

# Device-related urinary tract infections – Foreword by the section editors

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The use of urological devices, especially urinary catheters, forms the basis of the daily praxis in urological departments, and also is widespread in most hospitals and long-term care facilities. Using a foreign body that bypasses the normal host defences always increases the risk of infectious complications. Approximately 40% of healthcare-associated infections originate from the urinary tract, and most patients with nosocomial urinary tract infections (UTIs) have permanent urethral catheterisation or other urinary foreign bodies. Catheter-associated urinary tract infections (CAUTIs) are the most common healthcare-associated infections worldwide. Although largely asymptomatic, they are major reservoirs for antibiotic resistance and contribute to morbidity in hospitals and long-term care facilities. When UTI occurs in a catheterized patient it always requires careful clinical management. Due to biofilm formation there are different causative pathogens with different sensitivity patterns from what we see in the non-catheterized urinary tract. Identification of CAUTI by clinical and microbiological assessment and appropriate treatment is important for better outcomes. Clinicians should always consider alternatives to indwelling urethral catheters that are less prone to causing symptomatic infection. In appropriate patients, suprapubic catheters, condom drainage systems and intermittent catheterisation can be good alternatives to indwelling urethral catheterization.

In the first part of this section the authors compare the various available catheter materials. Urinary catheters are of varying design and material. Efforts are underway to develop novel catheter materials and coatings that may decrease CAUTIs or inhibit biofilm formation or both. The next chapter presents evidence-based recommendations for the prevention and treatment of catheter-associated infections. With design revisions, engineering changes, and improvements of surgical techniques, the non-infectious complication rates of urological devices, such as artificial urinary sphincters and penile prostheses have significantly decreased. As urological devices are now expected to function for many years post implantation, infection has become a significant problem. The next three chapters highlight the different alternative catheters, artificial sphincter and penile prostheses that have been developed to prevent or treat infections.

The second part of this section summarises the spectrum and antibiotic resistance pattern of CAUTI internationally with evidence from large prospective studies. The last part of this section outlines the epidemiology and risk factors for catheter-associated urinary tract infections and the pathogenesis of these infections especially with opportunistic pathogens.

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