



Joint EU-MNE Programme for
Employment, Education and Social Welfare



WP 2.2 - Implementation of Data Warehouse for prescription of medicines in PHC IS

DEV 2.2 - Report

“Business Intelligence tools for data analysis of prescribed medicines”

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MG Soft

Podgorica, 24.07.2020



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Monitoring the prescription of diclofenac with the aim
of optimization of its safe use



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1. Introduction

This report describes Business Intelligence tools that are developed on the bases of Data Warehouse System implemented in DEV 2.1 of the project.

Developed BI tools use the the main source of the data that is delivered into DW from PHC IS and which is cleansed, transformed, catalogued. Established DW is initially filled with prescription information from 2016 from PHC information system and will be updated on a daily basis to monitor the effects of the project in the next stages.

BI tools should provide appropriate platform for conducting expert analisys during WP3 of the project. These include:

- 3.1. Analysis of obtained data on prescribing patterns of diclofenac in PHC,
- 3.2. Assessment of compliance or deviation of diclofenac prescribing in PHC with CALIMS and EMA recommendation of its safe use,
- 3.3. Scientific research and statistical analysis of data with aim of publishing in relevant scientific journals.

Besides providing targeted alphanumeric data needed for conducting analisys, BI tools will also provide visual representation of data (graphs, pies etc), in order to visually present findings of the project.

During DEV 2.3 of the project users from CALIMS will be trained in usage of delivered BI tools.





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2. BI technology platform

Having in mind the large amount of data gathered regarding the medicine prescribing process, on national level in PHC IS, appropriate powerful technology platform needed to be selected.

In recent years, Health Insurance Fund of Montenegro (HIF) acquired the Oracle Business Intelligence Suite, for the purposes of advanced reporting and data analysis in Healthcare on national level. HIF supported project 'Monitoring the prescription of diclofenac with the aim of optimization of its safe use' by providing access rights to prescription data in PHC IS and providing other resources including appropriate licences for usage of Oracle Business Intelligence Suite platform.

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BUSINESS INTELLIGENCE



The foundation of the Oracle Business Intelligence Suite platform is a true BI server that is designed to be highly scalable, optimizing concurrency and parallelism to make the value of BI applications available to the largest possible audience. It provides centralized data access and calculation, essentially creating a large pipe through which anyone can consume any information in any form anywhere in the IS. The BI server is central to all of the business processes that



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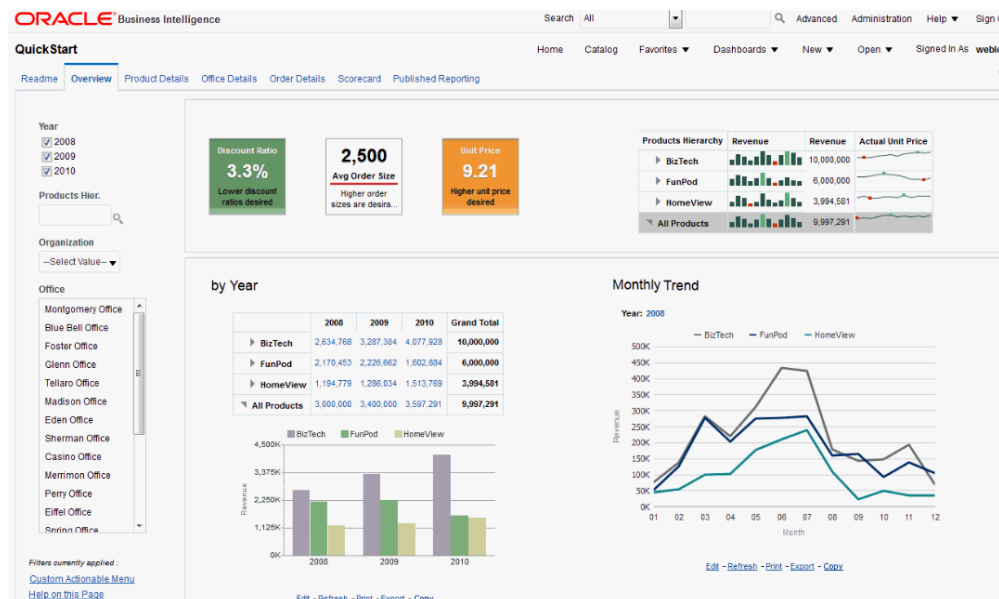
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consume information, including dashboards, ad hoc queries, intelligent interaction capabilities, process reporting, OLAP analysis, data mining, and other Web Service-based applications (J2EE). All of these applications require rich access to broad sets of data across the enterprise, and they all require a sophisticated calculation and aggregation infrastructure that the platform provides to deliver value.

