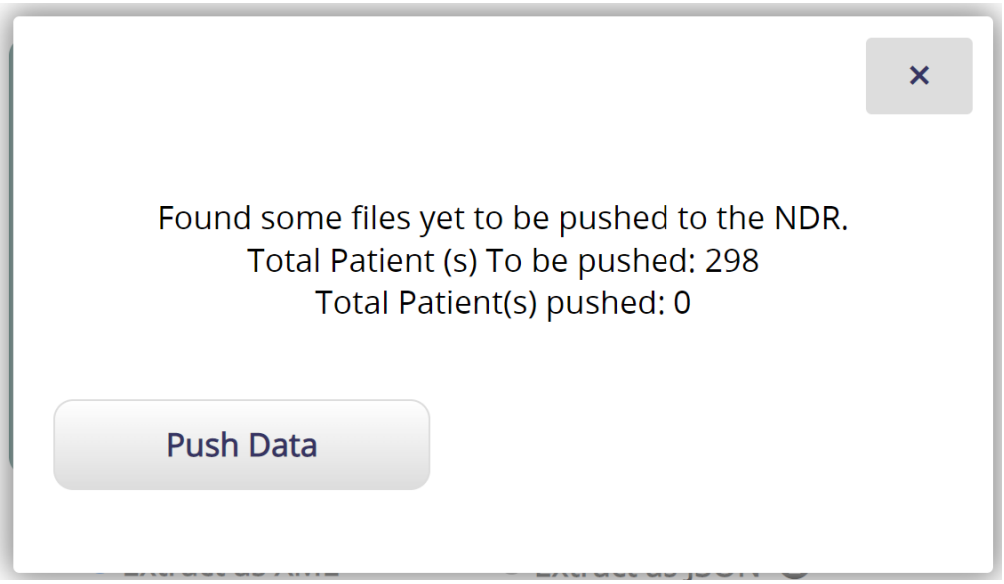
Click the **Export** button and wait for the data extraction progress indicator to show **100%**. The data push to the NDR is automatically triggered once the extraction completes as shown below:



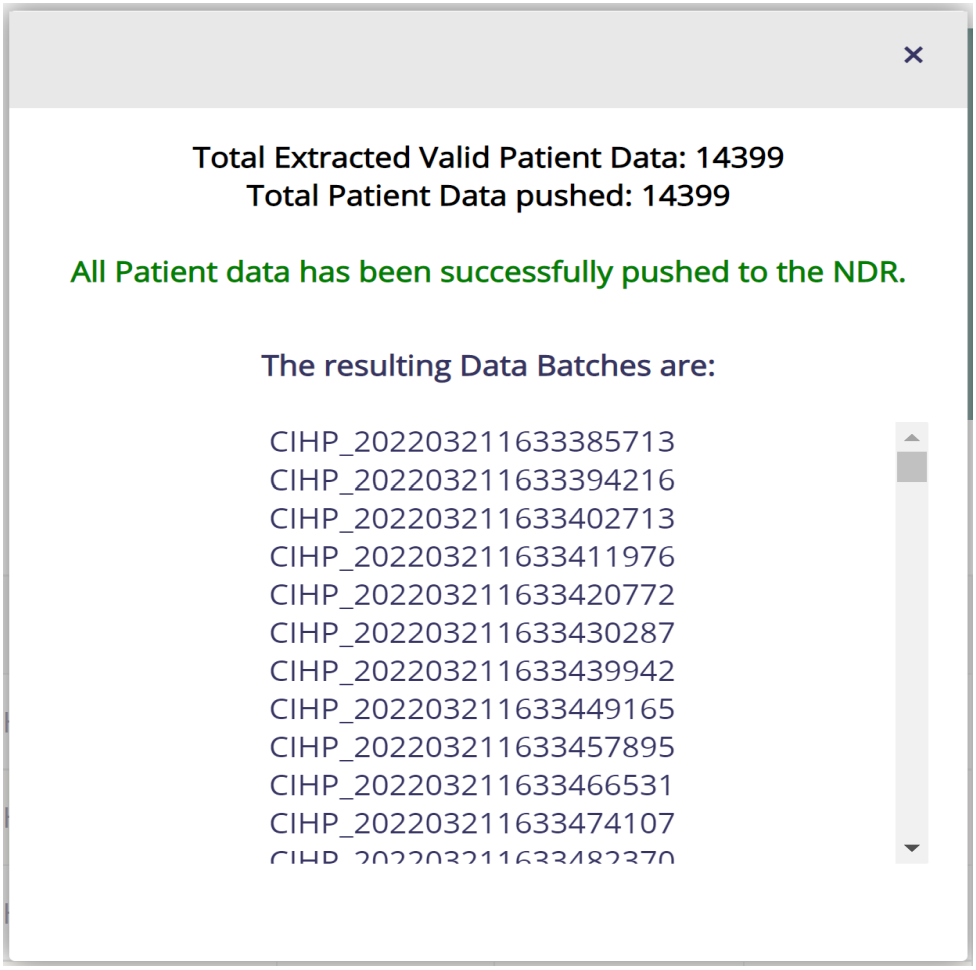
During the data transfer, if internet connectivity is interrupted, a message is displayed as shown below:



This will enable you to continue pushing the data from where the process was interrupted. Even after extraction and the data could not be transferred immediately, when handshake with the NDR becomes possible, then refresh the page and you will be able to initiate the data transfer again. Should the page be refreshed during data transfer, the utility will still check for failed data and if any is available, it will provide you with the view as shown below so that the remaining data can be transferred to the NDR.



