



*Express path to interoperable solutions –
case of the Oncology Institute of Vojvodina*

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Location





- The Autonomous Province of Vojvodina has the population of about two million.
- Most of them are the Serbs (about 70%), but numerous nations and nationalities live here as well.
- The official languages in Vojvodina are Serbian, Hungarian, Romanian, Slovak and Ruthenian.
- The capital town is Novi Sad.

Cancer in Vojvodina

- **About 8,000 newly diagnosed patients per year.**
- **About 5,000 patients die from cancer each year.**
- **About 17,000 cured patients who need permanent follow-up.**



Oncology Institute of Vojvodina



The Oncology Institute of Vojvodina is a highly specialized health, educational and research institution in the field of oncology.

Within its capacity the Institute is also engaged in other epidemiological studies, multidisciplinary clinical researching of precancerous and malignant tumors, in researching, introduction and application of new methods related to tumor prevention, diagnostics, treatment and rehabilitation. The Institute organizes a professional supervision not only within its clinics and departments but also in other hospital oncology departments, outpatient departments over the whole territory of the Autonomous Province of Vojvodina.

The Oncology Institute of Vojvodina is a referent center for oncology and medical informatics.



Oncology Institute of Vojvodina

Employees: 531

- **Physicians: 101**
- **Nurses & technicians: 286**
- **Beds: 239**



XP computers: 250
Servers: 10
Users IHBIS: 500



Diagnosics Imaging Center

Modality	No. of procedures	No. of patients
MR	10,612	7,480
US	5,901	5,171
US of breast	2,711	2,572
Stereotaxis	230	230
Mammography	3,770	3,108
Stereotaxic biopsy	30	30
CT	3,439	1,686
PET/CT	550	515
Scintigraphy	3,412	3,401



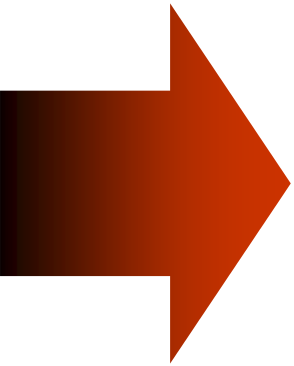
Making decisions and goals defining

- A successful implementation of IHBIS starts with making a decision and defining goals which we wish to accomplish.
- The goals must be clearly established, realistic and comprehensible, and accepted at all levels of medical institution organization.
- IT managers in hospitals must decide how to contribute to cross-organizational integration and what strategy and means to choose for achieving interoperability.
- If a system is poor in its interoperability, any increasing functions or little changes could stop its working properly.



Our goal

- Generation of EPR
- 5 **p**'s of electronic medical documentation:
 - **proper** information
 - on a **proper** patient
 - available to a **proper** person
 - at a **proper** place
 - in a **proper** time



Brief project chronology

26.08.2005 – tender

“Integrated hospital business information system”

04.10.2005

Public opening of Bids

23.11.2005 – signing of the contract, initiation of the project

Contract – signed

16.06.2006 – the end of the project

Official commissioning of the contracted activities

15.-16.04.2007 – start of IHBIS

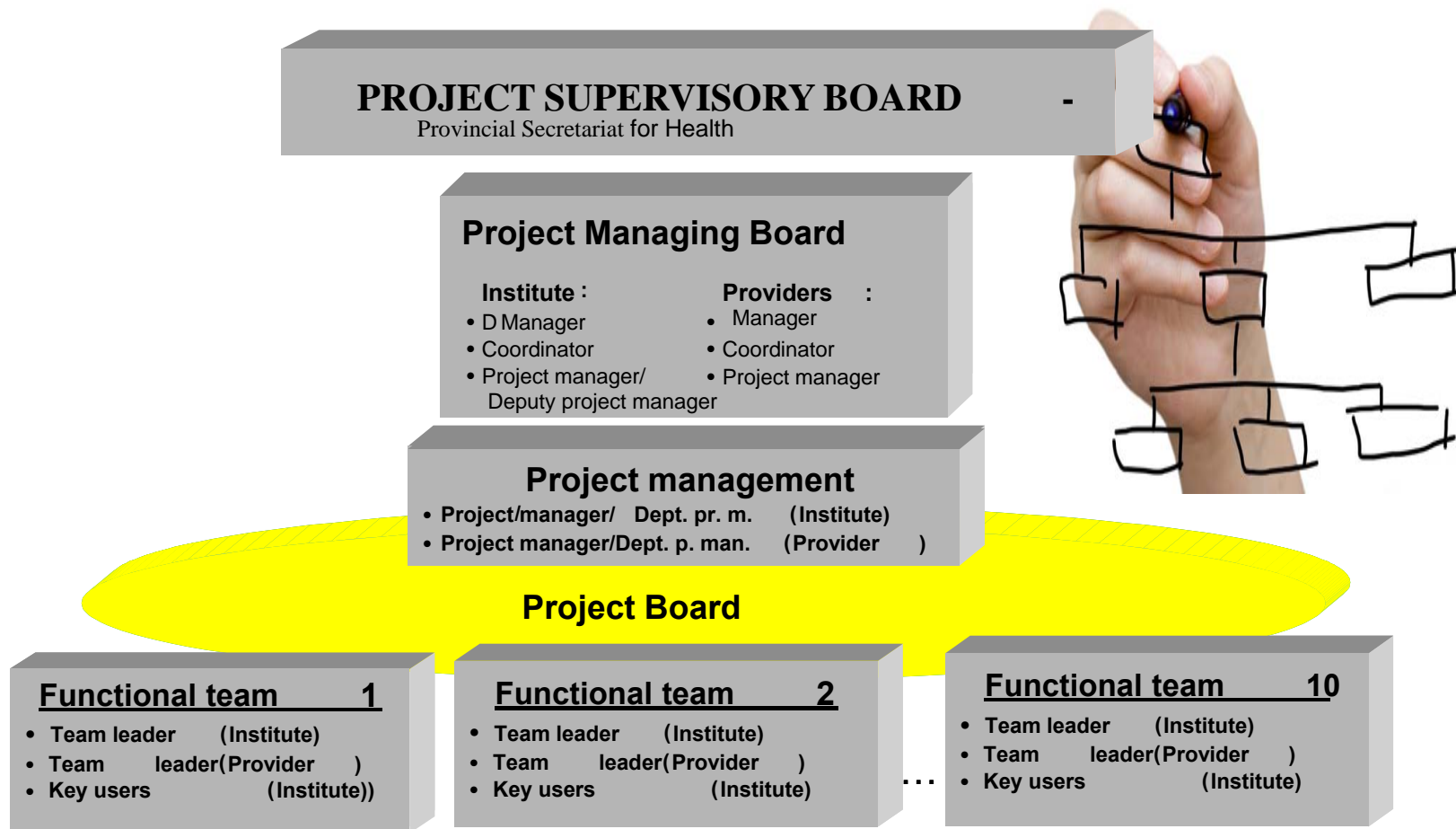
04.09.2007 – Commissioning Minutes – signed

