

IMPACT ASSESSMENT OF STABILIZATION DEVICES ON CLABSI

Mark Rowe MNSc, RNP, VA-BC®



Mark is a graduate of the University of Arkansas for Medical Sciences (UAMS) with both his Bachelors and Masters in Nursing Science. His initial 8 years in the art of nursing was in the specialty of burns/trauma but for the past 26 years has focused on Vascular Access as a clinical/education specialty. Mark, as Senior Vascular Access Specialist, along with a great team; assist with the education of vascular access by hosting Vascular Access Residency program.

Mark was honored to serve as the 2014-2015 Board President of the Association for Vascular Access (AVA) after serving as Director at Large for 4yrs and past Scientific Meeting Chairperson. Mark has presented local, national, and international presentations related to all aspects of vascular access.

Mark is married and they are the proud adopted parents of the best dogs in the world! (seen is upcoming slide!)

Financial Disclosure

- Mark Rowe
- Past-President, Association for Vascular Access (AVA)
- Employer: University of Arkansas for Medical Sciences (UAMS)
- Independent Consult/Speaker:
 - Interrad Medical, Inc.
 - Ethicon, Inc.
 - Becton Dickinson and Company, Inc.
 - 3M, Inc.
 - *I will not discuss off label use and/or investigational use in my presentation*



AVA  2018

Impact Assessment of Securement Devices on CLABSI

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University of Arkansas for Medical Sciences

Association for Vascular Access

ANNUAL SCIENTIFIC MEETING

September 15-18 • Columbus, OH

Objectives

- Learner will:
 - Understand the difference between subcutaneous engineered securement device (SESD) and adhesive engineered securement device (AESD)
 - Understand retrospective methodology used to accumulate data
 - Understand the risk reduction comparison, as related to securement device selection, as it related to CLABSI

Our Story at University Arkansas Medical Sciences



- 500+ all Private beds
- Only level 1 Trauma center in state
- Only high risk birth center in state
- 7 Institutes on campus

Do We Look Alike?

Patient Visit 2017

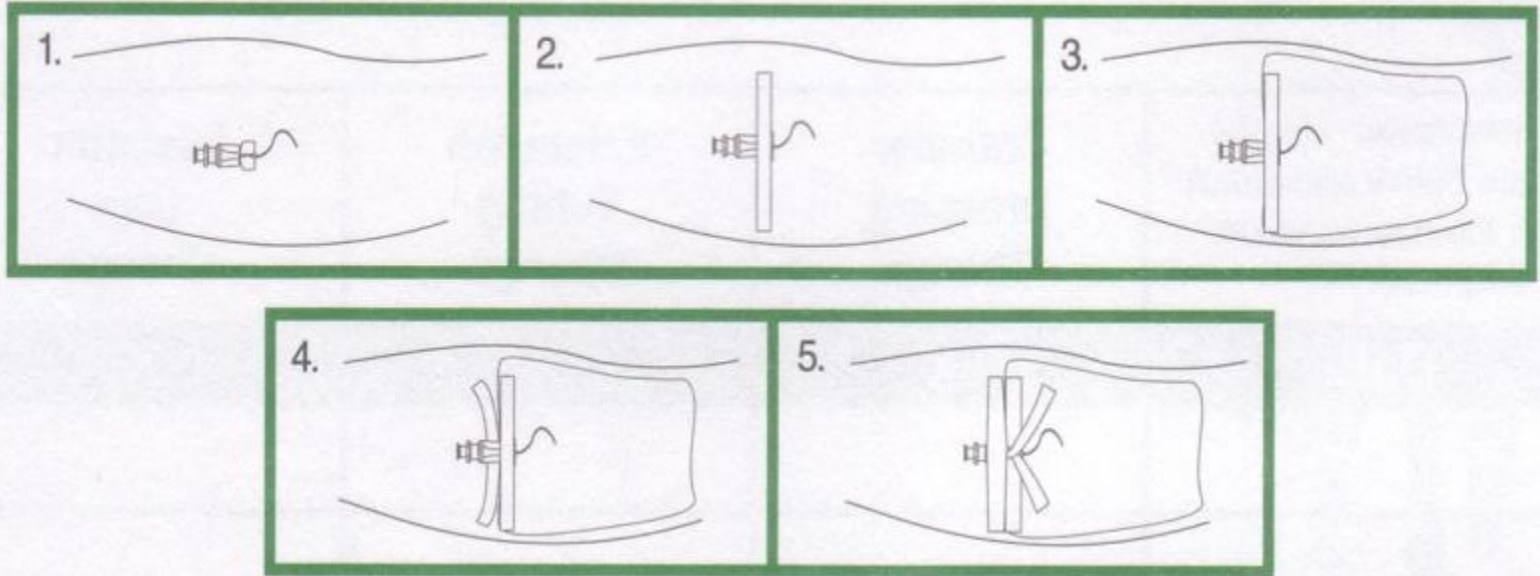
ED Visits	60,861
Surgery Cases	19,262
Outpatient Visits	485,121
Infusion Visits	44,655 (122.3/day)

Vascular Access 2017

Vascular Access Procedures	2,603
PICCs	1,748
Ultrasound PIVs	668
Chest Procedures	187



Anyone Remember This?



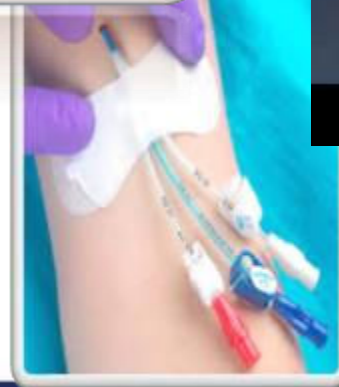
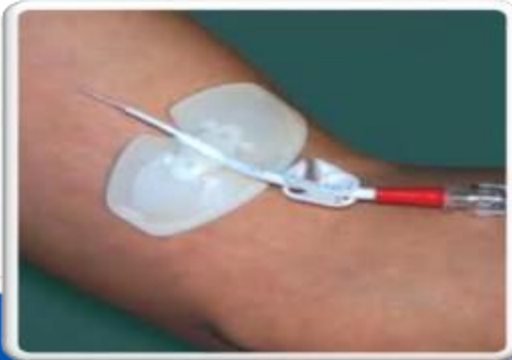
What is your experience with Suture?



Suture

- Multiple punctures to tissue creating infection risk
- Variation in technique as broad as inserter base
- Does not prevent movement long term
- Associated with safety issues, skin tears
- Hinders care and maintenance
- May require replacement, and additional punctures

What is your experience with Adhesive Engineered Securement Devices?



Adhesive Engineered Securement Devices

- Evidence suggests frequent migration & dislodgement up to 20%
- May damage skin, Medical Adhesive Related Skin Injury
- Care and maintenance
 - Vulnerable to movement & catheter loss
 - Must replace with each dressing change
 - Inconsistency of care with patient transitions
 - Are they being replaced?
 - Are they available in community care?
 - Material costs over time are burdensome
 - Are the costs covered for the patient after insertion?



