

DWAPI Data Transmission SOP

[Last updated: Jul 2023]

TASK:	Load and send data from the docket
OBJECTIVE:	How to use DWAPI for differential uploads and sending data to the National Data Warehouse
WHO:	Clinicians/Data Staff
REQUIRED MATERIALS:	Functional DWAPI v 3.1.x and above, Functional KenyaEMR ver18.6.x and above, Internet Connectivity

SUMMARY: DWAPI is a cross platform Data Warehouse API client tool designed to connect to EMRs at facility level. It can connect to different types of EMR databases supported by PEPFAR to extract data on Care & Treatment and HIV testing. The datasets contain data elements collected by the different program tools and implemented by the EMR. DWAPI runs data quality checks on the data and provide feedback to users. It also identifies possible duplicate patient records in the EMR and notifies user for rectification. Finally, it provides a secure transmission channel to the DWH over the internet.

UNDERSTANDING DWAPI DASHBOARDS

DWAPI provides a comprehensive dashboard that highlight various indicators and metrics about the database and the data extracted in general. These include:

- Quality indicators
- EMR indicators
- DWAPI Metrics
- Database connection properties
- DWAPI Version

The dashboard gives facilities deeper insights into the data being uploaded into NDW and provides better opportunity to take corrective actions where inconsistencies are identified.

SECTION 1: UNDERSTANDING DWAPI DASHBOARD

Action	Screen shot																									
<p>Quality Indicators</p> <ul style="list-style-type: none"> - A summary of quality checks is provided under the dashboard to show the status of selected quality indicators. - Green status signifies no user intervention required. - Red status requires urgent attention by the user. 	<p>Quality Indicators</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Indicator</th> <th style="width: 30%;">Status</th> <th style="width: 20%;">Checked</th> </tr> </thead> <tbody> <tr> <td>Last EMR Login date</td> <td></td> <td></td> </tr> <tr> <td>MFL Codes in the database</td> <td>Your MFL code is 14081</td> <td>15 hours ago</td> </tr> <tr> <td>Last EMR Encounter create date</td> <td style="color: red;">You may be uploading an old database. The last EMR encounter create date is 43 days ago. Please confirm you have the latest database.</td> <td>15 hours ago</td> </tr> <tr> <td>Last EMR ETL Refresh date</td> <td></td> <td></td> </tr> <tr> <td>Current on ART</td> <td>Your current on ART is 3600</td> <td>15 hours ago</td> </tr> <tr> <td>DWAPI Application Version</td> <td>You are using the latest version of DWAPI</td> <td>15 hours ago</td> </tr> </tbody> </table>	Indicator	Status	Checked	Last EMR Login date			MFL Codes in the database	Your MFL code is 14081	15 hours ago	Last EMR Encounter create date	You may be uploading an old database. The last EMR encounter create date is 43 days ago. Please confirm you have the latest database.	15 hours ago	Last EMR ETL Refresh date			Current on ART	Your current on ART is 3600	15 hours ago	DWAPI Application Version	You are using the latest version of DWAPI	15 hours ago				
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<p>EMR Indicators</p> <ul style="list-style-type: none"> - DWAPI performs basic analysis on selected EMR indicators for the loaded database. The indicators include: HTS, C&T, Retention, last recorded encounter date and the facility MFL code. - Users should verify the values under each indicator for concordance 	<p>EMR Indicators</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">Indicator</th> <th style="width: 10%;">Value</th> <th style="width: 35%;">Description</th> <th style="width: 15%;">Status</th> <th style="width: 25%;">Period</th> </tr> </thead> <tbody> <tr> <td>HTS TESTED</td> <td>16</td> <td>Individuals who received a HIV test. Computation : Count of all individuals who received HIV Testing Services (HTS) and received their test results in a given month</td> <td style="color: green;">Checked</td> <td>Apr 30, 2021</td> </tr> <tr> <td>HTS TESTED POS</td> <td>10</td> <td>Individuals who tested positive during a HIV test. Computation: Count of all individuals with a positive in a given month</td> <td style="color: green;">Checked</td> <td>Apr 30, 2021</td> </tr> <tr> <td>HTS INDEX</td> <td>1</td> <td>Individuals who were identified and tested using Index Testing Services (PNS or contact tracing) and received their results. Computation: Count of all individuals identified and tested using Index Testing Services in a given month</td> <td style="color: green;">Checked</td> <td>Apr 30, 2021</td> </tr> <tr> <td></td> <td></td> <td>Individuals who tested</td> <td></td> <td></td> </tr> </tbody> </table>	Indicator	Value	Description	Status	Period	HTS TESTED	16	Individuals who received a HIV test. Computation : Count of all individuals who received HIV Testing Services (HTS) and received their test results in a given month	Checked	Apr 30, 2021	HTS TESTED POS	10	Individuals who tested positive during a HIV test. Computation: Count of all individuals with a positive in a given month	Checked	Apr 30, 2021	HTS INDEX	1	Individuals who were identified and tested using Index Testing Services (PNS or contact tracing) and received their results. Computation: Count of all individuals identified and tested using Index Testing Services in a given month	Checked	Apr 30, 2021			Individuals who tested		
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DWAPI Metrics

