

# Patient Data Management System

- význam a nezbytnost  
na současné ICU

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*no conflict of interest*

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# přehled

1. terminologie
2. jak to bylo dříve
3. benefity
4. podmínky
5. vybavení
6. ordinace léků
7. implementace



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***terminologie***  
***PDMS***

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WIKIPEDIA  
The Free Encyclopedia

## Search results

🔍 patient data management system



Search

Advanced search: Sort by relevance ✕



Search in: (Article) ✕



The page "*Patient data management system*" does not exist. You can [create a draft and submit it for review](#), but consider checking the search results below to see whether the topic is already covered.

## ***terminologie***

- patient data management system (PDMS)
- patient data monitoring system (PDMS)
- critical care information system (CCIS)
- ICU clinical information system (ICIS)
- computerized provider order entry (CPOE)
- clinical decision support system (CDSSs)
- critical care database (CCD)
- intensive care information system (ICIS)
- intensive information management system (IIMS)



*dříve*

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# „ordinaace“

ml	g	g=4kcal
33 %	Glucose	(g=4kcal)
40 %	Glucose	(g=4kcal)
5 %	Amino-mel „hepa“	
10 %	Amino-mel „nephro“	
10 %	Eloamin	
15 %	Eloamin	
	Dipeptiven	
	L - Valin	
20 %	Intralipid (g=9kcal)	
	Omegaven (10% Fett)	
20 %	Humanalbumin	
	Nephromix (800 ml / 380 cal)	
	Clinomel 4% GFE (1000 ml / 1040 kcal)	
	Nutriflex Lip.plus (1875 ml / 1575 kcal)	
Gesamt		

Menge	Rate	Einheit / Perfusion
	ml/h	Kalium - Malat
	ml/h	10 % NaCl
	ml/h	Emgecard (Mg-40)
	ml/h	Cornegesin (Mg-8)
Vitaminzusätze		
1		Cemevit (Soluvit/Vitalis)
1		Konakion Di + Fr.
		L-Carnitin
		Folsan / Vit. B 12 Di + Fr.
weitere Zusätze		
		Kationen/Anionen
		Alkohol 50% (20 ml = 70 kcal)

Trinkmenge:	min	max	ml
Sondennahrung			kcal
esenius			O Abbot
.....	ml/h		
.....	ml Bolus/	.....	/ Tag?
/ Galorade / Suppe			
ose 5 %			
Mineralwasser mild			
Normolyt			
Iso Source Standard			
Iso Source Fibre			
Nova Source Start			
Glucerna			
Pulmocare (ml = 1,6 kcal)			
Nova Source GI Kontr.			
Impact			
Impact oral (1B = 250ml / 130kcal)			
Proten Plus (1B = 250ml / 130kcal)			
Sucralfat			
Lactulose / Humatin			
Prepulsid			
Gesamt			

Bypass - Infusionen			
	Lösung	ml/h	ml/h
Bypass 1	RL, NaCl, Aqua	100	
Bypass 2	RL, NaCl, Gl. Aqua, Mannit 20%, Hämlil, Hyperhes		40
Kat.-Byp.	RL, NaCl, Gl. Aqua, Hofcomant, Mannit 20%		
Gesamt			

Stuhl am: _____ 2002	
Einlauf	
Relaxyl	
El. Lactulose	

Tag	Antibiotikum	Dosis	Uhrzeit
	Penicillin	10 M I.E.	
	Floxapen	1,0 g	
	Augmentin	2,2 g	
	Standacillin	2,0 g	
	Tazonam	4g / 0,5 g	
	Kefzol	2,0 g	
	Mandokel	2,0 g	
	Curocef	1,5 g	
	Mefoxitin	2,0 g	
	Claforan	2,0 g	
	Rocephin	2,0 g	
	Kefazim	2,0 g	
	Cefrom	2,0 g	
	Maxiplime	2,0 g	
	Azaktam	2,0 g	
	Zienam	0,5/1,0 g	
	Optinem	0,5/1,0 g	
	Colistin	1 Mega	

Tag	Antibiotikum	Dosis	Uhrzeit
	Relobacin	80/160/240 mg	
	Tobrasix	80/160/240 mg	
	Certomycin	150/200 mg	
	Biklin	500 mg	
	Ciproxin	200 mg	
	Erythrocin	1,0 g	1 g über 24 Std. 2 ml/h
	Lidaprim	250 ml	
	Klacid	0,5 %	
	Dalacin	600/1200 mg	
	Metronidazol	0,5 g	
	Fosfomycin	4g / 8 g	
	Vancomycin	0,5g / 1 g	
	Targocid	400 mg	
	Zyvox	600 mg	
	Fucidin	500 mg	
	Rifoldin	600 mg	
	Amphotericin B	50 mg	
	Amphocil	100 mg	
	Diffucan	200/400 mg	
	Zovirax	250 mg	
Antibiotika Gesamt-Flüssigkeit / 24 Std. ml			

l.v. - Perfusion: (Standard-Verdünnung 50ml)	ml/h
Dopamin	250 mg
Dobutamin	250/400 mg
Suprarenin	5/10 mg (mg=ml)
Arterenol	5/10 mg (mg=ml)
Vasopressin / DHE	
Adalat	5 mg pur
Nimotop	10 mg pur
Ebrantil	250 mg pur
Perlinganit	50 mg pur
Renitec	10 mg 2 Amp.
Sotacor / Brevibloc	40/2500 mg 1 Amp.
Sedacoron	900 mg 5 Amp.
Rytmonorma	2 Amp pur
Gilurytinal	250 mg 5 Amp.
Euphyllin	1,2 mg pur pur
Bricanyl	mg Amp.
Heparin	1.000 I.E. / 1ml ACT.
Flolan	0,5 mg pur
Inasul	ml = 1 I.E. BZ = 100
Trasyrol	500.000 I.E. pur
Losec	Amp/50
Dihydroerfollin	1 / 2 % kcal
Thiopental / Bribetal	2 / 4 g / 500 mg
Dormicum	50 mg pur 1
Sufenta	1 / 5 / 20 ml Amp
Delpal / Truxal	5/10 Amp
Haldol	4 Amp.
Clonidin	10 ml
Rivotril	3 Amp
Xylanäst	Amp
Lasix	20 / 40 / 250 mg Amp.
Aldactone	Amp
Takus	1 Amp / 50 ml NaCl
Naropin	20ml 7,5mg +20ml NaCl + (epidural)
Perfusionen Gesamtflüssigkeit/24 Stunden	
Medikament Dosis Uhrzeit	
Digimerck / Lanitop	1 x 6 - 7 - 8 - 9 - 10
Alupent / Atropin / Itrop	
Adalat	
Beloc / Sotacor	
Isoplin / Verapabene	
Sedacoron	
Dihydroergot (DHE)	
Effortil 1 ml = 10 mg	
Euphyllin	
Bricanyl s.c.	
Aldactone	2 = 200mg
Lasix / Burinex	3 - 4 - 5

ml	1 x verdünnte Infusionen	Bemerkung
	Ischaes / Voluven	
	Hyperhaes	
	Biseko	
	250 ml Humanalbumin 5%	
	Pentaglobin ( x 100 ml / die)	
	75 mg Voltaren / 100 NaCl	
	15 mg Dipidolor (1A) / 10 ml NaCl	
	Schmerzpumpe lt. Protok.	

Richtbilanz			
O Minus - Bilanz	O Plus - Bilanz	O Null - Bilanz	
O ZVD	mmHg	O PAP	mmHg
O PCWP	mmHg		
Gesamt - Einfuhr 24 Std. ml kcal			

Tag	orale Dekontamination	Uhrzeit
	SDD (Tobra, Colistin)	4x tgl 1/1/3/5
	Mykostatin	4x tgl 1/1/3/5
	Amphotericin	4x tgl 1/1/3/5

orale Medikation	Dosis	Uhrzeit
siehe Verordnungsblatt vom _____ 2002		
Mucosolvan 4 ml		

Medikament	Dosis	Uhrzeit
Fortecorin	4 78 / 40 mg	4 x 1
Solu-Dacortin	250 mg	
Dobondin / Fenistil		
Calcium		
Ambroxene / Mucosolvan		6 - 10 x 10 3 x 10
Nootropil (Starfonyl)		
Metogastrol / Paspertin		
1 A Zofran / Navoban / 100 NaCl		
DXBP		
Zantac		
Fragmin / Heparin		10 - 10 - 10
AT3 / Fibrinoggn		
Prothrombex / Beriplex 500 I.E.		
Recomron / Eryp 10.000 I.E.		
Ferlicit		
Deca - Durabolin		3 - 8 - 9





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*problémy?*

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## *problems*

- **clinicians** must often make multivariate high-risk **decisions** based on **incomplete patient information**
- data **unreadable**
- **disseminated** data and **disconnected** systems
- data **incorrect**
- contribute to **care variation**
- **high** incidence of **human errors**
- gaps in **clinical transparency**

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***Patient  
data  
management  
system***

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## ***PDMS***

integrated, user-friendly **ICU management information system** that provides proven strategies to help healthcare providers improve **quality of care**, reduce **risk of errors**, **optimise time** and better manage costs in the **ICU**

<b>Hersteller</b>	<b>Produktname</b>
Philips GmbH	ICIP CC
COPRA System GmbH	COPRA6
GE Healthcare	Centricity Critical Care, Centricity Anesthesia
A.C.M. Consult GmbH	ICUData, NarkoData
Dräger GmbH	ICM
Cerner GmbH	Millenium
LOWteq GmbH	e.IcR, e.AR
Medisite GmbH	m.life
iMDSOft	MetaVision
Logica GmbH & Co. KG	SAP-Lösung

