NOSO Strategy – in brief
National Strategy for the Monitoring, Prevention and Control of Healthcare-Associated Infections
Switzerland has one of the most efficient healthcare systems in the world. This should not, however, detract from the fact that there is also a risk here in Switzerland of becoming infected with pathogens while in hospital or in a nursing home. Every year, some 70,000 patients fall ill in Swiss hospitals due to a healthcare-associated infection (HAI), and approximately 2,000 of them die as a result. In particular, surgical site infections and catheter-associated bacteraemias (blood poisoning) are frequent and are associated with serious consequences. Lungs and urinary tracts are also at risk or are susceptible to infections during and after medical interventions. Studies show that, depending on the type of infection, between 20% and 50% of these infections can be avoided through targeted monitoring and prevention measures.

There are numerous initiatives as well as concrete measures in Switzerland to reduce these infections. They do, however, vary greatly in terms of scope and quality depending on the establishment and region. To date, there is no national system for monitoring of the epidemiological situation, nor are there any generally valid, evidence-based minimal requirements or standards for preventing and combating HAIs. In addition, healthcare facilities need targeted support in introducing and adequately implementing measures to ensure that the topic receives a higher priority in their everyday work.

The Federal Council has declared the reduction of HAIs as one of the primary measures in its comprehensive health policy strategy “Health2020”. With the national Strategy for the monitoring, prevention and control of healthcare-associated infections (NOSO Strategy), the Confederation, cantons and implementing stakeholders are providing the necessary foundations for a targeted and nationally coordinated action. The acronym NOSO refers to the specialist term “nosocomial infection” from Greek nōsos “disease” and μικρόν μέλεί “to take care of”.

The following table provides an overview of possible responsibilities with regard to design and implementation of the measures. Details are clarified further with stakeholders and partners in the course of implementation planning.
The NOSO Strategy originated in close cooperation with the Swiss Conference of the Cantonal Ministers of Public Health (CMPH), H+ (the Hospitals of Switzerland), CURAVIVA (the association for Swiss nursing homes and institutions), the Swissnoso expert panel as well as medical professional societies, associations, insurers and other relevant stakeholders.

The NOSO Strategy is based on best practices in Switzerland and abroad and closes existing gaps. It sets out the responsibilities for achieving objectives and implementing measures. The suggested key measures take account of healthcare establishments’ different needs and possibilities and their operational requirements. The NOSO Strategy is also coordinated with federal measures such as the Strategy on Antibiotic Resistance (StAR) and pilot programmes that are part of the quality strategy, so as to ensure a common approach without any duplication.

The NOSO Strategy includes both occurrence and outbreaks of HAIs in inpatient care facilities (hospitals and nursing homes) in Switzerland. The Confederation intends to extend the NOSO Strategy to the outpatient domain in a second step.

The NOSO Strategy defines any infections as HAIs that occur while staying in a hospital or nursing home in connection with a diagnostic, therapeutic or nursing measure, or that are simply due to the circumstances of the stay, possibly as a result of pathogens in the air or on surfaces.

The Strategy’s objectives include the reduction of HAIs and the prevention of the spread of potentially dangerous pathogens in hospitals and nursing homes, in order to
(1) increase the safety of patients, residents and staff,
(2) improve protection of population health,
(3) contribute to the prevention and control of antibiotic resistance in Switzerland, and
(4) reduce follow-up costs.

To reduce the number of infections and associated loss of quality of life, as well as long-term effects and deaths, the national NOSO Strategy defines four priorities (action areas): governance, monitoring, prevention and control as well as education and research. For each action area a strategic objective is defined. The strategic objectives will be achieved by a set of 14 key measures.

As part of their respective responsibilities, the Confederation and the cantons ensure that the national NOSO Strategy is implemented and work closely with the different stakeholders in this area. The strategy objective, namely to ensure a significant and lasting reduction in HAIs, can only be achieved if implementation occurs on a wide scale and all stakeholders do their bit.

From the Confederation’s point of view, the following measures should have priority:

- Perform baseline study – starting 2016
- Expand structures (coordinating body EpG, Swissnoso+) and define responsibilities – starting 2016
- Win over decision-makers at cantonal, hospital and nursing home’s levels as prominent proponents for implementing the NOSO Strategy – starting 2016
- Expand existing surveillance of surgical site infections (Swissnoso/ANQ) in modules to include further HAIs – starting 2016 and following years
- Develop national guidelines on HAI prevention and control – starting 2016 and following years
- Provide suitable staff training for surveillance – starting 2017 and following years
- Promote awareness among stakeholders and the public – starting 2017 and following years

