O24 Intelligent electronic tools for automated surveillance and feedback, for audit and networking – a significant step towards evidence-based IPC in intensive care

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Safety and quality structures as required by modern healthcare can be managed best with intelligent information and communication technologies (ICTs). The more they rest on fully automated and intelligent data and knowledge management the better they support quality assurance, benchmarking, error prevention, and implementation of best practice methods. Our example is automated surveillance, monitoring, and reporting of HAIs for which we developed and use MONI, an intelligent ICT system for 14 intensive care units at a tertiary hospital. Fully automated detection and monitoring systems not only can assess HAIs more precisely with less time investment than conventional surveillance systems. They do it always the same way as data processing automatically follows the electronically implemented rules. Once in place, they function regardless of human factors which often impair reliability and continuity of conventional surveillance. They may also be adapted to new rules for data interpretation as additional input or new surveillance output emerges or is required by clinicians, administrators, and health authorities. Definitions of different networks can be used in parallel. Along with good documentation of such changes, this setting is perfect for quality control and audit in the long run. Availability of computer-based systems and networking grows rapidly throughout the globe. Especially in countries of lower income, mobile client-based solutions can substantially improve healthcare with high cost-effectivity, remote clinical decision support for health workers in rural African regions being an existing example. Propagation of intelligent ICT tools seems promising also in low resource environments.

The burden of surgical site infections worldwide O25

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Recent work by the World Health Organization (WHO) shows that surgical site infection (SSI) is the most surveyed and most frequent type of healthcare-associated infection (HAI) in low- and middle-income countries, affecting up to one-third of operated patients. Pooled incidence of SSI was 11.8 per 100 surgical procedures (range, 1.2 to 23.6) in developing countries. Among the highest rates, studies conducted in Nigeria and Kenya reported that wound infection affected 24% and 19% women undergoing caesarean section. The gaps in our understanding of these high rates include poor data reliability from many countries, inexistent surveillance systems and lack of standardized definitions and of information to classify SSI according to risk categories. By contrast, SSI rates vary between 1.2% and 5.2% in high-income countries. Although SSI incidence is much lower in these countries, it is the second most frequent type of HAI in the USA and Europe and the most frequent type in some European countries. While advances have been made in best infection control practices implementation, SSIs remain a substantial cause of morbidity and mortality among hospitalized patients. In one study in the USA, among nearly 100,000 HAIs reported in one year, deaths were associated with SSIs in more than 8,000 cases.

The presentation will provide an overview of SSI epidemiology worldwide based on recent and still unpublished systematic reviews conducted by WHO, including evaluation of any different risk factors, infection frequency, and impact in terms of mortality and costs between low-/middle-income and high-income countries.

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ABSTRACTS

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