**01.01.2008 – Business-Technical Cooperation Contract
Maintenance Contract**



Project organization

The Project was financed by the Executive Council of AP Vojvodina





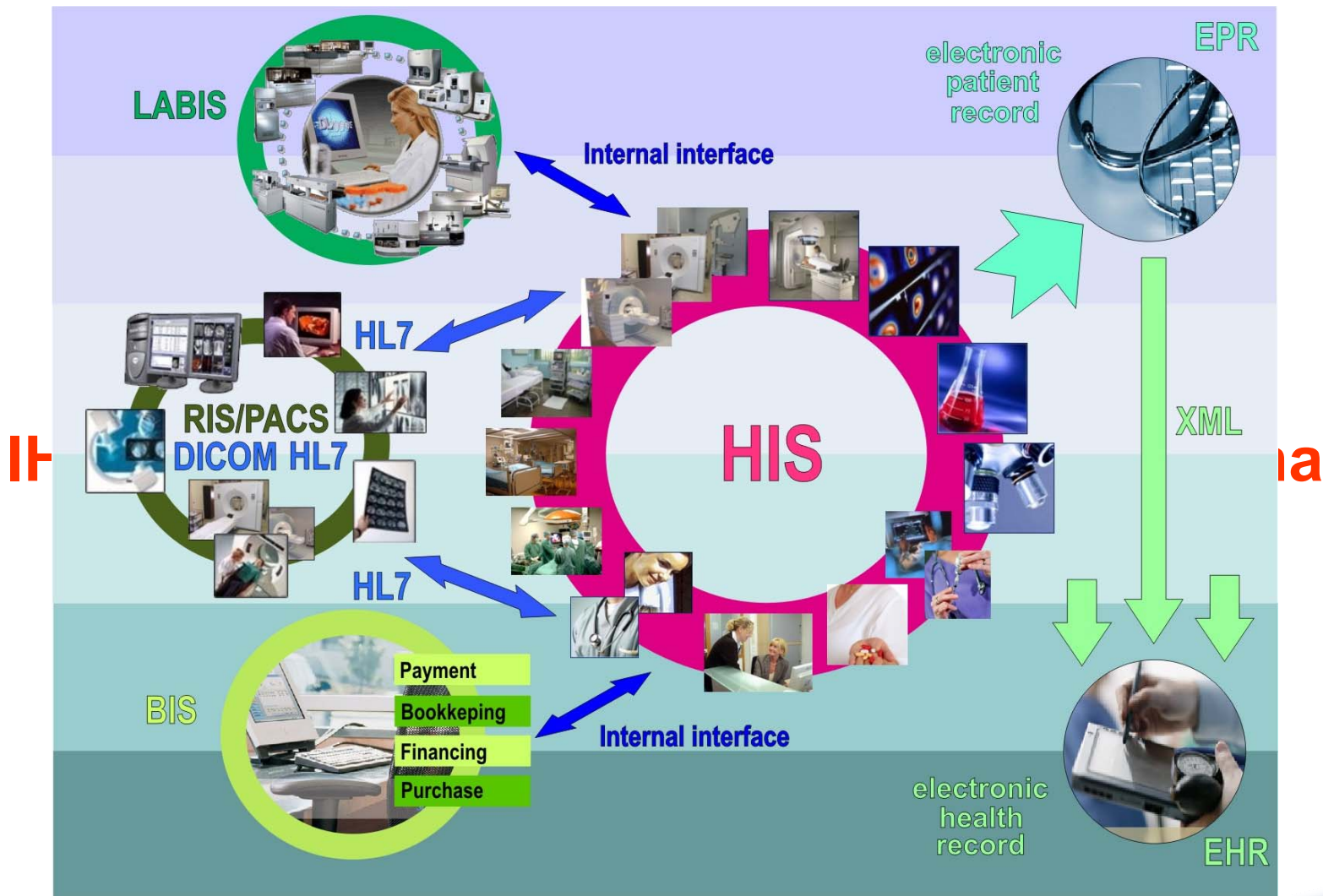
Implementation

Users' training on a test system

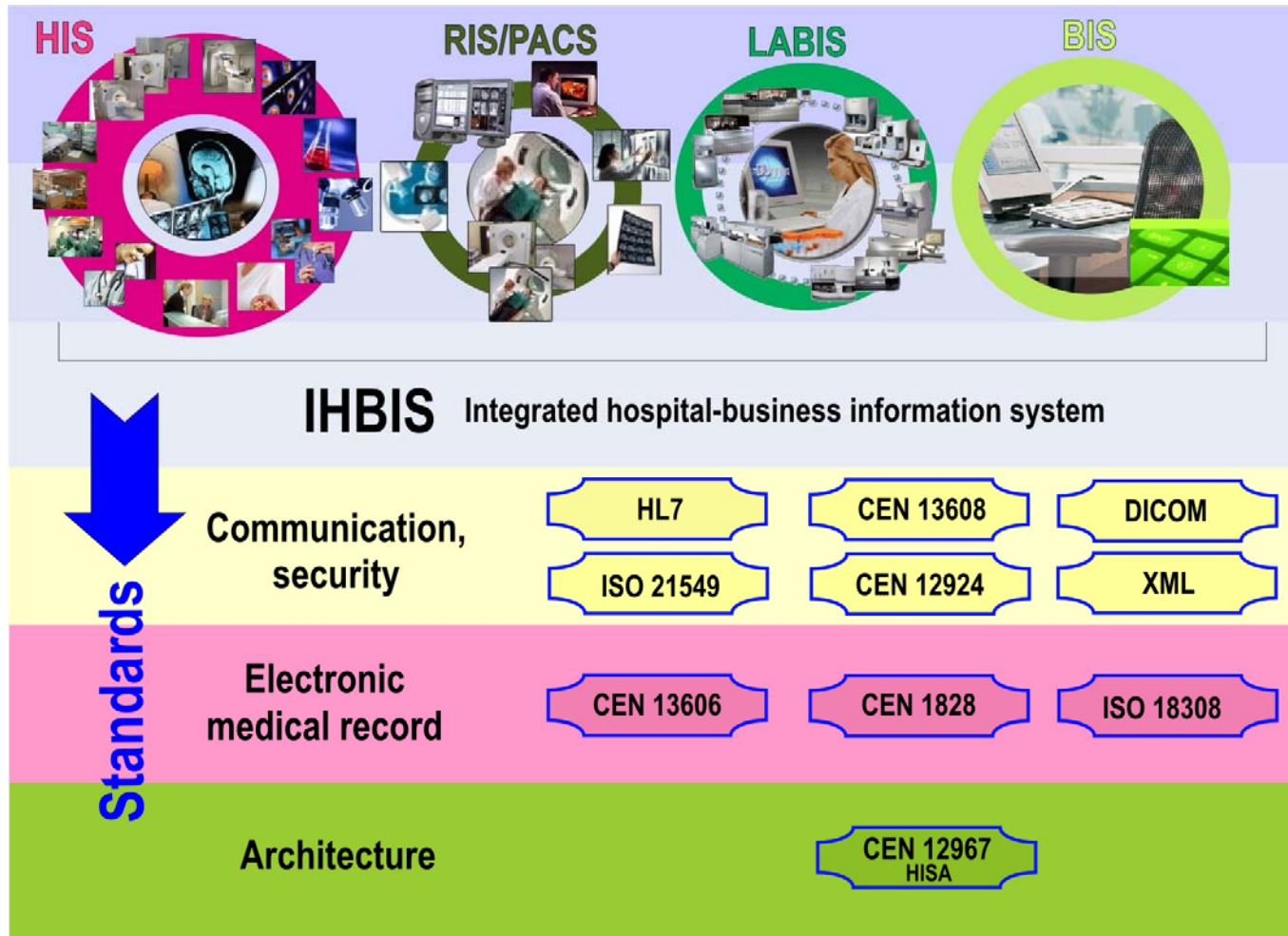
- Recognition of key users
- Training of key users
- Training of other employees



Realized Goal



Standards: ISO/TC215, CEN/TC251, HISA, HL7



CIS - L@BIS *integration* (HL7)

- Basic functions of L@BIS are:
 - Acceptance of order entries from CIS with generation of protocols and working lists.
 - Operation with analyzers, data transmission and taking over the results from analyzers.
 - Findings verification and preparation of necessary reports.
 - Distribution of verified findings in CIS.
- Integration of L@BIS and CIS:
 - Can be observed in two-way transmission and availability of data. CIS electronically sends the orders with the patient's data and requested examinations, and, in the same manner, electronically, it receives from L@BIS, the examination results. The results are presented in CIS in their original form, as they were created in L@BIS, and they are visible immediately after the performance of the verification in L@BIS.
 - For the integration of L@BIS into a unique HIS, the systems need to communicate by note exchange in accordance with HL7 standard.