This acts as facility DWH upload log to indicate which docket were loaded and which ones were sent to DWH.

DWAPI Metrics

Docket	Activity	
Care and Treatment	Loaded	6 days ago
Care and Treatment	Sent	6 days ago
HIV Testing Services	Loaded	6 days ago
HIV Testing Services	Sent	6 days ago
PKV Services	Loaded	
PKV Services	Sent	

DWAPI Database connection properties:

A set of database connection properties that DWAPI relies on to connect to create and access its database.

For more information refer to DWAPI configuration SOP

DWAPI Database Connection

Database Provider
MySQL

Server
172.17.0.1

Port
3306

User
dwapi

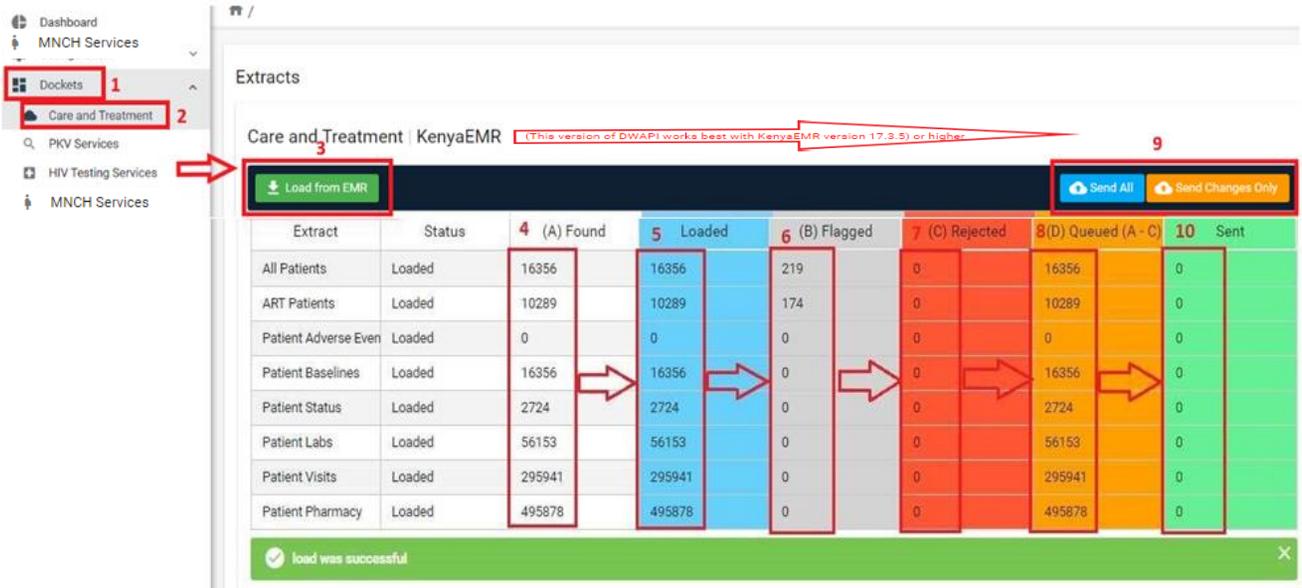
Password
.....