The platform supports a full complement of access, analysis, and information delivery options, all in one fully integrated Web environment. Each of these components serves different audiences in the organization who have different appetites for the same underlying data, but need to access it in different ways. But unlike other BI tools, all components are integrated on one common architecture, enabling a seamless and intuitive user experience.

Oracle BI Interactive Dashboards provides interactive access to information that is actionable and dynamically personalized based on the individual's role and identity. In the Oracle BI Intelligence Dashboards environment, the end user is working with live reports, prompts, charts, tables, pivot tables, graphics, and tickers in a pure Web architecture. The user has full capability for drilling, navigating, modifying, and interacting with these results. Oracle BI Intelligence Dashboards can also aggregate content from a wide variety of other sources, including the Internet, shared file servers, and document repositories.



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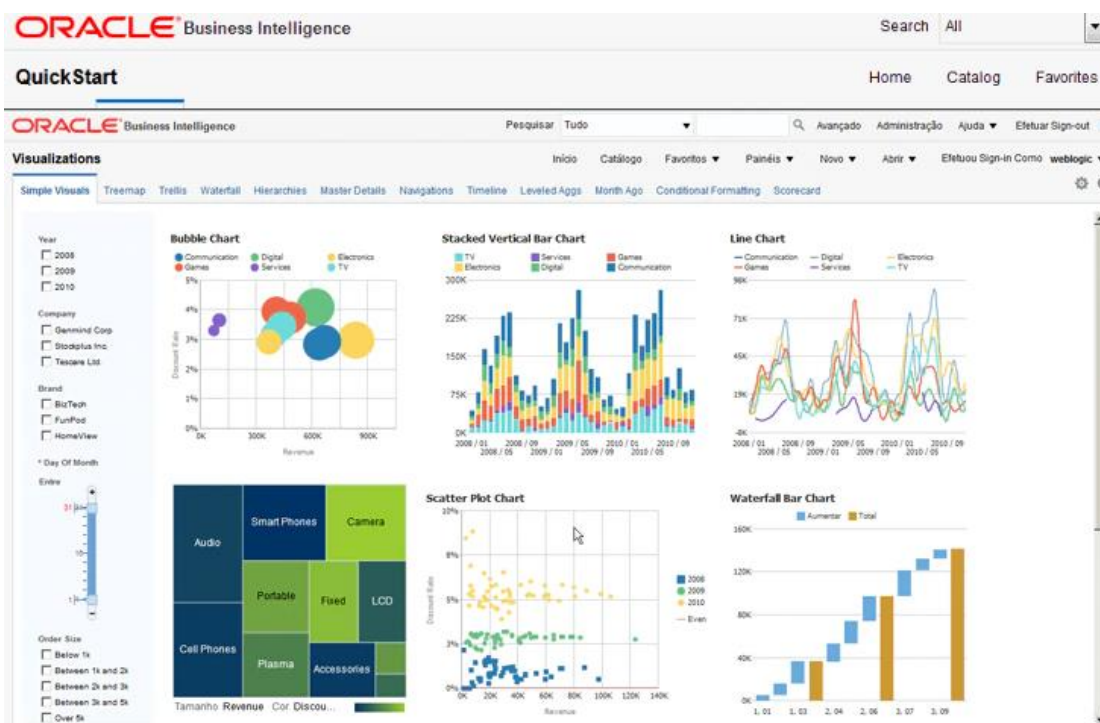




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Oracle BI Answers provides true end user ad hoc capabilities in a pure Web architecture. Users interact with a logical view of the information—completely hidden from data structure complexity while simultaneously preventing runaway queries—and can easily create charts, pivot tables, reports, and visually appealing dashboards, all of which are fully interactive and drillable and can be saved, shared, modified, formatted, or embedded in the user's personalized Oracle BI Intelligence Dashboards. The results are new levels of business user self-sufficiency in an environment that is fully secure and controlled by IT.



Oracle Business Intelligence Suite will provide CALIMS professionals appropriate BI tools and environment for advanced analysis of large sets of data that are available.

CALIMS professionals will be able to create individual dashboards for visual and alphanumeric tracking of key parameters, ability to create custom reports with appropriate prompts, charts, tables, pivot tables and graphics.



