

# Smart Training Platform

**– An innovative simulation tool to prepare management and staff for the move to a new hospital building**

ICMASIM2019, October 9, 2019

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## Sodertalje Hospital

- Located in the city of Sodertalje, 30 km southwest of Stockholm
- New hospital building in 2017 for ER, ICU, Surgery, Specialist Care units
- Refurbished building opening in Oct 2019 with five wards
- 183 beds in total, approx. 1100 staff
- Serves approx. 200 000 citizens



## Background

- 5 Medical and Surgical wards will move into new wards
- Larger wards with single rooms, no change in staffing
- Relocating into new spaces require staff education, training and orientation in order to provide competent and safe care\*
- A need to standardize work processes and routines



\*Ecoff & Thomasson, 2009

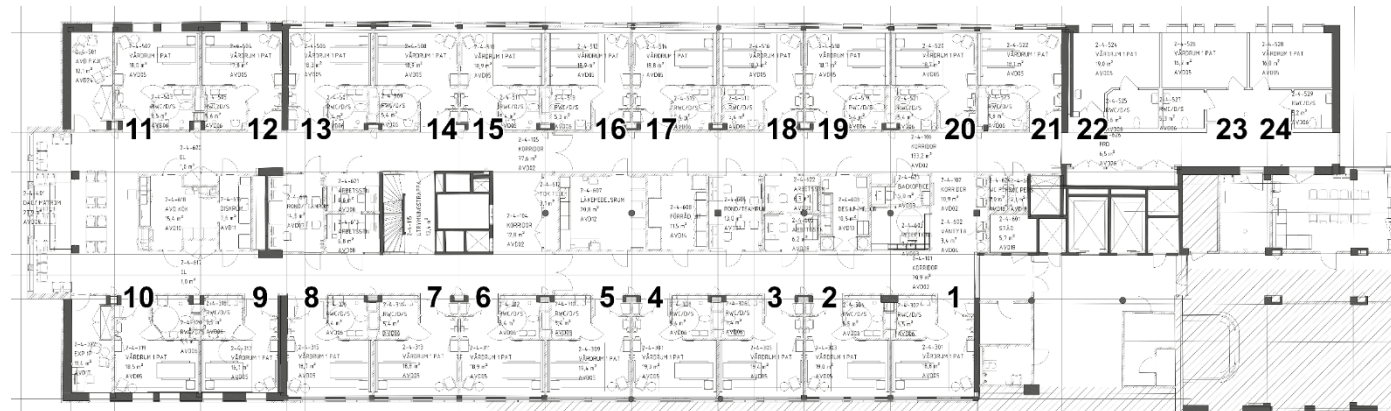
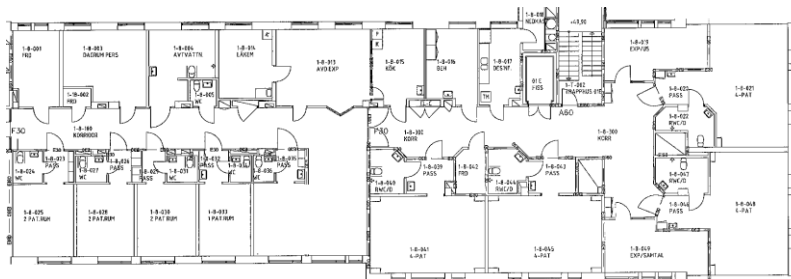
## The Challenge

### Old wards

- 16-20 beds
- 1 to 4 beds per room
- Single corridor, 32 meters long

### New wards

- 24 beds
- Single rooms
- Two corridors, 60 & 75 meters long



## Aim



To develop, test and evaluate a new simulation tool to prepare management and staff for the move to a new hospital building

The Smart Training Platform (STP) was identified as an innovative tool suitable for the project

## Methods: The STP simulation tool

### Background

- Innovation project funded by the “Region Stockholm Innovation Fund”
- Developed at South General Hospital Innovation in co-operation with Sodertalje Hospital Innovation

### The Set-up

- 65” 4K touchscreen
- Motorized stand with tilt function
- PC with FileMaker Pro Advanced
- iPad with FileMaker Go
- Local WiFi-network
- Speakers



