

## **010: ADHERENCE TO KEY INDICATORS FOR ANTIBIOTIC USE IN LOWER RESPIRATORY TRACT INFECTIONS (LRTI): A MULTICENTRE TRIAL IN DUTCH HOSPITALS**

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### **Objective:**

To detect areas of possible improvement in the appropriate use of antibiotics in hospital LRTI's and to develop and test a tailor-made intervention strategy.

### **Methods:**

Using a two-round iterated consensus procedure in an expert panel, we developed a set of process-of-care indicators for the appropriate use of antibiotics in LRTI's, based on key-recommendations from national and international guidelines and a recent literature review. Experts were asked to rate recommendations by the following qualifications:

1. Clinically relevant to the patients' health
2. Relevant to reducing antimicrobial resistance
3. Cost-effective
4. Sensitive to change and
5. Is data available and feasible to measure?

Between September 2002 and March 2003, data collection was performed prospectively in 8 medium-to-large hospitals in the internal- and respiratory medical wards. All data were collected from concurrent chart reviews by trained research assistants. Demographic data, relevant co-morbidity, severity of disease (PSI or Fine score), clinical and microbiological data were entered into a previously constructed computerised algorithm to calculate results of the process-of-care indicators.

### **Results:**

A set of indicators for the appropriate use of antibiotics in LRTI was selected in two rounds: 11 for community-acquired pneumonia (CAP), 7 for acute exacerbations of chronic bronchitis or COPD (AE-CB / COPD) and 6 for Nosocomial Pneumonia (NP). 1,065 patients with LRTI were studied in a 6-month period (498 patients with CAP, 499 with AE-CB / COPD and 68 with NP). Timely initiation of antibiotic therapy in CAP (% of patients receiving antibiotics within 4 hours of admission) was performed in 60% of patients, prescribing an empirical antibiotic regimen adherent to national guidelines in 39%. Changing broad spectrum empirical- into pathogen-directed therapy, as soon as cultures become available (streamlining therapy) was achieved in 52% of cases. Prescribing antibiotic therapy for acute exacerbations of COPD only on a correct indication was found to occur in 47%. Allergy to antibiotics (28%), possible causative micro-organisms (11%) and respiratory rate (12%) were scarcely documented in medical records. A large variation existed between hospitals and professionals.

### **Conclusion:**

The development of a set of key-indicators enabled us to describe actual care for patients admitted to hospitals with a LRTI. Based on performance on these indicators we developed a tailor-made, multifaceted intervention containing educational, feedback and process-redesign strategies. This intervention is currently tested in a clustered randomised controlled trial.