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3. BI project set of reports

BI project platform is able to provide possibility to users to create custom reports by grouping, selecting and agregating of the data that need to be analysed.

In order to provide stated possibilities, system needs to have bases for predefined set of reports. These predefined set of reports are bases for user interaction and creation of needed custom reports.

We have identified the main 3 sets of project reports:

- 1. Reports on diclofenac prescriptions and consumption**
- 2. Reports on interaction of other medicines prescribed with diclofenac to patients**
- 3. Reports on medical treatment of patients with prescribed diclofenac medicines**

Stated set of reports cover main interests of the project but they are not final set of reports. These reports are needed to start detail analysis that are intended by the project. During further analysis we anticipate that more specialised set of reports will be needed depending on the first results of the project. This means that this document will be updated with newly developed set of reports after they are requested by CALIMS professionals.

Reports on diclofenac prescriptions and consumption cover various reports that mainly target quantites of diclofenac that are prescribed by chosen doctors in PHC IS. Reports also gather data about diclofenac consumption (issuing quantites) from system of public and private pharmacies on national level. This also includes the information of what and if substitute medicine was issued for prescribed diclofenac medicine. Users have posibilitities to create custom reports with prescribed and issued quantities by grouping data for defined time intervals on ICD10 diagnosis, patient age groups, PHC centers, PHC organisational units and doctors prescribing diclofenac medicines (personal doctor data is hidden as it is the case with patient data). These are quantity oriented reports that are based on agregations of prescripton and issuing data.





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Reports on interaction of other medicines prescribed with diclofenac to patients also cover various reports regarding quantity of diclofenac prescriptions crossreferencing that information with information about quantities of other medicines that were prescribed to the patients in the same time interval (user parameter- week, month etc..) as diclofenac medicine.

First two set of reports deal with quantities of prescribed and issued medicines as quantity aggregations (grouping) by diagnosis, patient age groups, time intervals on national, local (PHC center or organisational unit-punk) level or even prescribing doctor personal doctor data is hidden as it is the case with patient data).

Third set of reports named **Reports on medical treatment of patients with prescribed diclofenac medicines** deal with concrete data on patient treatment of patients with prescribed diclofenac medicines during treatment. This set of reports need to answer why diclofenac medicine was prescribed to patient by providing overview of all treatment data (anamnesis and diagnosis). This is not aggregated set of reports and it targets concrete diclofenac patient treatment.

As it was stated earlier, depending of findings of initial analysis, further set of reports will be defined or existing set of reports will be expanded in order to show data that will be in the focus of CALIMS professionals.



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3.1 Reports on diclofenac prescriptions and consumption

Reports on diclofenac prescriptions and consumption cover various reports that mainly target quantities of diclofenac that are prescribed by chosen doctors in PHC IS. Reports also gather data about diclofenac consumption (issuing quantities) from system of public and private pharmacies on national level.

Input parameters for reports:

1. ATC codes (one or more diclofenac ATC Codes to form the report) - by default following codes:

Medicine name	ATC Code
diklofenak	M02AA15
diklofenak	M01AB05
diklofenak	S01BC03
diklofenak kalijum	M01AB05
diklofenak natrijum	M01AB05

2. Prescription or doctors order (depending if report will be formed from prescriptions and/or doctors order in PHC Centre).

Depending of entered input parameters and appropriate grouping and aggregation options, users are generating custom reports with prescribed and issued quantities by grouping data for defined time intervals on ICD10 diagnosis, patient age groups, PHC centers, PHC organisational units.





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Naziv Ustanove

NALOG

Godina	Naziv sa pakovanja	Broj propisanih lijekova	Broj izdatih lijekova	Dijagnoza
2017	Diklofenak rastvor za inj. 5 x amp. 3 ml (75 mg / 3 ml)	1	0	CYSTIS OVARIJ ALIAE ET NON SPECIFICATAE

RECEPT

Godina	Naziv sa pakovanja	Broj propisanih lijekova	Broj izdatih lijekova	Dijagnoza
2017	Diklofenak retard tabl. 20 x 100 mg	1	1	GINEKOLOSKI PREGLED (OPSTI)(RUTINSKI)