Tabelle 1: Beispiele von Herstellern und Produktnahmen



***benefits***



- **automatic collection** of digital **data** from **medical devices** at the patient bedside
- **organ/functions approach** – see dynamic and intuitive views organized per organ and functions, making it **easier to target problems** and track progress
- simplified **report generation** – produce detailed reports for billing, **benchmarking**, and **quality registries** **easily and quickly** with our data and extraction tools
- it helps **prioritize** the **most relevant insights** to enable **faster**, more **informed decision-making**



## *benefits*

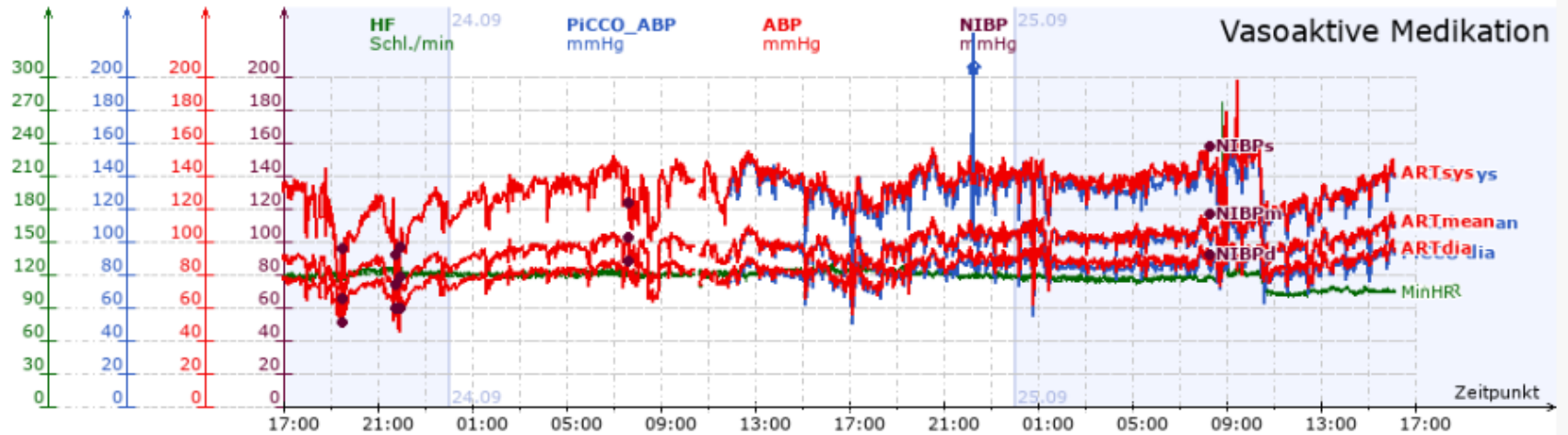
- **automated** multi-source **documentation** with clinically relevant **data visualization**
- **continuity of care** between **emergency**, **critical care** and **anesthesia**
- helps to manage the **daily routine**
- helps to manage the **staff productivity**
- improves **medication safety**

**HÄMODYNAMIK**

Trend PICCO

Vasoaktive Medikation

automatic collection of data



23.09.2019 - 25.09.2019	17	19	21	23	01	03	05	07	09	11	13	15	17	19	21	23	01	03	05	07	09	11	13	15	Gesamt
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**Medikamente**

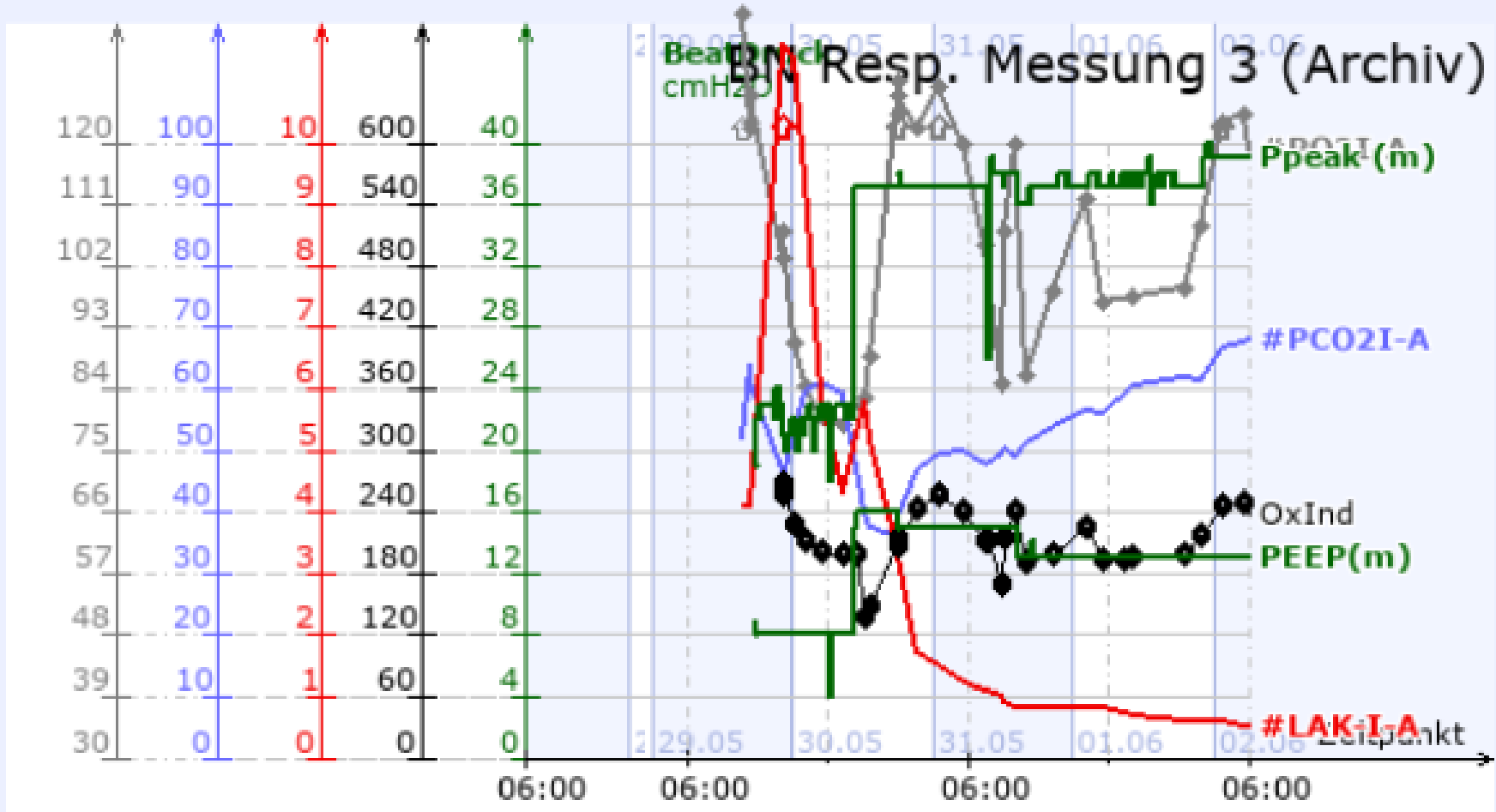
Regelmässig	23.09	24.09	25.09	Gesamt
Cormagnesin 400 mg / 100 ml NaCl KI 4 mg/ml	400 x	400 x		800 mg
Inspira 50 mg - Filmtbl. 50 mg/Tabl		25 x	25 x	50 mg
Solu-Cortef 1 mg/ml NaCl 0.9 % 1 ml/ml	100 x			100 mg 100 ml

**Medikamenteninfusionen**

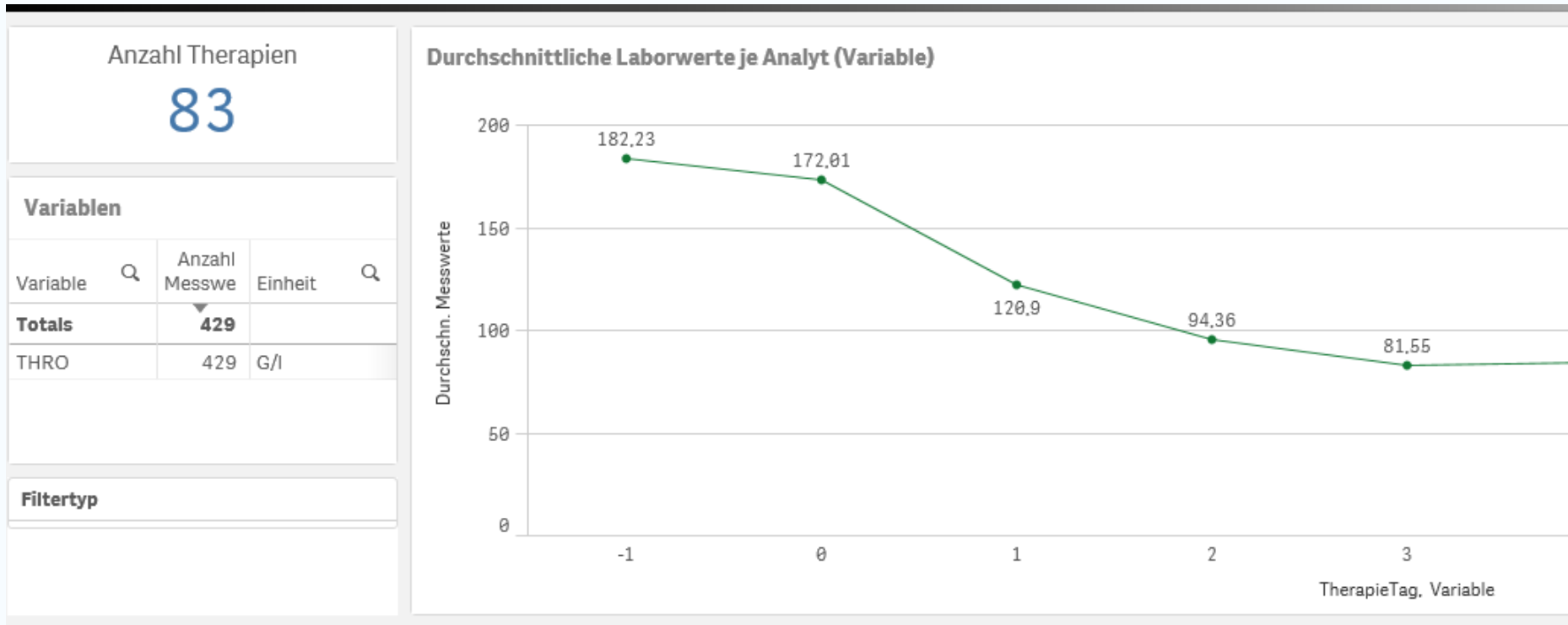
Ziel	23.09	24.09	25.09	Gesamt				
Dobutamin 250 mg / 50 ml 5 mg/ml	6	15 !	15 ! 15 !	15 ! 15 !	15 !	15 ! 10 ! 10 !	10 ! 10 !	2921 mg
Perfusor	4	10	10 10	10 10	10	10 6.667 6.667	6.667 6.667	[ug/kg/min]
NORadrenalin 5mg Perfusor 0.1 mg/ml			8 ! 8 ! 8 !			8 ! 8 !	7 ! 7 !	24.5 mg
Perfusor			0.107 0.107 0.107			0.107 0.107	0.093 0.093	[ug/kg/min]
NORadrenalin 5mg Perfusor 0.1 mg/ml	10 ! 8 ! 8 ! 7 !		7 !	7 ! 7 ! 7 !	7 !	7 ! 7 !	8 ! 8 ! 9 !	35.4 mg
Perfusor	0.133 0.107 0.107 0.093		0.093	0.093 0.093	0.093	0.093 0.093	0.107 0.107 0.12	[ug/kg/min]
Rapibloc 300 mg Perfusor 6 mg/ml							2 !	68.7 mg
Perfusor								
Simdax 0.23 mg/ml Glukose 5% 0.91 ml/ml 12,5mg/50ml	1.5		2 ! 2 !			1 !	2 !	15.6 mg 62.4 ml
	0.045		0.061 0.061			0.03	0.061	[ug/kg/min]