CIS - L@BIS integration

Request for analyses

Uput u laboratoriju

Pacijent: 47206 - M 5.06.1954, 54 let

Naruđžbina
Broj naruđžbine: **1123171**

Jedinica koja nar: GAS ODELJENJE ZA GASTROENTEROHEPAT Jedinica izvođenja: LAB LABORATORIJA

Naročilac: 000000 NEPOZNAT Priorit izvođenja: Normalno Hitan

Dodatna naruđžbi

Hematologija <input checked="" type="checkbox"/> KKS <input type="checkbox"/> DKS analizator (5diff) <input type="checkbox"/> DKS analizator (3diff) <input type="checkbox"/> DKS mikroskop <input type="checkbox"/> Lkci <input type="checkbox"/> Trc <input type="checkbox"/> Ht <input type="checkbox"/> Rtc <input type="checkbox"/> AF-Leu <input type="checkbox"/> Ster. punk <input type="checkbox"/> Bio. k. sr. <input type="checkbox"/> Izrada mik. prep. <input type="checkbox"/> Vad. krvi-hema	Biohemija <input type="checkbox"/> S-Glukozza <input type="checkbox"/> UREA <input checked="" type="checkbox"/> CRSC <input type="checkbox"/> URAT <input type="checkbox"/> TBIL <input checked="" type="checkbox"/> AST <input checked="" type="checkbox"/> ALT <input checked="" type="checkbox"/> GGT <input checked="" type="checkbox"/> CHE <input checked="" type="checkbox"/> ALKP <input checked="" type="checkbox"/> S-LDH <input type="checkbox"/> S-Ukup. prot. Albumini Globulini TGL HDL HDL-H LDL-H VLDL Ind. ateroskl. LIPAZA S-Alfa Amilaza S-CK S-CK-MB	Imunobiologija <input type="checkbox"/> ANA <input type="checkbox"/> CIK <input type="checkbox"/> C3 <input type="checkbox"/> C4 <input type="checkbox"/> Cq <input type="checkbox"/> IGA <input type="checkbox"/> IGG <input type="checkbox"/> IGM <input type="checkbox"/> Odred. DNA CD markeri CD marker2X CD marker3X CD marker4X CD marker5X CD marker7X CD marker10X CD marker15X Antehi. anti. ASA HPV Vad. krvi-imbio Centrifug-imunbi Centrifug-imun2X Centrifug-imun4X	Tumorski markeri <input checked="" type="checkbox"/> S-CEA <input type="checkbox"/> S-CA 15-3 <input type="checkbox"/> S-AFP <input type="checkbox"/> S-BHCG <input type="checkbox"/> S-PSA <input checked="" type="checkbox"/> S-CA 19-9 <input type="checkbox"/> S-CA 125 <input type="checkbox"/> S-FT3 <input type="checkbox"/> S-TSH <input type="checkbox"/> S-TG <input type="checkbox"/> S-ANTI-TG <input type="checkbox"/> S-ANTI-TPO <input type="checkbox"/> S-FT4 <input type="checkbox"/> Beta2 MG <input type="checkbox"/> S-Fenin <input type="checkbox"/> Vad. krvi-TM <input type="checkbox"/> Centrif-TM	Testovi hemostaze <input type="checkbox"/> Prot. vreme <input type="checkbox"/> Vr. krv. <input type="checkbox"/> Br. tromb. <input type="checkbox"/> Ret. koag. <input type="checkbox"/> Vreme koag. <input type="checkbox"/> APTT <input type="checkbox"/> TT <input type="checkbox"/> Fibrinogen <input type="checkbox"/> Fibrinoliza <input type="checkbox"/> FDP <input type="checkbox"/> D-dimer <input type="checkbox"/> Agreg. tromb. <input type="checkbox"/> TEG <input type="checkbox"/> Anitri III <input type="checkbox"/> Prot. komp. II <input type="checkbox"/> Prot. komp. V <input type="checkbox"/> Prot. komp. VII <input type="checkbox"/> Prokalcitonin <input type="checkbox"/> Centrifug-hemost <input type="checkbox"/> Centrif-Hemost2x <input type="checkbox"/> Centrif-Hemost4x <input type="checkbox"/> Vad. krvi-hemost
---	---	--	--	--

Tekst naruđžbine:
DOCI CE U LABORATORIJU

Zatvori

Predogled naruđžbe Naruđžba unapred

start | Blic Online | Poljika... | Inbox - Outlook Ex... | 892 - Sport - Fudb... | Document1 - Micros... | Carestream Client (... | HISA-rad | Microsoft PowerPol... | BIRPIS21 - LAB LAB... | SR | 9:36



CIS - L@BIS integration

Requested analyses review

L@b-15 2

Administracija Prijem/Isporuka Narudbenica Pretraga Tehničar Voda Štampanje Radni/Arhiv Podešavanja Pomoć

Radni Arhiv Pomoć(F1) Izlaz(Ctrl+X)

Administracija Traži(F9) Uredi(Ctrl+U) Snimi(Shift+F10) Prekini(Ctrl+C) Briši(F8) Nalepnice(F6) Prenesi(Ctrl+P) Izberi Počisti(Ctrl+D) Štampanje Pregled Štampa(Ctrl+T) Štampači Arhivira(Ctrl+A)

Tehničar Potvrdi(F3) Komentar(F5) Odbij(Ctrl+U) Istorija Prikaži(Ctrl+H)

Administracija

Prijem...
Pacient...
Pregled...
Štampanje...

Naruđbe | Naruđba

Dnevni ID: 3001 Datum: 21.09.2007

Pacient
Datum rojstva: 01.01.2007

Prezime in ime: TESTNI PACIENT

Naručilac
Odelenje: CPN [CENTAR ZA POT. PAL. I TER. NEG]

Lekar: [XXXXXXXX [NEPOZNAT]]

Tip: padajući
Stanje: Upisan

Beleške

Uzorci	Vrsta	Br. pretraga	Tip	Status	Beleške	Vreme oduzimanja	Korisnik oduzimanja	Vreme autorizacije	Korisnik auto
	EDTA	10	padajući	Upisan		21.09.2007 10:38:15	Dežurni laborant		

PRETRAGE	Šifra	Naziv	Rezultat	Op	Ref. v.	Jedinice	Tip	Status	Laboratorija	Beleške	Vreme kreiran
	128091	K-KKS					padajući	PotV	hemat		21.09.2007 10:38:15
	128022	K-Trombociti			150 - 400	10E9/L	padajući	Upisan	hemat		21.09.2007 10:38:15
	128090	K-Levkociti			4 - 10	10E9/L	padajući	Upisan	hemat		21.09.2007 10:38:15
	129090	K-Eritrociti			3.6 - 5.8	10E12/L	padajući	Upisan	hemat		21.09.2007 10:38:15
	130090	K-Hemoglobin			115 - 170	g/L	padajući	Upisan	hemat		21.09.2007 10:38:15
	131090	K-Hematokrit			0.32 - 0.54	L/L	padajući	Upisan	hemat		21.09.2007 10:38:15
	132090	K-MCV			80 - 95	fL	padajući	Upisan	hemat		21.09.2007 10:38:15
	132810	K-MPV			6.0 - 10.0	fL	padajući	Upisan	hemat		21.09.2007 10:38:15
	133090	K-MCH			27 - 34	pg	padajući	Upisan	hemat		21.09.2007 10:38:15
	134090	K-MCHC			320 - 370	g/L	padajući	Upisan	hemat		21.09.2007 10:38:15

