

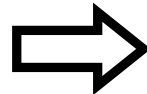
Data Validation for Patient Level Costing

Joe Hunter & Brian McCarthy
Healthcare Pricing Office

Aim

- ▶ Patient Level Costing is the merging of Patient Activity and Hospital Costs with the aim of determining patient costs
- ▶ It is
 - a significant project for the HPO
 - a benefit for individual hospitals
 - a benefit for the national systems
- ▶ Central Issue

Better Data



Better Costs

Background – PLC

▶ Patient Level Costing (PLC)

- Major undertaking
- Up to 30 data sources
 - HIPE, Costs (general ledger), feeder systems
- Working with up to 15 hospitals
- Past = Six Pilots (using PPM1)
- 2015 – Full implementation

▶ PowerHealth Solutions

- Chosen external consultants
- PPM2 (Power Performance Manager)
- 18 Month Project



Experience from Pilot(s)

- ▶ Enthusiastic Support from Hospitals
- ▶ Challenges
 - Variety of feeder systems with different capabilities in Hospitals
 - Different levels of competence
- ▶ Multiple submissions to correct inaccuracies in the data
- ▶ MS Access “Applet” was key piece of the puzzle.

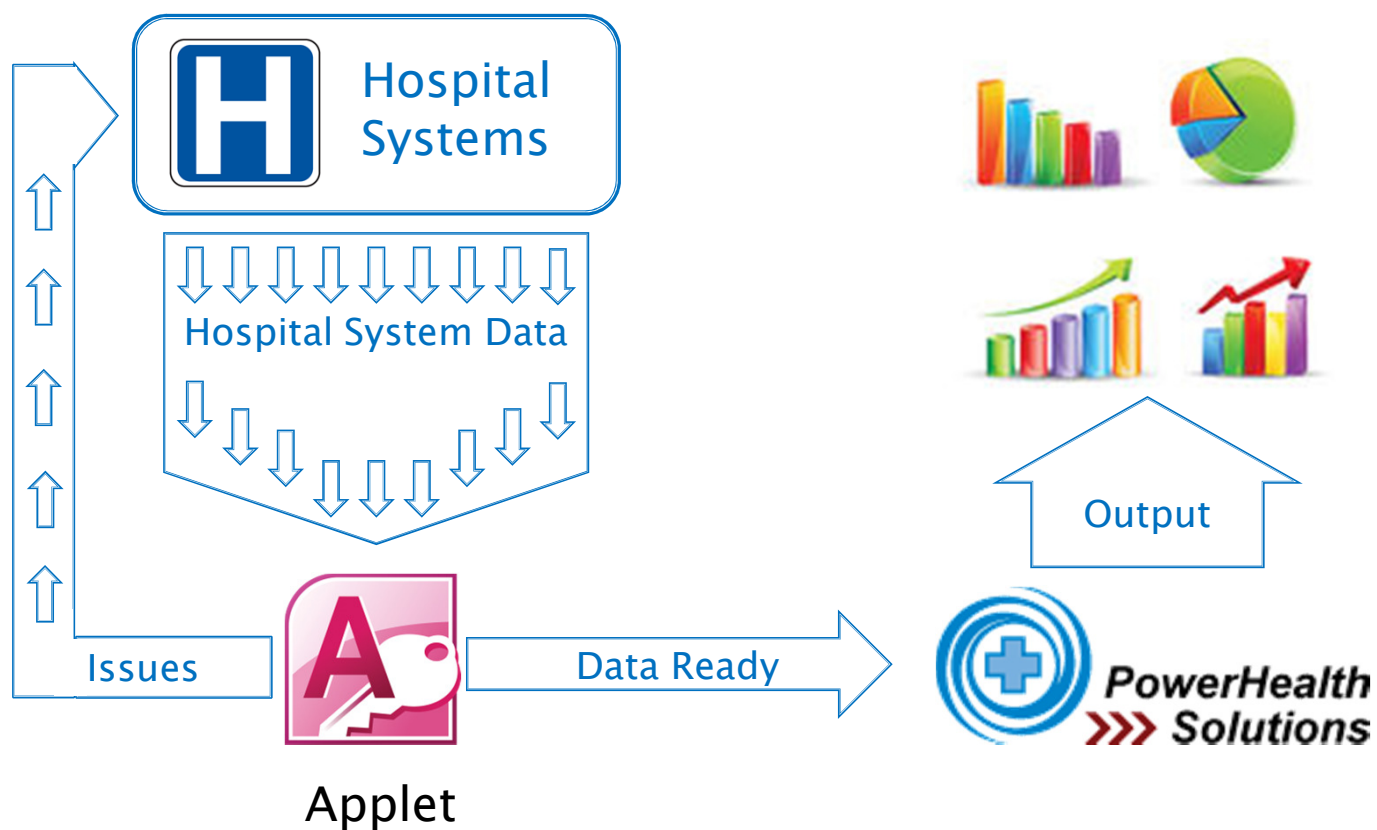
