# Lincoln Hospital AMS Highlights

UW-TASP :  February 23, 2021

LINCOLN HOSPITAL
Pharmacy

# AMS “Highlights” to Present Today:

1. Anti-Microbial Stewardship Annual “Tracker”

2. Our (microbiologist free) Antibiogram Journey…….

# 2021 Antimicrobial Stewardship Activity Tracker

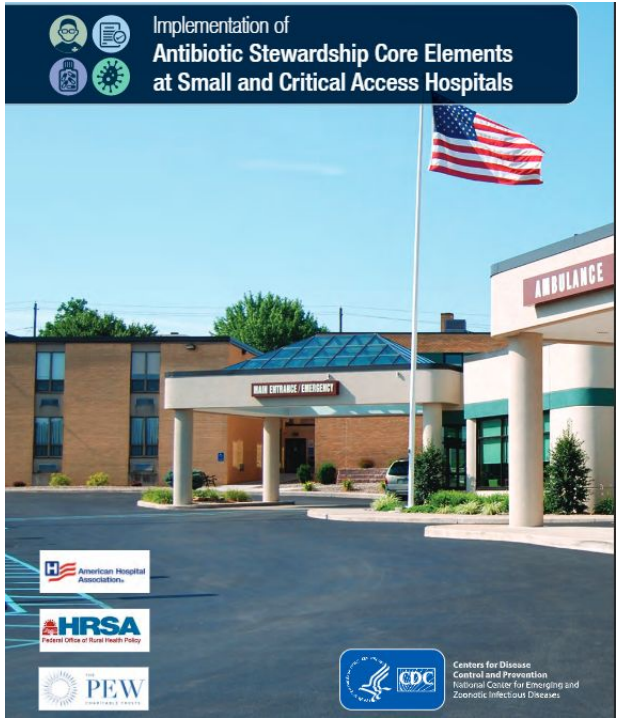
| *Abx Stewardship Core Elements for Small & Critical Access Hospitals (CDC/HRSA/AHA)* | *1 & 2: Leadership Commitment & Accountability* | | *3: Drug Expertise* | | *4: Action* | | *5: Tracking* | | *6: Reporting* | | *7: Education* | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Core Element** | **Activity Description** | **Jan** | **Feb** | **Mar** | **Apr** | **May** | **Jun** | **Jul** | **Aug** | **Sep** | **Oct** | **Nov** | **Dec** |
| **Leadership Commitment, Drug Expertise, & Education** | Weekly UW-TASP Participation & Attendance to UW-TASP Annual Conference | | | | | | | | | | | | |
| **Action & Tracking** | ED Prepack Dispensing & Order Review including Micro check on all Abx PP | | | | | | | | | | | | |
| **Drug Expertise, Action & Education** | COVID-19 Vaccine Education | MOD Vax Med Staff Power Point | Pt COVID Vax Quest for mass clinics | | | | | | | | | | |
| **Tracking & Reporting** | DOT Tracking via monthly submission to WSHA Antimicrobial Use | | | | | | | | | | | | |
| **Action, Tracking, & Drug Expertise** | Daily prospective audit & feedback for all abx for all inpatients & swingbeds | | | | | | | | | | | | |
| **Action & Education** | UW-TASP case presentations to assist with individual questions as well as process development | Surgical MRSA Prophylaxis | Tracker & Antibiogram Pres. | | | | | | | | | | |
| **Action** | Order Set Development & Revision | TCU/Inpt COVID Vax Orders | | | | | | | | | | | |
| **Action, Tracking, & Education** | 2018-2020 Antibiogram Development | | Presented to P&T | | Med Staff Presentation & Ed | | | | | | | | |

# The Antimicrobial Stewardship Tracker

**Goals and Advantages of the Tracker:**

1. A tool to help document all activities related to our Anti-Microbial Stewardship Program happening throughout the facility throughout the year.
2. It pairs each AMS activity with the “Core Element(s)” it pertains to
3. Serves as a  visual aid to provide succinct updates to various committees such as Infection Prevention, P&T, and Administration
4. *A document that will be useful during DOH/Medicare Surveys when asked to provide proof and summaries of our AMS program.

| 2020 Antimicrobial Stewardship Activity Tracker | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Abx Stewardship Core Elements for Small & Critical Access Hospitals (HRSA/AHA)* | *1 & 2: Leadership Commitment & Accountability* | | *3: Drug Expertise* | | *4: Action* | | *5: Tracking* | | *6: Reporting* | | *7: Education* | |
| Core Element | Activity Description | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |




# The Antimicrobial Stewardship Tracker: Components

# AMS Tracker Components Continued:

| *Abx Stewardship Core Elements for Small & Critical Access Hospitals (HRSA/AHA)* | *1 & 2: Leadership Commitment & Accountability* | | *3: Drug Expertise* | | *4: Action* | | *5: Tracking* | | *6: Reporting* | | *7: Education* | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Core Element** | **Activity Description** | **Jan** | **Feb** | **Mar** | **Apr** | **May** | **Jun** | **Jul** | **Aug** | **Sep** | **Oct** | **Nov** | **Dec** |
| **Leadership Commitment, Drug Expertise, & Education** | Weekly UW-TASP Participation & Attendance to UW-TASP Annual Conference (Canceled 2020) | | | | | | | | | | | | |
| **Leadership Commitment** | Letter of AMS Program Commitment from LHD3 Administration | | | | | | | | | | | | |
| **Action & Tracking** | ED Prepack Dispensing & Order Review including Micro check on all Abx PP | | | | | | | | | | | | |
| **Tracking & Reporting** | DOT Tracking via monthly submission to WSHA Antimicrobial Use | | | | | | | | | | | | |
| **Action, Tracking, & Drug Expertise** | Daily prospective audit & feedback for all abx for all inpatients & swingbeds | | | | | | | | | | | | |