Verify Server Verify Database Save

DWAPIv3.1.07

help@palladiumgroup.on.spiceworks.com 0800-722440

SECTION 2: DATA EXTRACTION AND UPLOAD PROCESS

Action	Screen shot																																																																								
<p>DWAPI DOCKETS</p> <p>It is important to extract and submit datasets from all the datasets.</p>	<p>KEY:</p> <ul style="list-style-type: none"> - Care and treatment: Extract and send HIV related datasets. - PKV Services: Extracts and submits patient unique identifiers (patient Key Values) - HIV Testing Services: Extracts and submits all HTS related datasets. - MNCH Services: Extracts and submit MNCH related datasets - PrEP Services: Extracts and submits PrEP datasets 																																																																								
<p>Loading and sending Care and Treatment Data</p> <p>Step 1: Navigate to Dockets and expand the menu.</p> <p>Step 2: Click on Care and Treatment</p> <p>Step 3: Click on Load from EMR</p> <p>Step 4-8: Review the validations and if corrections are needed kindly do them as per the flagged column.</p> <p>Step 9: Click on “Send All”</p> <p>Step 10: Review the sent column</p>	 <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th>Extract</th> <th>Status</th> <th>4 (A) Found</th> <th>5 Loaded</th> <th>6 (B) Flagged</th> <th>7 (C) Rejected</th> <th>8 (D) Queued (A - C)</th> <th>10 Sent</th> </tr> </thead> <tbody> <tr> <td>All Patients</td> <td>Loaded</td> <td>16356</td> <td>16356</td> <td>219</td> <td>0</td> <td>16356</td> <td>0</td> </tr> <tr> <td>ART Patients</td> <td>Loaded</td> <td>10289</td> <td>10289</td> <td>174</td> <td>0</td> <td>10289</td> <td>0</td> </tr> <tr> <td>Patient Adverse Even</td> <td>Loaded</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>Patient Baselines</td> <td>Loaded</td> <td>16356</td> <td>16356</td> <td>0</td> <td>0</td> <td>16356</td> <td>0</td> </tr> <tr> <td>Patient Status</td> <td>Loaded</td> <td>2724</td> <td>2724</td> <td>0</td> <td>0</td> <td>2724</td> <td>0</td> </tr> <tr> <td>Patient Labs</td> <td>Loaded</td> <td>56153</td> <td>56153</td> <td>0</td> <td>0</td> <td>56153</td> <td>0</td> </tr> <tr> <td>Patient Visits</td> <td>Loaded</td> <td>295941</td> <td>295941</td> <td>0</td> <td>0</td> <td>295941</td> <td>0</td> </tr> <tr> <td>Patient Pharmacy</td> <td>Loaded</td> <td>495878</td> <td>495878</td> <td>0</td> <td>0</td> <td>495878</td> <td>0</td> </tr> </tbody> </table>	Extract	Status	4 (A) Found	5 Loaded	6 (B) Flagged	7 (C) Rejected	8 (D) Queued (A - C)	10 Sent	All Patients	Loaded	16356	16356	219	0	16356	0	ART Patients	Loaded	10289	10289	174	0	10289	0	Patient Adverse Even	Loaded	0	0	0	0	0	0	Patient Baselines	Loaded	16356	16356	0	0	16356	0	Patient Status	Loaded	2724	2724	0	0	2724	0	Patient Labs	Loaded	56153	56153	0	0	56153	0	Patient Visits	Loaded	295941	295941	0	0	295941	0	Patient Pharmacy	Loaded	495878	495878	0	0	495878	0
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Loading and Sending Master Patient Index Data

Step 1:

Navigate to Dockets and expand the menu.

Step 2:

Click on **Master Patient Index**

Step 3:

