

Needs analysis for training in infection prevention

Executive Summary

Healthcare-associated infections (HAIs) are a widespread problem in the health system. Even if HAI prevalence in Switzerland (6%) reflects the European average (2017 survey), the unrealised potential of 35–55% avoidable HAIs must be rapidly addressed so as to reduce complications, suffering and costs. The aim of the study commissioned by the FOPH is to investigate whether hospital and nursing home staff have the necessary knowledge and skills to contribute to the reduction of HAIs. The needs analysis will deal with two topics:

1. **Deficiencies in the skills, knowledge and know-how** which healthcare facility staff require to ensure appropriate infection prevention
2. **Appropriate measures** for closing skill gaps.

Two target groups were included in the analysis – **healthcare professionals with direct patient contact** and **people in executive functions**.

The mandate was carried out in four steps:

- In a survey (brief questionnaire), the experts belonging to the FOPH project team, various persons attached to Espace Compétences and Höhere Fachschulen Gesundheit, and other individuals were asked to answer four questions in order to define problem areas and gain an initial overview. The 19 responses were analysed, classified and compared with the results of the study conducted by fibs (Infection prevention experts and hospital hygiene consultants) in the first half of 2017.
- The results of the survey, questions arising from these, and the initial working hypotheses were discussed at two workshops (each involving two experts) in Zurich and Lausanne. Additional experts were also consulted for in-depth discussions. The content of the workshops and discussions was analysed, and on this basis the definitive working hypotheses (presented and discussed in the tables below) were formulated.
To test the hypotheses and assess individual HAI awareness, a short survey tool was developed, which can be used across the entire spectrum of occupational groups in hospitals or nursing homes. The tablet-based evaluation tool consisted of a true-to-life error scenario with 21 situations in which errors were to be identified in the area of standard hygiene measures. The tool reflects complex everyday challenges in a compressed form and plugs into the real-life working processes of different types of staff. The short survey was validated by experts.
- At each of four institutions, approx. 20 individuals with different functions were surveyed on-site (recruitment goal n=80). The institutions selected were medium-sized acute and long-term care centres (Spital Limmattal in Schlieren; Domicil Bern sites in Thun and Bern; Home Médicalisé de la Sarine in Fribourg; Hôpital Pourtalès RHNe in Neuchâtel). In consultation with the institutions, the survey sample was adapted to local circumstances. It was ensured that the entire range of occupational groups would be represented. The recruitment goal was exceeded (97 participants overall). The primarily quantitative data was analysed and presented in the form of tables and diagrams. Training needs were determined according to staff categories. The results were consolidated in an interim report, which served as the basis for discussion at a workshop.
- A workshop organised by the FOPH in cooperation with sottas formative works was held on 22 August 2019, with 20 participants, including 15 experts in the field of hygiene and infection prevention. This served to validate the results and to compile and discuss possible solutions and recommendations.

The discussion of the results in the two following tables – based on the hypotheses and including the results of all the steps described above – represents a synthesis.

Hypotheses and results concerning factors outside the training area

Hypothesis	The skills acquired are not employed in practice due to: - deficiencies in organisation and prioritisation - a working culture which tolerates carelessness (no learning from mistakes) - inadequate openness to criticism, self-reflection and error culture - high production pressure - lack of sanctions
Assessment /Comments	→ The entire spectrum of organisational obstacles was confirmed. Knowledge is often not routinely employed, and the error culture is rudimentary. Differences of degree were observed from one institution to another. → The organisational framework is too rarely oriented towards infection prevention, and instruments are lacking to reinforce these priorities.
Hypothesis	Professionals have inadequate self-ratings concerning their prevention skills.
Assessment /Comments	→ Overestimation of skills is widespread, across all occupational groups. This is particularly problematic in hygiene instructors. → Skills are also overestimated by superiors and by management.
Hypothesis	There is a lack of experts at key positions in institutions.
Assessment /Comments	→ In smaller institutions, suitable staff are regularly lacking because it is not worth employing a hygiene expert. An adequate level of training is lacking between basic skills and expert. → Hygiene experts often have only a marginal position without the necessary influence; in addition, their leadership profile is inadequate for communication purposes.
Hypothesis	The focus is on controlling symptoms; solution strategies are fragmented and not targeted at the systemic context of HAI prevention.
Assessment /Comments	→ With regard to risk constellations in procedures, processes and routines, there is a need for improved reflection and action on the systemic nature of HAI prevention. → Fundamental problem with currently pursued solutions and training strategies.