# AMS Tracker Components Continued:

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Action & Education** | UW-TASP case presentations to assist with individual questions as well as process development | | | COVID-19 Q&A | | | Vanco AUC Question/Discussion | | | Zaugg pharyngitis case to TASP | | | |
| **Action** | Order Set Development & Revision | | | | Ortho Admit & Post Op Orders | | | | | | | COVID-19 Inpt Orders | |
| **Action & Education** | Policy & Procedure Development and Revisions | | | | | MDRO P&P | | | | | | | |
| **Action & Education** | Provider Correspondence & Education | Oseltamivir Dosing Provider Ed | | COVID-19 TMT Option Review | | | | | Provider memo on flu vax info & ACIP recs | | Provider Education on inpatient treatment of COVID patients | | |
| **Drug Expertise** | Influenza Vaccination Oversight | | Order Flu Vax for all LHD3 entities | | | | | | | Flu vax dist to clinics, flu crew kick off | Flu Crew Vaccination Clinics and Tracking | | |
| **Drug Expertise** | Development of guidelines for Pharmacy monitoring of Vancomycin utilizing AUC | | | | | UW-TASP Ed on AUC | Test Dosing Calculators | | | | **Vanco CDTA Development** | | |
| **Drug Expertise & Action** | COVID-19 Vaccine Committee | | | | | | | | | | | Coordination of COVID Vax Response & Plan | |

# 2021 Antimicrobial Stewardship Activity Tracker

| *Abx Stewardship Core Elements for Small & Critical Access Hospitals (CDC/HRSA/AHA)* | *1 & 2: Leadership Commitment & Accountability* | | *3: Drug Expertise* | | *4: Action* | | *5: Tracking* | | *6: Reporting* | | *7: Education* | | |
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# Our Antibiogram Journey……

# The Antibiogram Journey……

***Step 1:  Educate - Educate - Educate - yourself about the process….***

UWTASP
tele-antimicrobial stewardship program

**Antibiogram Development and Utilization for Antimicrobial Stewardship Programs**

Mandana Naderi, PharmD, BCIDP
University of Arizona College of Pharmacy/AZ Department of Health Services

Elizabeth Garrett, PhD
University of Washington Clinical Microbiology Fellow

February 2, 2021


View Sample Pages

M39QG

Antibiograms: Developing Cumulative Reports for Your Clinicians

Serves as a handy reference for laboratory personnel. It provides recommendations for preparation of a cumulative antibiogram, examples of selection criteria, and supplemental analyses. It also shows how to prepare tables, includes a description of limitations of data, and provides examples of reports and graphs. Formatted as seven durable, waterproof sheets on a convenient detachable ring. The Quick Guide is based on CLSI document M39-A4.

**Details**

**Date of Publication:** January 31, 2014

**Order Code PDF:** M39A4QGE

**Order Code Print:** M39A4QG

**Pages:** 7

Members: $18.00 → $51.00

Nonmembers: $60.00

Log in/sign up to see price and add to cart

# The Antibiogram Journey……

***Step 2:  Become Best Friends with your Lab Personnel!***

**Thank you Mike Chain! - LHD3 Lab Manager!**

# The Antibiogram Journey……

***Step 3:  Start Gathering Microbiology Reports***

- Determine Lab Report Printing Capabilities/Patterns ahead of time!
- Our lab prints a rolling 12 month microbiology report -- so I request it to be printed in January of each year.
- They may need time/assistance from the lab's technology contacts to print other formats - so start working with them early on your requests.
- For our facility this produces a 3-4 page report for both gram + and gram - organisms that looks like this……