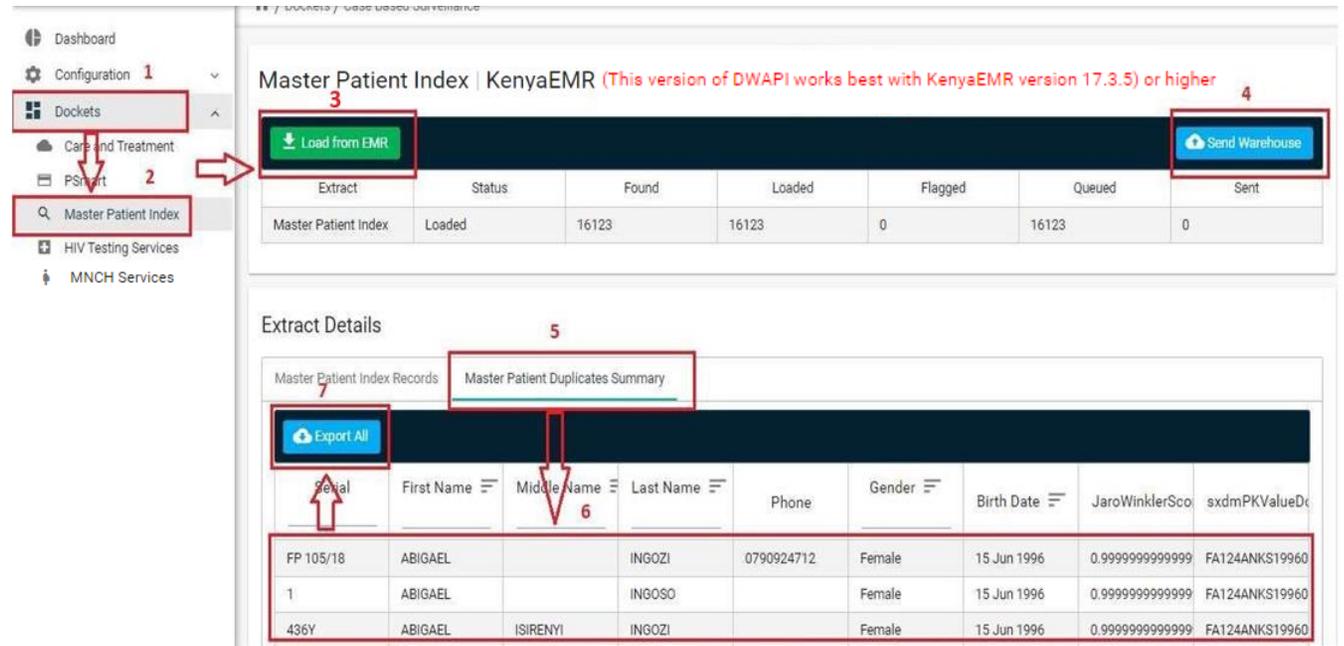
Click on **Load from EMR**

Step 4:

Click on “**Send All**”

Step 5-7:

From the validation summary, review any possible duplicates and export the list to excel for onward cleaning.



Master Patient Index | KenyaEMR (This version of DWAPI works best with KenyaEMR version 17.3.5) or higher

Extract	Status	Found	Loaded	Flagged	Queued	Sent
Master Patient Index	Loaded	16123	16123	0	16123	0

Extract Details

Master Patient Index Records | Master Patient Duplicates Summary

Export All

Serial	First Name	Middle Name	Last Name	Phone	Gender	Birth Date	JaroWinklerScore	sxdmPKValue
FP 105/18	ABIGAEL		INGOZI	0790924712	Female	15 Jun 1996	0.9999999999999999	FA124ANKS19960
1	ABIGAEL		INGOSO		Female	15 Jun 1996	0.9999999999999999	FA124ANKS19960
436Y	ABIGAEL	ISIRENYI	INGOZI		Female	15 Jun 1996	0.9999999999999999	FA124ANKS19960

Loading and Sending HIV Testing Services Data

Step 1:

Navigate to Dockets and expand the menu.

Step 2:

Click on **HIV Testing Services**

Step 3:

Click on **Load from EMR**

Step 4-8:

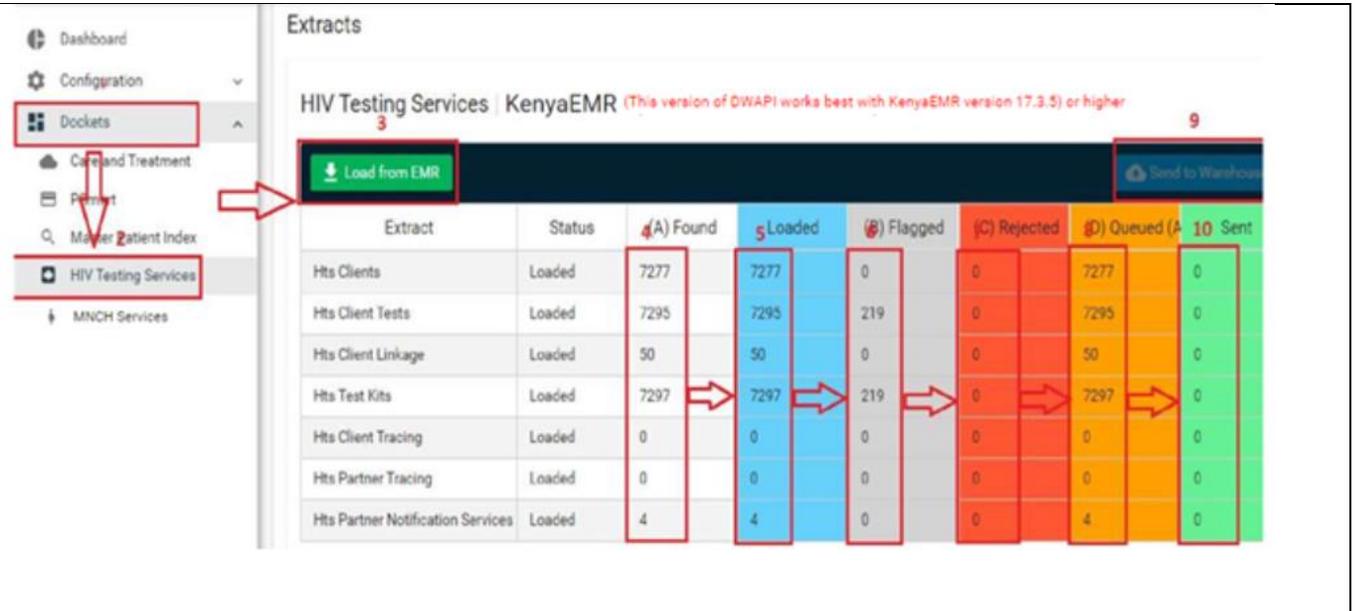
Review the validations and if corrections are needed kindly do them as per the flagged column.

