Bedside interactive education possibilities in critically ill neonates

An infant with pulmonary hypertension & pneumothorax

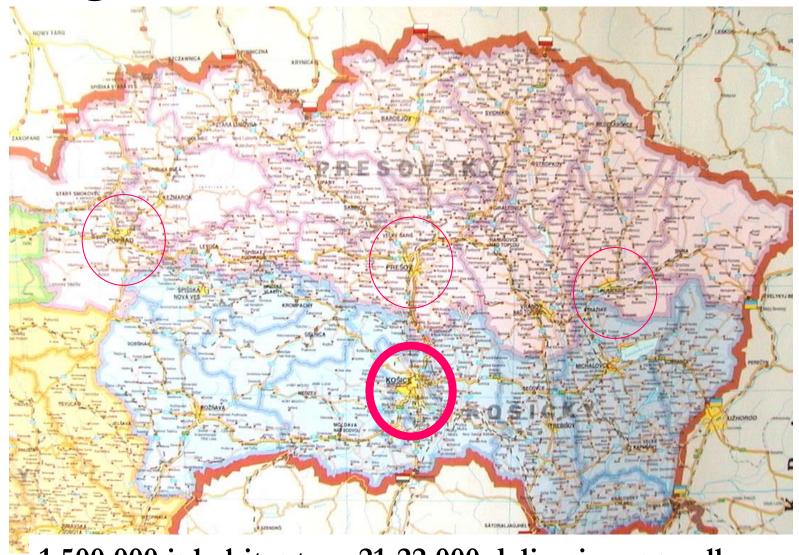
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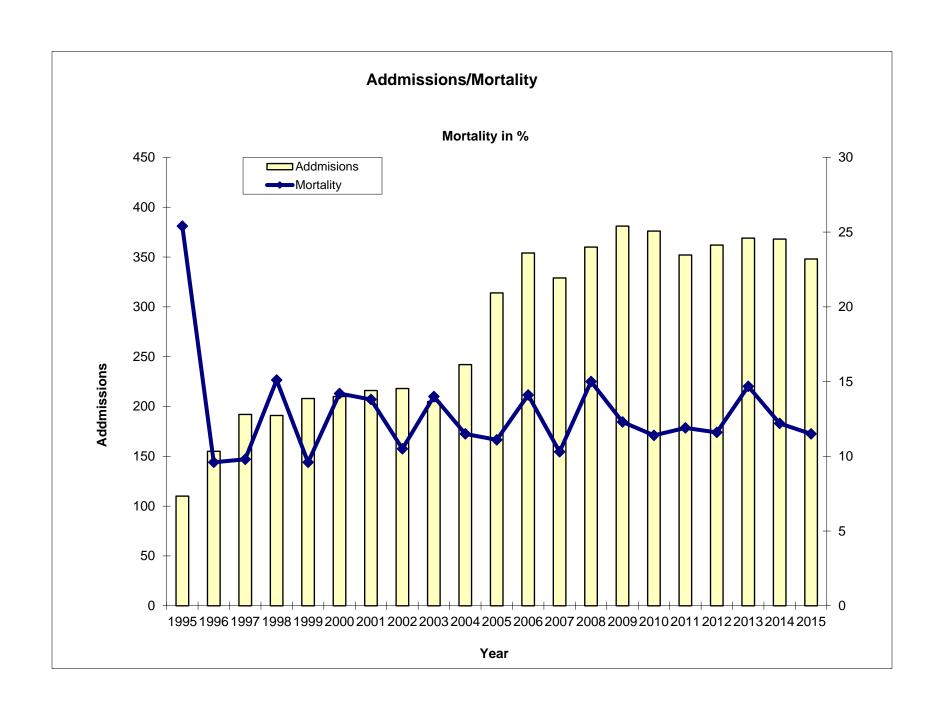