**Beatmung**

19.05.2018 06:00 - 02.06.2018 06:00



# cytokine removal vs platelets?



*Cytosorb<sup>®</sup> pre-filter, Cytosorb<sup>®</sup> post-filter, Jafron<sup>®</sup> post-filter*

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## Review

# Impact of commercial computerized provider order entry (CPOE) and clinical decision support systems (CDSSs) on medication errors, length of stay, and mortality in intensive care units: a systematic review and meta-analysis

Mirela Prgomet,<sup>1</sup> Ling Li,<sup>1</sup> Zahra Niazkhani,<sup>2,3</sup> Andrew Georgiou,<sup>1</sup> and Johanna I Westbrook<sup>1</sup>

**Results:** Twenty studies met our inclusion criteria. The transition from paper-based ordering to commercial CPOE systems in ICUs was associated with an 85% reduction in medication prescribing error rates and a 12% reduction in ICU mortality rates. Overall meta-analyses of LOS and hospital mortality did not demonstrate a significant change.

Author(s) and Year	Before-Paper Errors	Paper Orders	After intervention-CPOE Errors	Orders	Relative Risk [95% CI]
--------------------	------------------------	-----------------	-----------------------------------	--------	------------------------

**Pediatric patients**

Potts et al, 2004	2662	6803	110	7025	0.04 [ 0.03 , 0.05 ]
Jozefczyk et al, 2013	291	500	20	500	0.07 [ 0.04 , 0.11 ]
Warrick et al, 2011	14	159	29	465	0.71 [ 0.38 , 1.31 ]
Kadmon et al, 2009	103	1250	97	1250	0.94 [ 0.72 , 1.23 ]
RE Model for Subgroup					0.21 [ 0.02 , 2.65 ]

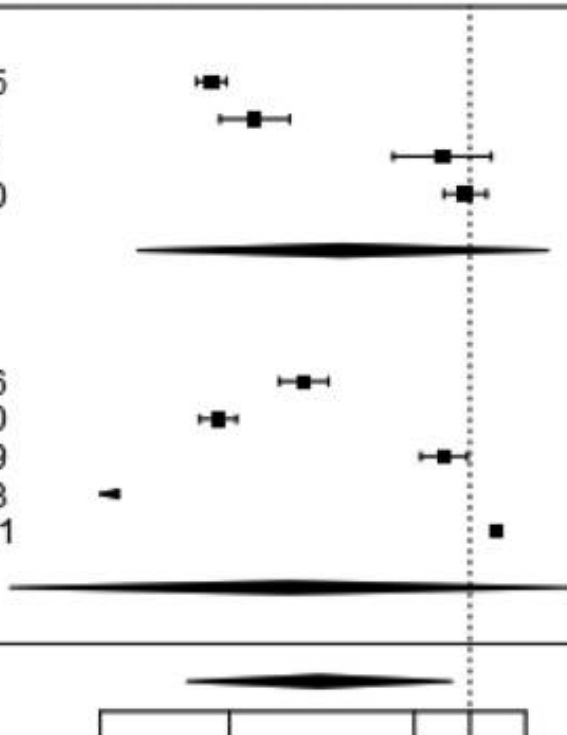
**Adult patients**

Colpaert et al, 2006	331	1224	44	1286	0.13 [ 0.09 , 0.17 ]
Armada et al, 2014	819	1829	76	3900	0.04 [ 0.03 , 0.05 ]
Shulman et al, 2005	69	1036	117	2429	0.72 [ 0.54 , 0.97 ]
Ali et al, 2010	215	2707	0	8173	0.00 [ 0.00 , 0.01 ]
Carayon and Wood, 2009	2063	45658	2070	32841	1.39 [ 1.31 , 1.48 ]
RE Model for Subgroup					0.11 [ 0.00 , 3.41 ]

RE Model for All Studies

0.01    0.05    0.50    2.00

Relative Risk





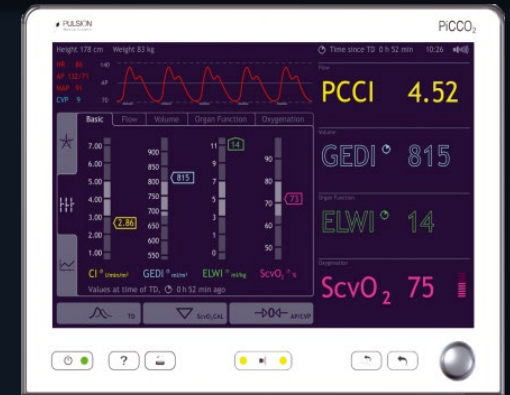
*podmínky*

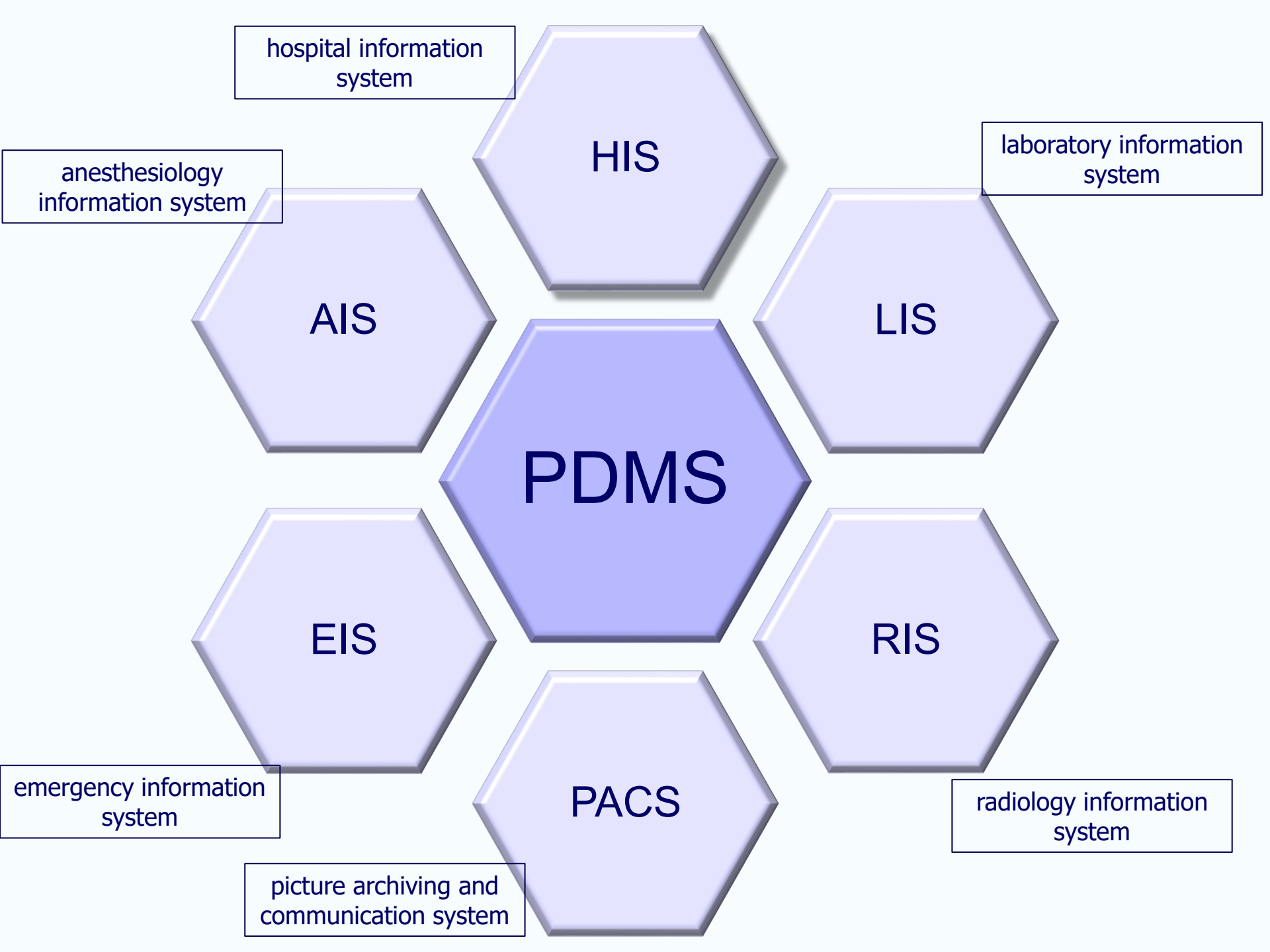


## *podmínky*

- **všechny přístroje** musí být integrovány
- **komunikace** s ostatními **informačními systémy**
- **konfigurovatelnost** a intramurální **adaptabilita**
- výstup na **webovou aplikaci**
- 2-3 stupňové **zálohování**
- možnost **statistických** hodnocení
- **output** dat do dalších **databází**
- ....