## STP – Functionality

- Suitable for simulating teamwork and facilitating team training
- FileMaker Db with staff, patients, events, equipment, sounds, icons etc.
- Flexible frontend
- Digital game pieces for staff, patients, MedTech devices
- Functional buttons with sound to simulate patient calls, presence indication, call for assistance, emergency alarms, code blue alarm
- iPad for controlling the time of day, trigger events, alarms and phone calls





**Time of Day**  
**07:00**

**Scheduled activities**  
 Shift handover report  
 Night Staff - end of shift  
 Morning meeting  
 Team status with patient prioritization  
 Morning care round

Smart Training Platform

Game Pieces

Staff

Settings  
 Activate iPad Keyboard  
 Deactivate iPad Keyboard

Set Patient Location

Log

Reset Sound 1  
 Reset all signals

Scheduled activities  
 Shift handover report  
 Night Staff - end of shift  
 Morning meeting  
 Team status with patient prioritization  
 Morning care round

Unplanned events  
 Send  
 Accept

Patient related events  
 Send  
 Clear all patient events



PRO	NAME	ROOM	STATUS	LAST	DATE	TIME	DESCRIPTION
1	11	Other Ward/Clinic	?				
2	12	Bed	?				
3	13	Bed	?				
4	14	Bed	?				
5	15	Toilet	?				
6	16	Day room	?				
7	17	Bed	?				
8	18	Bed	?				
9	19	Bed	?				
10	20	Bed	?				
11	21	Bed	?				
12	22	Bed	?				
13	23	Chair	?				
14	24	Chair	?				
15	10	Toilet	?				
16	9	Bed	?				
17	8	Day room	?				
18	7	Bed	?				
19	6	Bed	?				
20	5	Bed	?				
21	4	Chair	?				
22	3	Bed	?				
23	2	Bed	?				
24	1	Bed	?				

## Methods: The simulation

### The sessions are led by two instructors

- The facilitator coaches the staff focusing on the training aims
- The game leader uses the control iPad to send out events to the game board, such as phone calls to the ward, calls from patient rooms and acute alarms



## Participant introduction

Theoretical part covering specific training aims, such as orientation to new floor plan and the use of standardized care routines and standards.

