

Implementation of an automated monitoring system in two different wards of a hospital

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Introduction: Proper hand hygiene remains the most important factor for the reduction of nosocomial infections and therefore, besides absolute consumption of disinfectants and direct compliance observations, several automated monitoring systems for more detailed consumption of disinfectants have been invented.

Objectives: In this study, we aimed to explore the personnel's self-perception and to investigate the implementation of such a system in two different wards of a hospital.

Methods: Two wards were equipped with an automated monitoring system detecting each disinfection process in detail with the possibility to distinguish between occupational groups. A transponder worn by every participant transmits any information to a database for analysis. Prior to the

implementation, the personnel's self-evaluation of disinfection performance was surveyed with a questionnaire.

Results: Before starting the project, consultations with the works council, the installation company, in-house IT and hygiene department were indispensable. We aimed to address and apprise the majority off all affected employees before the installation. Therefore, we informed all leading positions in personal communication within small groups. Furthermore, all employees were invited to introductory events on each ward. Within this context, the survey dealing with the behaviour of hand hygiene was introduced. After activating the monitoring system, the wards were reminded repeatedly and performance summaries were communicated regularly. The survey showed that

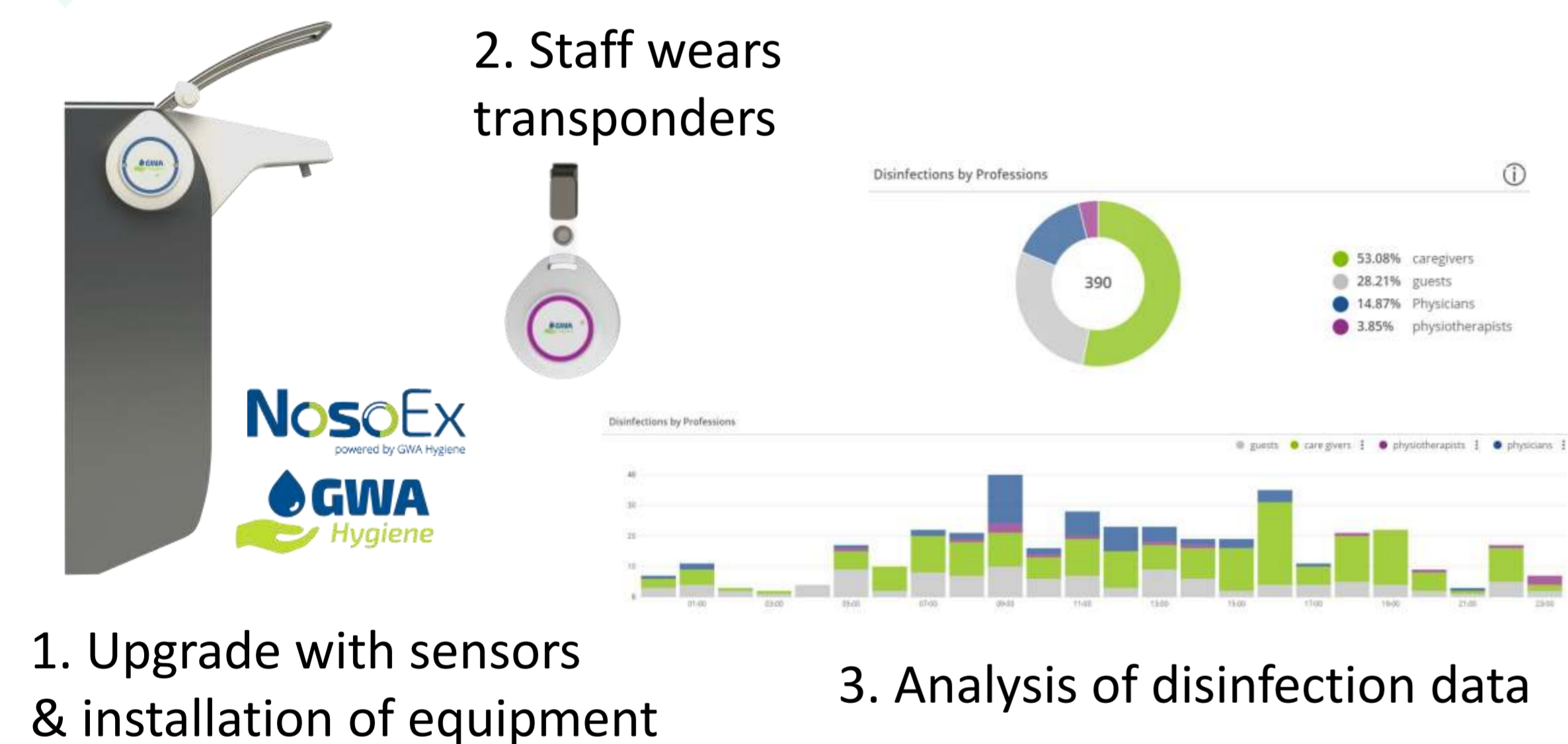
employees feel well informed about hygiene in the respective hospital and that the amount of disinfectants dispensers is mostly sufficient. However, due to time and personnel shortage, hand hygiene compliance is negatively impacted.

