

SGInf/SGSH/SSM – Jahreskonferenz 2024, Bern

Infektionsprävention mehr als 50 Jahre

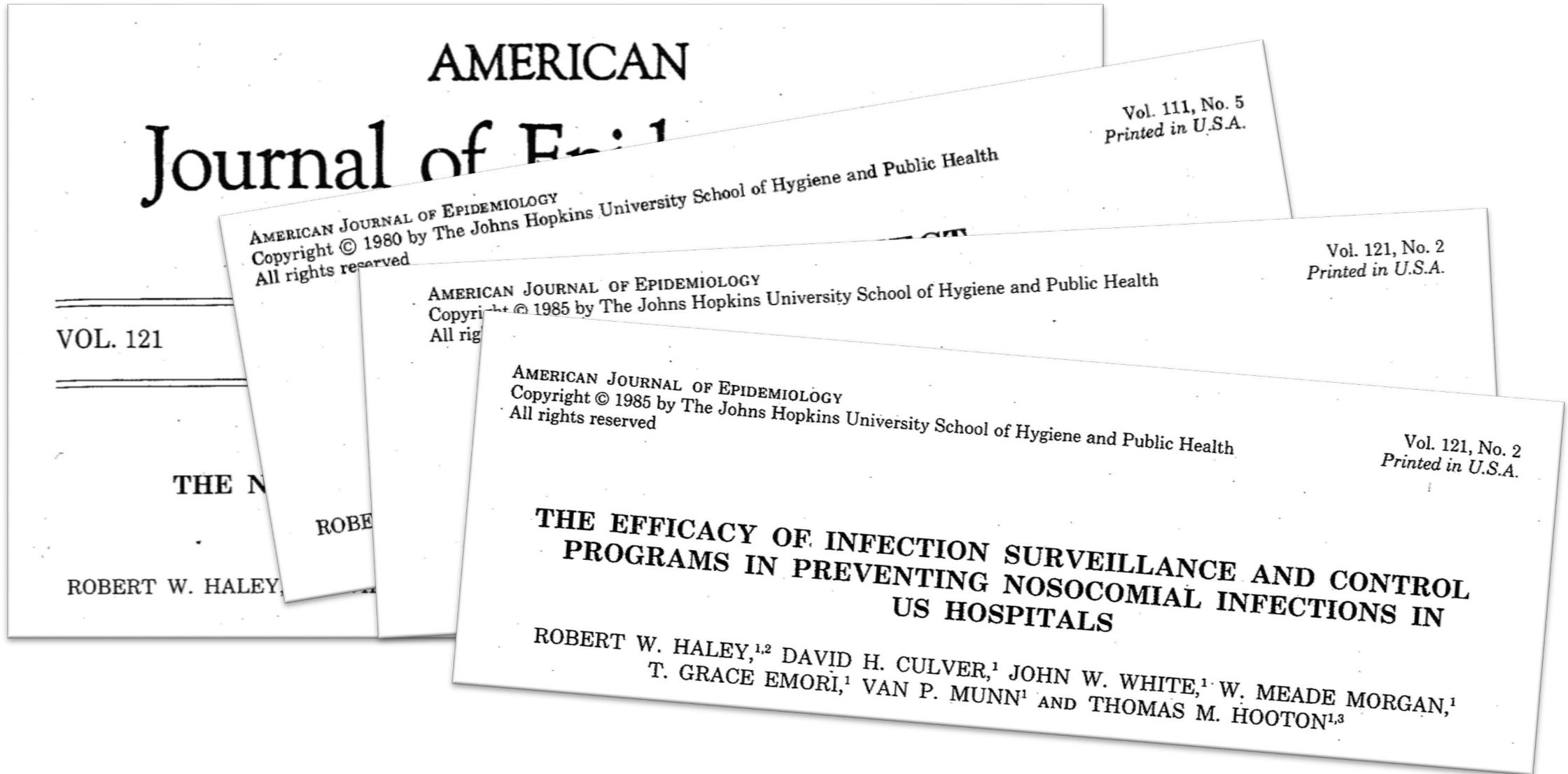
Meilensteine und Visionen

Walter Zingg

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Die “SENIC” Studie

Study on the Efficacy of Nosocomial Infection Control



Hypothese

474

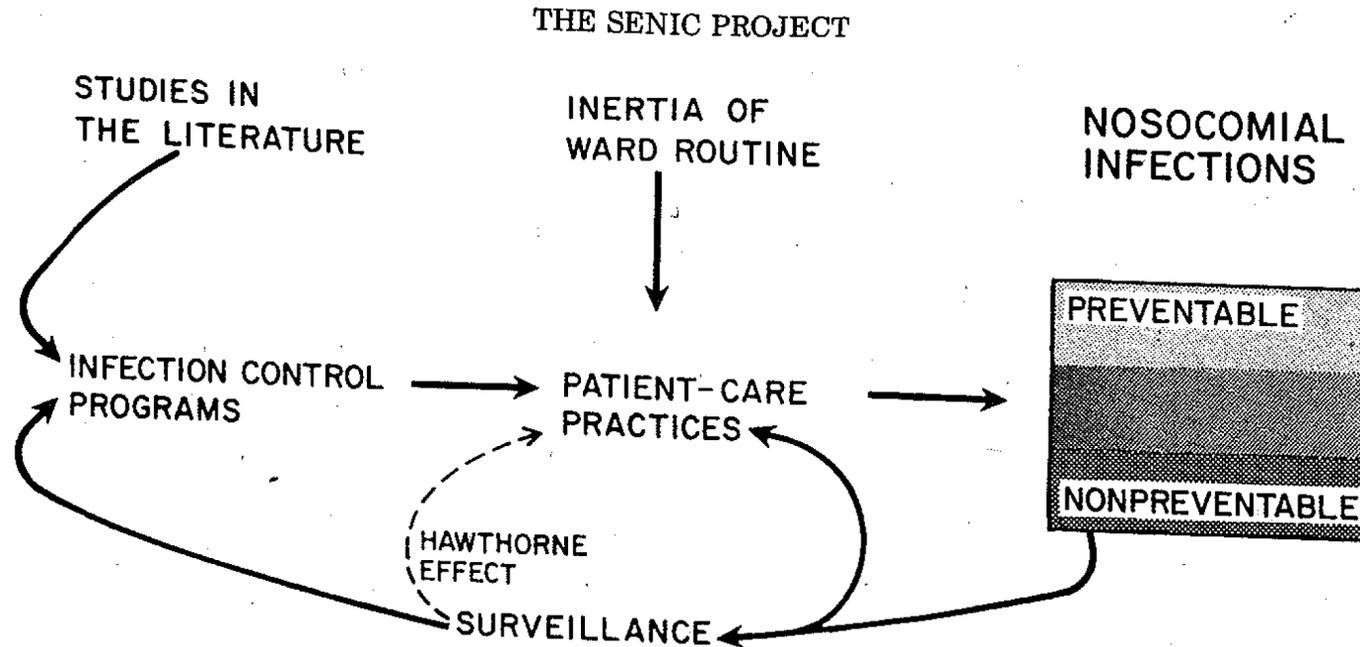


FIGURE 1. Simplified theoretical model of an infection surveillance and control program (ISCP).

- 1 Spitalhygienische Fachkraft pro 250 Betten
- 1 Epidemiologe
- Mikrobiologische Unterstützung
- IT-Support

→ *Surveillance*
→ *Prävention healthcare-assozierte Infektionen*

Nationales Projekt zur Evaluation spitalhygienischer und präventiver Massnahmen

Ursprüngliches Projekt

- Spitäler ohne Spitalhygiene sollten in eine Interventions- und eine Kontrollgruppe randomisiert werden
- Die Intervention sollte ein Programm sein, das Infektionsüberwachung und –Prävention kombiniert
- Healthcare-assoziierte Infektionen sollten prospektiv über mehrere Jahre gemessen werden

Durchgeführte Studie: quasi-experimentelle Studie in drei Phasen

- Phase I: Fragebogen zur Erfassung aktueller Aktivitäten hinsichtlich Infektionsüberwachung und –Prävention
- Phase II: Interviews mit den Spitälern, um die Informationen aus dem Fragebogen zu vertiefen und zu definieren, was Infektionsüberwachung und –Prävention konkret bedeuten
- Phase III: Abschätzung der Infektionsinzidenz anhand von Krankenakten im Jahr vor Einführung der «Intervention» und im aktuellsten Jahr der Informationserfassung

Phase I

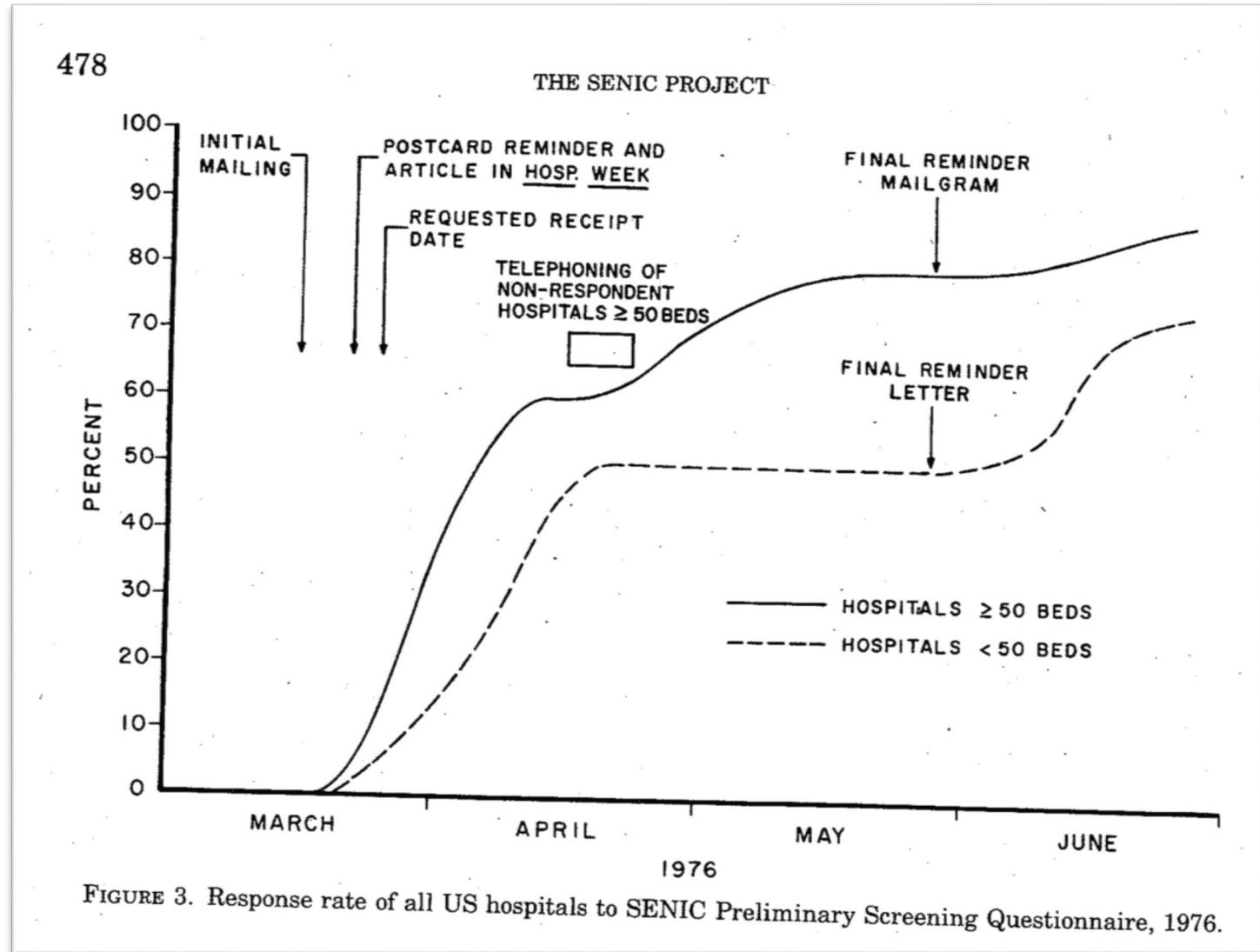
Fragebogen zur
Einschätzung der
Umsetzung von
Infektionsüberwachung
und –Prävention

