Developing and Presenting Scientific Posters

OhioHealth Pharmacy Resident Workshop Series

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Learning Objectives

1. Discriminate appropriate etiquette from common pitfalls for presenting research posters in live and virtual formats
2. Contrast highly effective vs less effective research poster structure and formatting elements
3. Critique research posters for application of effective visual representations

Disclosure Statement

The speakers have no relevant financial disclosures.

Presenting Scientific Posters

DR. PLUNKETT'S TIP SHEET

Purposes of Conference Presentations

Education

Feedback

Networking

Promotion

Presentation Etiquette and Tips

- Dress
- Nametag
- Handouts + business cards
- Early + prepared
- Meet and greet, don’t overwhelm
- Elevator summary
- Response to feedback, follow-up

Developing Scientific Posters

DR. PLUNKETT'S TIP SHEET

Formatting Fundamentals

Font type
- Sans serif vs. Serif

Font size

Colors and contrast

Sections

Graphics Points

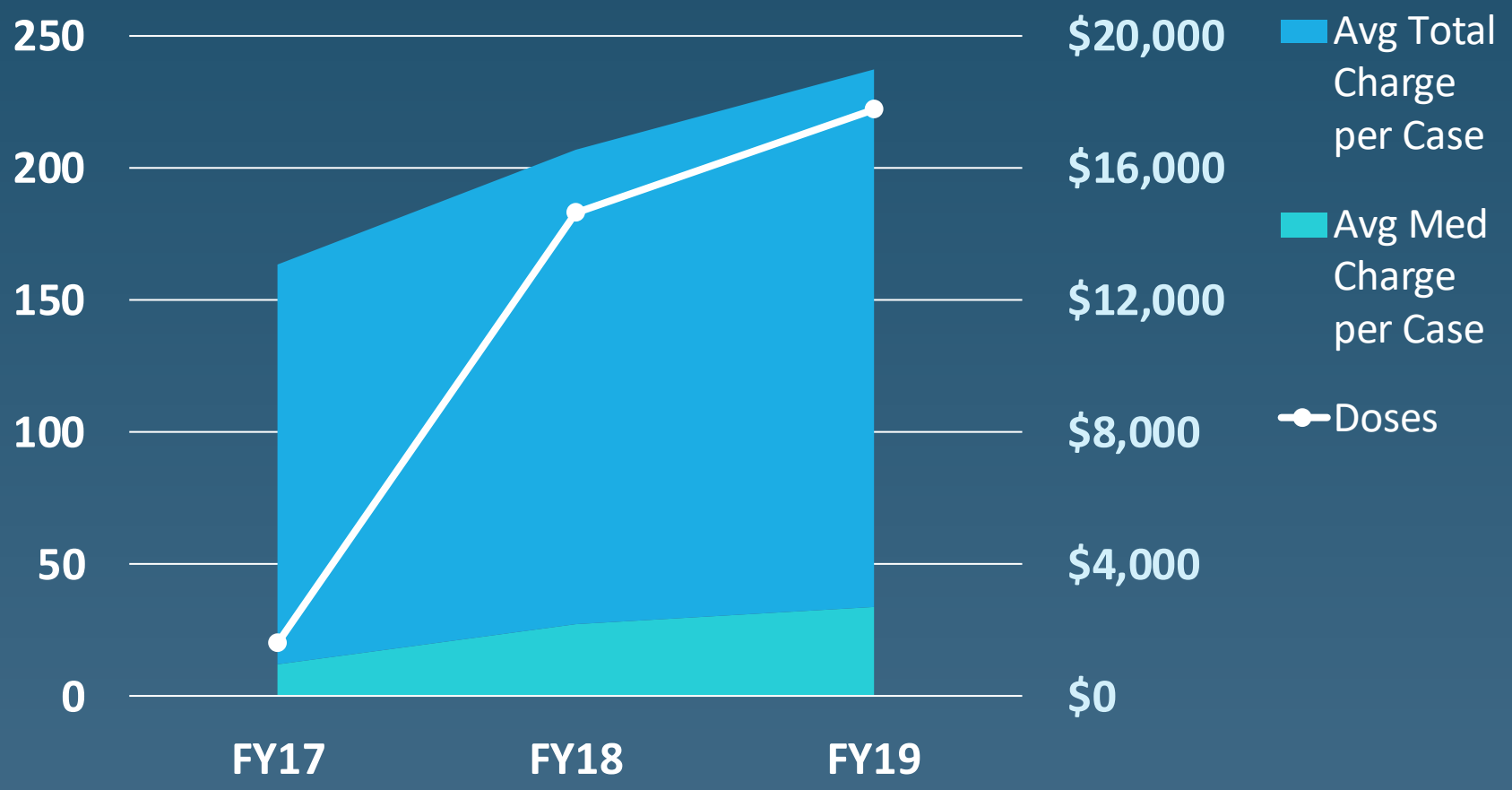
Graphs > Tables > Text

Liposomal bupivacaine use increased substantially over the study timeframe, as did medication costs and total hospitalization costs for the selected procedure.

Graphs > Tables > Text

	FY17	FY18	FY19	*p*-value
Liposomal bupivacaine use (# vials dispensed)	20	183	222	0.01
Medication charges per surgical case (average $)	957.53	2153.87	2684.54	0.04
Total hospitalization charges for admission (average $)	13086.52	16546.47	18975.24	0.03

