

Antibiotic resistance – mountain or molehill?

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Scenario



- Perioperative antibiotic prophylaxis
- Current surgical site infection rates 2.4% in CH
- Usually easily treated with antibiotics

Scenario

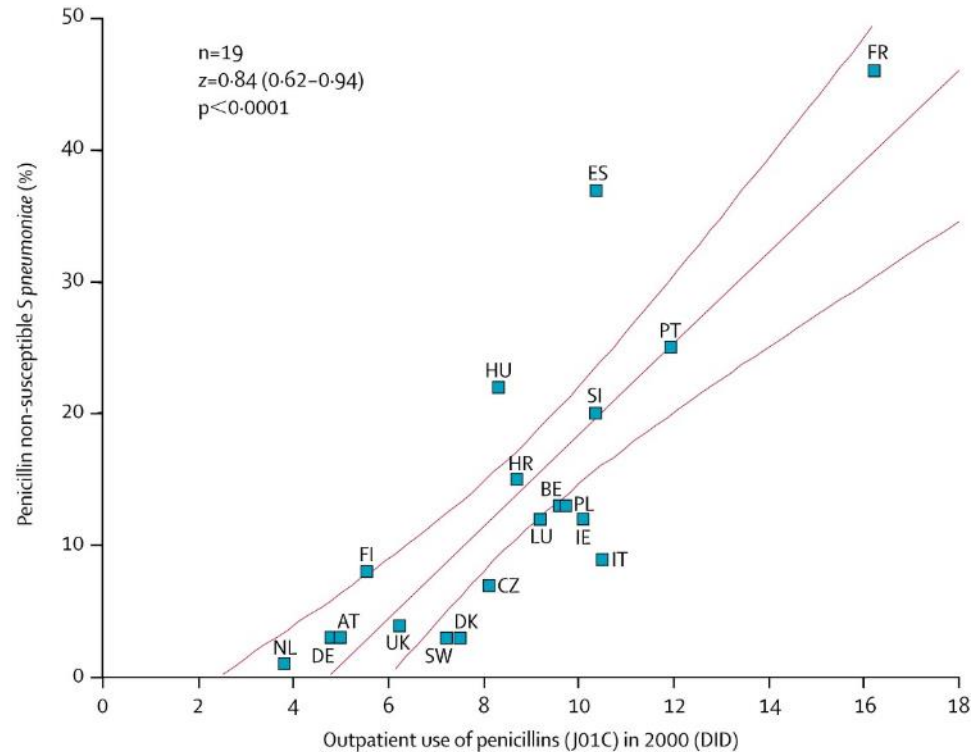


Mbará Regional Referral Hospital, Uganda

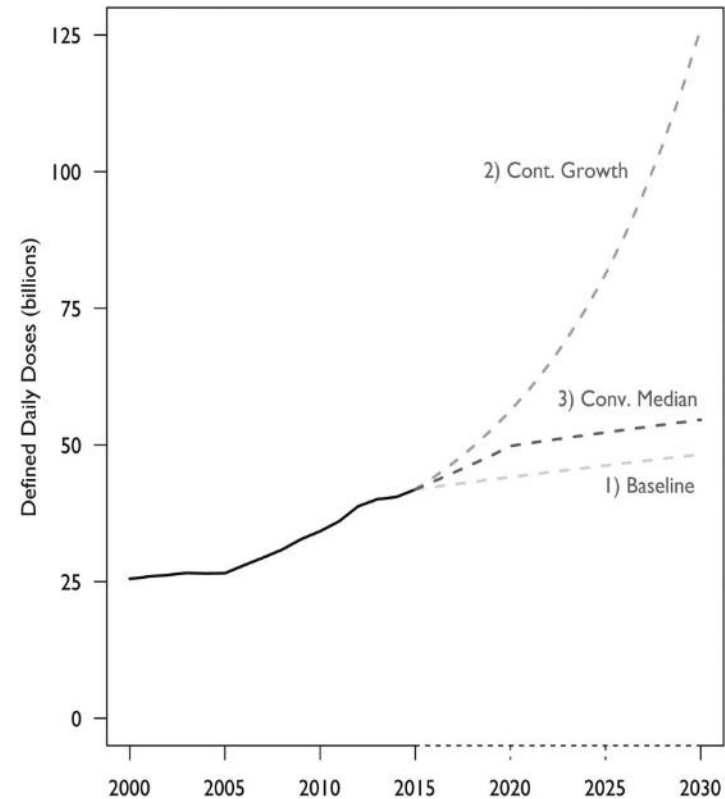
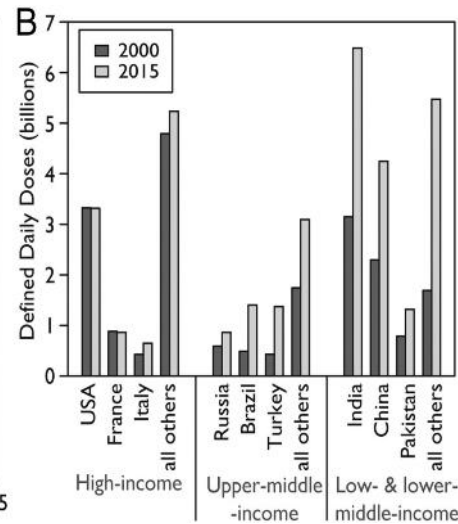
