

Mapping of resistance data for non-malarial febrile illness in South East Asia

Introduction

High morbidity and mortality rates, especially in children, attributed to malaria has led to presumptive treatment of febrile patients with anti-malarials without confirmative diagnoses. The resulting misdiagnosis of malaria has led to overuse of anti-malarials, inappropriate treatment of serious illness, and contribution to global growth in AMR. Furthermore, clear diagnostic tools and therapeutic guidance for non-malarial illness in low-income settings is lacking.

IDDO Resistance Mapping Project

The Infectious Diseases Data Observatory (IDDO) has undertaken a resistance mapping project in three locations (UK (Oxford), China, Brazil) on febrile illness in malaria endemic regions. A literature search is being conducted in order to map primary causes of fever in these regions in the aims of identifying priority areas for diagnostics research and improved surveillance and developing of regionally appropriate programs for fever case management.

Methods

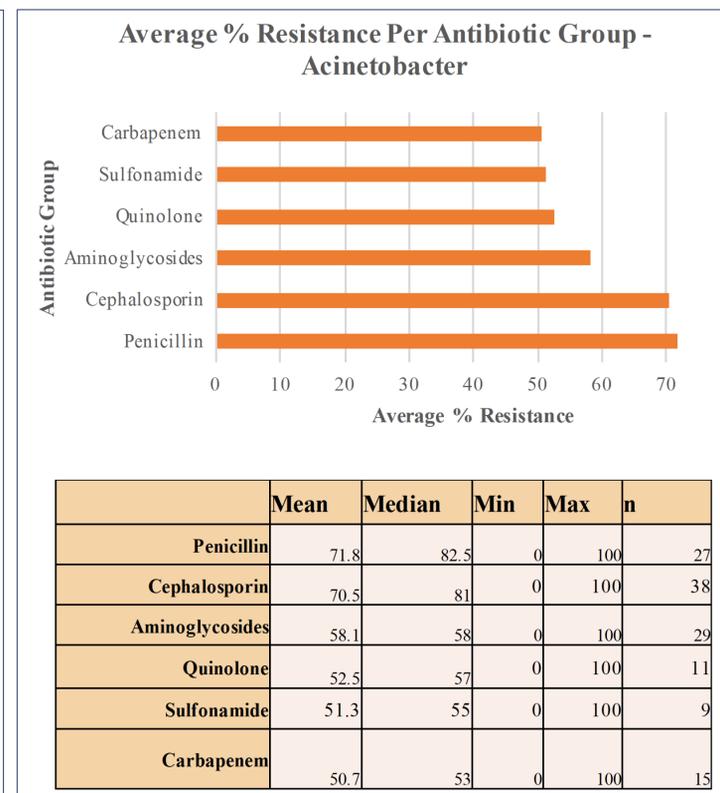
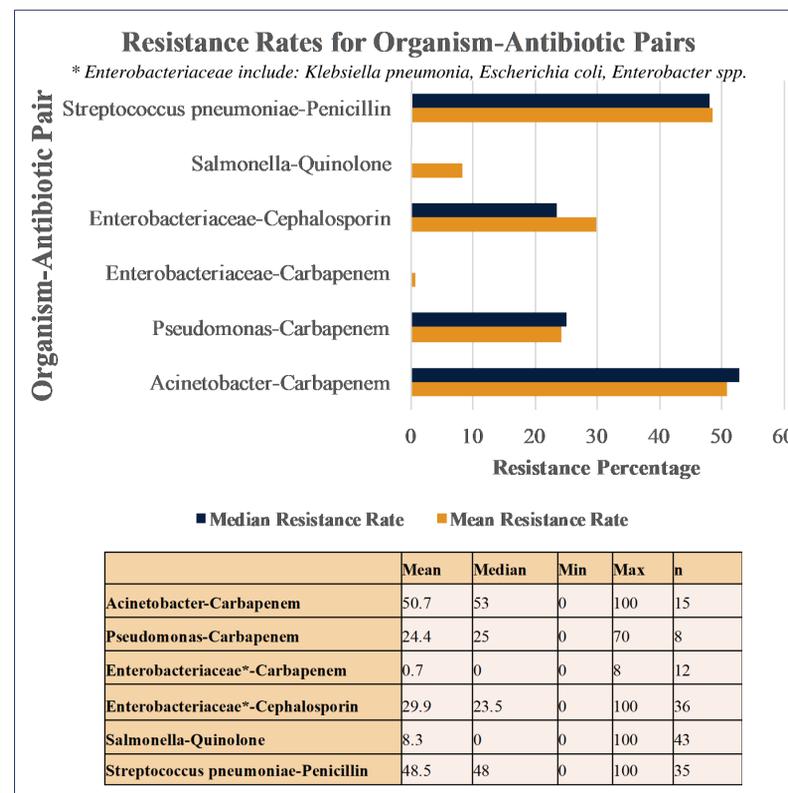
- Analysis of data using R
- Selection criteria for papers
 - Publication years: 1980-2015
 - Dealt with reports of fever in humans