hospital information system

**HIS**

laboratory information system

**LIS**

anesthesiology information system

**AIS**

**PDMS**

**RIS**

radiology information system

**PACS**

picture archiving and communication system

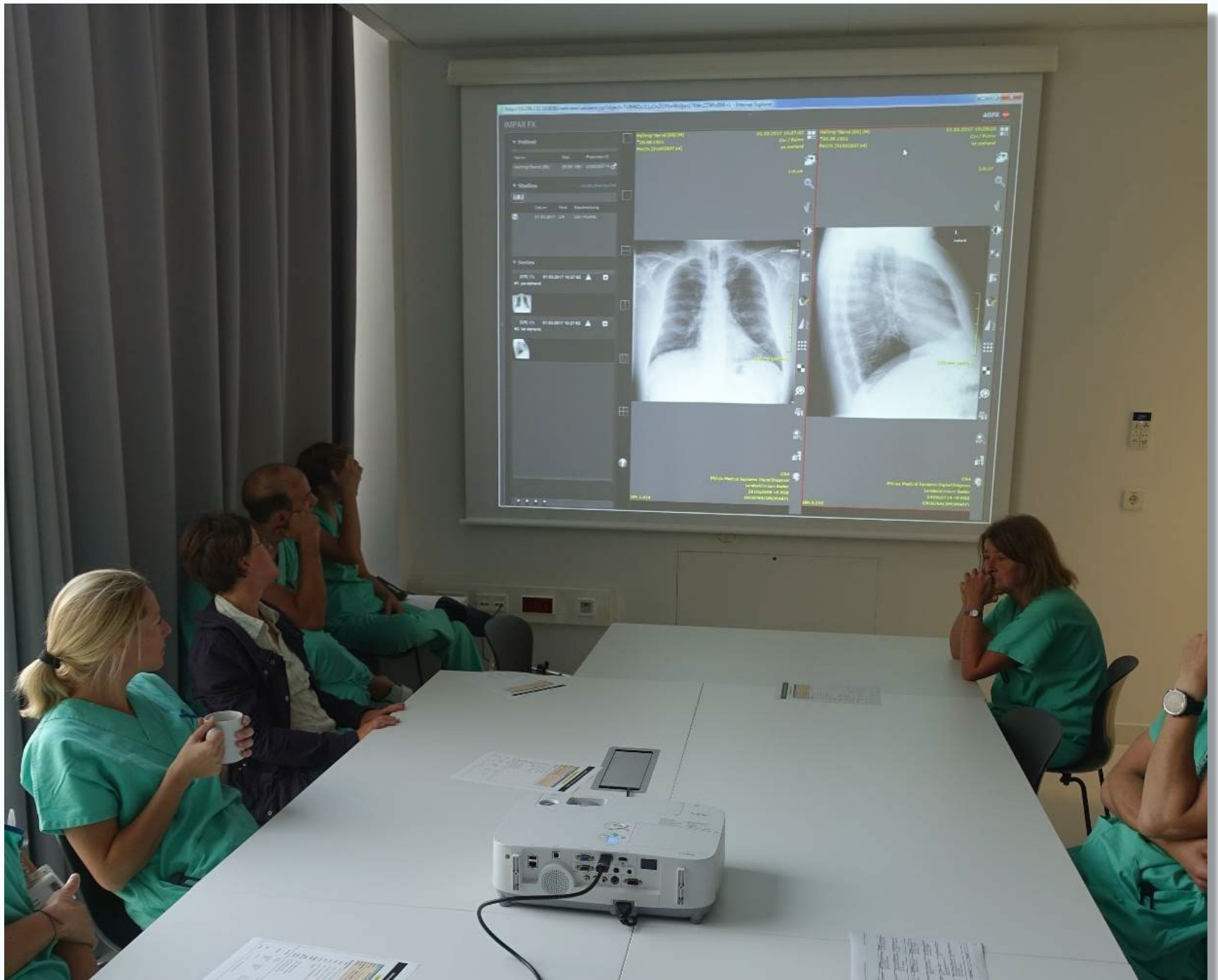
emergency information system

**EIS**



***vizita***

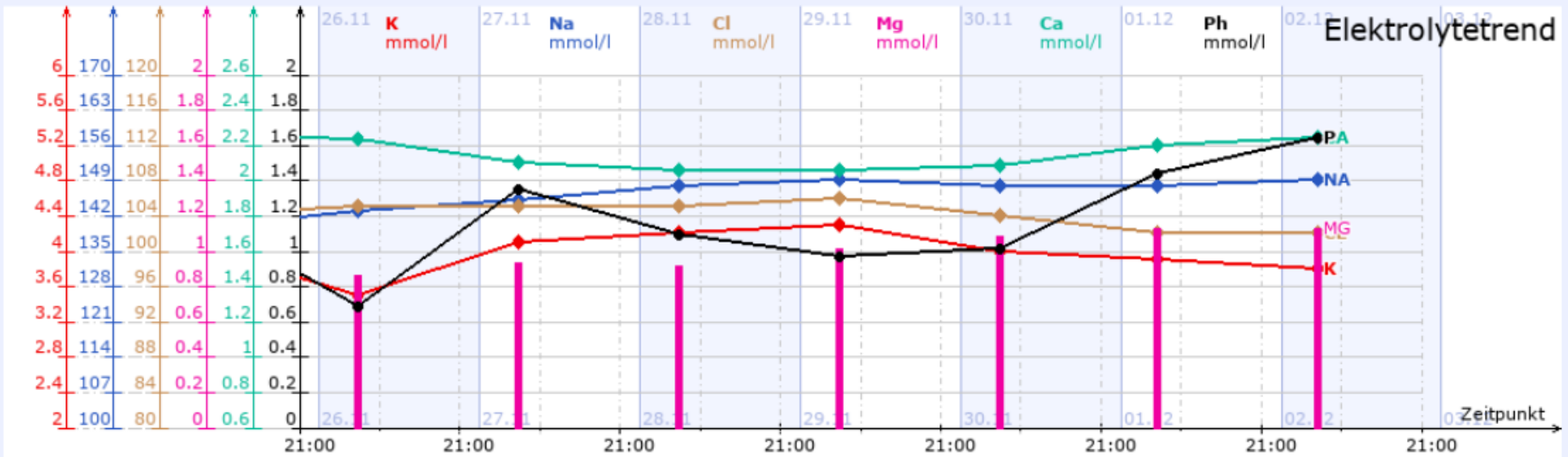




Blutprodukte (7d) (Gesamter Zeitraum)

Elektrolyttrend

25.11.2022 21:00 - 02.12.2022 21:00

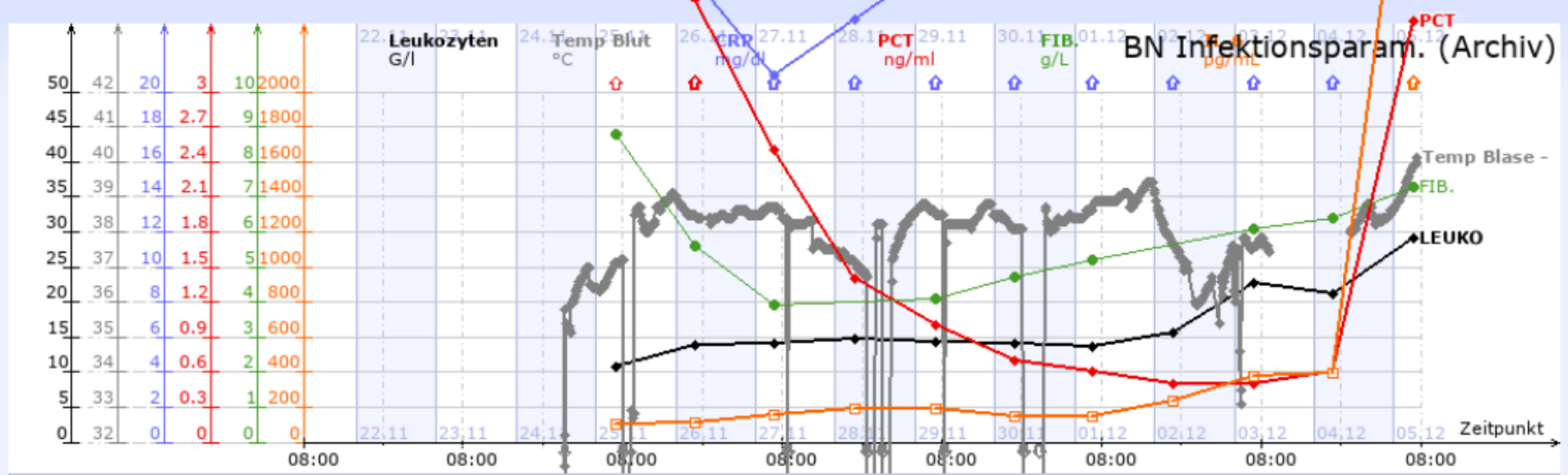


Trend Infektion

18.11.2022 21:00 - 02.12.2022 21:00



21.11.2022 00:00 05.12.2022 00:00



**Infektionsparameter**

**26.11.2022 00:00 - 02.12.2022 23:59**

	02.12	01.12	30.11	29.11	28.11	27.11	26.11
tympanic temperature [°C]	24.1	39.2	38.4	38.5	38.4	37.6	38.6
tympanic temperature [°C]	24.1	39.2	38.4	38.5	38.4	37.6	38.6

**19.11.2022 00:00 - 25.11.2022 23:59**

25.11	24.11	23.11	22.11	21.11	20.11	19.11
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Kein Eintrag!

