



EORNA

EUROPEAN OPERATING ROOM
NURSES ASSOCIATION

9th EORNA Congress

16-19 May 2019

The Hague, The Netherlands

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“ON THE MOVE”

9th EORNA Congress

The Hague, The Netherlands

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UMC Utrecht



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SCIENCES
UTRECHT

Introducing new technologies and medical equipment in operating theatres

Factors for successful implementation

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Joris Jaspers PhD

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Prof. Johan Versendaal, PhD



Agenda

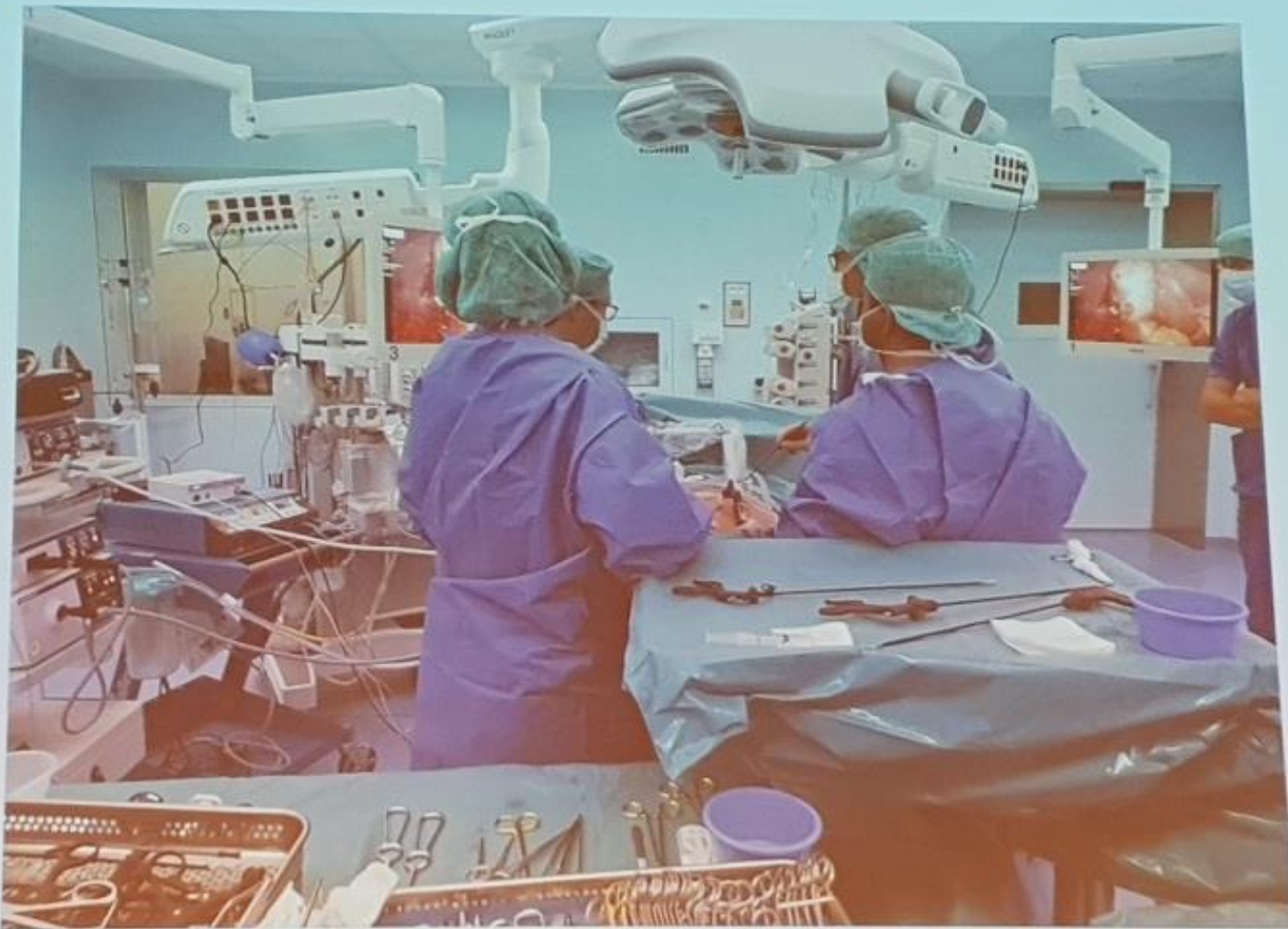
- Background and purpose
- Method
- Results
- Conclusions & further research



UMC Utrecht, Medical Technology and Clinical Physics
HU University of Applied Sciences Utrecht