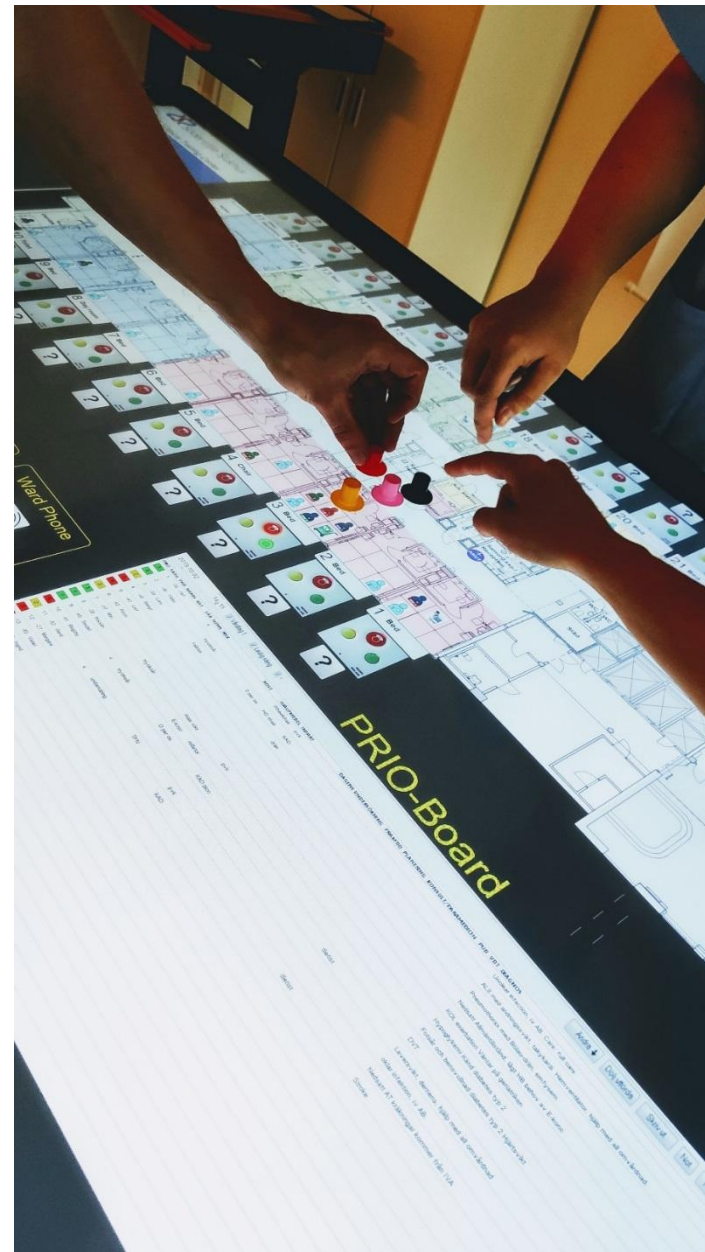
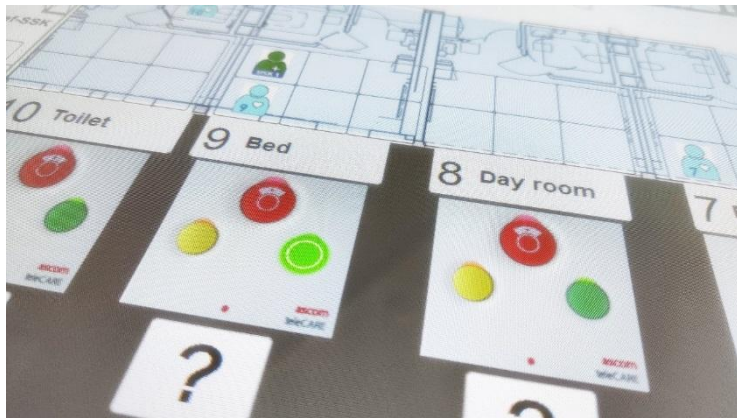
Brief STP overview, the new signal system and how they move game pieces, respond and act on events, signals and alarms during the simulation.



## Getting started

The participants are given team roles and necessary information to get started. Patient data is showed on the digital prio-board.

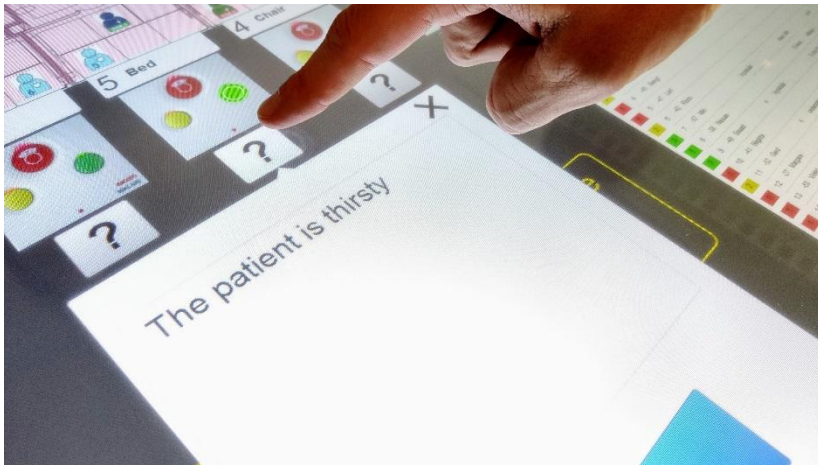
“It’s 7.15 and you take over after the night shift- what’s your next move?”