Conclusions: Although the systematic and organized implementation of an automated disinfection monitoring system is mandatory and time consuming, such a system offers more detailed information about the actual disinfectant consumption concerning dispensers, during outbreaks and distribution among the days and occupational groups.

Conflict of interest: HTK is an independent company collaborating with both *GWA Hygiene* and *Sozialstiftung Bamberg* without any financial interest or support.

Process and Principle

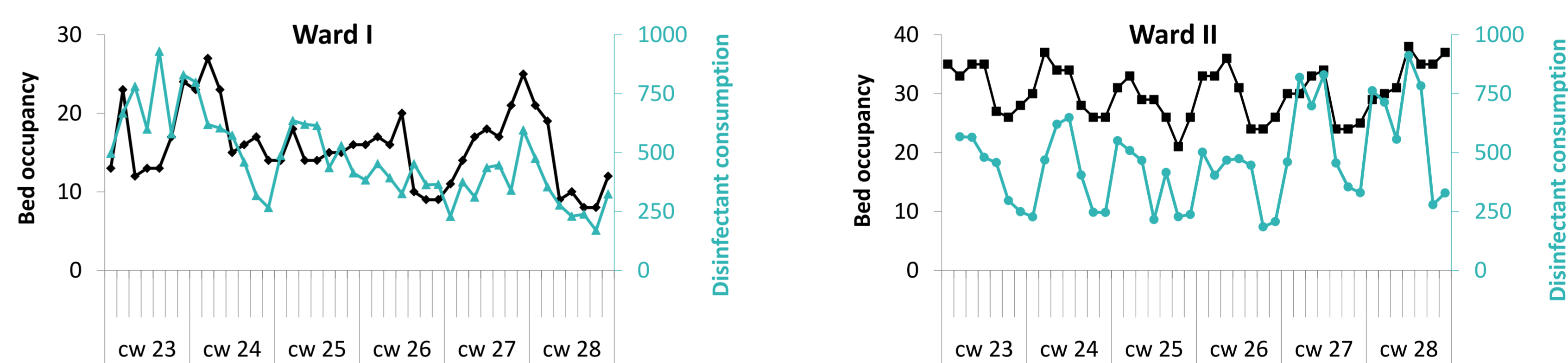
- Personal communication with all leading positions
- Introductory events
- Questionnaire
- Installation



	Ward I	Ward II
Number of disinfectant dispensers	52	54
Average number of disinfections per day*	210	118
Average volume per disinfection*	2.1 ml	2.7 ml

