

# Moving from place to place in a surgical setting

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## **Introduction**

Medical settings are typically a combination of ordinary workplaces and mobile work. The medical personnel may have access to an office space in which they, for example, can read their e-mail, but these are places that they only use on sporadic occasions during an ordinary work day. An ordinary work day typically consists of movements from one place to another, attending patient round meetings, planning meetings, patient meetings, seminars, operating patients, and so forth. The central parts in the medical personnel's work are the patients. Each patient can be seen as a project, and each project involves several people that are involved at different stages during the project.

This diverse movement from place to place makes it necessary for the medical personnel to be reachable through different kinds of technologies, today usually mobile phones or beepers. Such technologies make it possible to get in contact at the moment, independent of where the person is situated. Reaching the right person at the right time may be necessary, or even crucial, for a patient in cases where medical advice is quickly needed.

This position paper focuses on a surgical setting at a university hospital in Stockholm, Sweden. We discuss the way medical personnel move from space to space and how they can be reachable through different kinds of technology, as well as some constraints and side effects that follow with the use of such technology.

## **The setting**

At GastroCentrum, there are about 25 surgeons that are highly specialised on all complicated diseases in the upper part of the gastrointestinal tract, especially cancer surgery. The section for upper gastrointestinal surgery have a close collaboration with several other units, e.g., transplantation surgery, pathology, oncology, radiology and internal medicine, just to mention a few. Within the section, research is conducted within a broad area of topics, e.g., gastrointestinal cancer, stress, metabolism, and nutrition. The section also conducts development work within surgery, health care processes and tele-medicine.

An ordinary work week as a surgeon at GastroCentrum involves different kinds of activities. There are round meetings at the nursing ward where the responsible surgeon together with the nurses goes through the condition of all patients. There are staff meetings where all surgeons go through the operations that has been made, changes in the intermediary care and the nursing ward, and next weeks schedule. There are also lunch seminars, consensus meetings, meetings with patients, in-official breakfast meetings, and so forth. There are several places that may be in focus during such activities, e.g., intermediary care, intensive care, nursing ward, meeting rooms, office, lunch room, and so forth.

During an ordinary work day the mobile phones and beepers call for constant attention.

### **Moving from place to place**

Following a highly skilled surgeon (let us call her Susan), who is also presently responsible for all the surgical activities, gives the following movements from place to place during six hours:

- 7.30 – When starting for the day Susan quickly visits the intensive care, the intermediary care unit and the nursing ward.
- 8.00 – Time for a seminar, with an educational purpose, by another medical doctor.
- 9.00 – Time for a patient round at the intermediary care, together with seven other surgeons. They start with an informal discussion about some treatments and surgery that have been and will be made, where they go into detail about what they did, what they will do, preparations, and so forth. After that, one of the surgeons (Bill) goes through the patients they have at the intermediary care. This day they have six patients and they go through their condition, what has happened during the last 24 hours, and which ones that will move to the nursing ward.
- 9.25 – Susan walks together with Bill and another surgeon (Steve) to the intensive care. At the intensive care unit they meet with a medical doctor to discuss a patient that will have a transplantation. Together they look at the patient's medical record, discuss the patient's condition, results from tests, what the wound looks like, and so forth. At the end Susan says that she wants to be kept informed about the patient's condition.
- 9.35 – Susan, Bill and Steve walk back. Bill stops at the intermediary care. Susan and Steve continue to the nursing ward. They go directly to the lunch room to get some breakfast. Most of the personnel at the nursing ward have finished their breakfast and are on the move. Susan and Steve sit down next to four nurses. One of the nurses starts talking to Susan about a patient with some complications and says that Susan can read more about it. Another of the nurses asks about the effect of alcohol for another patient. Susan explains what alcohol does to a patient with that kind of disease.
- 9.55 – Breakfast is finished and Susan and Steve walk down the corridor and stop by the reception. Susan tells the nurses how many patients that will come from the intermediary care. Susan and Steve continue to the expedition room. Two nurses enter the room at the same time. Based on a paper based list of patients they start going through their medical condition, who is going home today, etc. Today they have a patient with severe complications and they do not now what is the cause. Susan uses the phone to try to reach the surgeon who did the operation, but he is operating and Susan asks the one on the phone to tell him to come to the nursing ward as soon as he is finished.
- 10.25 – Steve and the two nurses leave the room and Susan starts dictating by the computer. Susan always dictates the day notations on Fridays because a weekend means new personnel.
- 10.45 – Three nurses enter the room and the same procedure starts, but with a new set of patients. During the session the surgeon called for earlier enters. Susan explains the patient's condition and the surgeon starts looking for Steve. The three nurses leave.
- 11.10 – Steve enters the room with the first two nurses. Susan explains what she dictated and makes a summary of the second round in which Steve was missing. The two nurses leave. Susan and Steve go through each of the patients that are going home.
- 11.20 – Susan leaves the expedition room, walks over to the other corridor and enters another expedition room. The surgeon in the room starts to quickly go through the patients. They especially discuss one patient who is not feeling very well.
- 11.25 – Susan walks down to the office space to sit down by a computer for a while, but she instead walks to the office of another senior surgeon to discuss some matters.

