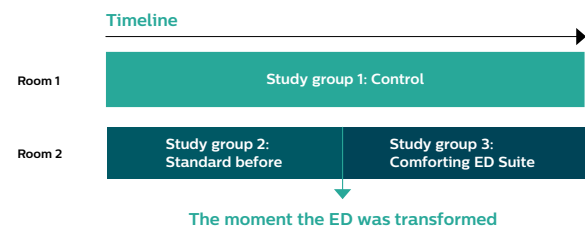


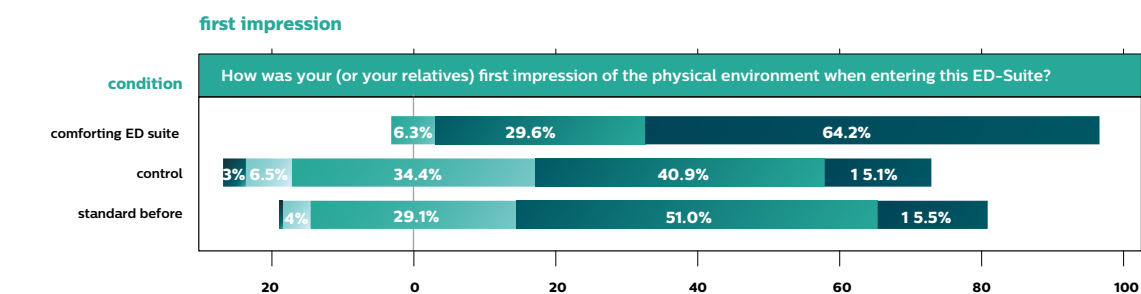
### Patient survey

The study compared the patient and family experience by conducting surveys in three different settings, being:

- 1) a control room in the ED that was not changed throughout the duration of the study (control)
- 2) the ED room before it was transformed (standard before)
- 3) the ED room after it was transformed (comforting ED suite)