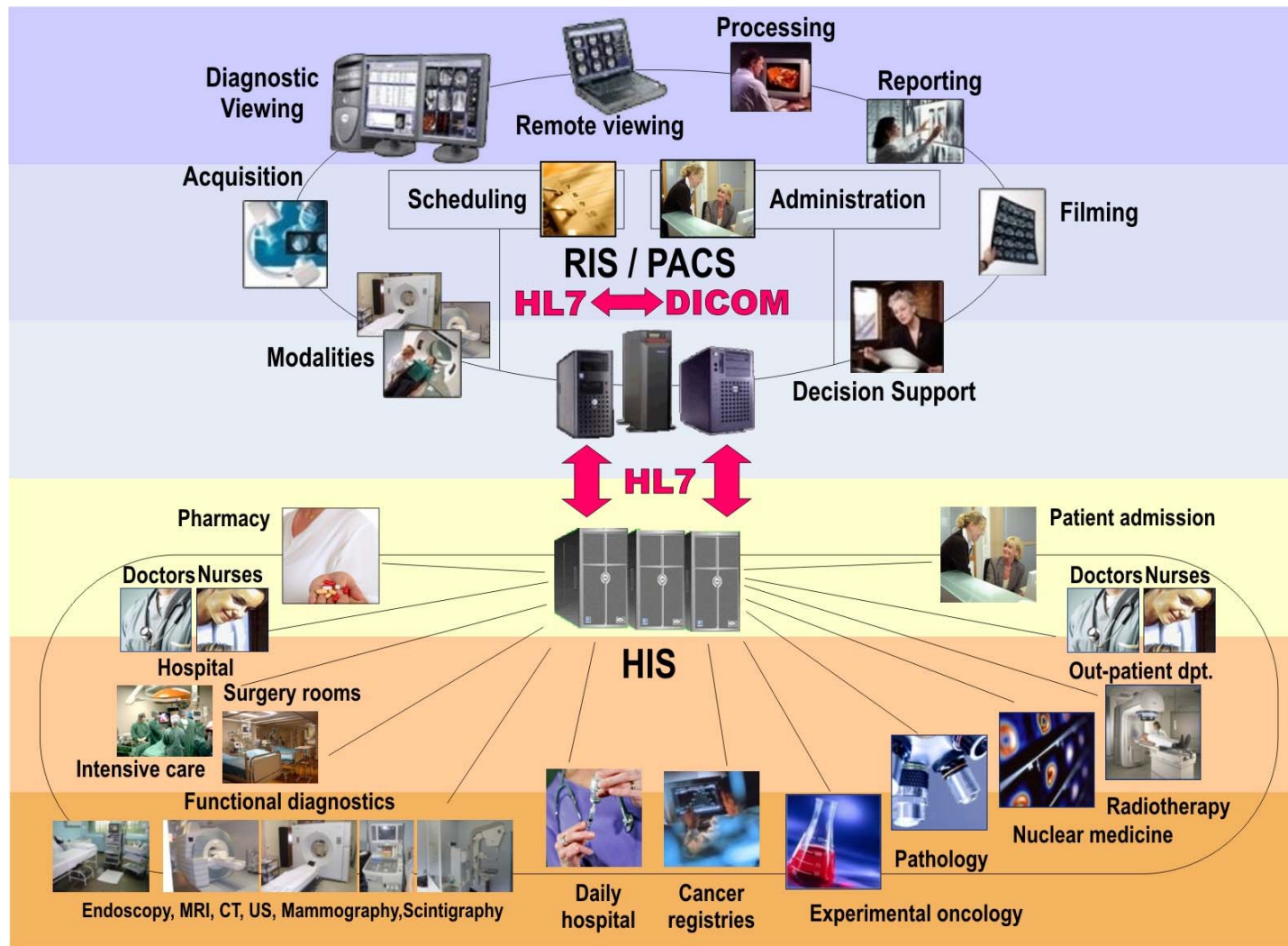


CIS-RIS-PACS *integration* (HL7, DICOM)

- Integration of HIS with PACS
- CIS: Reception of order entries and appointment scheduling for patients:
 - From the Department
 - From the Outpatient clinic
 - External orders
- Orders processing in RIS:
 - Orders' preparation
 - Selection of modalities
 - Sending the order to a modality
- Modality: Processing and sending of a picture in PACS
- CIS: Possibility of pictures from PACS review



CIS-RIS-PACS integration (HL7, DICOM)



CIS-RIS-PACS integration

The screenshot displays a medical imaging software interface with the following components:

- Windows and Menus:** Multiple windows are open, including "Carestream Client (service service)", "Patient Mini Archive", and "VIZI MARIJA". The "Patient Mini Archive" window shows a list of image series.
- Patient Information:** The patient's name is "VIZI MARIJA" and the study is "MR HEAD 28.10.2008 14:54 (680\680)".
- Image Series List:**
 - 1: localizer (11 images) ORIGINAL\PRIMARY\M\NORM\DIS2D Sequence Name: *f12d1_1, Scanning Sequence: GR, Echo Number: 1
 - 2: t2_tse_TRANS_320_pat2 (25 images) ORIGINAL\PRIMARY\M\NORM\DIS2D Sequence Name: *tse2d1_19, Scanning Sequence: SE, Echo Number: 1
 - 3: t2_tirm_tra_dark-fl_pat2 (25 images) ORIGINAL\PRIMARY\M\NORM\DIS2D Sequence Name: *t2d1_21, Scanning Sequence: SE\VR, Echo Number: 1
 - 4: Tse2D-f-slabs THICK_MIP_S
- Image Views:** The main area shows four image views:
 - Top-left: Localizer image with "ALL" label.
 - Top-right: Axial T2-weighted image (t2_tse_TRANS_320_pat2) with parameters: Pos: 103.88 mm, Tra, Acc#: M09411-08, Ec: 1, Patient Pos: HFS, Study Desc: GLAVA^RUTINSKI, Series Desc: t2_tse_TRANS_320_pat2, < 2 - 1 >, R, *tse2d1_19, 5730.00/798.00, Etl: 19 TA: 150.00, 320x272, Enc: 1, 2hex, C: 250, W: 542, Link 1.
 - Bottom-left: Axial T2-weighted image (t2_tirm_tra_dark-fl_pat2) with parameters: Pos: 38.98 mm, Tra, Acc#: M09411-08, Ec: 1, Patient Pos: HFS, Study Desc: GLAVA^RUTINSKI, Series Desc: ToF-3D-f-slabs THICK_MIP_S, < 4 - 184 >, R, *t2d1_21, 8840.00/2500.00/109.00, Etl: 21 TA: 180.00, 256x220, Enc: 1, 1hex, C: 470, W: 988, Link 1.
 - Bottom-right: Axial T2-weighted image (t2_tse_TRANS_320_pat2) with parameters: Pos: 103.88 mm, Tra, Acc#: M09411-08, Ec: 1, Patient Pos: HFS, Study Desc: GLAVA^RUTINSKI, Series Desc: t2_tse_TRANS_320_pat2, < 2 - 1 >, R, *tse2d1_19, 5730.00/798.00, Etl: 19 TA: 150.00, 320x272, Enc: 1, 2hex, C: 846, W: 1500, Link 1.
- Bottom Bar:** Includes "Pan", "Film Preview", "Key Image Preview", "Viewer\Viewer (1)-V1", and "NUM".



CIS-RIS-PACS integration

The screenshot displays the Carestream Client software interface for a PET/CT scan. The main window shows a PET image with a yellow box labeled 'F' and a scale bar of 20 cm. The patient information at the top reads: 19432, '05-Jun-98, M, 40Y. The interface includes a menu bar (File, Edit, View, Processing, Windowing, Graph), a toolbar, and a sidebar with patient details and technical parameters.

ViewerViewer (1) 13.03.2009 (UNRE)

19432
'05-Jun-98, M, 40Y

za Onkologiju Vojvodine
13.03.2009, 16:04:00
SIEMENS Biograph 64
120kV, 20mAs
SC:500.00 mm
SW 5.00 mm
66% Pixel
20 cm
C 40
W 300

za Onkologiju Vojvodine
SIEMENS 1093
13.03.2009, 16:26:42
SW 5.00 mm
198% Pixel
20 cm
C 7401
W 13321