Einladung aller 6586
Akutkrankenhäuser in
den USA

*Rücklauf: 86% (3599) der
«SENIC Universe of
hospitals»**

**Medizinische und chirurgische Allgemein-
krankenhäuser mit >50 Betten in 48 Staaten*

Haley RW *J Epidemiol* 1980;111:472



Phase II

Persönliche Interviews
mit relevanten Akteuren
(i.d.R 12) in den
Spitälern

Detailliertere
Abschätzung der
Umsetzung von
Massnahmen in
Infektionsüberwachung
und -Prävention

TABLE 1

Number of hospital personnel interviewed and average duration of their interviews among the 433 hospitals in the Hospital Interview Survey (Phase II) of the SENIC Project

| Hospital personnel | No. of persons interviewed | Average (\pm SD) interview time (minutes) |
|---|----------------------------|--|
| 1. Chairperson of the infection control committee and/or HE* | 488 | 86 (\pm 26) |
| 2. ICN† (if none, the nursing representative on the infection control committee or other most knowledgeable infection control person) | 465 | 176 (\pm 49)‡ |
| 3. Hospital Administrator (or Assistant Administrator more directly in charge of infection control) | 437 | 20 (\pm 7) |
| 4. Director of the Microbiology Laboratory | 435 | 24 (\pm 9) |
| 5. Technicians in the Microbiology Laboratory | 432 | 17 (\pm 6) |
| 6. Director of the Nursing Service | 447 | 15 (\pm 5) |
| 7. Operating Room Supervisor | 437 | 25 (\pm 8) |
| 8. Head of Pharmacy | 435 | 7 (\pm 4) |
| 9. Head of Inhalation Therapy | 430 | 15 (\pm 5) |
| 10. Head of Intravenous Team (if IV team present) | 121 | 15 (\pm 5) |
| 11. Head of Housekeeping | 439 | 13 (\pm 5) |
| 12. Person in charge of cleaning anesthesia equipment | 434 | 10 (\pm 5) |
| 13. Sample of the nursing staff | 7188 | 50¶ |
| TOTAL | 12,969 | |

* HE = hospital epidemiologist.

† ICN = infection control nurse.

‡ This interview had a scheduled break at approximately the midpoint to reduce the adverse effects of fatigue.

¶ Estimated.

Phase III

Vergleich der **Inzidenz** healthcare-assoziiierter Infektionen im Jahr, bevor das Spital Massnahmen zu Infektionsüberwachung und -Prävention eingeführt hatte, mit dem aktuellsten Jahr der Informationserhebung (De facto wurde 1970 als Baseline und April 1975 bis März 1976 als Outcome-Periode gewählt)

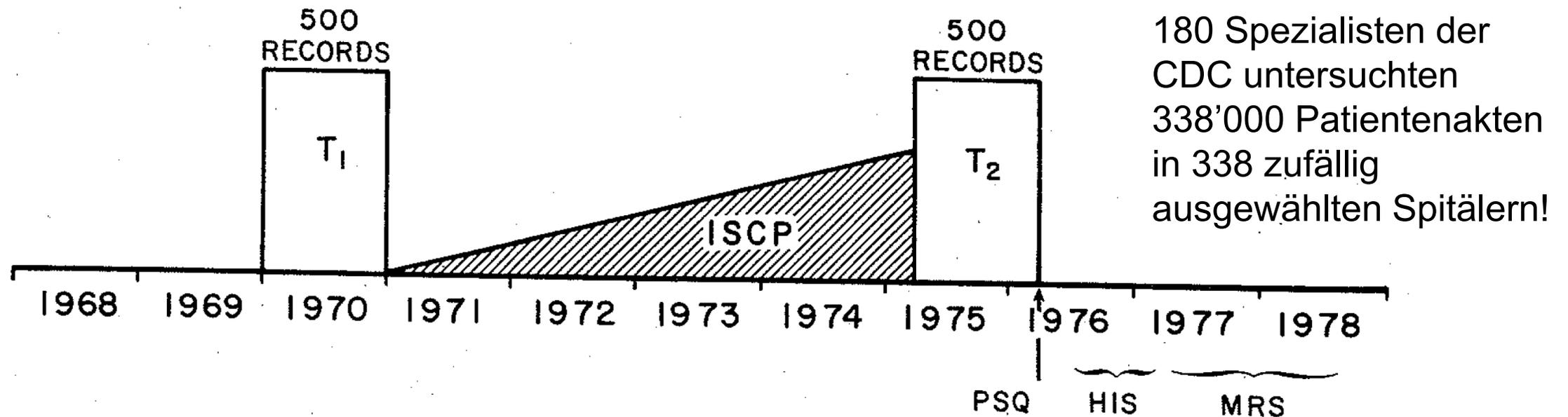
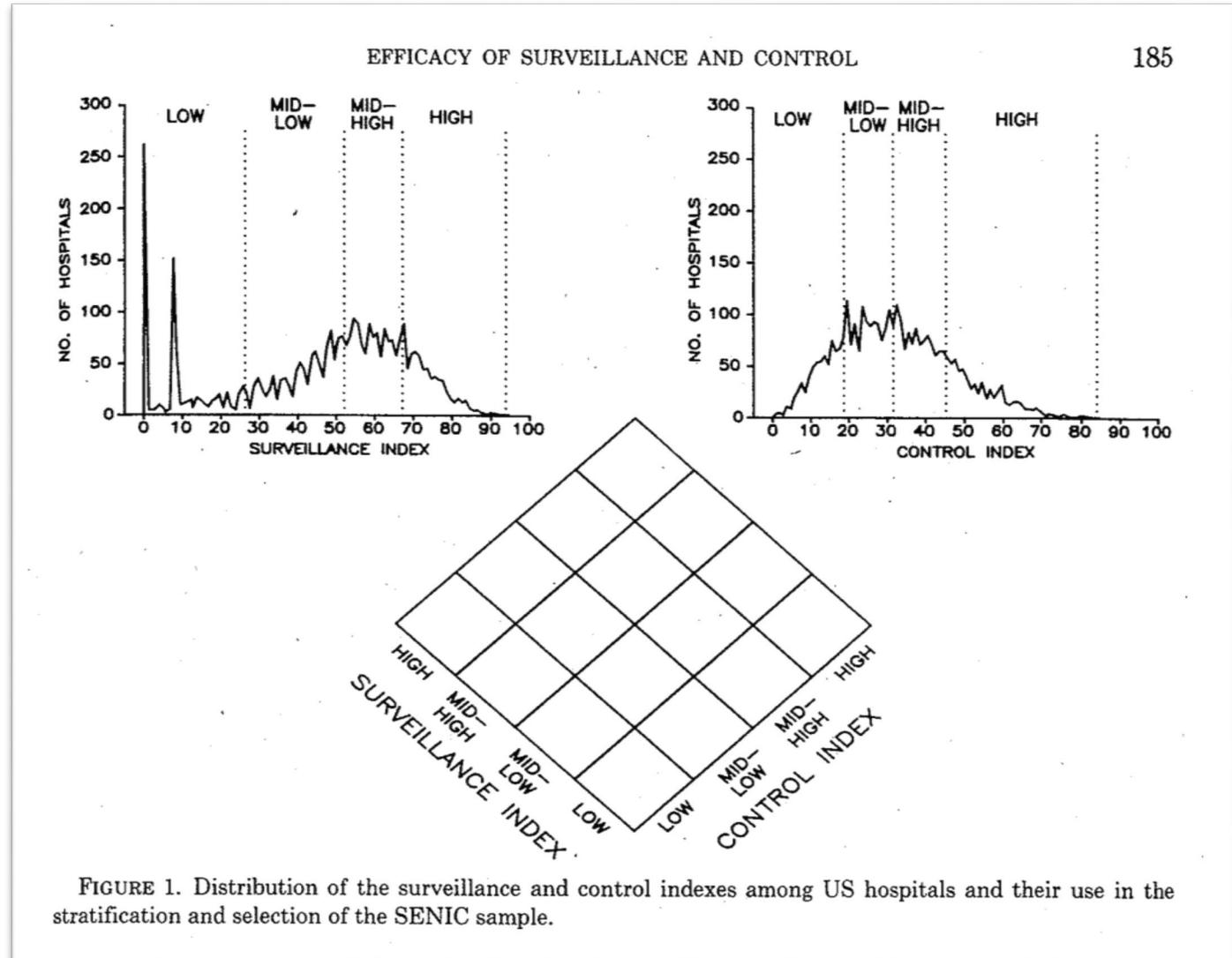


FIGURE 2. SENIC study design.