# Antimicrobic % Interpretive Report

365

2018 gt

10 Nichols Street
Davenport, WA 99122

(509) 725-2973

| Organism | (# of iso) | | E | ETP | FD | GM | GMS | ICD | IMP | LVX | LZD | MER | MXF | NXN | OX | P | PIT | PI | RIF | STS | SYN | T/S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| E. faecalis | (16) | S | 0% | -- | 100% | -- | 75% | -- | -- | 75% | 100% | -- | -- | -- | -- | 100% | -- | -- | 62% | 67% | -- | 0% |
| | | I | 100% | -- | 0% | -- | 0% | -- | -- | 0% | 0% | -- | -- | -- | -- | 0% | -- | -- | 19% | 0% | -- | 0% |
| | | R | 0% | -- | 0% | -- | 25% | -- | -- | 25% | 0% | -- | -- | -- | -- | 0% | -- | -- | 19% | 33% | -- | 100% |
| | | | 1 | 0 | 15 | 0 | 16 | 0 | 0 | 16 | 16 | 0 | 0 | 0 | 0 | 16 | 0 | 0 | 16 | 15 | 0 | 16 |
| E. faecium | (1) | S | -- | -- | 100% | -- | 100% | -- | -- | 100% | 100% | -- | -- | -- | -- | 100% | -- | -- | 100% | 100% | -- | 0% |
| | | I | -- | -- | 0% | -- | 0% | -- | -- | 0% | 0% | -- | -- | -- | -- | 0% | -- | -- | 0% | 0% | -- | 0% |
| | | R | -- | -- | 0% | -- | 0% | -- | -- | 0% | 0% | -- | -- | -- | -- | 0% | -- | -- | 0% | 0% | -- | 100% |
| | | | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 |
| MRSA | (21) | S | 10% | -- | 100% | 95% | -- | -- | -- | 29% | 95% | -- | 75% | -- | 0% | 0% | -- | -- | 95% | -- | 100% | 95% |
| | | I | 0% | -- | 0% | 0% | -- | -- | -- | 24% | 0% | -- | 20% | -- | 0% | 0% | -- | -- | 0% | -- | 0% | 0% |
| | | R | 90% | -- | 0% | 5% | -- | -- | -- | 48% | 5% | -- | 5% | -- | 100% | 100% | -- | -- | 5% | -- | 0% | 5% |
| | | | 20 | 0 | 1 | 21 | 0 | 0 | 0 | 21 | 21 | 0 | 20 | 0 | 21 | 21 | 0 | 0 | 21 | 0 | 21 | 21 |
| S. agalact-Gp B | (11) | S | -- | -- | -- | -- | -- | -- | -- | 100% | 100% | -- | -- | -- | -- | 100% | -- | -- | -- | -- | -- | -- |
| | | I | -- | -- | -- | -- | -- | -- | -- | 0% | 0% | -- | -- | -- | -- | 0% | -- | -- | -- | -- | -- | -- |
| | | R | -- | -- | -- | -- | -- | -- | -- | 0% | 0% | -- | -- | -- | -- | 0% | -- | -- | -- | -- | -- | -- |
| | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 11 | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 |
| S. aureus | (36) | S | 74% | -- | 100% | 97% | -- | -- | -- | 92% | 100% | -- | 100% | -- | 100% | 22% | -- | -- | 100% | -- | 100% | 100% |
| | | I | 0% | -- | 0% | 3% | -- | -- | -- | 6% | 0% | -- | 0% | -- | 0% | 0% | -- | -- | 0% | -- | 0% | 0% |
| | | R | 26% | -- | 0% | 0% | -- | -- | -- | 3% | 0% | -- | 0% | -- | 0% | 78% | -- | -- | 0% | -- | 0% | 0% |
| | | | 34 | 0 | 2 | 36 | 0 | 0 | 0 | 36 | 36 | 0 | 34 | 0 | 36 | 36 | 0 | 0 | 36 | 0 | 36 | 36 |
| S. epidermidis | (20) | S | 27% | -- | 100% | 95% | -- | -- | -- | 85% | 100% | -- | 93% | -- | 50% | 5% | -- | -- | 100% | -- | 100% | 40% |
| | | I | 0% | -- | 0% | 0% | -- | -- | -- | 0% | 0% | -- | 0% | -- | 0% | 0% | -- | -- | 0% | -- | 0% | 0% |
| | | R | 73% | -- | 0% | 5% | -- | -- | -- | 15% | 0% | -- | 7% | -- | 50% | 95% | -- | -- | 0% | -- | 0% | 60% |
| | | | 15 | 0 | 5 | 20 | 0 | 0 | 0 | 20 | 20 | 0 | 15 | 0 | 20 | 20 | 0 | 0 | 20 | 0 | 20 | 20 |

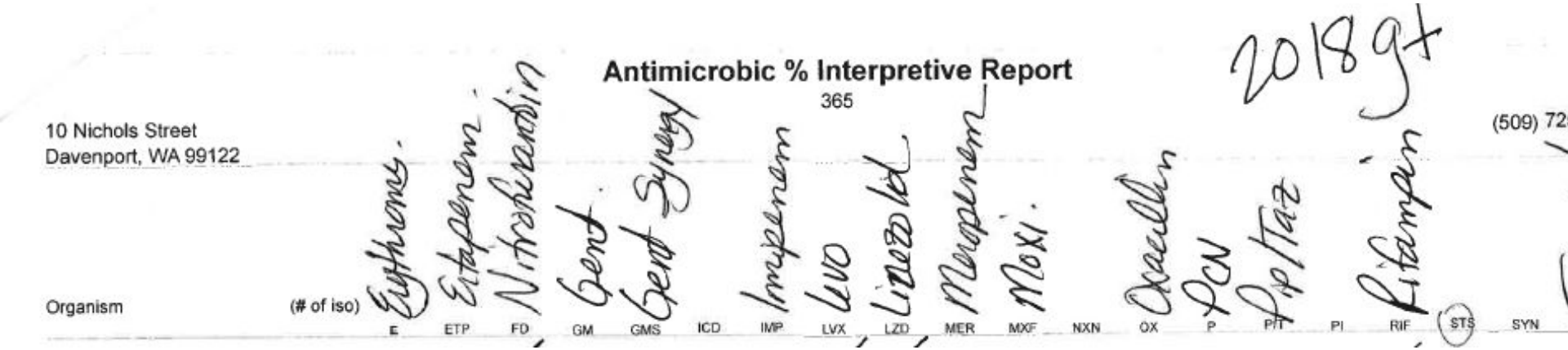
# The Antibiogram Journey

Knee Deep in Information??

