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Antimicrobial Stewardship

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Antimicrobial Stewardship

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A3 for Problem Solving

<p>Topic: Antimicrobial Stewardship in the Pediatric Intensive Care Unit</p> <p>A3 Team: Lauren Dohy, Mary Catherine Delgado, Haley Hennings, Sydney Lowe, Hannah McDonald</p>	<p>Owner: Nurse Residency Program</p>	<p>Date: 03.25.2020</p> <p>Department Director Signature: Jessica J. Fitzgerald MSN, RN, CERN-E</p>	<p>Date Approved: 11.25.2019</p> <p>ICU Scholar: Mely Gorbeld and Katherine Hoffman</p> <p>QIC: Elizabeth Monson</p>
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Clarify the Problem

Background: In 2016, Centers for Medicare and Medicaid (CMS) required hospitals to implement an antimicrobial stewardship program as a part of infection control measures. The American Journal of Infection Control (2019) states 95% of nursing staff expressed desire to participate in antimicrobial interventions to better improve patient outcomes and decrease antibiotic resistance. Children's Mercy implemented Antimicrobial Stewardship through Nurse Residency Quality Improvement Project.

Current Standard of Practice: Currently Children's Mercy PICU utilizes a 48-hour Antibiotic Review, Infection Director, section on Nurse Drive sheets, and mandatory antibiotic indications and durations on orders. ID sections on the nurse brain sheets facilitates RN to RN communication, however the current standards of practice do not have a reliable form of provider to nurse communication.

Current State: The current state of antimicrobial awareness, due to influences of nurse-nurse communication and provider-nurse communication, is 70% based on 27 applicable patients. This data was measured in three quantifiable questions: (1) Is the nurse aware the patient is on antimicrobials, (2) Does the nurse understand the reason why the patient is on antimicrobials, (3) Has there been a conversation about antimicrobials from nursing staff - parental relationship? Data collection on 27 patients currently receiving antibiotics showed 70% nursing staff awareness of antimicrobials prescribed from a nurse to nurse communication, 67% of nursing staff understood the indication of antimicrobials from a provider to nurse communication, and 75% of patient's parents were aware of antimicrobials prescribed from a nursing staff to parent communication presence.

Desired State: The desired state of nurse antimicrobial awareness would ideally 85% applicable awareness.

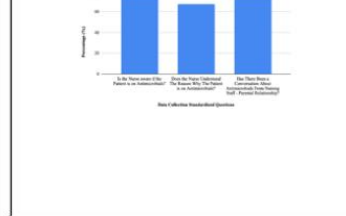
Develop and Implement Countermeasures:

We will implement a new antimicrobial engagement tool to be utilized by the bedside nurse and their parents. This sheet includes the specific antimicrobial agent the patient is on, expected length of course, and indication. There is also a "Family Friendly Info" section that includes a list of common adverse reactions. As a part of the implementation of the Antimicrobial Engagement Tool, we will email all PICU RN's with information about Antimicrobial Engagement Tool and post-implementation survey.



Break Down the Problem: Four distinct factors were identified as contributing factors towards lack of parental awareness and knowledge of patient's antimicrobial prescription. Factors in staff knowledge, parent, process/methods, and communication are studied in analysis of antimicrobial stewardship. Based on pre-countermeasure data collection, 70% of nursing staff were aware of active antimicrobial usage at shift change, and only 47% of nursing staff knew the indication of antimicrobials. The data collection shows for nurse improvement in antimicrobial stewardship among nursing staff.

Lack of family awareness of their child's antimicrobial is directly affected by these contributing factors due to the way families receive their information in the hospital. Families are directly affected by nursing staff knowledge and ability to communicate the information with families.

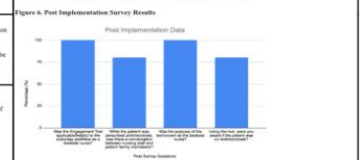


Check Results and Process

There was evidence that the Antimicrobial Engagement Tool did improve the communication between nursing staff and parent families. This was found through the Post Implementation Survey completed by nursing staff after using the visual tool in the patient rooms. Check results showed 90% of nursing staff agreed that the Antimicrobial Engagement Tool helped facilitate nursing communication with patient families on prescribed antimicrobials. This improvement process was evidenced by nursing audits on the presence of the Antimicrobial Engagement Tool.

Unintended Problems: At the beginning of initial data collection, the correct PICU brain sheet was printed with indicated antimicrobial section. The initial version of the Antimicrobial engagement tool was sent out in the educational email to PICU RN's rather than the current version already printed. Additionally, during data collection, the PICU Tier 1 huddle was transmitted to the breakrooms where the announcement of the tool by Charge Nurses was forgotten about due to change in location and lack of who/when with patient reminder.

Barriers: Identified gaps in the implementation and consistency of the Antimicrobial Engagement Tool included the Joint Commission visiting CMH PICU, the lack of consistency with the paper formatting of the tool, as well as the lack of a standardized accessible location of the final Antimicrobial Engagement Tool.

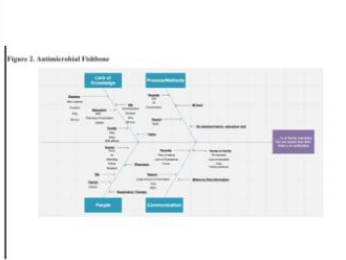


Set a Target

By March 1st, 2020, nurse and parental awareness and knowledge of patient's antimicrobial prescription and indication will increase to 90% in the PICU. This goal will be achieved through factors such as usage of Infection Director, category of nurse brain sheet, and new Antimicrobial Information Sheet at the bedside. A new visual reminder at the bedside will serve as a communication tool between providing team, nursing staff and the family. Nursing staff will be educated on the communication tool through Tier One Huddle announcements by the Charge Nurse and subsequent small instructions about purpose.