What is your experience with Subcutaneous Engineered Securement Devices?



What is your experience with Subcutaneous Engineered Securement Devices?

- Learning curve
- Change is not easy (Never Is!)
- Perceived claims vs substantiated truths
 - Pain
 - Bleeding
 - Looks barbaric
 - Causes INFECTIONS!?! (BUT DOES IT?)

Our Team & Impact Assessment

- UAMS Vascular Access Team – 4 practitioners 101 years Nursing Experience; 71 years VA Experience combined
- Routinely track CLABSI per NHSN requirements
 - Overall institutional CLABSI is very low 0.61 per 1000 catheter days in 2017
 - Data assessment initially determined that 0 CLABSI were insertion related
 - No other care and maintenance intervention occurred between 2015-2017
- Practice between UAMS VAT and IR groups differ by stabilization device
- UAMS VAT hypothesized that the SESD reduces risk of CLABSI compared to AESD due to:
 - Increased stability,
 - Reduction of migration
 - Reduction of dislodgement requiring replacement
 - Overall ability to disinfect the site 360 degrees



Methods

- Retrospective data analysis of 3 years of hospital PICC data
- Analysis of CLABSI was segmented by:
 - Patient demographics: age, gender, diagnosis
 - Placement Arm
 - Device Type
 - Dwell Time
 - Inserter Type
 - CLABSI Organisms
 - Securement Type

Sources of CLABSI

Contaminated Infusate

Fluid or Medication
Extrinsic Sources

Contamination of Catheter Hub

Extrinsic Sources
Endogenous Flora

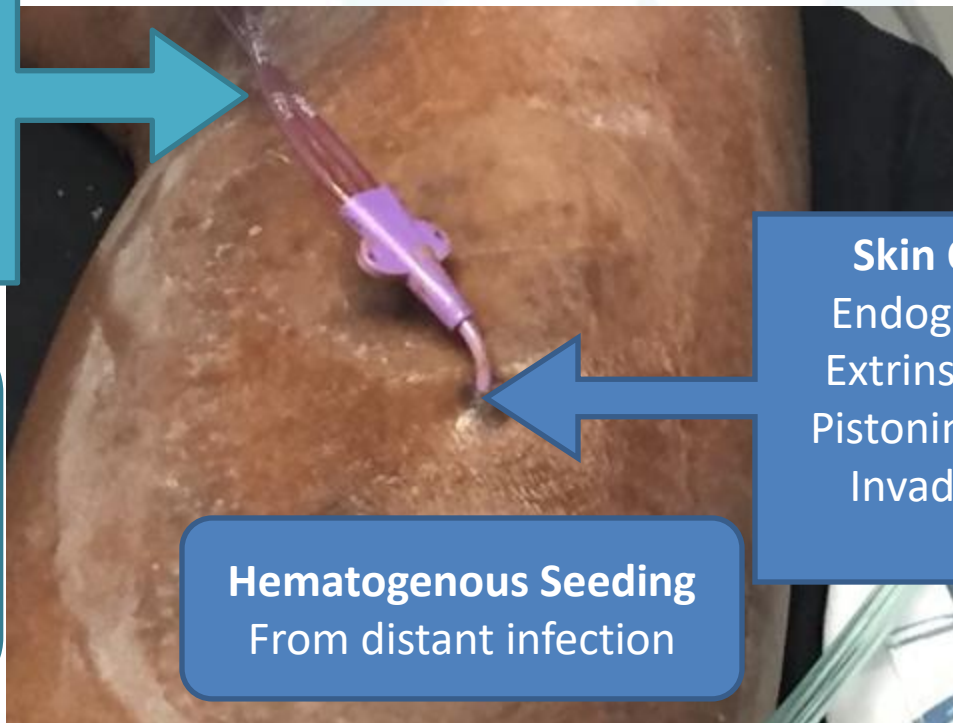
Hematogenous Seeding
From distant infection

Skin Organisms

Endogenous Flora
Extrinsic Sources –
Pistoning/Migration
Invading wound

Contamination of Device Prior to Insertion

Rare post- bundle



Departmental PICC Data

Bedside Vascular Access

Using SESD

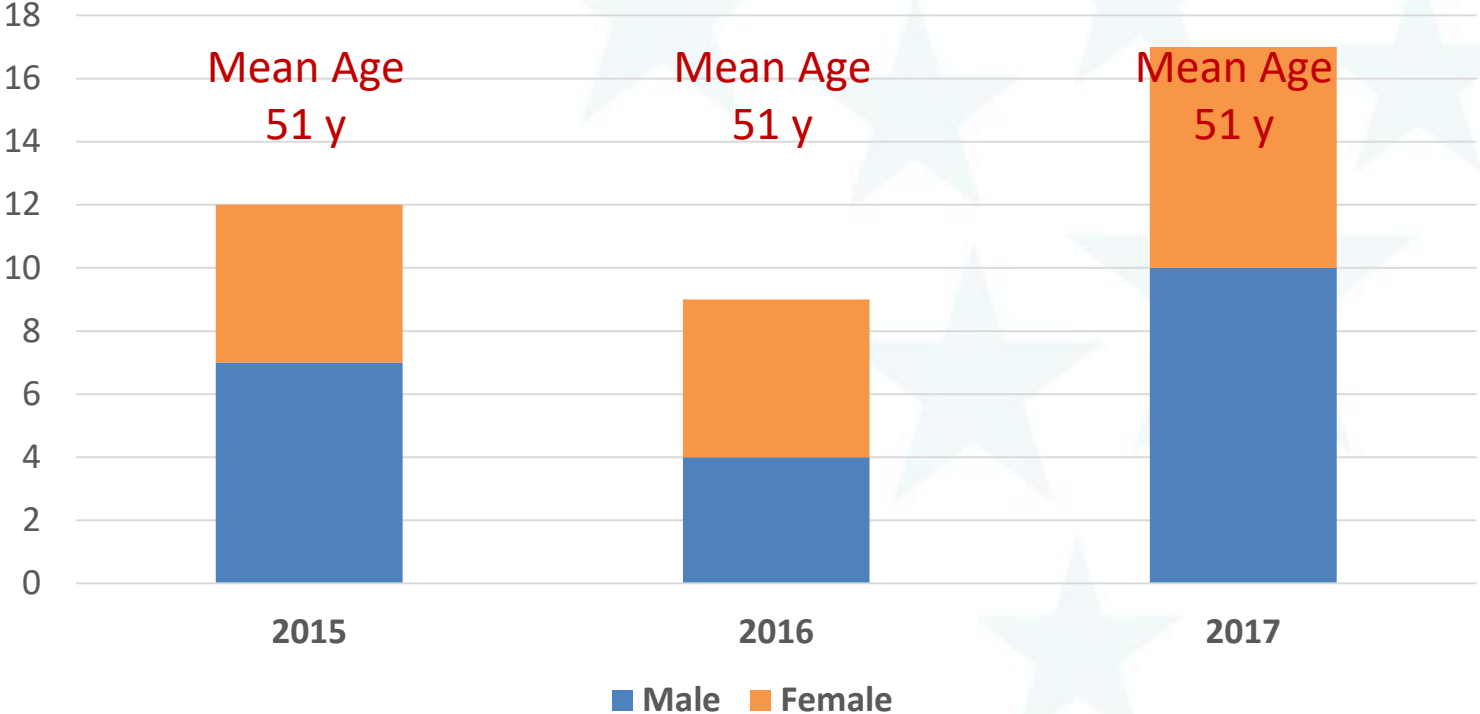
2015	1827
2016	1795
2017	1688
TOTAL	5310