Graphs > Tables > Text



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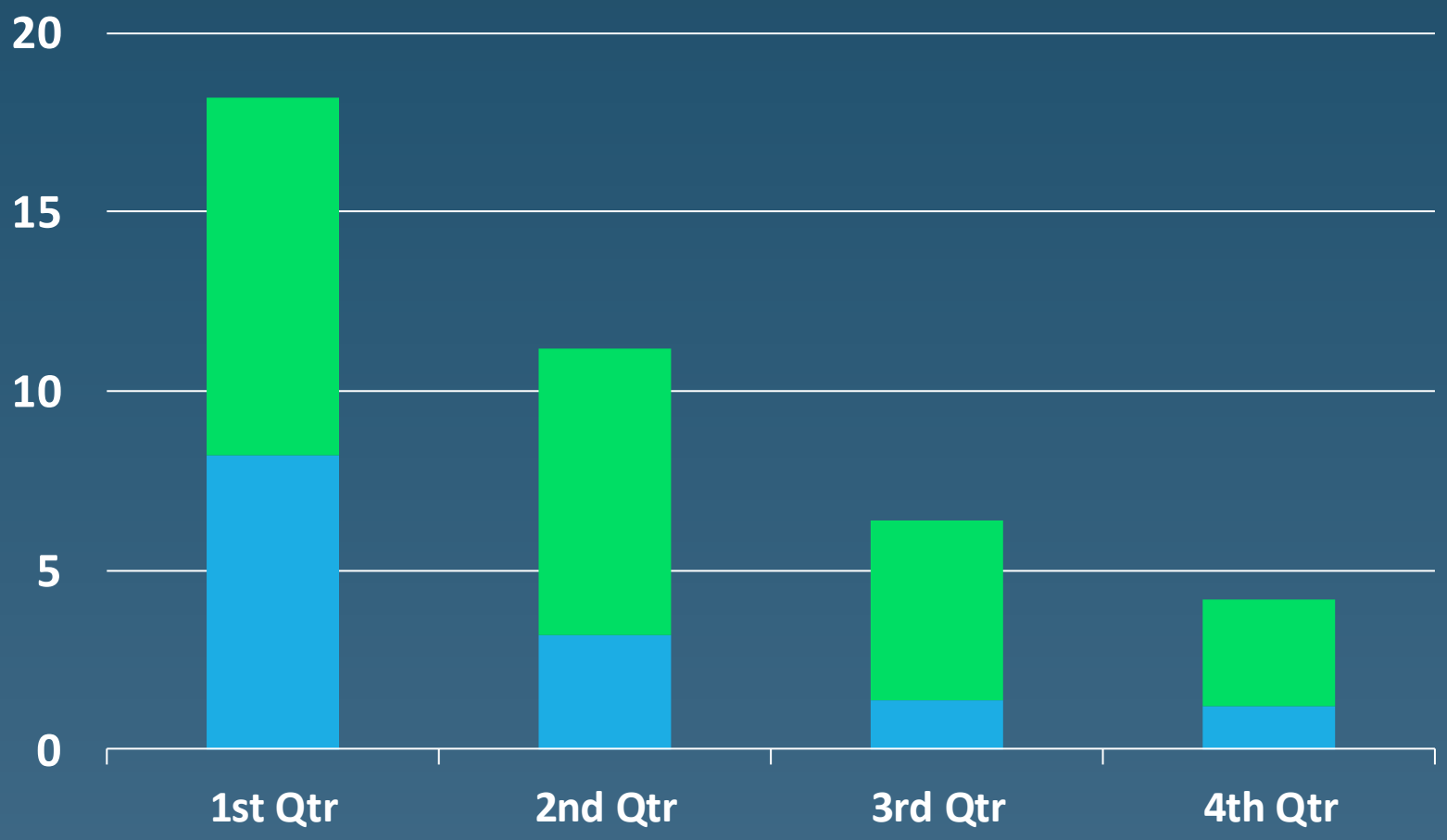

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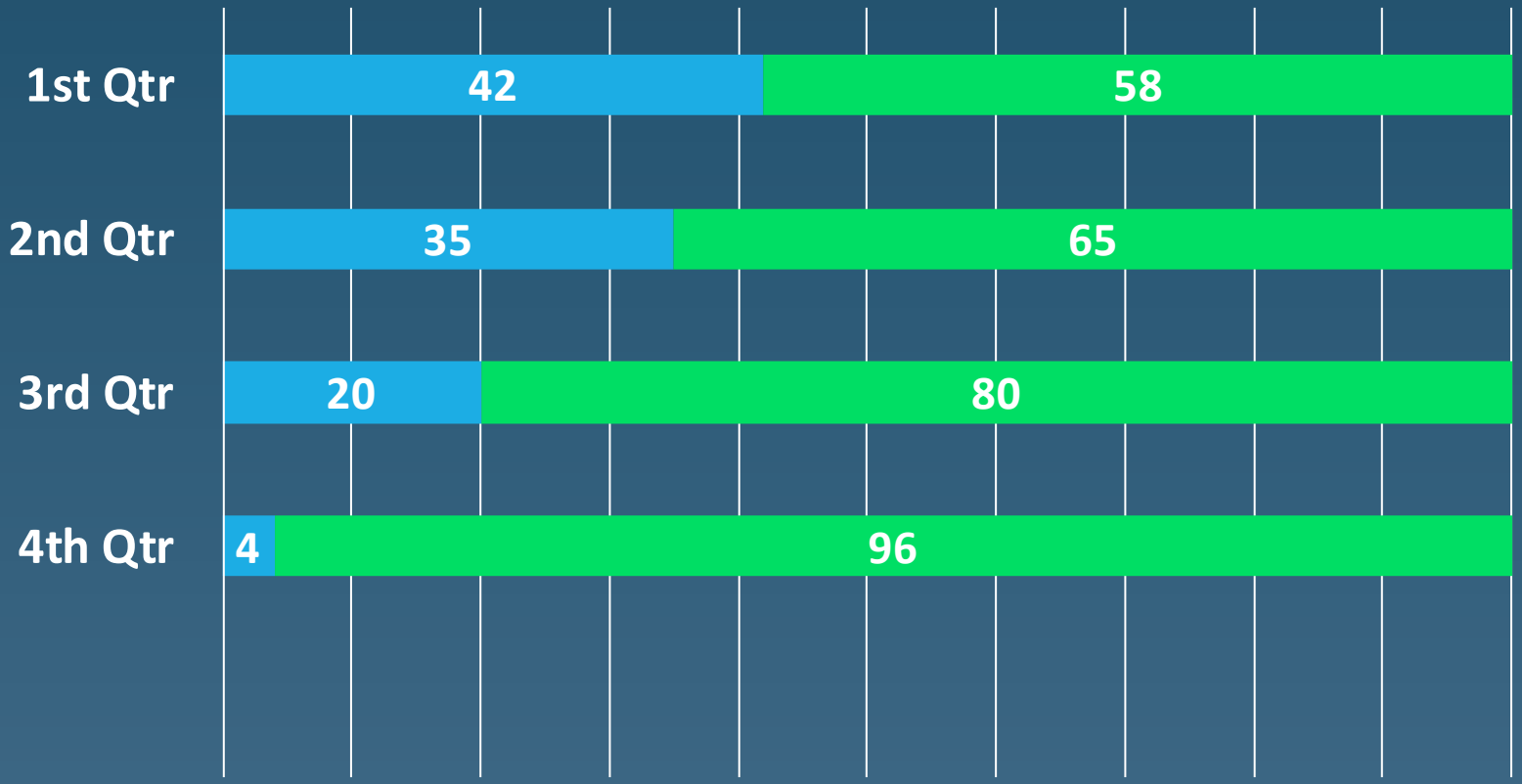