Analyse

Umsetzung von
Infektionsüberwachung
und –**Prävention** der
Phasen I & II



Analyse

TABLE 6

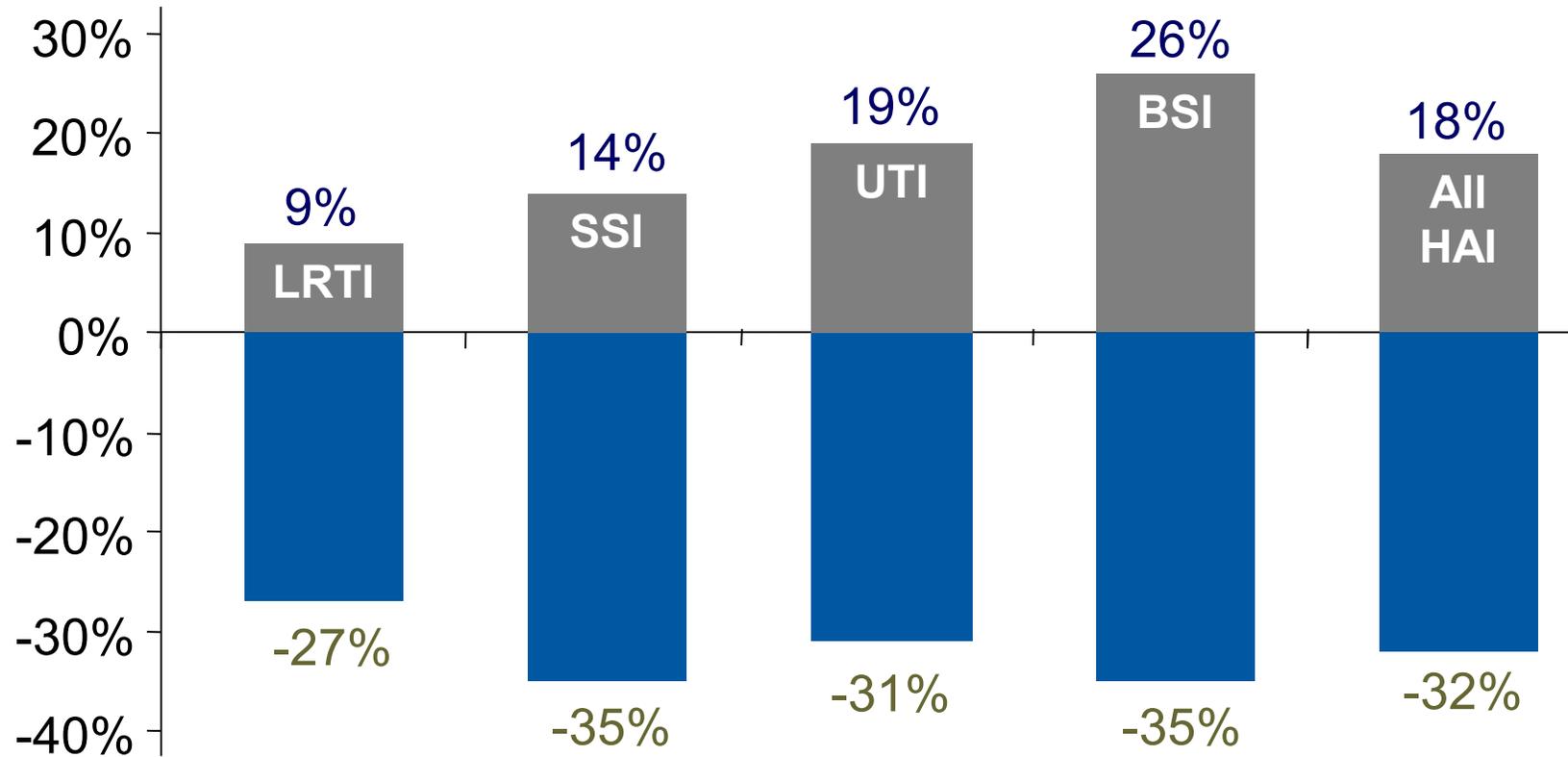
Percentage change in nationwide nosocomial infection rates from 1970 to 1975-1976 among hospitals that established infection surveillance and control programs (ISCP) of differing quality

| Site of infection | Patient group | Quality of ISCP* | | | | | | | |
|--------------------------|----------------------|------------------|----------|----------------------|----------|-------------|----------|---------------|----------|
| | | Very effective | | Moderately effective | | Ineffective | | All hospitals | |
| | | % change | Z value† | % change | Z value† | % change | Z value† | % change | Z value† |
| Surgical wound infection | High risk | -48.0 | -3.08 | -4.8 | -0.63 | 13.8 | 2.09 | -0.6 | -0.11 |
| | Low risk | -23.6 | -2.28 | 20.4 | 2.48 | 21.3 | 4.15 | 18.9 | 4.51 |
| Urinary tract infection | High risk | -35.8 | -4.51 | | | 18.5 | 3.84 | 13.8 | 3.04 |
| | Low risk | -41.6 | -2.58 | | | 30.7 | 6.89 | 27.0 | 6.19 |
| Pneumonia | High risk (surgical) | -7.3 | -0.50 | | | 9.3 | 2.07 | 8.0 | 1.85 |
| | Low risk (medical) | | | -7.7 | -1.47 | 10.0 | 1.84 | 1.2 | 0.32 |
| Bacteremia | All patients | -27.6 | -2.40 | 18.6 | 2.24 | 25.5 | 5.20 | 21.6 | 5.07 |

* Defined in tables 1-4.

† Test of the null hypothesis that the percentage change was 0; $Z > 1.64$ or $Z < -1.64$ is statistically significant in one-tailed test at the $p = 0.05$ level.

Ohne Infektionsüberwachung und -Prävention



338 zufällig
ausgewählte
Spitäler aus dem
«*SENIC Universe
of hospitals*»