Dijagnoza

Recept/Nalog

Godina	Naziv Ustanove	Naziv sa pakovanja	Broj propisanih lijekova	Broj izdatih lijekova
2017	JZU Dom zdravlja Budva	Diklofenak rastvor za inj. 5 x amp. 3 ml (75 mg / 3 ml)	2	0
	JZU Dom zdravlja Pijevlja	Diklofenak rastvor za inj. 5 x amp. 3 ml (75 mg / 3 ml)	1	0
			1	0
			1	0
			1	0
JZU Dom zdravlja Podgorica	Diklofenak rastvor za inj. 5 x amp. 3 ml (75 mg / 3 ml)	1	0	
		1	0	
		1	0	
JZU Dom zdravlja Ulcinj	Diklofenak rastvor za inj. 5 x amp. 3 ml (75 mg / 3 ml)	1	0	
		1	0	
		1	0	

Recept/Nalog

Naziv sa pakovanja



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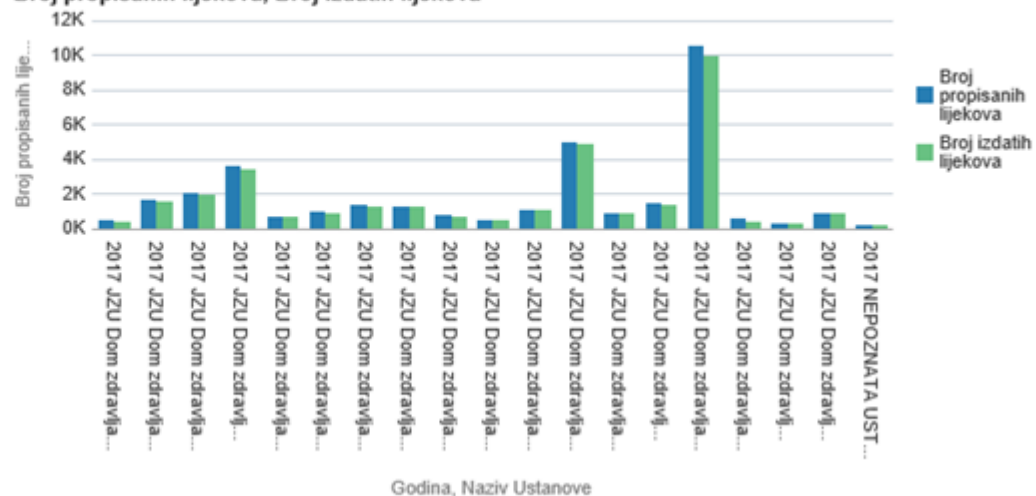


Godina	Naziv Ustanove	Naziv sa pakovanja	Broj propisanih lijekova	Broj izdatih lijekova
2017	JZU Dom zdravlja Budva	Diklofenak rastvor za inj. 5 x amp. 3 ml (75 mg / 3 ml)	2	0
			1	0
	JZU Dom zdravlja Pljevlja	Diklofenak rastvor za inj. 5 x amp. 3 ml (75 mg / 3 ml)	1	0
			1	0
			1	0
			1	0
			1	0
	JZU Dom zdravlja Podgorica	Diklofenak rastvor za inj. 5 x amp. 3 ml (75 mg / 3 ml)	1	0
			1	0
			1	0
	JZU Dom zdravlja Ulcinj	Diklofenak rastvor za inj. 5 x amp. 3 ml (75 mg / 3 ml)	1	0
			1	0
1			0	

Recept/Nalog **RECEPT** ▼

Naziv sa pakovanja **Rapten duo tbl.sa mod.osl. 30 x 75 mg** ▼

Broj propisanih lijekova, Broj izdatih lijekova





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DWH data available for first set of reports:

W_RECEPT_F		Description	Dimensions
VRRECEPT_ID	NUMBER(10)	Prescription or Order indication	W_VRRECEPT_D
ATCINN_ID	NUMBER(10)	ATC/INN of prescribed medicine	W_ATCINN_D
LIJEKPR_ID	NUMBER(10)	Prescribed medicine	W_LIJEK_F
DATPRLIJ_ID	NUMBER (8)	Date of medicine prescription	W_DATUM_D
JMLIJEKA_ID	NUMBER(10)	Unit of medicine prescription	W_JM_D
KOL	NUMBER (12,4)	Prescribed quantity	
LIJEKIZD_ID	NUMBER(10)	Issued medicine	W_LIJEK_F
DATIZDLIJ_ID	NUMBER (8)	Date of issuing medicine	W_DATUM_D
JMI_ID	NUMBER(10)	Unit of issuing medicine	W_JM_D
KOLIZD	NUMBER (12,4)	Quantity of issuing medicine	
LJEKAR_ID	NUMBER(10)	Doctor prescribing medicine	W_DOC_D
PUNKT_ID	NUMBER(10)	Organisational unit of doctor - Punkt	W_ORGJED_D
ORG_ID	NUMBER(10)	Organisational unit	W_ORGJED_D
UST_ID	NUMBER(10)	PHC Center	W_ORGJED_D
DIJ_ID	NUMBER(10)	ICD10 Diagnosis	W_DIJ_D
POL_ID	NUMBER(10)	Patient sex	W_POL_D
STAROST	NUMBER (3)	Patient age	