Interventional Group

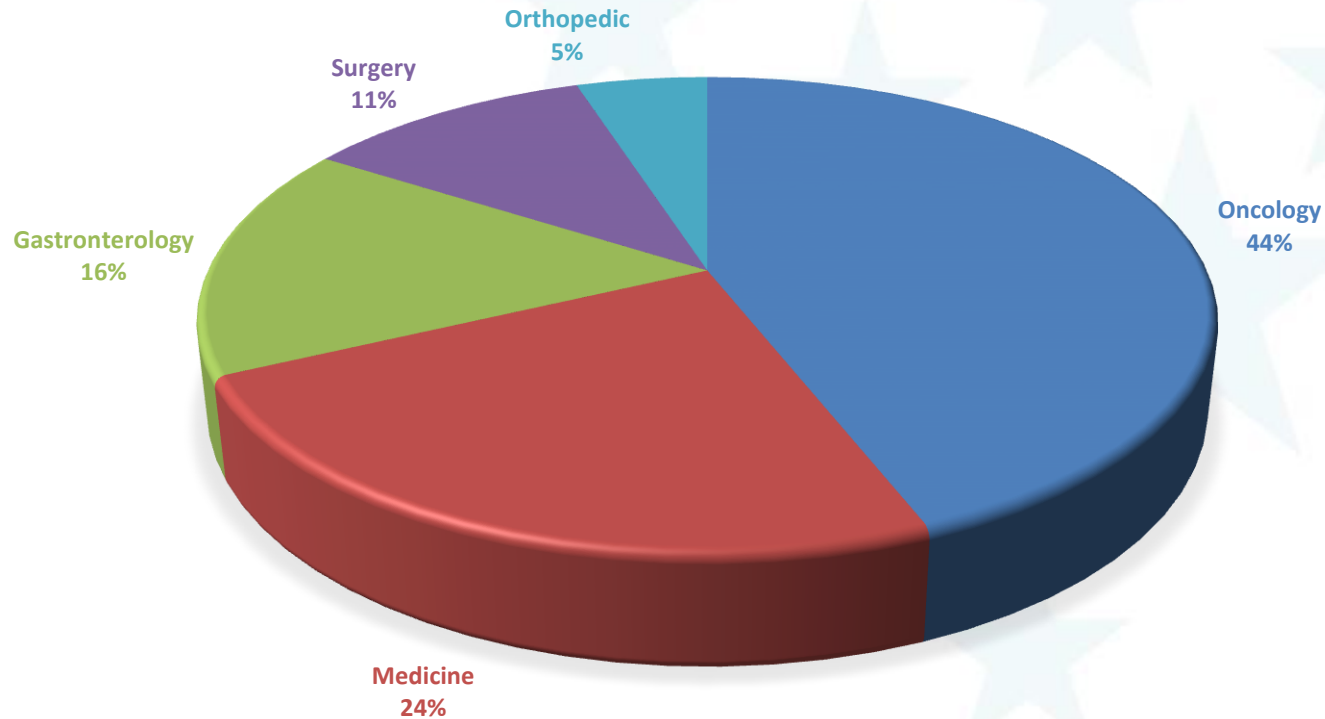
Using AESD

2015	272
2016	215
2017	203
TOTAL	690

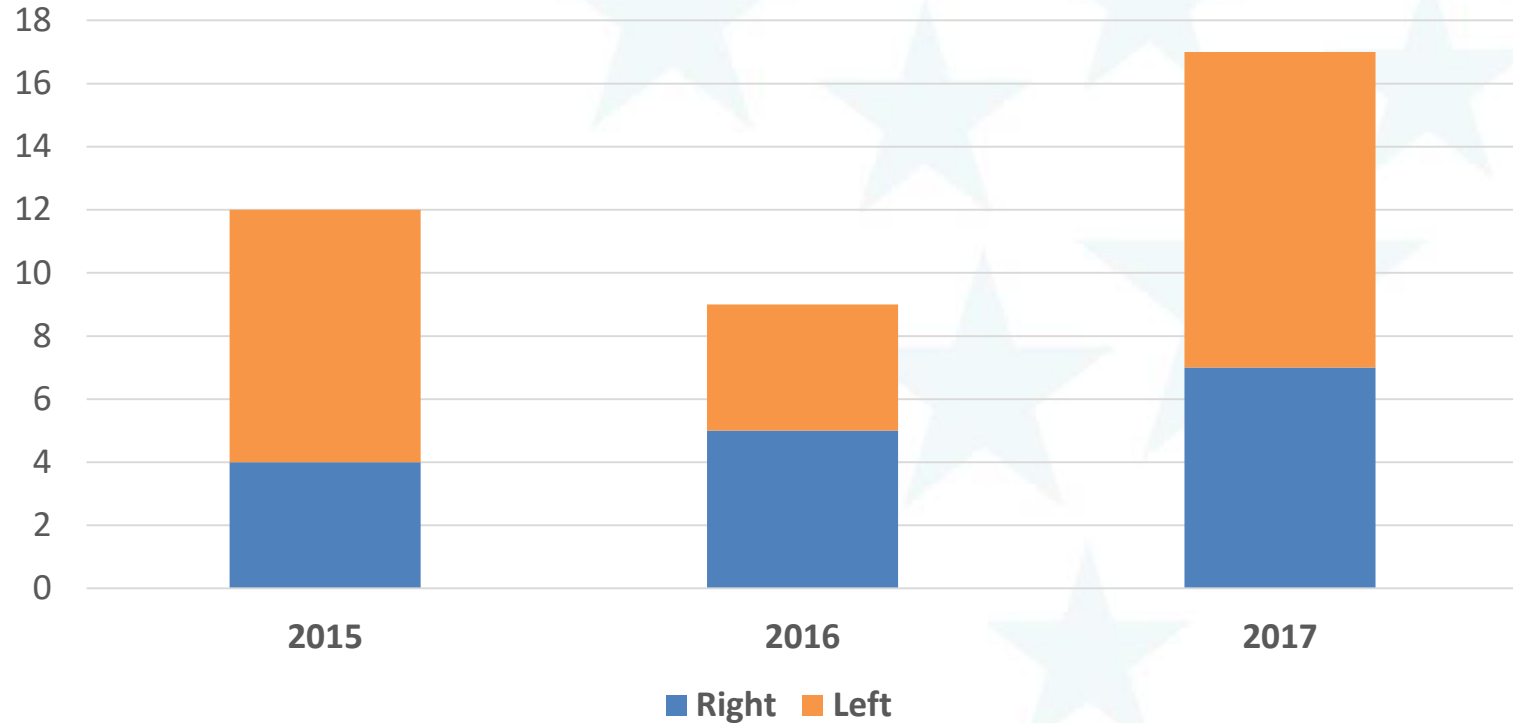