Do I have the skill set to deal with it all?

# The Antibiogram Journey……

***Step 4:  Start DE-CODING the lab report!***



Antimicrobic % Interpretive Report

365

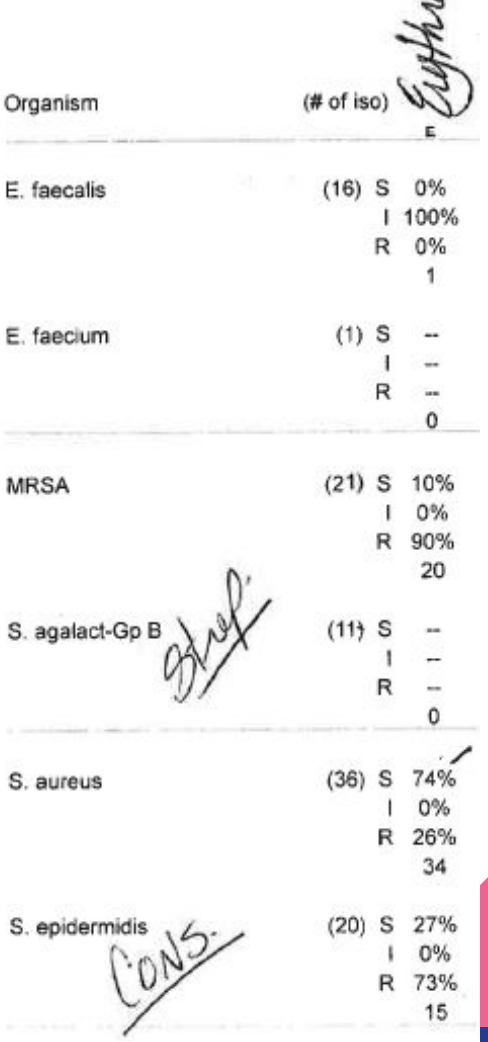
10 Nichols Street
Davenport, WA 99122

(509) 72

Organism | (# of iso) | E | ETP | FD | GM | GMS | ICD | IMP | LVX | LZD | MER | MXF | NXN | OX | P | PIT | PI | RIF | STS | SYN

# The Antibiogram Journey……

***Step 4: DE-CODING the lab report continued:***



| Organism | (# of iso) | Erythro E |
|---|---|---|
| E. faecalis | (16) S | 0% |
| | I | 100% |
| | R | 0% |
| | | 1 |
| E. faecium | (1) S | -- |
| | I | -- |
| | R | -- |
| | | 0 |
| MRSA | (21) S | 10% |
| | I | 0% |
| | R | 90% |
| | | 20 |
| S. agalact-Gp B | (11) S | -- |
| | I | -- |
| | R | -- |
| | | 0 |
| S. aureus | (36) S | 74% |
| | I | 0% |
| | R | 26% |
| | | 34 |
| S. epidermidis | (20) S | 27% |
| | I | 0% |
| | R | 73% |
| | | 15 |

# The Antibiogram Journey…..

**Limitations for Small Facilities:**

1. Small number of TOTAL samples -- we don’t separate clinic vs hospital and still have small numbers
2. CLSI recommends a MINIMUM of 30 isolates when including them in your antibiogram.
3. However, the higher the number of isolates, the more statistically meaningful the data is.
4. Timothy Chavis MD FACS from Newport did an outstanding TASP presentation on this topic in February of 2019!

# The Antibiogram Journey….

**Now what???**

| Organism | (# of iso) | Erythro | |
|---|---|---|---|
| E. faecalis | (16) | S 0% | |
| | | I 100% | 16 samples |
| | | R 0% | |
| | | 1 | |
| E. faecium | (1) | S -- | |
| | | I -- | |
| | | R -- | |
| | | 0 | |
| MRSA | (21) | S 10% | |
| | | I 0% | 21 samples |
| | | R 90% | |
| | | 20 | |
| S. agalact-Gp B | (11) | S -- | |
| | | I -- | |
| | | R -- | |
| | | 0 | |
| S. aureus | (36) | S 74% | |
| | | I 0% | 36 samples |
| | | R 26% | |
| | | 34 | |
| S. epidermidis | (20) | S 27% | |
| | | I 0% | 20 samples |
| | | R 73% | |
| | | 15 | |

# The Antibiogram Journey

# The Antibiogram Journey…..

**Determine the Data you want to include in your final report.**

1. Exclude bugs that have minimal isolates
2. Exclude drugs that you don’t stock or therapies you rarely use
3. Will it be necessary to utilize multiple years of reports to obtain the necessary number of isolates to make your antibiogram data meaningful?
4. Can you combine your data with other regional, similar facilities to make your data more meaningful with more isolates?