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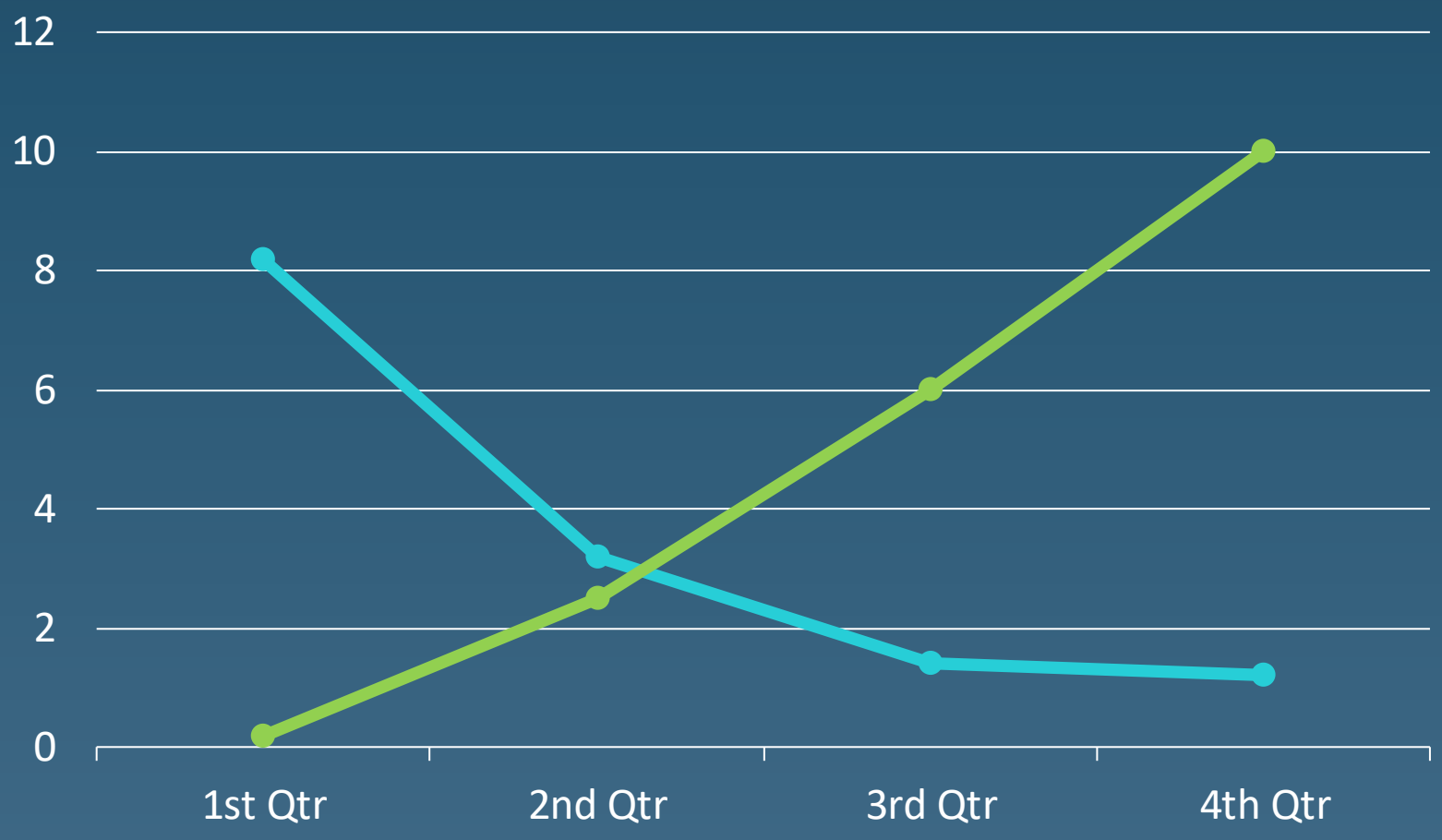

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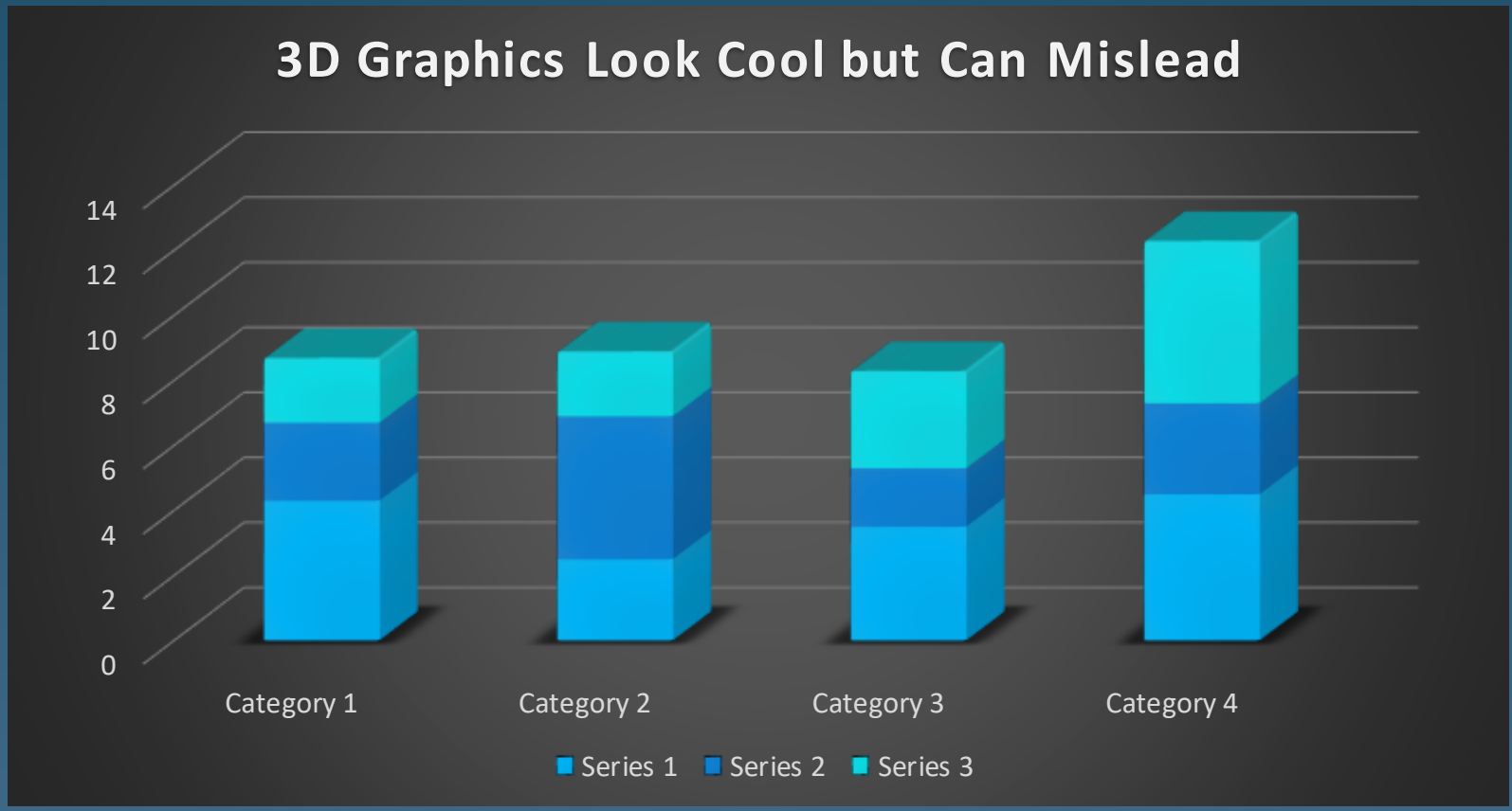
Avoid “Chart Junk”