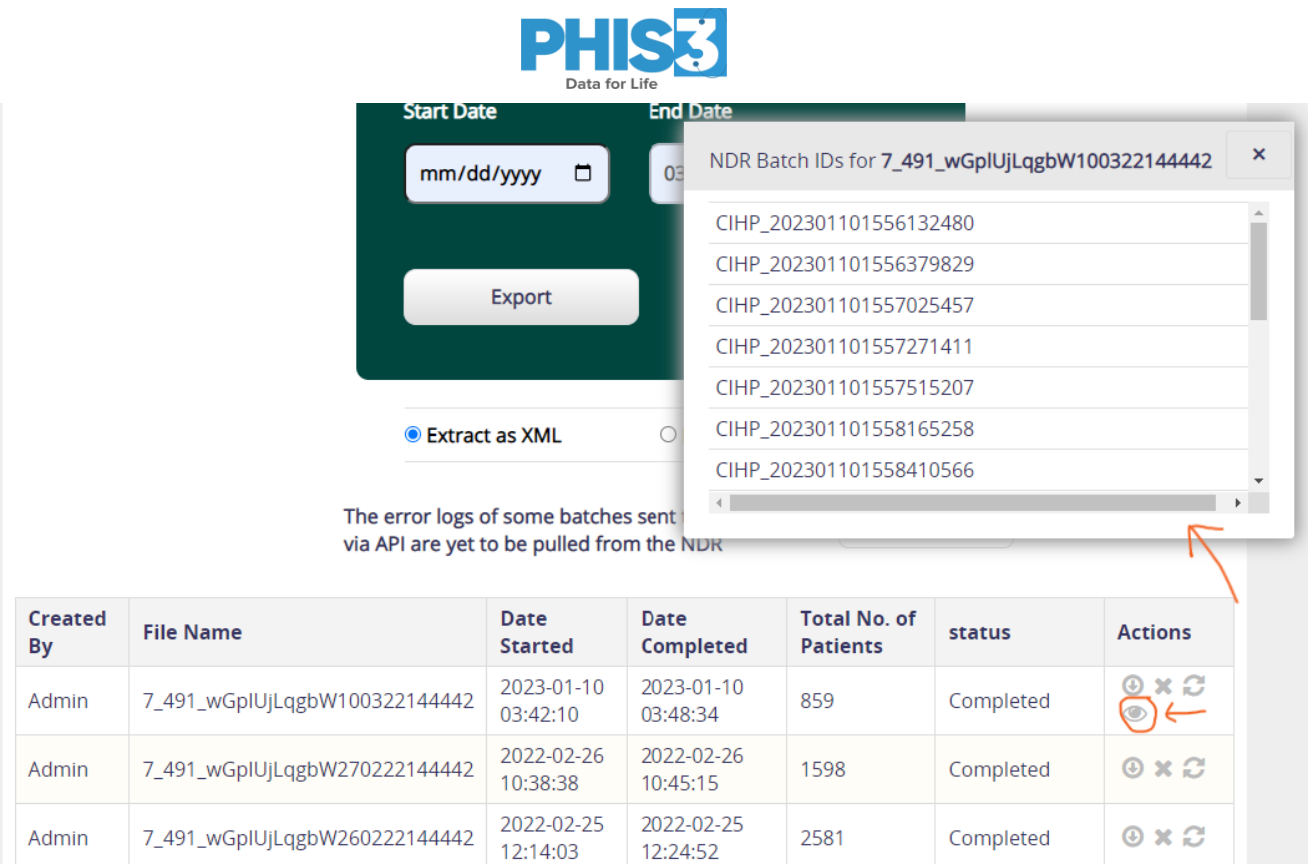
When the data transfer completes, a success message is displayed as shown below, capturing the batch IDs of the data batches pushed to NDR.



HANDLING THE RETURNED BATCH IDs

The returned file batch Ids are collated and stored in the EMR database.

The batch IDs for any extraction targeting JSON as output can be viewed anytime for reference purposes only by clicking on the **Eye** icon under the **Actions column** as depicted below. This can be



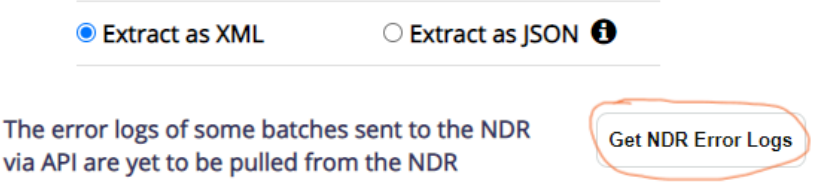
These batch Ids can be used to request for error logs generated on the NDR during processing of the files sent via the API.