# The Antibiogram Journey…..

My Solution:  Include multiple years of data and have a “rolling” antibiogram….

| | | | |
|---|---|---|---|
| *Enterrococcus faecalis 2018* | 16 | x | 100 |
| *Enterrococcus faecalis 2019* | 31 | x | 94 |
| *Enterrococcus faecalis 2020* | 22 | x | 100 |
| ***Enterrococcus Total*** | 69 | | 97 |

# The Antibiogram Journey…..

I MAY be making this too complicated -- but I “weight” the calculation of Sensitivity...

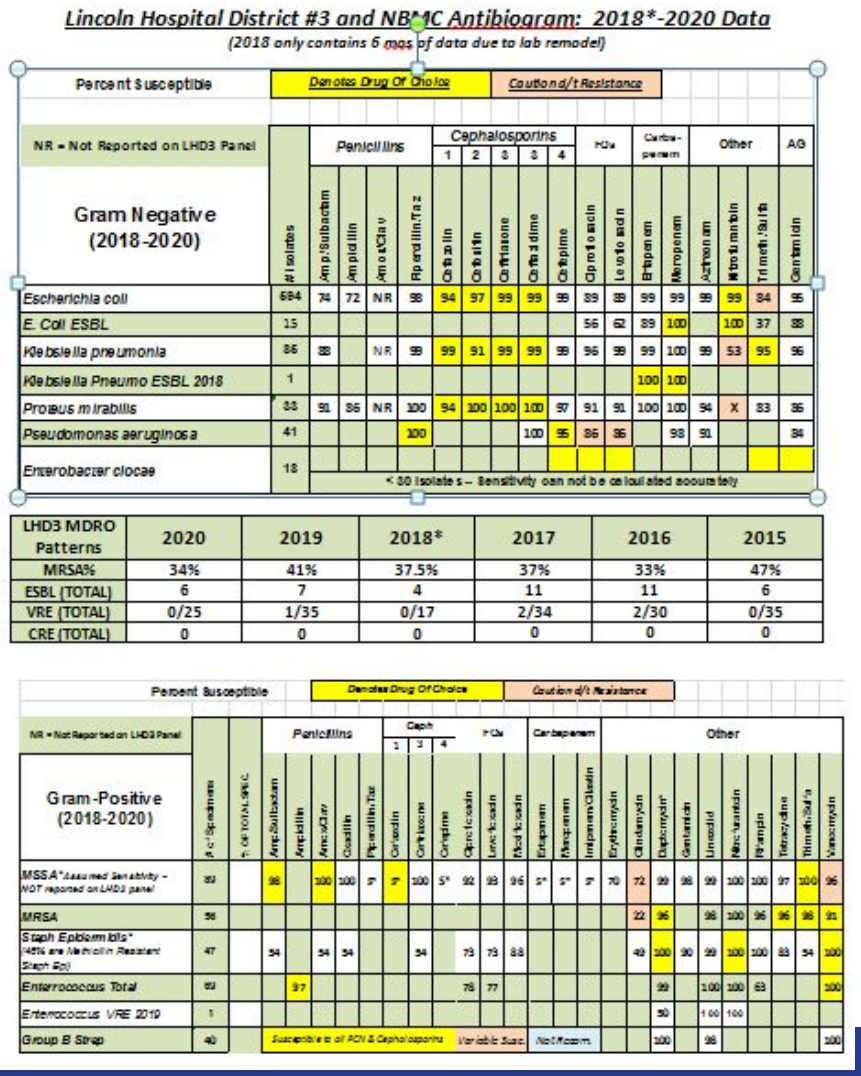
=L21*$C$21+L22*$C$22+L23*$C$23

| NR = Not Reported on LHD3 Panel | | | Penicillins | | | | | Ceph | | | FQs | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | 1 | 3 | 4 | | |
| **Gram-Positive (2018-2020)** | # of Specimens | % OF TOTAL SPEC. | Amp/Sulbactam | Ampicillin | Amox/Clav | Oxacillin | Pipercillin/Taz | Cefazolin | Ceftriaxone | Cefepime | Ciprofloxacin | Levofloxacin |
| *Enterrococcus faecalis 2018* | 16 | 0.232 | x | 100 | x | x | x | x | x | x | 69 | 75 |
| *Enterrococcus faecalis 2019* | 31 | 0.449 | x | 94 | x | x | x | x | x | x | 84 | 75 |
| *Enterrococcus faecalis 2020* | 22 | 0.319 | x | 100 | x | x | x | x | x | x | 77 | 82 |
| ***Enterrococcus Total*** | 69 | | | 97 | | | | | | | 78 | 77 |

