

Supplementary file

High proportion of plasmid-mediated quinolone resistance genes and integrons in hospital- and community-acquired *Enterobacterales* in Dakar, Senegal

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Bacterial DNA Extraction

Briefly, a well-separated bacterial colony was dispersed in a tube containing 1mL of sterile distilled water, vortexed, boiled for 15 min at 100°C, and centrifuged at 13,200 rpm for 10 min. The supernatant was carefully recovered, aliquoted, and stored at -20°C until use.

PCR program

Initial denaturation at 95°C for 3 min; 35 PCR cycles (denaturation: 94°C, 30 sec; hybridization; elongation: 72°C, 60 sec) and a final elongation at 72°C for 7 min.

Bacterial isolates and antimicrobial susceptibility testing

Bacterial isolation and identification were performed on Eosin Methylene Blue (EMB) agar (Merck KGaA, Darmstadt, Germany) and Api20E for *Enterobacteriaceae* (bioMérieux, Lyon, France), respectively. The isolates were stored at -80°C in brain heart infusion broth with 15% glycerol (West McCoy Lane, Santa Maria, California, USA) until our study began. At the beginning of our study, all isolates were recultured on Eosin Methylene Blue (EMB) agar (Merck KGaA, Darmstadt, Germany), and only pure colonies were re-identified using Api20E and included in the study.

ESBL production was detected using the double-disk synergy test with amoxicillin-clavulanic acid disc surrounded at a radius of 30 mm by cefepime, cefotaxime, ceftazidime, and aztreonam [4]. The multidrug resistance was defined according to Magiorakos et al. [5].

Table S1 Details of antibiotics tested during this study

Antibiotic class	agents	Details
Beta-lactams	amoxicillin-clavulanic acid	20/10 µg
	cefalotin	30 µg
	cefoxitin	30 µg
	cefotaxime	30 µg
	ceftazidime	30 µg
	cefepime	30 µg
	aztreonam	30 µg
	imipenem	10 µg
	ertapenem	10 µg
Quinolones	nalidixic acid	30 µg
	ciprofloxacin	5 µg
Aminoglycosides	gentamicin	10 µg
	amikacin	30 µg
Phosphonic antibiotics	fosfomycin	50 µg
Cyclines	tetracycline	30 µg
sulfonamide and folate antagonist	sulfamethoxazole-trimethoprim	1.25 µg/23.75 µg

Pathogenicity and origin of isolates

All the 124 selected isolates were multidrug-resistant (MDR) and were distributed as follows: 73 isolates of *E. coli* and 51 isolates of *K. pneumoniae*. Among the 73 isolates of *E. coli*, 25 were hospital-acquired (HA-*E. coli*) and 48 were of community origin (CA-*E. coli*). Furthermore, 50 isolates were isolated from UTIs [uropathogenic *E. coli* (UPEC)] whereas 23 [non-uropathogenic *E. coli* (Non-UPEC)] were isolated from pus, vaginal secretions, bronchial fluids and blood culture samples. Of the 51 *K. pneumoniae* isolates, eight were hospital-acquired (HA-KP) and 43 were of community origin (CA-KP). Additionally, 34 *K. pneumoniae* isolates were isolated from UTIs (UPKP), whereas 17 were isolated from pus, vaginal secretions, blood and bronchial fluids (Non-UPKP).

Additional details on PMQR genes and integrases amplification

The reaction volume of each PCR was 20 µL (2.5 µL of DNA + 17.5 µL mix). The mix was prepared using the Master Mix FIREPol (Teaduspargi 9, 50411 Tartu, Estonia). Each

amplicon (10 µL) was separated on a 2% agarose gel in 1X TAE buffer for 35 min at 135 volts and the amplified fragment was detected using a GelDoc imager (BioRad, Hercules, California, USA).

Table S2 Oligonucleotide primers sequence used for PCR

Target gene	Sequences genes	Size (bp)	Annealing Temp (°C)	Reference
<i>qnrA</i>	F: 5' – TCAGCAAGAGGATTTCTCA - 3' R: 5' – GGCAGCACTATTACTCCCA - 3'	657	55°C	[6]
<i>qnrB</i>	F: 5' – GATCGTGAAAGCCAGAAAGG - 3' R: 5' – ACGATGCCTGGTAGTTGTCC - 3'	469	55°C	[7]
<i>qnrC</i>	F: 5' - GGGTTGTACATTTATTGAATCG - 3' R: 5' - CACCTACCCATTTATTTTCA - 3'	307	55°C	[8]
<i>qnrD</i>	F: 5' - TGTGATTTTTCAGGGGTTGA - 3' R: 5' - CCTGCTCTCCATCCAACTTC - 3'	520	55°C	[9]
<i>qnrS</i>	F: 5' - ACGACATTTCGTCAACTGCAA - 3' R: 5' - TAAATTGGCACCCTGTAGGC - 3'	417	55°C	[7]
<i>qepA</i>	F: 5' – AACTGCTTGAGCCCGTAGAT – 3' R: 5' – GTCTACGCCATGGACCTCAC – 3'	596	55°C	[9]
<i>oqxAB</i>	F: 5' – CCGCACCGATAAATTAGTCC – 3' R: 5' – GGCGAGGTTTTGATAGTGGA – 3'	313	63°C	[10]
<i>aac(6')Ib-cr</i>	F: 5' – TTGGAAGCGGGGACGGAM – 3' R: 5' – ACACGGCTGGACCATA – 3'	265	52°C	[11]
<i>intI1</i>	F: 5' – ACATGTGATGGCGACGCACGA – 3' R: 5' – ATTTCTGTCCTGGCTGGCGA – 3'	569	57°C	[12]
<i>intI2</i>	F: 5' - CACGGATATGCGACAAAAAGGT - 3' R: 5' - GTAGCAAACGAGTGACGAAATG - 3'	788	62°C	[13]

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