Step 9:

Click on Send **“Send All”**

Step 10:

Review the sent column



Extract	Status	(A) Found	(B) Loaded	(C) Flagged	(D) Rejected	(E) Queued (A - B - C)	(F) Sent
Hts Clients	Loaded	7277	7277	0	0	7277	0
Hts Client Tests	Loaded	7295	7295	219	0	7295	0
Hts Client Linkage	Loaded	50	50	0	0	50	0
Hts Test Kits	Loaded	7297	7297	219	0	7297	0
Hts Client Tracing	Loaded	0	0	0	0	0	0
Hts Partner Tracing	Loaded	0	0	0	0	0	0
Hts Partner Notification Services	Loaded	4	4	0	0	4	0

Loading and Sending MNCH Services Data

Step 1:

Navigate to Dockets and expand the menu.

Step 2:

Click on **MNCH Services**

Step 3:

Click on **Load from EMR**

Step 4-8:

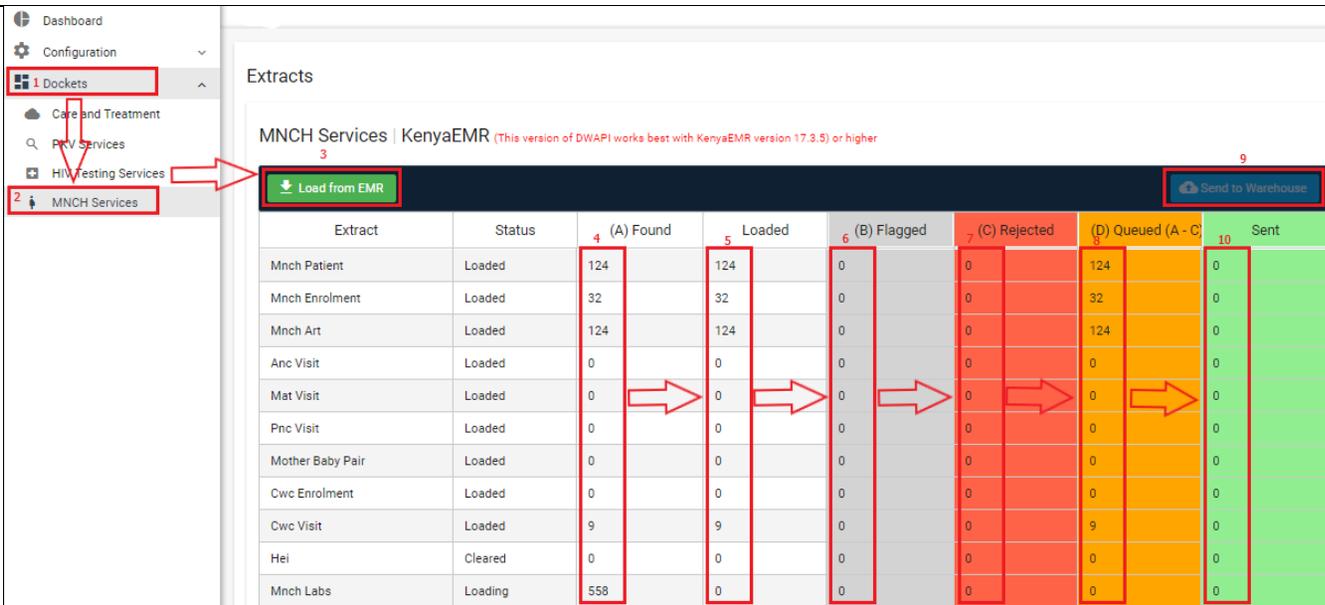
Review the validations and if corrections are needed kindly do them as per the flagged column.