# The Antibiogram Journey….

# The Antibiogram Journey

*The Final Product that will be published*



**Lincoln Hospital District #3 and NBMC Antibiogram: 2018*-2020 Data**

*(2018 only contains 6 mos of data due to lab remodel)*

Percent Susceptible — Denotes Drug Of Choice — Caution d/t Resistance

NR = Not Reported on LHD3 Panel

| Gram Negative (2018-2020) | # Isolates | Penicillins: Amp/Sulbactam | Penicillins: Ampicillin | Penicillins: Amox/Clav | Penicillins: Piperacillin/Taz | Cephalosporins 1: Cefazolin | Cephalosporins 2: Cefuroxin | Cephalosporins 3: Ceftriaxone | Cephalosporins 3: Ceftazidime | Cephalosporins 4: Cefepime | HQs: Ciprofloxacin | HQs: Levofloxacin | Carbapenem: Ertapenem | Carbapenem: Meropenem | Other: Aztreonam | Other: Nitrofurantoin | Other: Trimeth/Sulfa | AG: Gentamicin |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Escherichia coli* | 684 | 74 | 72 | NR | 98 | 94 | 97 | 99 | 99 | 99 | 89 | 89 | 99 | 99 | 99 | 99 | 84 | 95 |
| *E. Coli ESBL* | 15 | | | | | | | | | | 56 | 62 | 89 | 100 | | 100 | 37 | 88 |
| *Klebsiella pneumonia* | 86 | 88 | | NR | 99 | 99 | 91 | 99 | 99 | 99 | 96 | 99 | 99 | 100 | 99 | 53 | 95 | 96 |
| *Klebsiella Pneumo ESBL 2018* | 1 | | | | | | | | | | | | 100 | 100 | | | | |
| *Proteus mirabilis* | 33 | 91 | 86 | NR | 100 | 94 | 100 | 100 | 100 | 97 | 91 | 91 | 100 | 100 | 94 | X | 83 | 86 |
| *Pseudomonas aeruginosa* | 41 | | | | 100 | | | | 100 | 95 | 86 | 86 | | 98 | 91 | | | 84 |
| *Enterobacter cloacae* | 18 | < 30 Isolates -- Sensitivity can not be calculated accurately | | | | | | | | | | | | | | | | |

| LHD3 MDRO Patterns | 2020 | 2019 | 2018* | 2017 | 2016 | 2015 |
|---|---|---|---|---|---|---|
| MRSA% | 34% | 41% | 37.5% | 37% | 33% | 47% |
| ESBL (TOTAL) | 6 | 7 | 4 | 11 | 11 | 6 |
| VRE (TOTAL) | 0/25 | 1/35 | 0/17 | 2/34 | 2/30 | 0/35 |
| CRE (TOTAL) | 0 | 0 | 0 | 0 | 0 | 0 |

Percent Susceptible — Denotes Drug Of Choice — Caution d/t Resistance

NR = Not Reported on LHD3 Panel

| Gram-Positive (2018-2020) | # of Specimens | % Of TOTAL SPEC | Penicillins: Amp/Sulbactam | Penicillins: Ampicillin | Penicillins: Amox/Clav | Penicillins: Oxacillin | Penicillins: Piperacillin/Taz | Ceph 1: Cefazolin | Ceph 3: Ceftriaxone | Ceph 4: Cefepime | HQs: Ciprofloxacin | HQs: Levofloxacin | HQs: Moxifloxacin | Carbapenem: Ertapenem | Carbapenem: Meropenem | Carbapenem: Imipenem/Cilastin | Other: Erythromycin | Other: Clindamycin | Other: Daptomycin* | Other: Gentamicin | Other: Linezolid | Other: Nitrofurantoin | Other: Rifampin | Other: Tetracycline | Other: Trimeth/Sulfa | Other: Vancomycin |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *MSSA *Assumed Sensitivity - NOT reported on LHD3 panel* | 89 | | 98 | | 100 | 100 | 97 | 97 | 100 | 97 | 92 | 93 | 96 | 97 | 97 | 97 | 70 | 72 | 99 | 98 | 99 | 100 | 100 | 97 | 100 | 96 |
| *MRSA* | 56 | | | | | | | | | | | | | | | | | 22 | 96 | | 98 | 100 | 96 | 96 | 98 | 91 |
| *Staph Epidermidis* (45% are Methicillin Resistant Staph Epi) | 47 | | 54 | | 54 | 54 | | | 54 | | 73 | 73 | 88 | | | | | 49 | 100 | 90 | 99 | 100 | 100 | 83 | 54 | 100 |
| *Enterococcus Total* | 69 | | | 97 | | | | | | | 78 | 77 | | | | | | | 99 | | 100 | 100 | 63 | | | 100 |
| *Enterococcus VRE 2019* | 1 | | | | | | | | | | | | | | | | | | 50 | | 100 | 100 | | | | |
| *Group B Strep* | 40 | | Susceptible to all PCN & Cephalosporins | | | | | | | | | Variable Susc. | | Not Known | | | | | 100 | | 98 | | | | | 100 |

# The Antibiogram Journey

Educational “opportunities” with the Antibiogram….

**Percent Susceptible** | ***Denotes Drug Of Choice*** | ***Caution d/t Resistance***

| NR = Not Reported on LHD3 Panel | | *Penicillins* | | | | *Cephalosporins* | | | | | FQs | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 1 | 2 | 3 | 3 | 4 | | |
| **Gram Negative (2018-2020)** | # isolates | Amp/Sulbactam | Ampicillin | Amox/Clav | Pipercillin/Taz | Cefazolin | Cefoxitin | Ceftriaxone | Ceftazidime | Cefepime | Ciprofloxacin | Levofloxacin |
| *Escherichia coli* | 594 | 74 | 72 | NR | 98 | 94 | 97 | 99 | 99 | 99 | 89 | 89 |
| *E. Coli ESBL* | 15 | | | | | | | | | | 56 | 62 |
| *Klebsiella pneumonia* | 85 | 88 | | NR | 99 | 99 | 91 | 99 | 99 | 99 | 96 | 99 |
| *Klebsiella Pneumo ESBL 2018* | 1 | | | | | | | | | | | |
| *Proteus mirabilis* | 33 | 91 | 86 | NR | 100 | 94 | 100 | 100 | 100 | 97 | 91 | 91 |
| *Pseudomonas aeruginosa* | 41 | | | | 100 | | | | 100 | 95 | 86 | 86 |

A “nudge” to not use FQ b/c they aren’t labeled as a drug of choice for ANY G- bug and show some R to pseudomonas.

