

Hygiene yesterday, today, tomorrow

Hygiene gestern, heute, morgen

Abstract

I began my career in 1945 by tracing the footsteps of the legendary Max von Pettenkofer and Robert Koch. At that time their influence was still discernible, and continues to be.

The first major innovation was the introduction of antibiotics, which some people believed would now dispense with the need for disinfection and sterilization. The next major development was the introduction of hospital hygiene as a discipline in its own right, aimed at highlighting the growing risk of nosocomial infections, albeit also against the background of the, admittedly, brilliant but unceasingly innovative armamentarium of medical paraphernalia and fittings. As regards the pathogens, viruses were seen to play an increasingly more prominent role as nosocomial pathogens, giving rise to completely novel challenges and problems in the field of disinfection and sterilization. In 1956 at Prof. Pette's institute in Hamburg it generally took weeks to produce the results to diagnose poliomyelitis. Their value was immensely important for science – but their value to the doctor and patients was questionable. The introduction of inexpensive sterile disposable syringes and other disposable equipment represented, in my opinion, the next milestone. In the meantime, there was a dramatic increase in the overall constellation of problems caused by the continuing upsurge in antibiotic bacterial resistance. And with growing awareness of environmental issues, the late 60s set in motion a new avalanche where one had to strive not only to keep abreast of matters, but also to ensure that science continued to prevail as the highest instance.

Today we are facing completely different, but in principle still similar problems in consolidating the status of disinfection and sterilization, e.g. when it comes to the ultra delicate devices that in some cases are heavily contaminated after routine clinical use. Hence we elderly infection control experts still have a task to accomplish: to issue warnings again and again against accepting as “fate” the unresolved problems, but instead to highlight the very core of the problem. Disinfection and sterilization is a topical issue and will always continue to be just that: to protect the population and patients, and to protect ourselves as well as personnel in hospitals, medical practice and research.

Josef R. Möse¹

¹ Director Emeritus of the Institute of Hygiene at Graz University, Graz, Austria

Zusammenfassung

1945 begann ich meine Hygiene-Karriere auf den Spuren der großen Max v. Pettenkofer und Robert Koch. Ihr Einfluss war immer noch der Maßstab, und ist es lange Zeit noch geblieben.

Die erste große Innovation war die Einführung der Antibiotika, von denen manche dachten, dass sie Desinfektion und Sterilisation überflüssig machen würden. Der nächste große Entwicklungsschritt war die Einführung des eigenen Faches Krankenhaushygiene als Reaktion auf die zunehmenden Hospitalismusgefahren, aber auch wegen der Tücken immer neuer, brillanter Apparate und Einrichtungen in der Medizin. Viren „eroberten“ immer deutlicher einen Spitzenplatz als Krankheitserreger, mit neuen Anforderungen an Desinfektion und Sterilisation. 1956 im Institut von Prof. Pette in Hamburg brauchte ein Befund in der Poliomyelitis Diagnostik im Labor meist noch Wochen. Der Wert des Befundes

für die Wissenschaft war sehr hoch – der Wert für Arzt und Patienten dagegen fraglich. Die Einführung von preiswerten sterilen Einmalspritzen und sonstigen Einmalgeräten sind aus meiner Sicht der nächste Meilenstein. Inzwischen aber stieg die Gesamtproblematik mit immer weiter gehenden Antibiotika-Resistenzen dramatisch an. Und Ende der 60er Jahre kam mit dem Umweltbewusstsein eine neue Lawine ins Rollen, bei der man trachten muss, nicht einfach mitzuheulen, sondern der Wissenschaft weiterhin die oberste Instanz zu sichern.

Heute stehen andere, vom Prinzip her dann aber doch gleiche Probleme bei der Absicherung der Desinfektion und Sterilisation an, z.B. bei empfindlichen, nach Verwendung z.T. hoch verschmutzten Geräten aus dem klinischen Alltag. Wir alt gewordene Hygieniker haben also doch noch eine wichtige Aufgabe: Immer wieder zu warnen, ungelöste Probleme nicht Schicksalsergeben hinzunehmen, sondern sie laut und deutlich beim Namen zu nennen. Das Thema Desinfektion und Sterilisation ist aktuell wie eh und je und wird es immer bleiben: Zum Schutz der Bevölkerung, der Patienten und zum Schutz von uns und unseren Mitarbeitern im Krankenhaus, in der Praxis und der Forschung.