Health Root Cause

Primary Root Cause: Lack of a visual aid contributed to poor communication between nursing staff and families. Communication between providing team and nursing staff showed to be the root cause of lack of family awareness of antimicrobial's indication and duration. Contributing factors include lack of formal process and methods, poor interdisciplinary communication and lack of knowledge among nursing staff.



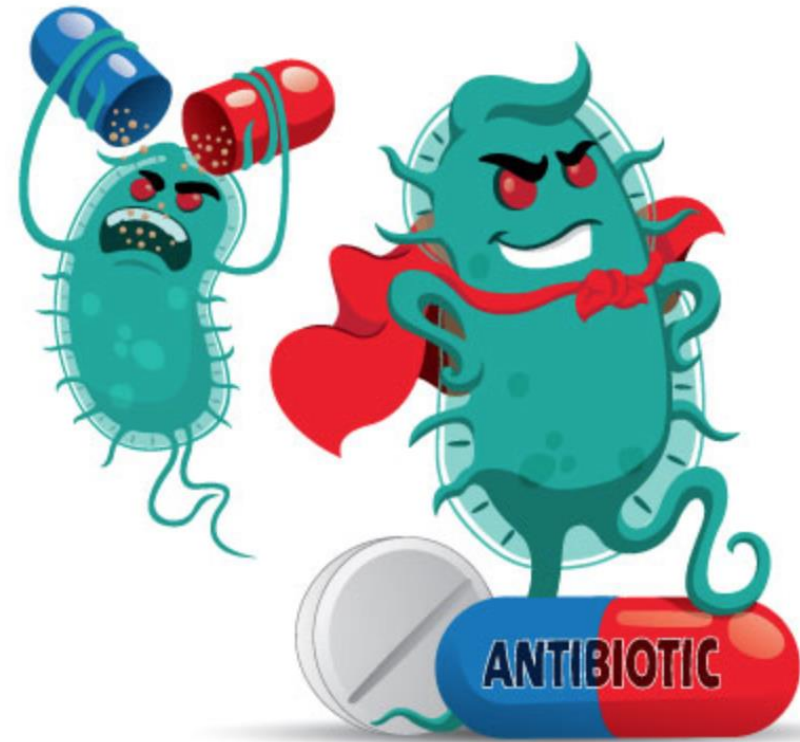
Standardize and Follow Up

It is necessary to standardize the implementation of the Antimicrobial Engagement Tool in antimicrobial stewardship efforts. The Antimicrobial Engagement Tool is not the new standard of care due to the many antimicrobial barriers to implementation. Future Children's Mercy Residency Groups may take into implementation and perfect the process of implementation to allow for a more accurate influence of the Engagement Tool, through laminating the visual aid and having a consistent location (ie Nurse Station in rooms) to allow for the full potential of the Antimicrobial Engagement Tool.



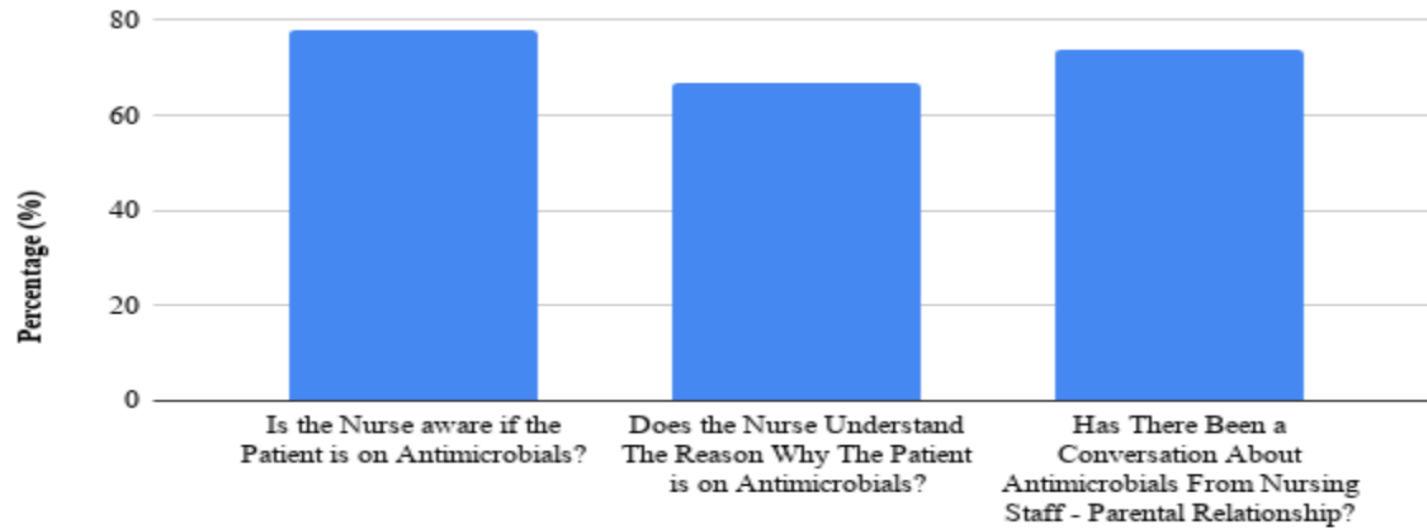
Clarify the Problem

- Antimicrobial stewardship has become a standard set by Centers for Medicare and Medicaid Service (CMS) with the goal of decreasing antibiotic resistance, resulting in improved patient outcomes
- Current PICU practice includes an infectious disease section on brain report sheets
- Antibiotic awareness and education does not currently include parents
- Antibiotic indication and course are not consistently communicated with nursing

