Hold That Buzz: Timely Malaria Medication Access in New Orleans, LA

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Background:

- Malaria is a common global health and travel medicine concern.
- Hospitals may struggle to meet immediate treatment needs of patients diagnosed with malaria, especially with nationwide shortages of IV quinidine.[1, 2]
- In 2016, Louisiana reported 11 malarial cases, of which half of these cases were treated in the Greater New Orleans Area.[3]
- New Orleans is a mid-size city with immigrants, international tourists, major academic centers with employees from a variety of countries and an international oil industry, and also has a diversity of medical systems.

Objectives:

- Perform a survey of current malaria medication access in New Orleans to assess major gaps in treatment capacity by surveying the largest providers of care.
- Identify reasons behind current formularies.
- Evaluate access to IV quinidine within the New Orleans area given recent shortages.

Methods:

- Inpatient pharmacy directors and formularies at three major New Orleans-area hospitals were queried about:
  - first-line agents outlined by the CDC on the inpatient formulary[4,5]
  - time needed to obtain both IV and PO first- line antimalarial agents
  - barriers to expanding the formulary (including cost, number of cases, side effects, and shelf life of medications).
- Queries were carried out using a survey of the Medication Orders System and a phone survey.
- Hospital systems were then queried 8 months later to assess for changes in their formularies.
- The hospitals were identified as follows:
  - Hospital 1=Academic Medical Center
  - Hospital 2=Large Safety Net Hospital
  - Hospital 3=Community Hospital

Figure 1:

Anti-Malarial Medications Available on Inpatient Formulary

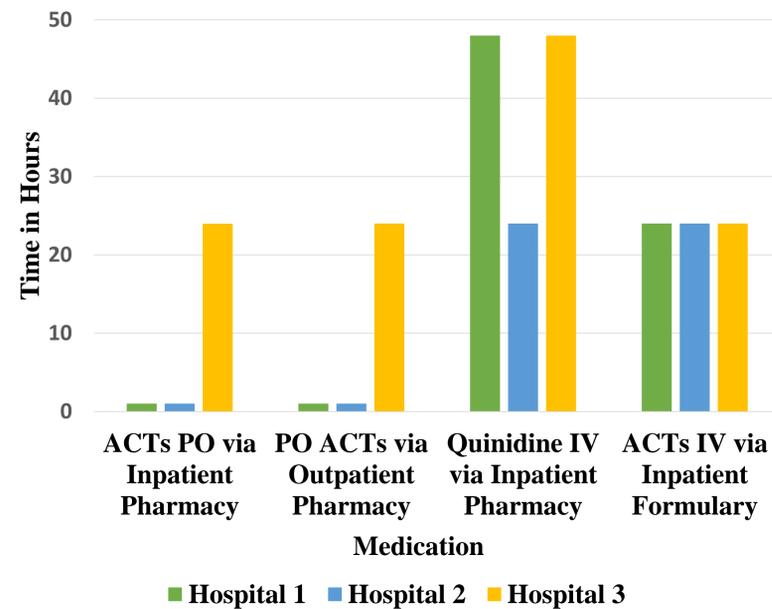|	chloroquine	hydroxychloroquine	artemeter lumafantrine	atovaquone proguanil	quinine	quinidine PO	mefloquine	quinidine IV
Hospital 1	-	✔	✔	✔	-	-	-	-
Hospital 2	✔	✔	-	✔	-*	✔	-	-
Hospital 3	-	✔	-	-	-	-*	-	-

Figure 2:

Timing of Anti-Malarial Availability

Figure 3:

Anti-Malarial Inpatient Formulary November 2017 vs. June 2018
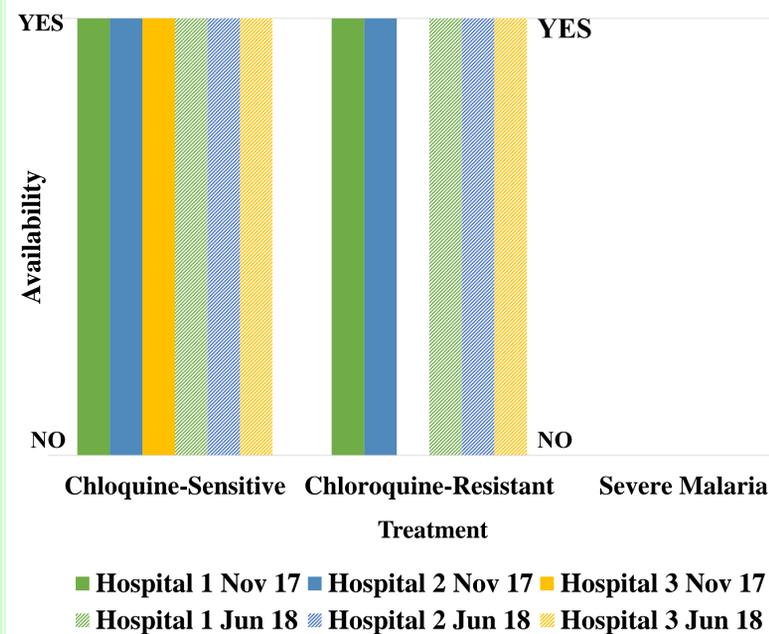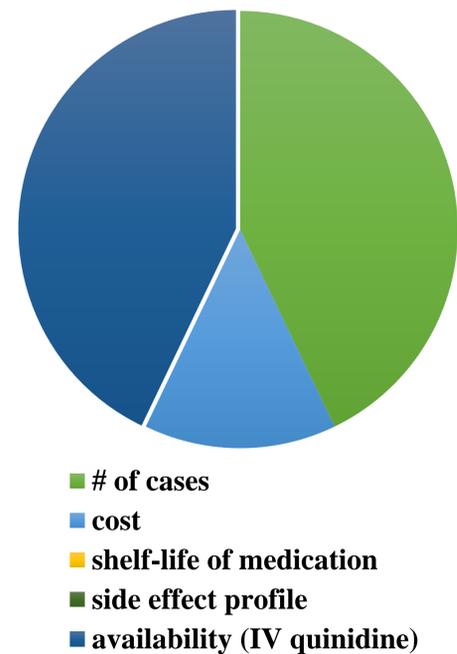
Figure 4:

Barriers to Formulary Anti-Malarials

- # of cases
- cost
- shelf-life of medication
- side effect profile
- availability (IV quinidine)

Results:

- No hospital provided first line-IV medications in <24 hours (Figure 1, 2).
- Two of the three hospitals provided oral artemisinin-based combination therapies (ACTs. (Figure 1, 2).
- All hospitals could obtain intravenous ACTs from the CDC in 24-48 hours; one of the hospitals surveyed could provide IV quinidine or quinine in the first 24-48 hours (Figure 2).
- All hospitals provided a first-line antimalarial coverage for chloroquine-resistant malaria within 24 hours (Figure 1, 3).
- Data queries at month 1 and month 8 saw a change in two medications across two different hospitals. (Figure 1, Figure 3).
- The major barriers for oral ACTs and other antimalarials on formulary at all hospitals were: small number of reported cases and availability of IV quinidine (Figure 4).

Conclusion:

- There may be a causal relationship between speaking to pharamacists and changes in antimalarials on formulary.
- First line ACTs were found at the community hospital and the academic medical center likely secondary to presence of travel clinics and immigrant populations at both sites.
- Barriers to the availability of anti-malarials include cost, availability of IV quinidine and number of cases seen.
- Access to IV quinidine is becoming increasingly difficult. [1,2]
- This data can be used to educate hospital systems about appropriate and timely malaria treatment, inform policy and procedures, and design systems to track malaria diagnosis and treatment as well as extrapolate to other areas outside of New Orleans.

References:

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