UWTASP

tele-antimicrobial stewardship program

May 28th, 2019

Agenda

- Didactic: *Low Hanging Fruit in AS*
- Case Discussions
- Open Discussion

We have Mother Nature to thank for the expression *low hanging fruit*. A fruit-bearing tree often contains some branches low enough for animals and humans to reach without much effort. The fruit contained on these lower branches may be not be as ripe or attractive as the fruit on higher limbs, but it is usually more abundant and easier to harvest. From this we get the popular expression, which generally means selecting the easiest targets with the least amount of effort.

Wisegeek.com

Clinical Infectious Diseases

. We also realized the limitations of clinical decisions based solely on chart-review data, and we were careful to make recommendations only in well-defined clinical scenarios. No suggestions were made if data were insufficient to allow a comfortable decision. In essence, we aimed at harvesting the "low-hanging fruit," rather than delving into complicated management issues. After several months, the program had met with wide approval, and some physicians regularly requested review of their patients' charts.

From January through December 2000, we made 488 recommendations. Three hundred and thirty-six (69%) were accepted and implemented; 126 (26%) were rejected; and 26 (5%) were cancelled because of patient discharge. Thirty-eight percent of recommendations were to discontinue 1 or more antibiotics, because of duplicate coverage, inappropriate use, or excessive duration; 33% were to change from intravenous to oral administration; 23% were to substitute or add an antibiotic to the regimen; and 6% were to change dosage. Antibiotic costs for the year 2000 averaged $14.77 per patient-day, compared with $18.21 per patient-day in 1999—a cost reduction of 19% and a total estimated savings of $177,000. Although we did not track clinical outcomes, no adverse events were reported in connection with this program. The AST required ~8–12 h per week of the ID specialist's time.

LaRocco CID 2003

What is the Goal in AS?

The ultimate goal of antimicrobial stewardship is to optimize clinical outcomes and minimize the unintended consequences of antimicrobial use, that is, the emergence of resistance, the selection of pathogenic organisms, and toxicity.

Dellit CID 2007

What is Most Important?