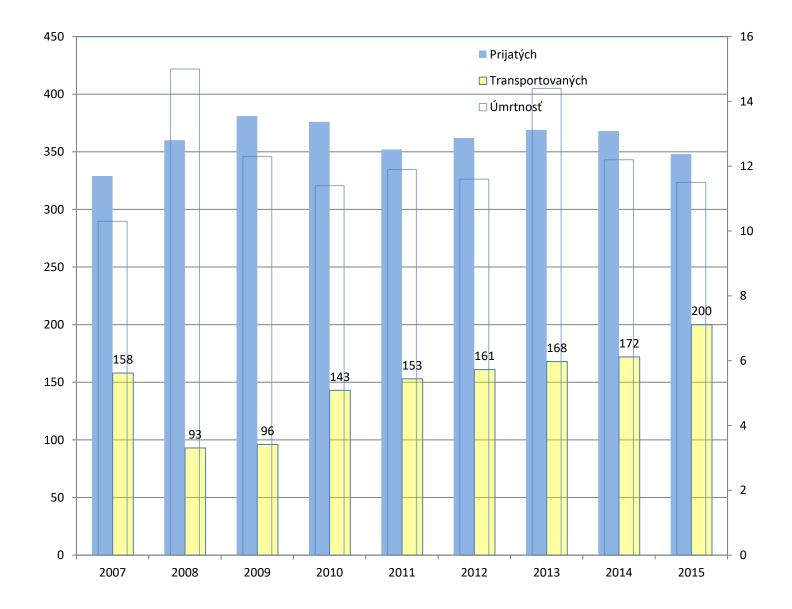


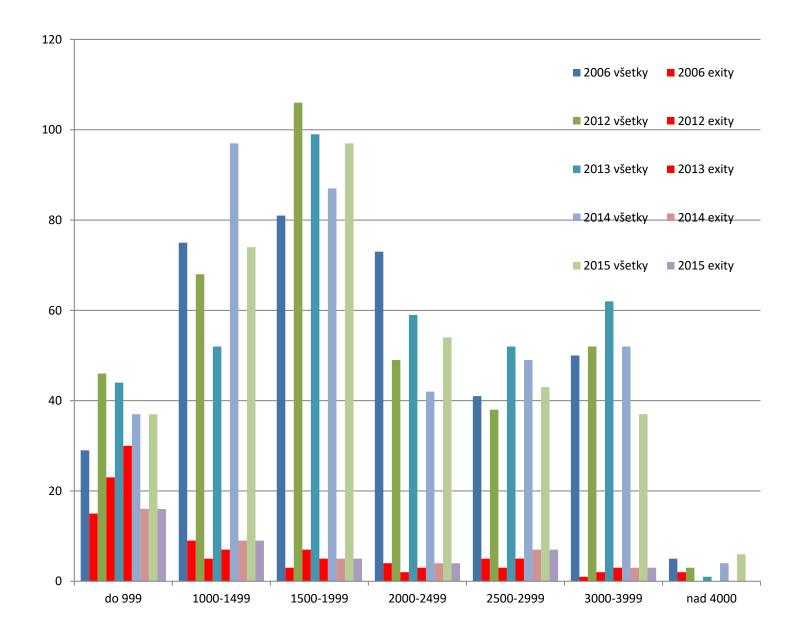
Region of our Perinatal Center

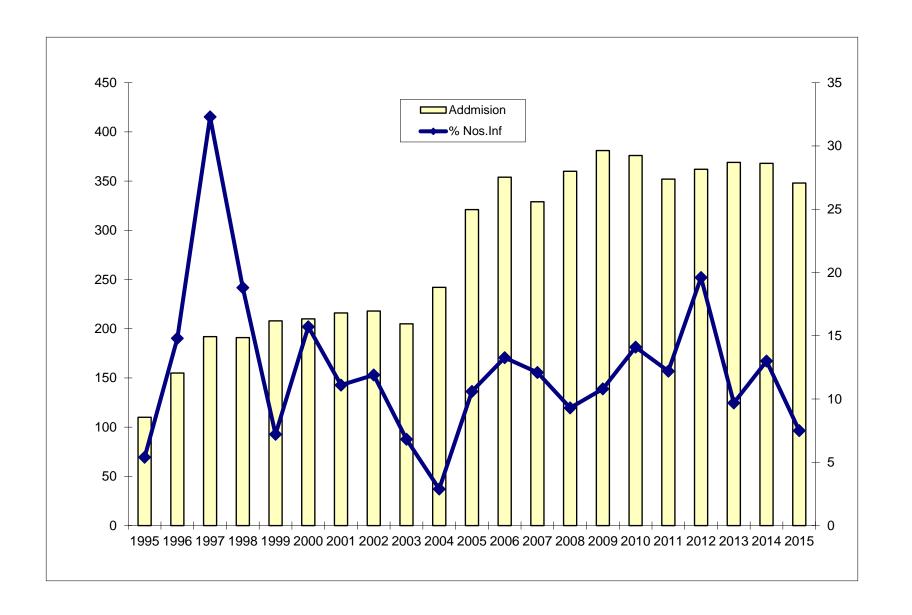


1,500,000 inhabitants 21-22,000 deliveries annually













Goals...

- Maintain quality
- Decrease regional neonatal mortality and morbidity
- Improve regionalisation
- Add equipment to cope with increasing admissions
- Address future needs

Clinical Interests

- Early stabilisation of the lungs and low oxygen
- Prevention of PIVH and cPVL
- Nosocomial infection prevention and treatment
- Understand transition and how best to intervene
- Prevention of BPD, ROP, NEC, PDA goal
- Prevention of HIE
- Solve the problem of PPHN and MAS
- Upgrade the ventilation strategies

The aim

- To use all possible visualisation techniques to create visual impression during education process
- Search for the best solution for the baby and document it
- Overlap of the information based medicine with the evidence based medicine