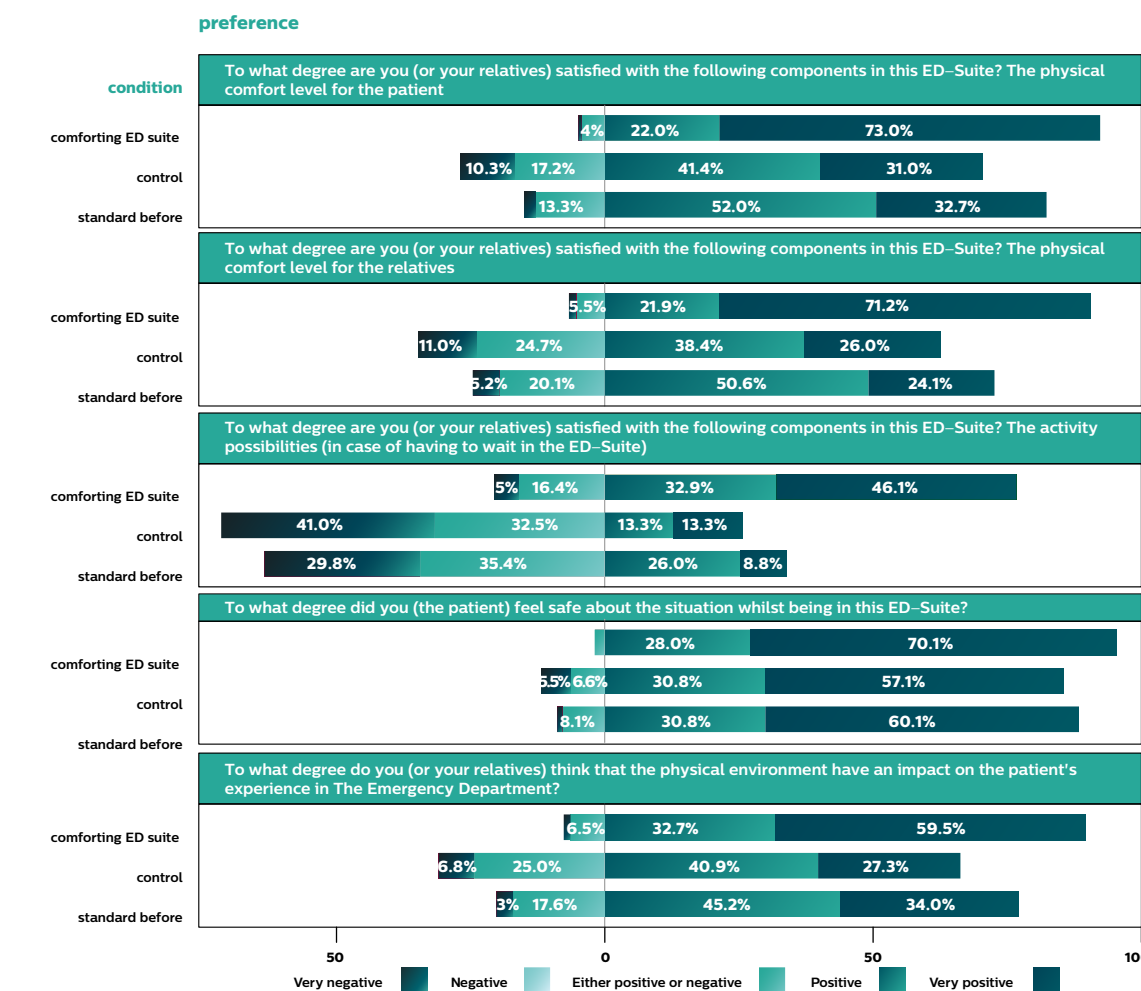


### Patients were asked about their first impression of the physical environment of the new room.



• **65%** of patients in the Ambient ED rated their first impression to be 'very positive' whereas in the control situation this was only **15%**.

### Patients were also asked about their preferences.



Some key insights of this figure:

- **70%** of the patients in the Ambient ED indicated to feel a high degree of safety, as compared to **55%** of patients in the control rooms
- **73%** of the patients in the Ambient ED indicated to feel a high degree of satisfaction with the level of comfort, as compared to 33% of patients in the control rooms.
- More than **70%** of patients in the Ambient ED indicated to feel a high degree of satisfaction with the level of comfort for the relatives, as compared to only **24%** of patients indicating so in the control rooms.

### Future plans

The improved working environment and high satisfaction experienced by patients, families and staff has had a positive impact on the ED. Based on this concept, the vision for the very near future is to:

1. Develop a concept that expands beyond the ED suite and addresses the patient flow dynamics, from arrival to discharge from the ED
2. Use learnings from this project to pilot solutions for the new hospital which is being built

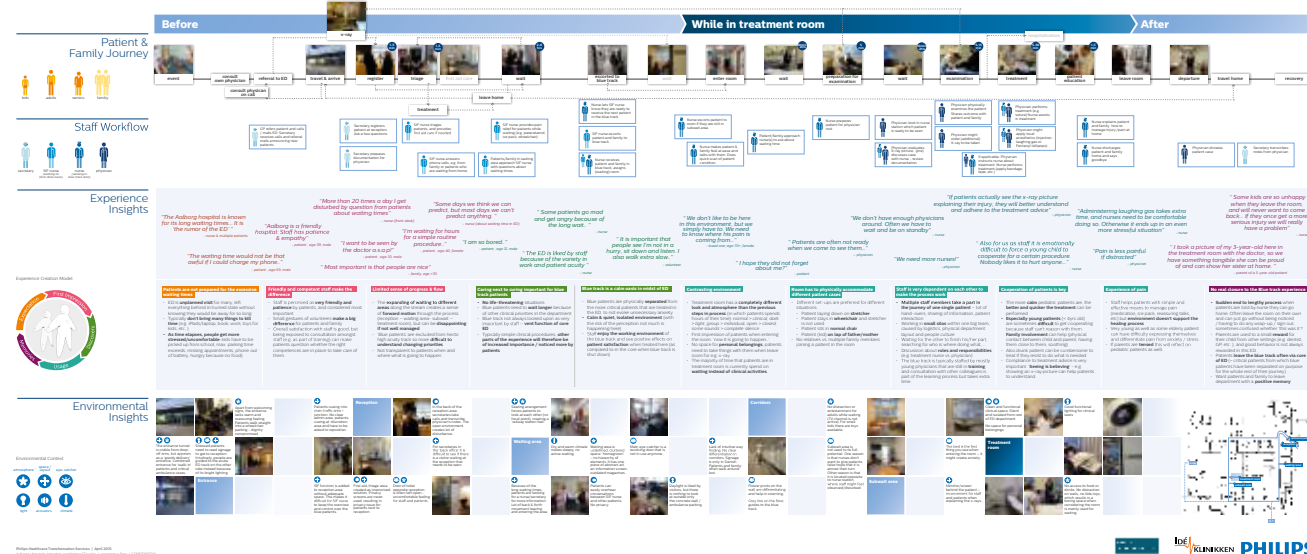
The project was structured as a public-private collaboration project funded by the regional government with EU funds.

