



MC-004855

Catheter and Bundle: Is Your Team Complete?

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Past clinical experience includes Medical Surgical, Emergency Department, Intensive Care Units, and supervisor & leadership roles. Graduate degree in nursing with a specialty track of Nursing Education.

Currently supervise a rapid response team and a vascular access team in a 450 bed acute care facility in Alabama. Currently using my clinical trial experience to share with others good outcomes and EBP.

Marguerite Naseau Core Values Award 2012 – Creativity

- Initiated an in-house vascular access team
- ABN provider of CEU material rt/vascular access
- Developed specific EMR charting for special teams
- Established an Outpatient service for line placement and other services
- Construct and write skill specific policies for vascular access
- Initiate and present Alabama Board of Nursing applications for procedures beyond basic nursing preparation



Disclosure

- Consultant for Teleflex Medical

- I will not discuss off label use

Learning Objectives

- Review the science behind how infections occur with a bundle.
- Identify how passive protection completes the team.
- Discuss a personal experience of adding a protected catheter to an existing insertion bundle practice.

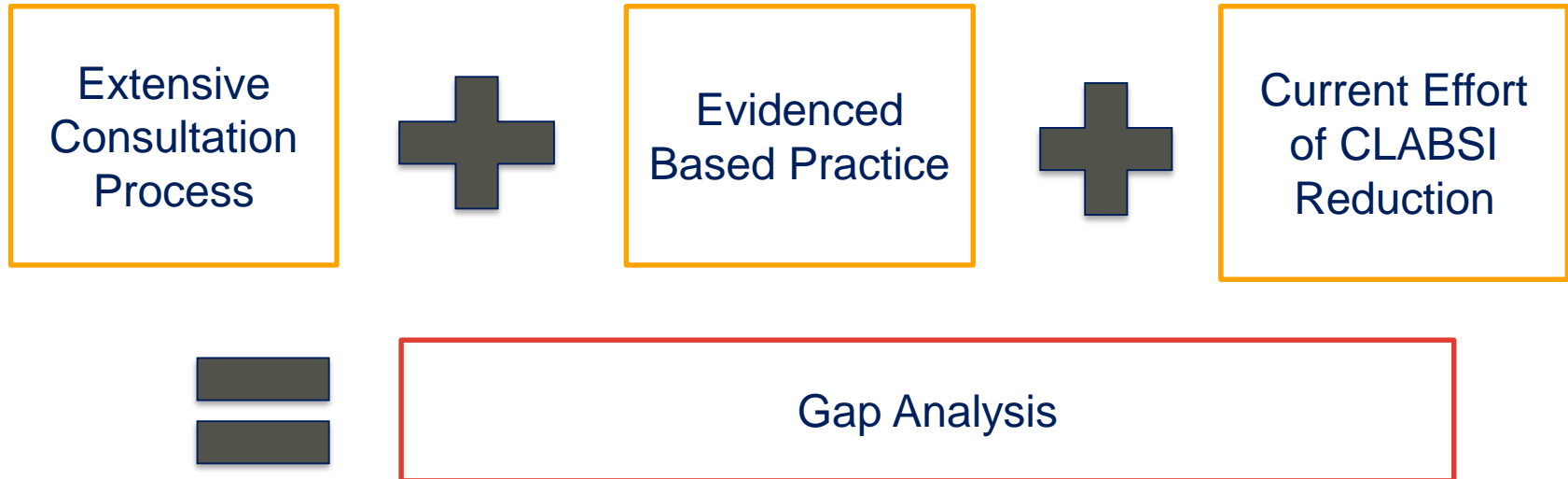
Catheter and Bundle Journey



Clinical Team Approach

- Interdisciplinary Team
- Key Leader or Champion
 - Vascular access team
 - Infection control leaders
 - Administrative support
 - Infection disease physicians
 - Champion or key leader for outcomes

Gap Analysis: Preventative and Aids In Identifying Cause



Bundles and Solutions

- Maximal Barrier Insertion Bundles
- CUSP Initiatives
- Central Venous Line (CVL) Carts
- Personal Protective Equipment (PPE)
- Central Line Insertion Practices (CLIP) forms
- Antimicrobial Catheter