**Antibiotika** (Gesamter Zeitraum)

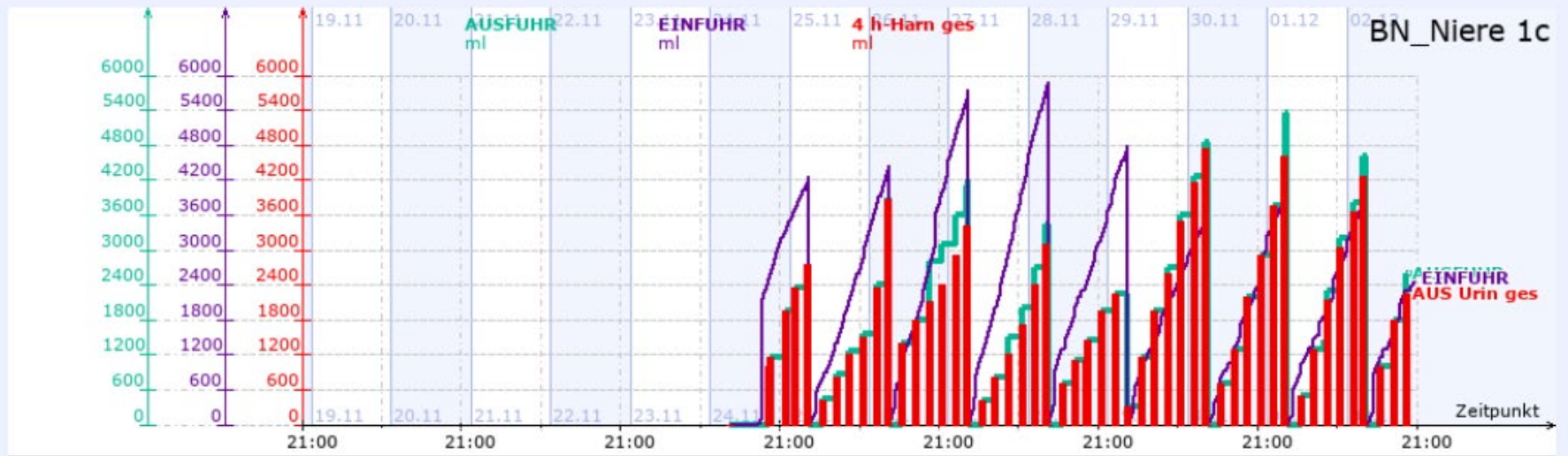
**Medikamente | Regelmäßig**

Verordnung	Applik.-Art	Details	Timing	von	bis	Hinweis
Anaerobex 0,5% 1500mg/300ml	iv-inf	1500 mg / 300 ml	/24 h #4	25.11.2022 08:00	28.11.2022 08:50	
Dalacin C 900mg / 100 NaCl	iv-inf	900 mg / 100 ml	8 stündlich	26.11.2022 08:30	28.11.2022 06:26	
Dalacin C 900mg / 100 NaCl	iv-inf	900 mg / 100 ml	8 stündlich	28.11.2022 06:26		
Erythrocin 1g Trstamp + 20ml Aqua	iv-inf	100 mg / 2 ml	/8 h #9	30.11.2022 16:00		1 g Erythrocin in 20 ml Aqua lösen, dann 2 ml (= 100 mg) in 100 ml Aqua
↳ Aqua		100 ml				
Invanz 1g	iv-inf	1 g / 1 Dstfl	12 stündlich	24.11.2022 18:00	25.11.2022 16:55	
↳ NaCl 0.9 %		1 ml				
Invanz 1g	iv-inf	1 g / 1 Dstfl	8 stündlich	25.11.2022 16:55	28.11.2022 06:26	
↳ NaCl 0.9 %		1 ml				
Invanz 1g	iv-inf	1 g / 1 Dstfl	8 stündlich	28.11.2022 06:26		
↳ NaCl 0.9 %		1 ml				



Trend Niere\_kum

18.11.2022 21:00 - 02.12.2022 21:00

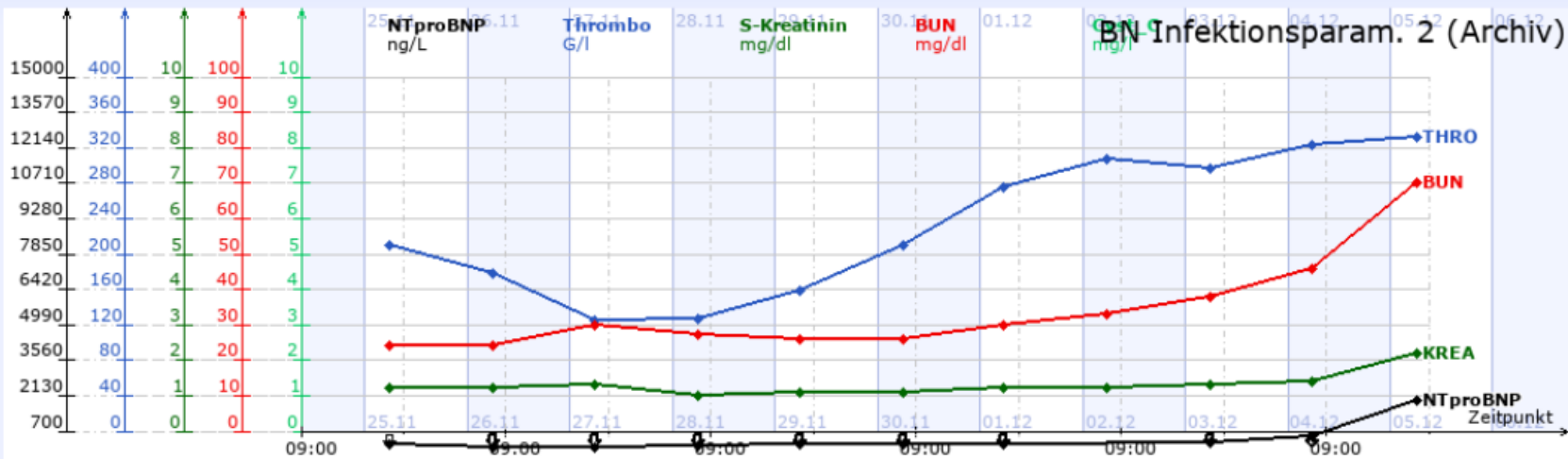


Prismaflex Citrat 24h

		Zeitpunkt																								
		21:00	01:00	05:00	09:00	13:00	17:00	21:00	01:00	05:00	09:00	13:00	17:00	21:00	01:00	05:00	09:00	13:00	17:00	21:00						
30.11.2022 - 02.12.2022		21	23	01	03	05	07	09	11	13	15	17	19	21	23	01	03	05	07	09	11	13	15	17	19	Gesamt
<b>Medikamente</b>																										
<b>Regelmässig</b>																										
Seroquel 100mg Ftbl. 100 mg/Tabl					100 <sub>mg</sub>		100 <sub>mg</sub>			300 <sub>mg</sub>								100 <sub>mg</sub>		100 <sub>mg</sub>						700 mg
Esmeron 10mg / ml 10 mg/ml																			150 <sub>mg</sub>							150 mg
<b>Medikamenteninfusionen</b>																										
<b>Ziel</b>																										
Dexdor 1000µg-Bypass 20 µg/ml	7 <sub>ml/h</sub> !			7 <sub>ml/h</sub> !		7 <sub>ml/h</sub> !	7 <sub>ml/h</sub> !			7 <sub>ml/h</sub> !				7 <sub>ml/h</sub> !				7 <sub>ml/h</sub> !	7 <sub>ml/h</sub> !				7 <sub>ml/h</sub> !		6606 µg	
Ketanest 1250mg Perfusor 25 mg/ml	7 <sub>ml/h</sub> !	7 <sub>ml/h</sub> !	7 <sub>ml/h</sub> !			7 <sub>ml/h</sub> !	7 <sub>ml/h</sub> !			7 <sub>ml/h</sub> !								7 <sub>ml/h</sub> !		7 <sub>ml/h</sub> !	7 <sub>ml/h</sub> !				7 <sub>ml/h</sub> !	8252 mg
Propofol 2% 50ml-Perfusor 20 mg/ml	7 <sub>ml/h</sub> !	7 <sub>ml/h</sub> !		7 <sub>ml/h</sub> !		7 <sub>ml/h</sub> !	7 <sub>ml/h</sub> !	7 <sub>ml/h</sub> !	7 <sub>ml/h</sub> !	5 <sub>ml/h</sub> !					5 <sub>ml/h</sub> !					5 <sub>ml/h</sub> !				5 <sub>ml/h</sub> !		5553 mg
Propofol 2% 50ml-Perfusor 20 mg/ml	7 <sub>ml/h</sub> !	7 <sub>ml/h</sub> !		7 <sub>ml/h</sub> !	7 <sub>ml/h</sub> !	7 <sub>ml/h</sub> !	7 <sub>ml/h</sub> !			5 <sub>ml/h</sub> !					5 <sub>ml/h</sub> !					5 <sub>ml/h</sub> !				5 <sub>ml/h</sub> !		5565 mg
Sevofluran Baxter 100% 1 ml/ml										8 <sub>ml/h</sub> !	12 <sub>ml/h</sub> !	12 <sub>ml/h</sub> !				12 <sub>ml/h</sub> !	12 <sub>ml/h</sub> !	12 <sub>ml/h</sub> !	12 <sub>ml/h</sub> !	0 <sub>ml/h</sub> !	12 <sub>ml/h</sub> !		12 <sub>ml/h</sub> !	12 <sub>ml/h</sub> !	12 <sub>ml/h</sub> !	317 ml
Sufenta 2mg / 50 NaCl 0.02 mg/ml NaCl 0.9 % 0.5 ml/ml										6 <sub>ml/h</sub> !								6 <sub>ml/h</sub> !		6 <sub>ml/h</sub> !	6 <sub>ml/h</sub> !			6 <sub>ml/h</sub> !		3.26 mg 81.5 ml
Ultiva 5mg / 50 ml NaCl 0.1 mg/ml	7.5 <sub>ml/h</sub> !	7.5 <sub>ml/h</sub> !		7.5 <sub>ml/h</sub> !		7.5 <sub>ml/h</sub> !	7.5 <sub>ml/h</sub> !																			14.5 mg
Ultiva 5mg / 50 ml NaCl 0.1 mg/ml	7.5 <sub>ml/h</sub> !	7.5 <sub>ml/h</sub> !		7.5 <sub>ml/h</sub> !		7.5 <sub>ml/h</sub> !	7.5 <sub>ml/h</sub> !						5 <sub>ml/h</sub> !					5 <sub>ml/h</sub> !		5 <sub>ml/h</sub> !				5 <sub>ml/h</sub> !		27.9 mg