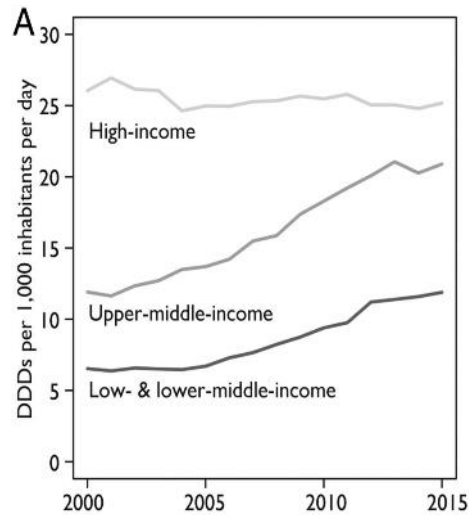
- Highest rate of infection among delivered women = post Cesarean section
- 100% adherence to prophylaxis among women with infections
- Considerable morbidity due to difficult to treat pathogens



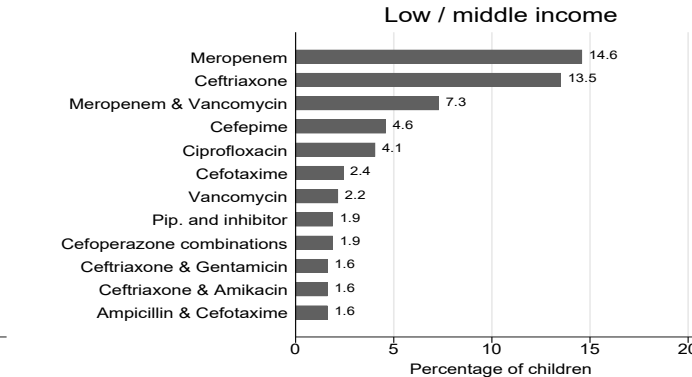
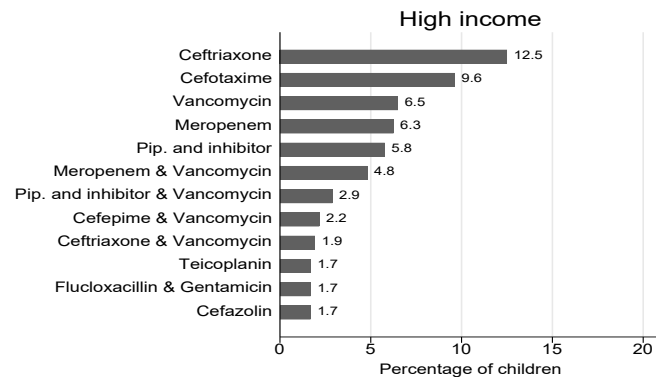
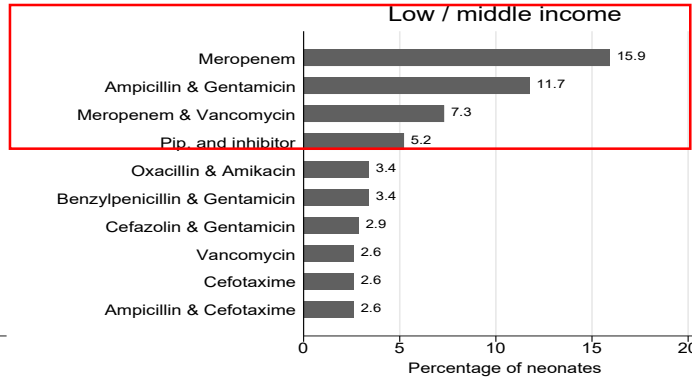
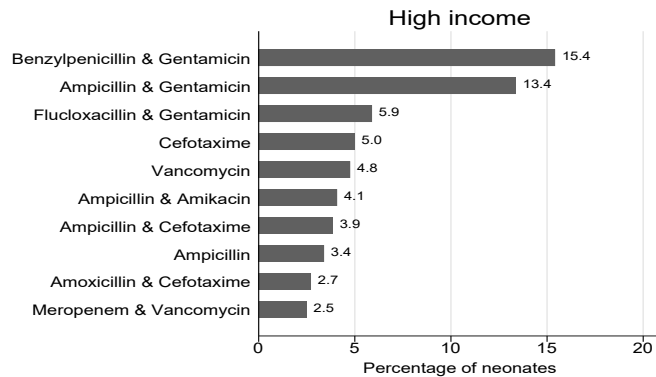
Lots of AB = Lots of AMR



