Antimicrobial resistance spreads due to the misuse of antimicrobial drugs, low quality medicines, weak laboratory capacity and surveillance, insufficient regulation, and inadequate programs. In the last 10 years, *P. aeruginosa* and *Acinetobacter* spp. have acquired resistance mechanisms and emerged as the most problematic bacteria in the 21st century. Treatments have failed to work, resulting in patients’ longer stays in hospital settings and scientists search for novel therapeutic targets. Interest in intrinsic resistance genes has increased; these gene products may provide the emergence of new drugs. However, the impermeability of cellular envelopes and the constitutive expression of efflux pumps can lead to the mobilization of resistant genes. In Paraguay, we isolated the first regional *Acinetobacter pitti*, carrying a metallo-beta lactamase of the NDM-1 type. Previously, molecular methods confirmed the circulation of bacteria with different resistance mechanisms, such as extended-spectrum β-lactamases (ESBL) and carbapenemase. Recently the circulation of mcr-1 in strains of enterobacteria was confirmed by molecular methods. The objective of the present study was to trace events concerning the discovery and emergence of the mcr-1 gene along with the presence of ESBL and carbapenemase genes. From January to April of this year, 13 strains, associated with different hospitalized patients (10 of *A. baumannii* and three of *P. aeruginosa*) were isolated from five different hospitals. The strains were submitted to the antimicrobial section of the LCSP, indicating resistance to several families of antibiotics, including colistin (with MIC between 4 and 16 ug/ml). Also, the presence of carbapenemases (NDM-1, OXA 23 and OXA 51) was confirmed, but the presence of the mcr-1 gene was discarded. It is recommended to strengthen surveillance programs and epidemiological research in all centers of the country for efficient detection of multi-drug resistant microorganisms.