Hospital in **E**urope
Link for **I**nfection **C**ontrol through
Surveillance

Final Report

HELICS Implementation Phase I

DEVELOPMENT OF A EUROPEAN NETWORK ON NOSOCOMIAL INFECTIONS (IMPLEMENTATION: PHASE I)

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EXECUTIVE SUMMARY

Following a series of previous scientific initiatives (e.g. DANOP, WHO.CARE, ESICM surveys, EURO.NIS, EPIC project…), the HELICS co-operation has been created to establish the scientific conditions for a harmonised European approach to nosocomial infection (NI) control by linking the major authorised groups and professional bodies involved in NI control.

Commissioned before the decision 2119/98/EC, the previous HELICS II report proposed a global strategy for the implementation of a European network on Nosocomial Infections, concerning surveillance, control, training and research. This HELICS III report presents the results of a first implantation phase agreed within the context created by the decision 2119/98/EC. It focused on the harmonisation of existing European networks and the solution of the technical problems of producing epidemiological data and other relevant information for these kind of infections.

Nosocomial Infections present particular challenges compared to the surveillance of other infections. Their clinical, microbiological, epidemiological and even physio-pathological features are heterogeneous. National initiatives to foster their surveillance and control vary from nil to comprising a high-level public health priority. However, efforts to produce valid outputs are considered more and more important in European health systems. Availability of such data contributes to improving the quality of patient care, to the design of optimal management systems and enables the adoption of valid evidence-based health care guidelines, policies and practices. To take these specific aspects into account, we proposed the adoption of a "bottom-up" and consensual approach to the preparation of the NI component of the EU network on communicable diseases.

During this phase of the HELICS co-operation, considerable effort has been devoted to the laying of the practical foundations for the network. After a further step of adaptation of the national protocols, the production of indicators for NI on a European level could be rapidly organised, the main one being as follows:

<table>
<tr><th>Population</th><th>Main Indicators</th><th>Analysis</th></tr>
<tr><td rowspan="3">ICU Patients (with lengths of stay >2 days)</td><td>level 1: [Unit- or Patient based]
Incidence rates (all, major sites) per 100 patients, per 1000 patient-days
Bloodstream infections (origin and micro- organisms)
Optionally: Incidence rates (major sites) per 1000 patient-days of device-exposures</td><td rowspan="4">EU
Countries
Networks

Inter-unit variations

Variations according to the hospital and unit characteristics

Micro-organisms and antimicrobial susceptibilities</td></tr>
<tr><td>level 2: [Patient-based]
Stratified Incidence rates (major sites) per 1000 patient-days of device-exposures
Standardised Infection Ratio (SIR 1)</td></tr>
<tr><td>level 3: [Patient-based]
Standardised Infection Ratio (SIR 2)</td></tr>
<tr><td>Surgical patients (specific interventions)</td><td>Incidence rates of Surgical Site Infections (superficial, deep, organ-space) per 100 patients, per 1000 post-operative patient-days
Antibiotic prophylactic use</td></tr>
<tr><td>All hospitalised patients (one-day</td><td>Prevalence rates (all, major sites) per 100 hospitalised patients</td><td>Countries or regions
Surveys (including</td></tr>
</table>

prevalence)	Antibiotic use	European ones) Variations according to the hospital characteristics

These achievements required the commitment of a large number of experts involved in seven working groups; the creation and analysis of two databases (on surgical and ICU infections); the testing of two data collection mechanisms (on surgical infections and for immuno-compromised patients); the preparation, extensive and in-depth discussions of three master protocols (on ICU and surgical infections and the prevalence survey); the evaluation of a procedure for the production of European evidence-based technical guidelines and an inventory of a European training programme on NI surveillance methods (plus the proposal of a core teaching curriculum). All these materials are (or will be shortly) available through the HELICS Internet site.

Three targets attained a high level of consensus for the implementation of the European network:

- infections in ICU patients (with three optional levels of comprehensiveness in data collection and analysis);
- infections in surgical patients;
- hospital wide prevalence studies of nosocomial infections for which we rely on clearly defined case definitions and denominator data.

The future Implementation of phase II will complete the present organisation by:

- assisting the national [regional] networks in adopting the harmonised HELICS master protocols,
- assisting countries [or regions] not covered by a surveillance network to develop their own organisation within the HELICS partnership,
- developing a set of hospital and quality of care parameters to complete the indicators and allow cross-analysis of resources, procedures and result indicators,
- developing a targeted training opportunity on methodology of surveillance for the participants in the European network on NI and for the other trainers in the different member states,
- and creating electronic data collection tools supporting data collection, quality control, transfer, analysis and dissemination using the HELICS site and EUPHIN-HSSCD.

HELICS IP I has clearly demonstrated the willingness and ability of the participants to work productively and efficiently in the effort to rationalise approaches and ensure that significant progress can be made in the control of this important health issue. The participants are now ready to implant and extend a harmonised surveillance scheme within the framework of the EU policy on communicable diseases.