11.30 – Susan walks across the corridor to the intermediary care, to the same seminar room as this morning. During the next half hour surgeons enter the room with a sandwich or salad. Susan runs the meeting and goes through the specific cases at the nursing ward. After a while a surgeon from another hospital gives a seminar on the surgery on hernia that they do.

12.55 – Everybody leaves and Susan goes to the pancreas conference that is held every Friday at one o'clock. The pancreas conference is a one hour video-mediated meeting with other hospitals, where they discuss patients' diagnosis and decide about their treatment. After that they spend half an hour on going through the operations that have been made, as well as the medical and economical outcome of patients that have left the health care.

Even though Susan is a senior surgeon, with specific responsibility due to her seniority, her movements from place to place during these six hours are not unusual for the surgeons in general. Steve, who followed Susan during a large part of the six hours were responsible for one unit at the nursing ward.

All places included in a surgeons work provide different kinds of technology infrastructures, with computers available where appropriate. The central tools are the patients' medical records and the mobile phones and beepers used. The use of medical records are dependent on the place. They can be accessed from wherever there is a computer, and there is a computer in the places in which it is necessary to access the medical records. The use of mobile phones and beepers, however, are independent of the place. They are, instead, dependent of the space around the specific user. They are following the user wherever he or she goes. However, moments have been observed when people did not have their mobile on or with them, resulting in people asking others about that persons whereabouts.

Since this research is in the early phase it is interesting to further investigate how these places differ in use of technology and social interaction.

### **The use of mobile phones and beepers**

The use of mobile phones and beepers in this medical setting is quite interesting. Some of the surgeons say that the beepers and mobile phones cause stress because the one calling is always given first access. During the lunch meeting that Susan was attending there was a constant beeping and people moving in and out of the room in order to reply. In some cases people only looked at the mobile phone or beeper, did some pushing on the buttons, and then put the device away.

Since the surgeons are moving from place to place the mobile phones and beepers are necessary in order for them to be there for the patients whenever necessary. They need to be contactable any time during a work day. The question, however, is if and how this can be achieved by other kind of technology, or with the same kind of technology but in other ways. To understand this, it is important that we also understand the different places they are moving to and from during a workday, and what these places offers.

### **Inspiring articles**

Dourish, Paul (2006) Re-Space-ing Place: "Place" and "Space" Ten Years On. Proceedings of CSCW'06, Banff, Canada.

Harrison, Steve & Dourish, Paul (1996) Re-Place-ing Space: The Roles of Place and Space in Collaborative Systems. Proceedings of CSCW'96, Cambridge, USA.

Bogdan, Cristian, Rossitto, Chiara, Normark, Maria, Jorge, Pedro & Severinson Eklundh, Kerstin (2006) On a Mission without a Home Base: Conceptualizing Nomadicity in Student Group Work. Proceedings of Group'06.