1. What do you want to change?
2. How are you going to know if it changes?

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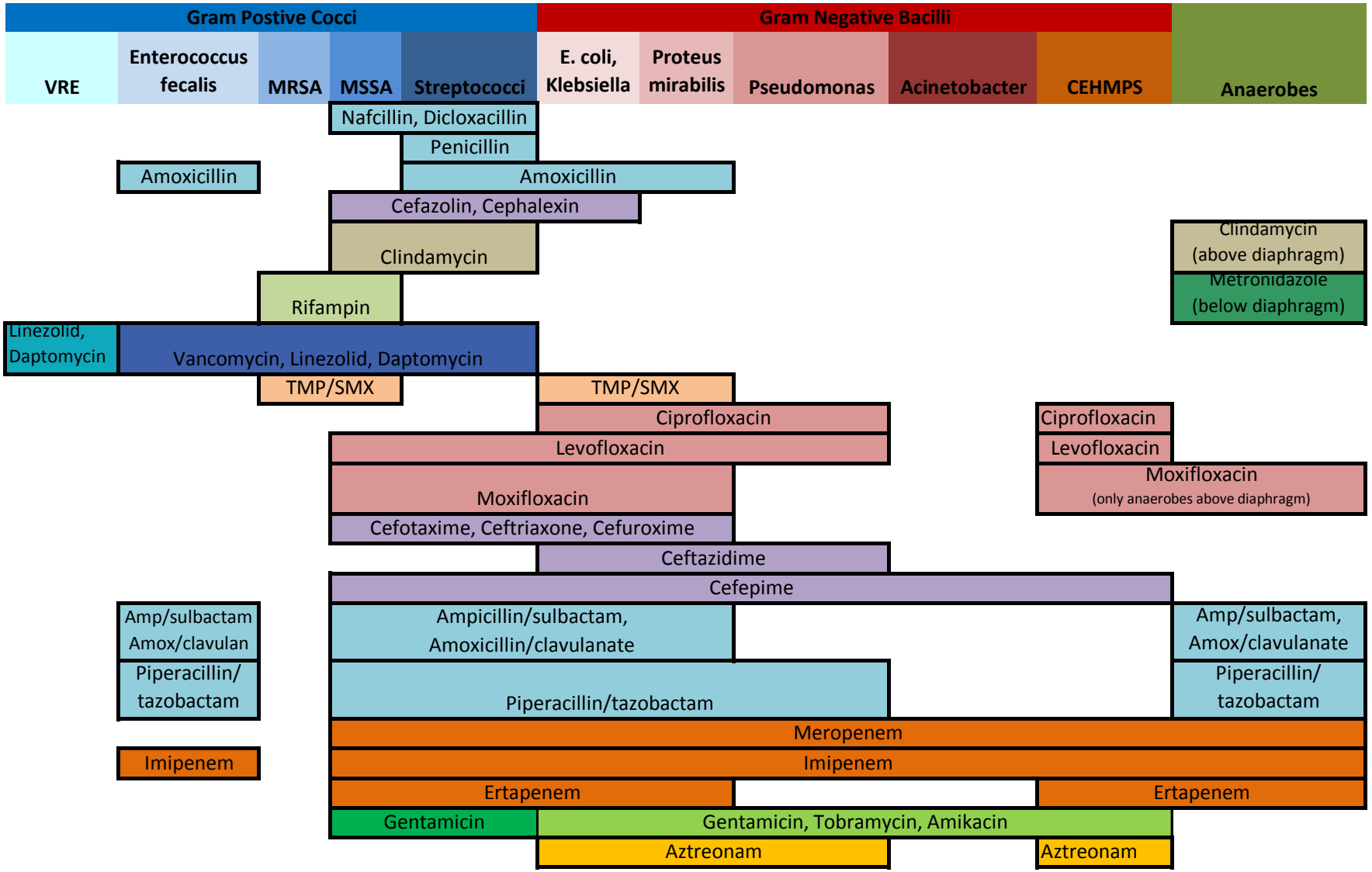
Low-hanging Fruit

- Antibiogram/local susceptibility data available
- Ease of guideline use (either electronically or on paper)
- Formulary restriction via the P&T committee
- Surgical antimicrobial prophylaxis
- Penicillin allergies
- Antimicrobial expenditures

Antibiotic Susceptibility Overview

This chart is intended as an initial guidance, and should not replace clinical judgement



CEHMPS = Citrobacter freundii, Enterobacter spp., Hafnia alvei, Morganella spp., Providencia spp., Serratia spp.
CEHMPS may harbor AmpC inducile beta lactamases. Resistance to penicillins and 3rd generation cephalosporins may arise on therapy.
TMP/SMX = trimethoprim/sulfamethoxazole, VRE = vancomycin resistant enterococci
Based on 2015 UW Medicine antibiogram, highlighted if suceptibility >70%

CDC Core Elements

- Leadership commitment
- Accountability
- Drug expertise
- Action
- Tracking
- Reporting
- Education

Leadership Commitment

Dedicate necessary human, financial and information technology resources.

- **FTE (physician and pharmacist)**
- **Newsletter**
- Identify an executive champion
- Support training in AS
- Access to microbiology data
- Support information technology

Accountability

Single leader for program outcomes. A physician leader is effective.

- Appoint a physician lead (*find a champion*)
- Include AS measures in physician evaluation
- ASP leaders engage other groups in the health system
- Reporting via the NHSN AU module

Drug Expertise

Single pharmacist leader working to improve antibiotic use.

- **Identify a pharmacist with expertise in the area**
- **Provide training for the pharmacist if needed**
- Support cascading of information to other pharmacists

Action

Implement at least one recommended action.