Convergence of antibiotic consumption



Regimens used for empiric treatment of neonatal sepsis



Interpreting antibiotic use in context

	Total sepsis	Culture-positive sepsis	Culture-negative sepsis	Meningitis
Incidence*				
Overall (n=13 530)	1934 (14.3%; 13.8–14.9)	840 (6.2%; 5.8–6.6)	1094 (8.1%; 7.6–8.6)	200 (1.5%; 1.3–1.7)
Site 1 (n=9239)	1237 (13.4%; 12.7–14.1)	502 (5.4%; 5.0–5.9)	735 (8.0%; 7.4–8.5)	119 (1.3%; 1.1–1.5)
Site 2 (n=2657)	502 (18.9%; 17.4–20.4)	279 (10.5%; 9.4–11.7)	223 (8.4%; 7.4–9.5)	67 (2.5%; 1.9–3.2)
Site 3 (n=1634)	195 (11.9%; 10.4–13.6)	59 (3.6%; 2.7–4.6)	136 (8.3%; 7.0–9.8)	14 (0.9% 0.5–1.4)
Incidence density†				
Overall (n=80 427)	1980 (24.6; 23.6–25.7)	847 (10.5; 9.8–11.3)	1133 (14.1; 13.3–14.9)	200 (2.5; 2.2–2.8)
Site 1 (n=42 419)	1246 (29.4; 27.8–31.0)	502 (11.8; 10.8–12.9)	744 (17.5; 16.3–18.8)	119 (2.8; 2.3–3.3)
Site 2 (n=21 342)	517 (24.2; 22.2–26.4)	281 (13.2; 11.7–14.8)	236 (11.1; 9.7–12.5)	64 (3.0; 2.3–3.8)
Site 3 (n=16 666)	217 (13.0; 11.3–14.8)	64 (3.8; 2.9–4.9)	153 (9.2; 7.8–10.7)	14 (0.8; 0.4–1.4)
Case fatality rate‡				
Overall	496/1934 (25.6%; 23.7–27.7)	400/840 (47.6%; 44.2–51.0)	96/1094 (8.8%; 7.2–10.6)	102/200 (51.0%; 43.8–58.1)
Site 1	248/1237 (20.0%; 17.8–22.4)	200/502 (39.8%; 35.5–44.3)	48/735 (6.5%; 4.8–8.6)	45/119 (37.8%; 29.1–47.2)
Site 2	226/502 (45.0%; 40.6–49.5)	188/279 (67.4%; 61.5–72.8)	38/223 (17.0%; 12.3–22.6)	56/67 (83.6%; 72.5–91.5)
Site 3	22/195 (11.3%; 7.2–16.6)	12/59 (20.3%; 11.0–32.8)	10/136 (7.3%; 4.8–10.6)	14/14 (100.0%; 80.0–100.0)

* Among those admitted to neonatal intensive care. Data are number of cases (%; 95% CI). † Data are number of cases per 1000 patient-days (%; 95% CI). ‡ Data are number of deaths/number of cases (%; 95% CI).

