

## An introduction to antifungal stewardship

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Stewardship is an ethic that embodies the responsible planning and management of resources. Antifungal stewardship (AFS) is the judicious use of today's antifungal agents. Recognizing the growing interest in antifungal stewardship, the Steering Committee of the Continuing Antifungal Research and Education (CARE) Programme, organized and funded by Gilead Sciences Europe Ltd, selected this as a topic for the eighth CARE meeting, held in Madrid in November 2015.

A primary goal of this meeting was to bring together infectious disease clinicians, medical microbiologists, medical mycologists, haematologists, pharmacologists and others to participate in a series of lectures, clinical case presentations and debate. The reviews in this Supplement of the *Journal of Antimicrobial Chemotherapy* reflect a cross-section of the key information presented.

The aim of antimicrobial stewardship is to preserve the future effectiveness of antimicrobial agents and to improve patient outcomes. AFS shares this aim but has features and challenges specific to the management of invasive fungal diseases (IFDs). These include high case-fatality rates, high drug costs and the development of antifungal resistance. Other factors to be considered during the management of IFDs include the complexity of fungal diseases in different patient populations, the requirement for more aggressive management strategies for malignant and inflammatory conditions, the relative ease of prescribing newer antifungal drugs due to improved formulations and reduced toxicity profiles and emerging resistance to different antifungal agents. Patient populations at risk of developing IFDs are typically very-low birthweight infants, children with inborn errors of their immune system, patients treated with chemotherapy for malignant diseases, transplant recipients, patients with chronic pulmonary disease and those depending on long-term critical care treatment.

A key issue for AFS programmes is to consider how they can be delivered effectively; such programmes involve a multi-faceted strategy. International organizations and societies recommend two core approaches: prospective audit and feedback to prescribers; and hospital antimicrobial teams. As part of prospective audit and

feedback, AFS teams review patients receiving antifungal drugs for appropriateness of drug, dose and duration. Proposed changes to antifungal regimens (interventions such as dose changes and drug switching) are then relayed to the clinician. These may be in the form of a written or electronic notification placed in the patients' notes, an electronic patient record system, or verbal communication, including face-to-face meetings or telephone communication.

Although overall acceptance of antimicrobial stewardship programmes and initiatives is well documented in the literature, very little has been reported regarding AFS and the way in which the various communication channels used by antimicrobial stewardship programmes have been applied in the AFS setting, and by whom. To address these issues and to ensure optimal management of IFDs, specialist knowledge and experience from a range of backgrounds that extends beyond the remit of most antibiotic stewardship programmes is required. The first step is to build a multidisciplinary team encompassing the necessary expertise in the management of IFDs to develop and implement the AFS.

The series of reviews and discussion papers in this Supplement outline how such programmes have been implemented in different clinical settings and in different regions of the world. The key issues discussed focus on questions such as: What tools can be used to guide antifungal stewardship? What is the current treatment landscape for diseases such as aspergillosis, candidosis and cryptococcosis? Have stewardship programmes been designed for the not-so-common fungal infections such as fusariosis or mucormycosis? How can surveillance and diagnostics be used to optimize antifungal management strategies? The following reviews address all of these topics and more.

### Transparency declarations

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