- Antibiotic indication
- Antibiotic time-out
- Penicillin allergy assessment
- Develop facility-specific ID guidelines
- Optimize specimen collection, testing and result delivery
- **Automate IV to PO conversion**
- **Eliminate double-coverage (low-risk, anaerobes)**

Tracking

Monitor process measures, impact to patients, antibiotic use, and resistance.

- Tracking actions (documentation of indications, time-outs)
- Adherence to guidelines
- Accurate penicillin allergy histories
- Days of therapy, SAAR, $$

Reporting

Report the tracking information regularly to doctors, nurses and relevant staff.

- Report tracking measures regularly
- **Get ASP on the agenda of physician and board meetings**
- Unit and/or service specific reports
- Make reports transparent and as real-time as possible
- Provider level antibiotic use reporting

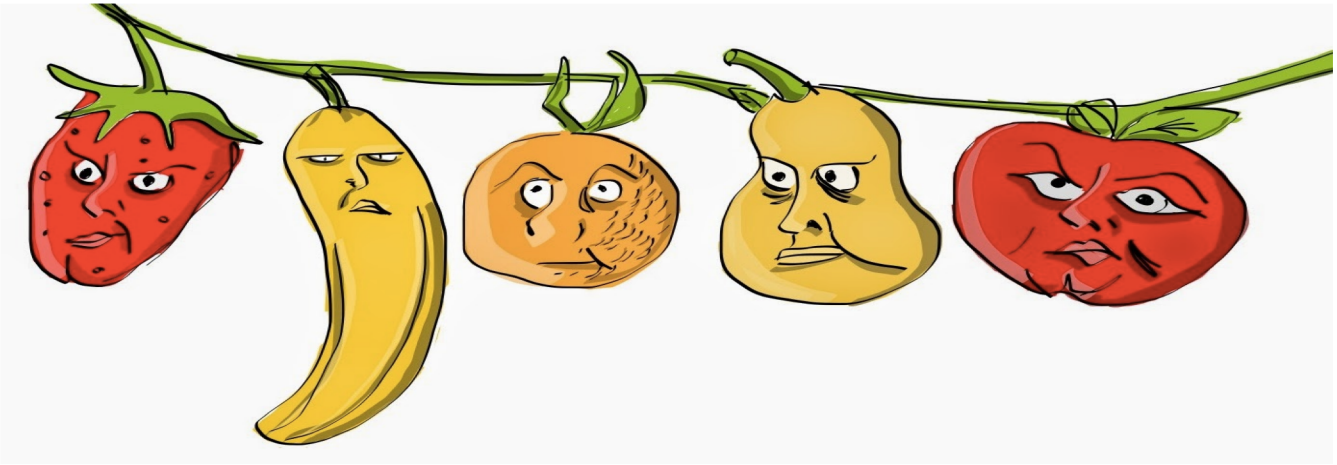
Education

Educate clinicians about disease state management, resistance and optimal prescribing.

- Integrate data from reports and regional/national updates
- **Educate prescribers about microbiology data**
- Provide patients with information about appropriate antibiotic use
- **Include ASP in on-boarding of prescribers**

Higher-hanging Fruit

- Daily/interrupted audit and feedback
- Antimicrobial use tracking (if you have BCMA)
- Working with IPC on CDI reviews