Background



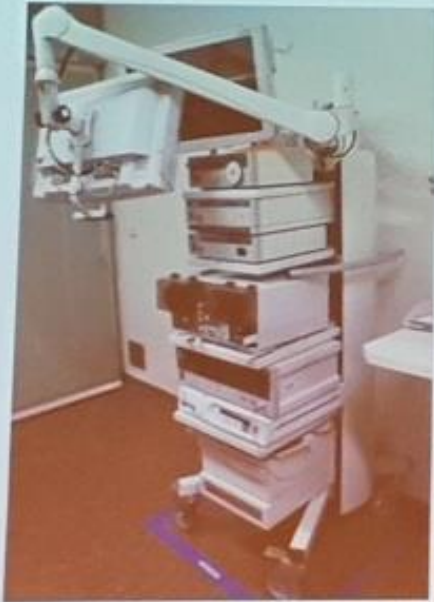
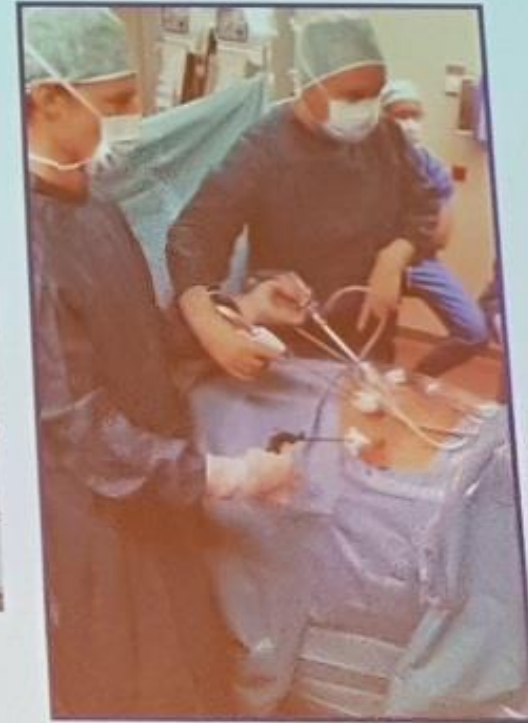
Transfer of knowledge from other industries For device related problems in the OR

(Engineering internship on the OR)