## Simulating

Events of all kinds will occur and make the team react, act and interact

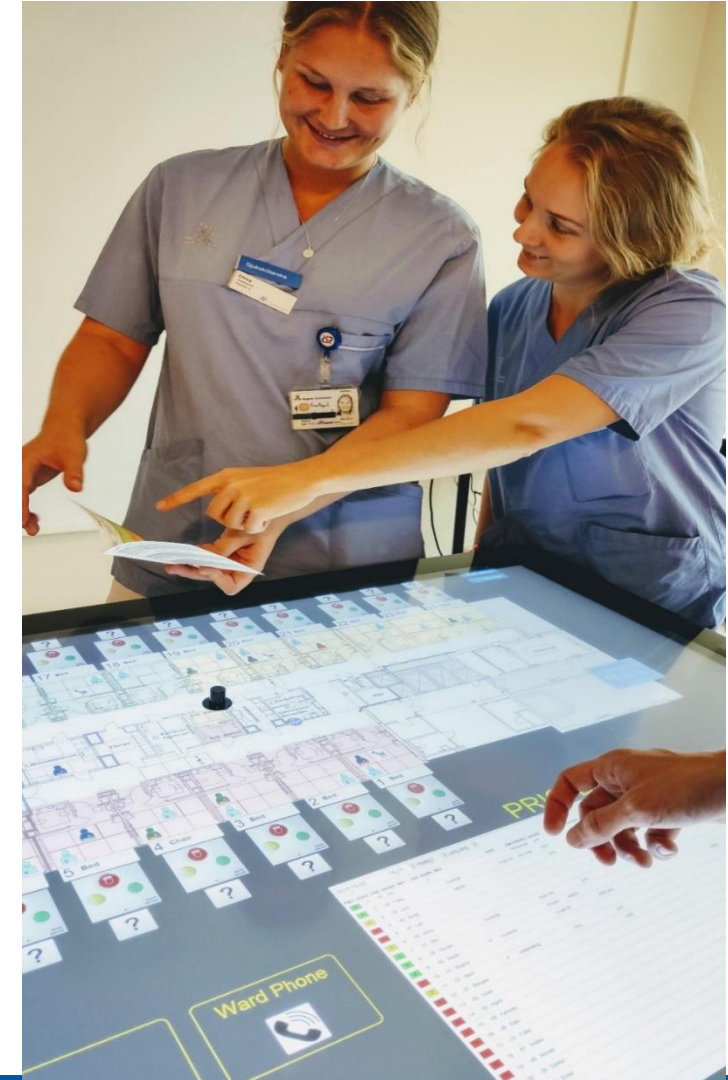
The training focus is on teamwork and communication



**National Early Warning Score (NEWS)**

Fysiologiska parametrar/posing	3	2	1	0	1	2	3
Andningsfrekvens	≤8		9-11	12-20			
Saturation	≤91	92-93	94-95	≥96		21-24	≥25
Syrgas		Ja		Nej			
Temperatur	≤35,0						
Systoliskt blodtryck	≤90	91-100	101-110	111-219			
Hjärtfrekvens	≤40	41-50	51-90	91-110	111-130	≥131	
Medvetandegrad			Alert				Sänkt, kräver röst/smärtstimuli

**Alert = fullt vaken.** Om du måste stimulera med höjd röst eller smärta för att patienten ska reagera är medvetandegraden sänkt (3 poäng)



## Coaching – Reflecting – Learning

The facilitator pauses the simulation and ask the participants to...

- Reflect on an action they had just taken
- Discuss if there might be another way of doing a specific task
- Reflect on some other situation they might encounter at that time of day
- Move forward and not get stuck on a specific topic too long



## Data collection

Org. level	Aim	Method	Participants (n)
Hospital management	Test of STP Logistics, resource and staffing	Three sessions a´ 3 hours (2018)	30
Multi-professional team	Testing new standard "Bedside rounds"	One session a´ 2 hours (2019)	10
Nursing staff	Prepare staff to the new environment, systems and work processes	15 sessions a´ 2 hours (2019)	104
Multi-professional teams (on site in new wards)	Use of STP in parallell with "real-life" simulation	Five sessions a´ 2 hours (2019)	Approx. 50 (on-going)