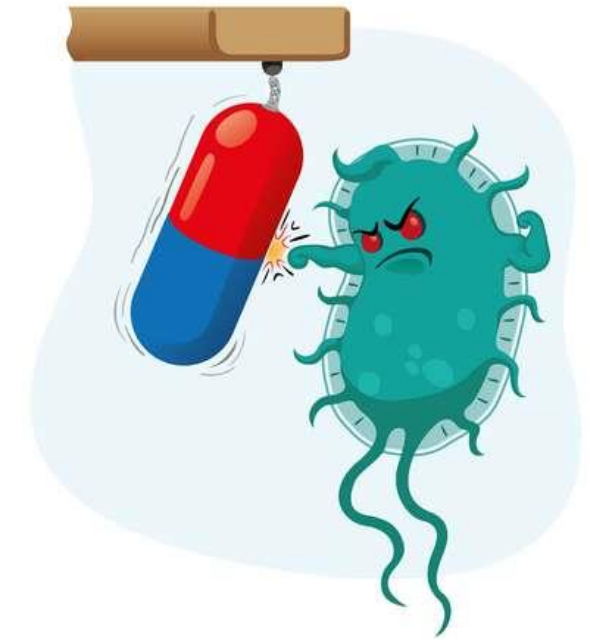


Clarify the Problem

Antimicrobial Data Collection



Data Collection Standardized Questions



Breakdown the Problem

- There is currently no formal education or visual resource to help RN start conversation with family and educate them about the patient's antibiotic
- Pre data indicates that RN's do not feel comfortable bringing up the patient's antibiotic course

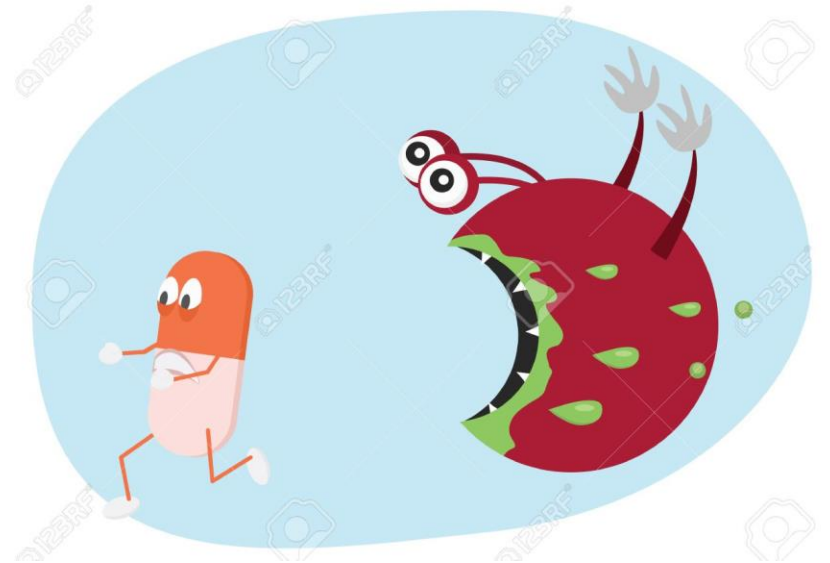
Q1 Project Pre-Intervention Data Collection
Antimicrobial Audit Sheet; Effective 9/16 - 10/11

Questions:

1. Do I know if the patient is on Antibiotics? Y | N
2. Do I know why the patient is on Antibiotics? Y | N
3. Has there been a conversation with parents about their child's Antibiotics? Y | N

Week 1: 9/16 - 9/22

Patient A		Patient B	
Date: ____ A P shift	Date: ____ A P shift	Date: ____ A P shift	Date: ____ A P shift
1. Aware? Y N	1. Aware? Y N	1. Aware? Y N	1. Aware? Y N
2. Why? Y N	2. Why? Y N	2. Why? Y N	2. Why? Y N
3. Conversation? Y N	3. Conversation? Y N	3. Conversation? Y N	3. Conversation? Y N
Date: ____ A P shift	Date: ____ A P shift	Date: ____ A P shift	Date: ____ A P shift
1. Aware? Y N	1. Aware? Y N	1. Aware? Y N	1. Aware? Y N
2. Why? Y N	2. Why? Y N	2. Why? Y N	2. Why? Y N
3. Conversation? Y N	3. Conversation? Y N	3. Conversation? Y N	3. Conversation? Y N



