

Computerized Physician Order Entry (CPOE) combined with Clinical Decision Support System (CDSS)

Logipren



A unique e-solution to protect newborns' and children's health by reducing the risk of medication prescription errors



Protecting newborns' and children's health by reducing the risk of prescription errors

- For every 6 manual prescriptions in neonatology, one medication error*
- Logipren is a prescription management software specifically designed for neonatal and paediatric intensive care units that meets the specific medical prescription needs of these patients

 Designed by a group of neonatologists, pharmacists, nurses and IT developers



 Relies on a proprietary drug database (Thesaurus) for neonatal and paediatric intensive care units of over 750 drugs and about 2,200 prescription protocols, including labelled drugs, off-label drugs, enteral and parenteral nutrition specifications, which is continuously updated

The Thesaurus is built from a variety of scientific publications (manufacturer product specifications, American Pharmacists Association guidelines, neonatal and paediatric scientific society guidelines, and international bibliography) and national guidelines and is tailored to each facility's practices

* Horri J et al. Frequency of dosage prescribing medication errors associated with manual prescriptions for very preterm infants. J Clin Pharm Ther 2014;39:637 Campino al. Medication prescription and transcription errors in a neonatal unit. An Pediatr (Barc) 2006;64:330

Logipren, a reliable, simple and effective prescription software



Medication prescription assistance, including labelled and off-label drugs, enteral and parenteral nutrition, medical examinations and patient monitoring

Patient-tailored dosage calculated automatically according to patient's gestational age, postnatal age, postmenstrual age, body weight and indication. Full elimination of manual calculations

Security ensured through prescription guidelines, tailored prescriptions, and alerts

To date, more than 6 million prescriptions for 102,000 newborns have been recorded in the database – not a single medication error has been generated by the software

Compliance with the current and upcoming European Union Medical Devices Regulation (CE marking) and General Data Protection Regulation (GDPR)



Logipren, a secure preparation

- The underlying principle in preparing medication for newborns is to minimize the volume of medication administered to the patient in order to maximize remaining available volume for nutrition
- Hidden nutritional intake from medication is automatically accounted for in nutrition prescription
- Instructions for medication preparation are automatically generated in order to avoid manual transcription and to record all caregivers' actions (including reconstitution, predilution, dilution, type and volume of solute, total volume, flow rate, and final concentration)
- Flushing is automatically calculated and accounted for



Logipren, a tool for neonatal and paediatric medication and nutrition prescriptions

• Logipren calculates the doses, preparation volumes, flow rate for administration, and flushing for each drug and sends all data to the digital care plan

Gentamicin (GENTAMICIN PAEDIATRIC 20mg/2ml sol inj (Zentiva))		- 💿	(1)	•					
Indication(s) 🗸 neonatal sepsis 🗌 Other									
Treatment 🔅 Started on Feb 22, 2021 (D10) 🔺 Treatment plan must be reassessed between H24 and H72 Notes									
PH: 3 to 5.5									
Off label benzoates, sulphite Feb 22, 2021 at 18th17 to?	Ē			0					
Prescription:2.5 mg/kg/day, ie5mg/kg/does every48 h, ie 6 mg/does every48 h by intravenous infusion \sim in60minpreparation:Ampoule of 20 mg for 2 ml(10 mg/ml)(1/1) - Take 0.6 ml add1.4ml ifD5% \sim to obtain 2 ml = 6 mg (3mg/ml):Administration:Administrer 2 ml by intravenous infusion in 60 min (2 ml/h) (=6 mg; deviation 0 %)Flushing:2ml ofD5% \sim by intravenous infusion in 60 min (2 ml/h)									

- Takes into account the *hidden nutritional intake* from prescribed medication
- Recommends *daily nutritional intake* for patient based on ESPGHAN 2018 guidelines
- Updates nutritional intake in real time

Daily nutritional assessmen (Jul 3, 2020)															
	per os	Drug	Infusion	IPN	Total	Reco.			Per os	Drug	Infusions	IPN	Total	Reco.	
				-											
Vol	48.2	9.3	50	0	107.6	160-180	ml/kg/d	Na	3.2	0.1	0.2	0	3.5	2-5 (7)	mmol/kg/d
Cal	61.3	1.3	23	0	85.6	45-120	Kcal/kg/d	k	1.7	0	0	0	1.7	2-3	mmol/kg/d
AA	2.6	0	0.8	0	3.4	2,5 - 3,5 (NP)	g/kg/d	CI	1.9	0	0.3	0	2.2	2-5	mmol/kg/d
СНО	8.4	0.3	5	0	13.7	5,8- 17,3	g/kg/d	Ca	128.1	0	18.8	0	146.9	32-80	mg/kg/d
Lipids	1.9	0	0	0	1.9	3-4 (NP)	g/kg/d	Р	73.7	0	0	0	73.7	31-62	mg/kg/d
								Mg	11.2	0	2.5	0	13.7	2,5-5	mg/kg/d
Vit D	0	0	0	0	0	200-1000 (NP)	IU	Zn	1.26	0	0.1	0	1.36	0,4-0,5	mg/kg/d
			Ca/p: 1.99	Cal/A	A: 21.5	Reco.: ESPGHAN/ESPEN/ESPR/CSPEN Guidelines on pediatric parenteral nutrition. Clin Nutr.2018									

Alarms

▲ Total intake of calcium > 140 mg/kg/d (146.9 mg/kg/d)

- Total intake of Magnesium > 10 mg/kg/d (13.7 mg/kg/d)
- ▲ Total intake of Zinc > 1 mg/kg/d (1.36 mg/kg/d)



A balance between standardised and personalised medicine



Standardisation



Recommendations

- Manufacturer product specifications
- American Pharmacists Association guidelines
- Neonatal and paediatric scientific societies guidelines
- International bibliography
- National guidelines
- Hospital protocols





- Unit dose
- Daily dose
- Calculated unit dose
- Infusion time
- Renewal of loading dose
- Concentration of the final solution
- Administration interval
- Non-compliance of the proposed dose with the patient's characteristics



Customisation



Hospital configuration



Identification and updates



Curves, daily weight, Z-score, height, head circumference



Milk prescription, supplementation, administration, composition analysis



Individualised parenteral nutrition

Connectors providing data exchanges with:

- Patient Identification System (including patient's localisation within the hospital)
- LDAP (Lightweight Directory Access Protocol) to identify authorised users
- Electronic Medical Records
- Other connectors for specific applications and robots (parenteral nutrition, milk bank)
- Ongoing discussion about protocols/procedures
- Advice from fellow neonatologists and paediatricians
- Sharing of experience and knowledge
- Research on anonymised database of more than 6 million prescriptions (from 102,000 newborns)
- Comparison of practices

The main benefits of Logipren as an e-prescription software are:

Decrease in medical errors and associated costs to society

Improved patient care and health

Improved efficiency in the care process, time savings, and greater compliance with prescription guidelines

Greater traceability of data and documentation





Get in touch



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