Text

I would like to elaborate on the fundamental changes that have taken place in the discipline of hygiene (infection control) over the last 60 years and which I as an infection control expert have experienced for myself. When I began my career in 1945 at Graz Institute of Hygiene, the relics of the golden era of innovation ushered in by Max von Pettenkofer and Robert Koch were still discernible. And in all my subsequent offices I noticed that it was only at a late stage that this spirit of innovation had also embraced the majority of other university institutes.

The first major innovation was the introduction of antibiotics. At that time some colleagues in the hospital setting believed that all knowledge relating to disinfection and sterilization now merited only peripheral attention. As well documented, the volte-face that followed was swift and sharp. The next major development seen was the introduction of hospital hygiene as a discipline in its own right, aimed at highlighting the risk of nosocomial infections, albeit also against the background of the, admittedly, brilliant but unceasingly innovative armamentarium of medical paraphernalia and fittings.

As regards the pathogens, viruses were seen to play an increasingly more prominent role, giving rise to completely novel challenges and problems in the field of disinfection and sterilization. Only later would the truly spectacular successes scored by novel serological and other direct diagnostic methods come to fruition. At times the time needed for the clinical specimen to reach the laboratory was longer than that needed to conduct the test itself. When I was working in 1956 at Prof. Pette's institute in Hamburg in order to gain more in-depth insights into poliomyelitis diagnostics in the laboratory setting (tissue culture, neutralization tests, etc), it generally took weeks to come up with the results. Their value was immensely important for science – but their value to the doctor and patients was questionable.

With the liberating introduction of inexpensive sterile disposable syringes and other disposable equipment used in the everyday medical setting, the medical devices industry simply consigned to oblivion the earlier unsatisfactory situation with its hazardous hurdles.

In the meantime, there was a dramatic increase in the overall constellation of problems caused by the continuing upsurge in antibiotic bacterial resistance. And in the form of "environmental protection" which enjoyed widespread public support, the late 60s set in motion a new avalanche where one had to strive not only to keep abreast of matters but to ensure that science continued to prevail as the highest instance. This is because in the general excitement, many aspirations would prove to be excessively exacting or merely pure speculation. But in terms of the momentum it lent to the field of hygiene, this new era was undoubtedly of major importance.

Today we are facing completely different, but in principle still similar problems in consolidating the status of disinfection and sterilization, e.g. when it comes to the ultra delicate devices that in some cases are heavily contaminated after routine clinical use, and accordingly are on the lookout for new solutions. At the last hygiene conference focusing on topical issues relating to disinfection and sterilization last May in Goldegg in the Salzburg region, I realized once again that precisely we elderly infection control experts still have a task to accomplish: to issue explicit warnings against accepting as "fate" disinfection and sterilization problems that have not yet been fully resolved, but instead to highlight the very core of the problem, in particular vis-à-vis management and the responsible government agencies and as pointers for the research needed. This is not an easy task. But it is necessary. New insights without practical conclusions contradict the basic tasks of hygiene.

Disinfection and sterilization is a topical issue and will always continue to be just that. To protect the population and to protect ourselves as well as personnel in hospitals, medical practice and research.

So much for the thoughts that came to mind on the occasion of Dr. Molitors important birthday. To a happy and healthy life – and I can give a personal assurance that further decades can also continue to bestow much happiness. And that is really what is important for each and everyone of us!

Curriculum Vitae

Univ. Prof. Dr. med. Josef R. Möse

Figure 1



Figure 1: Josef R. Möse

Specialist for Hygiene and Medicinal and Chemical Diagnostics.

Director Emeritus of the Hygiene Institute of the University of Graz, Austria.

Chief Executive of the Association of the Styrian Provincial Hospitals.

In 1941 Josef Möse moved to Göttingen to study Medicine. The war and after-war turmoil made his career tur-

bulent, he studied in Berlin and Prague, became a paramedic in the Air Force and used this opportunity to also become a pilot. He received his doctorate „summa cum laude“ in 1945. At first his career consisted mainly of staying alive: together with his wife he worked for an Air Force sick bay, then he started a medical practice in the country side and took on a position at the Hygiene Institute of the University of Graz, unsalaried for many years. There he habilitated in 1951. In 1961 he became director thereof and at the same time full member of the High Health Council.

To this very day Professor Möse is not only still deeply committed to hospital hygiene (especially infection control) but also to environmental hygiene and cancer research. His interest has always been less of a theoretical nature but first and foremost for the development and implementation of patient-oriented perceptions which is not only documented by his exceptional expertise but also by his numerous publications and books.

Corresponding author:

Univ. Prof. Dr. med. Josef R. Möse
Medizinische Universität Graz, Institut für Hygiene,
Universitätsplatz 4, A-8010 Graz
karin.orthofer@meduni-graz.at

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