Surveillance is considered a priority area by the Confederation and should be expanded as soon as possible. The aim is to expand existing surveillance of surgical site infections in modules and provide national surveillance of the most common types of infection. These include the following:

- Catheter-associated bacteraemias (blood poisoning)
- Ventilation-associated pneumonias
- Catheter-associated urinary tract infections
Increase safety of patients, residents and staff

Confederation, cantons, hospitals, nursing homes, insurers, professional societies, national expert panels, associations, educational and research institutions, other stakeholders

Global objective

- Reduce healthcare-associated infections
- Improve protection of population health
- Contribute to reducing antibiotic resistance
- Reduce follow-up costs

Monitoring

- Evidence-based and best practice-oriented standards and guidelines
- Responsibilities and structures
- Support and control of implementation
- Knowledge management

Prevention and control

Governance

Education and research

Stakeholders

Confederation, cantons, hospitals, nursing homes, insurers, professional societies, national expert panels, associations, educational and research institutions, other stakeholders
The 14 key measures of the NOSO Strategy

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**Governance action area**

The Confederation coordinates the procedure of HAI monitoring, prevention and control. Evidence-based standards and guidelines, defined responsibilities, optimised structures and processes, incentives and a functioning knowledge management all contribute towards achieving the global objective. The different stakeholders assume an active role in accomplishing their respective tasks. They support the achievement of objectives by means of their own control instruments, through suitable information and communication measures and by complying with requirements.

National uniform standards and guidelines on HAI monitoring, prevention and control for hospitals and nursing homes have been developed and are regularly updated. The stakeholders know their responsibilities and roles and coordinate their activities. Hospitals and nursing homes have structures and processes in place for reducing HAIs. Strategy implementation is supported with suitable tools and positive incentives. Best practice knowledge is shared at regional, national and international levels.

**G-1 Standards and guidelines**

Develop evidence-based and best practice-oriented standards and guidelines

The extended national Swissnoso+ expert panel is charged by the Confederation with developing recommendations for guidelines and standards for HAI monitoring, prevention and control. These are based on scientific evidence (where available), and attention is paid to their feasibility. For the authorities, they serve as a basis for adopting national uniform recommendations and supplementary regulations at a regional or local level which take account of the particular epidemiological and institutional characteristics and any special considerations.
Important sub-areas of this key measure include:

- Define minimum requirements in terms of specialist staff
- Determine data requirements, methods and standards for monitoring
- Develop recommendations for data processing
- Define task-specific competences and learning objectives

G-2 Responsibilities and structures
Establish tasks and responsibilities, optimise structures

On the basis of currently applicable responsibilities and stakeholders’ existing competences and experiences, ways are indicated as a result of this measure in which to optimise the current division of responsibilities. Existing structures are used, consolidated and adapted in terms of scope and resourcing to the forthcoming implementation of the NOSO Strategy.

Important sub-areas of this key measure include:

- Clarify duties, optimise division of responsibilities
- Optimise structures
- Secure structures to coordinate monitoring
- Take account of quality management and infection prevention

G-3 Implementation support
Support implementation with suitable tools and positive incentives

With the provision of appropriate implementation guidance for hospitals and nursing homes, the Confederation arouses the interest of institutions in the strategy’s concerns and facilitates uniform and resource-efficient implementation. At the same time, the cantons are to periodically evaluate the implementation of measures taken on their territory. By supporting and evaluating implementation, the Confederation and the cantons aim at making safety and quality a norm of institutions’ everyday work.

Important sub-areas of this key measure include:

- Support and evaluate implementation with suitable tools
- Support pioneering projects and programmes in infection prevention
- Improve incentives to implement preventive measures
- Consider HAI reduction measures as a criterion in supervisory, planning and licensing processes

G-4 Knowledge management
Build up and expand knowledge

Knowledge exchange and networking in the field of HAI monitoring, prevention and control is the objective of this measure. Decentralised knowledge is pooled, geared to the respective target group and made publicly accessible.

Important sub-areas of this key measure include:

- Set up a knowledge platform
- Secure knowledge transfer between theory and practice
- Actively push international cooperation
Monitoring action area

On the basis of existing structures, ongoing programmes and legal foundations, and by respecting responsibilities at the cantonal and federal levels, the monitoring of HAIs and their pathogens is being developed in Switzerland as needed. To this end, there are plans to record HAIs (outcome data) and pathogens as well as observe significant structural and process parameters (e.g. quality of monitoring or adherence to prevention measures in institutions). Depending on requirement, the collected data are evaluated locally (health institution), regionally (cantons) or nationally (Confederation, ANQ, etc.) and promptly made available to the parties concerned. They are used as a basis for developing and implementing targeted interventions or for evaluating their impact.