Mit Infektionsüberwachung und -Prävention

1970

1975/1976

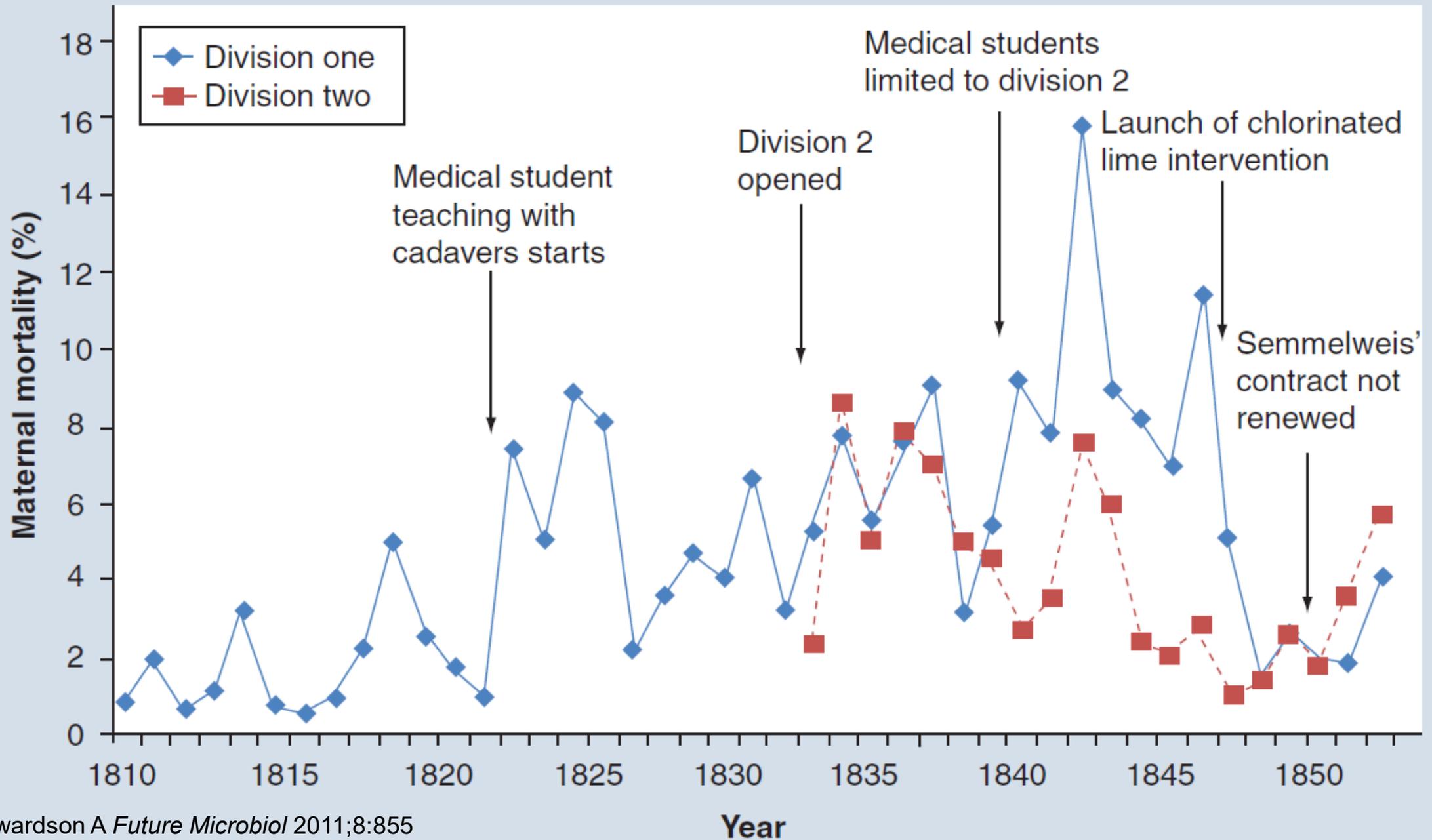
169'518 Patienten

169'526 Patienten

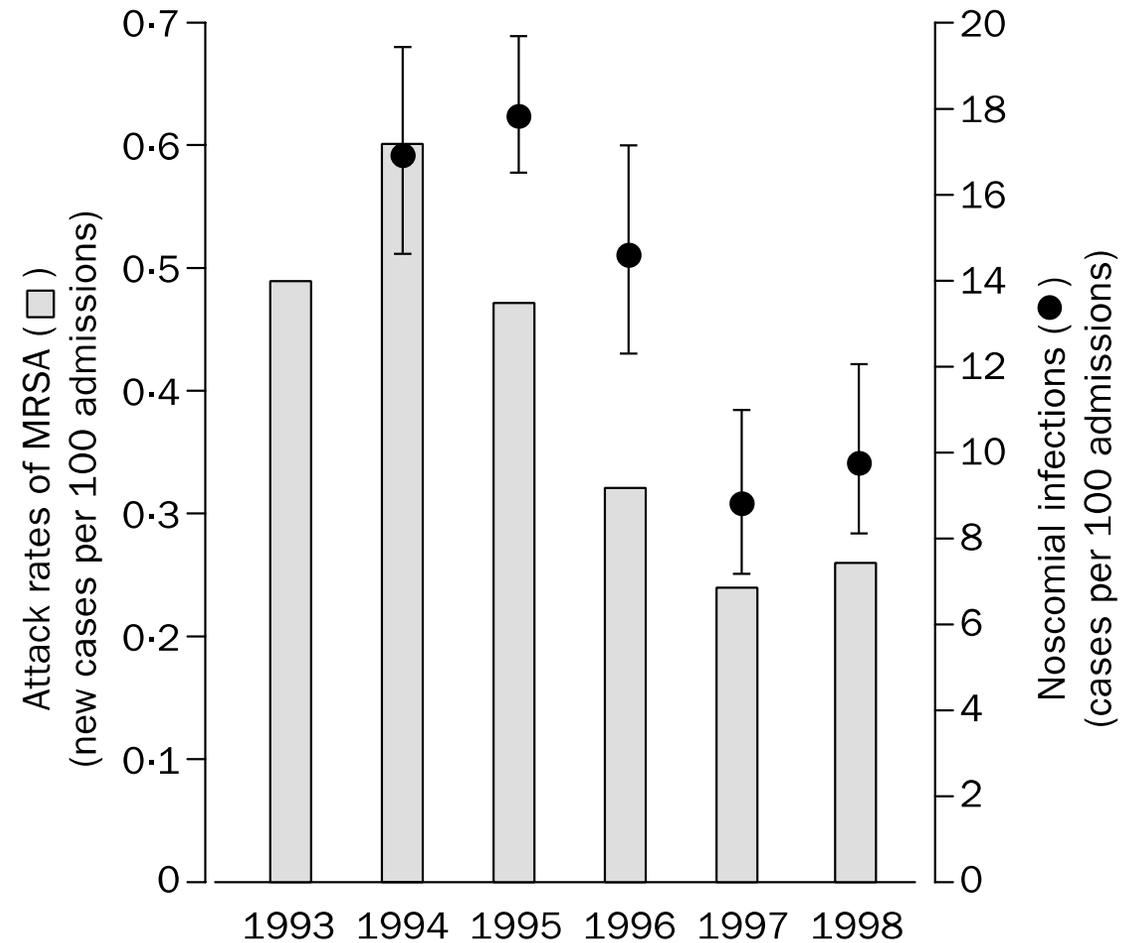
1'782'172 Patiententage

1'603'307 Patiententage

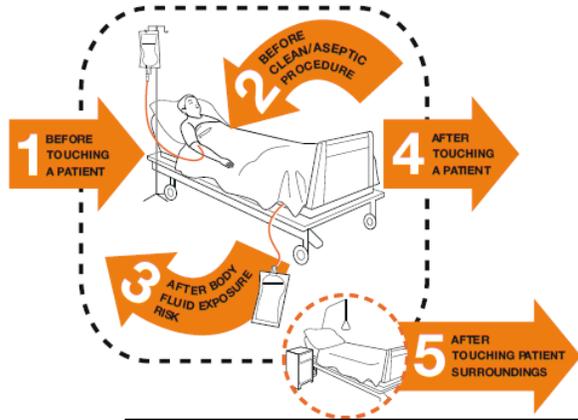
Die “*SAVE LIVES: Clean Your Hands*” Kampagne



Händehygiene schafft es ins Lancet!



When? YOUR 5 MOMENTS FOR HAND HYGIENE



Clean hands are safer hands.
Are yours clean?



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How to Handrub?

RUB HANDS FOR HAND HYGIENE! WASH HANDS WHEN VISIBLY SOILED

⌚ Duration of the entire procedure: 20-30 seconds



How to Handwash?

WASH HANDS WHEN VISIBLY SOILED! OTHERWISE, USE HANDRUB

⌚ Duration of the entire procedure: 40-60 seconds



World Health Organization



WHO Guidelines on Hand Hygiene

First Global Patient Safety Action Plan
Clean Care is Safer



SAVE LIVES
Clean **Your** Hands

Hand Hygiene Technical Package

To be used by health-care workers, patient safety trainers and observers



Hand Hygiene: Why?

WHY?

- Thousands of people die each year around the world from infections acquired while receiving health care.
- Hands are the main pathway for germ transmission during health care.
- Hand hygiene is therefore an important measure to avoid transmission of harmful germs and prevent health-care-associated infections.
- This brochure explains when to practice hand hygiene.

WHO?

- Any health-care worker, person involved in direct patient care needs to be able to perform hand hygiene at the right time.

PAGE 1 OF 7

WHO acknowledges the Hôpitalaux Universitaires de Ginevra for their active participation in the development of this document.

Revised August 2009



Patient Safety
A World Alliance for Safer Health Care

SAVE LIVES
Clean **Your** Hands

Glove Use Information Leaflet

Outline of the evidence and considerations on medical glove use to prevent germ transmission

Definitions

Medical gloves are defined as disposable gloves used during medical procedures; they include:

1. Examination gloves (non sterile or sterile)
2. Surgical gloves that have specific characteristics of thickness, elasticity and strength and are sterile
3. Chemotherapy gloves – these gloves are not addressed within this document

Rationale for using medical gloves:

Medical gloves are recommended to be worn for two main reasons:

1. To reduce the risk of contamination of health-care workers hands with blood and other body fluids.
2. To reduce the risk of germ dissemination to the environment and of transmission from the health-care worker to the patient and vice versa, as well as from one patient to another.

Gloves should therefore be used during all patient-care activities that may involve exposure to blood and all other body fluid (including mucous membrane and non-intact skin), during contact precautions and outbreak situations.

The efficacy of gloves in preventing contamination of health-care workers' hands and helping to reduce transmission of pathogens in health care has been confirmed in several clinical studies. Nevertheless, health-care workers should be informed that gloves do not provide complete protection against hand contamination. Pathogens may gain access to the caregivers' hands via small defects in gloves or by contamination of the hands during glove removal. Hand hygiene by rubbing or washing remains the basic to guarantee hand decontamination after glove removal.

Key learning point: gloves do not provide complete protection against hand contamination.

PAGE 1 OF 4

Revised August 2009

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The impact of wearing gloves on adherence to hand hygiene policies has not been definitively established, since published studies have yielded contradictory results. However, the recommendation to wear gloves during an entire episode of care for a patient who requires contact precautions, without considering indications for their removal, such as an indication for hand hygiene, could actually lead to the transmission of germs.

Key learning point: prolonged use of gloves for contact precautions in the absence of considering the need to perform hand hygiene can result in the transmission of germs.

Glove use and the need for hand hygiene:

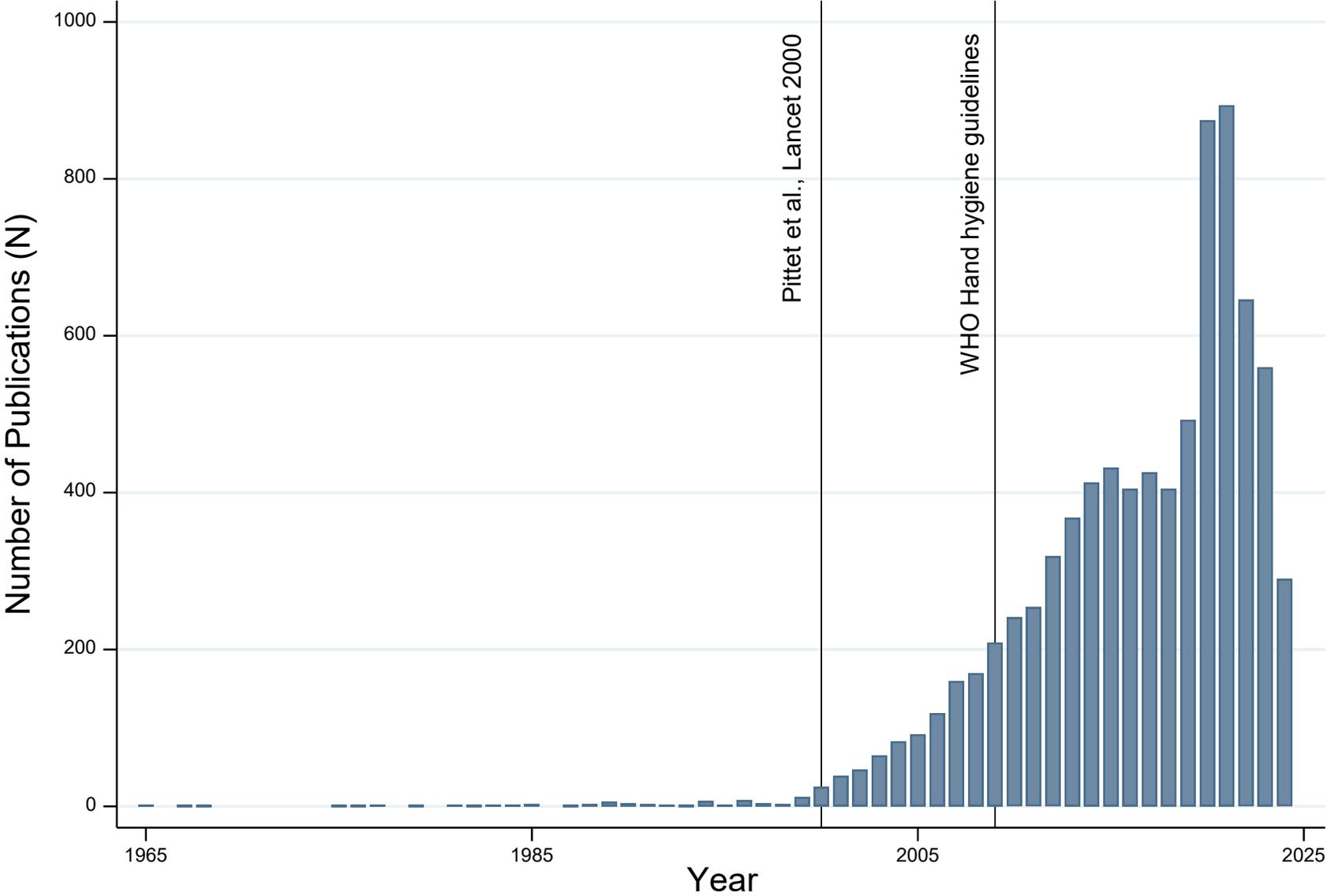
- When an indication for hand hygiene precedes a contact that also requires glove usage, hand rubbing or hand washing should be performed **before donning gloves**.
- When an indication for hand hygiene follows a contact that has required gloves, hand rubbing or hand washing should occur **after removing gloves**.
- When an indication for hand hygiene applies while the health-care worker is wearing gloves, then gloves should be **removed to perform handrubbing or handwashing**.