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3.2 Reports on interaction of other medicines prescribed with diclofenac to patients

Reports on interaction of other medicines prescribed with diclofenac to patients cover various reports regarding quantity of diclofenac prescriptions crossreferencing that information with information about quantities of other medicines that were prescribed to the patients in the same time interval as diclofenac medicine.

Input parameters for reports:

1. ATC codes (one or more diclofenac ATC Codes to form the report) - by default following codes:

Medicine name	ATC Code
diklofenak	M02AA15
diklofenak	M01AB05
diklofenak	S01BC03
diklofenak kalijum	M01AB05
diklofenak natrijum	M01AB05

2. Time period of medicine interaction (overlapping period where patient was prescribed with other medicine while he was also prescribed diclofenac (e.g. 1 week, 1 month, 6 months)). Prescribing of other medicine is not directly linked with current patient treatment with diclofenac and includes every other medicine that patient was prescribed in the user defined time period.

3. Prescription or doctors order (depending if report will be formed from prescriptions and/or doctors order in PHC Centre).

Depending of entered input parameters and appropriate grouping and aggregation options, users are generating custom reports with prescribed and issued quantities by grouping data for defined time intervals on ICD10 diagnosis, patient age groups, PHC centers, PHC organisational units and doctors prescribing diclofenac medicines.





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diklofen
interakcija ✕

Godina	Kvartal	Naziv	Mjesec	Naziv	Pacijent	Datum	Naziv sa pakovanja	Propisana kolicina suma	Izdana kolicina suma	Naziv JM
2017	II	APRIL	JZU Dom zdravlja Podgorica	21574	26/04/2017	Diklofenak retard tabl. 20 x 100 mg	1	1	kutija	
						Zorkaptil tabl. 40 x 25 mg	2	2	kutija	
						Zoxon tabl. 30 x 4 mg	2	2	kutija	
	MAJ	JZU Dom zdravlja Podgorica	21574	19/05/2017	Chloramphenicol mast za oči 5 g (1%)	1		tuba		
					Diklofenak retard tabl. 20 x 100 mg	1	1	kutija		
					Marocen kapi za oči 5 ml (0.3%)	1	1	kutija		
						Zorkaptil tabl. 40 x 25 mg	2	2	kutija	
						Zoxon tabl. 30 x 4 mg	2	2	kutija	



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DWH data available for second set of reports:

W_RECEPTI_F

VRRECEPT_ID	NUMBER(10)	Prescription or Order indicator	W_VRRECEPT_D
ATCINN_ID	NUMBER(10)	ATC/INN code of prescribed medicine	W_ATCINN_D
LIJEKPR_ID	NUMBER(10)	Prescribed medicine	W_LIJEK_F
DATPRLIJ_ID	NUMBER (8)	Date of medicine prescription	W_DATUM_D
JMLIJEKA_ID	NUMBER(10)	Unit of medicine prescription	W_JM_D
KOL	NUMBER (12,4)	Prescribed quantity	
LIJEKIZD_ID	NUMBER(10)	Issued medicine	W_LIJEK_F
DATIZDLIJ_ID	NUMBER (8)	Date of issuing medicine	W_DATUM_D
JMI_ID	NUMBER(10)	Unit of issuing medicine	W_JM_D
KOLIZD	NUMBER (12,4)	Quantity of issuing medicine	
LJEKAR_ID	NUMBER(10)	Doctor prescribing medicine	W_DOC_D
PUNKT_ID	NUMBER(10)	Organisational unit of doctor.-Punkt	W_ORGJED_D
ORG_ID	NUMBER(10)	Organisational unit of doctor	W_ORGJED_D
UST_ID	NUMBER(10)	PHC Center	W_ORGJED_D
DIJ_ID	NUMBER(10)	ICD10 Diagnosis	W_DIJ_D
POL_ID	NUMBER(10)	Patient sex	W_POL_D
STAROST	NUMBER (3)	Patient age	
OZNRECEPT_ID	NUMBER(10)	Prescription mark	W_OZNRECEPT_D
VRSTAREC_ID	NUMBER (3)	Prescription type	W_VRSTAREC_D
BRPON	NUMBER (2)	Frequency of usage	
RAZMAK	VARCHAR2 (60 Byte)	Time interval for usage	
BRDANA	NUMBER (2)	Number of day for usage	
DNPUTA	NUMBER (3)	Number of times per day	
DANI	NUMBER (3)	Interval in days for usage	



