

الجمهورية اللبنانية
وزارة الصحة العامة



Ministry of Public Health

National Barcode System for Pharmaceuticals Pharmacies API Integration Guide

 DATAFLOW
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1. Introduction

The Pharmacy API ensures the communication between the **National Barcode System for Pharmaceuticals** application and the **Pharmacist's** applications.

The API is a REST service with a single method that takes a “**CSV or Excel**” file in addition to a signature value which is sent as a querystring parameter in order to authenticate the request.

The signature value is the result of the AES encryption of the “**pharmacy identification value**”:

Signature value = AES ([PharmacyIdentificationValue])

The AES algorithm used has the following properties:

- Key Size : **256**
- Block Size : **128**
- Mode : (**Cipher Mode**) **CBC**
- Padding : (**Padding Mode**) **PKCS7**

The “**pharmacy identification value**” has the following format:

[MOPHPharmacyCode] + “:date:” + [RequestDate]

- **[MOPHPharmacyCode]** = MOPH Pharmacy Contact Code of pharmacy in question
- **[RequestDate]** = The request date has the following format **dd/MM/yyyy**

e.g.

In the example below we assume that the pharmacy uploads its movements on **02/02/2018** with the following parameters:

- MOPH Pharmacy Code: **P2000**
- Date: **02/02/2018**
- For AES Encryption we use:
 - **Block Size = 128**
 - **Key Size = 256**

- Mode = (Cipher Mode) CBC
- Padding = (Padding Mode) PKCS7
- Key = 000102030405060708090a0b0c0d0e0f
- IV = 0000000e000f0a00

The “Pharmacy identification value” becomes the following: **P2000:date:02/02/2018**

After encrypting the value above it should yield the following signature: **2Lv/jlSa+fcyOJlpJdTri1HrsYo+kH/Tl9V7wlg/pq4=**

2. Service Methods

We are using a REST service with the following method:

- Upload

1.1 Upload Method

1.1.1 URL Pattern:

<http://{BaseUrl}/PharmacyServices/api/Pharmacy/Upload?key=>

1.1.2 Method

- POST

1.1.3 Parameters

The methods take 4 parameters:

- 1- Key: Contains the signature value described in the [section above \(see Introduction\)](#)
- 2- Username: ([String](#)) MOPH username
- 3- Password: ([String](#)) MOPH password encrypted with AES encryption (like key)
- 4- File (CSV or Excel file) The file structure is explained in the [section below \(see File Structure\)](#)

1.1.4 File Structure

Column Name	Column Type	Required	Description
RowId	Numeric(18)	Yes	Unique Identifier for the Row
PharmacyCode	Varchar(20)	Yes	Pharmacy Code at MOPH
PrescriptionNumber	Varchar(20)	Yes	Required only for TransactionType SALES for Narcotic and Psychotropic Medications
PhysicianNumber	Varchar(20)	Yes	Required only for transactions having Prescription Numbers
PatientName	Varchar(100)	No	Patient Name as entered on the prescription
TransactionType	Varchar(20)	Yes	SALES → Pharmacies sales movements to patients

			RETURN → Pharmacies returns movements from patients back to pharmacies OUT → Pharmacies Stock OUT movements needed to adjust the pharmacies quantities in specific cases IN → Pharmacies Stock IN movements needed to adjust the pharmacies quantities in specific cases or to enter a Stock Opening
TransactionReason	Varchar(100)	No	Transaction Reason is required only for transactions having Transaction Type IN, OUT Reasons to be used for the Adjustment OUT: EXPIRY / NEAR EXPIRY / DAMAGED / PERSONAL USE Reasons to be used for the Adjustment IN: STOCK OPENING
TransactionNumber	Varchar(20)	Yes	Transaction Sequence Number (should be unique per transaction type and date)
TransactionDate	Datetime	Yes	Transaction date (format yyyyMMdd) should be 8 digits
MedicationMOPHCode	Varchar(20)	Yes	Medication Code at MOPH
LotNumber	Varchar(20)	Yes	Medication Lot Number
ExpiryDate	Datetime		Medication Expiry Date (format yyyyMMdd) should be 8 digits Required only for transaction Type IN , can be filled for other transactions if available
SerialNumber	Varchar(100)		Required for all medication having Lot Numbers registered with serial numbers at MOPH
Quantity	Numeric(10)	Yes	Quantity of the medication should be in purchase packing unit (decimal values are not allowed)
Pack	Varchar(1)	Yes	P
Barcode	Varchar(100)		Required only for transaction Type IN can be filled for other transactions if available
PatientUHID	Varchar(100)		Patient Unique Health ID, Required for some medications
PatientGender	Integer		1: Male, 2: Female. Required for some medications
PatientDOB	Datetime		Patient date of birth (format yyyyMMdd) should be 8 digits. Required for some medications
MessageCode	Integer	No	Message Code generated from the system after uploading the movements
Message	Varchar(500)	No	Message generated from the system after uploading the movements

1.1.5 Reply Back (success or error)

In case of success a CSV structure similar to the uploaded file is returned. The structure will contain a single row with the success code and message. In case of error a CSV structure similar to the uploaded file is returned which contains an error code and message for each invalid movement line. Note that in case of error the returned file can be re-uploaded after fixing errors.