Step 9:

Click on Send **“Send All”**

Step 10:

Review the sent column



Extract	Status	4 (A) Found	5 Loaded	6 (B) Flagged	7 (C) Rejected	8 (D) Queued (A - C)	10 Sent
Mnch Patient	Loaded	124	124	0	0	124	0
Mnch Enrolment	Loaded	32	32	0	0	32	0
Mnch Art	Loaded	124	124	0	0	124	0
Anc Visit	Loaded	0	0	0	0	0	0
Mat Visit	Loaded	0	0	0	0	0	0
Pnc Visit	Loaded	0	0	0	0	0	0
Mother Baby Pair	Loaded	0	0	0	0	0	0
Cwc Enrolment	Loaded	0	0	0	0	0	0
Cwc Visit	Loaded	9	9	0	0	9	0
Hei	Cleared	0	0	0	0	0	0
Mnch Labs	Loading	558	0	0	0	0	0

Dwapi Differential Uploads process

Step 1:

- On the left pane, select Care and treatment docket.
- Once the Care and Treatment option is selected, click load from EMR button to load care and treatment data and wait for the process to complete.
- Once loading is complete, a green flag will be displayed to notify you of successful Care and treatment data load and total number of records loaded will be displayed under Loaded.

NOTE:

For the Differential Upload feature to work effectively the following conditions have to be met:

1. *A facility has to Send All data atleast once before using the differnetial feature in subesequent uploads. This applies also to new KenyaEMR and DWAPI installations and Reinstallations.*
2. *ETL has to be recreated prior to extracting data into DWAPI*
3. *For offsite (boardroom) DWAPI uploads, ETL table MUST be recreated prior to data extraction into DWAPI.*
4. *REST Endpints MUST be correctly set under KenyaEMR Protocols (see EMR settings)*

Step 2:

- Click on the send all button to upload the whole datasets to the National Datawarehouse (This is done during the initial/first time upload, after installation or upgrade of dwapi)

Step 3:

- Click on the load from EMR button under care and treatment Docket.
- Once the upload is done click on the send changes only button to upload part datasets.
- Only new or updated records in the EMR will be uploaded to the national data warehouse.

Care and Treatment | KenyaEMR (This version of DWAPI works best with KenyaEMR version 17.3.5) or higher

step 3

Extract	Status	(A) Found	Loaded	(B) Flagged	(C) Rejected	(D) Queued (A - C)	Sent
All Patients	Sent	12591	12591	2	0	99	12492
ART Patients	Sent	10526	10526	1245	0	0	10526
Patient Baselines	Sent	12355	12355	0	0	0	12355
Patient Status	Sent	6976	6976	0	0	0	6976
Patient Labs	Sent	100395	100395	0	0	0	100395
Patient Pharmacy	Sent	30451	30451	0	0	0	30451
Patient Visit	Sent	709874	709874	0	0	0	709874
Patient Adverse Eve	Sent	0	0	0	0	0	0

↓ Load from EMR → step 1
 step 2 ←
Send All
Send Changes Only

Differential loading for specific docket

Differential Loading for CT docket

Care and Treatment KenyaEMR (This version of DWH works best with KenyaEMR version 18.4.1) or higher

Load All from EMR Load Changes from EMR

Extract	Status	(A) Found	Loaded	(B) Flagged	(C) Rejected	(D) Queued (A - C)	Sent
All Patients	Loaded	14765	14765	0	0	14765	0
OVC	Loaded	0	0	0	0	0	0
Defaulter Tracing	Loaded	0	0	0	0	0	0
OTZ	Loaded	0	0	0	0	0	0
Patient Adverse Events	Loaded	0	0	0	0	0	0
Contact Listing	Loaded	0	0	0	0	0	0
Enhanced Adherence C	Loaded	0	0	0	0	0	0
Depression Screening	Loaded	0	0	0	0	0	0
Covid	Loaded	0	0	0	0	0	0

Warning checks on Use of differential loading without initial all load and transmit

Care and Treatment KenyaEMR 18.3.0.DMASHOT (This version of DWH works best with KenyaEMR version 18.3.0) or higher