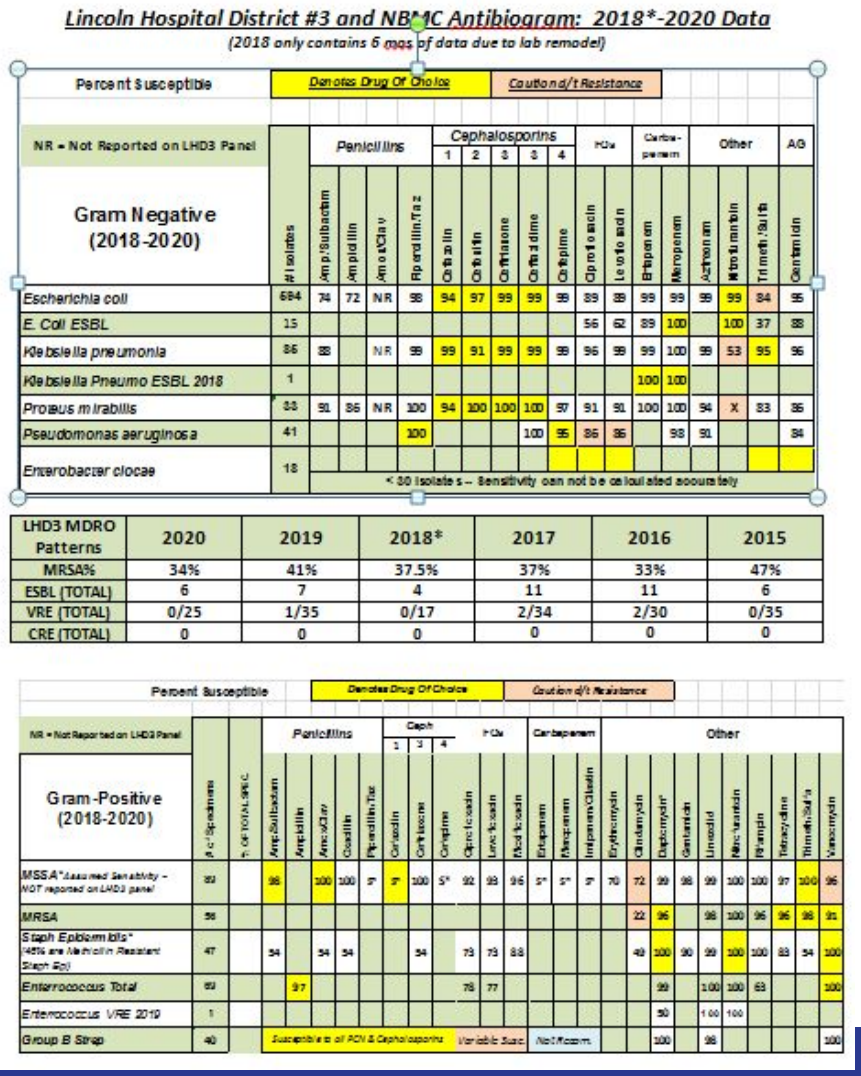
# The Antibiogram Journey

Educational “Opportunities” Continued….

| NR = Not Reported on LHD3 Panel | | | Penicillins | | | | | Ceph | | | FQs | | | Carbapenem | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | 1 | 3 | 4 | | | | | | |
| **Gram-Positive (2018-2020)** | # of Specimens | % OF TOTAL SPEC. | Amp/Sulbactam | Ampicillin | Amox/Clav | Oxacillin | Piperacillin/Taz | Cefazolin | Ceftriaxone | Cefepime | Ciprofloxacin | Levofloxacin | Moxifloxacin | Ertapenem | Meropenem | Imipenem/Cilastin |
| *MSSA* * *Assumed Sensitivity -- NOT reported on LHD3 panel* | 89 | | 98 | | 100 | 100 | S* | S* | 100 | S* | 92 | 93 | 96 | S* | S* | S* |