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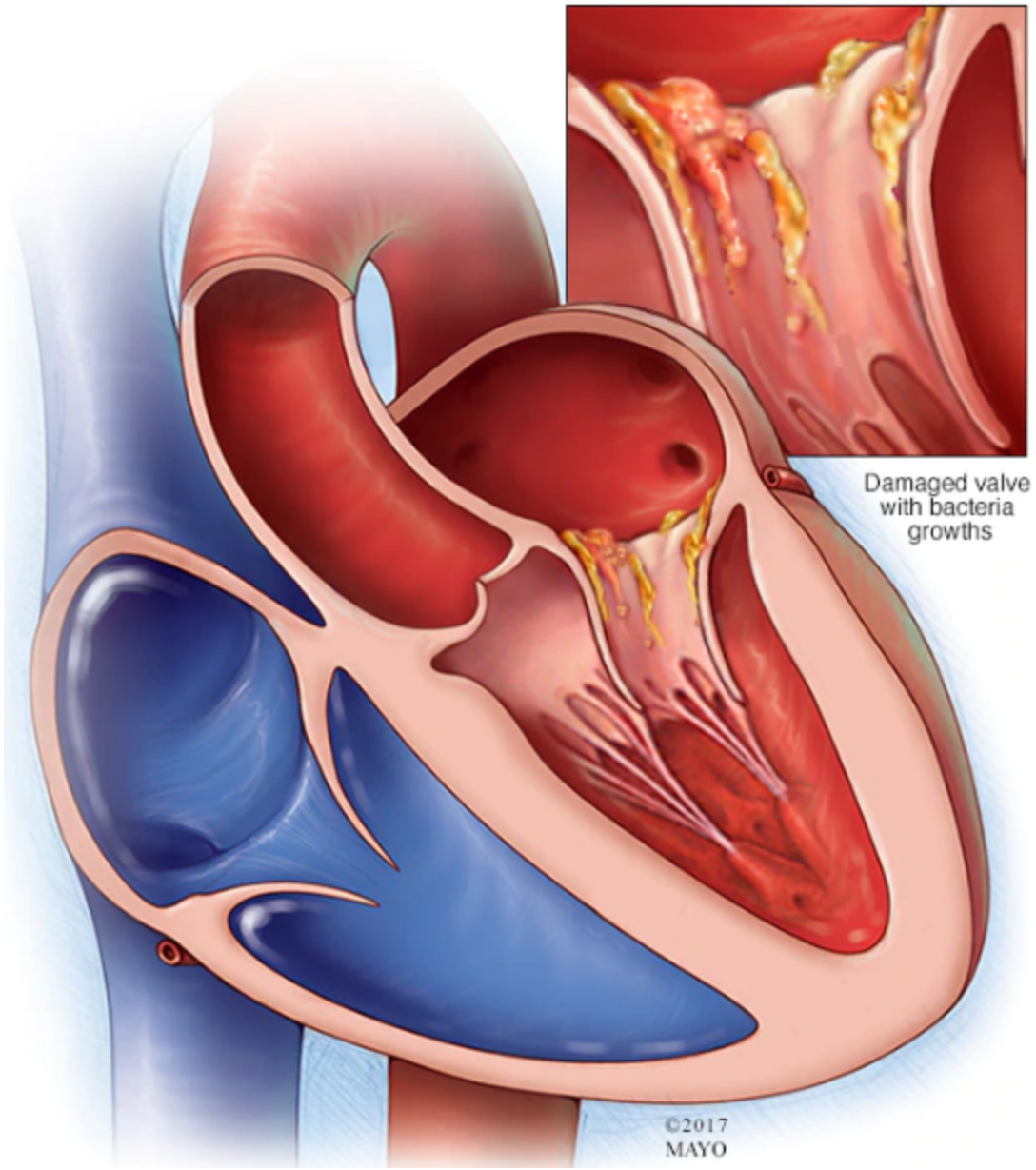

