

# An outbreak of multidrug resistant organisms in a neonatal intensive care unit in Malaysia.

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## Introduction:

Managing infections caused by multi-drug resistant organisms (MDROs) in the neonatal intensive care (NICU) is challenging.

During January–February 2017, MDROs increased, especially extreme drug resistant *Acinetobacter baumannii* (XDR-AB) which was isolated from infants in a 25-bed level III tertiary NICU.

An investigation to contain the outbreak was performed.

## Methods:

Surveillance of clinical isolates, contact screening & environmental swabs were carried out.

XDR-AB was defined as *Acinetobacter baumannii* resistant to all antibiotics except colistin

A review of protocols and direct observation of patient care practices were conducted and findings communicated to NICU staff.

## Results:

9 neonates were colonised or infected with a total of 13 MDROs. All 9 neonates harboured XDR-AB.

The XDR-AB isolated from the neonates & surveillance swabs had similar sensitivity patterns

Table 1: Summary of patients harbouring XDRAB

No	BW (gm)	GA (wks)	Age during MDRO isolation (days)	Site of isolation of MDRAB	Other MDRO	Infection or colonise	Outcome (30 days)
1	845	27	10	TA	ESBL Kp	HAC	Alive
2	1305	30	13	NPS	-	HAC	Alive
3	570	27	6	blood	-	HAI	Dead
4	1265	33	28	Swab omphalocoele	-	HAI	Dead
5	1515	31	14	Blood	-	HAI	Dead
6	1635	33	28	Throat swab	ESBL Kp,CR-Kp	HAC	Alive
7	1730	31	16	Rectal swab	-	HAC	Alive
8	1535	31	24	TA	ESBL Kp	HAI	Alive
9	1725	34	5	Eye swab	-	HAC	Alive

Table 2: Surveillance swabs

Surveillance swabs	Isolation of XDRAB
26 Environment surfaces	2 (mini syringe driver & sink)
EBM from 5 mothers	0
Finger print from 10 HCW	1
7 contacts screened	1

Interventions resulted in reduction of MDROs & no further XDR-AB isolates

## Conclusion:

Daily surveillance for MDRO is necessary to identify an outbreak promptly. The spread of XDR-AB was suspected to have arisen from contaminated equipment and pathogen transmission via close contact. Revision of protocols and rigorous infection control enforcement by a multidisciplinary team, resulted in outbreak containment.



Kp= Klebsiella pneumoniae, CR= carbapenam resistant , ESBL=extended spectrum betalactamases; TA=Tracheal aspirate; NPS= Nasopharangeal secretion; HAC= Hospital Acquired Coloniser, HAI= Hospital acquired Infection, VAP= ventilator associated pneumonia, CRBSI= catheter related blood stream infection, HH=hand hygiene, PPE= personal protective equipment