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3.3 Reports on medical treatment of patients with prescribed diclofenac medicines

Reports on medical treatment of patients with prescribed diclofenac medicines focus on concrete data on patient treatment for patients with prescribed diclofenac medicines during treatment. This set of reports need to answer why diclofenac medicine was prescribed to patient by providing overview of all treatment data (anamnesis and diagnosis).

Input parameters for reports:

1. ATC codes (one or more diclofenac ATC Codes to form the report) - by default following codes:

Medicine name	ATC Code
diklofenak	M02AA15
diklofenak	M01AB05
diklofenak	S01BC03
diklofenak kalijum	M01AB05
diklofenak natrijum	M01AB05

2. Prescription or doctors order (depending if report will be formed from prescriptions and/or doctors order in PHC Centre).

Depending on user entered parameters and grouping options selected, data about patient treatments are shown for further analysis.

It is expected that during further analysis in the project this set of reports will be expanded for more detail search and grouping of patient data with similar anamnesis.



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Naziv Ustanove JZU Dom zdravlja Andrijevića

Godina	Pacijent	Naziv sa pakovanja	Dijagnoza	Anamneza
2017	37456	Diklofenak retard tabl. 20 x 100 mg	MORBI ARTICULORUM ALII	
	38934	Diklofenak retard tabl. 20 x 100 mg	LABORATORIJSKI PREGLEDI	TA:130/80mmHg Dat savjet.Prepis Th
	44228	Rapten duo tbl.sa mod.osl. 30 x 75 mg	MORBI ARTICULORUM ALII	
	46983	Rapten duo tbl.sa mod.osl. 30 x 75 mg	MORBUS CORDIS HYPERTENSIVUS	
	48447	Rapten duo tbl.sa mod.osl. 30 x 75 mg	MEDICINSKO POSMATRANJE I PRACENJE ZBOG SUMNJE NA NEKE BOLESTI ILI STANJA	
	48448	Rapten duo tbl.sa mod.osl. 30 x 75 mg	HYPERTENSIO ARTERIALIS ESSENTIALIS (PRIMARIA)	Po izvještaju Dr N.Radenovića br.49 od 29.10.2019.: amp OH B12 2500 l.m. jednom mjesečno
	48448			
	49765	Rapten K obložena tbl. 10 x 50 mg	DORSALGIA	kontrola hirurga
	49765			
	50574	Diklofenak retard tabl. 20 x 100 mg	MORBI ARTICULORUM ALII	
	50574	Rapten duo tbl.sa mod.osl. 30 x 75 mg	HYPERTENSIO ARTERIALIS ESSENTIALIS (PRIMARIA)	
	53240	Rapten duo tbl.sa mod.osl. 30 x 75 mg	GONARTHROSIS	prepis terapije dat savjet
	54558	Diklofenak rastvor za inj. 5 x amp. 3 ml (75 mg / 3 ml)	MORBI ARTICULORUM ALII	
	54558	Diklofenak retard tabl. 20 x 100 mg	MORBI ARTICULORUM ALII	
	54757	Diklofenak retard tabl. 20 x 100 mg	MORBI ARTICULORUM ALII	
	55271	Diklofenak rastvor za inj. 5 x amp. 3 ml (75 mg / 3 ml)	HYPERTENSIO ARTERIALIS ESSENTIALIS (PRIMARIA)	
	55271	Diklofenak retard tabl. 20 x 100 mg	HYPERTENSIO ARTERIALIS ESSENTIALIS (PRIMARIA)	
	55645	Diklofenak rastvor za inj. 5 x amp. 3 ml (75 mg / 3 ml)	CYSTITIS	
	55645		DORSALGIA	
	55645		NEPHROLITHIASIS ET URETEROLITHIASIS	