# The Antibiogram Journey

*The Final Product that will be published*



**Lincoln Hospital District #3 and NBMC Antibiogram: 2018*-2020 Data**

*(2018 only contains 6 mos of data due to lab remodel)*

Percent Susceptible — Denotes Drug Of Choice — Caution d/t Resistance

NR = Not Reported on LHD3 Panel

| Gram Negative (2018-2020) | # Isolates | Penicillins: Amp/Sulbactam | Penicillins: Ampicillin | Penicillins: Amox/Clav | Penicillins: Piperacillin/Taz | Cephalosporins 1: Cefazolin | Cephalosporins 2: Cefuroxin | Cephalosporins 3: Ceftriaxone | Cephalosporins 3: Ceftazidime | Cephalosporins 4: Cefepime | HQs: Ciprofloxacin | HQs: Levofloxacin | Carbapenem: Ertapenem | Carbapenem: Meropenem | Other: Aztreonam | Other: Nitrofurantoin | Other: Trimeth/Sulfa | AG: Gentamicin |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Escherichia coli* | 684 | 74 | 72 | NR | 98 | 94 | 97 | 99 | 99 | 99 | 89 | 89 | 99 | 99 | 99 | 99 | 84 | 95 |
| *E. Coli ESBL* | 15 | | | | | | | | | | 56 | 62 | 89 | 100 | | 100 | 37 | 88 |
| *Klebsiella pneumonia* | 86 | 88 | | NR | 99 | 99 | 91 | 99 | 99 | 99 | 96 | 99 | 99 | 100 | 99 | 53 | 95 | 96 |
| *Klebsiella Pneumo ESBL 2018* | 1 | | | | | | | | | | | | 100 | 100 | | | | |
| *Proteus mirabilis* | 33 | 91 | 86 | NR | 100 | 94 | 100 | 100 | 100 | 97 | 91 | 91 | 100 | 100 | 94 | X | 83 | 86 |
| *Pseudomonas aeruginosa* | 41 | | | | 100 | | | | 100 | 95 | 86 | 86 | | 98 | 91 | | | 84 |
| *Enterobacter cloacae* | 18 | < 30 Isolates -- Sensitivity can not be calculated accurately | | | | | | | | | | | | | | | | |

| LHD3 MDRO Patterns | 2020 | 2019 | 2018* | 2017 | 2016 | 2015 |
|---|---|---|---|---|---|---|
| MRSA% | 34% | 41% | 37.5% | 37% | 33% | 47% |
| ESBL (TOTAL) | 6 | 7 | 4 | 11 | 11 | 6 |
| VRE (TOTAL) | 0/25 | 1/35 | 0/17 | 2/34 | 2/30 | 0/35 |
| CRE (TOTAL) | 0 | 0 | 0 | 0 | 0 | 0 |

Percent Susceptible — Denotes Drug Of Choice — Caution d/t Resistance

NR = Not Reported on LHD3 Panel

| Gram-Positive (2018-2020) | # of Specimens | % Of TOTAL SPEC | Penicillins: Amp/Sulbactam | Penicillins: Ampicillin | Penicillins: Amox/Clav | Penicillins: Oxacillin | Penicillins: Piperacillin/Taz | Ceph 1: Cefazolin | Ceph 3: Ceftriaxone | Ceph 4: Cefepime | HQs: Ciprofloxacin | HQs: Levofloxacin | HQs: Moxifloxacin | Carbapenem: Ertapenem | Carbapenem: Meropenem | Carbapenem: Imipenem/Cilastin | Other: Erythromycin | Other: Clindamycin | Other: Daptomycin* | Other: Gentamicin | Other: Linezolid | Other: Nitrofurantoin | Other: Rifampin | Other: Tetracycline | Other: Trimeth/Sulfa | Other: Vancomycin |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *MSSA *Assumed Sensitivity - NOT reported on LHD3 panel* | 89 | | 98 | | 100 | 100 | 97 | 97 | 100 | 97 | 92 | 93 | 96 | 97 | 97 | 97 | 70 | 72 | 99 | 98 | 99 | 100 | 100 | 97 | 100 | 96 |
| *MRSA* | 56 | | | | | | | | | | | | | | | | | 22 | 96 | | 98 | 100 | 96 | 96 | 98 | 91 |
| *Staph Epidermidis* (45% are Methicillin Resistant Staph Epi) | 47 | | 54 | | 54 | 54 | | | 54 | | 73 | 73 | 88 | | | | | 49 | 100 | 90 | 99 | 100 | 100 | 83 | 54 | 100 |
| *Enterococcus Total* | 69 | | | 97 | | | | | | | 78 | 77 | | | | | | | 99 | | 100 | 100 | 63 | | | 100 |
| *Enterococcus VRE 2019* | 1 | | | | | | | | | | | | | | | | | | 50 | | 100 | 100 | | | | |
| *Group B Strep* | 40 | | Susceptible to all PCN & Cephalosporins | | | | | | | | | Variable Susc. | | Not Known | | | | | 100 | | 98 | | | | | 100 |

# Antibiogram Journey - Looking for Trends

| Organism | Drug | 2017 Antibiogram | Current Antibiogram | Notes |
|---|---|---|---|---|
| **Proteus** | Cipro | 100 | 91 | Decrease S |
| | Levofloxacin | 100 | 91 | Decrease S |
| | Trimeth/Sulfa | 90 | 83 | Decrease S |
| **Pseudomonas** | Levofloxacin | 94 | 86 | Decrease S |
| | Cefepime | 91 | 95 | Increase S |
| **MRSA** | Vancomycin | 100 | 91 | 9% Intermediate Resistance |
| **Urinary Bugs (E. Coli, Klebsiella, Proteus)** | Cephalosporins & nitrofurantoin Drugs of choice! | | | |

.Questions?
.SUGGESTIONS?
.Corrections?