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SIMULATION GUIDED SETUP OF NEW PATIENT-SAFE PAEDIATRIC CARDIOPULMONARY-STRESS-TESTING UNIT

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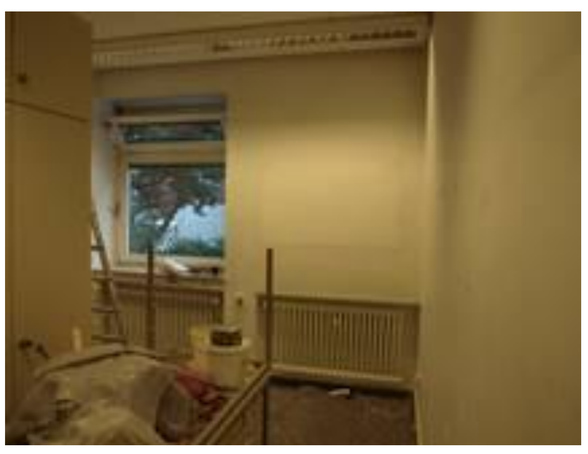
Kompetenznetz Angeborene Herzfehler

2006

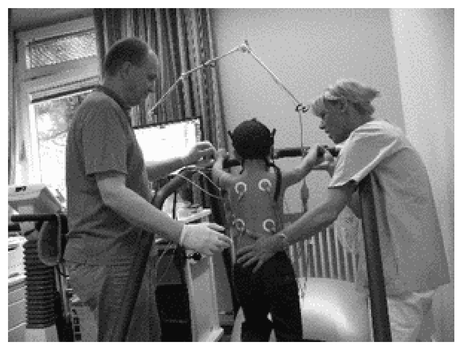
2009



2010

Introduction

After many years of only cardiological stress-testing on bicycle, the decision to shift to cardio-pulmonary stresstesting with treadmill has been made. Formerly few stress-testings have been realized (5-10/month). Stresstesting is a safe methods, but in very few cases, life-threating events may be happen. For this reason Patient safety is a issue with highest prioerity. Structure of the unit and trained team is mandatory.



Objectives

To set up in the small stress testing lab (3,10 m x 5 m) a functional and safe cardiopulmonary stress testing unit based on simulation and Lean-principles inside an outpatient-clinic with traditional methods of clinical and administrative pathways.

Methods

1) computer based simulation for distribution of new and old equipment and clinical procedures.
2) testing of the new unit with simulated patients and manniquins and implementation of procedures with audiovideo-assessment and -debriefing:
a) procedures and working space during stress testing and b) emergency procedures with dedicated area
3) integration in local working environment

Results

1) After the computer-based-design, the new testing and emergency equipment have been installed and basic skills for use have been learned. 2) With simulated patients the performance of clinical procedures and distribution of equipment have been continuously improved. Emergency manoevers have been trained and dedicated resuscitation area has been tested to find final distribution resuscitation with good access and working conditions for Emergency team. 3) During simulated stress-testing and resuscitation, many items of furnitures needed to be eliminated to create more space. Wherever possible all equipment has been allocated at the walls. 4) electronical clinical pathways for communication inside the outpatient-clinic and the wards has been created. 5) integration in the emergency system of the paediatric hospital. 6) Audiovideo-debriefing helped very quickly to unify performance of all staff members.

Conclusions

Using the principles of the Lean-Methodology deriving from car manufacturer as Toyota to optimize the use of ressources integrating simulation helps to setup faster a new clinical unit reducing time needs and costs, despite reduced spaces. Good team performance for clinical testing procedures and resuscitation have been implementated in very short time. Main waste of time was due to administrative issue and traditional adminstrative and clinical pathways in the outpatient clinic and wards of the paediatric hospital.

References

www.mh-hannover.de/paedsim.html

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