Total CLABSI by Gender



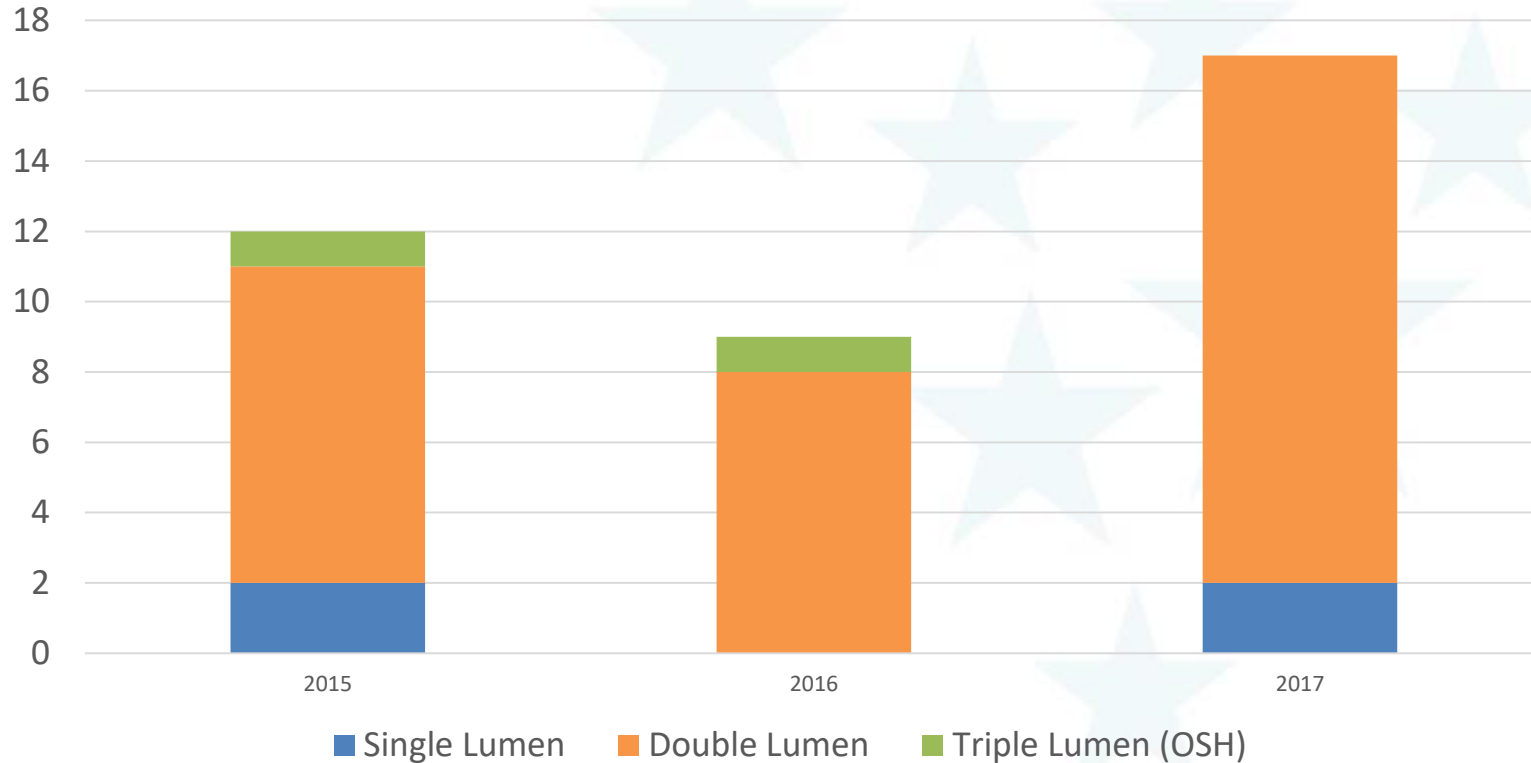
PICC PATIENT DIAGNOSIS DISTRIBUTION



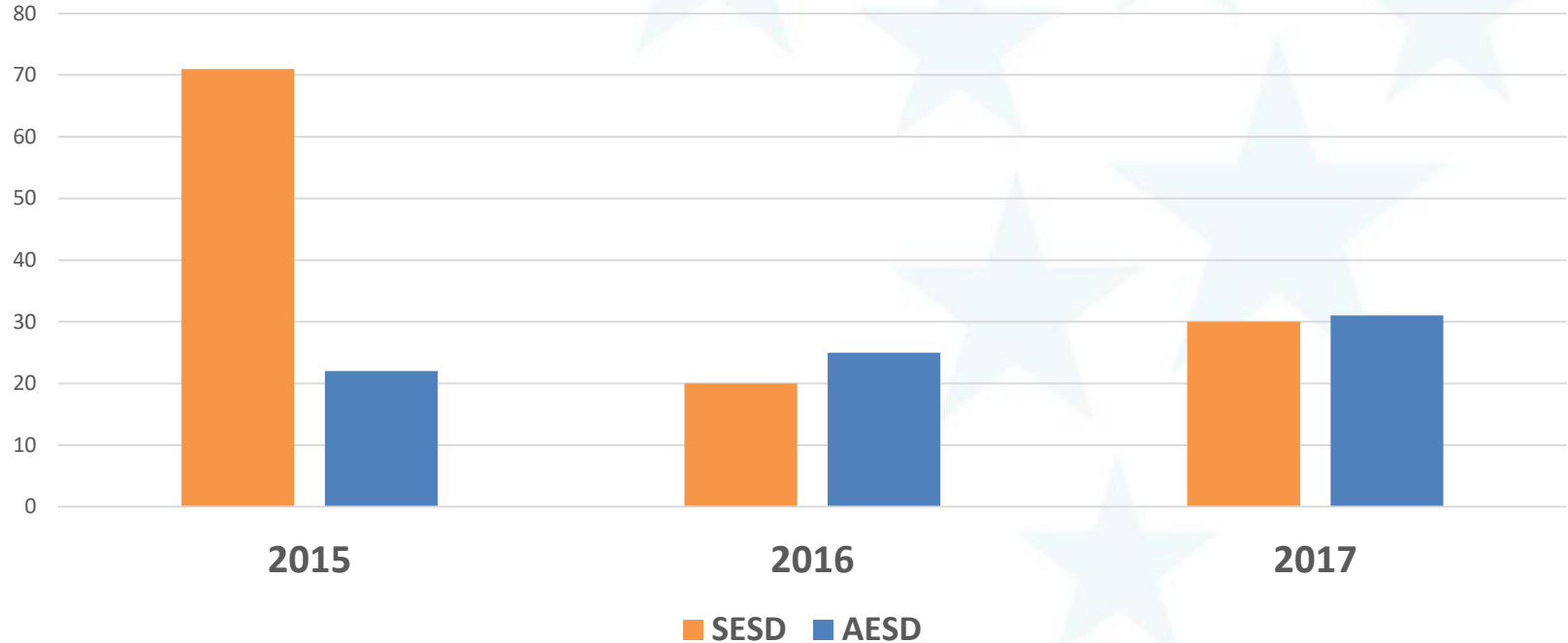
CLABSI by Insertions Side Arm