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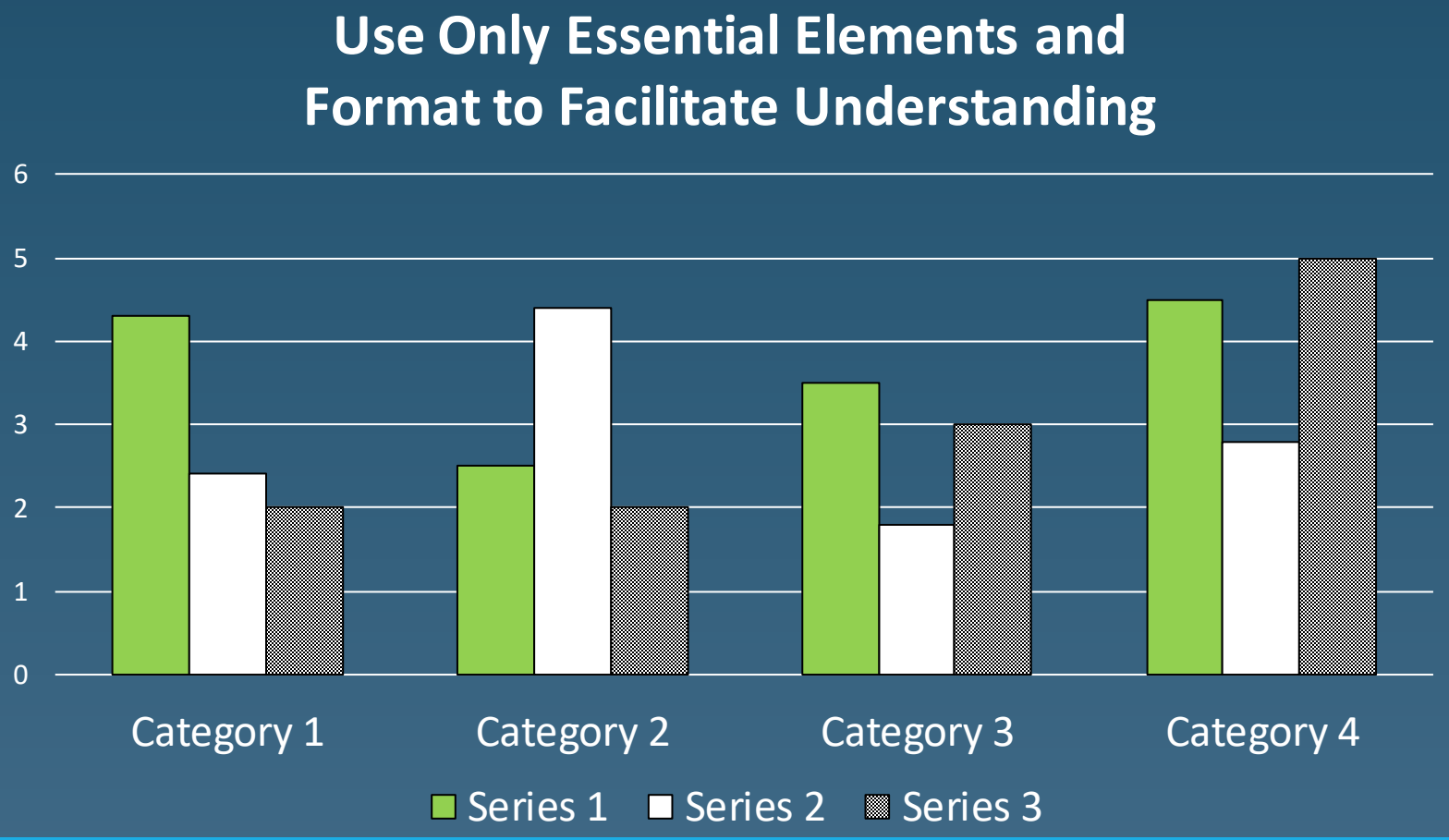

Pick the Best Chart or Graphic

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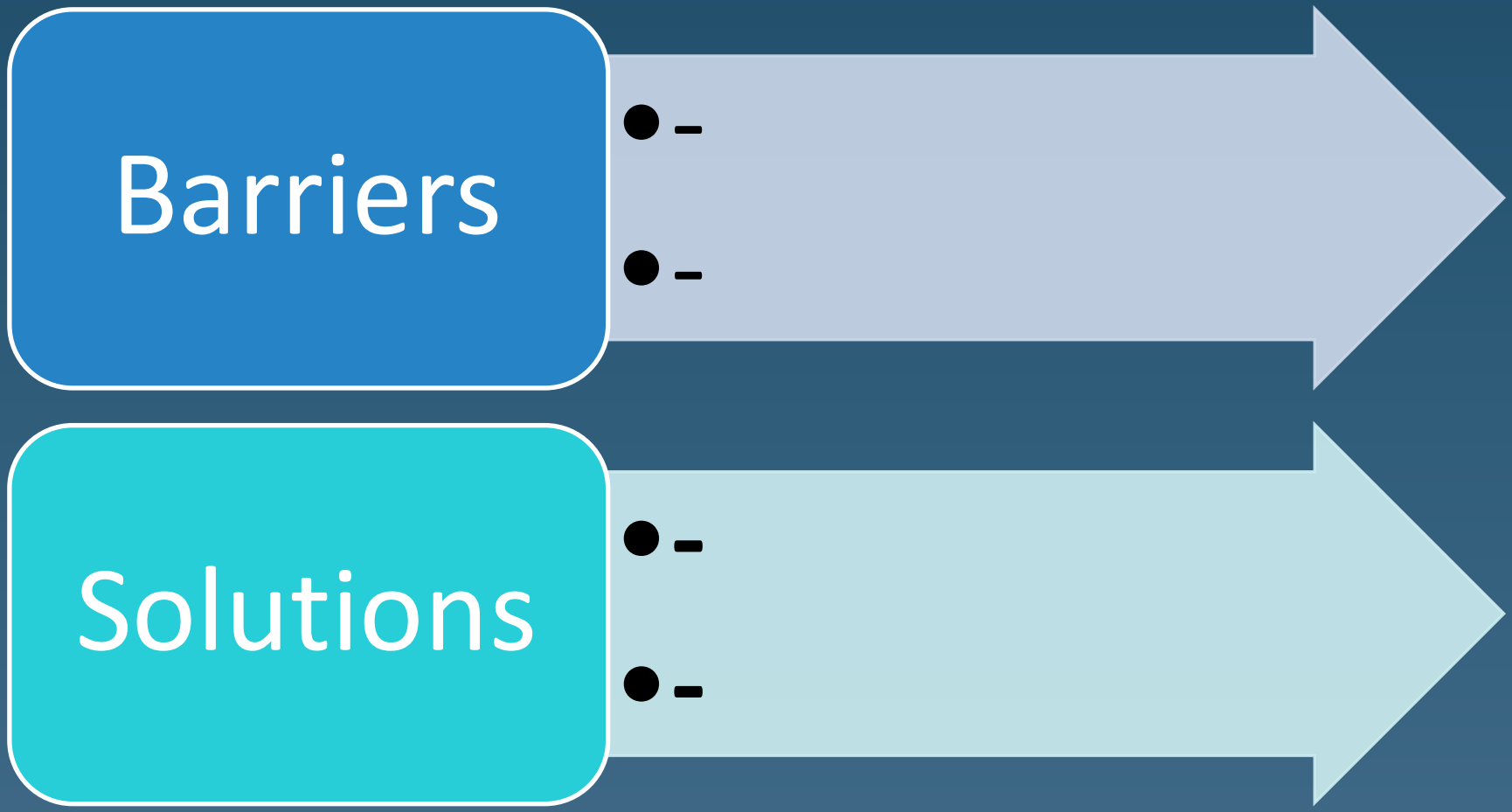