Load All from EMR Load Changes from EMR

Extract	Status	(A) Found	Loaded	(B) Flagged	(C) Rejected	(D) Queued (A - C)	Sent
All Patients	Loaded	3065	3065	2	0	3063	0
ART Patients	Loaded	2522	2522	1297	0	2522	0
Patient Baselines	Loaded	2752	2752	0	0	2752	0
Patient Status	Loaded	1666	1666	0	0	1666	0
Patient Labs	Loaded	11290	11254	0	0	11254	0
Patient Pharmacy	Loaded	11963	11923	0	0	11923	0
Patient Visit	Loaded	36333	36225	0	0	36225	0
Patient Adverse Ev	Loaded	0	0	0	0	0	0
Allergies Chrono M	Loaded	7	7	0	0	7	0

Error Loading from EMR -> Loading changes from EMR and sending is not allowed without sending the complete records first. Please load Extracts then attempt to load changes.

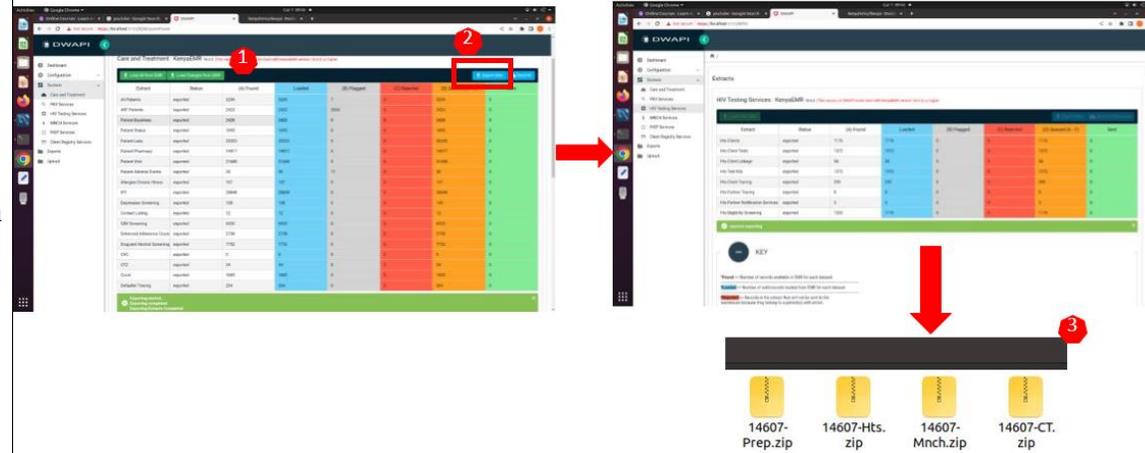
- Supports loading of changes only since the last transmission
- Reduces bandwidth required for DWH uploads
 - Saves internet bundles
 - Faster loading and transmission process
 - Reduces transmission of stale DBs
 - Promotes DWH uploads at facility level

Boardroom uploads

- Recommended for facilities without internet connectivity or where network services are intermittent.
- Supports data loading at facility level while transmission can be done at a location with internet connectivity.
- Data Security is implemented both at rest and transmission.

Facilities that are unable to transmit data can use boardroom uploads where the extracts are first exported to a zip file.