MF 1.00

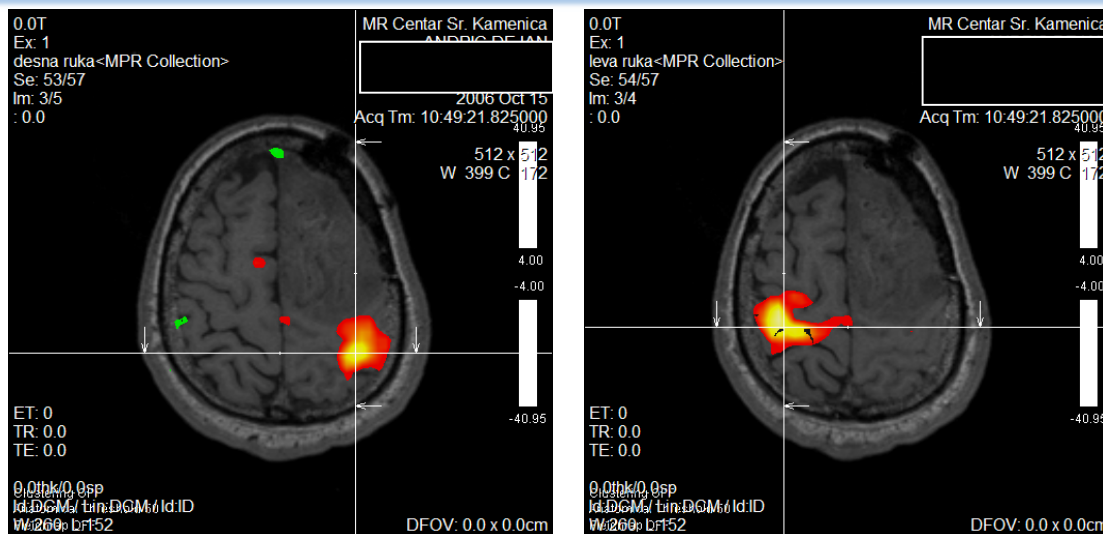
MR. PET |e |ra

(1) - ILI | NUB

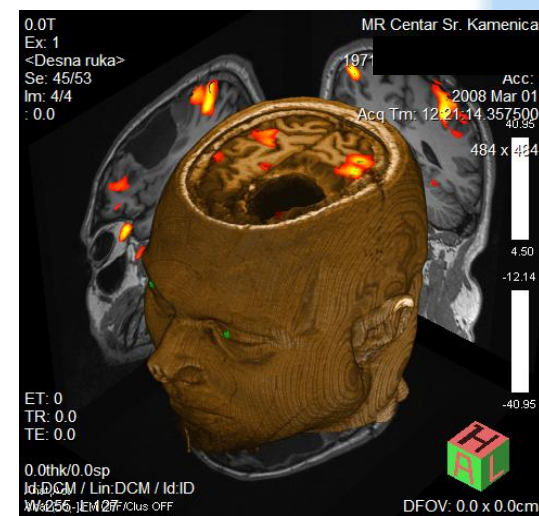
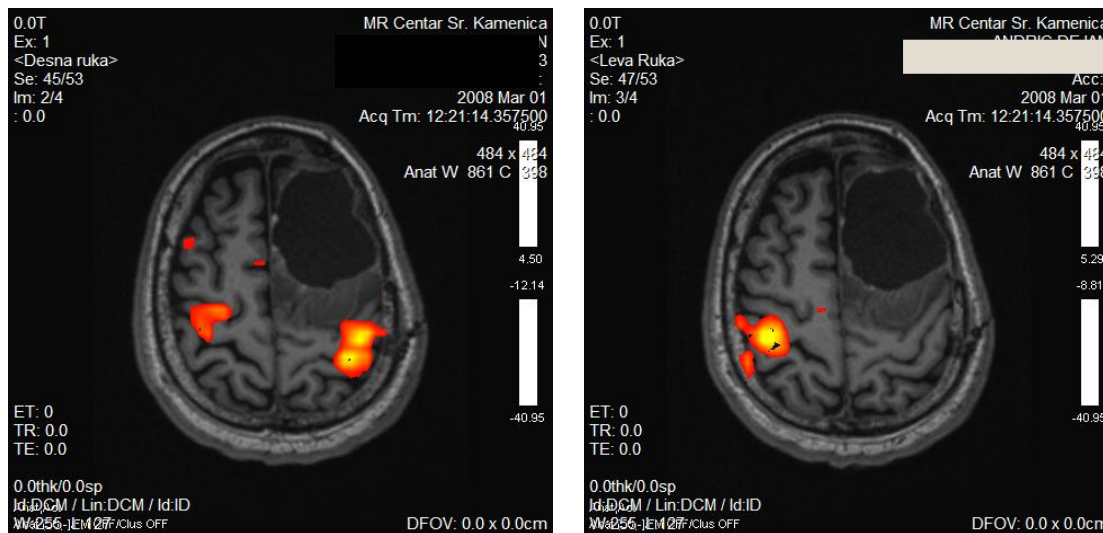


CIS-RIS-PACS integration

Before operative fMRI



After operative fMRI



Functional MRI

CIS – LIRPIS *integration*

LIRWIN (01 - CENTRALNI MAGACIN)
Sistem Dokumenti Pregledi Katalozi Alati Prozori Pomoć

Katalog lekova i robe

Lista Osnovno Stručni podaci Uputstva i upozorenja Stručna objašnjenja Ostalo Galenika Bolničke apoteke

Radna šifra: 011824 Naziv: TAXOL inf. 1 po 5 ml (6 mg/1 ml) F

Katalog lekova i robe

Lista Osnovno Stručni podaci Uputstva i upozorenja Stručna objašnjenja Ostalo Galenika Bolničke apoteke

Radna šifra: 011824 Naziv: TAXOL inf. 1 po 5 ml (6 mg/1 ml) F

Način razknjiževanja zaliha: IZDAJ NA MESTO TROŠKA IZ APOTEKE

Grupa:

Tip artikla: Z LEK

Način pratenja zaliha: U ALTERNATIVNOJ JEDINICI

Način obračuna zaliha: U OSNOVNOJ JEDINICI

Konto za zalihe: 0222378 Citostatici pozitivna lista

Konto za upotrebu: 0222378 Citostatici pozitivna lista

JKL šifra: 0039280

Izdajno mesto:

artikal se vodi na zalihama artikal aktivan za naručivanje artikal aktivan za upotrebu

Obračunski element:

Kategorija:

Matični magacin:

Grupa za tendere: TG01432 1 po 5 ml (6mg/1ml)



CIS – LIRPIS *integration*

- Prescribed therapy for a patient in basic or alternative unit measure (ml, mg, tbl, ...)

Naručena aktivnost

Pacijent: 47169 TEST MOJCA, 22.08.1979, 28 godina

Vrsta aktivnosti: TER TERAPIJA

Narudžba u apoteku WUD010

Jedinica: DB DNEVNA BOLNICA

Mesto troška: 1050

Datum od: 26.03.2008 do: 26.03.2008 Nema prenosa za taj dan

Filtar: sve nisu na zalih dodatno naručeni

Osveži Štampaj

Šifra	Jedinica	Troškovno mesto	Datum	Tip na	LIRPIS21	Status	Info
▶ 3660		15 1050	26.03.2008	1	1263341		3

Artikal	Količina alt.	Jedinica alt.	Količina osn.	Jedinica osn.	St	Naručena količina u OJ
010041 ADRENALIN HCL inj. 50 po 1 mg/1ml	50	MG	50	AMP	1	50
▶ 011318 NATRIIHLORIDI inf 10% , 100 ML.	100	ML	1	BOC	1	1

Generiraj Poništi

on the basis
o the

storage

n order

d
storage



HIS – BIS *integration*

Porudžbina 177-08-08-D
Br. javne nabavke 35-2008-O-02
Br. ugovora 078-2008

VELEFARM AD HOLDING KOMP
Bulevar Vojvode Stepe 62
NOVI SAD, 21000
Srbija

Br. dobavljača za nabavk 001558
Poreski broj 101736368

Datum porudžbine 27.08.08
Očekivani datum prijema 01.09.08 do 05
Mesto isporuke, do 12h : Apoteka IOV

RB.Br.	Gen. ime	Doziranje	Proizvođač	Br. partije	Br. stavke JM	Količina za prijem	Cena po jedinici mere	Iznos bez PDV-a P
1	ifosfamid	1000 mg	BAXT	1	BOC	200,00	1.930,60	386.120,00
2	cisplatin	1 po 50 mg/50 ml	PFIZ	11	BOC	200,00	801,91	160.382,00

Iznos bez PDV-a
Iznos PDV-a
Iznos sa PDV-om

Str. 1 | Generisanje izveštaja je dovršeno (1 stranica) | Pomoć

Cytostatics tender review

Frame purchase order

Purchase order by the supplier *Velefarm* in accordance with the tender documentation

Order form for suppliers and the central pharmacy

Semantics, communication and legislation interoperability



1. Standardized medical data

Diagnoses ICD10

BIRPIS21 - HIR AMBULANTA ZA HIRURGIJU

Infonet Kriani

Datoteka Obrada Ambulanta Terapeutska mesta Obrasci Listi analize Katalozi Alati Pomoć

52487, PL0802795, I, 60god (25.03.1948), Sek.amb., 26.03.2008(79916), Kreiran

Stablo prozora

- Pacijenti danas
- Radna lista
- Lista pacijenata
- Sekundarna zaštita
- Intervencije / na
- Katalozi i alati

Grupisano

KONTROLNI PREGLED - HIRURŠKA A

- Izveštaj lekara specijaliste
- Dijagnoza
- Dijagnoza (produžen opis)

UPUT

Unos medicinskih podataka

DK Sačuvaj Uputi Za obračun Kon-Materi... Prenos dija... Obračunaj Zaključni Pac.Nalazi Problemi - pacij

Česte Izv. nar. Dodaj Briši Unos nalaza Detalj Predef. tekstovi Dokument Graf

Unos medicinskih podataka

Grupisano

Odgovorni izvođač: 09042 ... BREBERINA MILAN 26.03.2008 11:00

Dijagnoza: C20. ... ZLOČUDNI TUMOR ZADNJEG CREVA

Statistički primer: Dodaj Skloni

Opis: NEOPLASMA MALIGNUM RECTI (3 cm)

Dodatni opis:

Tip dijagnoze: D Radna

Potvrda dijagnoze:

Značenje dijagnoze: G Glavna dijagnoza

Kritični podatak: N NE <INSERT> Dodaj još jednu dijagnozu

Morfološka dijagnoza:

TNM Klasifikacija:

Stage:

Figo:

Linfoni:



2. E-requests (ordering)

Naručena aktivnost
Naručivanje aktivnosti v termin

Naručivanje pacijent: 76554 TEST BGD [Ure.pac.]
Vrsta aktivnosti: MR MR TOMOGRAFIJA
Aktivnost: []