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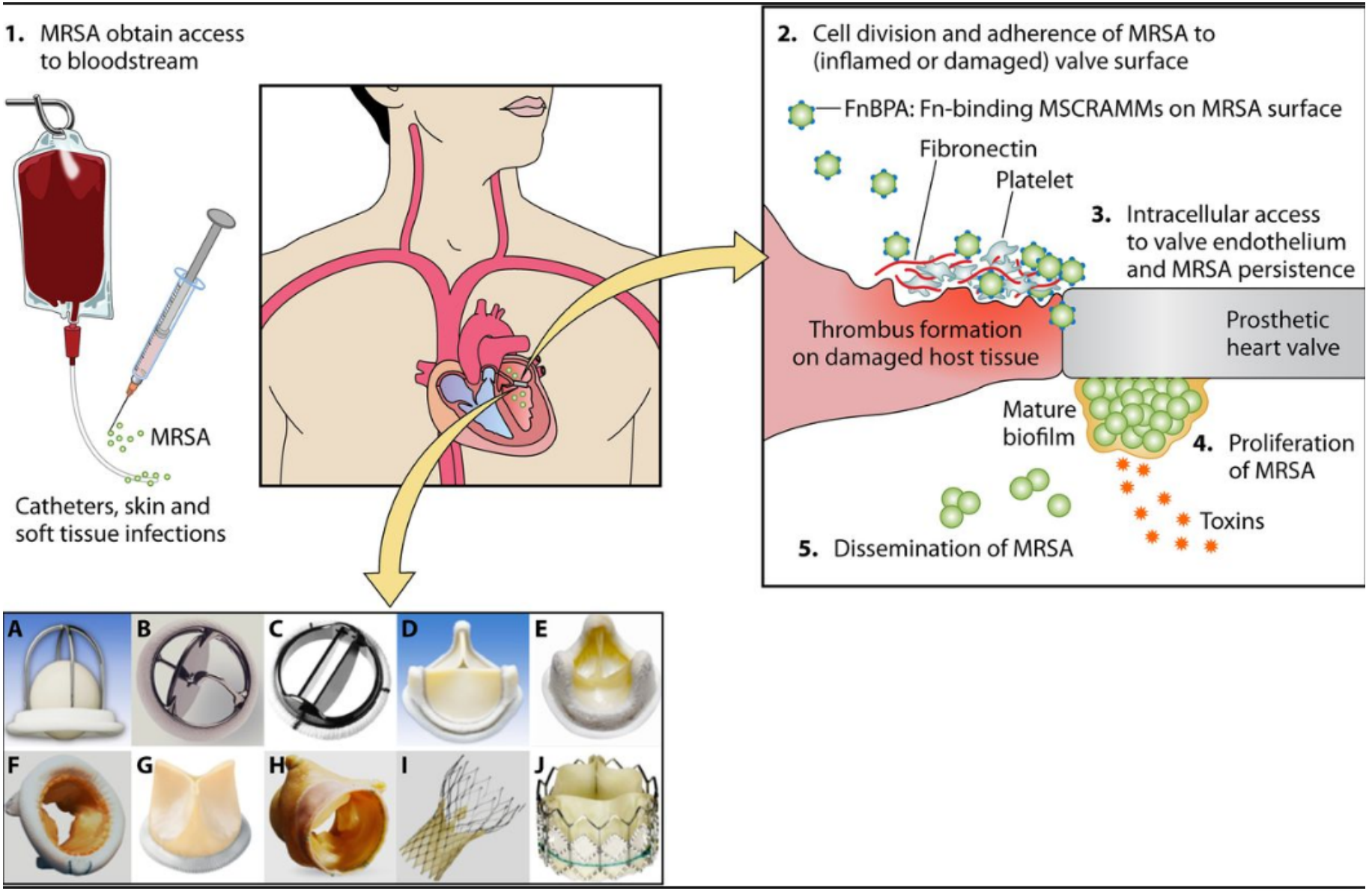
1. MRSA obtain access to bloodstream
MRSA
Catheters, skin and soft tissue infections
2. Cell division and adherence of MRSA to (inflamed or damaged) valve surface
FnBPA: Fn-binding MSCRAMMs on MRSA surface
Fibronectin
Platelet
3. Intracellular access to valve endothelium and MRSA persistence
Thrombus formation on damaged host tissue
Prosthetic heart valve
Mature biofilm
4. Proliferation of MRSA
Toxins
5. Dissemination of MRSA
A
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