Inappropriate glove use:

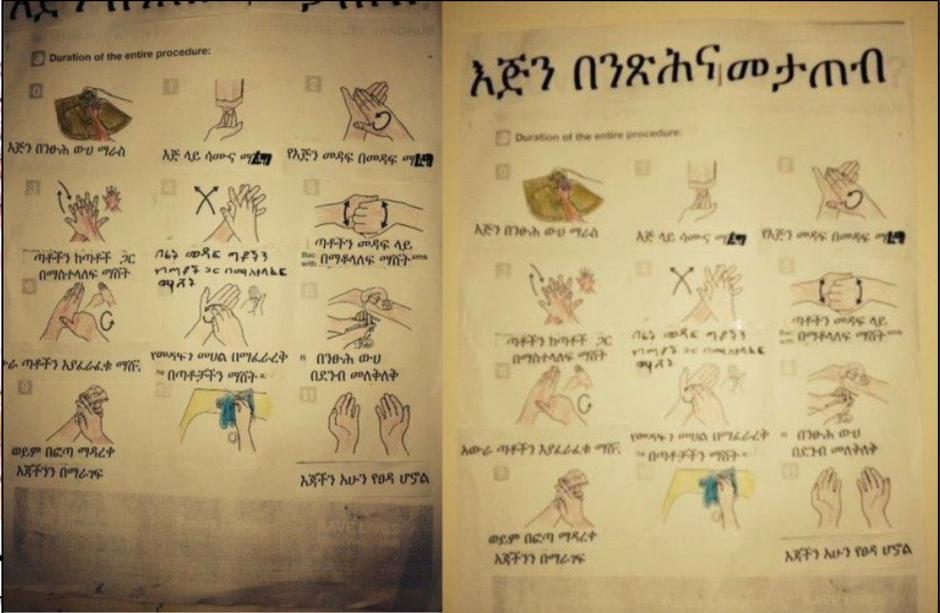
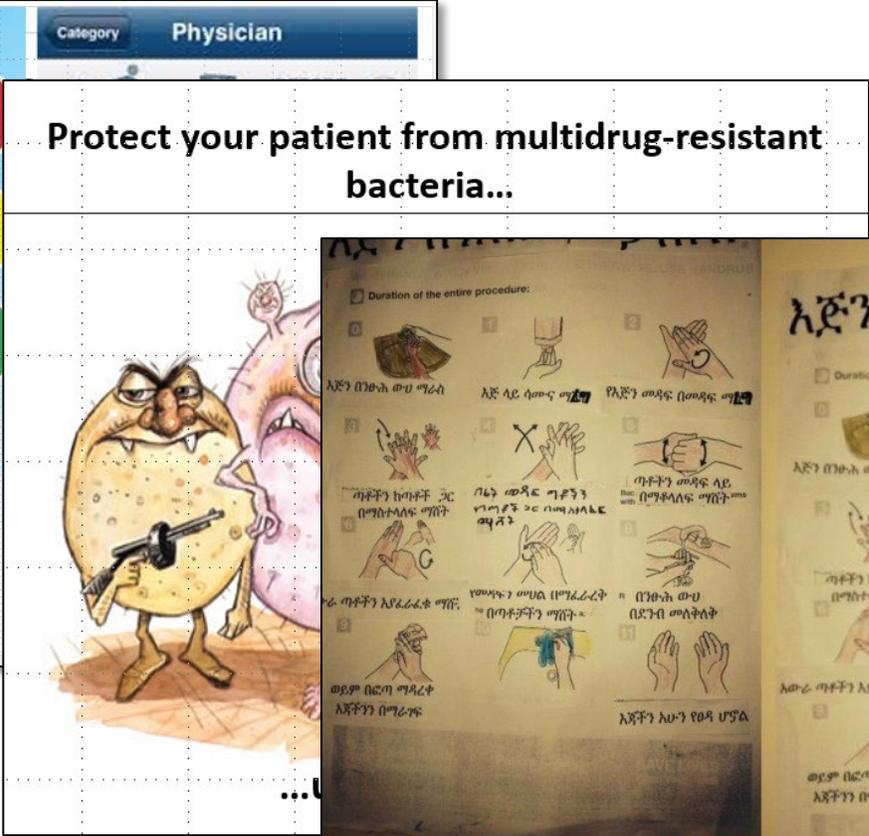
- The use of gloves when not indicated represents a waste of resources and does not contribute to a reduction of cross-transmission.
- It may also result in missed opportunities for hand hygiene.
- The use of contaminated gloves caused by inappropriate storage, inappropriate moments and techniques for donning and removing, may also result in germ transmission.

Key learning point: it is important that health-care workers are able to differentiate between specific clinical situations when gloves should be worn and changed and those where their use is not required (see figure The Glove Pyramid). Moreover, the health-care worker should be accurately informed on the moment (see Table) for donning and removing gloves.

Scientific publications on hand hygiene since 1965, PubMed

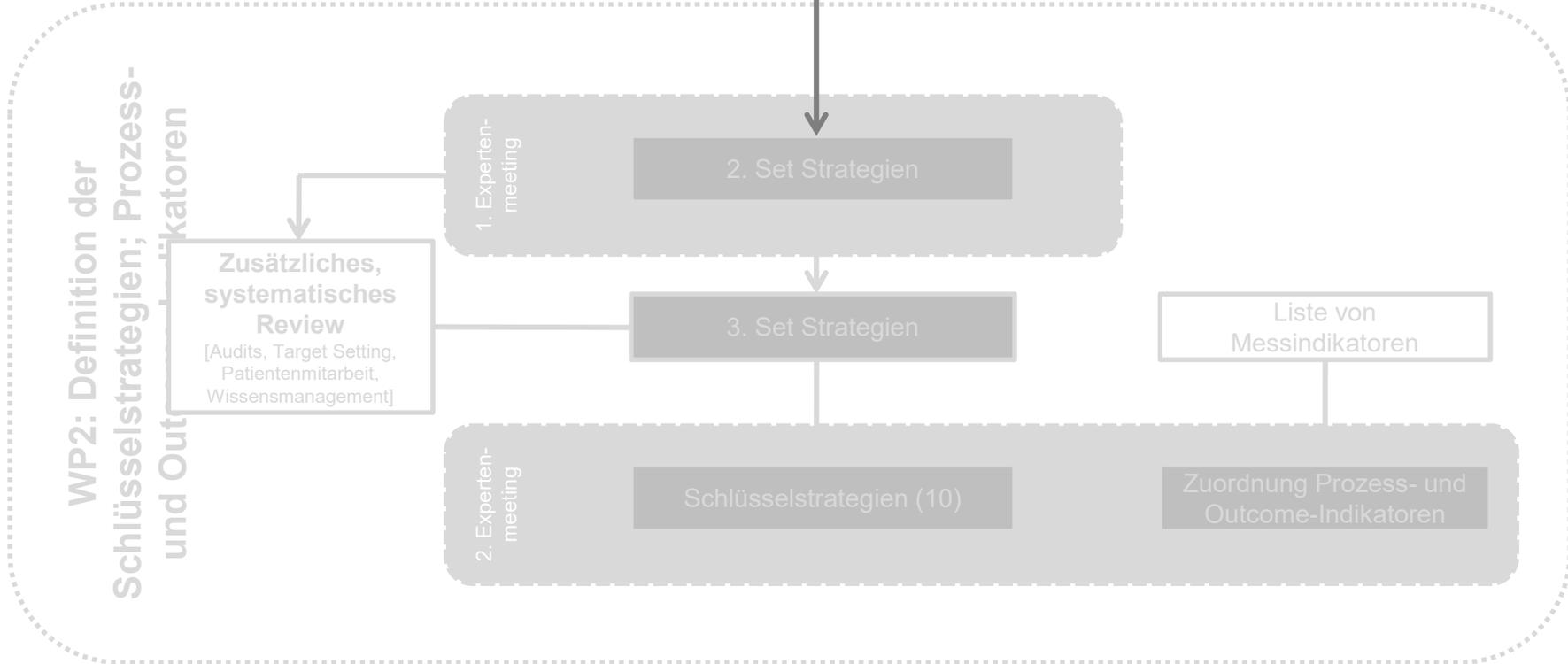
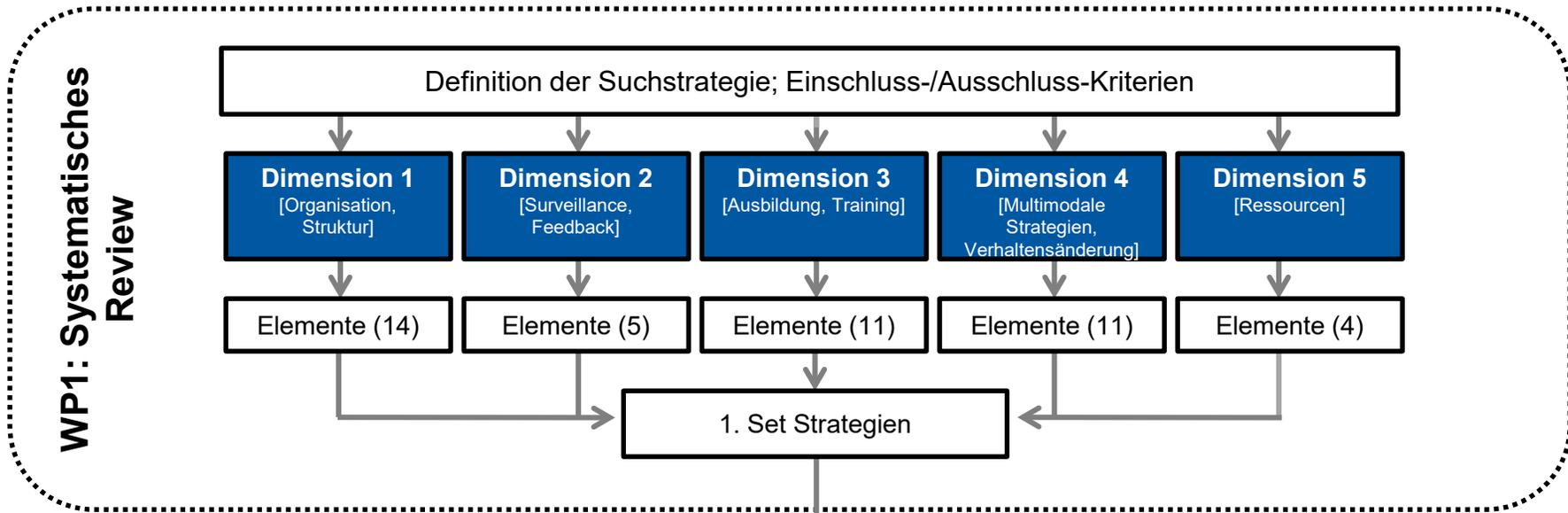