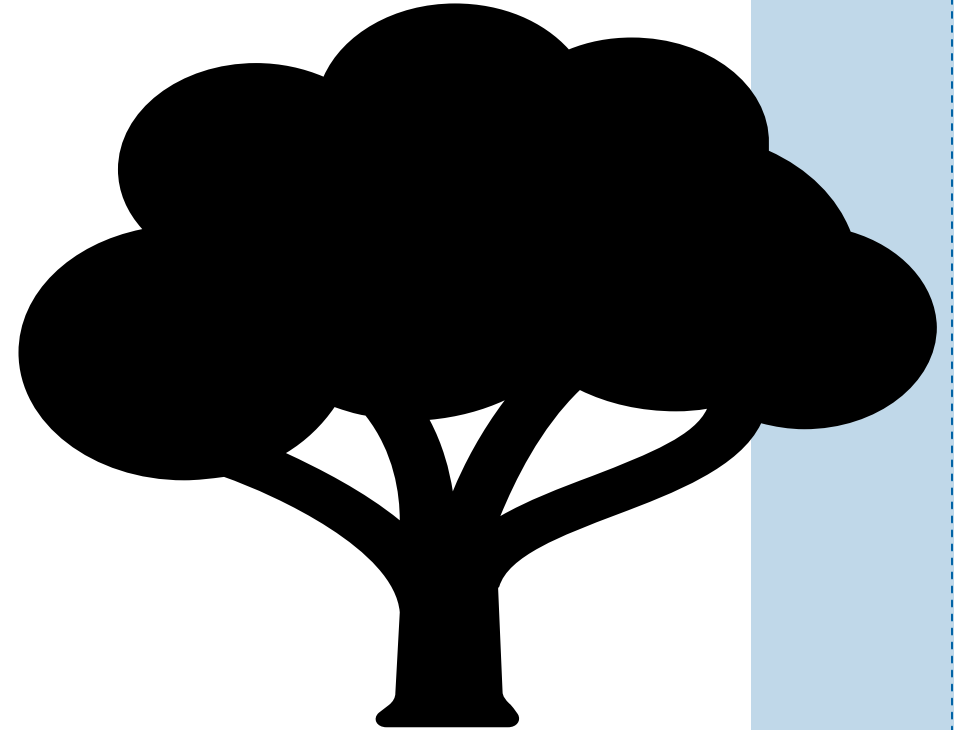
Set a Target

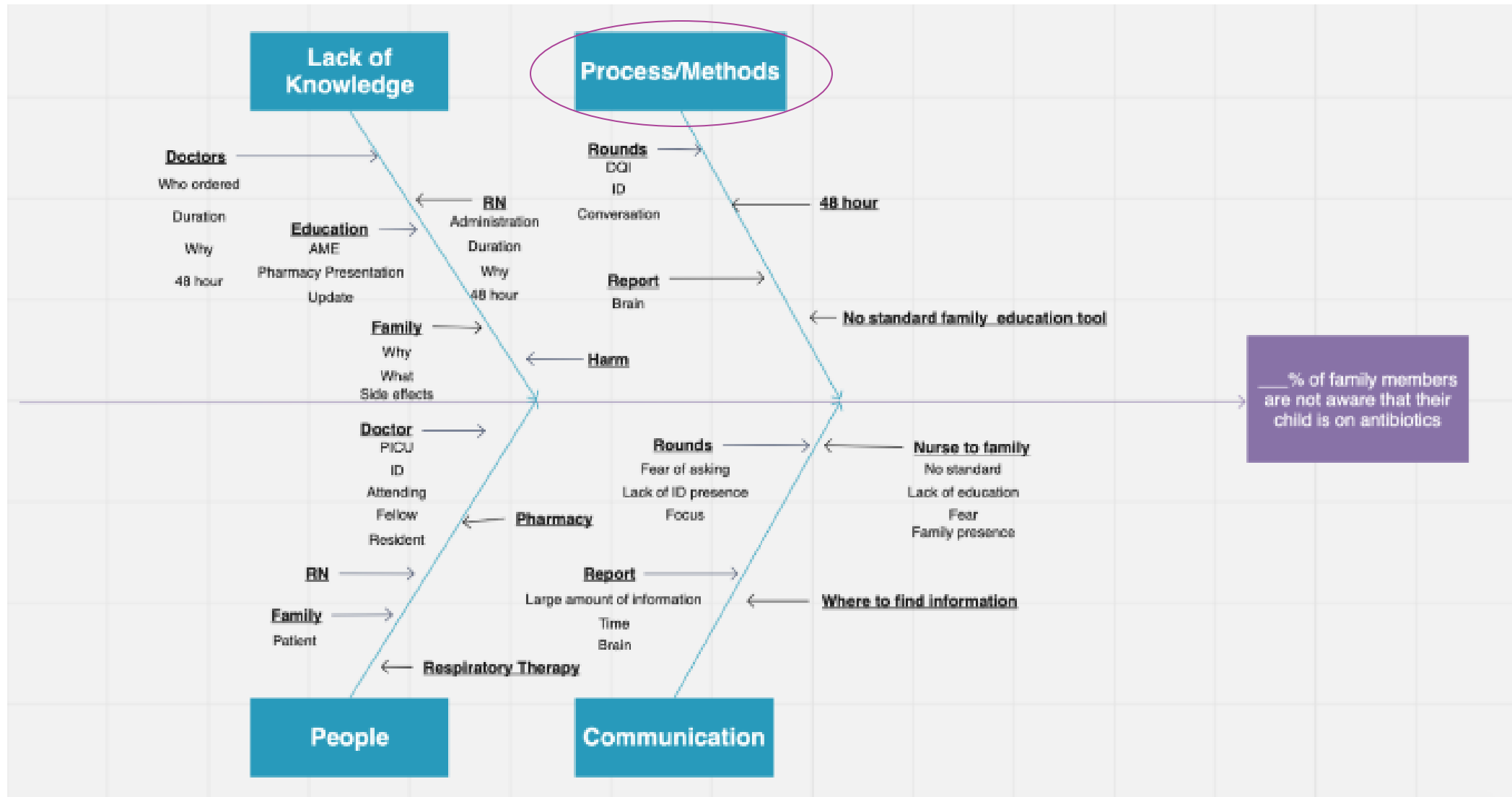
- Improve consistency of nursing awareness of antimicrobial stewardship, to in turn be able to educate the patient's families regarding their child's specific antibiotic plan
- **Our goal is to increase nurse awareness of the patient's antimicrobial course in Children's Mercy PICU to 90% by March 1, 2020 from 78% on October 15, 2019.**