Trend Infektion 2

24.11.2022 09:00 - 05.12.2022 09:00



Infektionsparameter

25.11.2022 07:11 - 05.12.2022 07:11

Variablen	Zeit	05.12.22	04.12.22	03.12.22	02.12.22	01.12.22	30.11.22	29.11.22	28.11.22	27.11.22	26.11.22
PCT 0-0.5[ng/ml]	06:07	3.60	0.60	0.50	0.50	0.60	0.70	1.00	1.40	2.50	3.80
LEUKO 3.6-10.2[G/l]		29.1	21.1	22.6	15.6	13.7	14.0	14.2	14.6	14.1	13.8
CRP -0.5[mg/dl]			44.60	38.10	31.30	30.40	29.80	27.50	24.10	20.90	26.70
THRO 160-370[G/l]		332	323	296	307	276	210	158	127	125	178
KREACR 50-110[ml/min]		34.00!	61.20!	77.80!	41.50	91.80!	112.50	93.10!		101.10	107.90!
IL-6 0-7[pg/mL]		3955.0	396.0	374.0	237.0	143.0	148.0	192.0	189.0	154.0	107.0

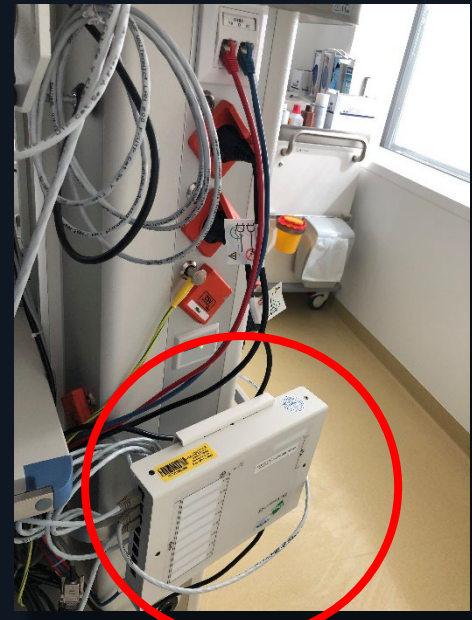
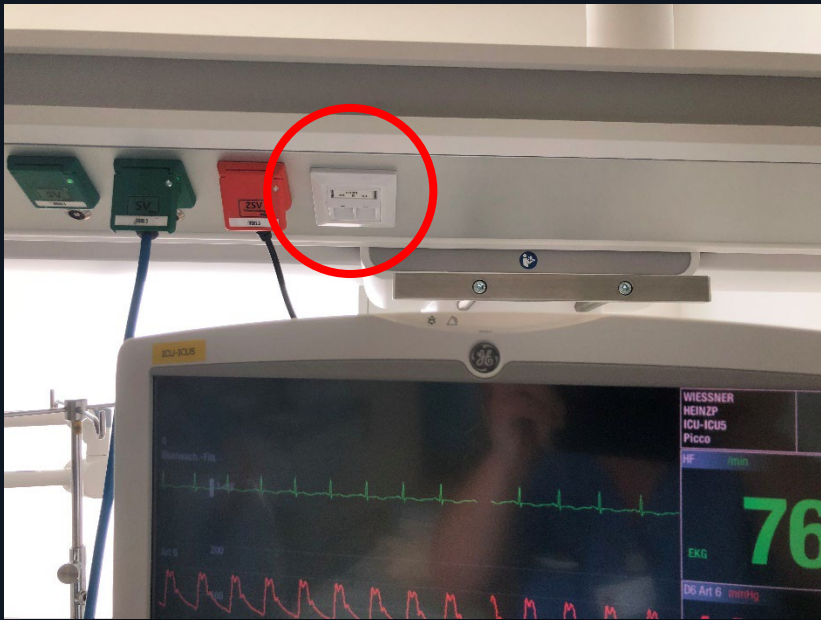
Covid (Gesamter Zeitraum)

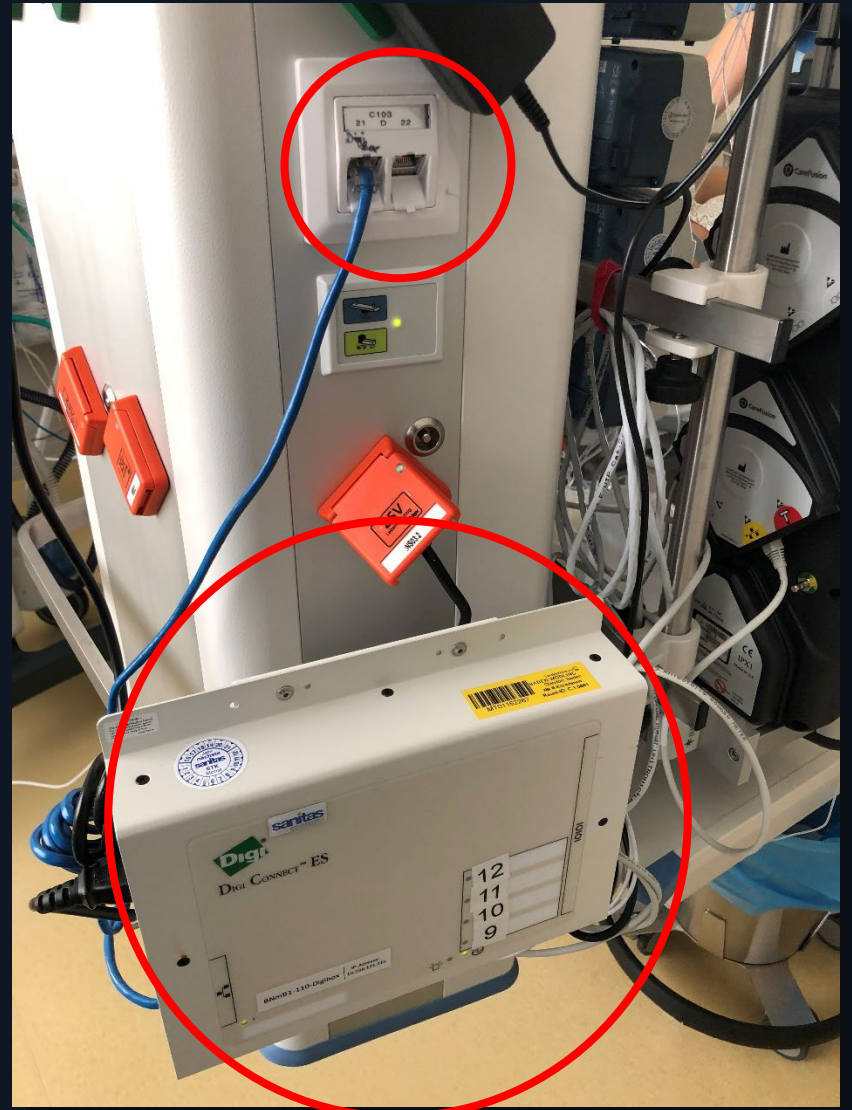
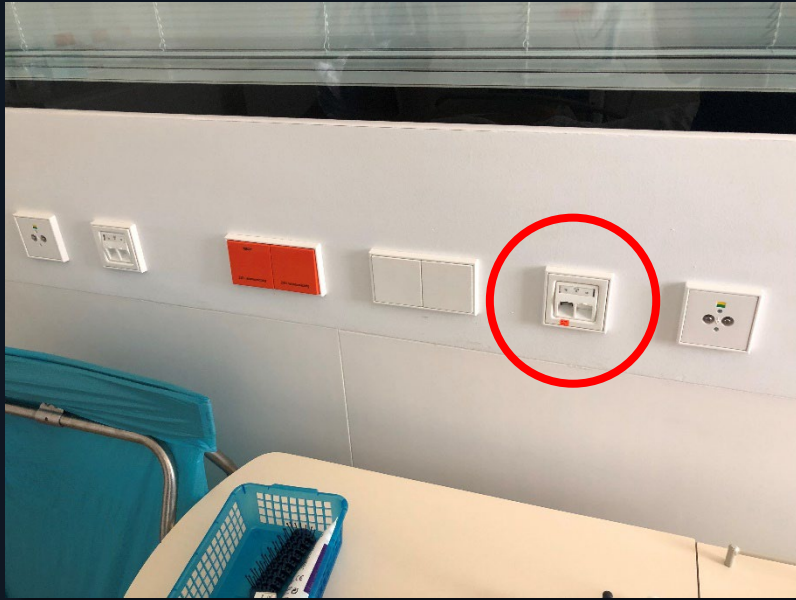
Variablen	Zeit	01.12.22	28.11.22
		05:30	04:55