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po
epizodi

diklofen po epizodi

Naziv Ustanove JZU Dom zdravlja Andrijevića

Receipt/Nalog RECEPT

Godina	Pacijent	Naziv sa pakovanja	Propisana kolicina	Dijagnoza	Anamneza	Godine starosti
2017	37456	Diklofenak retard tabl. 20 x 100 mg	1	MORBI ARTICULORUM ALII		48 god.
	38934	Diklofenak retard tabl. 20 x 100 mg	1	LABORATORIJSKI PREGLEDI	TA:130/80mmHg Dat savjet.Prepis Th	56 god.
	44228	Rapten duo tbl.sa mod.osl. 30 x 75 mg	1	MORBI ARTICULORUM ALII		34 god.
	46983	Rapten duo tbl.sa mod.osl. 30 x 75 mg	1	MORBUS CORDIS HYPERTENSIVUS		61 god.
	48447	Rapten duo tbl.sa mod.osl. 30 x 75 mg	1	MEDICINSKO POSMATRANJE I PRACENJE ZBOG SUMNJE NA NEKE BOLESTI ILI STANJA		86 god.
	48448	Rapten duo tbl.sa mod.osl. 30 x 75 mg	1	HYPERTENSIO ARTERIALIS ESSENTIALIS (PRIMARIA)	Po izvještaju Dr N.Radenovića br.49 od 29.10.2019.: amp OH B12 2500 l.m. jednom mjesečno	81 god.
	48448		1			81 god.
	49765	Rapten K obložena tbl. 10 x 50 mg	1	DORSALGIA	kontrola hirurga	54 god.
	49765		1			54 god.
	50574	Diklofenak retard tabl. 20 x 100 mg	1	MORBI ARTICULORUM ALII		56 god.
	50574	Rapten duo tbl.sa mod.osl. 30 x 75 mg	1	HYPERTENSIO ARTERIALIS ESSENTIALIS (PRIMARIA)		56 god.
	53240	Rapten duo tbl.sa mod.osl. 30 x 75 mg	1	GONARTHROSIS	prepis terapije dat savjet	67 god.
	54558	Diklofenak retard tabl. 20 x 100 mg	1	MORBI ARTICULORUM ALII		62 god.
	54757	Diklofenak retard tabl. 20 x 100 mg	1	MORBI ARTICULORUM ALII		42 god.



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	30 x 75 mg				
54558	Diklofenak retard tabl. 20 x 100 mg	1	MORBI ARTICULORUM ALII		62 god.
54757	Diklofenak retard tabl. 20 x 100 mg	1	MORBI ARTICULORUM ALII		42 god.
55271	Diklofenak retard tabl. 20 x 100 mg	1	HYPERTENSIO ARTERIALIS ESSENTIALIS (PRIMARIA)		79 god.
57935	Rapten duo tbl.sa mod.osl. 30 x 75 mg	1	DORSALGIA		62 god.
58613	Rapten duo tbl.sa mod.osl. 30 x 75 mg	1	SPONDYLITIS ANKYLOPOIETICA		32 god.
58984	Diklofenak retard tabl. 20 x 100 mg	1	PROLAPSUS DISCI INTERVERTEBRALIS LUMBALIS ET DISCORUM INTERVERTEBRALIUM ALIORUM CUM RADICULOPATHIA		57 god.
59259	Rapten duo tbl.sa mod.osl. 30 x 75 mg	1	MORBUS CORDIS ISCHAEMICUS CHRONICUS		69 god.
59900	Rapten duo tbl.sa mod.osl. 30 x 75 mg	1	DIABETES MELLITUS AB INSULINO INDEPENDENS		81 god.
59900		1			82 god.
62874	Diklofenak retard tabl. 20 x 100 mg	1	NEPHROLITHIASIS ET URETEROLITHIASIS		67 god.
64842	Rapten duo tbl.sa mod.osl. 30 x 75 mg	1	MORBI ARTICULORUM ALII		80 god.
73658	Rapten duo tbl.sa mod.osl. 30 x 75 mg	1	CEPHALALGIAE ALIAE		61 god.
75945	Rapten duo tbl.sa mod.osl. 30 x 75 mg	1	HYPERTENSIO ARTERIALIS ESSENTIALIS (PRIMARIA)		56 god.

