

# Prevention is in! Surveillance is out!

## Abstract

There has been a major change in the basic approach taken to hospital hygiene practices, and indeed to infection control within the hospital on the whole. Whereas as recently as the 1990s lectures on the topic of hand disinfection at international congresses were confined to "the periphery of the congress", today several keynote speakers address this issue with the full attention of the audience. This trend is also reflected in publications, and going beyond the domain of hand disinfection, has highlighted the important role of surface disinfection as well as of instrument disinfection in the prevention of nosocomial infections. The role of preventive as opposed to evidence-based hospital hygiene measures has for decades triggered lively discussions. The enormous rise in nosocomial infections due to antibiotic-resistant infections (MRSA, VRE, ESBL, etc.) will, no doubt, have made a significant contribution to bringing about a change in attitude. Even if of all the transmission channels implicated, the hands are the chief vehicles, there is in the meantime widespread evidence that contaminated instruments and surfaces can play a role in transmission. Surveillance is no doubt suitable for analyzing pathogenic transmission channels or shortcomings in infection control measures, but it is no substitute for the requisite preventive use of disinfection measures, since as a rule by the time the results of infectiology diagnostic measures are available, microbial spread will already have taken place.

Prevention has had a long tradition in Germany and, in respect of infectious diseases, can be traced back to the 1880s (Robert Koch). It was therefore not surprising that it was Germany, where such efforts were initiated already in 1959, that began to formulate guidelines for efficacy testing of disinfection procedures. Since 1989 such guidelines have been compiled for the whole of Europe, thus assuring the preconditions for provision of high-quality disinfectants and, above all, for disinfection procedures whose efficacy has been verified. For the future it must be advocated that industry, on the one hand, will continue to develop more environmentally compatible disinfectants with broader spectra of action and that, on the other hand, the test methods for efficacy testing will be further improved in order to meet the requirements for efficacy testing of such agents.

## Zusammenfassung

Bezogen auf das grundsätzliche Verhalten bei der Durchführung krankenhaushygienischer Maßnahmen und hinsichtlich der Grundeinstellung zur Krankenhaushygiene insgesamt sind wir an einem Wendepunkt angekommen: Waren Vorträge über Händedesinfektion bei internationalem Kongressen noch 1990 eher „Randerscheinungen“, sind es heute jeweils mehrere „key note speaker“, die darüber bei voller Aufmerksamkeit des Auditoriums referieren. Dieser Trend ist auch in Publikationen sichtbar, wobei über die Händedesinfektion hinaus die Flächendesinfektion wie auch der Instrumentendesinfektion als wesentliche Maßnahmen zur Prävention nosokomialer Infektionen mit einbezogen wird.

Die Bedeutung präventiver im Gegensatz zu so genannter evidenzbasierter krankenhaushygienischer Maßnahmen hatte über Jahrzehnte hinweg heftige Diskussionen ausgelöst. Die enorme Zunahme nosokomialer Infektionen durch Antibiotika-resistente Infektionserreger (MRSA,

Hans-Günther Sonntag<sup>1</sup>

1 Retired Director of the Institute of Hygiene and Medical Microbiology, University of Heidelberg, Heidelberg, Germany

VRE, ESBL u.a.) haben ganz wesentlich zu einer Neubesinnung beigebracht. Auch wenn die Hände in Bezug auf Übertragungsmöglichkeiten im Vordergrund stehen, gibt es inzwischen zahlreiche Nachweise dafür, dass auch über kontaminierte Instrumente und Flächen eine solche Übertragung möglich ist. Surveillance ist sicherlich dazu geeignet, Übertragungswege von Infektionserregern oder auch Defizite krankenhaushygienischer Maßnahmen zu analysieren. Sie ersetzt aber z.B. nicht den notwendigen präventiven Einsatz von Desinfektionsmaßnahmen, da das Ergebnis der infektiologischen Diagnostik in der Regel erst dann vorliegt, wenn Keimübertragungen bereits stattgefunden haben können.

Der Präventionsgedanke hat in Deutschland eine lange Tradition und lässt sich in Bezug auf die Verhütung von Infektionskrankheiten bis auf die 80er Jahre des 19. Jahrhunderts (Robert Koch) zurückverfolgen. Nicht überraschend war es daher Deutschland, wo schon 1959 damit begonnen wurde, zur Qualitätssicherung von Desinfektionsmaßnahmen Wirksamkeitstestungen zu entwickeln. Seit 1989 werden entsprechende Richtlinien für ganz Europa erarbeitet und damit die Voraussetzungen geschaffen für qualitativ hochwertige und vor allem in ihrer Wirksamkeit überprüfte Desinfektionsverfahren. Für die Zukunft ist zu fordern, dass einerseits von der Industrie die Entwicklung neuer Desinfektionsmittel mit besserer Umweltverträglichkeit und breiterem Wirkungsspektrum vorangetrieben und andererseits die Prüfmethoden zur Wirksamkeitstestung weiter verfeinert werden, um den Anforderungen für die Wirksamkeitstestung solcher Mittel gerecht zu werden.

