Infection control programs and nursing experts for hospital hygiene

Infektionskontrollprogramme und Pflegeexperten für Krankenhaushygiene

Abstract

From the data he had collected, Ignaz Phillip Semmelweis drew the right conclusions and began using disinfectants for handwashing. And this at a time when it was not at all known that infections were caused by bacteria. While ridiculed by colleagues, the results achieved impressively attested to just how correct were his views: there was a demonstrable reduction in mortality rates among puerperae from some 20% to 3%, which was very low for that time. In the course of the 20th century “Surveillance” was introduced, entailing systematic recording, analysis and interpretation of nosocomial infection data, in several countries throughout the world. This helps identify infection problems and take appropriate preventive measures. But the ongoing trend of emergent infectious diseases and the development of antibiotic-resistant bacteria continue to pose new challenges for us: the microorganisms appear to be always one step ahead of us.

During the 20th century the prevailing belief was that hand disinfection was the easiest, least expensive and most effective preventive measure to prevent the spread of microorganisms. In the 21st century compliance is the main focus of attention. We must devise novel motivational systems, tailored to the present day setting, to inculcate a sense of responsibility and ensure observance of hand hygiene regimens. Here, the infection control nurse plays a pivotal role.

Zusammenfassung

Ignaz Phillip Semmelweis zog die richtigen Schlussfolgerungen aus seinen gesammelten Daten und begann, die Hände desinfizierend zu waschen. Und dies zu einer Zeit, in der noch gar nicht bekannt war, dass Infektionen durch Bakterien verursacht werden. Viel belächelt von der Kollegenschaft, gab ihm das Ergebnis eindrucksvoll recht: eine nachgewiesene Senkung der Sterblichkeitsrate bei Wöchnerinnen von annähernd 20% auf für damals sehr niedrige 3%. Im 20. Jahrhundert wird die „Surveillance“, das heisst die systematische Erfassung, Analyse und Interpretation der nosokomialen Infektionsdaten weltweit in vielen Ländern etabliert. Damit lassen sich Infektionsprobleme erkennen und Präventionsmassnahmen gezielt einsetzen. Aber immer wieder neu aufkommende Infektionskrankheiten und die Entwicklung Antibiotika-resistenter Keime stellen heute neue Anforderungen an uns: Die Mikroorganismen scheinen immer einen Schritt voraus.

Im 20. Jahrhundert war die Meinung allgegenwärtig, dass die Händedesinfektion die einfachste, billigste und wirksamste Präventionsmassnahme sei, um die Übertragung von Mikroorganismen zu verhindern. Im 21. Jahrhundert steht die „Compliance“ im Vordergrund. Wir werden uns neue Reizsysteme, der Moderne angepasst, einfallen lassen müssen, um Betroffenheit auslösen zu können und die Aufmerksamkeit auf das Einhalten der Händehygiene aufrechterhalten. Eine wesentliche Rolle dabei spielt die Hygienefachkraft.

Margrith Bühler

1 Hospital Hygiene and Infection Prevention, Kantonsspital Baden AG, Baden, Switzerland
On 3 January 1981, I began working as an “infection control nurse” at Zurich University Hospital. I had undertaken my training at the initiative of Prof. A. von Graevenitz at the Centers for Disease Control Atlanta (USA) under the direction of Claire M. Coppage. At that time only 2 Swiss hospitals (Geneva University Hospital and Limattalspital Schlieren-Zürich Hospital) were actively focusing on an infection control program (surveillance of nosocomial infections and the related infection control policies).

We are working on yesterday’s structures with today’s methods, on tomorrow’s problems, predominantly with people who set up yesterday’s structures and who will no longer experience tomorrow within the organization (unknown source).

For practically the past 25 years, my working activities have been constantly overshadowed by 3 topics:

1. Nosocomial infection control programs (surveillance = analysis and selective interventions
2. Hand hygiene
3. Deployment and training of “infection control nurses” or “nursing experts for hospital hygiene and infection prevention”.

After this period of time, I dare venture the following view: in the past we dealt with, at present we are dealing with and in the future we shall continue to deal with exactly the same topics relating to infection control in the hospital setting.

Over the past 25 years no other topic has attracted as much attention as nosocomial infection surveillance and the implications of hand hygiene.

Using two simple but highly effective measures, Ignaz Philipp Semmelweis proved to be the savior of mothers and mentor of infection surveillance and hand hygiene more than 150 years ago. He did so by continually recording, analyzing and interpreting the infection and mortality data. Thanks to these data, he was able to draw the right conclusions and began using disinfectants for handwashing. And this at a time when it was not at all known that infections were caused by bacteria. While ridiculed by colleagues, the results achieved impressively attested to just how correct were his views: there was a demonstrable reduction in mortality rates among puerperae from some 20% to 3%, which was very low for that time.

**Surveillance** was introduced in the course of the 20th century, entailing systematic recording, analysis and interpretation of nosocomial infection data, in several countries throughout the world. This helps identify infection problems and take appropriate preventive measures, also providing for comparative data in the form of benchmarking, e.g. the established Hospital Infection Surveillance System.

In the future we must face up to the possibility of new infectious diseases (SARS), epidemics (flu, norovirus, etc.) and to new trends in the development of antibiotic-resistant bacteria.

The microorganisms appear to be always one step ahead of us.

**Hands**, man’s most vital tool, but hands that serve as the most common vehicle in the spread of all types of microorganisms. During the 19th century I.Ph. Semmelweis discovered and introduced hand disinfection (washing with chlorinated lime; Figure 1). In the 20th century the following sentence would often be repeated: “Hand disinfection is the easiest, least expensive and most effective measure for preventing the spread of microorganisms”.

![Figure 1: Ignaz Ph. Semmelweis, working in Vienna, introduced in the 19th century (1847) an infection control program based on hand disinfection with chlorinated lime, thus preventing puerperal fever.](image)

**Figure 1:**

In the 21st century compliance is the main focus of attention. We must devise novel motivational systems, tailored to the present day setting, to inculcate a sense of responsibility and ensure observance of hand hygiene regimens (Figure 2).

![Figure 2: Hand disinfection in the 20th and 21st century](image)

Finally, a word about the nomenclature used in this area. While the term “infection control nurse” somewhat reflects the qualifications and responsibilities associated with this profession in the hospital setting, why not opt for the more apt designation of “nursing expert for hygiene and infection prevention?” After all, our activities are not...
confined to the hospital, but are carried out in all medical domains and establishments.

Curriculum Vitae

Margrith Bühler Steiner

Expert for Hospital Hygiene and Infektion Prevention at the Canton Hospital Baden AG, Switzerland, founding member of the German Society for Hospital Hygiene e.V. Freelancing as consultant for geriatric, longterm and ambulant care.

One, if not “the” Grande Dame of the Hygiene Specialists in Europe Mrs. Bühler starts learning the profession of a nurse 1960 from bottom up, gets her diploma in 1967, continues her studies to become Surgery Nurse and is appointed Head Nurse. Alongside to her profession she educates healthcare students until she moves to the USA in 1992 as the first one to get herself a Hygiene Specialist education. Back in Zurich she is significantly involved in the establishment of an infection control programme of the University Hospital. Subsequently she is the initiator for training courses, congresses, for the formation of pressure groups, becomes member in the important task forces and also the author/co-author of numerous publications and books.

If being a Hygiene Specialist is a matter of course job description nowadays it is also the merit of Mrs. Margrith Bühler Steiner.

Corresponding author:
Margrith Bühler
Hospital Hygiene and Infection Prevention, Kantonsspital Baden AG, CH-5404 Baden
margrith.buehler@ksb.ch

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