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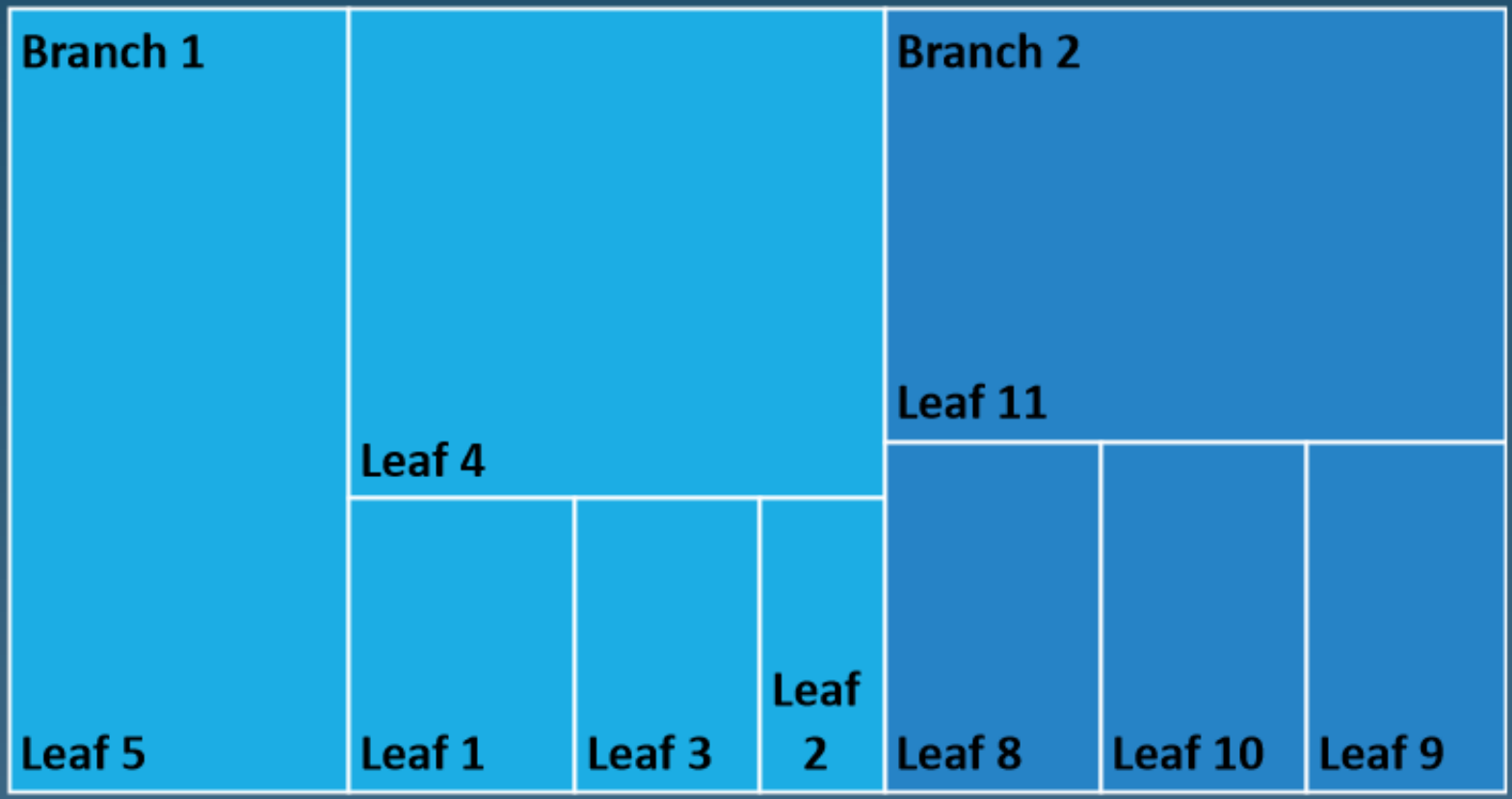


Avoid Misleading Infographics

Appellate Judgeships Confirmed During First Congressional Term. Ronald Reagan, 19; George Bush, 18; Bill Clinton, 18; George W. Bush, 16; Barack Obama, 15; Donald Trump, 24. Illustration by Tracy Ma

Virtual Poster Critiques

GROUP EXERCISE

Characteristics of postgraduate year two (PGY2) ambulatory care pharmacy residency (ACR) programs across the country

Kellie L. Evans, PharmD; Tara E. Schreck, PharmD, BCACP; Kristin A. Casper, PharmD, BCACP; Michelle Pershing, PhD; Jennifer L. Rodis, Ph

BACKGROUND

- Postgraduate pharmacy residency programs have evolved significantly since their inception in 1963.[1] As of 2017, there are 4,592 residency positions.
- Health care is quickly shifting its focus from **volume** based care to **value** based care.[2] Providers are required to meet more quality metrics than ever before in order to get paid for their services. This creates the desire for provider extenders, such as pharmacists, to help decrease cost and improve quality of care for patients in ambulatory care.
- The need for pharmacy practitioners that are able to perform in the ambulatory subspecialty is at its peak.[3]
- While there is a vast amount of literature relating to pharmacy residency programs, there remains a lack of understanding about characteristics of PGY2 Ambulatory Residency (ACR) Programs across the country.
- Without characterizing data from existing PGY2 ACR programs, it becomes challenging for new and emerging programs to understand how to structure their programs for success and learn from other more established sites.

PROJECT OBJECTIVES

1. Develop best practices that could determine the framework for this type of program at OhioHealth
2. Publish the findings as a guide for other institutions to develop or grow ambulatory pharmacy residency programs across the country.