* in two months

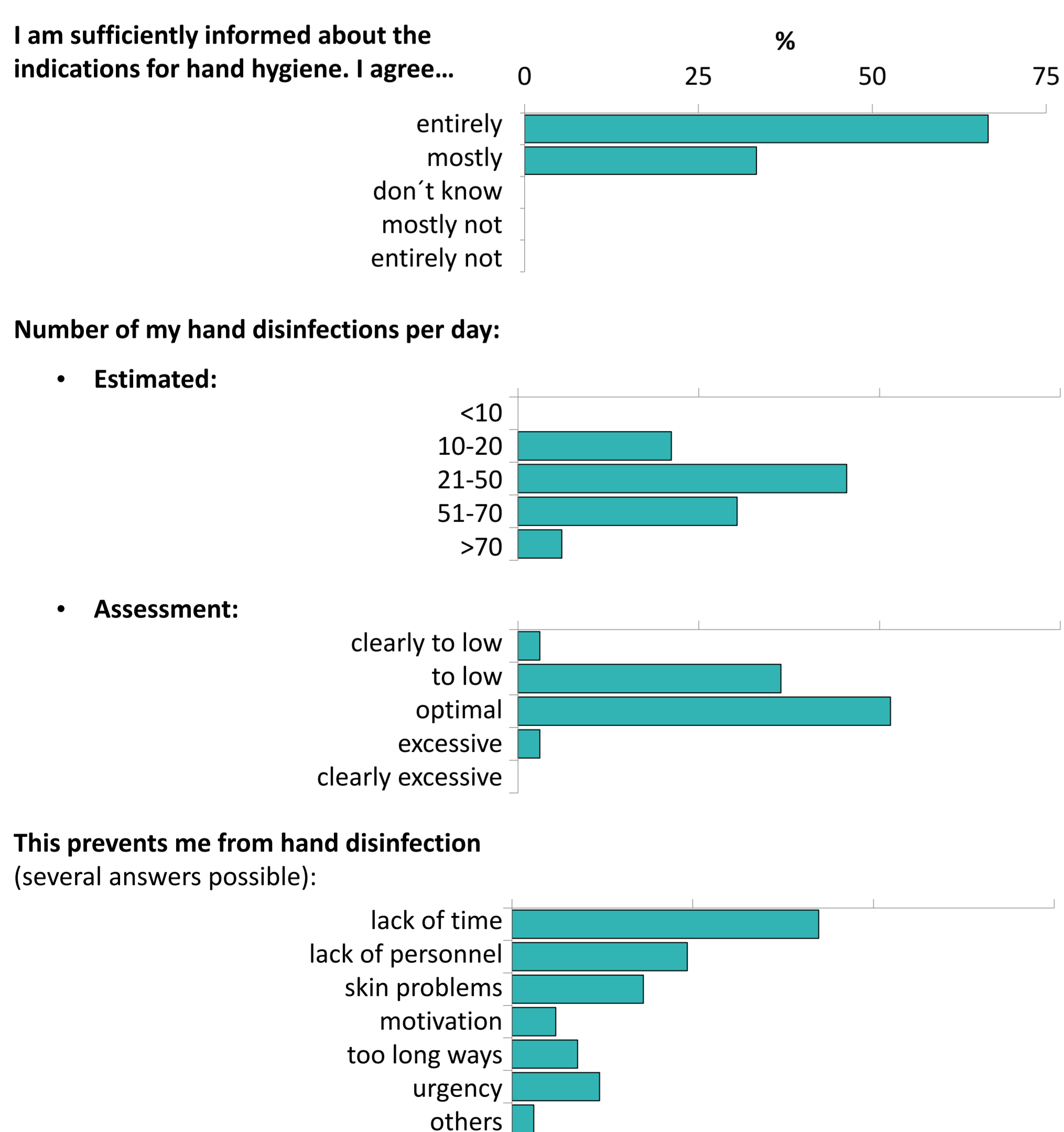
Bed occupancy versus disinfection consumption



In both wards it is obvious that the pattern of disinfection consumption follows the one of bed occupancy. Consequently, the disinfection actions are connected with the patients and not (only) with habits when coming or leaving the ward or after using the toilet which are no indications for hand disinfections

