Decomposition Method was identified to be the best prediction model for forecasting for all variables with the smallest error among the other models as measurement of accuracy which involved mean absolute error (MAE), sum square error (SSE), mean square error (MSE) and mean error (ME) nearest to zero. This model gave the ME values which underlying between −0.03 to 0.91, from 0.14 to 2.70 for MAE, 5.25 to 1265.11 for SSE and 0.07 to 16.22 for MSE. Forecasting results for male and female have shown that the cases of septicaemic deaths will be increasing in next five years.

Conclusion: Forecasting can be a reference model for government to make a move in planning for the future and to perform better health strategic planning especially in patient management related to septicaemic deaths.

64.056

The Etiology of Hospital-Related Central Vascular Catheter Infections. A Prospective Microbiological Study

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Background: A prospective microbiological surveillance program is ongoing at our tertiary-care Hospital located in Northern Italy.

Patients and Methods: The trend of microbial isolations from patients admitted during the last calendar year (January to December 2007), with a clinically- and microbiologically-confirmed central venous catheter (CVC) infection, is regularly reported on quarterly basis.

Results: The trend of CVC infections monitorized among our inpatients moderately varied during the observation period (149 cases in January-March, 169 episodes in April-June, 129 cases in July-September, and 134 episodes in October-December). Among the most frequent organisms, *Staphylococcus epidermidis* accounted for the majority of isolates (183 cases: 31.5%), followed by *Escherichia coli* (49: 8.4%), *Staphylococcus aureus* (45: 7.7%), Pseudomonas aeruginosa (36: 6.2%), *Enterococcus faecalis* (30: 5.2%), *Enterococcus faecium* (25: 4.3%), *Klebsiella pneumoniae* (21: 3.6%), and *Enterobacter cloacae* (15: 2.6%), while the yeast *Candida albicans* accounted for a minority of episodes (17 only: 2.9%). When analyzing the available figures according to calendar months, only some Gram-negative pathogens showed an increasing incidence over time: *Pseudomonas aeruginosa* from 5.4% in the first three months of 2007 up to 7.5% in the last three months of 2007, and *Enterobacter cloacae* (from 2.0% in January−March 2007, up to 2.68% in October−December 2007), as well as other environmental Gram-negative organisms

Conclusions: A prospective microbiological monitoring may notably add to the knowledge of local epidemiological figures and antimicrobial sensitivity trends of CVC infection (which represent relevant causes of hospital-related morbidity), and plays a highly significant role in the selection and planning of chemoprophylactic and therapeutic choices, on both local and regional settings. Although the major causative agents of CVC-related infection among hospitalized patients remain staphylococci as a group, however the progressive emerging of Gram-negative pathogens is appreciable also over a proportionally short (12-month) observation period, and deserves major attention by Microbiologists and Clinicians.

64.057

Prospective Monitoring of in Vitro Antimicrobial Susceptibility Testing of Major Pathogens at a Large Tertiary Care Metropolitan Hospital. A Guidance for Both Therapeutic and Prophylactic Choices

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Background: Prospective microbiological surveillance studies including a continued monitoring of antimicrobial sensitivity rates, have been performed at our Hospital since the year 2004. Materials and Methods: The temporal variations of in vitro antibiotic susceptibility rates were examined for the main hospital isolates, represented by *Staphylococcus aureus,* Enterobacteriaceae as a whole, *Pseudomonas aeruginosa*, and Enterococci. The same pathogen cultured more than once from the same patient within one month, has been considered once.

Results: Among *Staphylococcus aureus* isolates (1,869 tested strains), the rate of methicillin resistance remained elevated, but ranged from 46.2% (year 2007), to 53.3% (year 2005). Consistently elevated sensitivity rates were found for vancomycin-teicoplanin (100%), followed by cotrimoxazole (92.3%), chloramphenicol (81.7%), and rifampin (66.3%). With regard to Enterobacteriaceae as a group (4,428 tested strains), carbapenems and colistin maintained full (100%) in vitro efficacy, followed by amikacin (96.4%), piperacillin-tazobactam (85.7%), and ceftazidime (78.3%), while less than 65% of strains were sensitive to ciprofloxacin and amoxycillin-clavulanate. Among Enterobacteriaceae, *Escherichia coli* showed a significantly better sensitivity profile compared with other organisms, especially when co-amoxyclav, ceftazidime, piperacillin-tazobactam, and gentamicin were of concern. On the other hand, *Pseudomonas aeruginosa* (2,063 tested strains), was 100% sensitive to colistin, followed by imipenem (78.3%), ceftazidime (75.5%), amikacin (73.7%), and piperacillin-tazobactam (73.2%). Finally, among Enterococci as a whole (2,734 tested strains), vancomycin resistance accounted for 8.1% of cases, while linezolid proved 100% effective. Compared with *Enterococcus faecium, Enterococcus faecalis* tested more sensitive to penicillin, ampicillin, streptomycin, and nitrofurantoin, while it proved less susceptibile to tetracyclines.

Conclusions: A prospective bacteriological surveillance of antimicrobial susceptibility rates of major hospital-isolated microorganisms is extremely important, to establish reliable guidelines of antibiotic treatment and prophylaxis, on local-regional basis. Pending in vitro susceptibility testing of each bacterial isolate, a correct initial, empiric choice