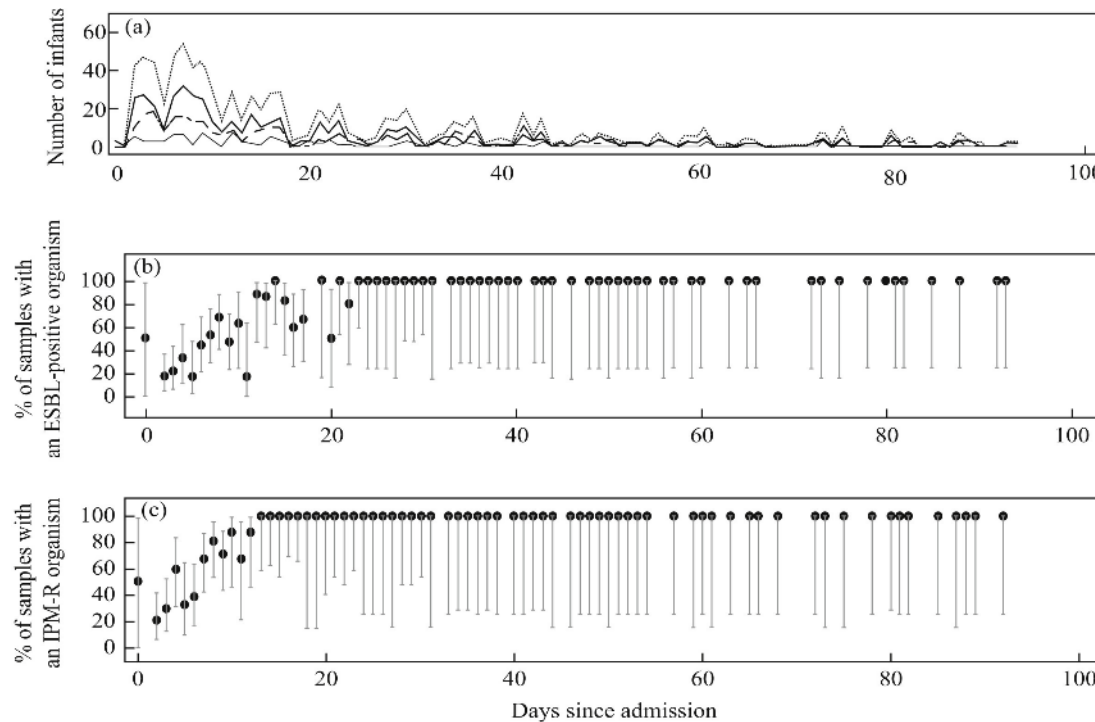
Table 2: Incidence and case fatality of neonatal sepsis

Commonest isolated pathogens:
Acinetobacter spp. and *Klebsiella* spp with high degree of TGC and CP resistance