METHODS

DESCRIPTION OF SURVEY

Figure 2. Key components of multiple choice questions

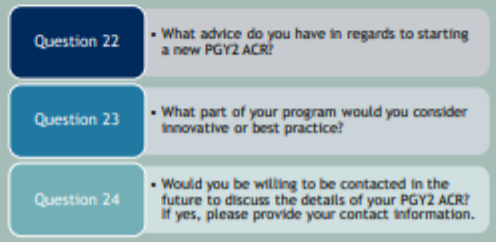


Figure 3. Key components of open-ended questions

RESULTS

Program Demographics

- 64.5% accredited by ASHP (n=34)
- Established as early as 1991 (57%) with 29 programs were established 2012 - 2017
- 53% of programs have 1 residents (n=27) and 31% of programs have 2 residents (n=16)
- 96% of programs have additional programs (n=45)
- 85% offered PGY1 Pharmacy Practice (n=40)
- 40 programs were single site (77%)
- Teaching
  - 85.7% of programs offer a teaching certificate
  - Residents act as APPE preceptors in 89.8% of programs (n=44)
  - All programs offer additional teaching opportunities

Figure 6. Most often required resident rotations or experiences

- Programs were given 36 rotation types and asked if this was most often a required, elective or unavailable experience.
- 44 different experiences were noted by programs as being incorporated in their programs.

Table 1. Resident staffing requirements

Where do your residents staff?	%	n
Community/Outpatient Pharmacy	37.50%	18
Primary Care Clinic	14.58%	7
Specialty Clinic	12.50%	6
Teaching	12.50%	6
Inpatient Pharmacy	10.42%	5
Specialty Pharmacy	8.33%	4
Other, please specify	20.83%	10

INNOVA

Figure 8.

- Rapid growth and
- Wide variety in the
- High degree of pre
- Promotion of enga
- Many programs alr

C

- Increasing need fo
- Each program is ur
  - Same ASHP
- Utilizing the inform continue to grow r the country

FUT

- Follow-up phone c
- OhioHealth Work G PGY2 Ambulatory
- Publication of resu

1. ASHP Celebrates 50 Years of Resid http://www.ashpintersections.org
2. Porter ME, Lee TH. From Volume t
3. Abramowitz PW, Allen S.J. Driving

Negative Predictive Value of Methicillin-Resistant Staphylococcus aureus (MRSA) Nasal Polymerase Chain Reaction in Critical Care Patients with Pneumonia

Jordan DeWitt, PharmD; Angela Harding, PharmD, BCCCP; Erin Meilton, PharmD, BCPS; Tamara McMath, MPH; Christy Collins, PhD

OhioHeal
BELIEVE IN *WE*

Background

- The diagnosis of pneumonia accounts for approximately 25% of Intensive Care Unit (ICU) admissions and 50% of all antibiotics prescribed on these units.[1]
- An estimated 49.5% of patients with the diagnosis of pneumonia will produce positive cultures[2]
- MRSA nasal PCR can be used to narrow antibiotic therapy by discontinuing MRSA targeted antibiotics
- Recent literature for critical care patient has produced conflicting results for intubated patients with pneumonia. NPV have ranged to 84.2-99.2% in this patient population.[3-6]
- OhioHealth pharmacists can order PCR in patients diagnosed with pneumonia and not-intubated

Objectives

- Determine the negative predictive value of the MRSA nasal PCR in patients with pneumonia in the intensive care setting
- Determine the negative predictive value of the MRSA nasal PCR among the subgroup of patients who were mechanically-ventilated, as compared to the non-ventilated critical care patients
- Determine the average number of antibiotic therapy treatment days saved through use of the MRSA nasal PCR

Methods

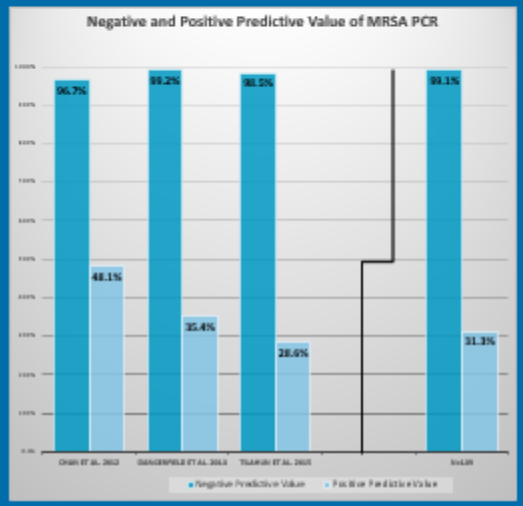
- Retrospective chart review of patients diagnosed with pneumonia who were admitted to critical care units at OhioHealth Riverside Methodist Hospital and OhioHealth Grant Medical Center in Columbus, Ohio between May 1, 2014 and May 31, 2015
- Based on previous data collection at Riverside Methodist Hospital which established NPV in non-intubated, general medicine patients that lead to policy allowing pharmacists to order MRSA PCR when vancomycin is initiated for pneumonia
- Data Points of Interest:
  - Hospital and admitting unit
  - Oxygen delivery method
  - MRSA PCR date and result
  - Confirmatory culture type, collection date, result date, and result
  - Empiric anti-MRSA antibiotic

Results

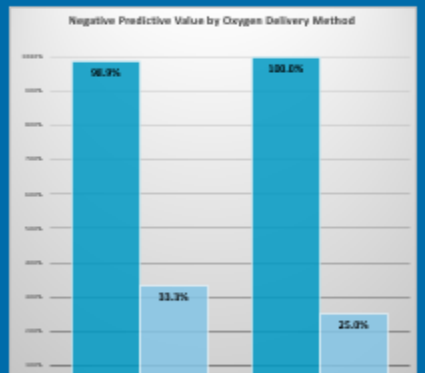
Primary Objective

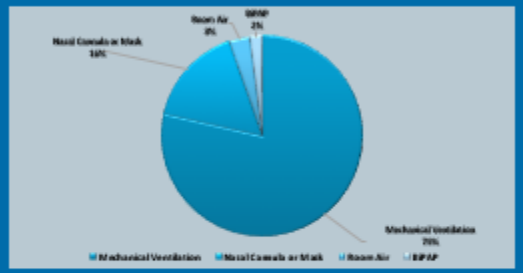
Demographic and Clinical Characteristics	N= 149
Male	74 (49.7%)
Age, mean	62.2
Admitting Site	
Riverside Methodist Hospital	109 (73.2%)
Grant Medical Center	40 (26.8%)
Empiric Antibiotic Therapy	
Vancomycin	148 (99.3%)
Linezolid	1 (0.7%)

Results of MRSA Nasal PCR	Results of BAL or Sputum Culture		
	Positive	Negative	Total
Positive	10	22	32
Negative	1	116	117
Total	11	138	149



Secondary Objectives





Average antibiotic days saved*:

2.2 days

*Defined as the amount of time from negative MRSA PCR result to confirmatory negative culture result

Conclusions

- The MRSA nasal PCR has a high degree of neg predictive value for patients in the ICU with pneumonia
- Negative predictive value is similar between mechanically ventilated and non-ventilated patients
- Average days of anti-MRSA antibiotics to be s utilizing the MRSA nasal PCR is 2.2 days