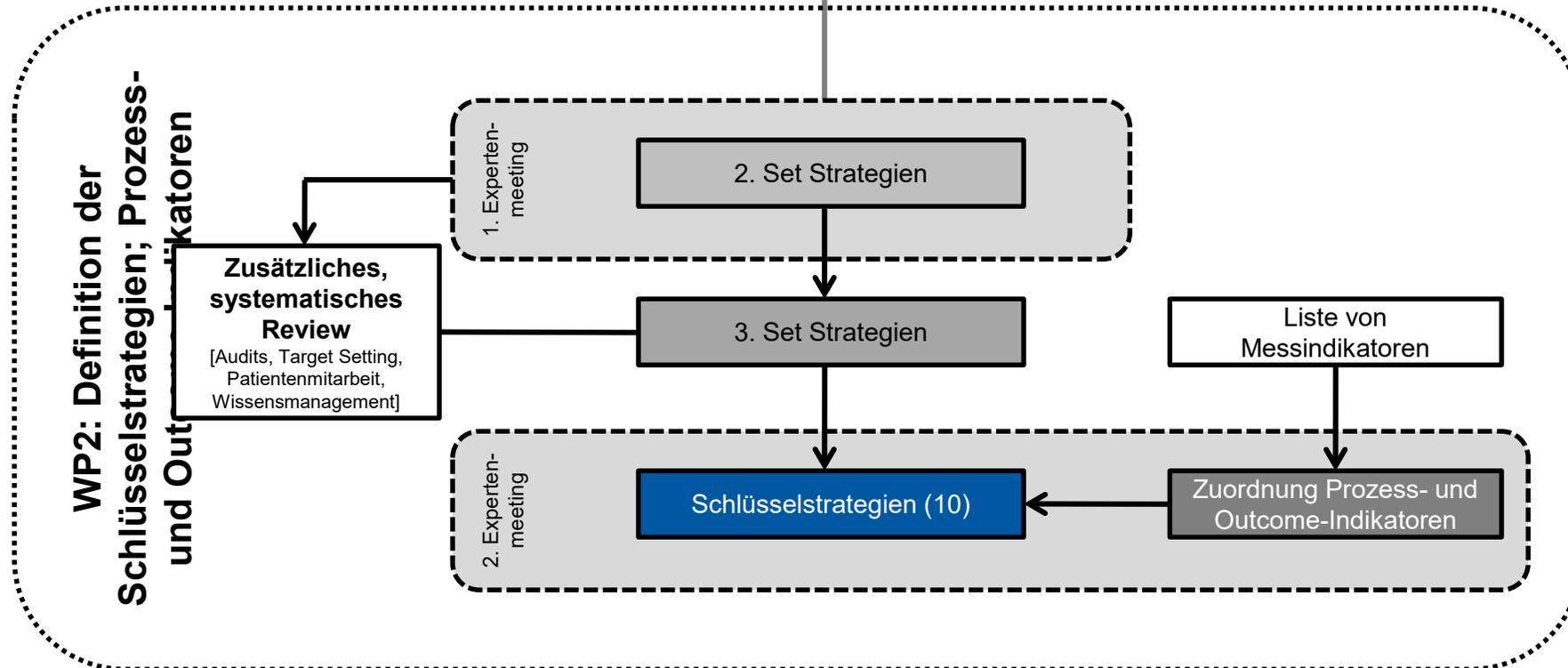
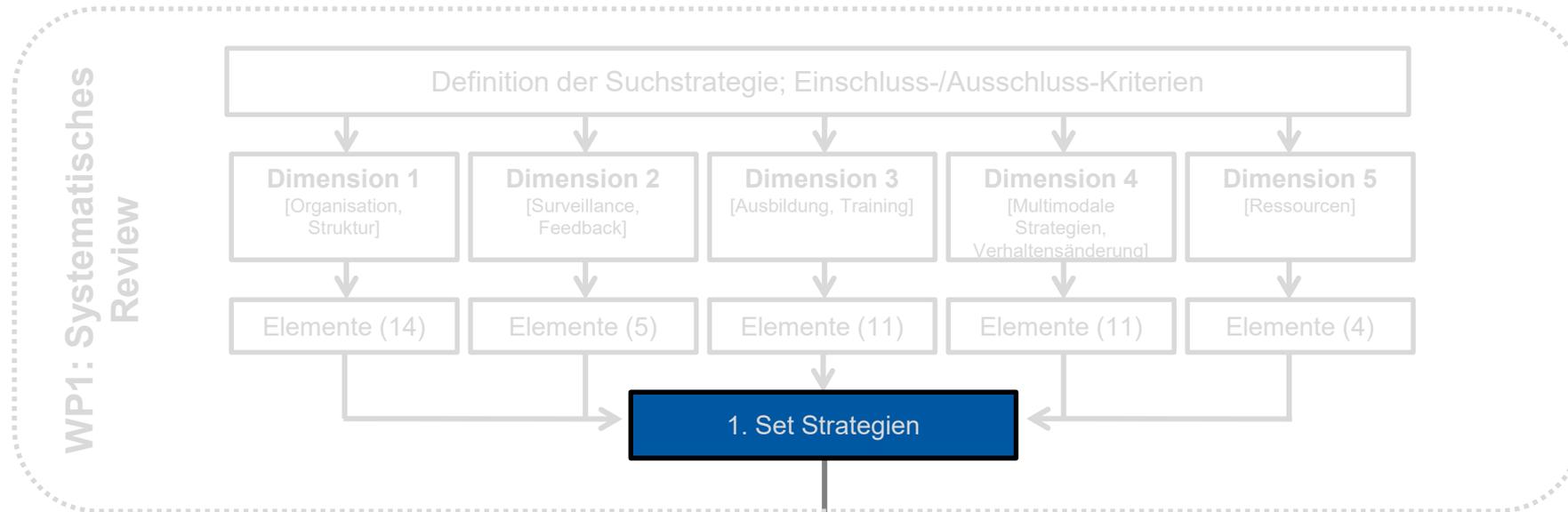
Händehygiene wird global



Local clinic in Turmi, Ethiopia
The Hamlin Fistula Hospital in Addis

Von «SIGHT» zu «IPCAF»





Organisation Spitalhygiene/Infektionsprävention

Schlüsselstrategie

Ein erfolgreiches **Präventionsprogramm** umfasst: eine **Hygiene-Pflegefachkraft** ≤ 250 Betten; einen **Hygienefacharzt/eine Hygienefachärztin**; **mikrobiologische Unterstützung**; Unterstützung des **Spitalmanagements**

Auslastung, Arbeitsbelastung

Schlüsselstrategie

Die **Auslastung** einer Abteilung sollte der geplanten entsprechen und diese nicht übersteigen; Beschäftigung und **Arbeitsbelastung** von Pflegenden und Ärzten/Ärztinnen sollte der zu erwartenden Pflegeleistung angepasst sein; die Zahl von **Aushilfspersonal** soll auf ein Minimum beschränkt werden

Material, Arbeitsergonomie

Schlüsselstrategie

Material soll in genügender **Qualität** und **Menge** vorhanden sein und ergonomisches Arbeiten unterstützen

Anwendung von Guidelines und Richtlinien

Schlüsselstrategie

Guidelines sollen **zugänglich** sein und in die **Weiterbildung** eingebaut werden

Team- und anwendungsorientiertes Lernen

Schlüsselstrategie

Mitarbeiter, welche ein Projekt ausführen sollen, müssen in die Ausbildung und Weiterbildung **eingebunden** werden; Inhalte von Ausbildungen sollen **Team- und Anwendungsorientiert** sein

Standardisierte Audits

Schlüsselstrategie

Audits mit **standardisierter** (messbarer) und systematischer **Beurteilung** von (Arbeits-/Pfleger-) Prozessen mit zeitnahe **Feedback**

Überwachung von Prozess- und Outcomeindikatoren

Schlüsselstrategie

Teilnahme an einer prospektiven **Surveillance** von Prozessen und/oder Infektionen, am Besten innerhalb eines **Netzwerkes** welches ein Benchmarking erlaubt

Multimodale Strategien zur Infektionsprävention

Schlüsselstrategie

Die Umsetzung von **Infektionspräventions-Programmen** erfolgt mittels einer multimodale Strategie, die durch multidisziplinäre Gruppen erarbeitet wurde und die lokalen Gegebenheiten in Betracht zieht

Champions und Vorbilder

Schlüsselstrategie

Champions* sollen **identifiziert** und in die Umsetzung von Projekten **eingebunden** werden

*Rollenmodelle, Vorbilder

Organisationskultur

Schlüsselstrategie

Eine positive Unternehmenskultur, welche die **Kommunikation** und die **Arbeitsbeziehungen** zwischen Mitarbeitern und Abteilungen aktiv unterstützt

| Key components (ECDC – SIGHT) | Core components (WHO) |
|---|--|
| An effective infection control programme in an acute care hospital must include at least: one full-time specifically trained IC-nurse ≤ 250 beds; a dedicated physician trained infection control; microbiological support; data management support | An IPC programme with a dedicated, trained team should be in place in each acute health care facility for the purpose of preventing HAI and combating AMR through IPC good practices |
| To make sure that the ward occupancy does not exceed the capacity for which it is designed and staffed; staffing and workload of frontline health-care workers must be adapted to acuity of care; and the number of pool/agency nurses and physicians minimized | In order to reduce the risk of HAI and the spread of AMR, the following should be addressed: (1) bed occupancy should not exceed the standard capacity of the facility; (2) health care worker staffing levels should be adequately assigned according to patient workload |
| Sufficient availability of and easy access to material and equipment and optimized ergonomics | At the facility level, patient care activities should be undertaken in a clean and/or hygienic environment that facilitates practices related to the prevention and control of HAI, as well as AMR, including all elements around the WASH infrastructure and services and the availability of appropriate IPC materials and equipment |
| Use of guidelines in combination with practical education and training | Evidence-based guidelines should be developed and implemented for the purpose of reducing HAI and AMR. Education and training of the relevant health care workers on guideline recommendations and monitoring of adherence with guideline recommendations should be undertaken to achieve successful implementation |
| Education and training involves frontline staff, and is team- and task-oriented | At the facility level, IPC education should be in place for all health care workers by utilizing team- and task-based strategies that are participatory and include bedside and simulation training to reduce the risk of HAI and AMR |
| Organizing audits as a standardized (scored) and systematic review of practice with timely feedback | Regular monitoring/audit and timely feedback of health care practices should be undertaken according to IPC standards to prevent and control HAIs and AMR at the health care facility level. Feedback should be provided to all audited persons and relevant staff |
| Participating in prospective surveillance and offering active feedback, preferably as part of a network | Facility-based HAI surveillance should be performed to guide IPC interventions and detect outbreaks, including AMR surveillance with timely feedback of results to health care workers and stakeholders and through national networks |
| Implementing infection control programmes follow a multimodal strategy including tools such as bundles and checklists developed by multidisciplinary teams and taking into account local conditions | At the facility level, IPC activities should be implemented using multimodal strategies to improve practices and reduce HAI and AMR |
| Identifying and engaging champions in the promotion of a multimodal intervention strategy | |
| A positive organizational culture by fostering working relationships and communication across units and staff groups | |