“It is **cozy and de-stressing**. Patients seem calmer and can more easily be distracted in this room”

ED staff member

### Experience Flow

Aalborg Hospital ED 'blue track'



Results from case studies are not predictive of results in other cases. Results in other cases may vary

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# Patient and staff satisfaction significantly improved at Aalborg University Hospital

By comforting Ambient Experience ED room design

### Who/where

The Emergency Department of Aalborg University Hospital provides emergency services for adults and children from across Northern Denmark. Patients of all ages with various injuries are treated in the emergency department (ED). Within the ED, the "blue track" treats patients with minor injuries, like simple fractures and small cuts.

### The challenge

To create an ED suite that helps reduce the stress experienced by (primarily young) patients and their family. To reduce long waiting times for patients and families, even for minor injuries, and improve patient and staff satisfaction.

### The solution

The Philips team created a unique and immersive new concept for a pilot suite in the emergency department using Philips Healthcare Experience Solutions. A new spatial design has been implemented to make the room more attractive and practical for patients, family and staff. The learnings from this pilot project are used in the construction of the emergency department in the new Aalborg University Hospital, scheduled to open in 2020.

### Introduction

Aalborg University Hospital is the largest hospital in the North Denmark Region. It is also northern Jutland's largest employer, with approximately 6,500 employees. As with all university hospitals in Denmark, the region is the owner of the hospital.

The hospital has a Section South (457 beds) and North (178 beds) located in Aalborg and Dronninglund Hospital with sections Hobro and Farsø and the dialysis section in Hjørring.





**Aalborg University Hospital provides:**

- highly specialized regional functions for approximately 640,000 inhabitants, including parts of the Central Denmark Region,
- regional functions for approximately 490,000 inhabitants
- and basic hospital functions, except for certain elective procedures, for approximately 250,000 inhabitants.
- Total discharges (2014): 70,030.



The old ED room

In 2013 Aalborg University Hospital approached Philips Denmark to discuss a project to make their emergency department more welcoming and improve the experience for patients, families and staff. Young patients and their families, in particular, experience a great deal of stress when visiting an emergency room. This emergency department treats approximately 150 patients a day in 47 rooms/beds and patients with less acute injuries may have to wait a significant amount of time from initial triage until a caregiver can attend to them. This can all have an adverse effect on patient satisfaction.

The project team decided to start by upgrading one emergency department suite as a pilot. The project was structured as a public-private collaboration project funded by the regional government with EU funds. The scope included construction and hardware in the room, which was referred to as the “comforting ED suite”.

Dr. Jørn M Møller, (MD, Chief Physician) realized that there was huge potential to design an ED environment that was exactly tailored for the department’s needs. “We wanted to create an area where people would feel relaxed during their visit and where they would be distracted from their potential concerns. We worked intensively together with Philips consultants and designers, our Idéklinikken sociologist and an architectural psychologist to discuss what we wanted and to define what we could afford.”

Idéklinikken stands for the Ideas Clinic, an innovation department affiliated with Aalborg University Hospital and the North Denmark Region. This department aims to bring good ideas to the market by collecting, testing and realizing good ideas related to professional healthcare.