Limitations

- Retrospective chart review
- No power calculation
- Timing of PCR and antibiotics not collected
- Timing of intubation and PCR result not rec
- No patient and treatment outcomes collecte

Clinical Implications

- Results presented to OhioHealth Antimicrobi Stewardship meeting in March
- Recommendation made to add ventilated pa to criteria for pharmacists to order MRSA PC pneumonia patients. Approved at OhioHealth Committee April meeting

Future Directions

- Evaluation of MRSA PCR and confirmatory cu results with respect to intubation
- Clinical outcomes of MRSA PCR result and antibiotic de-escalation
- Cost-benefit analysis based antimicrobial de escalation

References

1. American Thoracic Society and the Infectious Diseases Society of America. Gu the management of adults with hospital-acquired, ventilator-associated, and associated pneumonia. Am J Respir Crit Care Med. 2005;171:388-416.
2. Labelle AJ, Arnold H, Reichley RM, et al. A comparison of culture-positive and negative health-care-associated pneumonia. Chest. 2002;137(5):1130-1137.
3. Johnson JA, Wright ME, Shepard LA, et al. Nasal methicillin-resistant staphylo aureus polymerase chain reaction: a potential use in guiding antibiotic therap pneumonia. Perm J. 2015; 19(1):34-36.
4. Dangerfield B, Chung A, Webb B, Seville MT. Predictive value of methicillin-re staphylococcus aureus (MRSA) nasal swab PCR assay for MRSA pneumonia. Ant Agents Chemother. 2014; 58(2):859-864.
5. Chan JD, Dahlke M, Chaudhuri JA, et al. Active surveillance cultures of methi resistant staphylococcus aureus as a tool to predict methicillin-resistant s. au ventilator-associated pneumonia. Crit Care Med. 2013; 40(5): 1437-1442.
6. Sanchorawala KV, Micek ST, Doherty JA, et al. Methicillin-resistant staphylococcus nasal colonization is a poor predictor of intensive care unit-acquired methicil staphylococcus aureus infections requiring antibiotic treatment. Crit Care Me

Pharmacist management of positive culture resul after discharge

Monica E. Coupe, PharmD | Paul Miller, PharmD, BCPS
OhioHealth Grant Medical Center | Columbus, Ohio

7 Freestanding Emergency Departments (FSEDs)

BACKGROUND

Antibiotic resistance is one of the world's most pressing public health challenges → >35,000 annual deaths in the United States

One of the main contributing factors to antimicrobial resistance is **antibiotic misuse** and **inappropriate overuse**

Patients who present with an infectious etiology, but do not require hospital admission frequently receive culture results **after discharge**

Various healthcare personnel can review these cultures and prescribe or recommend antimicrobial therapy:

Physician | Nurse | Pharmacist

PRIMARY AIM

Compare **appropriate management** of discharge culture results between:

1. **Pharmacist** management
2. **Pharmacist & physician** management
3. **Nurse & physician** management

METHODS

Implement a consult agreement

Implement an antibiotic treatment algorithm created with physician and pharmacist collaboration

	Number of FSEDs	Process
Pre-implementation	2	Positive microbial culture results that finalize after discharge are alerted to healthcare team via in-basket notification sent in the EMR
	5	
Post-implementation	5	

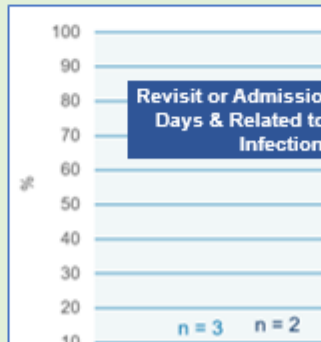
INCLUSION

Patients with an in-basket notification sent in the EMR when a culture finalizes after discharge from a FSED for ≥1 of the following conditions, outlined in the consult agreement:

- Strep throat (streptococcal pharyngitis)
- Skin and soft tissue infection
- Infectious diarrhea (*Clostridioides difficile*)
- Sexually transmi (chlamydia, trichom
- Urinary tract infec pyelonephritis, a bacteriu

Cost-Benefit Analysis

Annualized Costs of Study Intervention	Current State	Level 1 Billing *Recommendation*	Level 1 & 3 Billing *Future Recommendation*
Intervention Cost - *Pharmacist Time ($57/hour)*	$11,741	$11,741	$11,741
Intervention Benefit - *Reimbursement of Service*	$0	$36,901	$51,449
Net Monetary Benefit	($11,741)	$25,160	$39,708
Benefit-Cost Ratio	0	3.14	4.38



Analysis of the implementation of a selective tranexamic acid administration protocol in a level one trauma center

Erin Gordon, PharmD | Daniel James, PharmD | Daniel Dybdahl, PharmD | Chance Spalding, DO, PhD | Michelle Kincaid, MD, MS

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Our Question

Does selective tranexamic acid (TXA) administration based on thromboelastography (TEG) offer a mortality benefit over empiric TXA in hemorrhaging trauma patients?

Methods

- We are completing a retrospective chart review of ~400 patients seen at Grant Medical Center.
  - "Empiric" period: TXA was given to all trauma patients at risk of hemorrhage.
  - "Washout" period: Our protocol was evolving and practice was highly variable. These patients were excluded.
  - "Selective" period: TXA administration was based on LY30 values.
- By comparing these groups we hope to further our understanding of which patients benefit from TXA.
- We hope to understand any potential delays in therapy that might occur as a result of selective administration.

Inclusion Criteria

- Age ≥ 18
- Required a trauma activation
- Received ≥ 1 unit of packed red blood cells prehospital or in the trauma bay

Empiric TXA Sept. 2016 – Sept. 2017

Washout Protocol change

Background

TRAUMA #1 Cause of Death in US (Age 1 to 46)

60,000 Deaths from **HEMORRHAGE** alone

64-90% Of death from hemorrhage could be **PREVENTED**

TXA Mechanism

Fibrin strands crosslink platelets to form clots and cause natural hemostasis. TXA prevents clot breakdown by preventing plasmin from degrading fibrin.

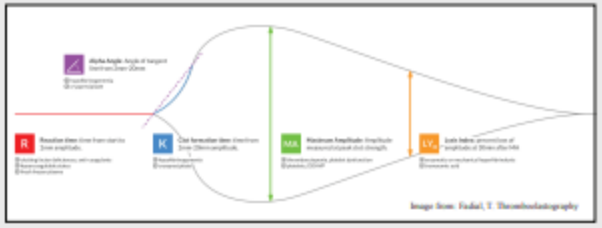
Image adapted from: Nadeau et al. JBJS Rev. 2015 Jun 2;3(6).

Crash-2 Trial[2,3]

- Randomized, placebo-controlled, multinational trial that enrolled over 20,000 patients
- Sub-group analysis found that earlier administration of TXA

Thromboelastography

TEG Tracing and Associated Blood Products



Many trauma centers use TEG to guide resuscitation of bleeding patients. By gaining a real-time understanding of the specific coagulopathy a patient is experiencing, blood product therapy can be individualized which results in more rapid resolution of coagulopathy and decreases overall blood product utilization. The Ly30 value, which represents the percentage of fibrinolysis 30 minutes after maximum clot formation, can theoretically identify the patients who will benefit from TXA and identify patients who are hypercoagulable and may be at increased risk of harm from TXA.