Data working with

 Information based medicine - applied in emergency situations

Evidence based medicine – applied in clinical practice

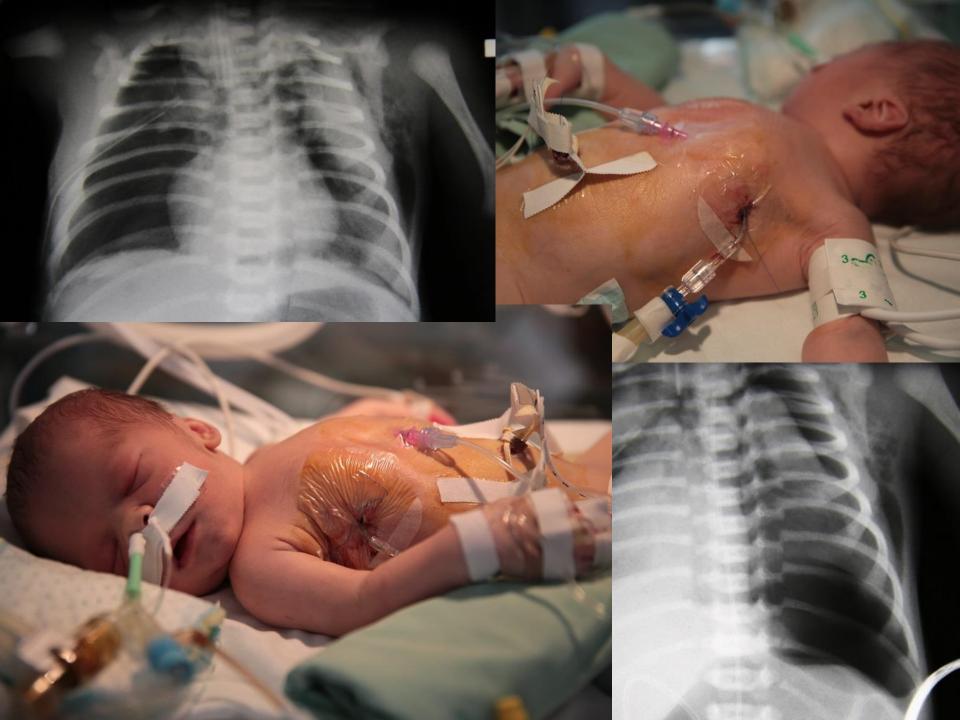
Information based medicine



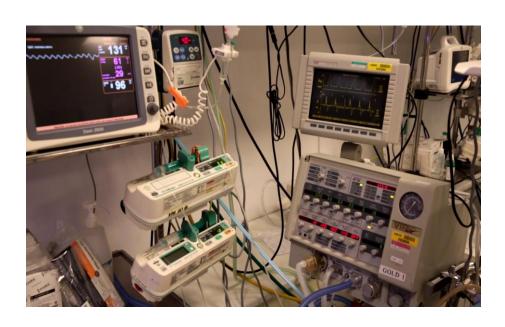
Evidence based medicine

1.9 Cerebral palsy in survivors assessed

	Hypothermia		Standard care			Risk Ratio	Risk Ratio
Study or Subgroup	Events	Total	Events	Total	Weight	M-H, Fixed, 95% CI	M-H, Fixed, 95% CI
1.9.1 Selective head cool	ing with m	ild syst	emic hype	othermi	a		
Gunn 1998	3	15	1	10	0.8%	2.00 [0.24, 16.61]	
Cool Cap Study 2005	23	72	29	68	19.5%	0.75 [0.48, 1.16]	
Zhou 2010	10	80	19	67	13.6%	0.44 [0.22, 0.88]	32
Subtotal (95% CI)		167		145	33.9%	0.65 [0.46, 0.94]	•
Total events	36		49				8
Heterogeneity: Chi ² = 2.69	, df = 2 (P =	= 0.26);	$I^2 = 26\%$				
Test for overall effect: Z =	2.29 (P = 0	.02)					
1.9.2 Whole body cooling	is .						
NICHD Study 2005	15	77	19	64	13.6%	0.66 [0.36, 1.18]	
TOBY Study 2009	33	120	48	117	31.9%	0.67 [0.47, 0.96]	a - ■-
neo.nEURO Study 2010	4	32	10	21	7.9%	0.26 [0.09, 0.73]	-
ICE Study 2011	21	79	17	59	12.8%	0.92 [0.54, 1.59]	
Subtotal (95% CI)		308		261	66.1%	0.67 [0.52, 0.86]	•
Total events	73		94				
Heterogeneity: Chi ² = 4.58	, df = 3 (P =	= 0.21);	$I^2 = 34\%$				
Test for overall effect: Z =	3.08 (P = 0)	.002)					
Total (95% CI)		475		406	100.0%	0.66 [0.54, 0.82]	•
Total events	109		143				**
Heterogeneity: Chi ² = 7.27	, df = 6 (P =	= 0.30);	$1^2 = 17\%$				0.05 0.2 1 5 20
Test for overall effect: Z =	3.84 (P = 0	.0001)					0.05 0.2 1 5 20 Favours hypothermia Favours standard car
Test for subgroup difference		500 PE 115 B	f = 1 (P = 0).93), I ²	= 0%		ravours hypothernia ravours standard cal



Complex and expensive treatment was necessary





Switch to the visualisation system, demo of the reviews and selection scans from tablet using secured wifi network .