Sat narudžbine: [] []
Jedinica naručilac: []
Naručilac: []
Jedinica izvođenja: PRI PRIJEM
Izvršilac: []

Prioritet za izvođenje: [] F4 - Postojeći uputi
Planirano vreme izvod: [] F5 Termin
Vreme ček.dana: / 1. termin
 Traži termine samo za lekara: []
tekst narudžbine: []

Izaberi : Aktivnost

Znaci za traženje: []
Itraženje po: Šifra

Koda aktivnosti	Opis aktivnosti
TAB	MR TOMOGRAFIJA ABDOMENA
TDE	MR TOMOGRAFIJA DONJIH EKSTREMITETA
TGD	MR TOMOGRAFIJA GRUDNOG DELA
TGE	MR TOMOGRAFIJA GORNJIH EKSTREMITETA
TKA	MR TOMOGRAFIJA KARLICE
TKS	MR TOMOGRAFIJA KIČMENOG STUBA
TKZ	MR TOMOGRAFIJA KOŠTANO ZGLOBNOG SISTEMA
TNA	MR TOMOGRAFIJA NEURO ADVANCED
TTE	MR TOMOGRAFIJA CELOG TELA
TVR	MR TOMOGRAFIJA VRATA

[Enter] - Traženje / potvrdi [Insert] - Šifra / opis
[ESC] - Izlaz [F8] [F9] - Pomeranje po tabeli

[OK] [Pozovi]

Naručivanje aktivnosti v termin

Naručivanje pacijent: 76554 TEST BGD [Ure.pac.]
Vrsta aktivnosti: MR MR TOMOGRAFIJA
Aktivnost: TAB MR TOMOGRAFIJA ABDOMENA

Sat narudžbine: 18.04.2009 19:27
Jedinica naručilac: ZODD RZZO-DOJKA - RZZO
Naručilac: []
Jedinica izvođenja: MRT MR TRIO Slične jedinice
Izvršilac: []
Tip za nar: 1 RZZO

Naručenih u danu: 15
Nar:3 Pov:5 Max:5
ČE 23.04.
8:00 1
8:30 1
9:00 1
9:30 1
10:00

Prioritet za izvođenje: 0 UOBIČAJENO F4 - Postojeći uputi
Planirano vreme izvod: 23.04.2009 09:30 F5 Termin
Vreme ček.dana: 5 Termin: 08:00 - 10:30
 Traži termine samo za lekara: []
tekst narudžbine: []

[Pokaži sve termine] F6 F7

Start [] DEMO Birpis21 [] BIRPIS21 -... [] Microsoft Po...



3. Clinical pathways (procedures, medications, materials)

BIRPIS Aktivnost Pacijent: SVETLANA

Aktivnost: TAB - MR TOMOGRAFIJA ABDOMENA

Klinički postupci

Paleta

Kod	Opis	Količina
MR05002	MR tomografija gornjeg abdomena (sa I.V. kontrastom)	1

Materijali/lekovi

Paleta

Kod	Opis	Kataloški br.	Plan	JM	Dato	JM	Tekst narudžbine	Knjiž	JM	Obr.	JM	Mesto trd	Raskl	Dat. upotret
011210	MAGNEVIST inj. 10 po 20 ml (469 mg/ml)	0199430		ML	10	ML		10	ML	10	ML	0730	00	26.03.2008
030502	FLASTER GALOPLAST 5x5			CM	10	CM		10	CM	10	CM	0730	00	26.03.2008
030802	IGLE PVC 0,8x38			KOM	1	KOM		1	KOM	1	KOM	0730	00	26.03.2008
030803	IGLE PVC 1,2			KOM	1	KOM		1	KOM	1	KOM	0730	00	26.03.2008
032003	VATA CELULA 1 KG.			G	10	G		10	G	10	G	0730	00	26.03.2008
032006	VATA SANITETSKA A 1 KG.			G	10	G		10	G	10	G	0730	00	26.03.2008
032020	VIGO IGLE 20G (1.1x33mm) ROZA			KOM	1	KOM		1	KOM	1	KOM	0730	00	26.03.2008
040007	ALKOHOL 95- 96% a 10 l.			ML	10	ML		10	ML	10	ML	0730	00	26.03.2008
100430	PRODUŽNO CREVO ZA PACIJENTA ZA INJEKT.MXD2040 ULI			KOM	1	KOM		1	KOM	1	KOM	0730	00	26.03.2008

Za obračun

Paleta

Kod	Opis	Količina	Cena
560001	Tomografija magnetnom rezonancijom	1	11821
0199430	MAGNEVIST 10 po 20 ml	10	165,67
MA030502	FLASTER GALOPLAST 5x5	10	0,16
MA030802	IGLE PVC 0,8x38	1	1,45
MA030803	IGLE PVC 1,2	1	1,45
MA032003	VATA CELULA 1 KG.	10	0,18
MA032006	VATA SANITETSKA A 1 KG	10	0,29

2008 11:55



Radiotherapy

- Brachytherapy protocol

Aktivnost Pacijent: **A**

Aktivnost: **BPRO - BRAHITERAPIJSKI PROTOKOL**
 Status: **Autorizovana**

Datum i vreme

Naručeno: 09.09.2008 09:12
 Planirano (oduzimanje): :
 Početak izvođenja: 09.09.2008 09:12
 Izvedeno: 09.09.2008 09:12
 Autoizovano: 09.09.2008 10:54
 Pročitano: :

Naručilac

Jedinica naručivanja: BRA ODELJENJE ZA BRAHITERAPIJU
 Naručilac: XXXXX NEPOZNAT

Izvođač

Jedinica izvođenja: BRA ODELJENJE ZA BRAHITERAPIJU
 Izvođač: T0732 VUKOVIĆ MARIJA

Klinički postupci

Kod	Opis	Količina
OBRHDRG	obrada brahith - HDR ginekološke	1

Materijali/lekovi

Kod	Opis	Katalogski br.	Plan	JM	Dato	JM	Tekst narudžbine	Kriš	JM	Obr	JM	Mesto trd	Plask	Dat. upotreba
031020	KATETER FOLI BR 12			KDM	1			1	1	0428	00	09.09.2008		
041650	SLAP LAVODERM F 1L			ML	100			100	100	0428	00	09.09.2008		
040300	DEZIDERM F 1000ml			ML	200			200	200	0428	00	09.09.2008		
032006	VATA SANITETSKA A 1 KG.			G	50			50	50	0428	00	09.09.2008		
042001	VASELINA ALBA A 1 KG.			G	5			5	5	0428	00	09.09.2008		
090040	PREZERVATIV A 144			KDM	1			1	1	0428	00	09.09.2008		
040200	CIDEZYME A 5l			ML	100			100	100	0428	00	09.09.2008		
040201	CIDEX OPA a 3.78l			ML	100			100	100	0428	00	09.09.2008		
032003	VATA CELULA 1 KG.			G	200			200	200	0428	00	09.09.2008		

Za obračun

Kod	Opis	Količina	Cena
070029	Izračunavanje idealne telesne mase	1	
090045	Socioterapijski rad sa članovima porodice ili kole	1	158,57
270036	Promena katetera i ispiranje mokraćne bešike	1	301,76
510322	Timska obrada-selektrom	1	2128,89
520015	Određivanje zračnog polja skopijom	2	
520016	Određivanje zračnog polja grafijom	2	395,25
520018	Određivanje markera grafijom	2	365,85



Nurse care

Infonet Krani

Liste analize Katalozi Alati Pomoć

Aktivnost ACD011

Vrsta aktivnosti: SES SESTRINSKA NEGA
Aktivnost: SES SESTRINSKA NEGA

Datum početka izvođenja: 29.10.2008 10:08 Datum završetka izvođenja: 29.10.2008 10:08

Jedinica izvršenja: GAS ODELJENJE ZA GAS Izvršilac:
Jedinica naručilac: GAS ODELJENJE ZA GAS Naručilac:

Klinički postupci

Paleta Briši Završi unos

Kod	Opis	Količin.
SN001	SN-davanje s.c. injekcije	1
SN003	SN-davanje i.v. injekcije	7
SN008	SN-plasiranje IV kanile 22G	1
SN011	SN-davanje infuzije	3