A national system for monitoring HAIs and their influencing factors (structures and processes) has been set up and is in operation. HAI data and analyses are promptly available and presented according to needs and target group. Switzerland has a high level of knowledge about the epidemiology of dangerous pathogens which can cause HAIs.

M-1 National monitoring system
Set up and operate a national monitoring system

On the basis of recommendations and derived standards and guidelines regarding data requirement, methods and procedures, a national monitoring system is being designed. Currently existing monitoring programmes in Switzerland will be expanded and coordinated with each other.

Important sub-areas of this key measure include:
- Strengthen stakeholders locally and provide appropriate training
- Ensure quality of monitoring

M-2 Targeted data utilisation
Evaluate data in a targeted manner, making analyses available promptly according to needs and target group

Relevant observations are regularly evaluated at institutional, cantonal or federal level according to defined criteria. Data are used as recommended by the specialists responsible (cf. measure G-1).

Important sub-areas of this key measure include:
- Evaluate data promptly, according to needs and target group
- Provide feedback on adherence-related observations directly to the staff concerned
- Introduce public reporting and benchmarking

M-3 Early detection
Enhance early detection

The NOSO Strategy provides the necessary framework to ensure that any threatening HAI outbreaks are detected early and the spread of pathogens can be contained.

Important sub-areas of this key measure include:
- Enhance early detection systems within institutions
- Determine reporting topics and deadlines, and put them on a statutory basis
Prevention and control action area

Targeted measures are designed to ensure that the different stakeholders (mainly the Confederation, cantons, hospitals, nursing homes and professional societies) and persons affected (staff, patients, residents and visitors) are aware of the problem, take it seriously and contribute to implementing the NOSO Strategy. Information, practical implementation guidance and evaluations help organisations and individuals review and where necessary adapt their attitude and behaviour regarding infection risks in accordance with the strategy objective.

**Strategic thrust**

Staff, patients, residents and visitors to hospitals and nursing homes are familiar with the problem of HAIs and their consequences for personal and public health. They understand the measures to be taken and help implement them. Immunisation is promoted in hospitals and nursing homes.

**Key measures**

**PC-1 Optimisation and further development**
Optimise and further develop prevention and control

Healthcare facilities are continuously putting into practice the recommendations and derived national standards and guidelines on prevention and control of HAIs.

**PC-2 Awareness-raising and involvement**
Promote public awareness and involve those directly affected in infection prevention

The promoting of awareness and involvement occurs in a suitable form at various levels and addresses decision-makers at institutional, cantonal and national levels as well as patients, residents, visitors and even the general public.

Important sub-areas of this key measure include:

- Develop and implement a communication concept specifically to particular target groups for informing the public
- Involve patients, residents and visitors in infection prevention
- Stakeholders formally declare their commitment

**PC-3 Learning and dialogue culture**
Promote learning and dialogue culture in hospitals and nursing homes

In every healthcare facility, infection prevention becomes an integral part of corporate culture and quality management. The possibility of sanction-free reporting on errors and incidents contributes to the constructive dialogue and thus to the institution’s continuing development.

**PC-4 Promotion of preventive vaccination**
Promote preventive vaccination in hospitals and nursing homes

Healthcare facilities motivate their staff to be vaccinated against preventable infectious diseases and have their vaccination status checked regularly. They also make other persons who are in hospitals or nursing homes either temporarily or in the longer term increasingly aware of the benefits of vaccination.
The institutions in charge of the respective levels of education coordinate the optimisation of educational concepts and offers in the area of infection prevention. In cooperation with university hospitals and other healthcare institutions as well as professional societies and associations, they ensure education and continuing professional development of healthcare professionals into specialists in infection prevention. Hospitals and nursing homes support their staff’s continuing professional development. Research into infection risks is promoted, as is research into the possibilities and limitations of improving patient safety.

Staff in hospitals and nursing homes are trained in infection prevention according to needs. They have the necessary competence to help reduce HAIs. Research and development are promoted and the use of new technologies is systematically evaluated.

<table>
<thead>
<tr>
<th>Key measures</th>
<th>ER-1  Infection prevention in education</th>
<th>Reinforce the importance of infection prevention in training and continuing professional development</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Learning objectives in relation to dealing with HAIs are defined at all levels according to the established needs and for all professions according to the specific task, with learning content being conveyed accordingly. Medical and non-medical staff in healthcare institutions have the necessary competence to help reduce HAIs.</td>
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</tbody>
</table>

Important sub-areas of this key measure include:
- Provide training and continuing professional development for specialists in infection prevention as needed
- Reinforce the importance of infection prevention in continuing professional development of staff in healthcare institutions
- Institutionalise staff training in the area of infection prevention

<table>
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<tr>
<th>ER-2  Research promotion</th>
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<tr>
<td>Anchor the issue of HAIs in research promotion</td>
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</table>

Research and innovation promotion stakeholders at national and local levels are encouraged to launch an increasing number of solicitations on the subject of HAIs and identify existing gaps in research. Cantons use the opportunity of their service contracts with the universities to influence the future direction of healthcare research.