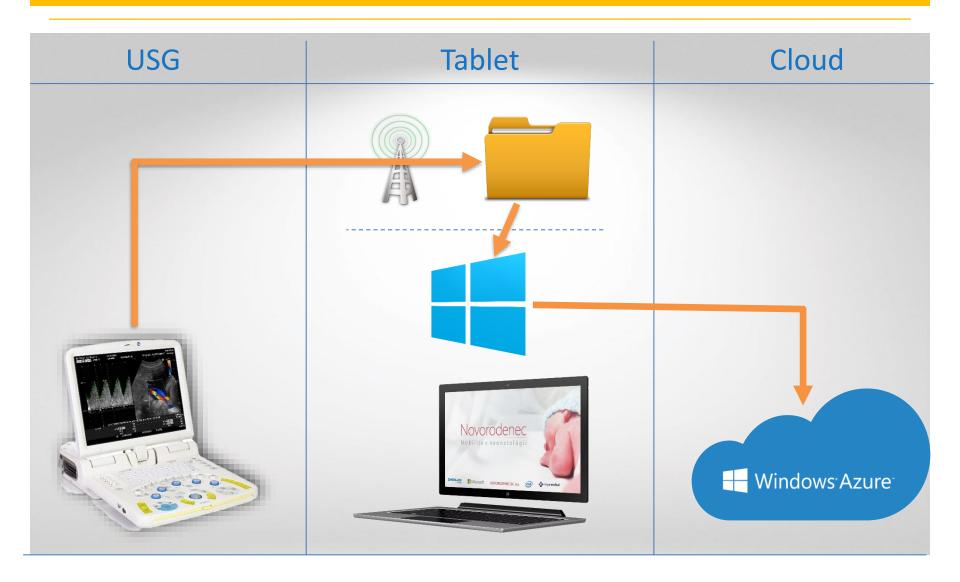
Continuity

- Transformation of the system to the regional hospitals
- Network of the tablets working mainly for transported critically ill newborns