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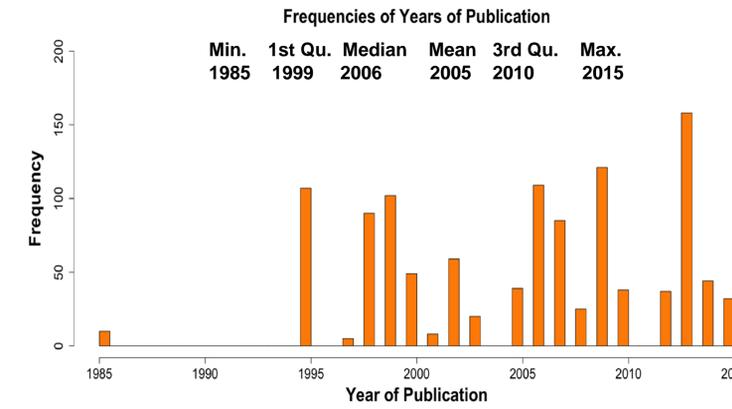
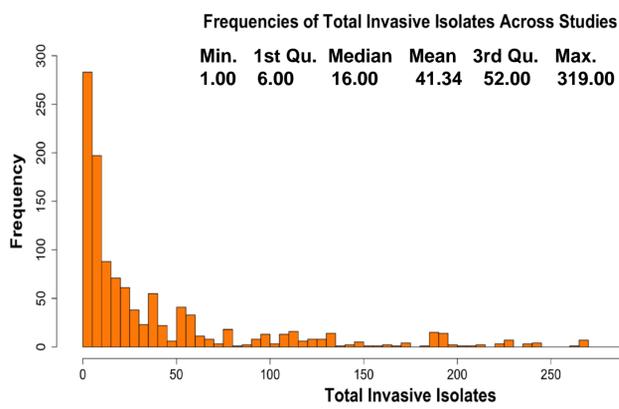
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Results



Limitations of Data



Discussion

- Acinetobacter (WHO Priority Tier 1) shows alarming resistance to carbapenems, as well as *Streptococcus pneumoniae* (Tier 3) to penicillins
- Acinetobacter shows high average resistance percentages to several classes of antibiotics
- Limitations of Data
 - Small sample sizes (median of 16 isolates)
 - Data from late 90's and early 00's may be outdated, especially with recent advancements in WHO-driven AMR stewardship programs

Further Research

Current Progress of Study as of March 2017

Region	Total records identified	Articles for full text review	Data extraction complete
Africa	16,872	1,300	1,014
China - English	960	137	137
China - Chinese	32,026	962	811
South America	21,650	1,186	136
South Asia	20,442	1,543	648
South East Asia	9,116	1,145	1,027
TOTAL	101,066	6,273	3,773

Future analysis may include comparisons of timelines of AMR growth in different regions, mapped alongside regional AMR policies to evaluate the effectiveness of these policies.

Conclusion

- Several organism-antibiotic pairs on WHO's priority pathogen list display alarmingly high rates of resistance, especially Acinetobacter
- Limitations of current data (e.g. small sample sizes, reliance on older data, inconsistent data collection methods) may lead to different conclusions as IDDO project continues

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