List of codes and messages generated after uploading the movements files

Error Code	Error Message	Action
1	RowId is empty	Flag Row as having problem and continue upload
2	Transaction Number is empty in RowId: ***	Flag Row as having problem and continue upload
3	Transaction Type is empty in RowId: ***	Flag Row as having problem and continue upload
4	Transaction Type *** is not valid in RowId: ***	Flag Row as having problem and continue upload
5	Pharmacy Code is empty in RowId: ***	Flag Row as having problem and continue upload
6	Transaction Date is empty or invalid in RowId: ***	Flag Row as having problem and continue upload
7	Medication Code: is empty in RowId: ***	Flag Row as having problem and continue upload
8	Lot Number is empty in RowId: ***	Flag Row as having problem and continue upload
9	Expiry Date is empty in RowId: ***	Flag Row as having problem and continue upload
10	Quantity is empty in RowId: ***	Flag Row as having problem and continue upload
11	Pharmacy Code *** does not exist in MOPH in RowId: ***	Flag Row as having problem and continue upload
12	Transaction Number: *** already exists in RowId: ***	Flag Row as having problem and continue upload
13	Physician Number: *** does not exist in RowId: ***	Flag Row as having problem and continue upload (Test done only for Narcotic, Psychotropic and Antineoplastic medications)
14	Medication Code: *** does not exist in RowId: ***	Flag Row as having problem and continue upload
16	Medication Code: *** does not exist with Lot: *** and Expiry: *** in RowId: ***	Flag Row as having problem and continue upload
17	Physician Number is required in RowId: ***	Flag Row as having problem and continue upload (Test done only for Narcotic, Psychotropic and Antineoplastic medications)

18	Medication Code: *** with Lot: *** and Expiry: *** does not exist in pharmacy's stock in RowId: ***	Flag Row as having problem and continue upload
23	Invalid Pharmacy Code	Stop upload
25	Transaction Reason is empty in RowId: ***	Flag Row as having problem and continue upload
26	Transaction Reason is not valid in RowId: ***	Flag Row as having problem and continue upload
27	Quantity value cannot be decimal in RowId: ***	Flag Row as having problem and continue upload
30	Not Authorized!	Stop upload
31	The selected file is not an Excel or CSV file!	Stop upload
32	File Structure Not Valid	Stop upload
33	File Data Empty	Stop upload
34	An Error has occurred	Stop upload
35	Movements have been created and confirmed successfully	Upload succeeded
36	Invalid Pack	Flag Row as having problem and continue upload
37	Prescription Number is required in RowId: ***	Flag Row as having problem and continue upload (Test done only for Narcotic, Psychotropic and Antineoplastic medications)
38	Barcode is empty in RowId: ***	Stop upload (Test done For TransactionType = "IN")
39	Barcode used for more than one lot number	Flag Row as having problem and continue upload (Test done For TransactionType = "IN")
40	Different barcodes found for Lot Number *** and Expiry Date ***	Stop upload (Test done For TransactionType = "IN")
41	Barcode already exists in MOPH in RowId: ***	Flag Row as having problem and continue upload (Test done For TransactionType = "IN")
42	Barcode *** already exists with different Lot and Expiry Date in RowId ***	Flag Row as having problem and continue upload (Test done For TransactionType = "IN")
43	Serial Number does not exist in MOPH	Save in Archived Movements and continue upload
44	Duplicate Serial Number for medication code: *** and Serial Number: ***	Stop upload (Test done For TransactionType = "IN")

45	Serial Number is empty in RowId: ***	Flag Row as having problem and continue upload (Test done For TransactionType = "IN")
46	Serial Number already exists in MOPH in RowId: ***	Flag Row as having problem and continue upload (Test done For TransactionType = "IN")
47	Lot Number *** should either be registered with serial numbers or without serial numbers	Stop upload (Test done For TransactionType = "IN")
48	Quantity should be 1 for movement with serial number in RowId: ***	Flag Row as having problem and continue upload
49	Barcode length is smaller than: *** in RowId: ***	Stop upload
52	Check if barcode is 2D barcode (GS1 Standard)	Stop upload (Test done for TransactionType = "IN")
53	Movement not uploaded due to error(s) in reception	Stop upload
54	The field length exceeds the maximum length allowed	Stop upload
55	The file is too large! The file must not contain more than 20,000 records	Stop upload
58	Patient UHID is Required in RowId: ***	Flag Row as having problem and continue upload
59	Invalid Patient UHID is RowId: ***	Flag Row as having problem and continue upload

Sample of success structure returned:

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
RowId	PharmacyCode	PrescriptionNumber	TransactionType	PhysicianNumber	TransactionReason	PatientName	TransactionNumber	TransactionDate	MedicationMOPHCode	LotNumber	ExpiryDate	Quantity	MessageCode	Message
														35 Movements have been created and confirmed successfully

Sample of error structure returned:

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
RowId	PharmacyCode	PrescriptionNumber	TransactionType	PhysicianNumber	TransactionReason	PatientName	TransactionNumber	TransactionDate	MedicationMOPHCode	LotNumber	ExpiryDate	Quantity	MessageCode	Message
														32 File structure not valid