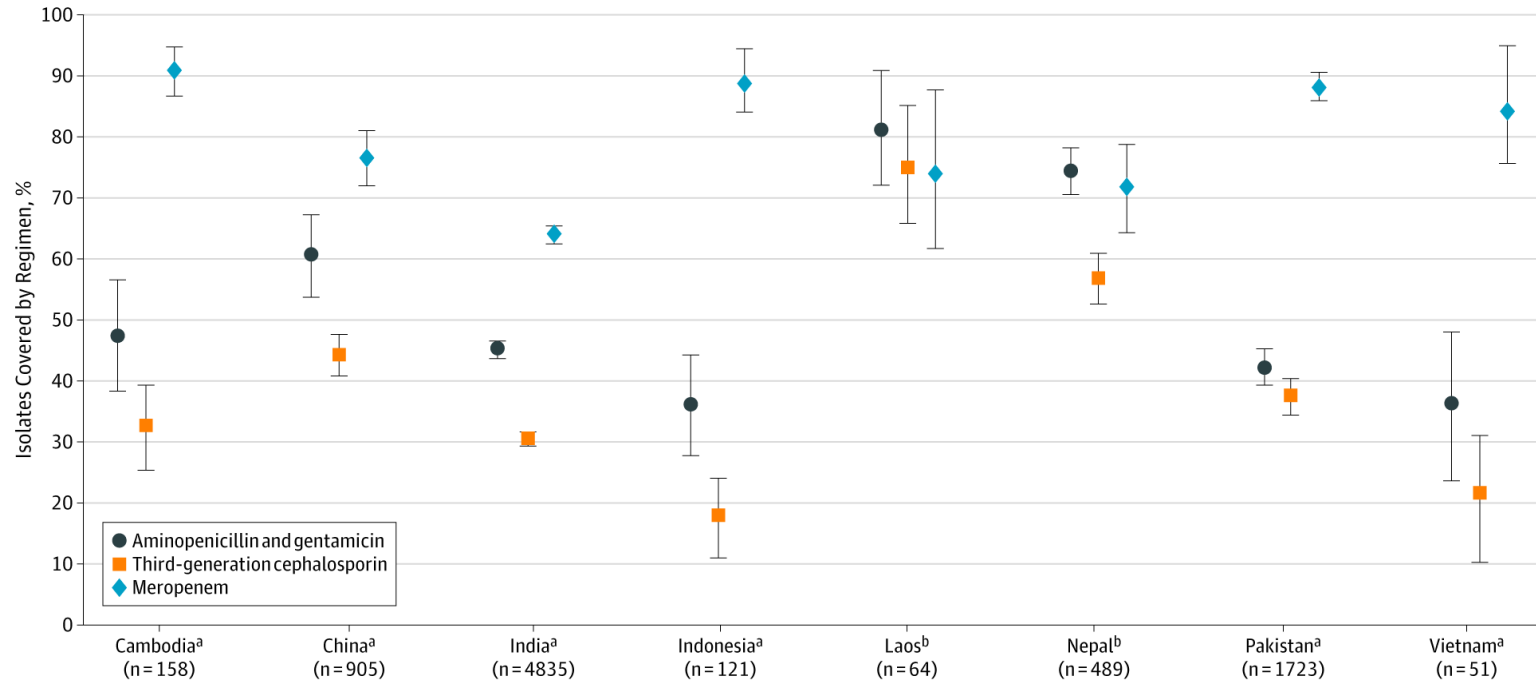
Newborn care is changing



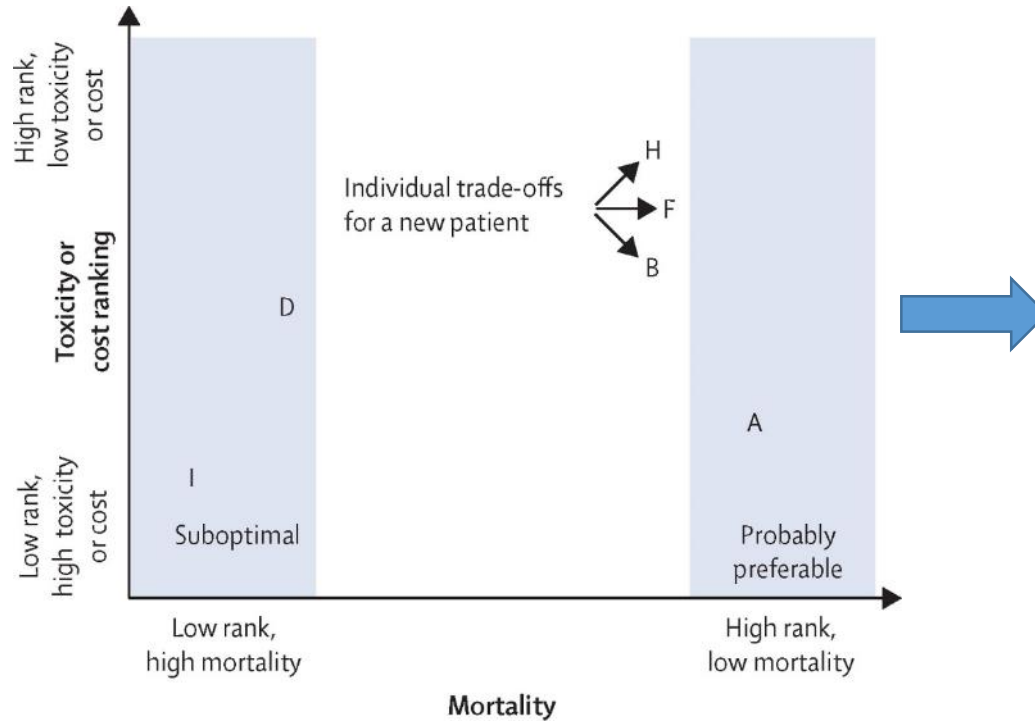
Risk of resistant bacterial colonization in NICU



Is the high use of broad-spectrum agents justified?



Novel trial designs: when to use which regimen?



Personalised RAndomised Controlled Trial (PRACTical) design that compares multiple treatments in an evidence synthesis, to identify, overall, which is the best treatment out of a set of available treatments to recommend, or how these different treatments rank against each other

Conclusions

For many patients, esp. in LMICs, antibiotic resistance is a major challenge

Antibiotic stewardship in these settings is challenging: patients who REALLY need antibiotics may also need broad-spectrum agents

We must not lose sight of the allies of antimicrobial stewardship: diagnostics and infection control!

The simplest method of infection control is to manage patients in the community as soon as possible

kompetent und menschlich