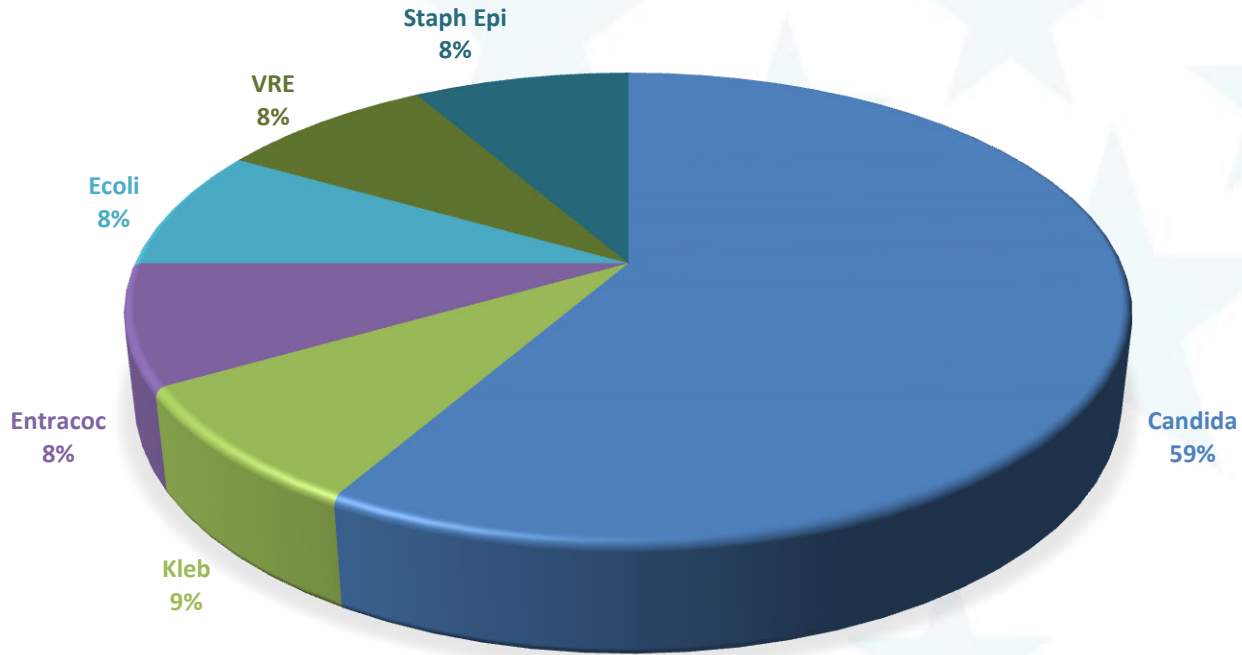
CLABSI Occurance by Lumens



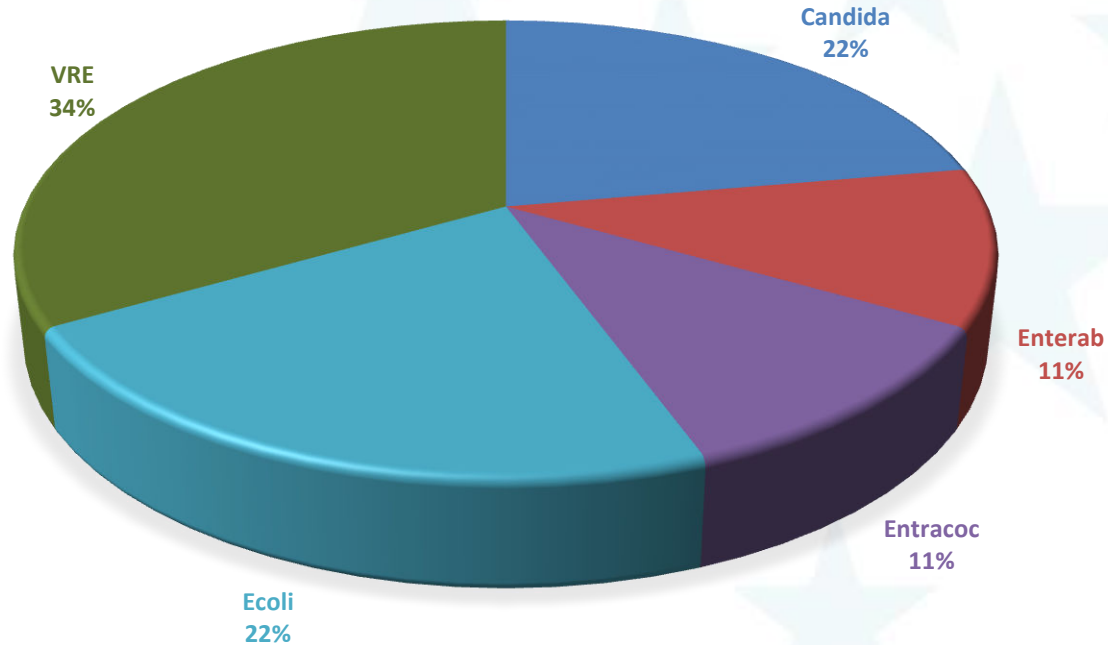
Mean Dwell Days for PICC CLABSI by Securement Type



