

### Introduction

The pharmacy team will be initiating the lead role of reassessing discharged patients for antibiotic appropriateness with the ability to further investigate prescribed antibiotics susceptibilities and known penetration

This will create an opportunity to **enhance clinical pharmacy services** provided in the ED, reduce the risk of multidrug-resistant organism infections and further strengthen interprofessional relationships within the ED

### Service

- Pharmacy reviews all positive 24 hour cultures daily
- Pharmacy investigates the prescribed antibiotics susceptibility and penetration to make sure **appropriate treatment** has been rendered
- If deemed inappropriate, a recommendation is provided to the ED physician assistant for **therapy intervention and patient follow up**

### Implementation

With implementation of pharmacy as the **lead role**, pharmacy will verify the patient was placed on the correct antibiotic based on the results of the culture and sensitivity. Pharmacy will provide the physician assistants with an **appropriate antibiotic with proper dose, frequency and duration** based on all patient factors.

### Hospital AntibioGram

GRAM NEGATIVE  
MICROBIOLOGY DEPARTMENT  
CUMULATIVE INPATIENT SUSCEPTIBILITY  
REPORT: 1/2017-12/2017  
PERCENT (%) SUSCEPTIBLE

	# ISOLATES	AMIKACIN	AMPICILLIN	UNASYN (AMP/SULBACTAM)	CEFAZOLIN	CEFEPIME	CEFTAZIDIME	CEFTAZIDIME	CIPROFLOXACIN	CEFOXTIN	LEFTAPENEM	GENTAMICIN	LEVOFLOXACIN	MEROPENEM	NITROFURANTOIN	ZOSYN (PIPTAZO)	BACTRIM (TMP/SMX)	TOBRAMYCIN	ESBL (n=63)	ONE (n=7)
ESCHERICHIA COLI	881	100	47	52	85	92	91	91	71	87	100	85	71	100	96	97	72	85	6.1	0.0
ENTEROBACTER CLOACAE COMPLEX	43	100			86	65	67	79		89	93	81	98	25	79	70	77		0.0	10.4
KLEBSIELLA PNEUMONIAE	193	100			89	99	99	99	96	95	100	99	96	100	39	97	92	98	2.0	0.0
KLEBSIELLA OXYTOCA	34	100			44	71	100	100	97	91	94	100	91	100	85	91	94	100	0.0	0.0
PROTEUS MIRABILIS	95	100	79	86	92	99	98	98	59	91	100	91	59	100		100	68	95	2.1	1.0
PSEUDOMONAS AERUGINOSA	119	100			93			76				94	68	93		85		99		

GRAM POSITIVE  
MICROBIOLOGY DEPARTMENT  
CUMULATIVE INPATIENT SUSCEPTIBILITY  
REPORT: 1/2017-12/2017  
PERCENT (%) SUSCEPTIBLE

	# ISOLATES	AMPCILLIN	UNASYN (AMP/SULBACTAM)	CEFAZOLIN	CEFTRIAXONE	CLINDAMYCIN	DAPTOMYCIN	HL GENT	GENTAMICIN	LEVOFLOXACIN	LINEZOLID	OXACILLIN	ZOSYN (PIPTAZO)	BACTRIM (TMP/SMX)	TETRACYCLINE	VANCOMYCIN
ENTEROCOCCUS (VSE) <sup>3</sup>	163	93					100	75		64	100			25	100	
ENTEROCOCCUS (VRE) <sup>3</sup>	< 30 Isolates															
STAPHYLOCOCCUS AUREUS (MSSA) <sup>4</sup>	232					79	100		99	88	100	100		100	91	100
STAPHYLOCOCCUS AUREUS (MRSA) <sup>4</sup>	170					56	100		99	41	99			88	79	100

### Examples of Positive Cultures

Example	Culture and Sensitivity	Recommendation
Patient with uncomplicated UTI sent home on cephalexin	Urine culture indicates resistance to cefazolin and susceptibility to nitrofurantoin	Follow up to discontinue cephalexin; Initiate nitrofurantoin 100mg PO BID x 5 days
Patient tested for STD infection through urine culture	Urine culture indicates a positive result for Chlamydia	Follow up to initiate treatment with azithromycin 1g PO x 1 dose
An asymptomatic pregnant woman has urine culture tested	Urine culture indicates a positive result of Escherichia coli susceptible to cefazolin	Follow up to initiate cephalexin 500 mg PO QID x 5 days

### Significance

- Pharmacy readily **utilizes clinical knowledge and resources** due to their specialized training in antibiotics and their mechanisms of action.
- Pharmacy has the time and ability to investigate patient allergies and past antibiotic history.
- The physician assistants will have **more time to see patients.**
- Pharmacy has detailed knowledge of bacteria and vast resources such as the **hospital antibiogram** which shows relative antibiotic susceptibility and resistance within the area.

### Adaptability

This service can be adapted to fit the needs of any ED whose physician assistants could benefit from a collaboration with clinical pharmacy services. Along with helping to free up the already busy physician assistants within the ED, the review of cultures for true antibiotic appropriateness is deemed necessary in preventing antibiotic resistance and providing proper antibiotic treatment on a patient-specific basis.

### Future Direction

A single individual reviewing daily cultures would allow for patterns to be recognized. It will then become possible to further address these patterns in prescribing habits and identify areas for improvement.

**Disclosure:** Authors of the presentation have the following to disclose concerning possible financial or personal relationships with commercial entities that may have a direct or indirect interest in the subject matter of this presentation:  
: nothing to disclose;