Rows 1 - 25

Naziv Ustanove **JZU Dom zdravlja Plav**

Dijagnoza **ABCESSUS PERIAPICALIS NON FISTULOSUS**

Godina	Pacijent	Naziv sa pakovanja	Propisana kolicina	Anamneza	Godine starosti	Recept/Nalog
2017	171788	Rapten duo tbl.sa mod.osl. 30 x 75 mg	1		71 god.	RECEPT
	189168	Diklofenak retard tabl. 20 x 100 mg	1		46 god.	RECEPT
	343408	Diklofenak retard tabl. 20 x 100 mg	1		58 god.	RECEPT



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DWH data available for third set of reports:

W_RECEPTI_F

VRRECEPT_ID	NUMBER(10)	Prescription or Order indicator	W_VRRECEPT_D
ATCINN_ID	NUMBER(10)	ATC/INN code of prescribed medicine	W_ATCINN_D
LIJEKPR_ID	NUMBER(10)	Prescribed medicine	
DATPRLIJ_ID	NUMBER (8)	Date of medicine prescription	W_DATUM_D
JMLIJEKA_ID	NUMBER(10)	Unit of medicine prescription	W_JM_D
KOL	NUMBER (12,4)	Quantity of prescribed medicine	
MKO_ID	NUMBER(10)	Unique patient identifier	
LIJEKIZD_ID	NUMBER(10)	Issued medicine	
DATIZDLIJ_ID	NUMBER (8)	Date of issuing medicine	W_DATUM_D
JMI_ID	NUMBER(10)	Unit of issuing medicine	W_JM_D
KOLIZD	NUMBER (12,4)	Quantity of issued medicine	
LJEKAR_ID	NUMBER(10)	Doctor prescribing medicine	W_DOC_D
PUNKT_ID	NUMBER(10)	Organisational unit of doctor- Punkt	W_ORGJED_D
ORG_ID	NUMBER(10)	Org. unit of doctor	W_ORGJED_D
UST_ID	NUMBER(10)	PHC center	W_ORGJED_D
DIJ_ID	NUMBER(10)	ICD10 Diagnosis	W_DIJ_D
POL_ID	NUMBER(10)	Patient sex	W_POL_D
STAROST	NUMBER (3)	Patient age	
OZNRECEPT_ID	NUMBER(10)	Prescription mark	W_OZNRECEPT_D
VRSTAREC_ID	NUMBER (3)	Prescription type	W_VRSTAREC_D
BRPON	NUMBER (2)	Frequency of usage	
RAZMAK	VARCHAR2 (60 Byte)	Time interval of usage	
BRDANA	NUMBER (2)	Number of days	
DNPUTA	NUMBER (3)	Times a day	
DANI	NUMBER (3)	Days interval	



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W_EPIZODE_F		Treatment description	Dimenzije
EPIZODE_ID	NUMBER (18)	Treatment ID	
MKO_ID	NUMBER (20)	Patient ID	W_MKO_F
LJEKAR_ID	NUMBER (10)	Doctor	W_DOC_D
UST_ID	NUMBER (10)	PHC Center	W_ORGJED_D
ORG_ID	NUMBER (10)	Org. unit of doctor	W_ORGJED_D
PUNKT_ID	NUMBER (10)	Punkt org. unit of doctor	W_ORGJED_D
DIJ_ID	NUMBER (10)	Working diagnosis ICD10	W_DIJ_D
ODDAT_ID	NUMBER (8)	Date of treatment start	W_DATUM_D
DODAT_ID	NUMBER (8)	Date of treatment end	W_DATUM_D
ST	NUMBER (1)	Treatment status	
DIJD_ID	NUMBER (10)	Final diagnosis ICD10	W_DIJ_D
ISS_ID	NUMBER (10)	Treatment outcome	W_ISS_D
ANAMNEZA	VARCHAR2 (4000 Byte)	Anamnesis	
MBGR	VARCHAR2 (13 Byte)	Unique citizen number of patient	



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4. Conclusion

Delivered Oracle Business Intelligence Suite platform is a true BI server that is designed to be highly scalable, optimizing concurrency and parallelism to make the value of BI applications available as powerful reporting and data analysis tool to CALIMS professionals.

Described BI tools and platform will be essential tools to deliver main project analysis of the project, including:

- 3.1. Analysis of obtained data on prescribing patterns of diclofenac in PHC,
- 3.2. Assessment of compliance or deviation of diclofenac prescribing in PHC with CALIMS and EMA recommendation of its safe use,
- 3.3. Scientific research and statistical analysis of data with aim of publishing in relevant scientific journals.

Described projects report sets target main areas for analysis in the project and will be subject to further development depending on initial findings in WP3 of the project.



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