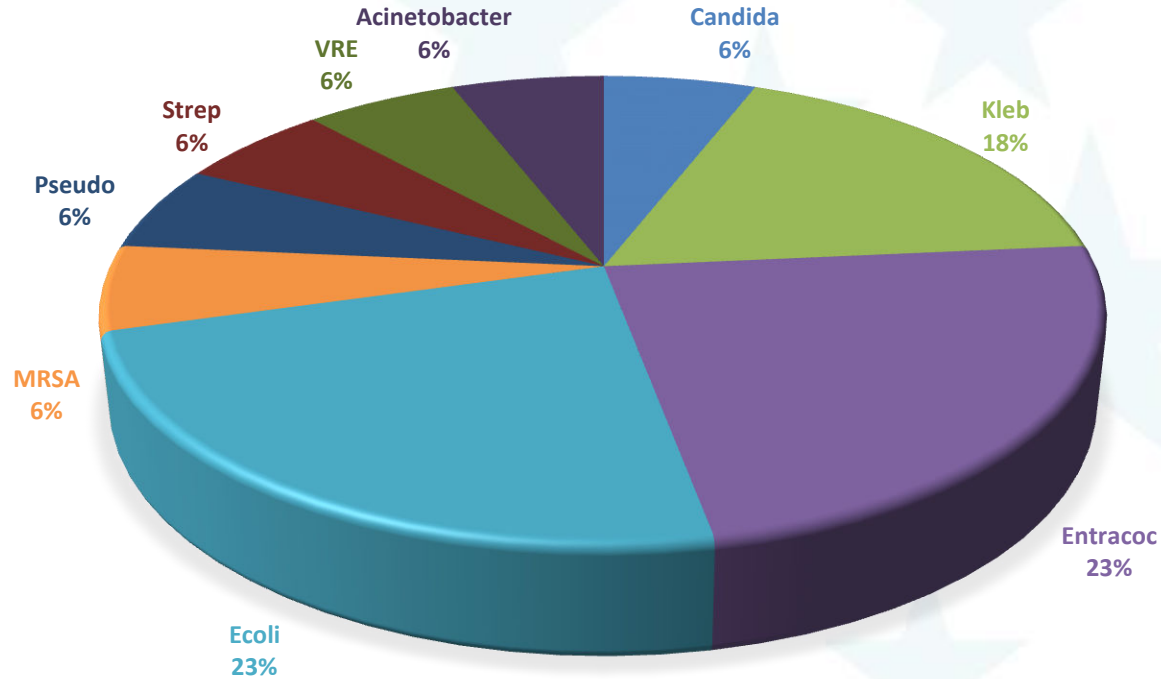
2015 CLABSI ORGANISMS



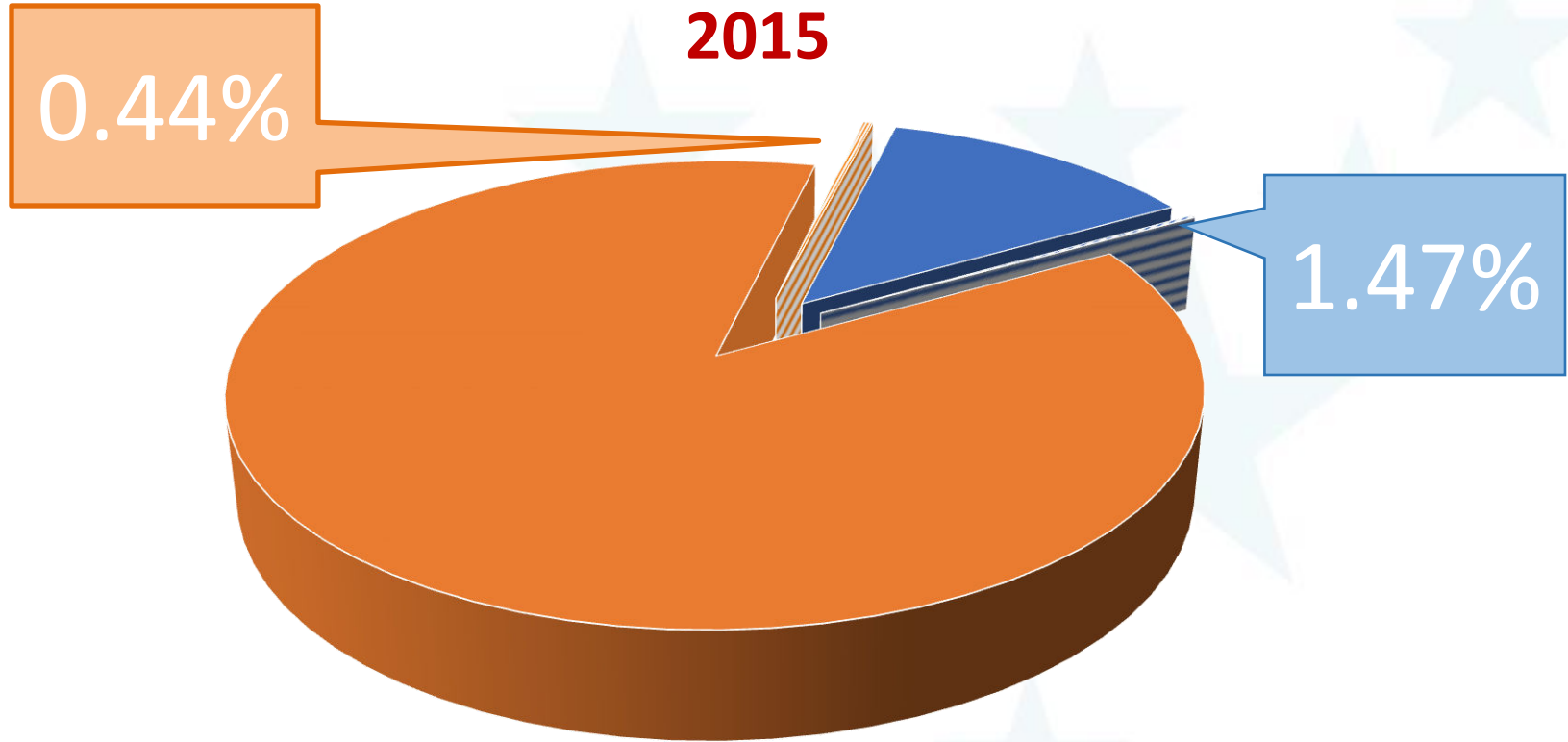
2016 CLABSI ORGANISMS



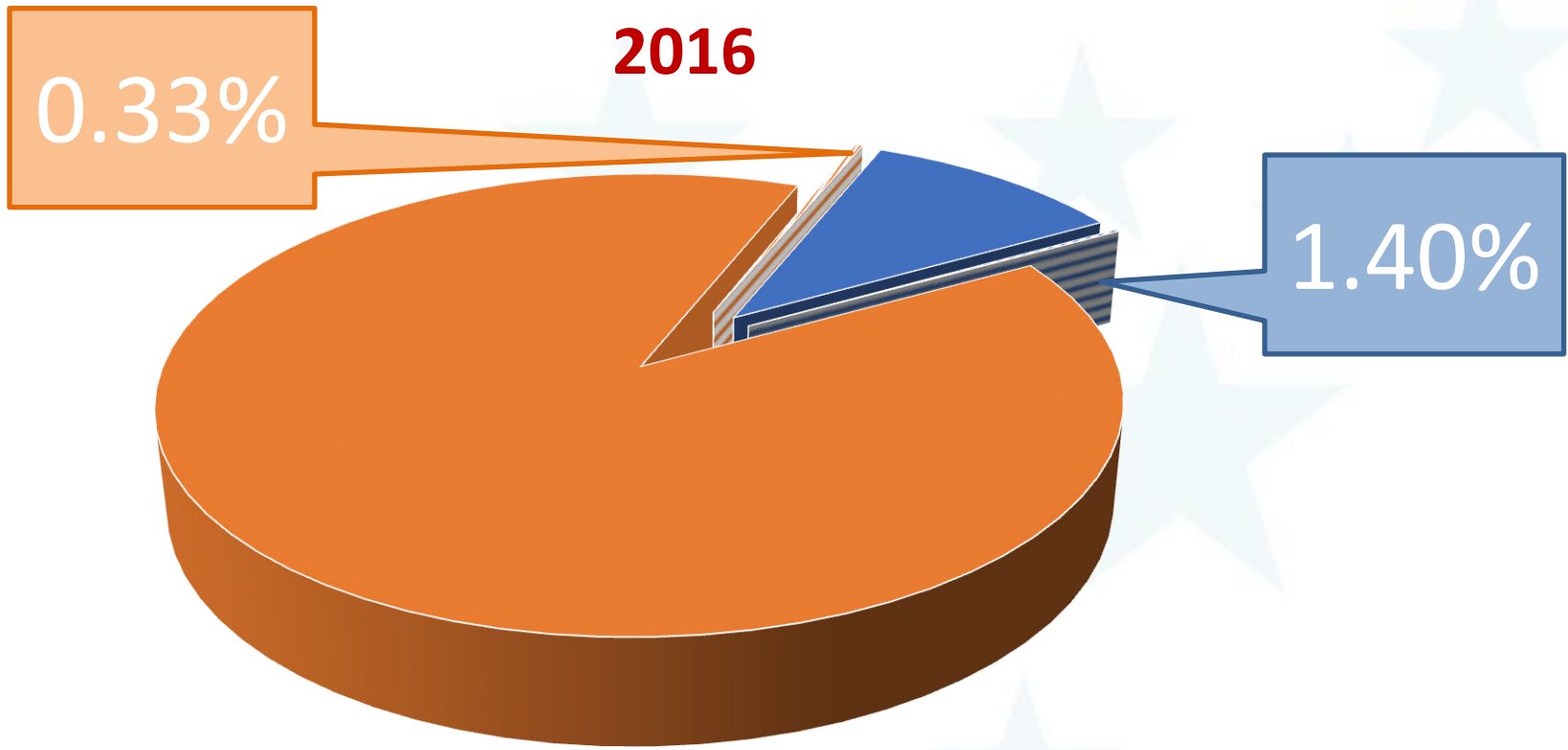
2017 CLABSI ORGANISMS



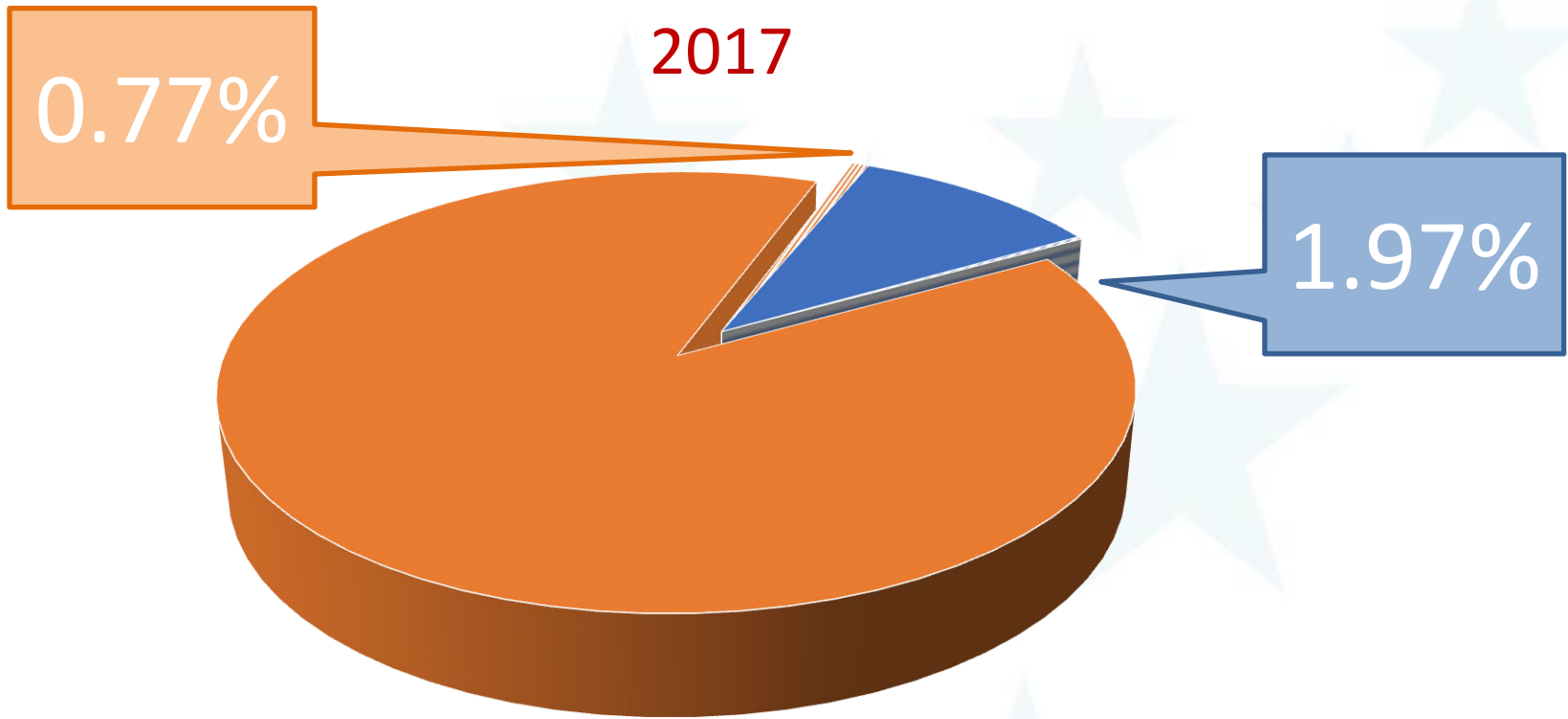
2015



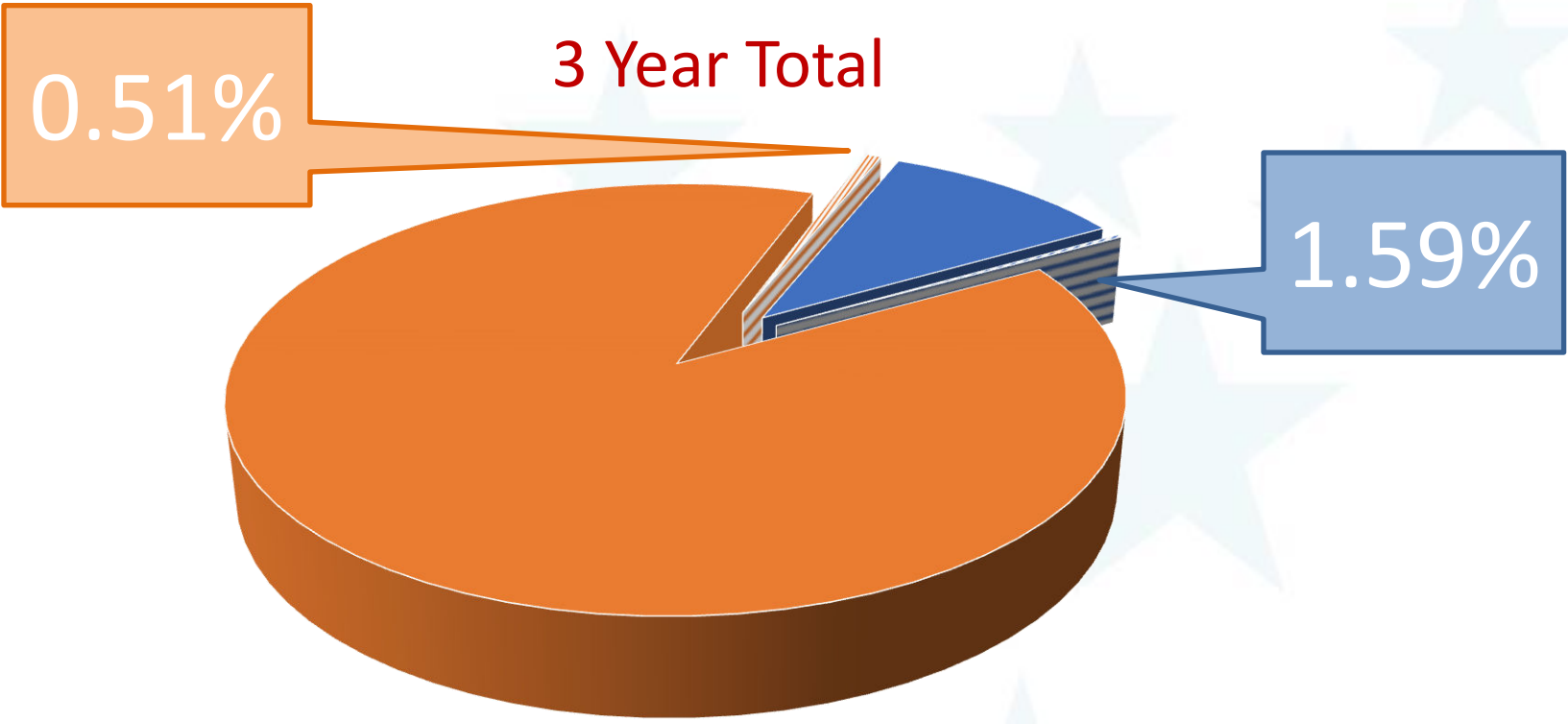
■ SESD ■ Infections with SESD ■ AESD ■ Infections with AESD