Identifying the Root Cause

- Based on a fishbone diagram and pre data collected, a lack of consistent nurse awareness of antimicrobial stewardship was the root cause of limited communication with patient families





Develop and Implement Countermeasures

We implemented a new antimicrobial engagement tool to be utilized by the bedside nurse

- Sheet includes specific antimicrobial prescribed, duration, and indication
- Includes a “Family Friendly Info” section
- Does our countermeasure address the root cause?
- We did one PDSA cycle within our group and collected pre-data

Got Antimicrobials?

Patient Name: _____

Antimicrobial: _____

Dose/Timing: _____

How Long: _____

Why: _____

Family Friendly Info

- Antimicrobials = antibiotics, antifungals, antivirals
- Length of treatment is chosen specifically for your child
- Antimicrobials can be used to prevent infection, actively treat infection or non-infectious reasons
- Common Adverse Reactions to antimicrobials include: diarrhea and rash



Develop and Implement Countermeasures

- Bedside engagement tool rolled out to PICU staff on January 11, 2020
- Email sent to help educate staff members



Digiacinto, Mary Catherine,

Fri 1/10/2020 1:10 PM

PICU RN



Antimicrobial Engagement To...

childrensmercy.sharepoint.com

Good afternoon!

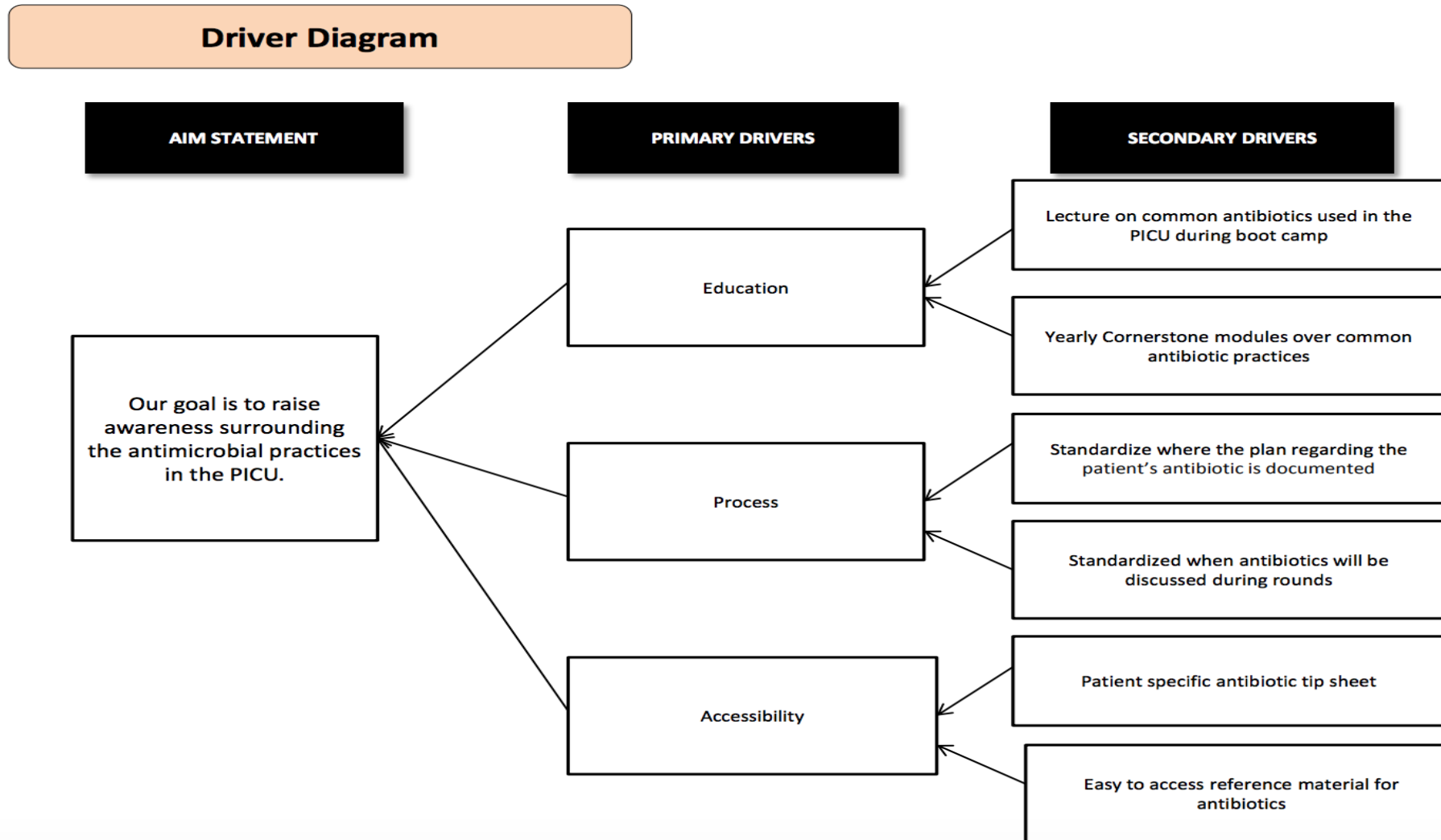
We are now ready for everyone to start using the antimicrobial engagement tool!! The sheet is attached. We will be sending a survey out in a few weeks. Thank you so much for your participation!!