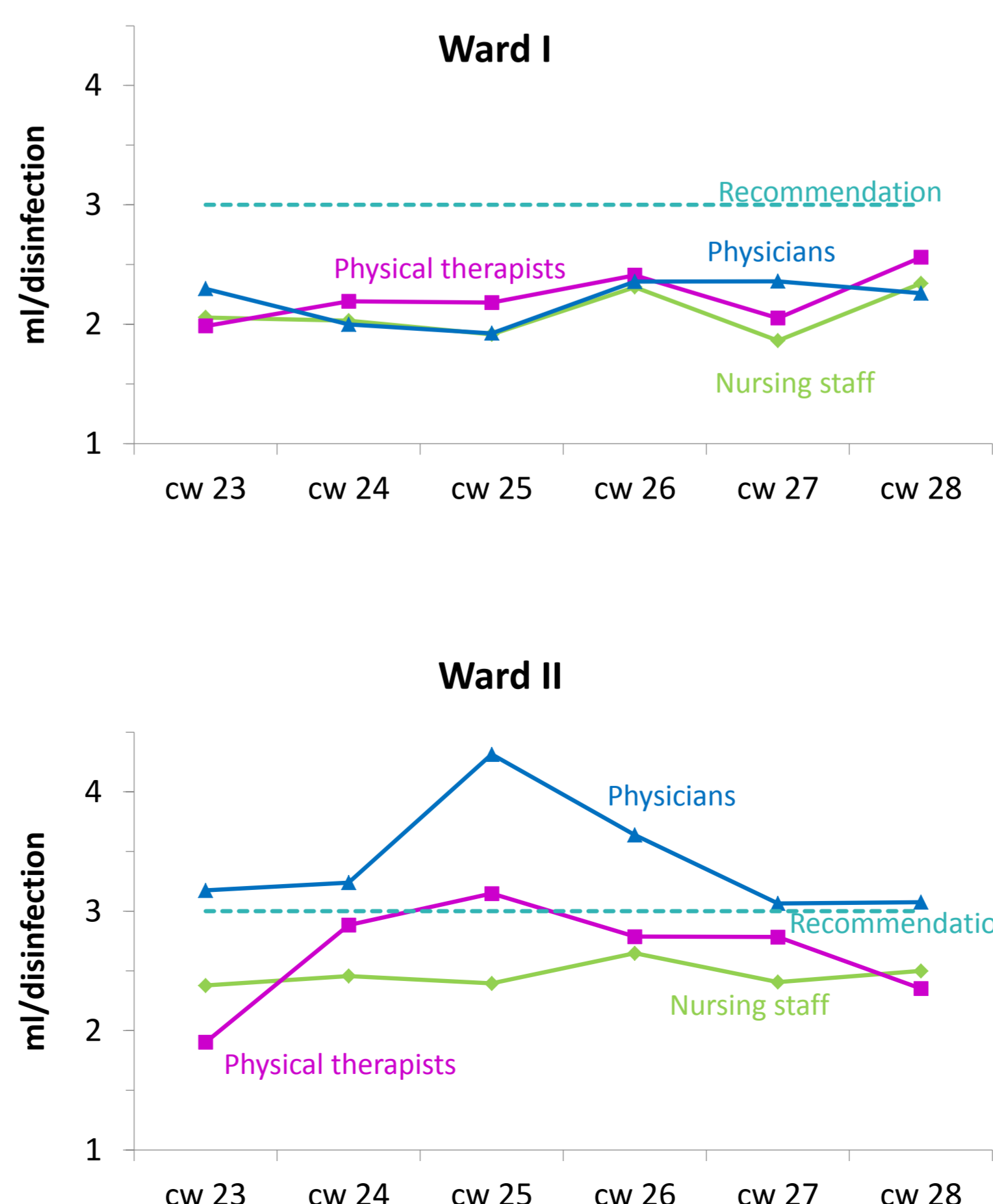
according the *My five Moments for Hand Hygiene* (WHO). However, due to different focus of the wards, the consumption per patient differs (Ward I twofold compared to Ward II).

Questionnaire - selection



Before installation of the monitoring system, personnel was questioned about hand hygiene. After approximately one year following the installation, the questionnaire will be repeated with the same questions and questions about the system.

Different behavior of occupational groups



In both wards, the average consumption of disinfectant was analyzed for each occupational group. While all occupational groups stay distinctly below the recommended dispensed amount per disinfection (3 ml) in ward I, the physicians of ward II are regularly even above this level. Future courses can address this deficit and especially train and sensitize the groups using insufficient amount of disinfectant.

Outlook

- Analysis & observation & feedback
- Questionnaire – Follow up
- Conclusion & future perspectives