■ SESD ▨ Infections with SESD ■ AESD ▨ Infections with AESD

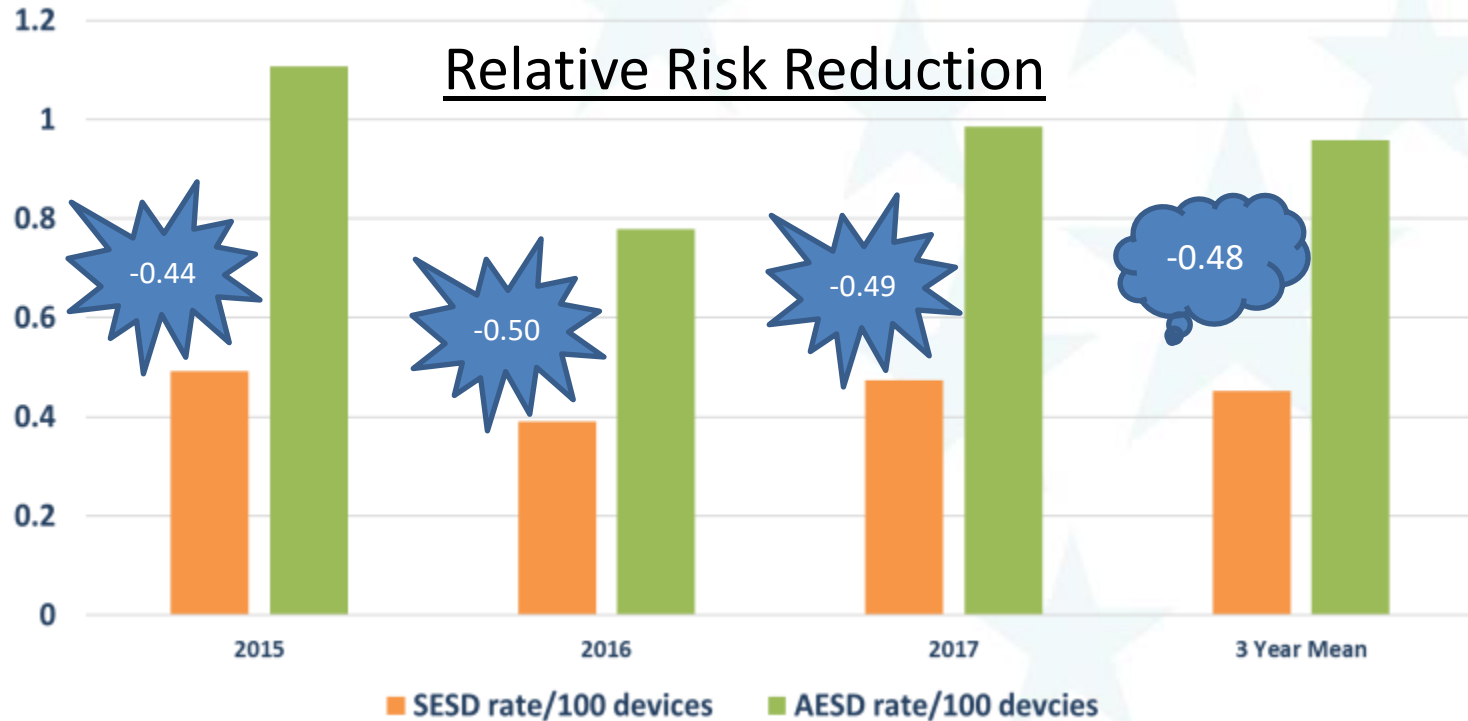


■ SESD ■ Infections with SESD ■ AESD ■ Infections with AESD



■ SESD ■ Infections with SESD ■ AESD ■ Infections with AESD

CLABSI per 100 Securement Devices



In Conclusion

- SESD does not increase chance of CLABSI...all indications (Relative Risk) is that it decreases!
- SESD has become international recognized as a patient centered securement
- Securement device will continue to evolve... but so must we!
- The risk of having a CLABSI with an SESD is consistently about half as much for a Subcutaneous device as it is with an Adhesive securement device.