Our Nurse Residency EBP project is focusing on antimicrobial stewardship. We have designed a little sheet that can be filled out by the bedside nurse centered around parent education regarding their child's antibiotics. The sheet is attached to this email. Our goal is to increase awareness of antibiotics for both parents and bedside nurses. We are starting with a small trial just on the medicine side of the unit. This can be filled out during rounds or at any point in your shift. Our plan is to hang these on the door in the patient room near the CODE and ECMO sheet. We will leave one sheet out at nurse stations 1, 2, and 3 and put extras in the forms drawer at each nurse station. If you have any questions please let any of us know.

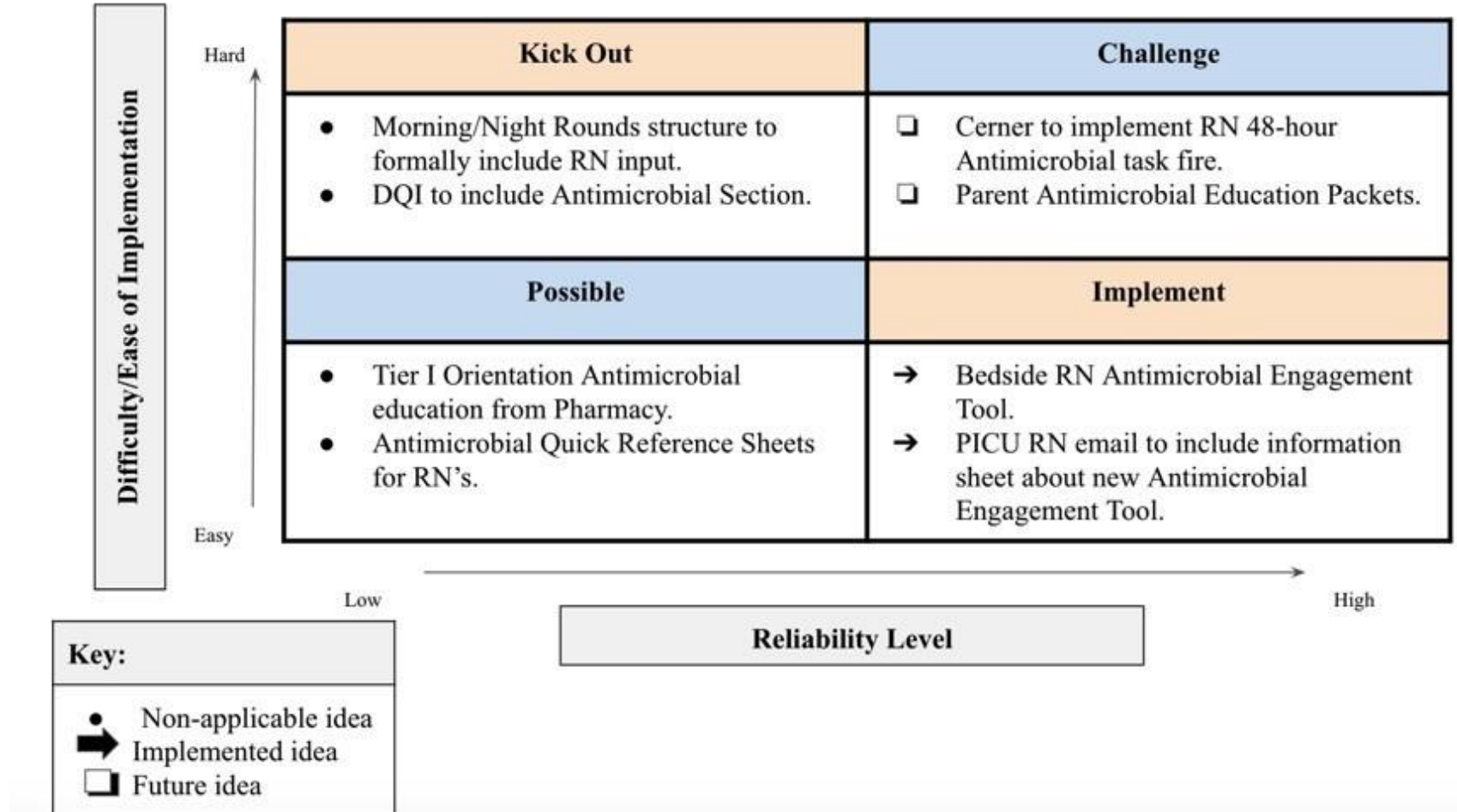
Thank you so much for your participation!!