Materijali/lekovi

Paleta Briši Zaloha Završi unos

Kod	Opis	Katalogski br.	Pl.
030602	GAZA HYDROFIL.A 100 M.		
030807	IGLE INSUL.0.5x16		
030802	IGLE PVC 0.8x38		
030803	IGLE PVC 1.2		
030602	GAZA HYDROFIL.A 100 M.		
030802	IGLE PVC 0.8x38		
030602	GAZA HYDROFIL.A 100 M.		
030602	FI ASTER.GAI.PI.AST. 5x5		

Za obračun

Paleta Briši Ponovni unos

Kod	Opis	Količin.		
000051	Davanje S.C.I.I.M.injekcije	1		
MA030802	IGLE PVC 0.8x38	1	1,46	
MA030807	IGLE INSUL.0.5x16	1	1,68	
MA030602	GAZA HYDROFIL.A 100 M.	20	0,11	
000052	Davanje I.V.injekcija	7		
MA030802	IGLE PVC 0.8x38	7	1,46	
MA030602	GAZA HYDROFIL.A 100 M.	210	0,11	
MA030803	IGLE PVC 1.2	7	1,45	
000052	Davanje I.V.injekcija	1		

Sa strelicama izaberi odgovarajuću paletu. Količinu povečaj sa [+] i smanjij sa [-]. Za završetak pritisni [ALT]+[O]

OK X Opzovi

SESTRINSKA NEGA Izvedena : 30.1
Naručilac: KUKIĆ BILJANA, ODELJ
Izvođač: MITRAŠINOVIĆ TATJANA

OBRAČUNSKA AKTIVNOST Izvede
Naručilac: KUKIĆ BILJANA, ODELJ
Izvođač: MITRAŠINOVIĆ TATJANA

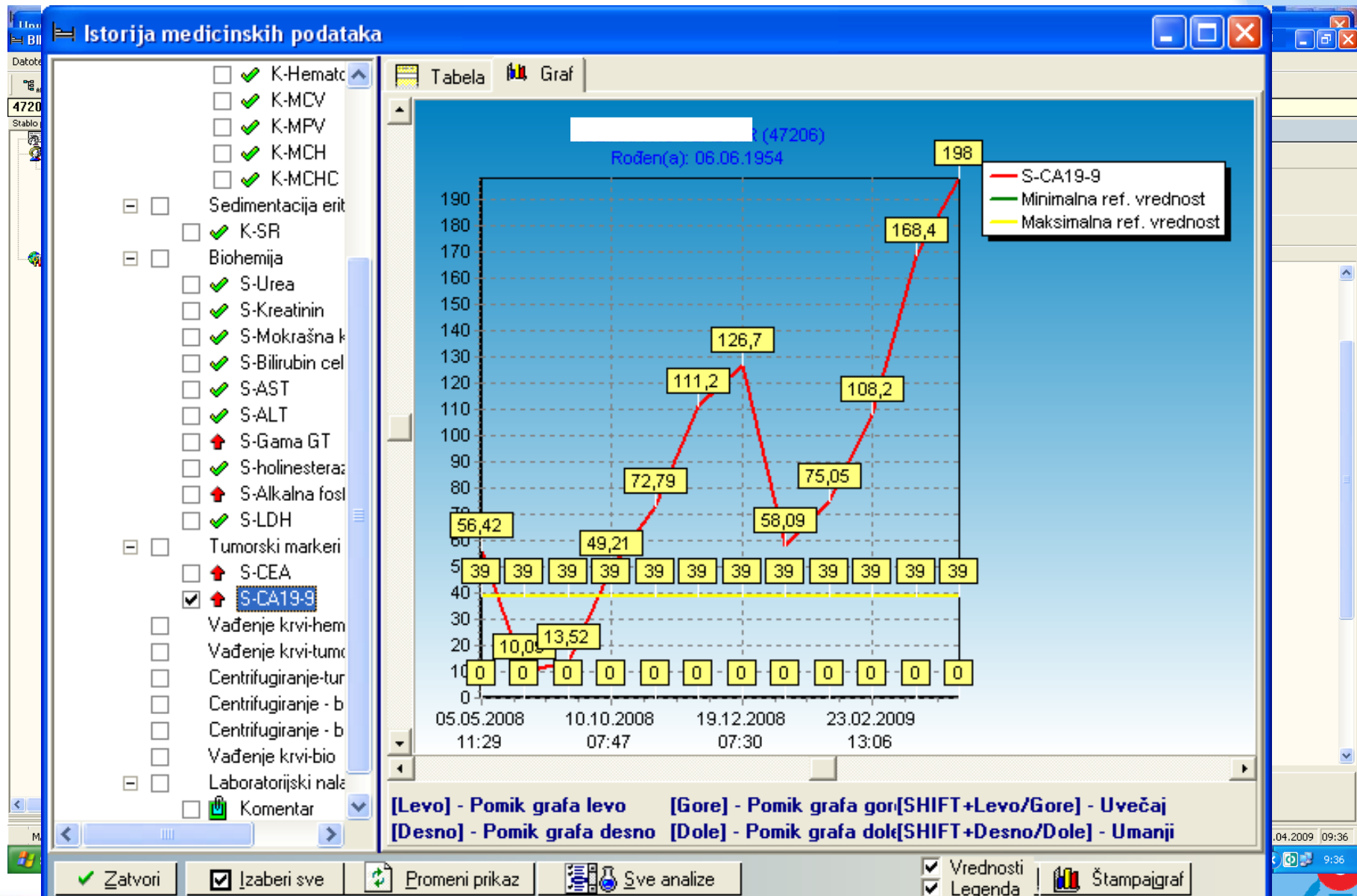
Naзад u izvođenje

Repisanih zvučnih zapisa: 0

JOVANOVIĆ DUŠAN, ODELJENJE ZA GASTROENTEROHEPATOLOGIJU, GAS ODELJENJE ZA GASTROENTEROHEPAT DUBRAVKA STRIBER DEVAJA 27 32/906/1535/40% 30.10.2



E-request (Ordering) – L@BIS



Planning of chemotherapy

Naručena aktivnost

Pacijent:

Vrsta aktivnosti: HT1 HTP-DOJKA
Aktivnost: 14 HT_VIG VINORELBIN - GEMCITABIN

Sat narudžbine: 19.04.2009 18:54

Jednica naručilac: ETD ODELJENJE ZA ENDO. I TU. DOJKE

Naručilac: 09328 DONAT DRAGUTIN

Jednica izvođenja: ETD ODELJENJE ZA ENDO. I TU. DOJKE

Izvršilac: 09328 DONAT DRAGUTIN

Informativni izvršilac: ALTZ

Prioritet za izvođenje: 0 UOBIČAJENO

Planirano vreme izvod: 19.04.2009 18:54 F5 Termin

Vreme ček.dana: 0

Traži termine samo za lekara.

tekst narudžbine:

Pokaži sve termine

Izaberi : Aktivnost

Znaci za traženje:

Traženje po: Opis

Koda aktivnosti	Opis aktivnosti
HT_AC	AC
HT_CMZ	CMF - INFUZIONI
HT_CMI	CMF - INTRAVENSKI
HT_FAC	FAC
HT_TAM	TAXOL - MONOTERAPIJA
HT_TMP	TAXOL - MONOTERAPIJA PREMEDIKACIJA
HT_TP1	TAXOL - PLATINA (TP) DAN 1
HT_TP2	TAXOL - PLATINA (TP) DAN 2
HT_TPP	TAXOL - PLATINA (TP) PREMEDIKACIJA
HT_TXM	TAXOTERE - MONOTERAPIJA
HT_TXP	TAXOTERE - MONOTERAPIJA PREMEDIKACIJA
HT_VIG	VINORELBIN - GEMCITABIN
HT_VIP	VINORELBIN - GEMCITABIN PREMEDIKACIJA

[Enter] - Traženje / potvrdi [Insert] - Šifra / opis
[ESC] - Izlaz [F3] - Pomeranje po tabeli

Stanje zaliha artikla

Artikal:
010600 GEMZAR inj. 1 po 200 mg

Odelj.	Odk.	Apot.	Apk.
4 BOC	0	218	0
(800 MG)	(0)	(43600)	(0)

Izračunavanje telesne

Težina(kg):

Visina(cm):

Površina: 0

Materijali/lekovi

Kod	Opis	Plan	JM	Tekst narudžbine
010603	GEMZAR inj. 1 po 1000 mg	1000	MG	IV U INF TECE 45MIN
010600	GEMZAR inj. 1 po 200 mg	600	MG	IV U INF TECE 45MIN
011302	NATRIJCHLORIDI INFUNDIBILE inf.1po500ml 0.9%	1	BOC	INF TECE 45MIN
011904	VINORELSIN konc. za rast. za inf 1 po 50 mg	50	MG	DATI 40MG IV BOLLUS NAKON GEMZARA

Start | ezdravlje-20... | 21_UVOD_IP... | DEMO Birpis21 | BIRPIS21 -... | LEM



Material and medication consumption per patient

- Administration of a prescribed therapy

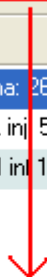
TEST MOJCA(SMPL), 28god (22.08.1979), Sek.amb., 26.03.2008(61509), Kreiran

OK Sačuvaj

Naruč. akt. Česti Izvođenje terapij Akt. dodaj Akt. česta Dod.por.mat Briši Ispravi Pošalji apotec

Grupa aktivnosti: ...