The Philips team came in and worked with the entire staff to understand their clinical, functional and emotional needs. We used our unique and structured methodology, Experience Flow Mapping, to provide an insights-based view of the patient journey and clinical processes, and identify the most impactful opportunities for improvement. We mapped out the data points and insights gathered from deep data analysis as well as stakeholder interviews and workflow observations. At the same time, a spatial analysis of the emergency room was carried out to identify improvement opportunities based on the current room’s layout and interior.

Philips consultants drew upon the insights gathered from observations and interviews with patients, family and staff, as well as the spatial analysis to develop concepts for improving the patient experience and way of working for staff. These concepts were discussed with the relevant stakeholders. After several sessions a final design was developed that aimed to create a comfortable, stress reducing environment by integrating technology, spatial design and workflow improvements.

**Concept for comforting ED suite**

The new comforting ED suite was completely transformed in July 2016 according to the concept shown in the drawing below.

This concept addresses different aspects of the patient and staff experience:

- **Room preparation:** Before the patient enters the room the nurse prepares the emergency department room. During this task, the nurse needs clear light to arrange the bed sheet and prepare the necessary materials for a procedure. The nurse can select the working light theme which provides excellent illumination to prepare the room.
- **First impression:** The emergency department can be an intimidating and stressful place. When the family and patient enter the room, they often feel stressed. Because patients are unsure what will happen to them, the first impression will set the tone, how the patient perceives the subsequent care. By providing a positive experience, which is comforting and easy to understand, the clinical feeling is reduced. When patients and family enter the new comforting ED suite they see an uncluttered room with a couch, bed and a lamp with a lamp shade, which looks much like a living room. This creates a feeling of familiarity and gives them focal points to look at.
- **Active waiting:** A great deal of time is spent waiting in the ED suite, which can cause boredom and anxiety for patients and family. The patient and family may not understand what is going on around them, where they are in the process and when they are going to be treated. There is need for a positive distracting environment with a choice of comfortable seating for both patient and family to pass the time in a pleasant way. In the comforting ED suite, people can choose different lighting and visualization themes to distract them. The couch provides comfortable seating for the family within close reach of the patient.
- **Preparation:** Often before an examination, the patient is feeling uncertain and stressed about what is going to happen next. To reduce this feeling, the patient is informed about the upcoming procedure. This helps establish a relationship of trust with the caregivers which is important to the patient and may improve their cooperation during treatment.
- **Examination and treatment:** When the patient is examined by the physician it is important to have a clearly illuminated view of the treatment area. Positive distraction can be necessary for unpleasant and painful examinations. The patient can choose a theme with visuals and music to be displayed on the wall in front of them for distraction, while a working light can be used in the examination area.

**ED Aalborg | New room solution and experience needs**



- Welcoming, hospitably like atmosphere**  
The head board with a natural wooden feel, adds warmth to the room.
- Decluttering**  
Medical gasses are integrated in the head board and are hidden from the patients eyes
- Positive first impression**  
A domestic lamp shade creates a familiar first focal point
- Decluttering**  
A cabinet with integrated easy accessible nurse supplies, hides clinical equipment from the patient eyes
- Offering choice**  
A bench allows patients and loved ones to wait comfortably
- Help to engage with kids**  
The bench allows adults to hold their kids comfortably during examinations, and supports an efficient interaction between staff and patient
- Personalization**  
Colored cover lighting, chosen by the patient, involves them actively in the process



The new ED room

“ The smaller kids are happy with the big screen with cartoons. And parents can more easily sit in the sofa and have their kids on their lap while they are examined”