Access “Applet” – Assessment

- ▶ Simple Interface.
- ▶ Used to check the input files for PPM1.
- ▶ Used to prepare summary tables on the data.
- ▶ Gave hospitals confidence in using the system.
- ▶ Designed for use with PPM1 and not PPM2.
- ▶ Does not cater for new files and new formats.

Pros

Cons

PPM1 – Data Flow



PLDC Web Application

- ▶ HPO IT are developing a replacement application for the MS Access applet
 - PLDC – Patient Level Data Checker
 - The application will check the patient costing data and activity data prior to submission to PPM2
 - Target –> Available by end of June
 - Web based – Like the HIPE Portal
- ▶ The application will process the input files, check them and report any issues.

PLDC Web Application – Features

► It will

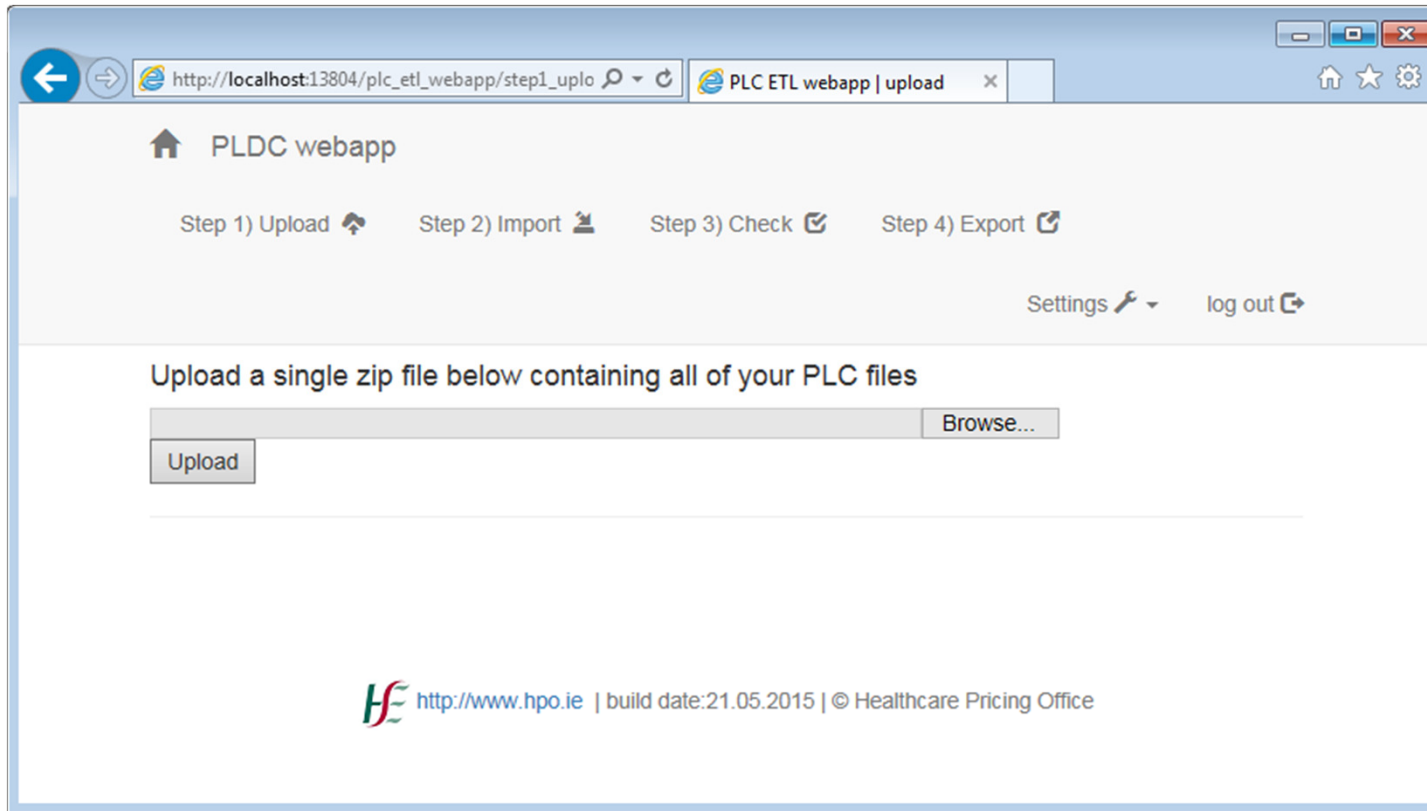
- include a simple checking process.
- report all errors back to the user for correction.
- process the available input files.
- ensure that the input files follow the defined templates.
- check that data is consistent.
- check that the values for each variable make sense.
- check the relative integrity of the files.
- export the data for PPM2.

