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Advances in Remote IV Therapy Monitoring

Nordic Proof breakfast meeting in Oulu, Finland
19th Oct 2021
Mikko Savola, CEO, Monidor



**90% get IV therapy
70% gravity based**

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Problems due to inaccurate infusion fluid therapy

Complications^[1,4]

Longer hospital stay^[1,2,3]

Increased mortality^[5]



[1] Clin Med (Lond) 2007 Oct;7(5):482-5
[2] Ann Surg 2016 Mar;263(3):502-10
[3] Proc Nutr Soc 2010;69:488-98
[4] Anesthesiology 2005; 103:25-32
[5] BMC Nephrol 2017 Feb;18(1):45

A female healthcare worker in dark blue scrubs is sitting on a staircase, looking distressed. She has her hands on her head, and her eyes are closed. The background is a light-colored wall and a metal railing. The text "This is REAL" is overlaid in the center of the image.

This is REAL

Problem

Innovation

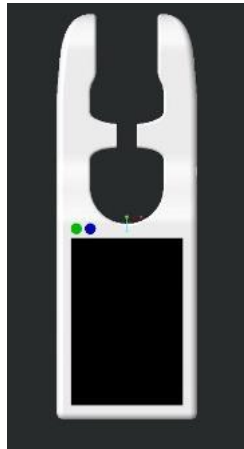
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Innovation evolution

2014



2015



2016



2018



2020



2021



2022



Idea



CE0598

CE0598

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Why New Innovation?



Patient Safety



Time Savings



Work Flow

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Monidor Effectiveness Study: Methods

- Follow-up questionnaires to nurses using Monidor remote IV therapy monitoring as part of hospital trial
- 12 departments in 6 Finnish hospitals
 - coverage approx. 1M patients
- Questionnaire topics:
 - IV infusion amounts
 - Routine room visits avoided
 - Earlier detection of infusion-related problems
 - Time savings
- Statistical analysis
 - partner ESiOR Oy
 - Outlier/blank responses detection
 - Outcomes:
 - Mean number of events avoided/problems detected earlier per shift
 - Mean time savings per shift
 - Comparisons:
 - Across departments
 - Across shifts (morning, evening, night)
 - Multivariate modelling
 - Generalised linear regression investigating the relation between time savings and events

Monidor Effectiveness Study: Preliminary Results

- N=152 replies (i.e., shifts)
- 11 blank responses deleted

Results per shift	Mean	SD	IQR
Infusions	2.27	1.16	1 - 3
– using Monidor	1.66	0.89	1 - 2
Routine visits avoided	2.06	1.38	1 - 3
– in isolation rooms	0.58	0.76	0 - 0
End of infusion detected	1.34	1.05	1 - 2
Risk of blockage detected	0.30	0.76	0 - 0
Unusual speed detected	1.30	1.23	0 - 2
Other problem detected	0.48	1.01	0 - 0
Time saved (minutes)	5.04	10.1	0 - 8

- Statistically significant differences between hospital departments
- Differences across shifts not quite statistically significant
- Time savings regression (min):

Coefficient	Mean	SE	P-value
(Intercept)	-1.35	1.68	0.422
Visit avoided	2.43	0.78	0.002
End of infusion detected	2.33	0.98	0.019
Risk of blockage, unusual speed, other problem detected	-0.69	0.39	0.084

- Conclusion: Monidor break-even point for time savings if approx. 0.56 visits can be avoided.



Monidor Effectiveness Study: Implications

- E.g., in a department with 3 daytime, 3 evening and 2 night nurses using Monidor - monthly results:*



415 routine room visits avoided



326 ends of infusion detected



74 impending cases of line blockage could be avoided



22 hours saved time for acute care



641€/mon Material related savings
630€/mon Nurse time-related savings

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*A user interface model was developed to aid hospital decision-makers in evaluating the potential impact of Monidor Solution

Contact us for demo: sales@monidor.com

Visit our website: www.monidor.com

We Care.

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