Fibrinolytic Phenotypes in Trauma Patients

Mortality Rate in Fibrinolytic Phenotypes

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2. Shakur H, I Roberts,

Antimicrobial stewardship program associated with **optimized a**
decreased total antibiotic exposure, and **cost savings** in tot

Antimicrobial stewardship in major orthopedic surgery: final program results

Sara J. Hyland, PharmD, BCPS; Rodney Kusumi, MD; Lauren Lopez, PharmD, BCPS, BCIDP; Brian Kramer, PharmD, BCCCP; Robert Fada, MD; Michelle Lucki, RN, MSN; Killian Rodgers, PharmD Candidate 2021; Abigail Benecke, MS

Grant Medical Center (OhioHealth) | Columbus, OH

Introduction

Antimicrobial Stewardship: known to many, newer to orthopedics

- High stakes in total joint arthroplasty (TJA)

Where is the right balance?

Surgical site infections (SSIs) → further antibiotic exposure, morbidity, direct and indirect costs[1-3]

Antimicrobial resistance, toxicities, *C. difficile*, morbidity, direct and indirect costs[4-7]

Recent reviews underscore challenges in defining best practice antibiotic use in TJA surgery[6,7]

- Limited high-quality data for many antibiotic modalities
- Variation in drug selection, dosing strategy, route of administration, timing, duration, phase of care

→ **Unmet need for orthopedic surgery antimicrobial stewardship program (Ortho ASP) development, implementation, and assessment**

Hypothesis

A collaborative, comprehensive Ortho ASP can optimize antibiotic use in TJA

Indicators of optimal antibiotic use:

- Narrower, more targeted spectrum
- Reduced number of exposures
- Improved or no effect on SSI rates
- Improved or no effect on postop AKI
- Reduced direct and/or indirect costs

Methods

Design: single-center, prospective, pre-post interventional study

Population: all TJA patients at a large surgery center in an urban, community teaching hospital

Intervention: Ortho ASP implementation

ASP Work Team – Reviewed literature and generated recommendations

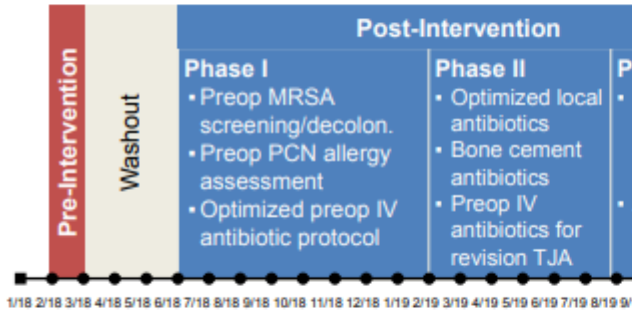
Ortho Quality Committee – Discussed and approved proposed changes

Change Team – Operationalized and implemented approved process changes

Ortho ASP Lead – Maintained SSI case series and monitoring dashboard

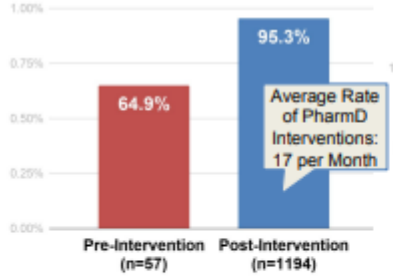
→ **12 total recommendations issued**
→ **11 accepted changes**
→ **3 grouped implementations**

Timeline



Results – Antibiotic Selection

Primary Outcome: Rate of optimal preop IV antibiotic selection for primary TJA (Fisher's exact test, $p<0.001$)



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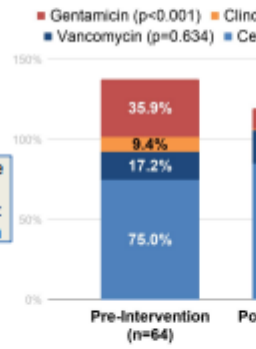
selection (IV+irrigatio



References and Disclosures

1) J Arthroplasty. 2012;27(8 Suppl):61-65 e61; 2) JAMA Surg. 2014;149(6):575-581; 3) J Arthroplasty. 2018 Feb;33(2):521-526; 4) Arthroplast Today. 2018 Sep; 4(3): 335–339; 5) Geriatr Orthop Surg Rehabil. 2012 Dec; 3(4): 157–163; 6) J Am Acad Orthop Surg 2014;22:772-781; 7) J Am Acad Orthop Surg 2020;28:e793-e802.

This project was approved by the OhioHealth Institutional Review Board (IRB).
This project was not supported by any form of funding.

In-Person Poster Critique

YOU BE THE JUDGE – APPLY THE RUBRIC YOU BROUGHT

Printing Posters at OhioHealth Storefront

eSource - Workplace Tools - Print Shop/Digital Storefront Ordering

http://ohiohealth.myprintdesk.net/DSF/storefront.aspx

Must log in (requires creating account) to see “Custom Print Request” - “Poster Request”

Need to know cost center/business unit info (I.e. #####-AAAAA)

References and Recommended Readings

ASHP Poster Abstract Resources

https://midyear.ashp.org/-/media/midyear-conference/docs/2019/MCM19ResidentFellowsPosterSubmissionInstructions.ashx?la=en&hash=1647EE52EC7D9544CCE0B4289AFCB5146295D0F1

https://midyear.ashp.org/Posters/Residents-and-Fellows

AJHP New Practitioners Forum piece re: poster presentations

Explore: Poster Examples and Resources-

http://colinpurrington.com/tips/poster-design **including** links at bottom of first page, especially "Do's and Don'ts"

https://projects.ncsu.edu/project/posters/ - especially the examples with critique

Fixing academic posters: the #BetterPoster approach | astrobites – Better Poster concept

https://phdposters.com/howto.php#design_tips – especially the gallery link

Dr. Plunkett's Tips Sheet (provided)
http://www.csun.edu/plunk/documents/poster_presentation.pdf

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   - ***First time only***: Text your email address to 614-412-1138 to pair your mobile number.
2. Download and use the CloudCME® mobile app. Organization code: **OhioHealth**. Click the "Claim Credit" button, enter activity **17958** and follow the prompts.
3. Log into CloudCME® using either mobile web or a computer. Click the "My CME" button, then the "Claim Credit" button, enter activity **17958** and follow the prompts.
4. Scan QR code with your phone's camera. Enter activity **17958** and follow the prompts.

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UAN: 0647-0000-23-040-L04-P&T Credits: 1.0 hour (0.1 CEUs)

*Attendance can be recorded between 30 minutes before the activity starts until up to 24 hours after the event start time

For questions regarding Pharmacy CE, contact Jamie.Summerlin@OhioHealth.com