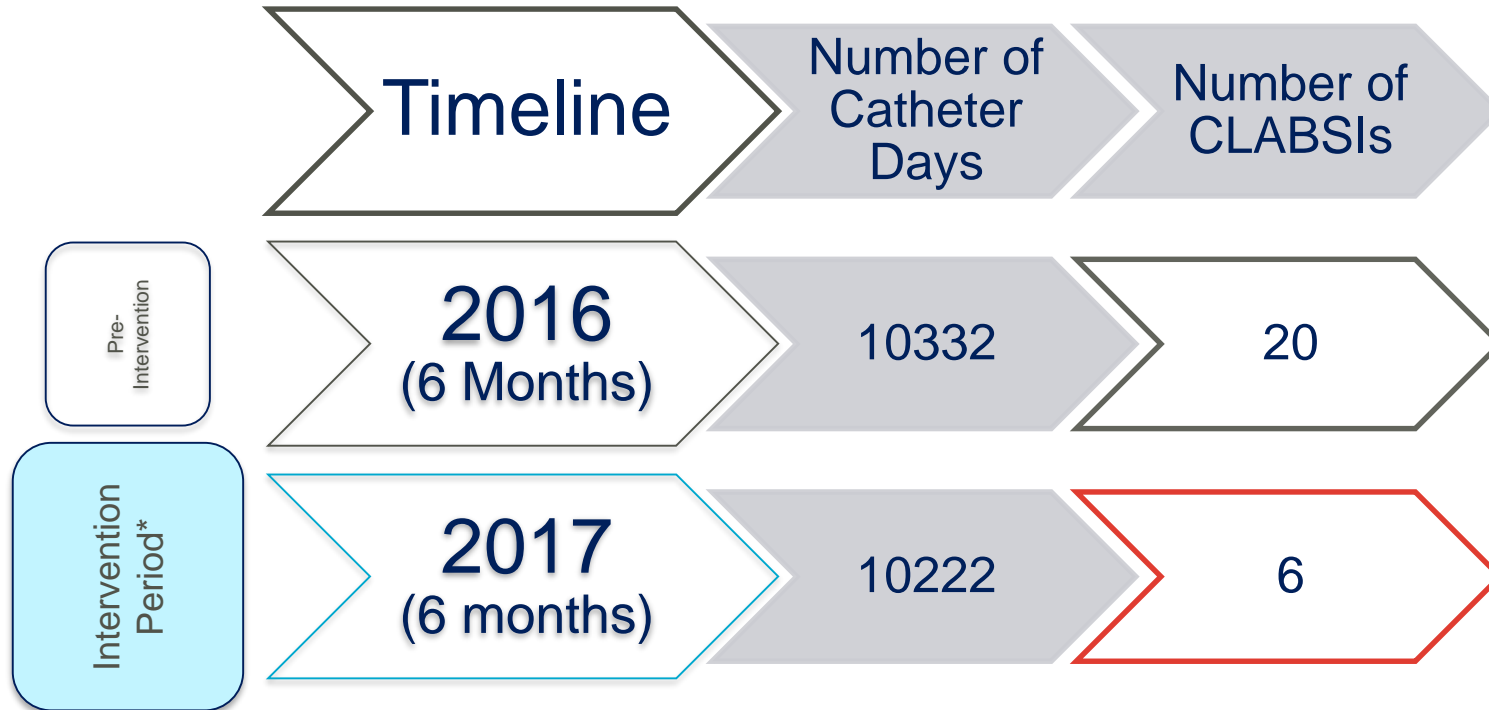


What is “All we could do”?

