

DWAPI Data Transmission SOP

[Last updated: 12th May 2021]

TASK:	Load and send data from the 3 docketets
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 2.6.0 and above, Functional KenyaEMR ver17.3.4 and above, Internet Connectivity
<p>SUMMARY: <i>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.</i></p>	
<p>UNDERSTANDING DWAPI DASHBOARDS</p> <p>DWAPI provides a comprehensive dashboard that highlight various indicators and metrics about the database and the data extracted in general. These include:</p> <ul style="list-style-type: none"> - Quality indicators - EMR indicators - DWAPI Metrics - Database connection properties - DWAPI Version <p>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.</p>	

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 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: 45%;">Indicator</th> <th style="width: 30%;">Status</th> <th style="width: 25%;">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	13 hours ago
Care and Treatment	Sent	an hour ago
Hiv Testing Services	Loaded	9 minutes ago
Hiv Testing Services	Sent	6 minutes ago
PKV Services	Loaded	16 hours ago
PKV Services	Sent	
Migration Services	Loaded	
Migration 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

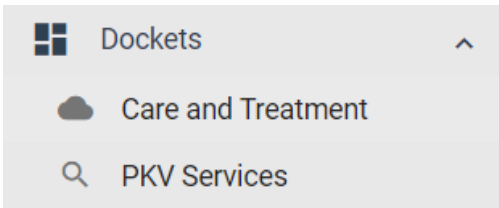
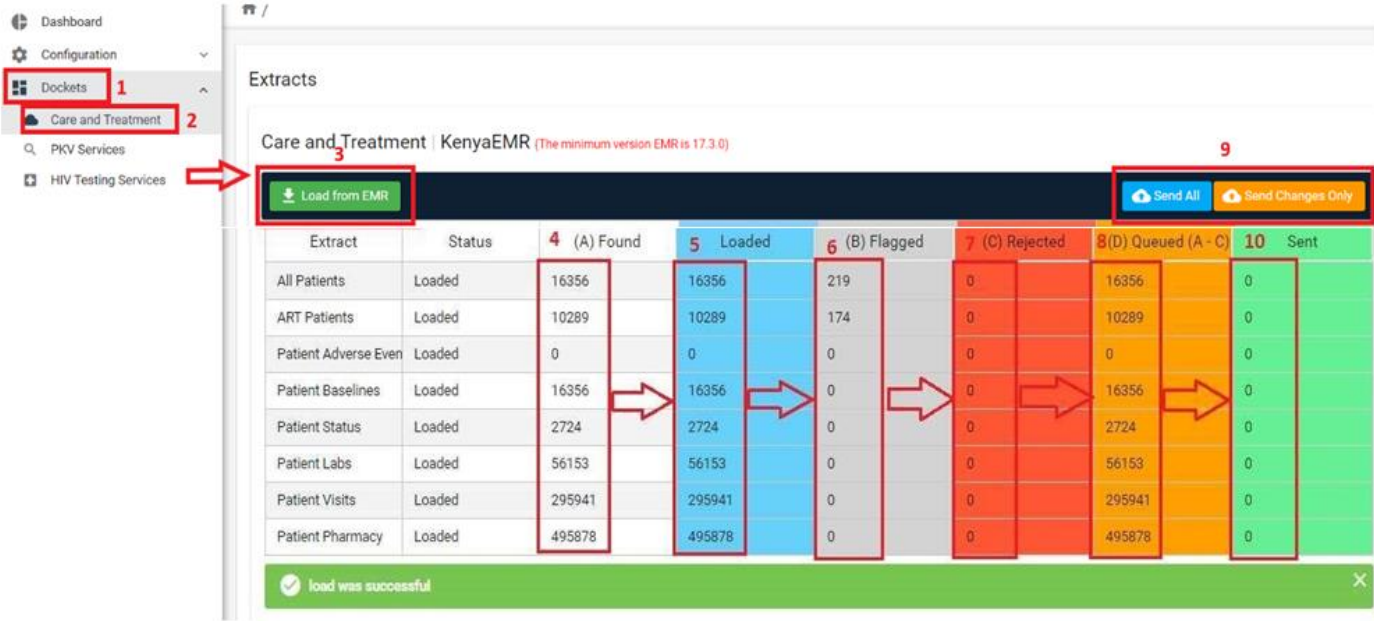
Server
 kenyaemrstaging_kenyaemr-staging-mysc

Port
 3306

User
 dwapi

Password

SECTION 2: DATA EXTRACTION AND UPLOAD PROCESS

Action	Screen shot																																																																								
<p>DWAPI DOCKETS</p> <p>There are three main Datasets that exist in DWAPI. It is important to extract and submit datasets from all the three datasets.</p>	<div style="display: flex; justify-content: space-between;"> <div style="width: 60%;">  <p style="margin-top: 10px;"> Dockets Care and Treatment PKV Services HIV Testing Services </p> </div> <div style="width: 35%;"> <p>KEY:</p> <ul style="list-style-type: none"> - Care and treatment: Extract and send HIV related datasets - PKV Services: Extracts and submit patient unique identifiers (patient Key Values) - HIV Testing Services: Extracts and submit all HTS related datasets </div> </div>																																																																								
<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>	 <p>The screenshot shows the 'Extracts' page for 'Care and Treatment KenyaEMR'. The interface includes a sidebar menu with 'Dockets', 'Care and Treatment', 'PKV Services', and 'HIV Testing Services'. The main area displays a table with columns for Extract, Status, (A) Found, Loaded, (B) Flagged, (C) Rejected, (D) Queued (A - C), and Sent. A 'Load from EMR' button is highlighted, and a 'Send All' button is also visible. A success message 'load was successful' is shown at the bottom.</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:

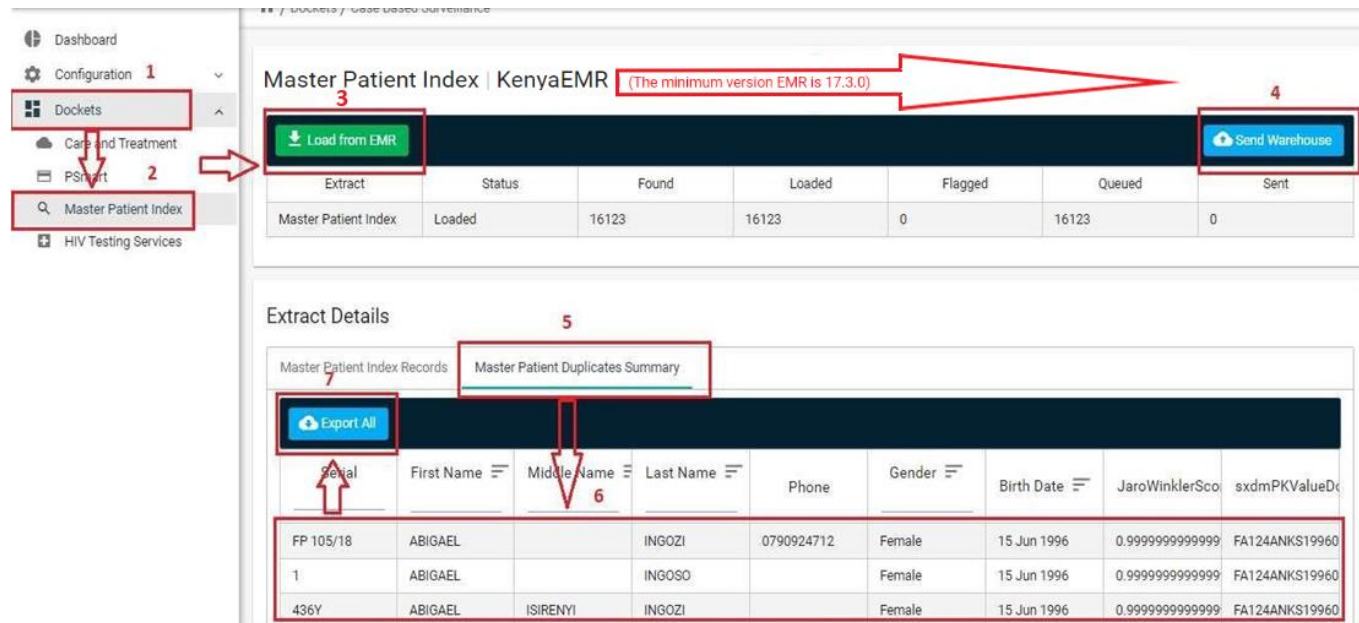
Click on **Load from EMR**

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.



The screenshot shows the 'Master Patient Index | KenyaEMR' interface. The left sidebar contains a menu with 'Dockets' expanded, and 'Master Patient Index' selected. The main content area shows a table with columns: Extract, Status, Found, Loaded, Flagged, Queued, and Sent. A 'Load from EMR' button is highlighted with a red box and labeled '3'. A 'Send Warehouse' button is highlighted with a red box and labeled '4'. A note above the table states '(The minimum version EMR is 17.3.0)'. Below the table, the 'Extract Details' section shows 'Master Patient Duplicates Summary' with an 'Export All' button highlighted with a red box and labeled '7'. A table of duplicates is shown with columns: Serial, First Name, Middle Name, Last Name, Phone, Gender, Birth Date, JaroWinklerSco, and sxdmPKValueDc. The first row of the table is highlighted with a red box and labeled '6'.

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

Serial	First Name	Middle Name	Last Name	Phone	Gender	Birth Date	JaroWinklerSco	sxdmPKValueDc
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

- Dashboard
- Configuration
- Dockets
- Care and Treatment
- Payment
- Master Patient Index
- HIV Testing Services

Extracts

HIV Testing Services | KenyaEMR 1 (The minimum version EMR is 17.3.0)

3 Load from EMR

9 Send to Warehouse

Extract	Status	4(A) Found	5 Loaded	6 (B) Flagged	(C) Rejected	(D) Queued (A)	10 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

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.

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.

(This process is done for subsequent uploads to the national data warehouse)

NOTE:

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

- 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.**
- ETL has to be recreated prior to extracting data into DWAPI**
- For offsite (boardroom) DWAPI uploads, ETL table MUST be recreated prior to data extraction into DWAPI.**
- REST Endpints MUST be correctly set under KenyaEMR Protocols (see EMR settings)**

Care and Treatment | KenyaEMR (The minimum version EMR is 17.3.0)

↑ spep 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

Data Extract Details

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 > >