

Kamuzu Central Hospital Microbiology Study: A Partnership with the UNC Project Lilongwe, Malawi

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Background

Rarely are specimens collected and cultured for proper diagnosis of patients at KCH. Resources are limited, and diagnosis is generally presumptive based on clinical presentation (i.e. patient signs or symptoms). In an effort to establish patterns of infectious disease and antimicrobial resistance, the KCH Micro Study, in partnership with the UNC Project laboratory, will take appropriate specimens and test specified pathogens identified for drug resistance for patients admitted to KCH hospital. After its conclusion (approximately 1 year in duration), the data collected will be used to develop treatment algorithms that outline the most appropriate course to take to treat patients that present with certain signs or symptoms, and what drugs would be the most effective given the determined resistance patterns.

In Lilongwe at the UNC Project, located across the road from KCH, I assisted Dr. Mwai Makoka with study planning and beginning stages of study implementation. These included: health care worker training, drafting patient forms, organizing meetings with heads of each medical department, inventory of lab media, assembling specimen collection kits, and communicating with data management to develop an appropriate database.

Objectives

- Provide efficient lab testing and diagnosis for current patients
- Determine patterns of pathogen antibiotic and antifungal resistance
- Develop treatment algorithms for better patient care in the future

Organisms (#) Identified So Far:

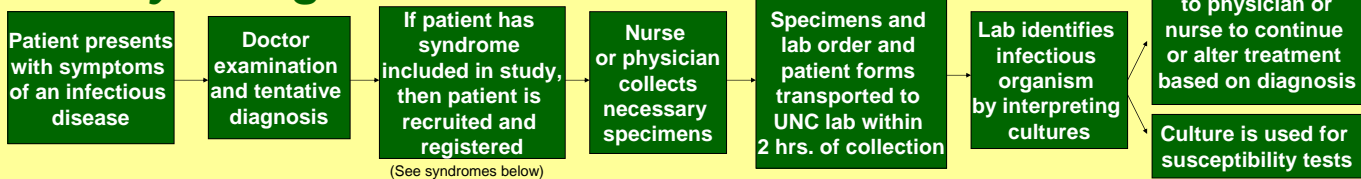
<i>S. aureus</i> (19)	<i>Salmonella</i> (3)
<i>S. pneumoniae</i> (3)	<i>S. pyogenes</i> (3)
<i>E. coli</i> (3)	<i>C. albicans</i> (2)
<i>C. neoformans</i> (5)	<i>H. influenzae</i> (2)
<i>Proteus</i> (1)	<i>Klebsiella</i> (1)
<i>Mycobacterium</i> (1)	

Sensitivity Testing Results: Nine Samples of *S. aureus*

#	Clindamycin	Gm	Erythromycin	Ccol	TMP/SXT	Tetracycline	Ox
1	S	R	R	R	R	R	R
2	S	R	R	R	R	R	R
3	S	S	S	I	S	S	R
4	S	R	R	R	R	R	R
5	R	R	R	R	R	R	R
6	S	S	S	S	R	S	S
7	S	R	R	R	R	R	R
8	S	R	R	R	R	I	R
9	R	R	R	R	R	R	R

R=Resistant, I=Intermediate, S=Susceptible

Study Design



Presenting Syndromes for Inclusion in the KCH Micro Study	Medical Department			
	Adult Medicine	Pediatrics	Surgery	Obstetrics/Gynecology
	Meningitis	Sick Neonate	Osteomyelitis	Meningitis
	Pneumonia/TB	Febrile Infant/Child	Necrotizing Fasciitis/Cellulitis	Pneumonia/TB
	Non-Localizing Fever		Abdominal Abscess	Sepsis
			Burn Wound	Prepartum Sepsis
			Septic Arthritis	Puerperal Sepsis
				Gynecologic Sepsis

In the UNC Lab...

Pathogens for Susceptibility Testing:

- Staphylococcus* species
- Salmonella* species
- Streptococcus* species
- Escheria coli*
- Candida albicans*
- Cryptococcus neoformans*

Antibiotics for Susceptibility Testing:

- Gram positives-** Chloramphenicol (Ccol), TMP/SXT, Gentamicin (Gm), Clindamycin, Erythromycin, Oxacillin (Ox), Tetracycline
- Gram negatives-** Chloramphenicol (Ccol), TMP/SXT, Gentamicin (Gm), Ampicillin (Am), Ceftriaxone (CRO), Ciprofloxacin (Cip), Nalidixic Acid (NA)
- Antifungals-** Fluconazole, Voriconazole

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