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***přístrojové  
vybavení***

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## **Baden bei Wien**

- 442 lůžek, cca 900 zaměstnanců

### **Anästhesie** (6 Haupt-OP, 6 Außenstellen, 2 Schockräume)

- cca 10000 - 11000 anestézií ročně

### **Intensivmedizin**

- 8 ICU lůžek, 8 ICU/IMCU lůžek, 8 CCU lůžek

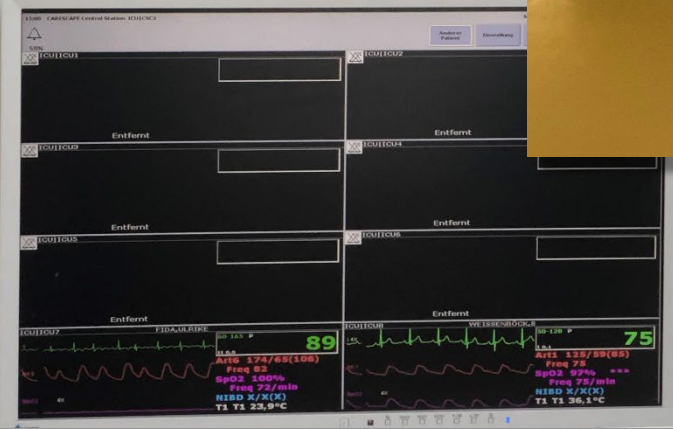
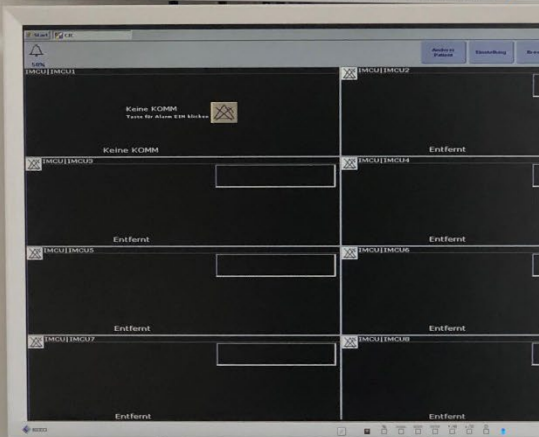
- obloženost: 96,3 %

- > 50 % internistických pacientů

- ventilovaných 88,2 %; CRRT cca 800 dní ročně

### **Notfallmedizin**

- cca 3500 primárních zásahů, 850 sekundárních transportů

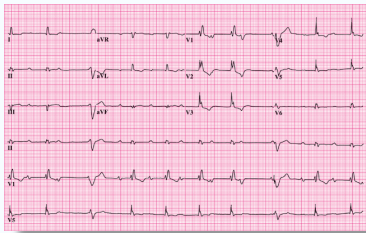




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***spolupráce  
s ostatními HIS***

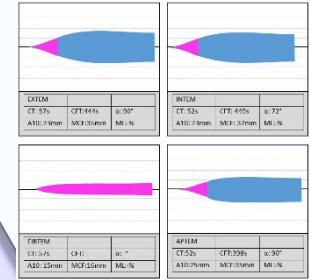
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ICU

Notarzt

OP



PDMS

emergency room

Labor

Parameter	Value	Unit	Normal Range
Temp	38.5	°C	36.0 - 38.0
HR	110	1/min	60 - 100
RR	20	1/min	12 - 20
SpO2	95	%	95 - 100
MAP	65	mmHg	60 - 90
SBP	110	mmHg	90 - 120
DBP	70	mmHg	60 - 80
HRV	50	ms	40 - 100
PRP	160	ms	120 - 200
QTc	380	ms	350 - 440
QT	400	ms	370 - 440
QTd	420	ms	380 - 460
QTn	440	ms	400 - 460
QTm	460	ms	420 - 460
QTs	480	ms	440 - 460
QTp	500	ms	460 - 460
QTt	520	ms	480 - 460
QTc	380	ms	350 - 440
QTd	420	ms	380 - 460
QTn	440	ms	400 - 460
QTm	460	ms	420 - 460
QTs	480	ms	440 - 460
QTp	500	ms	460 - 460
QTt	520	ms	480 - 460



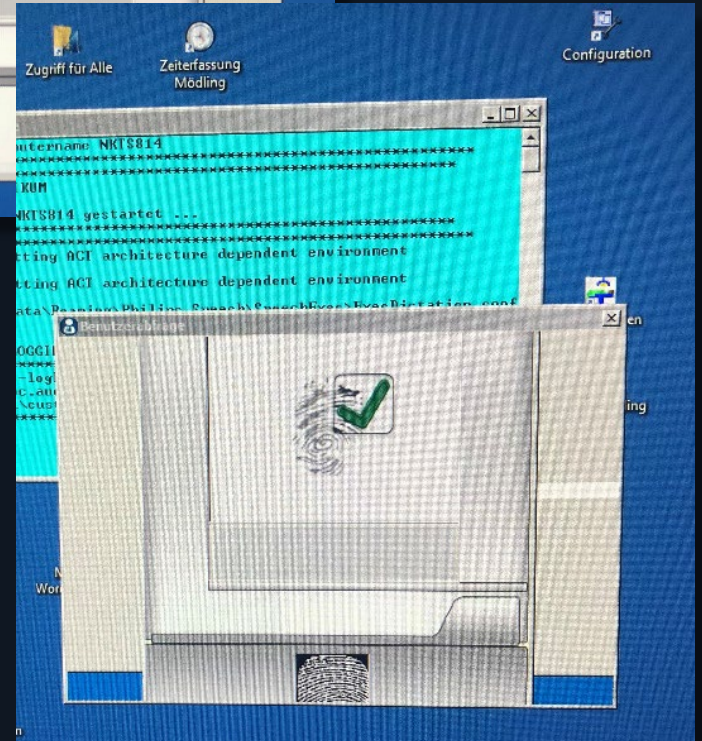
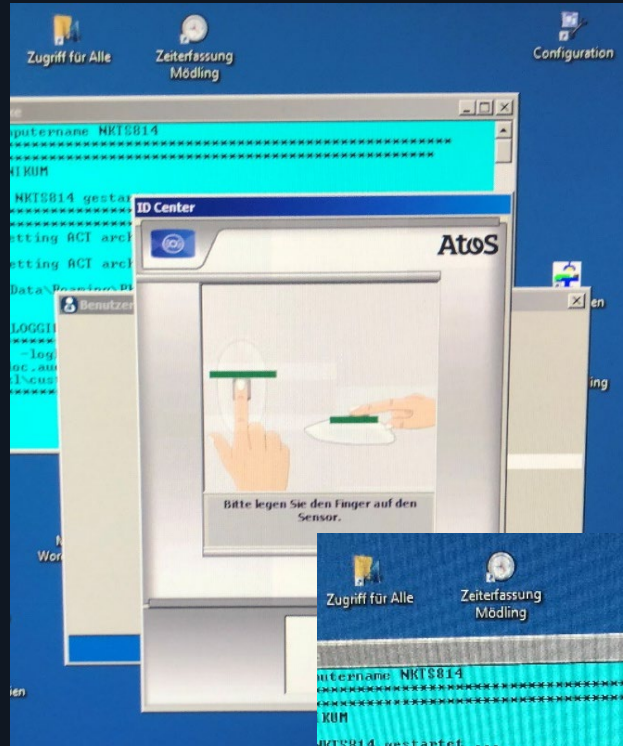
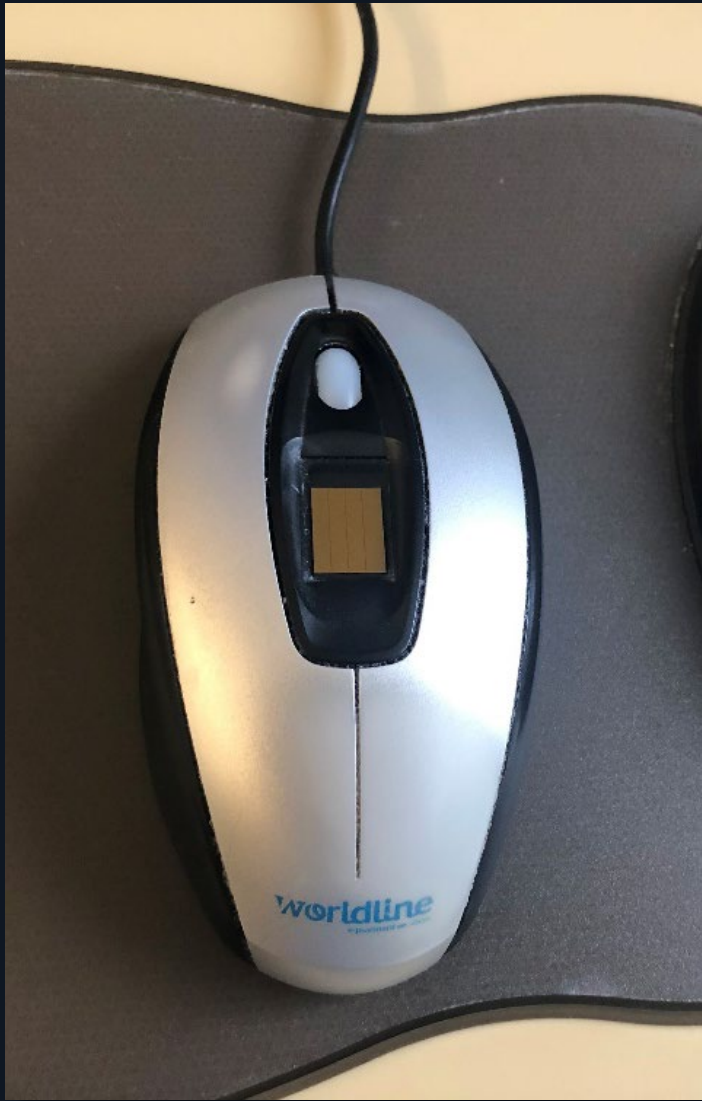
rtg/CT