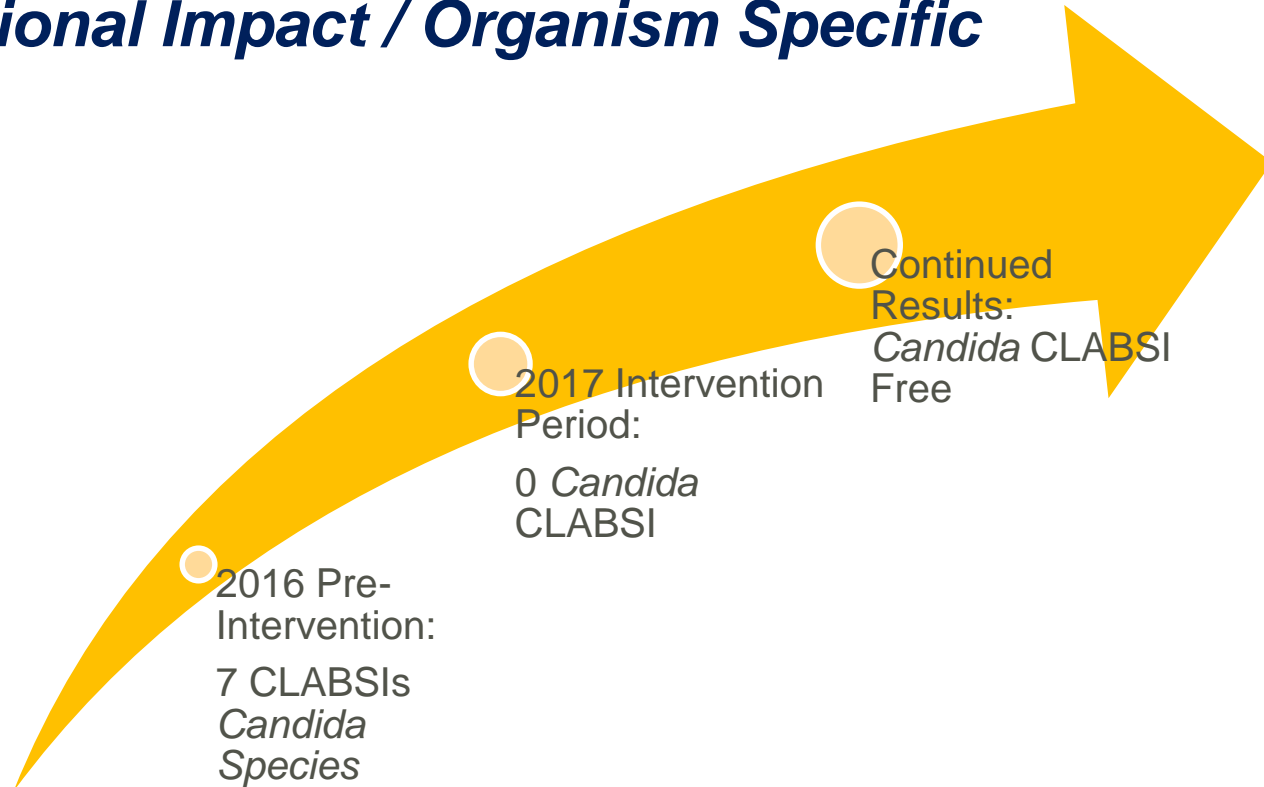
- Team approach
- Educate all staff – hands on & didactic
- 2 person team – empowered VAS
- Incorporation of EBP
- VAS perform weekly dressing changes
- Daily assessment of all lines by expert
- Yearly assessment of VAS clinicians
- Data Collection



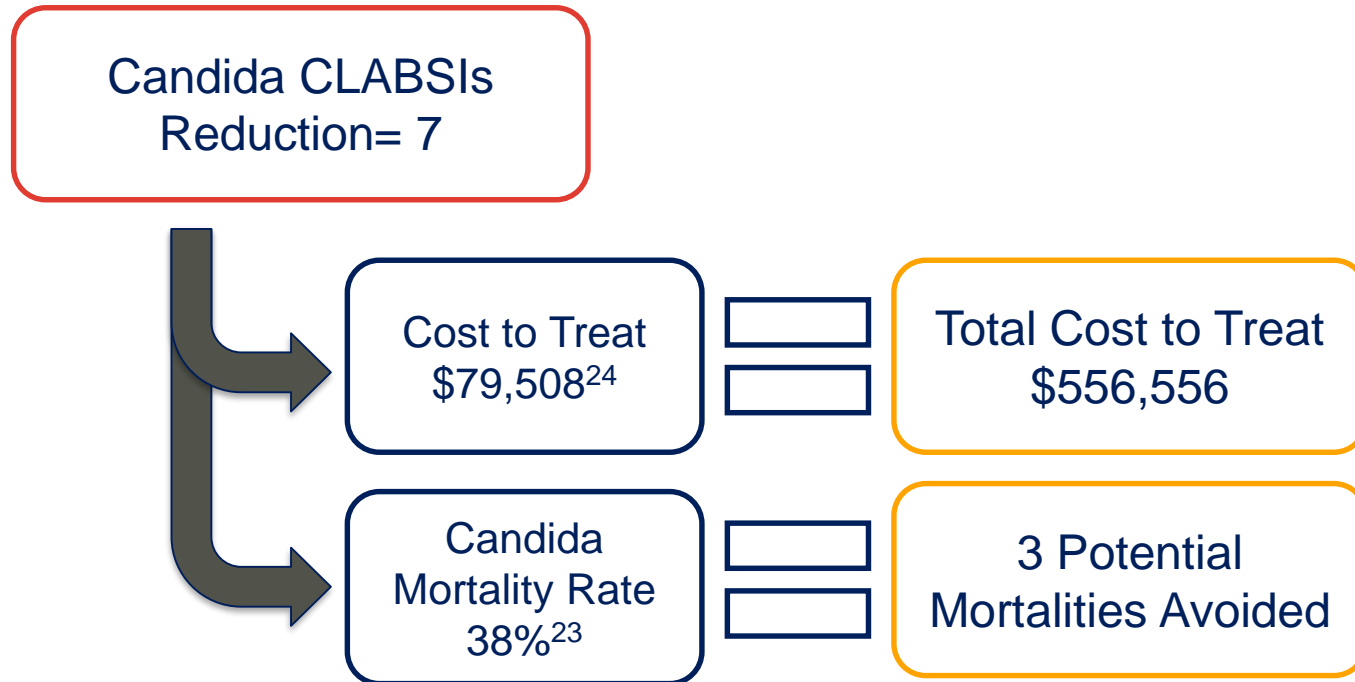
Remarkable Results = Improved Patient Outcomes