Aktivnosti, materijali i lekovi	Plan.količina	Dato	Tekst naruč.
DNEVNA TERAPIJA Planirana: 26.03.2008 15:40 (377858)			
010041 ADRENALIN HCL inj. 50 po 1 mg/1ml KŠ:0105031	50MG		
011318 NATRIICHLORIDI inf 10% , 100 ML.	100ML		



TEST MOJCA(SMPL), 28god (22.08.1979), Sek.amb., 26.03.2008(61509), Kreiran

OK Sačuvaj

Naruč. akt. Česti Izvođenje terapij Akt. dodaj Akt. česta Dod.por.mat Briši Ispravi Pošalji apotec Pošalji sve

Grupa aktivnosti: ...

Aktivnosti, materijali i lekovi	Plan.količina	Dato	Tekst naruč.	Mest.tr.
DNEVNA TERAPIJA Planirana: 26.03.2008 16:00 Izvedena: 26.03.2008 15:37 (377857)				
010041 ADRENALIN HCL inj. 50 po 1 mg/1ml KŠ:0105031	50MG	50MG		1050
011318 NATRIICHLORIDI inf 10% , 100 ML.	100ML	100ML	ZAJEDNO SA ADREN...	1050



Security model

The screenshot displays a medical information system window titled "Unos medicinskih podataka". The main area shows a form for "BOLNIČKI KONTAKT" with fields for "Jedinica izvođenja:" (HOSPITAL) and "Odgovorni lekar obr.:" (JANKOVIĆ LJUBOMIR). A red arrow points to the "BOLNIČKI KONTAKT" entry in the left-hand tree view. A modal dialog box titled "BIRPIS21 - GAS ODELJENJE ZA GASTROENTEROHEPAT" is open in the center, displaying a red 'X' icon and the message "Nemate prava za autorizaciju aktivnosti BOLNIČKI KONTAKT!". The dialog has an "OK" button. The right side of the window shows a list of medical activities with their respective orderers and issuers. At the bottom, a status bar shows the user "NIKOLIĆ IVAN" and the date "31/10/18". A second red arrow points to the user name in the status bar.



Project results

- The fulfillment of the prerequisites for the implementation of IHBIS demands full engagement of the management, organizational units' managers, physicians, medical personnel and of course, IT experts.
- A human factor is crucial for the successful creation of prerequisites for IHBIS implementation, and the synergy of all participants in this process is obligatory.
- It is to be known that the fulfillment of prerequisites for IHBIS implementation, leads our medical institution into information social surroundings, which contributes to the development of entire information society, which is a 21st century strategy at the state level.



Realized goal

- **Organizational**

- Rendering of services and material process standardization
- Change of business processes
- Reduction of time: request-realization

- **Medical**

- Standardization of methods and procedures in the process of rendering medical services
- Increase of therapeutic and diagnostic quality by authorized access
- Control of quality and reliability of services and data

- **Economic**

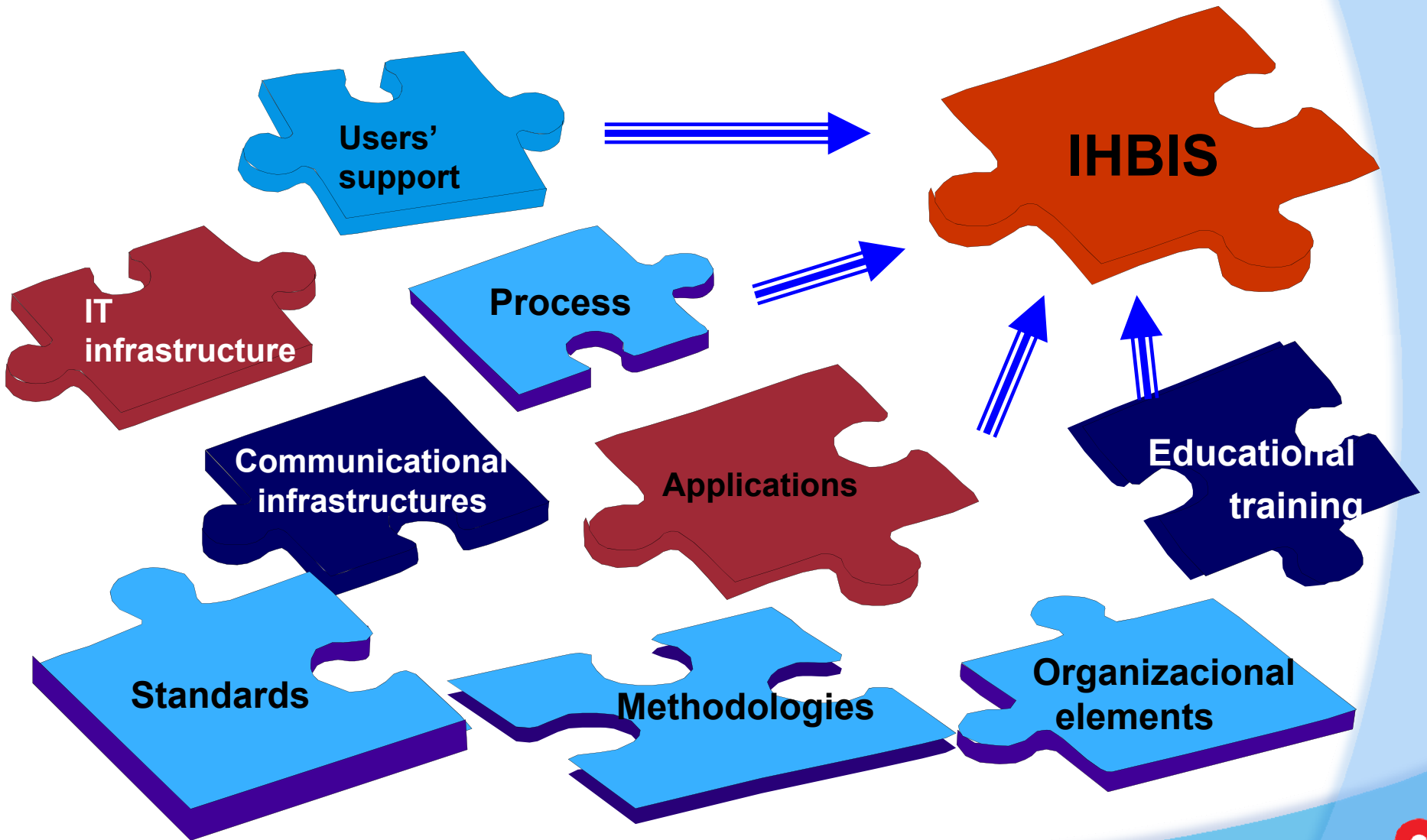
- Its primary goal is not saving but rationalization of consumption
- Increase of service span
- Reduction of in-hospital days
- Expenditure principle of business activities
- Saving of materials and poorly connected financial funds in stock supply

- **Qualitative**

- **Scientific-research**



Interoperable solution



E-health interoperability

A recommended system of standardized medical data, methods and procedures, as well as the amendments of business processes, which was successfully implemented and passed a two-year long testing period at the Oncology Institute of Vojvodina, is the model, which will be implemented in all the secondary and tertiary level medical institutions at the territory of Vojvodina.

The budget of AP Vojvodina for the year 2010 anticipates the financial funds for the further implementation of IHBIS, which leads to the realization of our primary goal:

Interoperable e-health of VOJVODINA



Thank you!

- **“Mediocrity does not win”**

We were never mediocre, and now, we went even further

- **“Be unique”**

Yes, today, we are the only medical institution in Serbia with IHBIS

- **“Get connected”**

Yes, we cooperate with people leading in rendering of services related to business systems’ planning and maintenance

- **“Remember, an average number of smiles per an employee is a pretty good sign of the future company’s performance”**

yes, we are smiling!