Patient transfer



Static, uncomfortable
bent-over posture



Heavy OR
equipment



Lifting heavy
instrument baskets

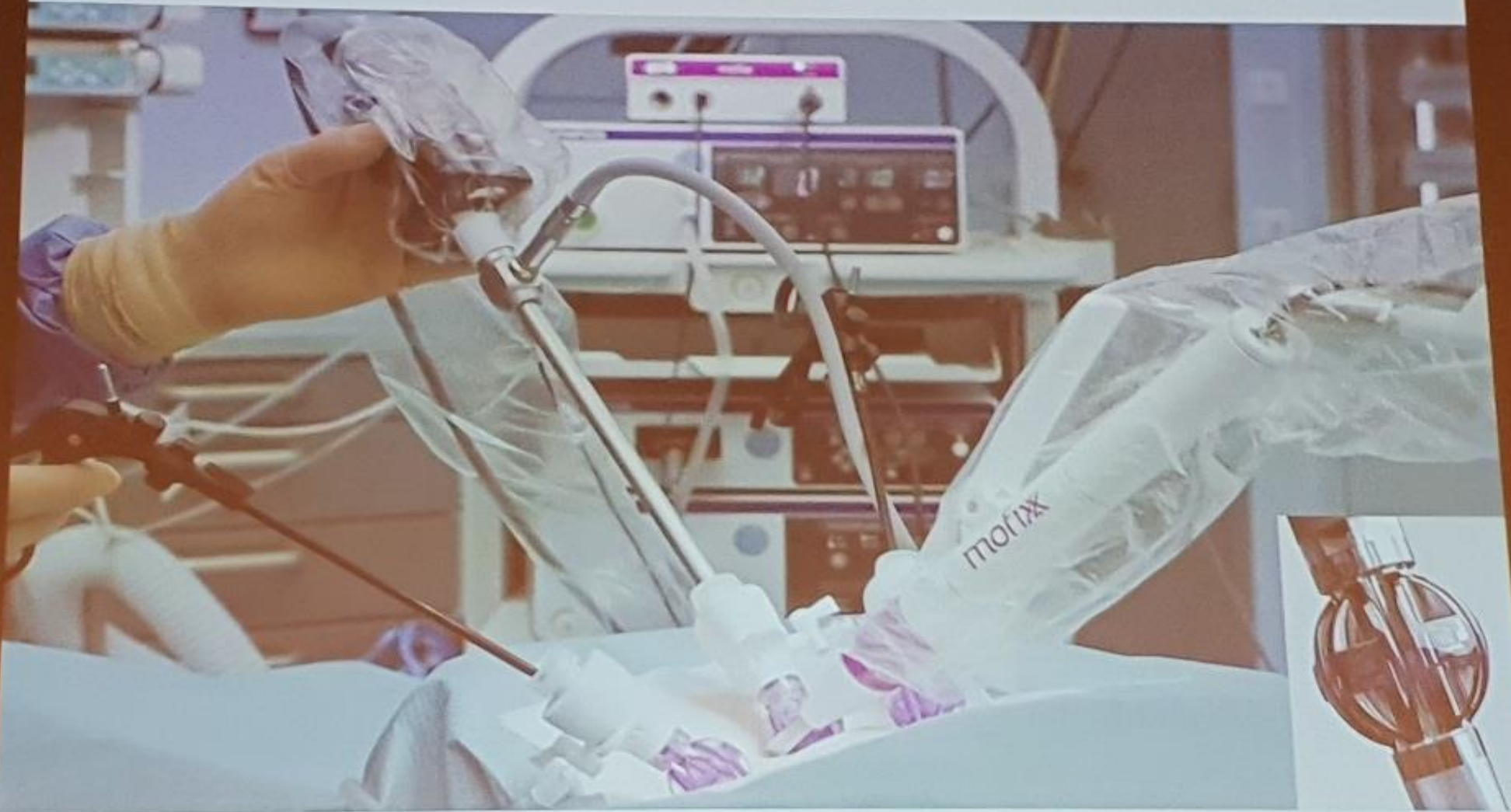


Solution for posture related problems: back support for OR staff.



<http://www.laevo.nl/>

camera and retractor holder



(Start-up Company with Hospital Invention)



Background and purpose

- Implementation of new medical equipment varies
 - Variety in implementation activities and procedures
 - Variety in implementation outcomes
 - Variety in leadtimes
- A holistic implementation protocol, involving various departments and stakeholders is not yet available.



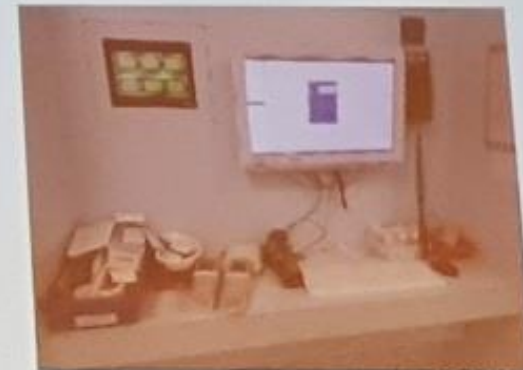
Research question

Identify factors for successful implementations of medical equipment from a surgical supporting staff's perspective



Medical equipment

- Medical information systems
- Other devices e.g. mechanical



Method

- Explorative research
 - Setup and review of a survey
 - Survey with open ended, closed questions
 - Distribute and collect surveys to scrub and circulating nurses at a country-wide congress (LVO)
 - Processed and analysed results in SPSS and MS Excel
- Variables:
 - Implementation
 - Training and governance
 - Readiness
 - Other protocol related questions



General Results

- Number of visitors: 235 OR staff
- Response: 92 (39%)
- Experienced population:
 - 4 in training
 - 18 less than 5 years experience
 - 58 more than 5 years of experience
- Specialisms (top 4):
 - Allround, general surgery, orthopedic surgery, ear, nose, and throat.



Results: implementation

- Medical Equipment was implemented in almost all the present hospitals (99%), which resulted in
 - Process changes 80% (n=89)
 - ICT changes 62% (n=86)
 - Training 91% (n=86)



OR as a system is affected by the implementations of medical equipment



Results: implementation

- Undertaken steps during implementation

Undertaken Steps during implementation	Frequency N=90	Percentage
Introducing device	82	91%
Simulations		
Inform stakeholders		
Theoretical training		
Supervision by coworker		
Evaluating experiences		
Skills assessment		
Modifying Protocols	3	3%

Results: implementation

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Modifying Protocols	3	3%

- Protocols not often adjusted
- Improvements: introduction time, lack of information and training, limited assessment, improved communication



Results: training

- Training is vital for the success of implementations, not only for surgeons
- Responsibility lies with the manager of the OR or senior scrub nurse



- Protocols not often adjusted



Results: readiness for use

- Mostly preferred: self assessments and demonstrations to fellow colleagues
- Less preferred: exams



Conclusions from this study

- A coherent and holistic implementation approach is not yet available
- Careful preparation and planning is required:
 - Integration of medical equipment in regular processes
 - Integration in (information) systems
 - Integration within the organisation
 - Knowledge and skill development
 - Effective communication

Sewberath Misser, N., Jaspers, J., van Zaane, B., Gooszen, H. and Versendaal, J. (2018) 'Transforming operating rooms: factors for successful implementations of new medical equipment', *Digital Transformation – Meeting the challenges*, pp. 279–289. doi: 10.18690/978-961-286-170-4.18



Further research

- A protocol for implementation of medical technology consisting of:
 - Implementation factors
 - Implementation activities
 - Implementation instructions

Sewberath Misser et al. (2019) (in press). 'A Protocol for the Implementation of New Technology in a Highly Complex Hospital Environment: The OR', *Int. J. of Networking and Virtual Organisations*.

- Validate protocol for implementation



Questions

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