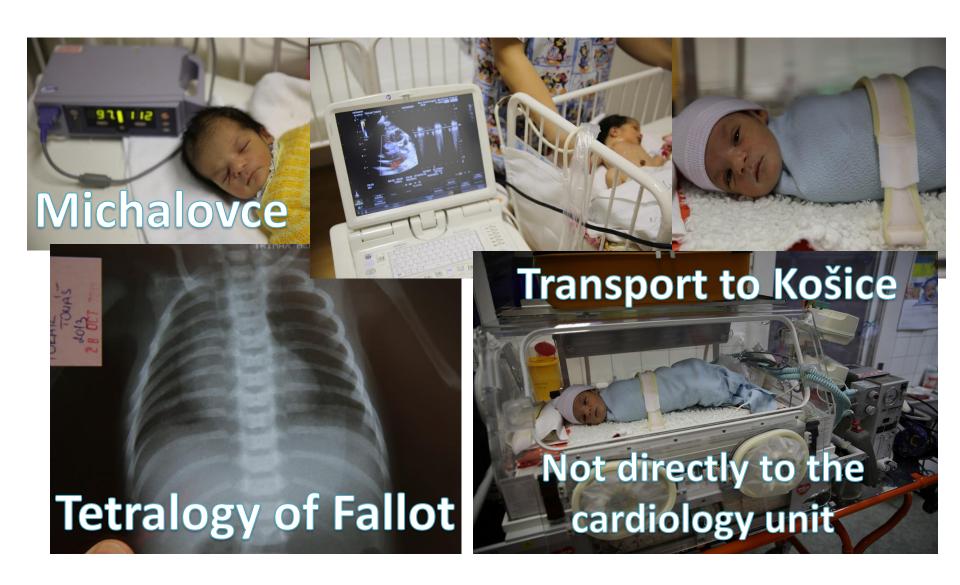
Data availability in all places



Tablet – Ultrasound - Cloud



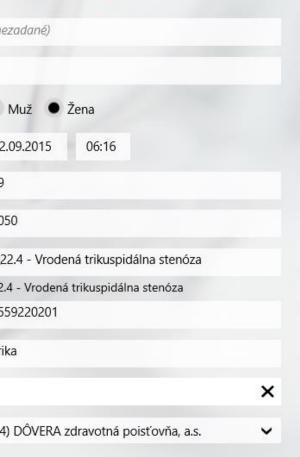






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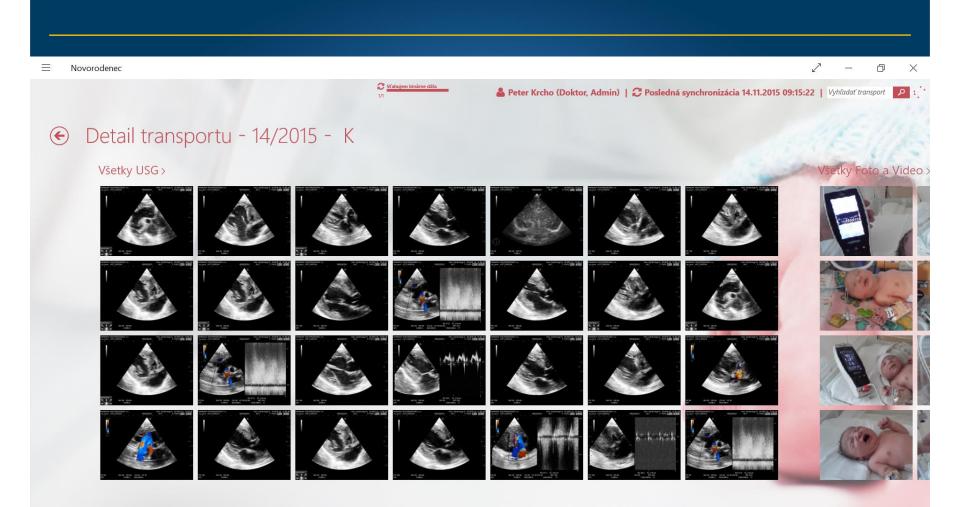
kladné údaje



ABR-BIO

Test vykona	aný	Ph	Pco2	Po2	Bec	HcO3	So2
22.09.2015 9:2	21:42	7,41	4,2	5,23	-5,5	20	75
22.09.2015 12:	00:23	7,39	5,28	4,11	-4,5	20	55

Pridať Zmeniť Zn

