PLDC – Screen Shots



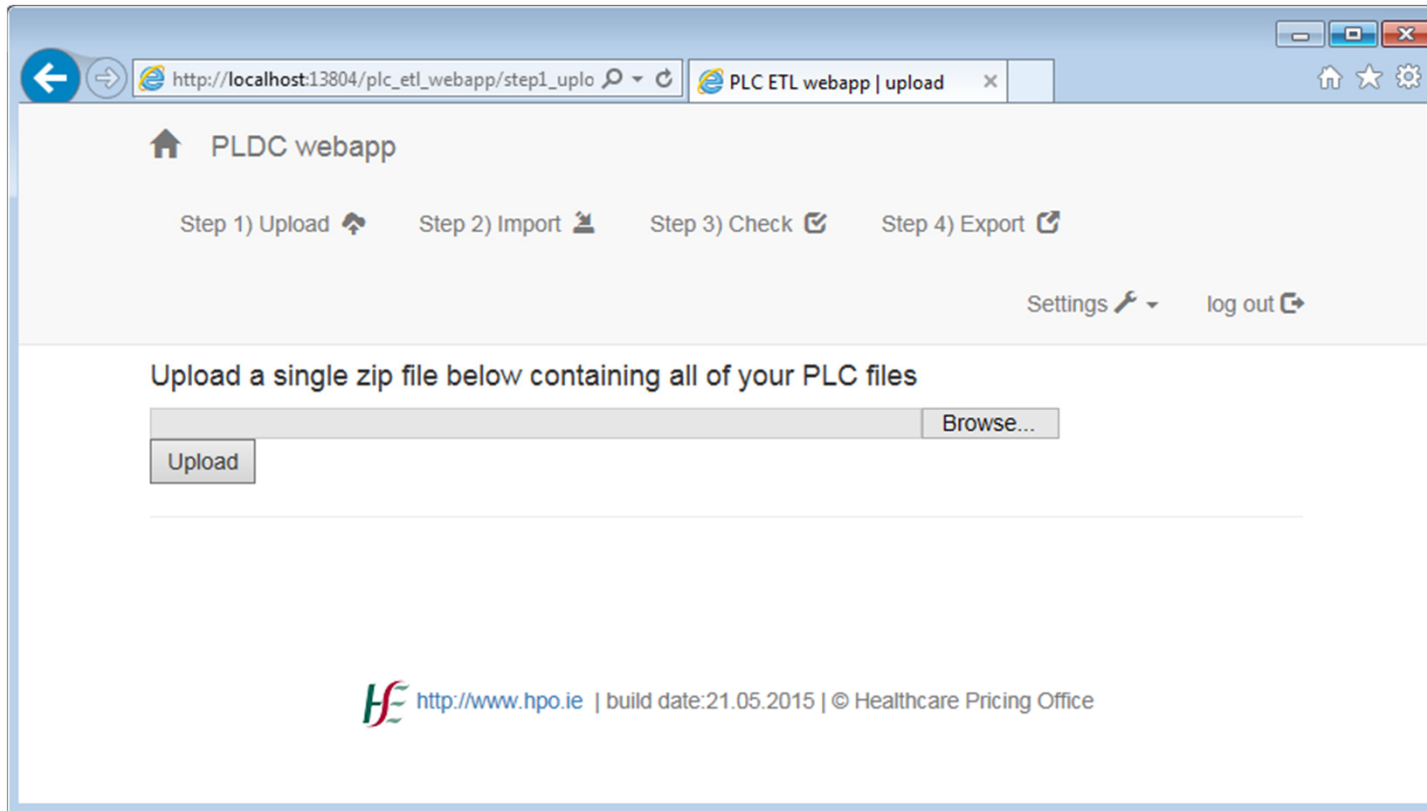
The screenshot shows a web browser window with the address bar displaying `http://localhost:13804/plc_etl_webapp/login.aspx` and the tab title `PLDC ETL webapp`. The page content includes the title `PLDC ETL webapp (v1.0)`, a prompt `please sign in below...`, a text input field containing `info@hpo.ie`, a password input field with masked characters, a dropdown menu with the text `...and then choose your hospital:`, and a blue `Sign in` button with a right arrow icon. At the bottom, there is a footer with the HPO logo, the URL `http://www.hpo.ie`, the build date `21.05.2015`, and the copyright notice `© Healthcare Pricing Office`.

