# Enterobacteria in the hospital environment and their antimicrobial resistance

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**Background**: Enterobacteria can produce enzymes (ESBLs) to inactivate beta-lactamins and can also be resistant to carbapenems (CRE), as superbugs.
**Objective:** To evaluate the superbacteria frequency in the last two years in Arad County Clinical Hospital.
**Material and methods:** The multidrug criteria described in Clinical Microbiology and Infection Volume 18, Issue 3, 2011 were used. VITEK and E-test for ESBLs and diffusometric anti-biograms methods for CRE were used, interpreted according to EUCAST and CLSI.
**Results:** Were identified 5093 isolates, 67.85% were Gram negative (n = 3456), 2905 were enterobacteria (57.03% of total, 84.05% of Gram negatives). ESBLs represent 19.53% (n = 995), 15.2% (n = 151) in Surgical wards, 14.94% (n = 149) on ICU and 12.8% (n = 127) in Internal Medicine departments; they were present in all 24 hospital wards, colonizing even ambulatory patients (n = 32; 3.2%). Superbugs were 117 of these, most of which were present on ICUs (n = 57; 48.7%), Neurology (n = 15; 12.8%), Surgery (n=15; 12.8%) and Palliative (n = 12; 10.3%). Most multidrug resistant organisms were Klebsiella pneumoniae (n = 58; 49.6%), Proteus spp (n = 28; 23.91%) and Providencia stuartti (n = 19; 16.2%).
**Conclusions:** Enterobacteria with extended resistance to cephalosporins and carbapenems were identified in the last two years in this hospital, especially in the ICU, Surgical and Internal Medicine departments, colonizing ambulatory patients as well. They are in the WHO alert, along with other Gram negative species, as Acinetobacter baumannii and Pseudomonas aeruginosa.
**Key words:** enterobacteria, ESBs, carbapenemases.

# Acute respiratory distress syndrome particularities in oncological patients with $AH_1N_1$ influenza. Case series report

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**Introduction:** In oncological patients influenza may result in severe forms associated with high mortality (11-33% in solid cancers, 23% in bone marrow transplant), one of them being acute respiratory distress syndrome (ARDS).
**Objective:** Evaluation of diagnostic, management and outcome particularities in ARDS AH1N1 influenza oncological patients.
**Material and methods:** The study enrolled all ARDS AH1N1 influenza patients, diagnosed and managed in ICU IRO Iași in January-February 2018 during a hospital-acquired influenza outbreak. Analyzed parameters were patient related (cancer type and treatment), influenza related (virus type and identification tests), ARDS related (severity, management, outcome).
**Results:** Out of 40 symptomatic or influenza contact asymptomatic patients, 21 tested positive for AH1N1 influenza virus, 9 out of them having ARDS managed in ICU. 5 pts presented severe ARDS in the context of post-therapeutic severe immune compromise: 4 pts post-chemotherapy medullary aplasia for hemato-oncological disease and 1 pt post-radio/chemo/surgical therapy for gynecological cancer. All received ventilatory support: 3 pts invasive ventilatory support in prone position (worst PaO2/FiO2 29-46 mmHg, nonsurvivors), 2 pts non-invasive ventilatory support (worst PaO2/FiO2 54-94 mmHg, survivors). After 25th Jan 2018 (first case) epidemiological alert and management were instituted, resulting in outbreak control on 23rd Feb 2018 (last case).
**Conclusions:** In immuno-compromised oncological patients AH1N1 influenza may rapidly generate a hospital-acquired outbreak and severe ARDS forms associated with high mortality. Early diagnostic and management are the most effective strategies in reducing associated mortality and controlling influenza outbreak.
**Key words:** acute respiratory distress syndrome.