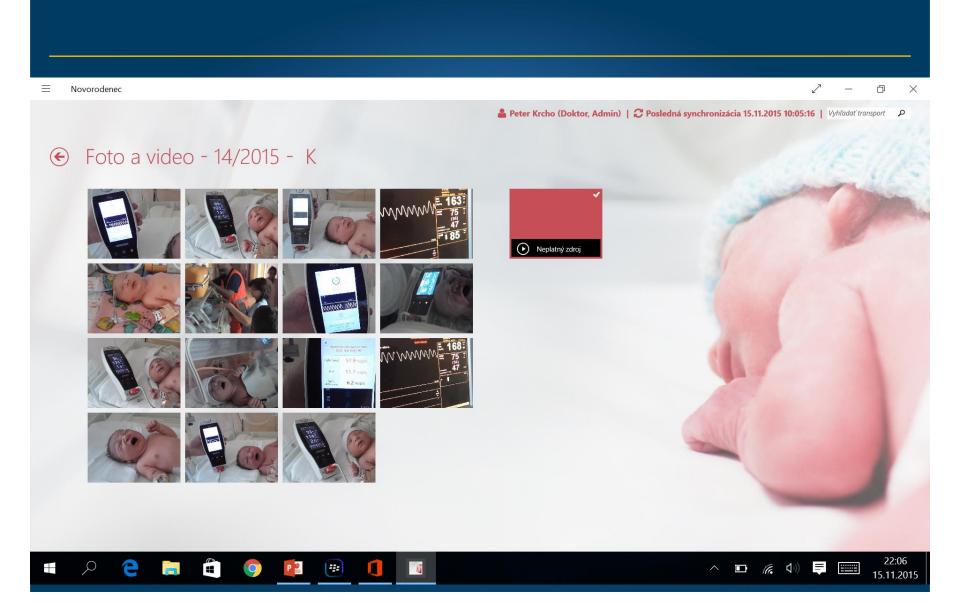












Advantages

- Different communication tools
- Consultation in community of nurses and physicians
- Data availability everywhere in the region
- Consultation possibility on regional and international level
- New application possibilities coming out during clinical practice





https://www.youtube.com/watch?v=YlaSYplCa3Q





The outcome of our critically ill, finally healthy newborn...he grow up