Mary Catherine DiGiacinto, Hannah McDonald, Sydney Lowe, Hailey Hoisington, and Lauren Delay

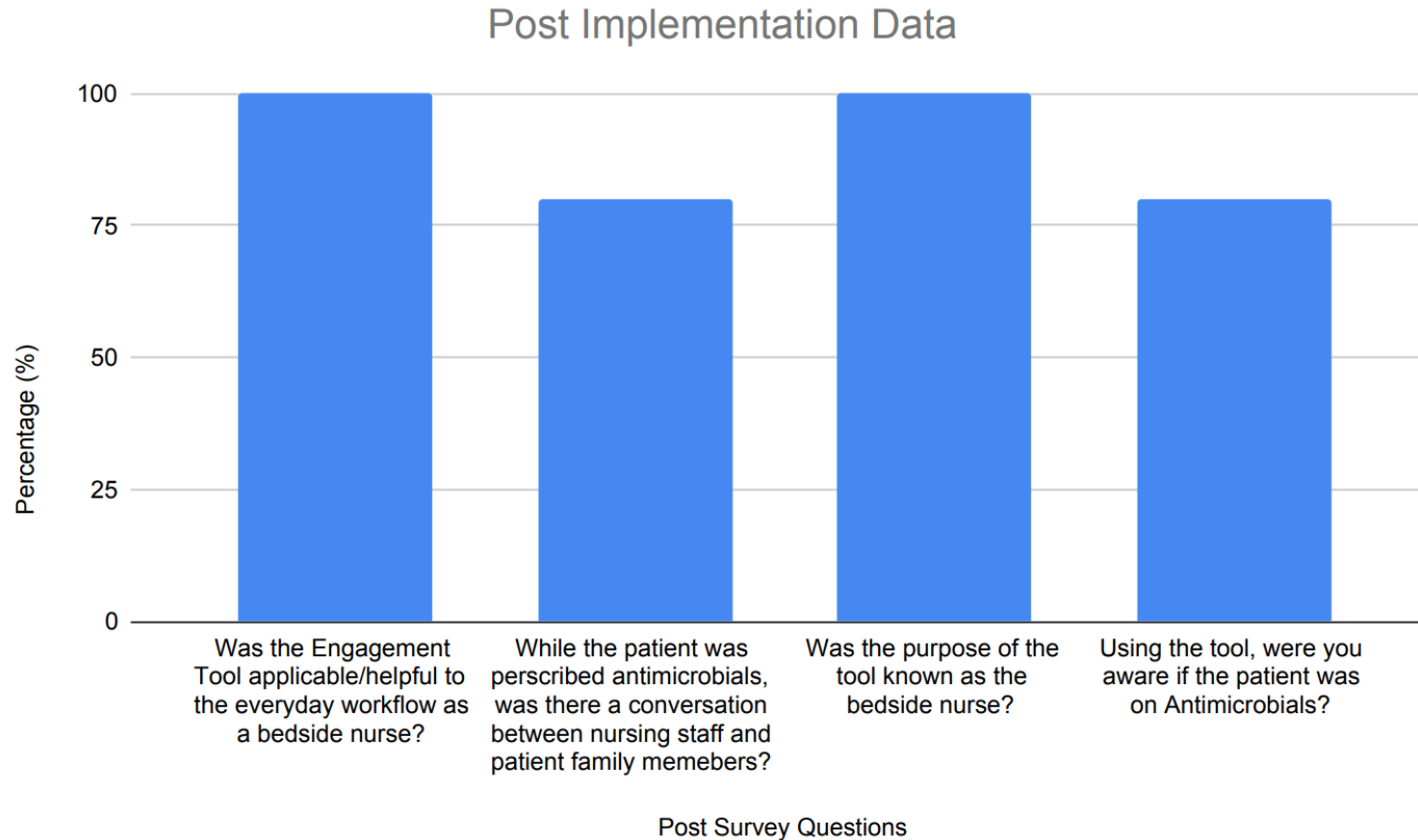
Develop and Implement Countermeasures



Develop and Implement Countermeasures

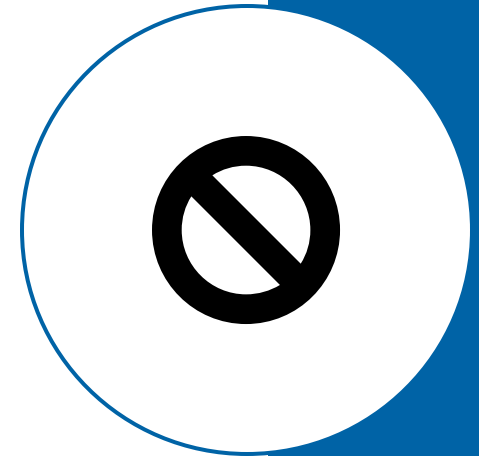


Check Results and Process



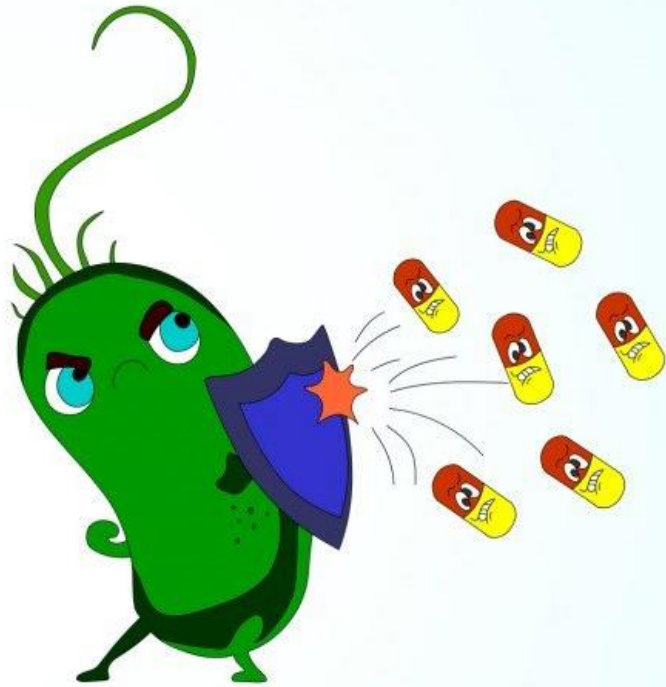
Check Results and Process

- Unintended Problems
 - At beginning of data collection, the correct PICU brain sheet was not printed
 - PICU Tier I huddle was moved to a new location. Lack of white board space limited ability to hang engagement tool
- Barriers
 - Timing of roll out to the unit coincided with Joint Commission visit
 - Paper format of engagement tool
 - Accessible location



Standardize and Follow Up

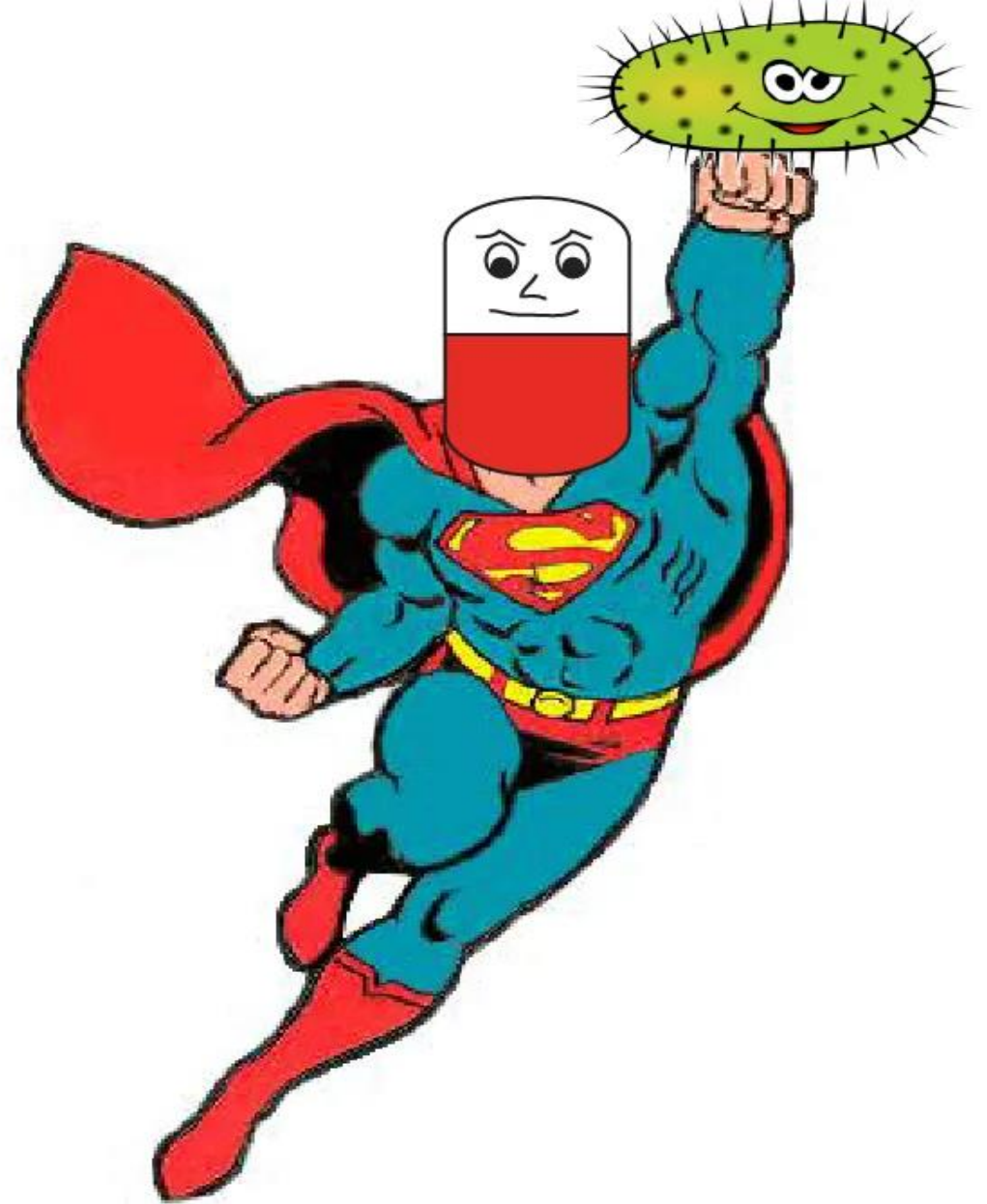
We must standardize this process to promote consistent utilization of our antimicrobial awareness tool.



- Copies of the engagement tool at each nurse station
- Next group- laminated engagement tool in nurse server

Conclusion

- AIM statement met
- Pediatric Nursing Implications
 - Increase in nurse involvement can lead to improved antimicrobial utilization
- Lessons
 - Major lack of literature regarding nursing role in AMS
 - Large need for nursing education and clarification of AMS



References

- American Nurse Association. (2017). Redefining the antibiotic stewardship team: Recommendations from the American Nurses Association/Centers for Disease Control and Prevention workgroup on the role of registered nurses in hospital antibiotic stewardship practices. *Nursing World*.
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Questions?

Thank you for your time!



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