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Introduction and user
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The user should be fam
plementation of the IPC
provide a baseline asse
tions through repeated

What is its purpose?
The IPCAF is a structur
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between external asse
framework is intended
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is, existing IPC activiti
diagnostic tool for fac
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¹ WHO Guidelines on core of
² improving infection preven
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WORLD HEALTH ORGANIZATION

SEVENTY-FIFTH WORLD HEALTH ASSEMBLY

GENEVA, 22–28 MAY 2022

RESOLUTIONS AND DECISIONS
ANNEXES

GENEVA
2022



swissnosc
Nationales Zentrum für Infektionsprävention

Kommentare und Beispiele
Strukturelle Mindestanforderungen für die Prävention und Bekämpfung von healthcare-assoziierten Infektionen bei hospitalisierten Patientinnen und Patienten für Schweizer Akutspitäler (Fassung vom 28.06.2019)

Vorwort und Kontext
Das 2005 in Kraft getretene Bundesgesetz über die Bekämpfung übertragbarer Krankheiten (Einführungsgesetz) beauftragt den Bund, unter Einwirkung der Kantone eine nationale Strategie der Überwachung, Verhütung und Bekämpfung von Healthcare-assoziierten Infektionen (HAI) zu erlassen.
Im Rahmen der nachfolgenden Strategie NODO wurden Bekämpfung- und Überwachungsrichtlinien aufgestellt. Daraus resultierte die Strategie NODO 2019, die einen umfassenden Qualitätsstandard, die Festlegung derjenigen Mindestanforderungen zur Prävention von HAI auf Spitalniveau festzulegen, die sich durch die Überwachung, Prävention und Bekämpfung von HAI in allen Spitalkategorien unterscheiden.
Diese sind entsprechend in Struktur- und Fachanforderungen unterteilt. Zur Unterstützung der HAI-Prävention hat swissnosc ebenfalls strukturelle Mindestanforderungen für Schweizer Akutspitäler in Zusammenarbeit mit dem Bundesamt für Gesundheit (BAG) erarbeitet. Sie sollen nun den Kantonen und Spitälern zur Verfügung gestellt werden.
Als Anhaltspunkt geben diese strukturellen Mindestanforderungen einen Leitfaden im Bereich der Akutspitäler, der Überwachung und Pflege von hospitalisierten Patientinnen und Patienten nach HAI-empfindlichen Erregern, in den kantonale oder lokale Spitäler, welche eine allgemeine und spezialisierte klinische Versorgung gewährleisten. Rehabilitationseinrichtungen gelten nicht als Akutspitäler. Für Intensivspitäler sind diese Standards nur befragt, nicht verbindlich.
Einklang zu den rechtlichen Kommentaren und Beispielen
Die vorliegenden strukturellen Mindestanforderungen werden von der Expertengruppe Swissnos in Anlehnung an nationale Regelungen auf internationaler Ebene formuliert. Die Inhalte sind weiterhin, die dafür als Grundlage verwendet wurden, sind bei den einzelnen Punkten als Quellen referenziert.
Die strukturellen Mindestanforderungen werden von Spitälern vorrangig für die Umsetzung genutzt.

Version: September 2020, Seite 1 von 1
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 Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra
Eidgenössisches Departement des Innern EDI
Bundesamt für Gesundheit BAG

 GDK S
Konferenz der kantonalen Gesundheitsdirektoren und -direktoren
Conférence des directeurs et directrices cantonaux de la santé
Conférenza dals directur e dir directur cantunals dala sanità

 H+
LES HÔPITAUX DE SUISSE

 VKS / AMCS
Vereinigung der Kantonsärztekammern und Kantonsärzte der Schweiz
Association des médecins cantonaux de Suisse
Associazione dei medici cantonali della Svizzera
Association dals medics cantunals de la Svizra
Swiss Association of Cantonal Officers of Health

 Schweizerische Gesellschaft für Infektiologie
Swiss Society for Infectious Diseases
Association dals medics cantonals dala Svizra
Société Suisse d'Infektiologie

 Schweizerische Gesellschaft für Spitalhygiene

 fibs
Forschungsinstitut für Infektionskrankheiten & Berufshygiene für Spitäler

 SIPI
SOCIETÀ ITALIANA INFETTIOLOGIA
INFETTIOLOGIA
DE L'UNIFICAZIONE

 PIGS
Pediatric Infectious Disease Group of Switzerland

Stakeholder-Konsultationen

 Strategie NOSO

Gemeinsam gegen Infektionen in Spitälern und Pflegeheimen
www.strategie-noso.ch/de

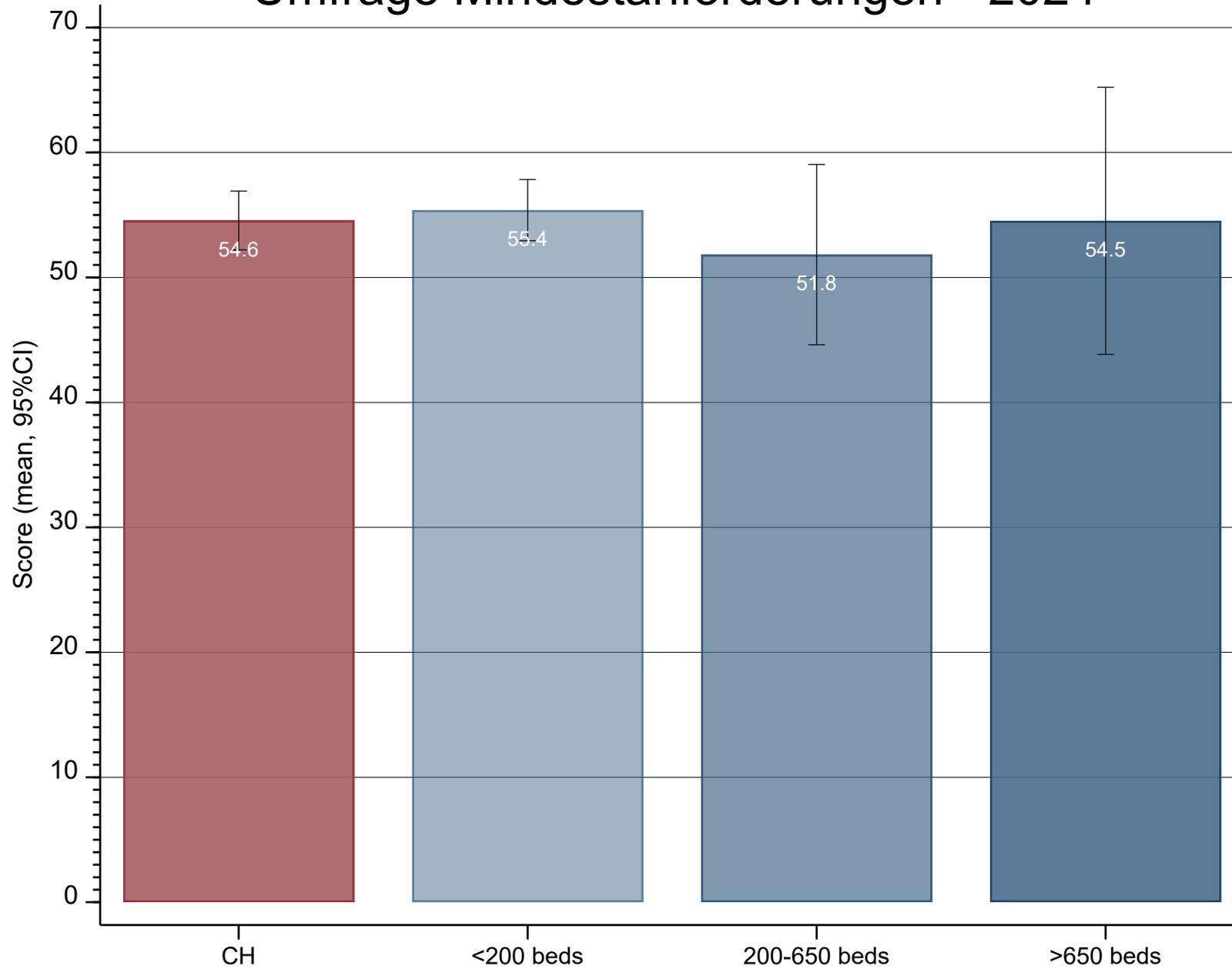
Strukturelle Mindestanforderungen für die Prävention und Bekämpfung von healthcare-assoziierten Infektionen (HAI) bei hospitalisierten Patientinnen und Patienten für Schweizer Akutspitäler

