#01380 National implementation of mandatory pan-drug-resistant bacteria notification in Argentina: lessons for the first two years

11. Public health & vaccines
11g. Global health & health security (incl policy-making, climate change, biosafety/biosecurity)

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Background

In response to an outbreak of pan-drug-resistant (PDR) *Klebsiella pneumoniae* in immunosuppressed patients, the Ministry of Health in Argentina incorporated PDR bacteria as a mandatory nominal event in the National Health Surveillance System (SNVS 2.0) in September 2024, after a 10-month pilot starting October 2023. The policy aims to enable early alerting, rapid containment, and inter-institutional coordination for PDR Enterobacterales, *Pseudomonas aeruginosa*, and *Acinetobacter* spp. AIM: to describe the mandatory PDR notification system, including case definitions, workflow, and outcomes from the pilot to date.

Methods

We conducted nationwide surveillance using SNVS 2.0 notifications. Suspected PDR cases were notified immediately by clinical laboratories to SNVS 2.0 and isolates referred to the NRL (INEI-ANLIS) for antimicrobial susceptibility testing against a nationally agreed panel (Figure 1), plus molecular and genomic characterization. Cases were classified as: confirmed (when the LNR verified the PDR phenotype), discarded (suspect isolate referred but susceptible to ≥1 listed drug at the NRL), or invalidated (epidemiology/entry error).

Results

Seventy-seven suspected PDR events were notified from 8 jurisdictions: 57 Enterobacterales (48 *Klebsiella pneumoniae*, 1 *Proteus mirabilis*, 8 not speciated), 13 *Pseudomonas aeruginosa*, and 7 *Acinetobacter* spp. After re-testing at the NRL, 49/77 (63.6%) were discarded as non-PDR, due to discrepancies with hospital reports most often involving tigecycline, aztreonam–avibactam, colistin or fosfomycin. A further 24 suspects were invalidated after epidemiological/administrative review. Four cases (overall confirmation rate 5.2%) were confirmed as PDR by the NRL: two *K. pneumoniae* (2023 and 2025), one *A. baumannii* (2024), and one *P. aeruginosa* (2025) (Figure 2). Confirmed cases were from different hospitals within one jurisdiction.

Conclusions

After 2 years of PDR surveillance, built on immediate SNVS 2.0 notification with centralized NRL confirmation, we identified a small but high-consequence burden of confirmed PDR cases across Enterobacterales, *A. baumannii* and *P. aeruginosa*. The system has strengthened early detection and containment capacity and provides real-time, nominal data to inform clinical and public-health actions. Next steps include reducing invalidated cases by addressing inter-jurisdictional diagnostic heterogeneity and sustaining annual updates of case definitions as treatment options and phenotypes evolve.

PDR definition by bacterial group (2025)

Figure 1. Antimicrobials included in the 2025 PDR definition by bacterial group

Enterobacterales	Acinetobacter spp.	Pseudomonas aeruginosa
Penicillins	-	-
Cephalosporins (all generations)	Cephalosporins (all generations)	Cephalosporins (all generations)
Aztreonam	Aztreonam	Aztreonam
Carbapenems	Carbapenems	Carbapenems
Aminoglycosides	Aminoglycosides	Aminoglycosides
Fosfomycin	-	-
Colistin	Colistin	Colistin
Tigecycline	Minocycline / Tigecycline	-
Quinolones	Quinolones	Quinolones
Folate pathway inhibitors	Folate pathway inhibitors	Folate pathway inhibitors
Nitrofurans	-	-
β-lactam/β-lactamase inhibitor combinations (classic): Ampicillin/sulbactam, Amoxicillin/clavulanate, Piperacillin/tazobactam	β-lactam/β-lactamase inhibitor combinations (classic): Ampicillin/sulbactam, Piperacillin/tazobactam	β-lactam/β-lactamase inhibitor combinations (classic): Piperacillin/tazobactam
β-lactam/β-lactamase inhibitor combinations (new generation): Ceftazidime/avibactam, Ceftolozane/tazobactam, Imipenem/relebactam, Aztreonam/avibactam	-	β-lactam/β-lactamase inhibitor combinations (new generation): Ceftazidime/avibactam, Ceftolozane/tazobactam, Imipenem/relebactam

Epidemiology, molecular and genomic features of the confirmed PDR isolates

Figure 2 - Relevant epidemiology, molecular and genomic features of the four confirmed PDR isolates

Specie	Date	Patient Age (sex)	Site of isolation	Sequence Type (ST)	Main resistant mechanism (WGS)	Patient outcome	PDR dissemination
K. pneumoniae	2023	13 y.o. (F)	Blood, Lower respiratory tract	ST152	OXA-163 (carbapenemase) CTX-M-15 (ESBL) TEM-1, SHV-1 (OSBL)	**Survived** after compassioned treatment with ertapenem plus imipenem	Contained
K. pneumoniae	2024	84 y.o. (F)	Urine	ST258	NDM-5 (carbapenemase) CTX-M-15, SHV-5 (ESBLs) TEM-1 (OSBL) ompK36 D135DGD (porins) *pmrB* R256G (colistin)	Urinary tract colonizing strain, no treatment required.	Contained
A. baumannii	2024	61 y.o. (M)	Peritoneal fluid	CCII -ST2	OXA-23 (carbapenemase) *fstI* A515V (PBP3, target site) *pmrB/pmrC* (colistin)	**Survived** after compassioned treatment with sulbactam plus ceftazidime-avibactam	Contained
P. aeruginosa	2025	38 y.o. (M)	Urine	ST233	VIM-2 (carbapenemase) PER-2 (ESBL) phoP/phoQ (colistin)	**Survived** after compassioned treatment with aztreonam plus ceftazidime-avibactam	Contained

y.o.: years old. WGS: whole genome sequence. ESBL: extended-spectrum beta-lactamase.
OSBL: older (narrow)-spectrum beta-lactamase

Keyword 1
Antimicrobial resistance (AMR)
Keyword 2
Public Health and surveillance
Keyword 3 (Please provide your suggestion)
Pan-Drug-Resistant