PLDC – Screen Shots



- ▶ Once the application is started, the user follows the steps to Upload the files, Import their contents, Check the data and Export the final files.

PLDC – Screen Shots



- ▶ The user will upload their PLC files using a single archive.

PLDC – Screen Shots

Step 1) Upload the PLC CSV files for your hospital

Upload a single zip file below containing all of your PLC files

Browse...

Please see details below of the 16 CSV files in the zip file you uploaded.

What is required next is to ensure each CSV file has a proper PPM2 file type from the drop down list. Service can be used multiple times but all other PPM2 types must once. When complete click on the 'Save CSV files...' button at the bottom of the table.

#	File Name	PPM2 File Type	Compressed Size	unCompressed Size
1	alliedhealth.txt	Service	379310	2871474
2	bloodproducts.txt	Service	21124	186645
3	cardiology.txt	Service	138686	954676
4	diagnosis.txt	Please choose from below...	889133	4062341
5	emergency.txt	CodingDiagnosis CodingProcedure Encounter Admitted	714073	4838852

- ▶ The user is presented with the name of each file and must select the PPM2 type of file from the list.

PLDC – Screen Shots

📄 Step 2) Import the CSV files into the PLC Database

Click the import button to start importing all uploaded CSV files from Step 1)

Import CSV Files Into Database 📄

CSV File Name	PPM2 File Type
alliedhealth.txt	Service
bloodproducts.txt	Service
cardiology.txt	Service
diagnosis.txt	CodingDiagnosis
emergency.txt	Encounter_ED

- ▶ Once all the file types are identified, the user can begin the Import process by clicking on Import CSV Files into Database.

PLDC – Screen Shots

File#	FileName	PLC file type	Num Rows In File?	Num Rows In DB?	File Total = DB Total?	All Mandatory Columns?	Number Cast Problems?	All Preferred Columns?
1	alliedhealth.txt	Service	32048	32048	True	YES	0	view warnings
2	bloodproducts.txt	Service	2226	2226	True	YES	0	view warnings
3	cardiology.txt	Service	11157	11157	True	YES	0	view warnings
4	diagnosis.txt	CodingDiagnosis	119049	119049	True	view missing	0	view warnings
5	emergency.txt	Encounter_ED	41020	41020	True	YES	0	view warnings
6	endoscopy.txt	Service	4323	4323	True	YES	0	view warnings
7	hcc.txt	Service	516	516	True	YES	0	view warnings
8	imaging.txt	Service	73897	73897	True	YES	0	view warnings
9	inpatient.txt	Encounter_Admitted	37702	37702	True	YES	0	view warnings
10	outpatient.txt	Encounter_Outpatient	118320	118320	True	YES	0	view warnings
11	pathology.txt	Service	854993	0	False	YES	view errors 1	view warnings

- ▶ As the data files are loaded, the first set of checks are performed. Where errors in files are spotted, they are marked with [view errors 1](#) or [view warnings](#).

PLDC – Screen Shots

PLDC webapp | tableViewer



COLUMN_WITH_PROBLEM	PatientNumber	EncounterNumber	StartDateTime	Ward
[StartDateTime] 2014-03-87 07:15:00	12345	987654	2014-03-87 07:15:00	Day Ward
[StartDateTime] 2014-03-13 23:83:00	13579	975318	2014-03-13 23:83:00	Day Ward
[StartDateTime] 2014-06-05 10:86:00	12358	122032	2014-06-05 10:86:00	Acute Medical

number of rows: 3 rows

- ▶ Clicking on individual error flags for the files will list the errors found. In the example, the start dates and time do not make sense.