Additional Impact / Organism Specific



Impact of Reducing Candida





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What Gaps exist in the modern bundles? Let's evaluate the missing pieces.

Central Line-Associated Bloodstream Infection Costs



CLABSIs occur in the US each year

80,000
in ICUs¹

20%
of CLABSI incidents result in a mortality²



The CDC estimates the annual cost of CLABSI is more than

\$1 Billion²



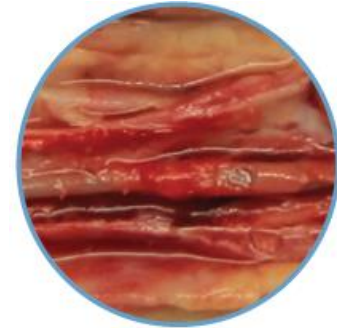
Winning with a Multi-Faceted Approach



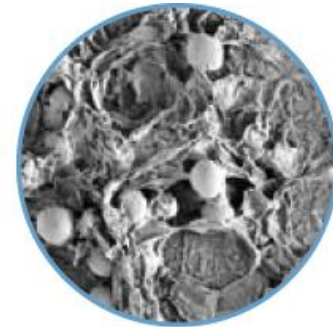
Why Do Catheters Cause Infections?

Key Elements:

- Nutrition
- Surface for attachment
- Minimal competition
- Time (24 hours)



Biofilm formation, thrombus and fibrin sheath around untreated catheter



Biofilm formation

Why Do Catheters Cause Infections?

Key Elements:

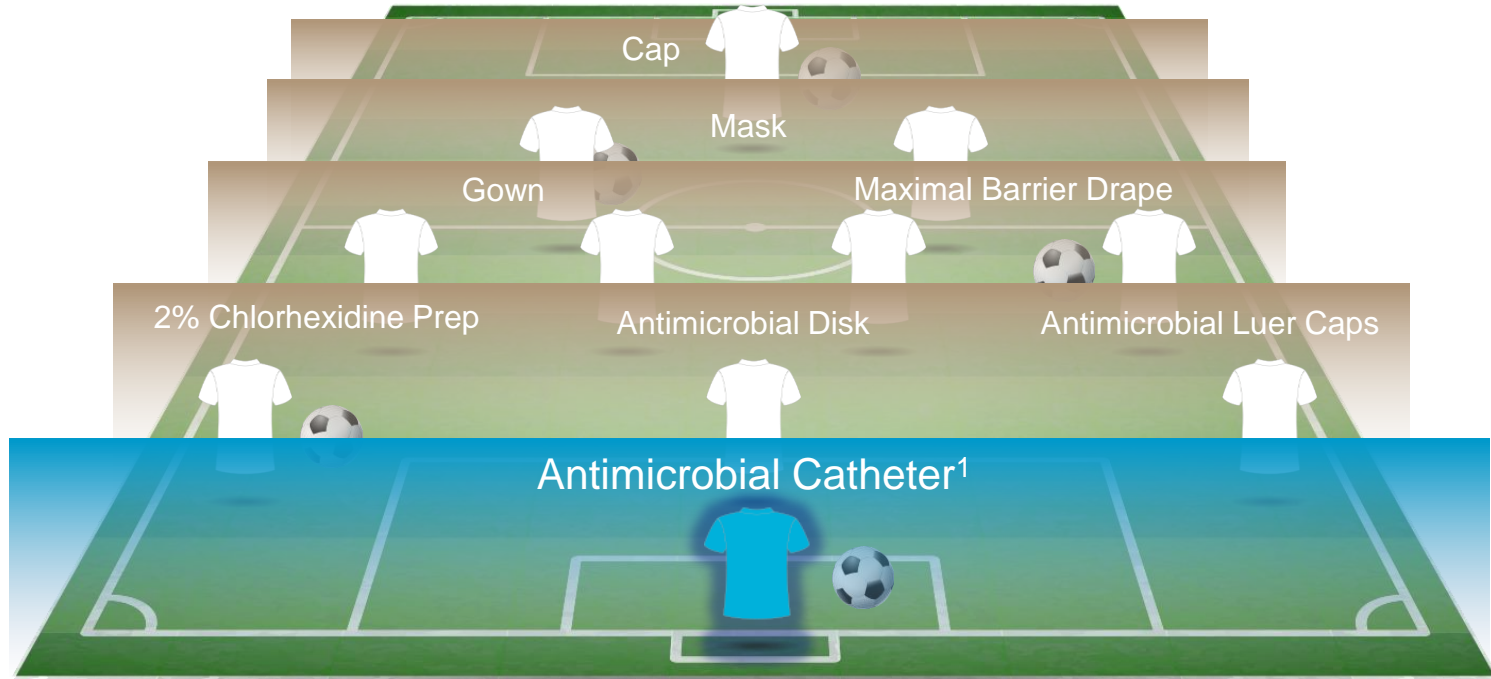
- Nutrition
- Surface for attachment
- Minimal competition
- Time (24 hours)