DWAPI: Boardroom Uploads

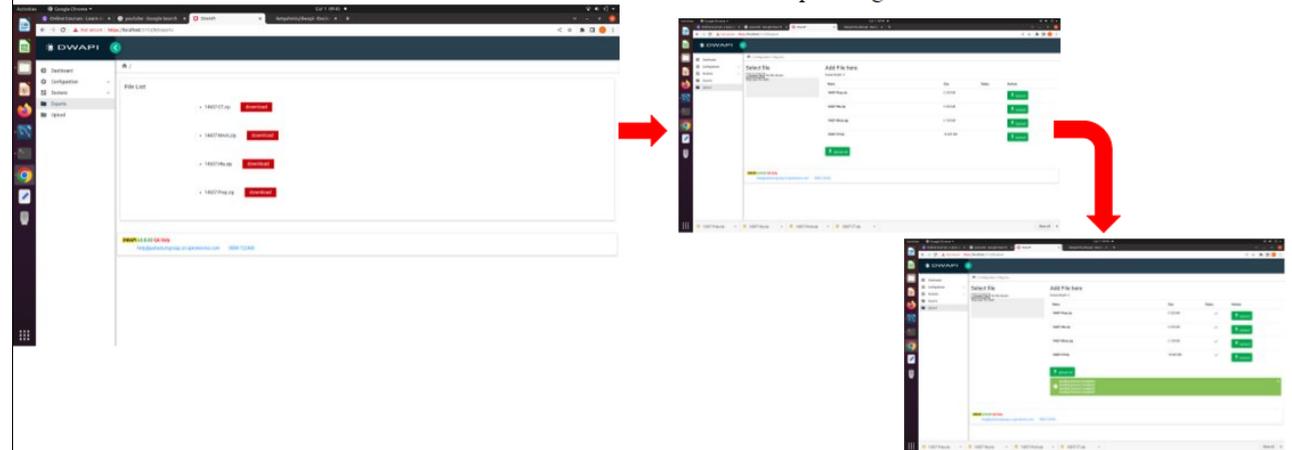


Boardroom upload process:

DWAPI : Boardroom Uploads

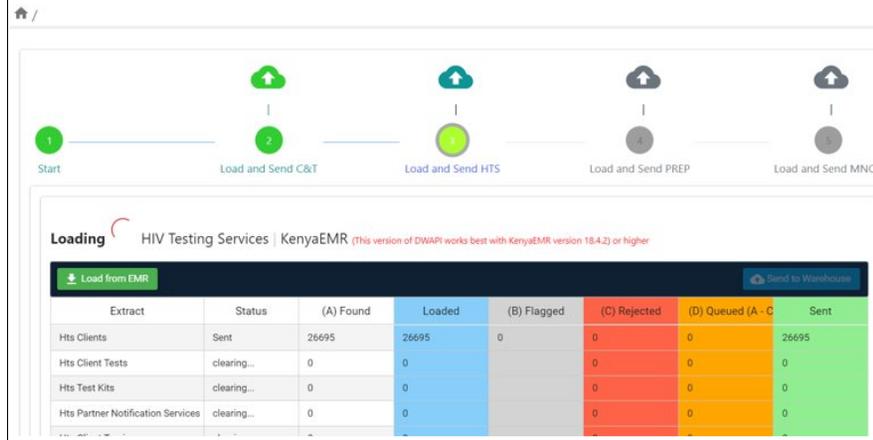
The files can then be picked by downloading the zip files

Uploading of the files



Merged Dockets Upload Process:

DWAPI: Unified loading and Transmission of data (Merged Dockets)



The screenshot shows a progress bar with five steps: 1. Start, 2. Load and Send C&T, 3. Load and Send HTS, 4. Load and Send PREP, and 5. Load and Send MNCH. Below the progress bar is a table titled 'Loading HIV Testing Services | KenyaEMR'. The table has columns for Extract, Status, (A) Found, Loaded, (B) Flagged, (C) Rejected, (D) Queued (A - C), and Sent. The 'Loaded' column is highlighted in blue, and the 'Sent' column is highlighted in green.

Extract	Status	(A) Found	Loaded	(B) Flagged	(C) Rejected	(D) Queued (A - C)	Sent
Hts Clients	Sent	26695	26695	0	0	0	26695
Hts Client Tests	clearing...	0	0		0	0	0
Hts Test Kits	clearing...	0	0		0	0	0
Hts Partner Notification Services	clearing...	0	0		0	0	0

- Supports data loading and transmission from a single click
- Users can monitor the progress of each docket submission (Intuitive Colour codes)

Data Extract Details (DQA)

Note: It is important to send all THREE (3) dockets whenever data is being uploaded to the Data Warehouse.

All flagged records should be cleaned. However, it does not prevent the user from sending data and continuously carry out data cleaning.

For data cleaning processes, refer to Section 5 of the **DWAPI Data Cleaning Job Aid**

Extract Details

[All Patients](#)
[ART Patients](#)
[Patient Baselines](#)
[Patient Status](#)
[Patient Labs](#)
[Patient Pharmacy](#)
[Patient Visits](#)

File Extracts Navigation Panel

[ART Patients Records](#)
[ART Patients Validation Summary](#)
[ART Patients Send Summary](#)
[Validation Summary panel](#)

Export

Extract	Field	Type	Summary	Date Generated	Patient PK	Facility id	Patient ID
TempPatientArtExtracts	DOB	Logical	DOB greater than StartARTDate	2018-09-10T16:15:06.19	1908	754	4437
TempPatientArtExtracts	StartARTDate	Logical	StartARTDate after last visit date	2018-09-10T16:15:06.383	73505	754	13028-07037
TempPatientArtExtracts	StartARTDate	Logical	StartARTDate before patient registered	2018-09-10T16:15:06.413	71495	754	13028-07003

< < 1 2 3 4 5 > >

THE END