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***zabezpečení***

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*ordinace*  
*léků*

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## *ordinace léků*

- **orders** are **pre-scheduled**
- task **reminders** keep **workflow** on track
- **worklist** – follow step-by-step processes
- avoid adverse drug events  
*(optional integration with certified drugs database)*
- ordinace přehledné, jednoznačné
- zkrácení času SZP potřebného pro dokumentaci

Medikamenten-Verordnungen

Plan Verordnung Medikation

**Medikamenten Allergien:**

Basis Flüssigkeit über Medikamente: 1587..16105 ml/24h

Präparat	Menge	Zeiten	Dosen	Applik.-Art	Verordnet(schriftlich)	Unterschrieben	Gegengezeichnet
Bepanthen - Lösung	3 ml	/ 12 h		inhal	bnbrunal (BNBRUNAL)	bnbrunal	
Calcium-Gluconat 2A / 1...	2 Amp	/ 12 h		iv-inf	bnbrunal (BNBRUNAL)	bnbrunal	
Combivent Inhalationslös...	2,5 ml	/ 8 h		inhal	bnwillsa (BNWILLSA)	bnwillsa	
Dalacin C 900mg / 100 N...	900 mg	/ 8 h		iv-inf	bnwillsa (BNHAASNA)	bnwallmi	
Diamox 250mg Tbl.	500 mg	/ 12 h		p os	bnwillsa (BNWILLSA)	bnwillsa	
Erythrocin 1g Trstamp + ...	100 mg	/ 8 h	9	iv-inf	bnbrunal (BNBRUNAL)	bnbrunal	
Inspira 25 mg - Filmtbl.	25 mg	/ 24 h		p os	bnbrunal (BNBRUNAL)	bnbrunal	
Irvariz 1g	1 g	/ 8 h		iv-inf	bnwillsa (BNHAASNA)	bnwallmi	
Lovenox 100mg-Spritz...	100 mg	/ 12 h		sc-inj	bnstibbr (BNSTIBBR)	bnstibbr	
Movicol-Pulver	1 Btl	/ 12 h		enteral	bnbrunal (BNBRUNAL)	bnbrunal	
Mucosolvan Lösung 7,5...	22,5 mg	/ 12 h		inhal	bnwillsa (BNWILLSA)	bnwillsa	
Nicotinell 21mg/24h	21 mg	/ 24 h		Haut	bnwallmi (BNWALLMI)	bnwallmi	
Pantoloc 40 mg Trst Amp.	40 mg	/ 24 h		iv-inj	bnwillsa (BNWILLSA)	bnwillsa	
Seroquel 100mg Ftbl.	100 mg, 100 mg, 300 mg	08:00, 14:00, 20:00		p os	bnwillsa (BNWILLSA)	bnwillsa	

Ziel/Infusion/Bei Bedarf

Präparat	Dosis/Rate	Ziel	Max /24h	Applik.-Art	Verordnet(schriftlich)	Unterschrieben	Gegengezeichnet
Dexdor 1000µg-Bypass	0,9..12,6 ml/h (0,1...1,4 µg...	Perfusor		Perfusor	bnwillsa (BNWILLSA)	bnwillsa	
Kalium-Malat infusionszu...	0..20 ml/h (0..20 mmol/h)	50mmol/50ml;		Perfusor	bnwillsa (BNWILLSA)	bnwillsa	
Ketanest 1250mg Perfusor	0,5..8 ml/h	Perfusor		Perfusor	bnwagnba (BNWAGNBA)	bnwagnba	
Lasix 120 mg / 40 NaCl...	0,5..4 ml/h	Perfusor	1500 mg	Perfusor	bnstibbr (BNSTIBBR)	bnstibbr	
NORadrenalin 5mg Perfu...	0,108..54 ml/h (0,001...0,5...	Perfusor		Perfusor	bnrescth (BNRESCTH)	bnrescth	
NovoRapid 50 I.E / 50 N...	0,5..8 ml/h	Perfusor		Perfusor	bnwillsa (BNWILLSA)	bnwillsa	
Propofol 2% 50ml-Perfusor	9..36 ml/h (1..4 mg/kg/h)	Perfusor		Perfusor	bnrescth (BNRESCTH)	bnrescth	
Propofol 2% 50ml-Perfusor	9..36 ml/h (1..4 mg/kg/h)	Perfusor		Perfusor	bnrescth (BNRESCTH)	bnrescth	
Sevofluran Baxter 100%	2..10 ml/h	Perfusor		Perfusor	bnvoegeja (BNVOGEJA)	bnvoegeja	
Sufenta 2mg / 50 NaCl	1..10 ml/h (0,222...2,22 µg...	Perfusor		zv-inf	bnvoegeja (BNVOGEJA)	bnvoegeja	
Ultiva 5mg / 50 ml NaCl	1,08..216 ml/h (0,01...2 µg...	Perfusor		Perfusor	bnwillsa (BNWILLSA)	bnwillsa	
Ultiva 5mg / 50 ml NaCl	1,08..216 ml/h (0,01...2 µg...	Perfusor		Perfusor	bnrescth (BNRESCTH)	bnrescth	
ELO-MEL Isoton boluswe...	500..500 ml			iv-inj	bnwallmi (BNMASCFR)	bnwallmi	
KADC	50..500 ml/h			iv-inf	bnbrunal (BNBRUNAL)	bnbrunal	
Lasix 20 mg / 2ml	10..20 mg			iv-inj	bnwillsa (BNWILLSA)	bnwillsa	
Novalign Amp. 2,5g / 5ml	100 ml/h			iv-inf	bnsevea1 (BNWILLSA)	bnwillsa	

Medikamenten Allergien:

Anzeigen

Patientengruppe: ICU/ICU  Station: ICU  Alle Medikamente

Medikamentengruppen: Alle

Präparate

Wirkstoff

- Noax uno 200mg retard
- Noctamid-Tabletten
- Nocutil-Nasenspray 0,1mg/ml
- Nomexor 5mg-Tabl.
- Nomexor 5mg-Tbl.
- Nootropil 1200mg Ftbl.
- Nootropil 12g Infusionsflasche
- Nootropil 33,3% orale Lösung
- NORadrenalin 10mg/10ml Amp.**
- NORadrenalin 10mg Perfusor
- NORadrenalin 1mg/ml Amp.
- NORadrenalin 1mg Perfusor - Dosierung!!
- NORadrenalin 20mg Perfusor
- NORadrenalin 5mg Perfusor
- Noradrenalin A
- Noradrenalin B
- Norcuron 10 mg / 10 ml
- Norfloxacin 400mg Ftbl.
- Norit Carbomix Granulat
- Normastigmin 2,5mg Ampullen
- Normastiamin 2.5ma Kurzinfusion

Noradrenalin

Präparate

- Noax uno 200mg retard
- Noctamid-Tabletten
- Nocutil-Nasenspray 0,1mg/ml
- Nomexor 5mg-Tabl.
- Nomexor 5mg-Tbl.
- Nootropil 1200mg Ftbl.
- Nootropil 12g Infusionsflasche
- Nootropil 33,3% orale Lösung
- NORadrenalin 10mg/10ml Amp.**
- NORadrenalin 10mg Perfusor
- NORadrenalin 1mg/ml Amp.
- NORadrenalin 1mg Perfusor - Dosierung!!
- NORadrenalin 20mg Perfusor
- NORadrenalin 5mg Perfusor
- Noradrenalin A
- Noradrenalin B

Noradrenalin

Standard-Verordnungen

Primärverordnungen...

Basis...

Zielverordnung/Infusion...

Bei Bedarf...

Schließen

Hilfe...



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***střední  
zdravotnický  
personál***

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## *nurses*

- **nurse** tasks can be **reallocated** away from paper-based form filling and back to traditional **patient care**
- task **reminders** keep **workflow** on track
- **worklist** – follow step-by-step processes
- saved up nurse time by approximately **5-10 mins every hour**
- **2-4 hours** over a **24 hour** period,  
or **730-1460 hours annually/nurse**
- **less time** for **documentation**



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***implementace***

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## ***problémy implementace***

- **všichni jsou proti**
- **vedení nemocnice** (ekonomický náměstek)
- **IT** oddělení
- dodavatelé **přístrojů**
- **střední zdravotnický** personál
- chybí **konfigurovatelnost** a intramurální **adaptabilita**
- není výstup na **webovou aplikaci**
- chybí **integrace** a **konektivita** s **HISs**
- **human errors**

<b>Eporatio 30.000</b> IU.E./1ml	1170000 I.E.	17.01.2015 10:52	11.05.2015 08:00	39	<b>3 d</b>	<b>sc-inj</b>
Fenistil 4 mg Amp	12 mg	22.02.2015 10:07	23.02.2015 08:00	3	12 h	iv-inf
NaCl 0.9 %	300 ml					
<b>Ferinject 500mg</b>	7000 mg	17.01.2015 10:52	18.04.2015 08:00	14	<b>7 d</b>	<b>ad-inf</b>
NaCl 0.9 %	1400 ml					

**Eporatio 30.000 IU s.c. á 3d (17.1. – 11.5.2017)**

celkem **1.170.000 IU**

**Ferinject 500 mg i.v. á 7d (17.1. – 18.4.2017)**

celkem **7.000 mg**



# Co bych si vzal s sebou z Rakouska zpátky do ČR

**OA Dr. Stibor B.**

*ICU, Landeskrlinikum Baden bei Wien, Austria*

# 10 věcí, bez kterých bych se už nechtěl obejít

**OA Dr. Stibor B.**

*ICU, Landeskrlinikum Baden bei Wien, Austria*





**... děkuji Vám za pozornost**