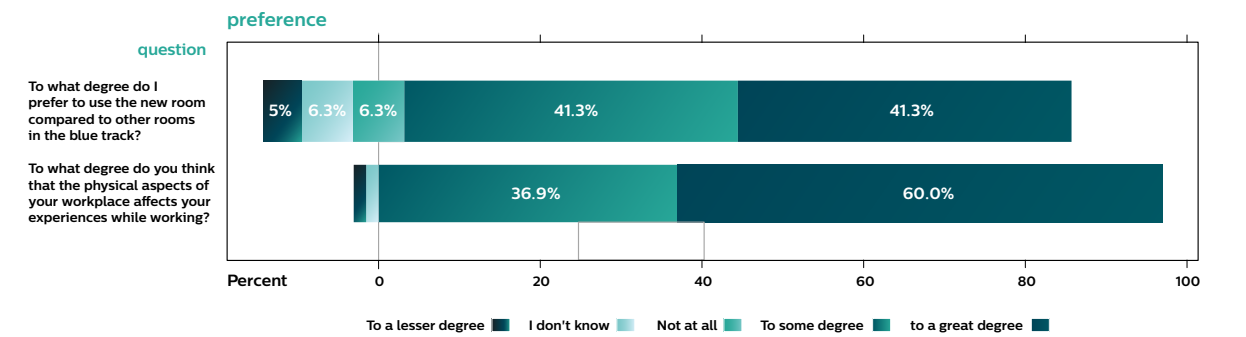
ED staff member

**Feedback from staff and patients**

Mid 2016 the hospital and Philips conducted an evaluation study including 458 patients and 65 staff members to assess the impact of the new comforting ED suite. Feedback from the families and staff confirmed that patients feel less stressed when coming in for their examination. The whole ED team has been impressed at the extent of impact that the new room has had on their emergency services. The results of the study are described below.

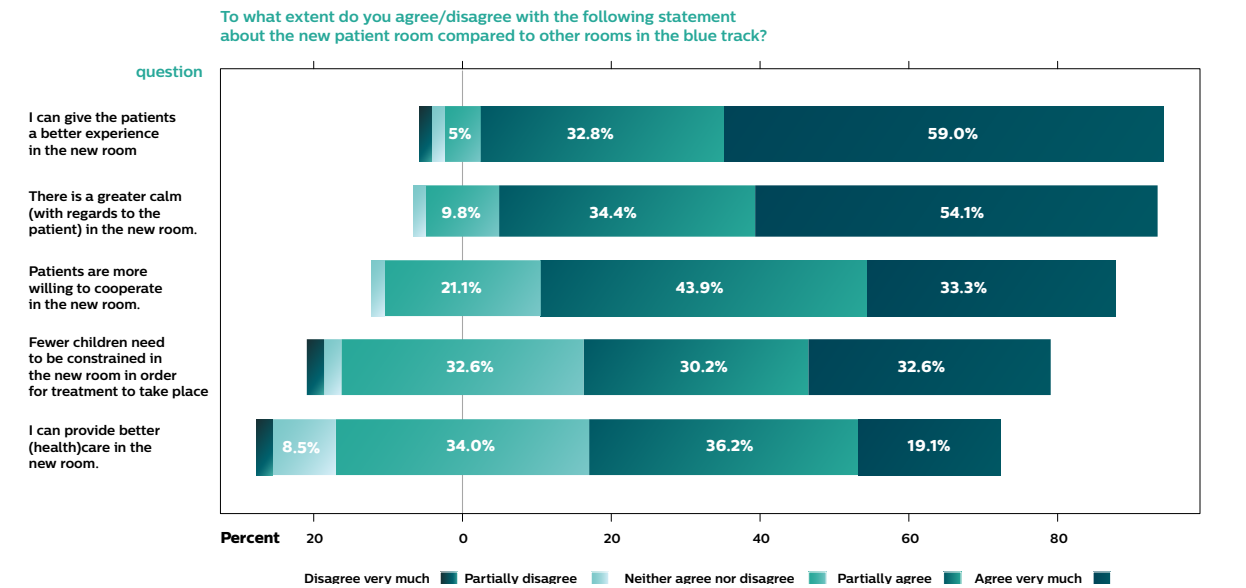
**Staff survey**

Staff (65 persons) were asked to what extent they agreed with statements about the new patient room compared to other rooms in the blue track, see below figure.



The above figure shows that:

- More than **82%** of staff prefer the new room over the old one
- **96%** of staff feel that physical aspects of their workplace positively affects their experiences while working



Some key insights of above figure:

- More than **90%** of the staff indicate that they can give patients a better experience in the new room
- More than **88%** of the staff feel that patients are calmer in the new ED room
- **77%** of the staff find that patients are more willing to cooperate in the new room