Hypotheses and results concerning factors within the training area

Hypothesis	There is no national training standard for HAI prevention; too often, outdated content is communicated, as there is no clearly defined, coherent basic knowledge on HAI prevention.
Assessment /Comments	→ A national standard would be desirable, but would require coordinated efforts by numerous actors. Success is still not guaranteed due to freedom of teaching. → Different standards exist abroad.
Hypothesis	Teaching materials contain errors in conception and content.
Assessment /Comments	→ Confirmed in expert discussions: unfavourable selection of authors, remoteness from practice, resistance to advice, textbook authors often tend to be theoreticians.
Hypothesis	Hygiene and infection prevention are complex and demanding in practice.
Assessment /Comments	→ Especially the process-based and systemic nature of pathogen transmission and HAI prevention is not adequately understood – awareness raising is focused on factual knowledge, rather than processes. No subject correctly identified all the risks and applied standard hygiene measures properly.
Hypothesis	After basic training, professionals have in principle sufficient knowledge of standard hygiene measures and infection prevention.
Assessment /Comments	→ The example of standard hygiene measures shows that there is a need to strengthen basic preventive skills in health professionals: <ul style="list-style-type: none"> • Reliable, routine identification of typical risk sources in daily practice • Correct, risk-appropriate anticipation of transmission routes • Automatic, reliably effective interruption of transmission routes/chains <p>Due to the lack of influence on basic training, a need thus exists particularly in continuing education and personnel development across all occupational groups (medicine, nursing, healthcare assistants, nursing assistants, management, other staff).</p>
Hypothesis	In teaching, little consideration is given to the process-based, systemic nature of HAI prevention. Training is not conceived in a process-oriented manner; the dominant elements are fragmented, topic-/pathology-oriented factual learning on patient safety, infectious diseases, without transfer to practice.
Assessment /Comments	→ There is a widespread need to strengthen these skills, to allow well-known, straightforward standard hygiene principles to be applied to a complex real-life situation. → The expert view that there is a particular need for intensive continuing education where infections originate can be emphatically supported.
Hypothesis	Hygiene and infection prevention can be readily learned.
Assessment /Comments	→ For standard hygiene measures, it was shown that hygiene can be learned. → Non-professionals in some cases performed better than many physicians and nurses.
Hypothesis	It is not clear how much particular occupational groups should know about HAI prevention. Non-health professionals (30%) are definitely to be included. Among non-health professionals, there is a need for better training and practice-relevant skills.
Assessment /Comments	→ Different HAI skills are required depending on the type of interaction with patients/patient environment. However, the standard measures are applicable for everyone.

	→ There is no consensus as to which groups are relevant. There is a widespread need among non-professionals working near patients.
Hypothesis	Hygiene and infection prevention concern all occupational groups within institutions.
Assessment /Comments	→ The focus on interventions concerning individual hygiene and infection transmission problems inhibits infection prevention behaviour in daily routines – both among persons working near patients and among those who can influence organisational aspects.
Hypothesis	The infection prevention skills of health professionals are overestimated by superiors and by management.
Assessment /Comments	→ Across the entire spectrum of staff, hygiene knowledge, especially as applied in practice, is not as deeply rooted and routine as is supposed by those concerned and by superiors. → Healthcare assistants, nursing assistants, or cleaning staff are too often uncertain.
Hypothesis	Management lacks knowledge and awareness of HAI prevention.
Assessment /Comments	→ Within management, HAI awareness is not always present. As the organisational framework is essential for hygiene and infection prevention, action is required. In some cases, management also lacks the capacity to ensure compliance among refractory staff members.

Conclusions

In an area where the fundamental goal is to minimise or, if possible, completely eliminate errors, the potential for basic/advanced training and continuing education for all staff in the health sector, but also in particular for all health professionals, is not yet exhausted.

At an overarching level, the following observations can be made:

- Many deficiencies arise, not from training deficits, but from inadequate implementation.
- Organisational deficiencies, inadequate work and error culture, low prioritisation, lack of sanctions and high production pressure cannot be effectively remedied by means of training alone; there is a need for organisational development.
- Expert views differ, sometimes substantially, with regard to the skills/knowledge lacking and know-how deficits, as well as effective measures.
- A need for training exists for all occupational groups involved in the care process. Also to be included are all those who, as superiors or within management, bear organisational responsibility and allocate resources. Because the potential to influence basic training is limited, continuing education efforts must be intensified.
- The survey showed that, in the case of complex procedures, professionals also have inadequate skills, knowledge and know-how. In particular, there is a lack of understanding of the process-based and systemic nature of pathogen transmission and HAI prevention.
- Particular attention is to be paid to older staff in the categories of healthcare assistant, nursing assistant and cleaning staff.

Recommendations

The recommendations are addressed to the FOPH with the NOSO Strategy, its partner organisations and persons responsible for training:

- Development of a training standard for minimum hygiene and infection prevention skills for basic training in medicine and nursing and for healthcare assistants.
- Development of appropriate types of examination for all basic training programmes for occupations with patient contact.
- Development of concepts for effective basic training and continuing education involving realistic complexity, process orientation, interprofessionality, practical near-peer learning and “speaking up”.
- An awareness-raising campaign on widespread problems relating to standard hygiene measures (complexity, overestimating one’s own skills, effect on costs, reputational consequences, patient safety).
- Development of benchmarks, incentives and sanctioning options for institutions.
- Reduction in teaching of theoretical knowledge in training, to be replaced by practical exercises with visualisation of systemic HAI risk constellations and communication training.
- Announcement of high-profile HAI awards for diploma dissertations and for good teaching in the various basic training programmes and at various training levels, as well as for good practice in the acute/long-term care/rehabilitation settings.
- In management training programmes, regular inclusion of brief interventions on HAI questions (e.g. organisational risks, transmission routes, costs, reputational consequences and patient safety).
- Within institutions, annual organization of level-appropriate continuing education courses on critical activities and risk situations, which are process-oriented and systemic, interdisciplinary/interprofessional and involve near-peer learning.
- In continuing education programmes, a special focus on non-health professionals so as to improve adherence (non-native language skills, attitudes, limited perception).
- In personnel and management development, discussion of attitudes and the responsibility of superiors and role models.