<table>
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<tr>
<th>ER-3  New technologies, quality assurance</th>
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<tbody>
<tr>
<td>Determine costs, efficacy and safety of new technologies, reinforce quality assurance</td>
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</tbody>
</table>

Decision-making principles are being developed that will allow technology users to assess costs, efficacy and safety of technological innovations even before they are introduced. To this end, evidence-based measurement data are defined and utilised.
### NOSO Strategy – Summary of responsibilities

The following table provides an overview of possible responsibilities with regard to design and implementation of the measures. Details are clarified further with stakeholders and partners in the course of implementation planning. Defined responsibilities may change based on the structuring of the measures.

#### 1. Implementation support

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<td><strong>G-2 Responsibilities and structures</strong></td>
<td>Data requirements, methods and standards</td>
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</tr>
<tr>
<td></td>
<td>Institutions in charge of the respective level of education</td>
<td>Confederation*, ANQ, CURAVIVA/senesuisse, professional societies, CMPH, H+, Swissnoso+, Patient Safety Switzerland; Confederation</td>
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<tr>
<td></td>
<td>Competences and learning objectives</td>
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</tr>
<tr>
<td></td>
<td>Optimise structures</td>
<td>Confederation*, ANQ, CURAVIVA/senesuisse, professional societies, CMPH, H+, Swissnoso+, Patient Safety Switzerland; Confederation</td>
</tr>
<tr>
<td></td>
<td>Coordination structures</td>
<td>Confederation*, ANQ, CURAVIVA/senesuisse, professional societies, CMPH, H+, Swissnoso+, Patient Safety Switzerland; Confederation</td>
</tr>
<tr>
<td></td>
<td>Coordination structures for monitoring, management and infection prevention</td>
<td>H+, Cantons</td>
</tr>
<tr>
<td><strong>G-3 Implementation support</strong></td>
<td>Support pioneering projects</td>
<td>Swissnoso+<em>, CURAVIVA/senesuisse, H+, Swissnoso+, Patient Safety Switzerland</em>; Confederation (EpG and quality strategy)</td>
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<td></td>
<td>Improve incentives</td>
<td>Confederation*, CURAVIVA/senesuisse, H+, Cantons, Swissnoso+, cantons; Confederation, cantons</td>
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<td><strong>G-4 Knowledge management</strong></td>
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<td>Knowledge transfer</td>
<td>Swissnoso+*, CURAVIVA/senesuisse, ANQ, Confederation, Cantons, CMPH, H+, Swissnoso+, hospitals, nursing homes</td>
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<td><strong>M-1 National monitoring system</strong></td>
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<td>Swissnoso+*, CURAVIVA/senesuisse, ANQ, Confederation, Cantons, ANQ, Swissnoso+, hospitals, nursing homes</td>
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<td>High-quality monitoring</td>
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<td><strong>M-2 Targeted data utilisation</strong></td>
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<td><strong>M-3 Early detection</strong></td>
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<td><strong>M-4 Prevention and further development</strong></td>
<td>Infection prevention in education</td>
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<td></td>
<td>Institutionalise education in infection prevention</td>
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<td>Quality assurance</td>
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#### Information on responsibilities

- **NOSO Strategy**: The NOSO Strategy outlines the measures to be taken in response to the COVID-19 pandemic, including responsibilities for various stakeholders and partners.
- **Implementation planning**: Details of the implementation are being clarified and coordinated with stakeholders and partners as the plan is being developed.
- **Change of responsible bodies**: The responsibilities for the implementation of the measures are subject to change as the operational structure evolves.
- **Responsibilities and structures**: The table provides an overview of the responsibilities, structures, and coordination activities associated with the implementation of the NOSO Strategy.
Imprint

Editor:
Federal Office of Public Health (FOPH)

Date of publication:
March 2016

This publication is also available in German, French and Italian.

Further details regarding the NOSO Strategy and this publication are available online:
www.bag.admin.ch/NOSO

Source of supply:
BBL, Verkauf Bundespublikationen, 3003 Bern
www.bundespublikationen.admin.ch

BBL-Order number:
316.527.e

FOPH-Publication number:
216-OEG-08

Printed on unchlorinated bleached paper