

Example 4.3 Eden Medical Center Sutter Health Antibioqram Analysis (page 1 of 3)

Eden Medical Center Sutter Health 2015 Antibioqram Analysis –  
comparison with 2014

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1. Staph aureus
  - a. Total Staph aureus isolated increased by 22%
  - b. MRSA
    - i. 188 isolates ( 37% of all S. aureus isolates)
      1. Down from 40% last year
      2. Overall still continuing trend down since peak 2006-7 (63%) also seen nationally
  - c. MSSA
    - i. 327 isolates (63% of all S. aureus isolates)
  - d. Clindamycin sensitivity is has two patterns
    - i. Most of the resistance is in MRSA (increase from ~40% to almost 50% resistant from 2014-2015
    - ii. MSSA still usually Clindamycin sensitive ~85%
  - e. Levofloxacin sensitivity has two patterns
    - i. MRSA only 30% sensitive to levofloxacin
    - ii. MSSA stable about 80% sensitive
  - f. Trimethoprim-sulfa sensitivity remains excellent at 98%
  - g. Vancomycin 100% sensitive. No VISA or VRSA seen
  - h. Tetracycline ~96% sensitive (both MRSA and MSSA)
2. Enterococcus
  - a. Total number of isolates increased by >25% (245 to 335) but total E. faecium which is more resistant is stable.
  - b. 30 VRE isolates in 2015. (about 90% of E. faecium are VRE)
  - c. E faecalis plus NOS
    - i. increasing resistance to levofloxacin from 25% to 33% in one year
    - ii. Almost all ampicillin sensitive
  - d. About 80% of all enterococcus are resistant to tetracycline
3. Streptococcus pneumoniae
  - a. Only 6 isolates from sterile sites that are penicillin screen resistant
  - b. Number of isolates from sterile sites continues to progressively decrease – probably due to implementation of immunizations
4. E. coli, Klebsiella, Proteus increase ~30%)
  - a. E. coli 2249 isolates
  - b. Klebsiella 436 isolates
  - c. Proteus 300 isolates
  - d. ESBL very stable at 8-10%
  - e. Cefazolin remains unreliable at ~ 50% sensitivity
  - f. Cefoxitin and ceftriaxone sensitivity remain very good at 87-96%
  - g. Levofloxacin stable but misses 1 out of 4 E. coli and 1 out of 3 Proteus.

For more information about this example contact Jeffrey Silvers, MD at [Silverj@sutterhealth.org](mailto:Silverj@sutterhealth.org)

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- h. Cefazolin stable but only covers <50% (43%) of isolates
- i. Amp/Sulbactam stable covers little less than 2/3 (59%)
- 5. Pseudomonas
  - a. 218 isolates – about same number as last year.
  - b. ~85-90% sensitive to Zosyn, imipenem, ceftazidime, cefepime, and gentamicin (stable)
  - c. ~ 1/3 resistant to fluoroquinilones (stable)
- 6. Acinetobacter and Stenotrophomonas without enough isolates to draw conclusions
- 7. Citrobacter and Enterobacter antibioqram available as needed, no special trends/

**TAKE HOME POINTS**

- **Staph aureus**
  - MRSA incidence is gradually decreasing. (down to ~37%)
  - Do not use empiric clindamycin waiting for sensitivity results. Would usually cover MSSA but almost 50% of the MRSA are resistant.
  - Do not use empiric levofloxacin waiting for sensitivity results. Would usually cover MSSA but 70% MRSA would be resistant
  - Vancomycin, trimethoprim/sulfa, tetracycline sensitivities remain excellent for MRSA
- **Enterococcus**
  - E. faecalis almost always ampicillin sensitive
  - E. faecium usually VRE
  - Do not use empiric Levofloxacin for enterococcus. Coverage unpredictable and increasing resistance seen in last year
- **E. coli, Klebsiella, and Proteus**
  - ESBL incidence little lower at 8-10%
  - Cefoxitin or ceftriaxone/flagyl covers E. coli, Klebsiella, and Proteus very well and could be expected to work for appendicitis/ diverticulitis.
  - Very sensitive to Ceftriaxone and Cefoxitin (87-96%).
  - Zosyn (89-100%) about same but has extra coverage for Pseudomonas, if needed.
  - Cefazolin covers <50% (43-46%)
  - Do not use empiric Levofloxacin:
    - Levofloxacin misses 25% E. coli and almost 50% of the Proteus species.

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- Recommend Cefoxitin or ceftriaxone/metronidazole over cefazolin/metronidazole for prophylaxis or treatment for abdominal surgery/diverticulitis, etc.
- CRE remains a major risk concern but thus far has not been significant at our facility
- **Pseudomonas:** (218 isolates)
  - Relative to other isolates, incidence of Pseudomonas is lower year over year.
  - Zosyn, imipenem, ceftazidime, and cefepime all provide equivalent coverage.
  - Levofloxacin is inferior missing 1 out of 3 isolates.
- **No pus in the cellulitis** – Probably not MRSA. Do not need vancomycin. Use cefazolin
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- **Minimize levofloxacin/ciprofloxacin usage** both inpatient and outpatient
  - increases risk of binary toxin positive aggressive C. difficile disease
  - Unreliable coverage for Staph aureus, enterococcus, E. coli, Proteus, and Pseudomonas
  - Part of treatment for CAP going to ICU
  - Can use for de-escalation for discharge if no other oral alternatives.
- **Non critical patients from community** can receive ceftriaxone instead of very broad spectrum e.g. piperacillin./tazobactam, imipenem, ceftazidime or cefepime.

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