## Text

This key topic of the 3rd International Decennial Conference for Hospital Hygiene in 2000 in Atlanta in my opinion not only marks a turning point in the fundamental approach taken to the implementation of hospital infection control measures but also as regards the basic attitude to hospital hygiene.

Whereas in 1990 at the 2nd of these series of congresses in Atlanta, the role of hygienic hand disinfection was still dealt with only in the context of a satellite symposium "at the periphery of the congress" and M. Rotter, despite convincing scientific date received little support, and this was not only from the English-speaking countries – the difference between "handwashing" und "hand disinfection" had still not yet sunk into the heads of the experts responsible for hospital infection control, conversely, we saw a total of 3 keynote speakers (J. Boyce, J. Gerberding, R. Wenzel) at the 3rd congress in 2000 in Atlanta who, citing their own scientific studies, emphasized the importance of hygienic hand disinfection with alcohol-based products for prevention of nosocomial infections. Accordingly, it was no surprise when in the course of the 54th annual congress of the German Society of Hygiene and Microbiology (DGHM) in Heidelberg 2002, 4 American colleagues (J. Boyce, D. Cardo, M. Favero, B. Rutala) as keynote speakers confirmed this new American approach to infection control in the hospital setting with the presentation of further scientific studies. This trend has continued in publications up to the present day, and going beyond the domain of hand disinfection, has highlighted

the important role of surface disinfection as well as of instrument disinfection in the prevention of nosocomial infections.

What were the reasons for this change in attitude, which has also been noted in Germany? The role of preventive as opposed to evidence-based hospital hygiene measures has for decades triggered lively discussions, even culminating in an altercation among infection control experts. The enormous rise in nosocomial infections due to antibiotic-resistant infections (MRSA, VRE, ESBL, etc.) will, no doubt, have made a significant contribution to bringing about a change in attitude. Only by reducing these pathogens to such a low degree that they cannot give rise to further infection, i.e. through the use of appropriate disinfection procedures, it is possible to contain the further spread of such pathogens and hence occurrence of infectious diseases. Even if of all the transmission channels implicated, the hands – and hence hand disinfection – are the chief vehicles, there is in the meantime widespread evidence that contaminated instruments and surfaces can play a role in transmission, that instrument and surface disinfection are important measures in the prevention of nosocomial infections. Surveillance is no doubt suitable for analyzing pathogenic transmission channels or shortcomings in infection control measures, but it is no substitute for the requisite preventive use of disinfection measures, since as a rule by the time the results of infectiology diagnostic measures are available, microbial spread will already have taken place.

Prevention has had a long tradition in the development of the entire health sector in Germany, as can be traced back as far as the 1880s (Robert Koch). It is therefore not surprising that for definition of the quality of prevent-

ive measures, and here in particular of disinfection measures, already in 1959 guidelines had been formulated by the DGHM for efficacy testing of disinfection procedures and that ever since such tried and tested procedures have been published. Since 1989 such guidelines have been compiled for the whole of Europe, thus assuring the preconditions for provision of high-quality disinfectants and, above all, for disinfection procedures whose efficacy has been verified. This has meant that, and should continue to do so in future, measures for prevention of nosocomial infections, in particular to the extent that they are based on disinfection procedures, will guarantee the elimination of infectious microbes and thus exhibit the requisite preventive character of such a measure. But this also means that industry, on the one hand, will continue to develop more environmentally compatible disinfectants with broader spectra of action and that, on the other hand, the test methods for efficacy testing are further improved in order to meet the requirements for efficacy testing of such agents.

## Curriculum Vitae

### Univ. Prof. Dr. med. habil Hans Günther Sonntag

Figure 1



Figure 1: Hans Günther Sonntag

Retired Director of the Institute of Hygiene and Medical Microbiology, University of Heidelberg, Germany.

Hans Günther Sonntag studied medicine at the universities in Gießen and Kiel, Germany. He received a doctorate at the University of Kiel in 1966 and habilitated there in 1974 for immunology, in 1976 for Medical Microbiology. He was appointed Director of the Institute for Hygiene and Medical Microbiology of the University of Heidelberg in 1980 where he stayed until he took the emeritus status in 2004.

Professor Sonntag covers a broad area of subjects by his expertise. His research focuses are the immunology for organ transplantations, mycobacteria, anaerobic bacteria like the epidemiology of infection diseases like the virus hepatitis, meningitis or typhus. He is particularly active in the field of hospital- and drinking water hygiene as well as environmental toxics.

The internationally highly acknowledged expert documented his knowledge in more than 350 publications, as editor of educational books and received numerous national and international honours. Not only is he now "Doctor honoris causa" but also Senator of the University of Budapest, Hungary.

#### Corresponding author:

Univ. Prof. Dr. Hans-Günther Sonntag

Dekanat, Im Neuenheimer Feld 136, 69120 Heidelberg  
hanssonntag@web.de

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