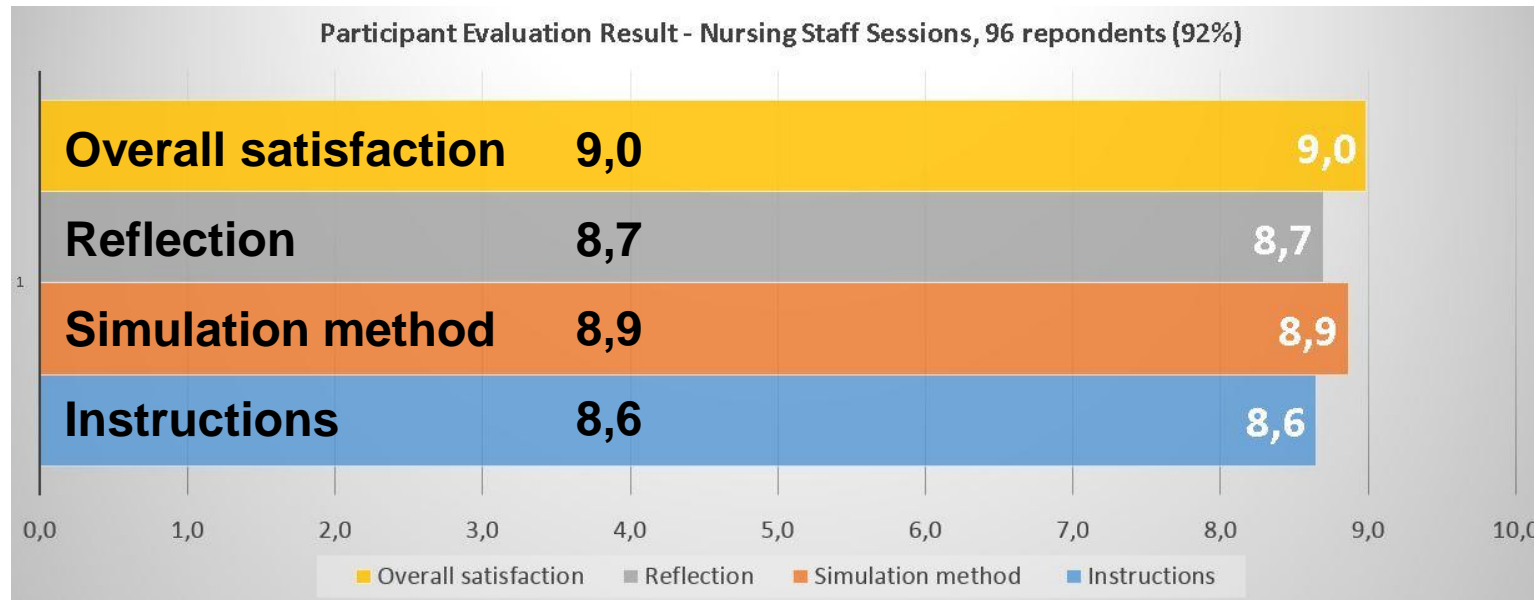
## Data analysis

- The nursing staff participants (n= 104) were asked to evaluate their experience of the simulation session using;
  - Rating scores in four areas; Instructions, Simulation method, Reflection and Overall Satisfaction
  - A free text field for additional comments
- Data was analysed using descriptive statistics
- Verbal feedback was obtained from simulation sessions with hospital management and multi-professional teams



## Results - Nursing staff sessions

- Response rate 92% (96 out of 104 participants)
- Ratings were in general very high with an Overall Satisfaction score of 9.0
- Free text comments covered many aspects of moving to a bigger ward as well as the experience of the simulation session



## Comments from participant evaluation

*We need more simulation exercises!*

*I'd wish we had more staff in this big ward*

*Very good to start thinking about how we will have to change our way of working in a larger ward and single rooms*



*Great simulation!  
Got new ideas and perspectives*

*The size of the ward is overwhelming!*

*The simulation raised new questions for us to continue to work with*

## Discussion - STP

- STP is a very flexible and interactive tool, easily adapted for other purposes
- Mobile solution, simulation can be done on-site
- Technical issues provides valuable input to further development of STP



## Discussion – The simulation

- Well tolerated by the participants- fun and easy to like!
- STP and realistic events promote awareness, critical thinking and active learning
- Need for improvements include timing, group size, length of training and attendance of team leaders



## Use of STP in parallel with “real life” simulation on site on-going and promising



# Thank you!

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