

# Getting it **Right** from the Start

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## Human factors support for the rearrangement of medicine rooms in Danish hospitals

FORCE Technology has shown our competences in human factors and the human element related to handling of medicine through previous cooperation with hospitals in the county of South Jutland. Therefore, as the medicine rooms at three general hospitals and one specialised in this area of Denmark were undergoing rearrangement, it was decided to include human factors expertise from FORCE Technology to make a dedicated human factor analysis of the existing medicine rooms. The objective was to make recommendations on a solid basis for the future rearrangement of the rooms.

One of the issues identified as important for correct medicine handling and patient safety was the interaction between the nurse and the medicine room. This interaction is to a wide extent formed and adjusted by the arrangement of the medicine room: Is the medicine arranged in a proper way on shelves and in refrigerators? Are shelves and refrigerators suitable for storage of medicine? Is the medicine always organised in the same order? Are notes and information consistent and up-to-date?

## Identified problems and recommendations

The analysis was based on hundreds of pictures from medicine rooms showing the layout of the rooms as well as details such as shelves, refrigerators, boxes for storage of medicine, slips of paper with information, etc. The result was a comprehensive report



Arranging the medicine correctly, neat and in good order, with labels upright and turned to the spectator is very important. This makes the medicine easy to find. Analysis of medicine rooms showed, that good housekeeping is not always the case, and that some medicine rooms are badly arranged and rather untidy.

*Photo: Klinisk Foto, Sønderborg Sygehus*



Nurses working close together in a narrow space. Inadequate ergonomics due to limitations in space, lighting and work environment can lead to medication errors.

*Photo: Klinisk Foto, Sønderborg Sygehus*

describing human factors problems in the arrangement of the existing medicine rooms.

The report included a set of twelve recommendations for future arrangement of the existing rooms. One recommendation was to raise attention towards the use of shelves and refrigerators not designed especially for the purpose of storing medicine. The use of equipment designed for another purpose, e.g. private house hold, could appear to be inappropriate. It could be difficult to find the correct medicine due to non-transparent shelves and boxes, and the medicine could be difficult to arrange on shelves and in boxes in a safe way.

Another recommendation – which is in conformity with official guidelines – was to keep medicine in the original package at all times and avoid re-packaging. It was also recommended that medicine should be placed on shelves in a way that name and content clearly show. Also, medicine should be arranged in a standardised way independently of room, department or hospital. This would make transfer of personnel easier, and substitutes would be less exposed to problems related to finding the medicine on shelves.

## General relevance for similar projects

The analysis and recommendations made in this project have been disseminated to pharmacists at the hospitals and to parties in other hospitals showing interest. The problems identified are not specifically related to the hospitals in the survey as they are of general relevance. Further, it has been discussed to make a thematic day on the subject in order to disseminate the results and findings to a wider audience struggling with similar problems. Experience shows that it is much better to take human factors aspects into account in the beginning of a design process rather than when the design is finished, i.e. the room is rearranged and equipped. It saves time and expenses if it is done right from the beginning.