PLDC – Screen Shots

✓ Step 3) Run Integrity Checks

Start Date:  End Date: 

Integrity Checks

[select all checks](#) [clear all checks](#)

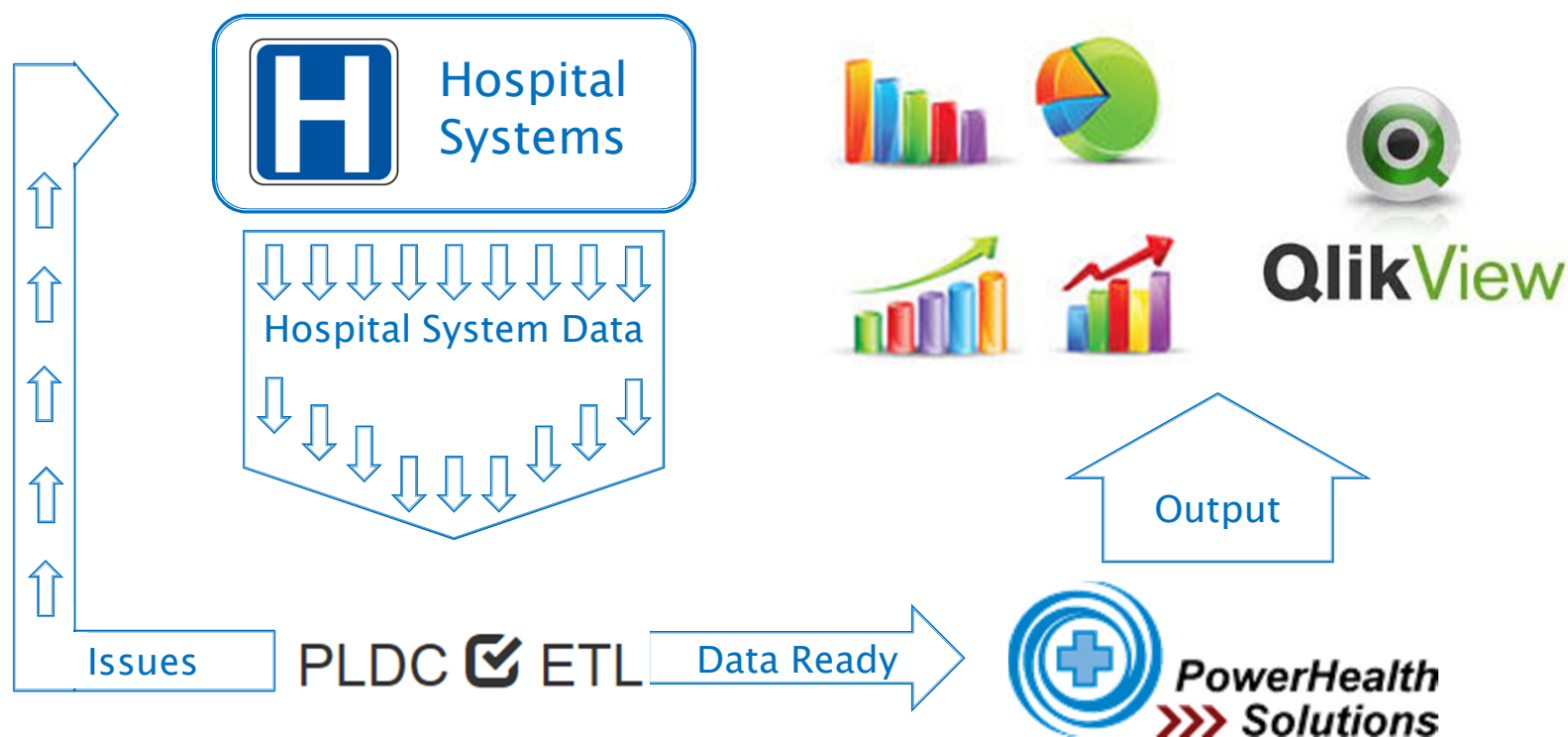
choose	OK To Run?	File Name	File Type	All Mandatory Columns?	All Columns Convertible?	All Preferred Columns?
<input type="checkbox"/>	YES	alliedhealth.txt	Service	YES	YES	NO
<input type="checkbox"/>	YES	bloodproducts.txt	Service	YES	YES	NO
<input type="checkbox"/>	YES	cardiology.txt	Service	YES	YES	NO
<input type="checkbox"/>	NO	diagnosis.txt	CodingDiagnosis	NO	YES	NO

number of rows: 4 rows

[Run Selected Checks](#) ✓

- ▶ For the integrity checks, it is possible to choose which checks to run.

PPM2 – Data Flow



In Summary

- ▶ The PLC project is a major undertaking for the Healthcare Pricing Office.
- ▶ The aim of the project is to obtain optimal patient level costing data.
- ▶ Good data relies on Good input data.
- ▶ The PLDC application will check the input data before it is imported into PPM2
- ▶ Issues in the file will be identified for correction.

Thank you

► Any Questions

► Joe.Hunter@HPO.ie & Brian.McCarthy@HPO.ie

► HIPEIT@HPO.ie

☎ 771 8454