

Changing the Culture Around Cultures (and more): Choosing Wisely for Uncomplicated Cellulitis and Abscess in the Hospital

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Background

In the United States, an estimated 14.5 million cases annually of cellulitis account for \$3.7 billion in ambulatory care costs alone. A recent PHIS study reported 225,304 children were hospitalized in a 3-year period. The majority of cases of cellulitis are nonculturable. In the 15% of cellulitis cases in which organisms are identified, most are due to β -hemolytic Streptococcus and Staphylococcus aureus. There are no effective diagnostic modalities, and many clinical conditions appear similar. This has led to testing overuse (ESR). Studies suggest blood culture is not useful in the management of immunocompetent well-appearing children admitted for uncomplicated cellulitis and abscess and its routine practice should be avoided. More recently, the value of CBC or CRP in uncomplicated cellulitis and abscess has been questioned.

Objective

The PHM Division reviewed current practices and identified an opportunity to reduce unnecessary testing in this population.

Aim Statement: Within 3 months, decrease the total and mean number of unnecessary blood tests by 25% for patients admitted with uncomplicated cellulitis and/or skin abscess to the hospital medicine division

Methods

Over a 9 month period careful PDSA cycles were conducted

- An interdisciplinary team was created (MD, RN, PNP, Pharmacy, Infectious Diseases, Lab, IT)
- Ishikawa diagram performed; summative information reviewed
- Evidence based medicine literature search conducted
- Local baseline data obtained and reviewed
- Team review of proposed interventions (order set)
- Order set created
- Education and Training sessions with clinicians : JAN, FEB
- Order set GO LIVE: MARCH
- Post interventions data review with feedback

WHY?

- Why should this be done for patients?**
 - Decrease & minimize blood draws
 - Decrease unnecessary testing
 - Best practice for antibiotic use
- Why should physicians care?**
 - Decreases testing
 - Provides guidelines for trainees
 - Allows providers to drive the decision to obtain labs
- Why should the healthcare system care?**
 - Decrease costs and potentially length of stay
 - Antimicrobial stewardship

HOW?

- How can I tell where the problem lies?**
 - Ishikawa diagrams/fishbone
 - Key driver diagram
 - Reviewing Epic baseline data
- How can I change culture/habits?**
 - Creation of an order set and clinical pathway
 - Education session
 - Suggesting order set use with problem list
- How do I get data, IT, resources?**
 - Epic reports
 - Meet with local clinical experts

HOSP MED Uncomp Cellulitis or Abscess: ORDER SET DRIVES ACTIONS

This order set is intended for uncomplicated soft tissue and skin infections. Do not use if there is a concern for sepsis, deep tissue infection (osteomyelitis, joint infection), if there is concern for a rapidly progressive lesion, concern for tetanus wounds, or bite wounds.

NOTIFY MD

Notify physician

Routine, CONTINUOUS starting Today at 1200 until Specified

1. Temperature GREATER than 38.0 or LESS than 36.0

2. Respiratory rate GREATER than 20 or LESS than 10

3. Heart rate GREATER than 100 or LESS than 50

4. SPO2 GREATER than 92 or LESS than 90

5. Temperature GREATER than 100 or LESS than 98

6. Come out of EIC

7. WBC 10,000 or more

8. Platelets less than 100,000

9. Change in mental status

10. Increased clinical concern

11. Cultures of results showing mixed results or change in clinical picture

12. Any change in vital signs (other than increased number, decreased or other color change or count)

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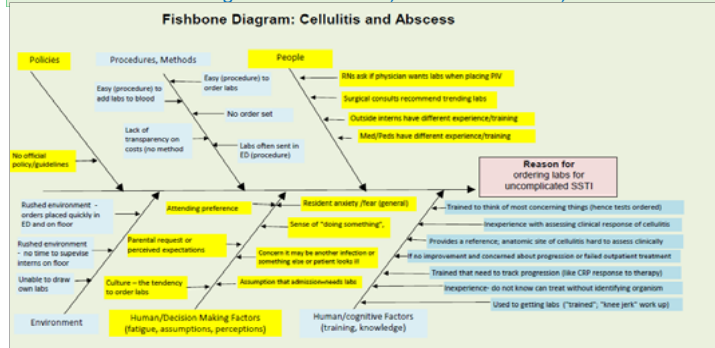
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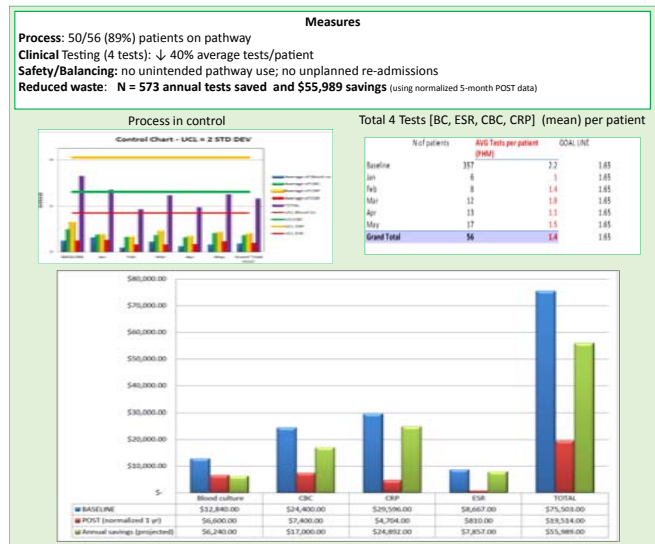
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Results

Ishikawa Diagram: PHM Division, Pediatric Residents, PNPs



Results



Conclusions and Next Steps

- Interdisciplinary teams, order sets, and training are critical to successful projects
- Next PDSA cycles: Antibiotic ordering (type, # doses), imaging use, total costs and waste savings
- Spread: Complicated skin and soft tissue infection project
- Initiated: ED-PHM QI Collaborative to reduce unnecessary testing (ABP MOC Part 4)

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