The request for the error log can be made automatically when the NDR extraction page is opened such that the collated batch Ids can be looped one at a time to pull the error logs from the NDR.

If the files have been processed by the NDR, the error logs will be retrieved via the API and made available on the EMR. The retrieved error logs can be stored on the EMR so that they will be available to the system user via a designated interface.

When the NDR extraction page is opened, the EMR makes an automatic call to the NDR for the error logs of files batches using the collated and stored batch IDs.

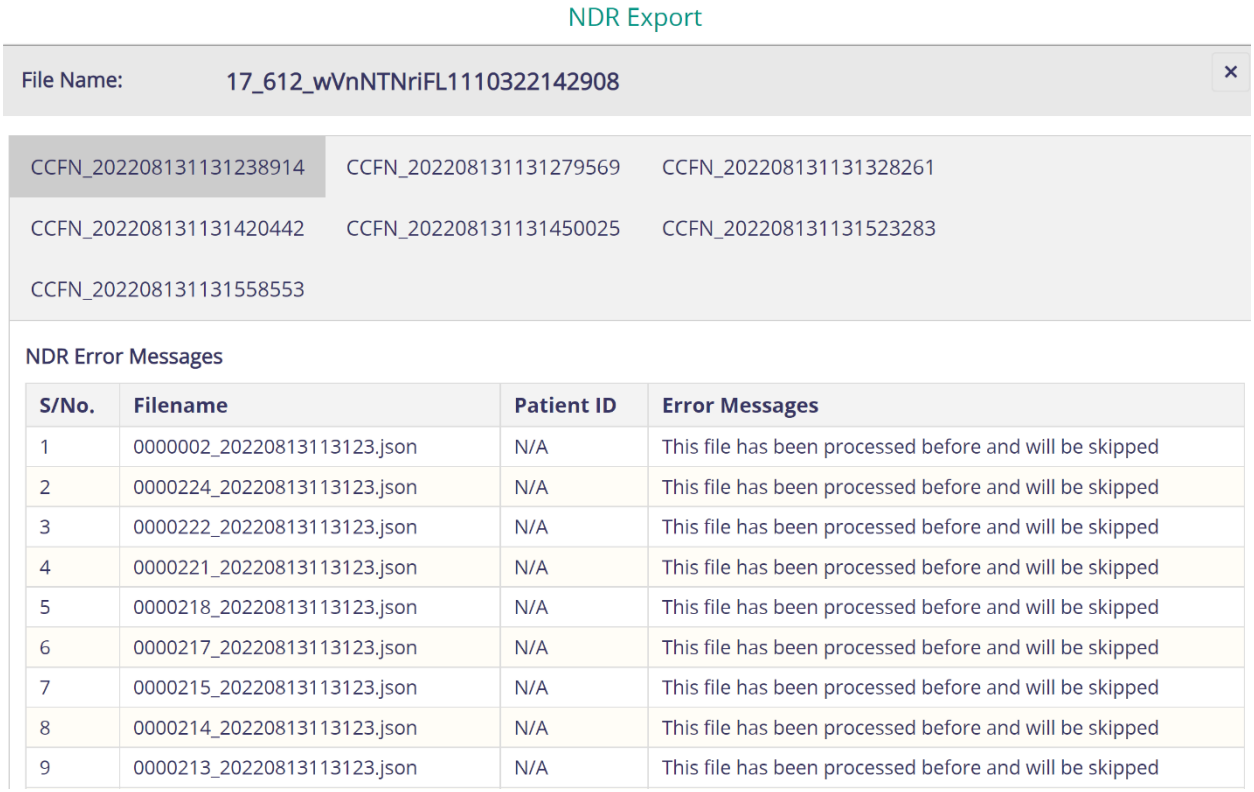
This can also be triggered manually by clicking the button shown below:



If the files have been processed by the NDR, the error logs will be retrieved via the API and made available on the EMR.

Created By	File Name	Date Started	Date Completed	Total No. of Patients	status	Actions
Admin	17_612_wVnNTNriFL1110322142908	2022-08-12 11:16:39	2022-08-12 11:24:53	1795	Completed	

The error logs can then be viewed by clicking the **View NDR Error Logs** button (as shown above) on any batch file extracted and uploaded via API to display the logs as shown on the image below.



S/No.	Filename	Patient ID	Error Messages
1	0000002_20220813113123.json	N/A	This file has been processed before and will be skipped
2	0000224_20220813113123.json	N/A	This file has been processed before and will be skipped
3	0000222_20220813113123.json	N/A	This file has been processed before and will be skipped
4	0000221_20220813113123.json	N/A	This file has been processed before and will be skipped
5	0000218_20220813113123.json	N/A	This file has been processed before and will be skipped
6	0000217_20220813113123.json	N/A	This file has been processed before and will be skipped
7	0000215_20220813113123.json	N/A	This file has been processed before and will be skipped
8	0000214_20220813113123.json	N/A	This file has been processed before and will be skipped
9	0000213_20220813113123.json	N/A	This file has been processed before and will be skipped

The batch IDs are presented as tabs and the logs for each batch can be viewed by clicking on the tabs.