Next Step: Surface Colonization

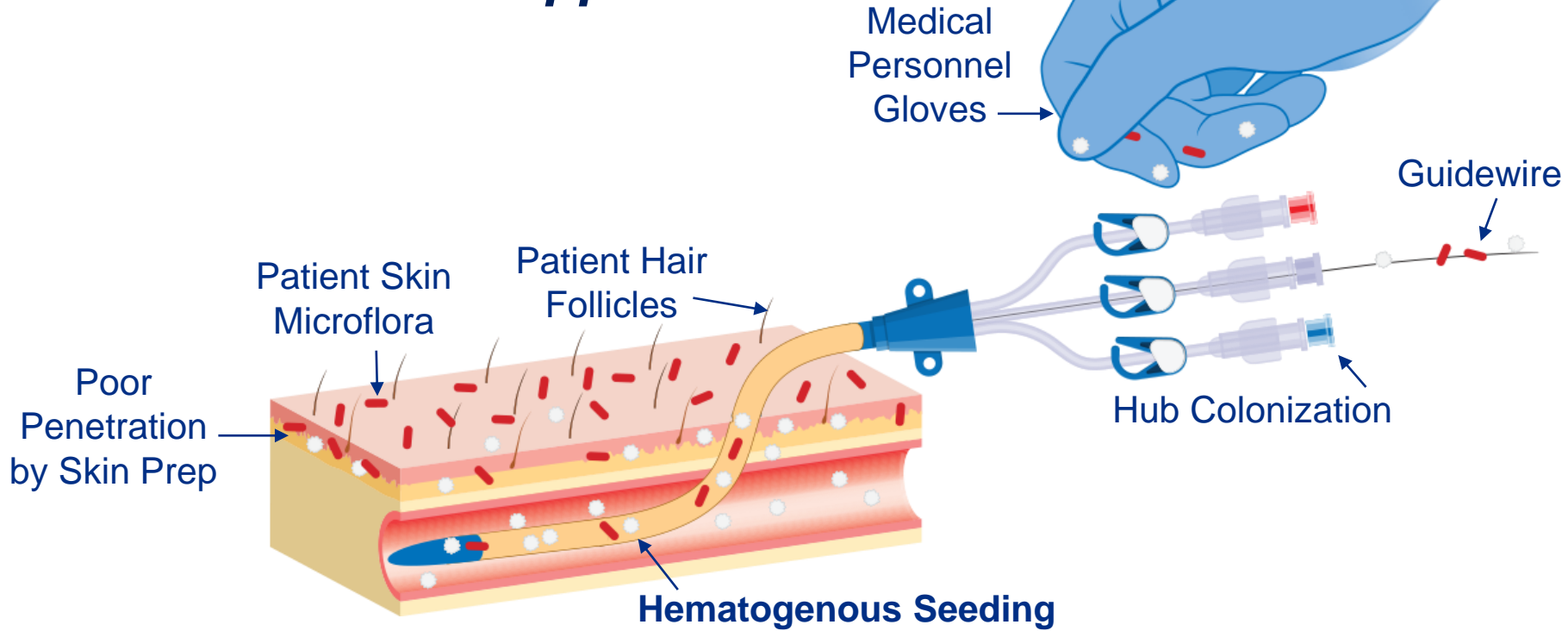
- Biofilm formation



Creating a Gold Medal Team



Contamination Happens



Colonization Starts with Contact



Extraluminal Colonization



Intraluminal Colonization



Active Solutions to Reduce Colonization



**Potential for
human error!**

- Maximal Barrier Precaution
- Antimicrobial Dressings
- Skin Prep

Extraluminal

- Antimicrobial injection caps
- Proper Care and Maintenance
- Lock Solutions

Intraluminal

Passive Solution to Reduce Colonization



- Antimicrobial Catheters

**Extraluminal/
Intraluminal***

* and/or