Version 1.0, 30. September 2020

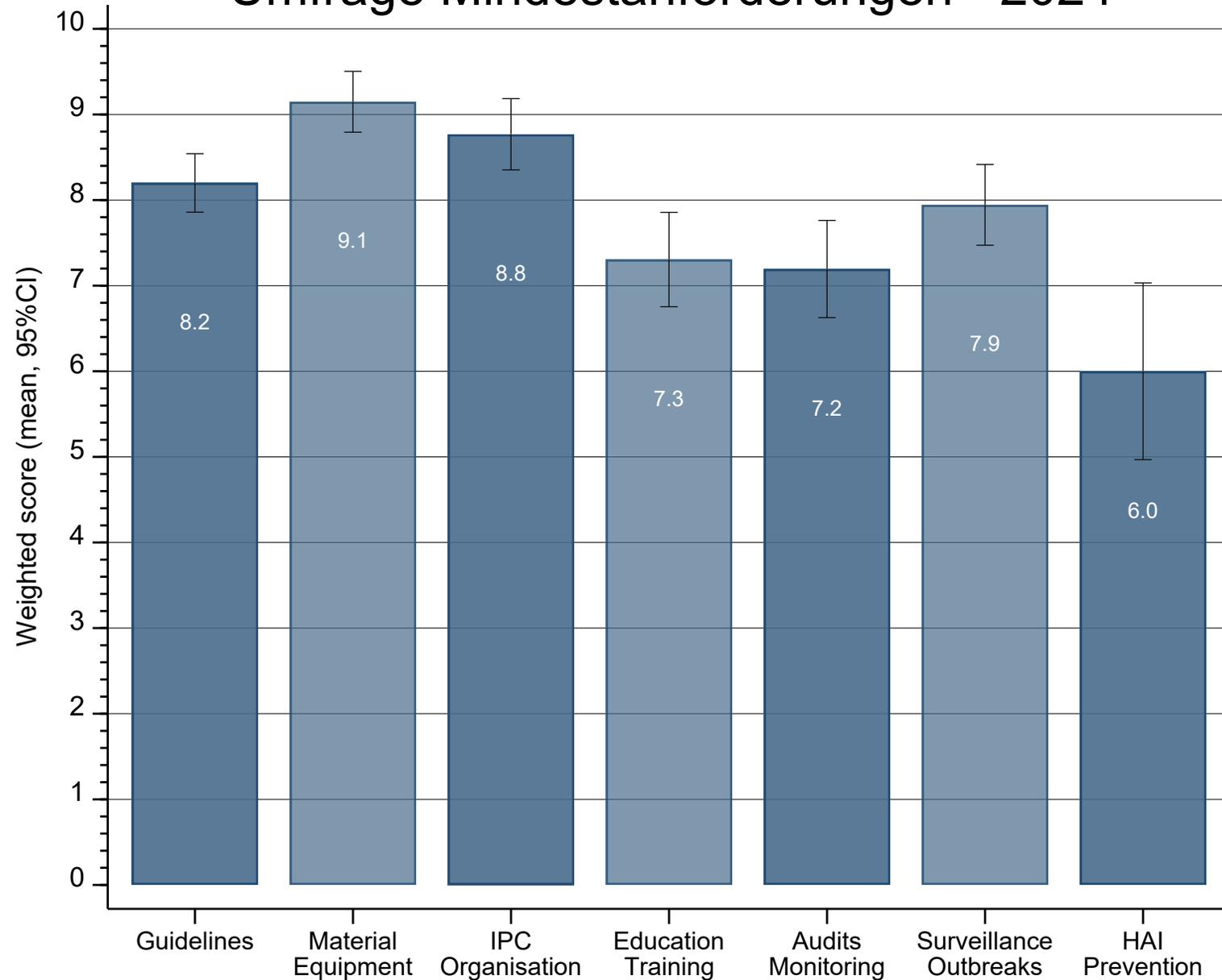
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Nationales Zentrum für Infektionsprävention



Umfrage Mindestanforderungen - 2024



Umfrage Mindestanforderungen - 2024



HAI: healthcare-associated infection

Visionen



EHRs
Patient data is stored in EHRs

Database

Extraction of data for all patients included in HAI surveillance

Data management

Based on data from EHRs, patients are classified as high or low probability of a HAI

High-probability patients are manually evaluated by an infection preventionist to determine HAI status

High prob

Infection control

HAI

No HAI

HAI rate for reporting and feedback

Low prob

Low-probability patients are assumed to not have an HAI

+ Smartphone Applikationen zur Überwachung nach Spitalaustritt



EHRs
Patient data are stored in EHRs

Database

Extraction of data for all patients included in HAI surveillance

Data management

Algorithm to determine HAI status based on data from EHRs

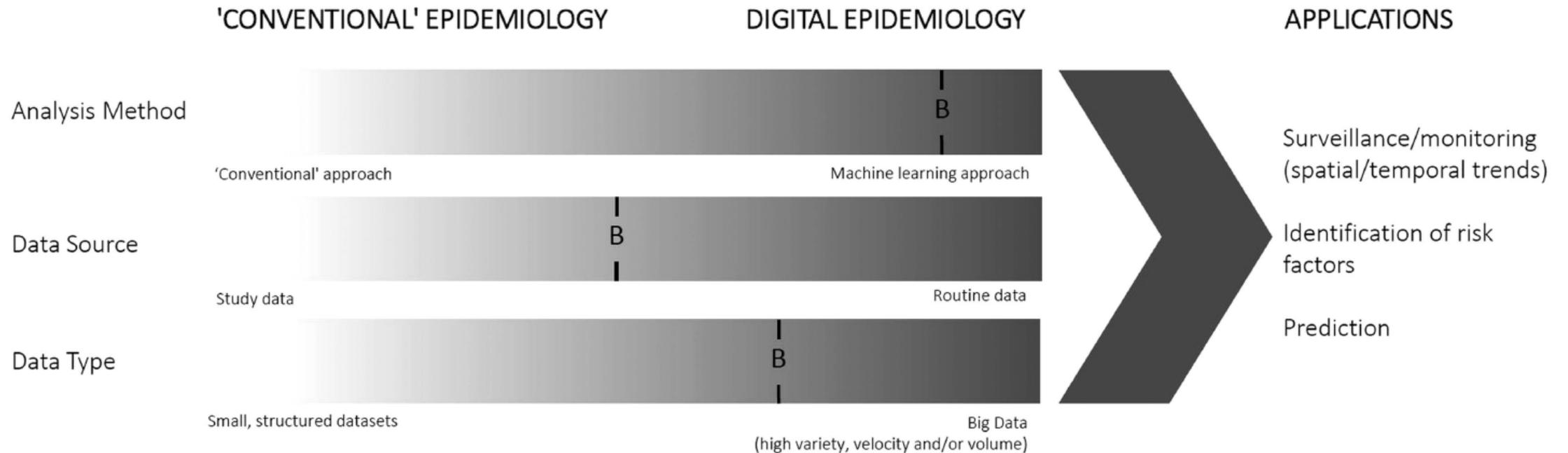
Infection control

HAI

No HAI

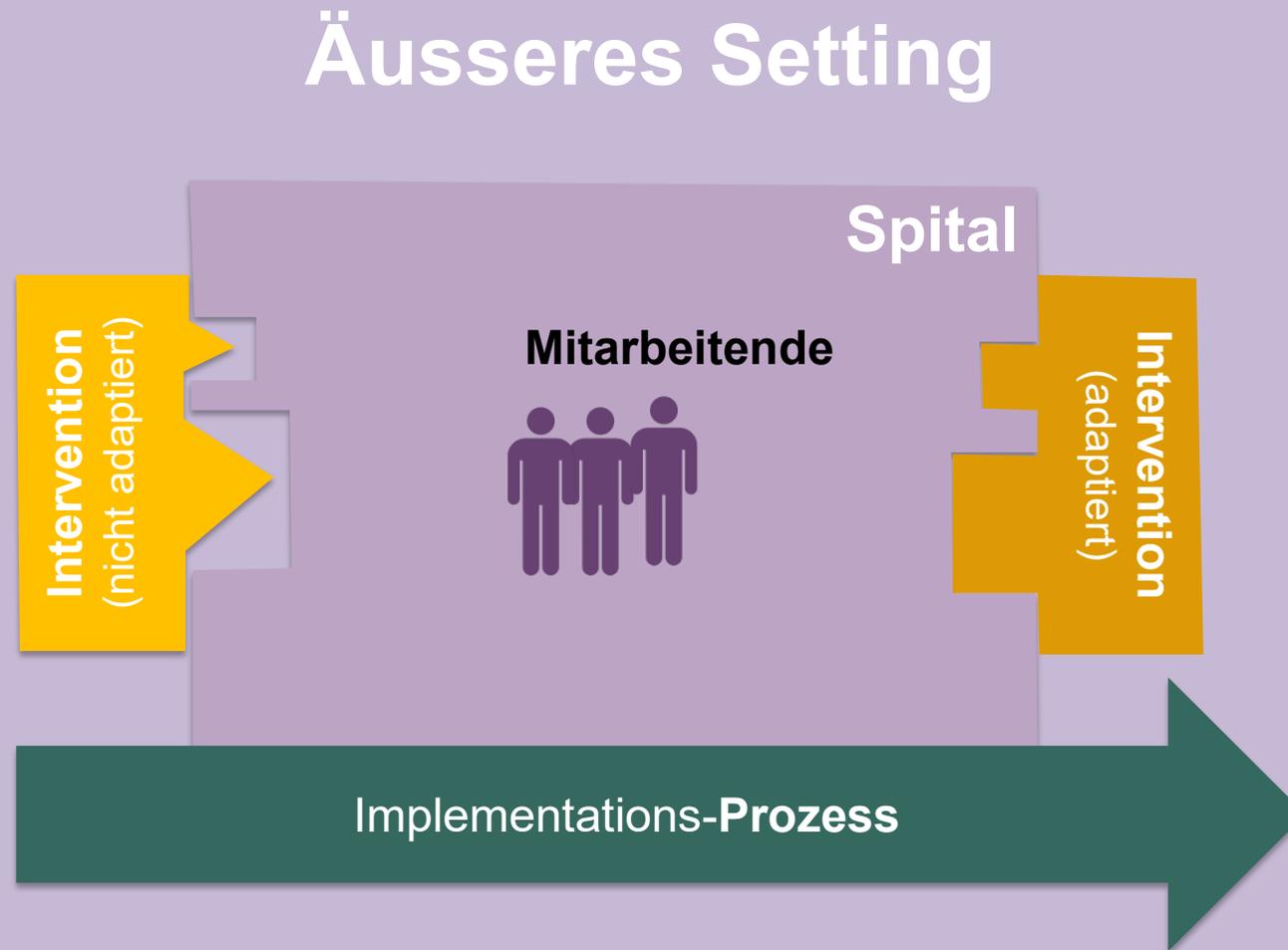
HAI rate for reporting and feedback

Modelling, Machine Learning



Fiktives Projekt «B», das sich je nach Konzept in den drei Achsen unterschiedlich positioniert

Implementierungswissenschaft als Kernkompetenz



Patientensicherheit und Prävention müssen Teil der DNA im medizinischen Alltag werden

Bis es soweit ist, brauchen wir Surveillance und Präventionsprojekte...

...das wussten schon die Leute von SENIC!

SGInf/SGSH/SSM – Jahreskonferenz 2024, Bern

Infektionsprävention mehr als 50 Jahre

Meilensteine und Visionen

Vielen Dank für Ihre Aufmerksamkeit

Walter Zingg

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