Clinical Trial Evidence: Antimicrobial Catheters

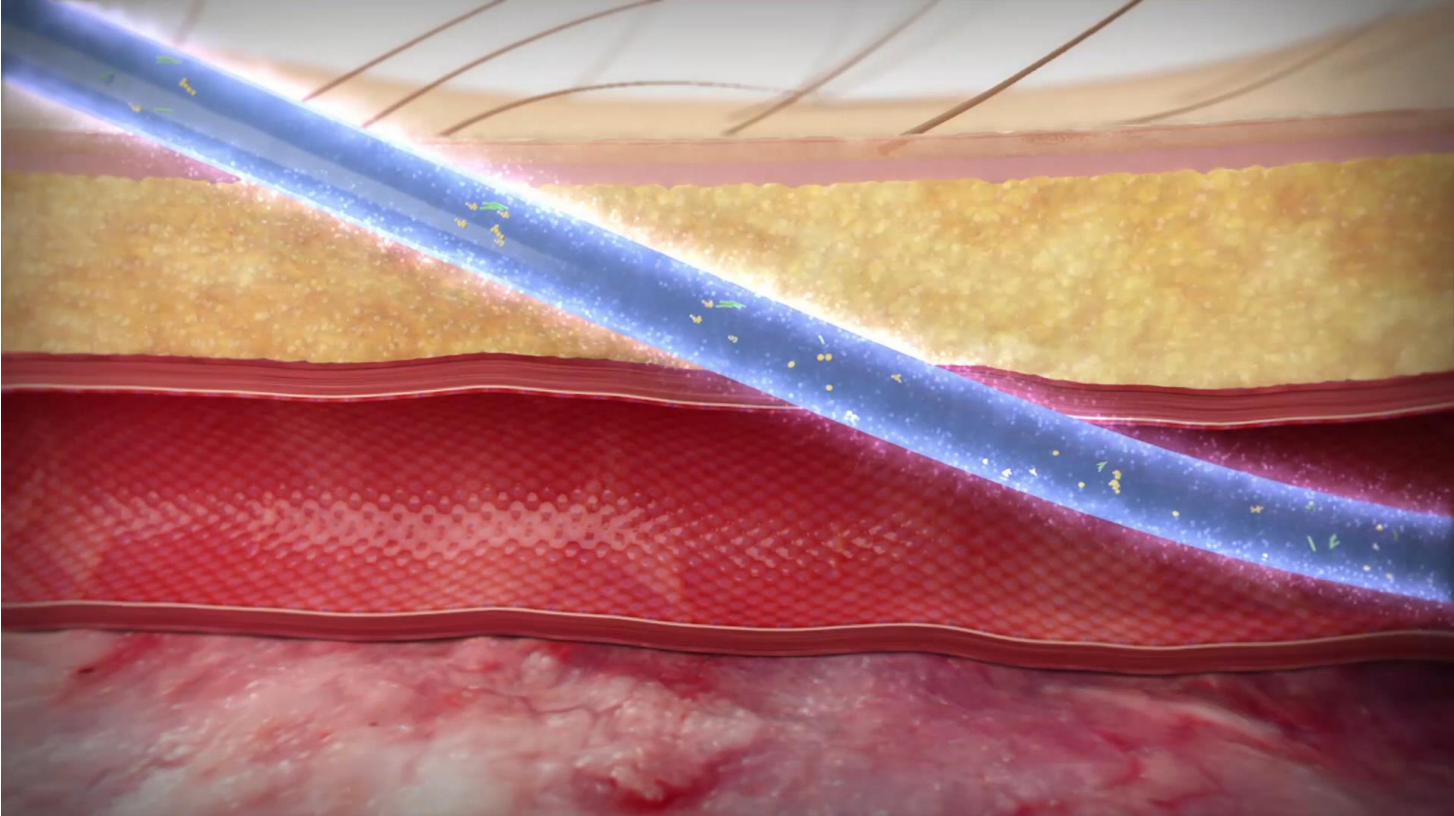
Maki D.
et al.
1997



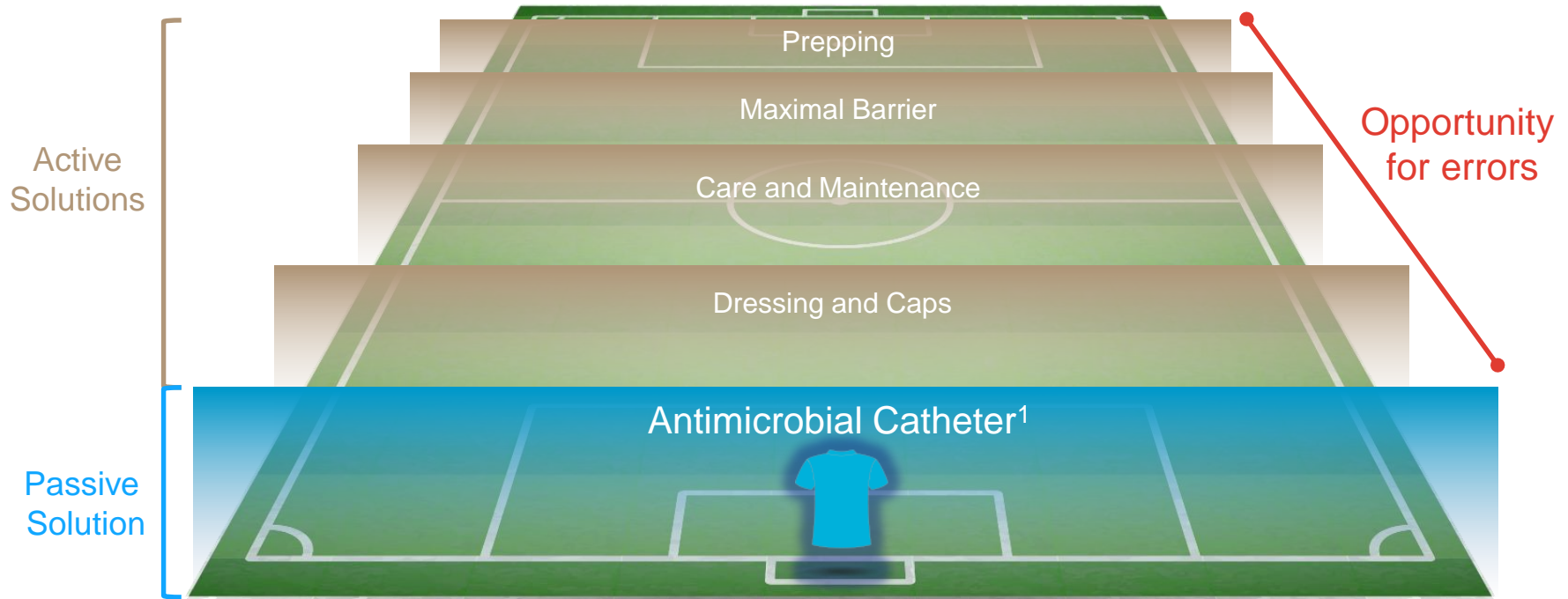
Rupp et
al. 2005

Lorente et al. 2014

Antimicrobial Efficacy of Antimicrobial Catheters



The Bundle Needs a Goalie!



Conclusion

- Team approach
- Catheter colonization
- Active vs. passive solutions
- Insertion bundle and antimicrobial catheter evidence
- Commitment to look
 - If not all protected, ask **why not?**

Ask, what would the patient choose for themselves?

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Any Questions?

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