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Timely Interventions in Patients Developing Sepsis within the PICU

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Timely Interventions in Patients Developing Sepsis within the PICU

Graduate Nurse Residents
PICU Winter Cohort 2018

Lindsey Bloom, Ashley Bramel, Kelsey Cumpton, Christopher Damrat, Emily Lingo, Grace Sexton, & Breton Struble

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- Physicians – Dr. Jay Rilinger and Dr. Marita Thompson
- KT Scholar - Jessica Youmans
- QIC - Charity Thompson
- Additional Support for project - Adonia Ligouri
A3 for Problem Solving

**Focus:** Timely Interventions in Patients Developing Sepsis within the PICU

**Owner:** Nurse Residency Program

**Dates:** 9/30/2018

**Date Approved:** 11/7/2018

**A3 Team:** Lindsey Bloom, Ashley Bramal, Kelsey Cumpson, Chris Dauvray, Emily Lingo, Grace Sexton, & Breton Struble

**Department Director Signature:**

**KT Scholar:** Jessica Youmans

**QIC:** Charity Thompson

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**Clarify the Problem**

A quick review of the Respiratory Team at Children’s Mercy showed that despite having a protocol for sepsis care, the overall hospital mortality rate in PICU patients was higher. A review of the respiratory team’s protocol revealed that the sepsis care plan was not being followed consistently. The team decided to conduct an A3 study to identify the root cause of the problem.

**Define the Problem**

The team identified several key areas where improvements could be made, including timely administration of antibiotics and close monitoring of vital signs.

**Break Down the Problem**

The team created a flowchart to visualize the current process and identify areas for improvement.

**Set a Target**

The team set a target of reducing mortality rates in septic patients within the PICU.

**Identify Root Cause**

The team used a root cause analysis diagram to identify the underlying issues contributing to the problem.

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**Develop and Implement Countermeasures**

The team implemented several interventions, including the creation of a sepsis care bundle and regular training for staff.

**Check Results and Process**

The team monitored the results and made necessary adjustments to the process.

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**Standardize and Follow-Up**

- The Children’s Mercy Hospital’s sepsis collaborative meetings, PICU nurse rounds, and sepsis protocol adherence will be improved to reduce mortality in the PICU.
- Close monitoring will be increased to ensure timely administration of antibiotics.
- The next steps in the process will focus on promoting the revised sepsis care bundle and implementing a designated sepsis nurse in the PICU.

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*Image of Children's Mercy logo*
Clarify the Problem

- Literature review
- Care Process Models (CPM)
- PICU median time to interventions from Clinically Derived time Zero
  - 110 minutes for fluid administration
  - 72 minutes for antibiotic administration
The Summer 2017 Nurse Resident Cohort ended their PICU Sepsis project with the development of a Computer on Wheels (COW) card which went live on 7/16/18.

On average the PICU has 4 patients develop sepsis each month and as of 8/7/18 no COW Cards had been completed.

Your patient was diagnosed with SEPSIS at

*To be Completed in the 1st Hour*

**Start Time:**
- Initiate Supplemental Oxygen
- Obtain IV Access
- Obtain Cultures
- Obtain Labs
- Start IV Fluids
- Start 1st Dose of Antibiotics

**Completion Time:**

Initials of RN:
Breakdown the Problem
Set a Target

- As of 09/10/18, 0 cards have been collected. Our goal is to collect sepsis COW cards to better communicate among the team to ensure the treatment tasks are completed within the first hour, which will be evidenced by collecting 4 cards by 02/01/19.
Identify Root Cause

Problem Statement:
The lack of utilization of the sepsis cow cards in the PICU.

Identify Root Cause - Fishbone Diagram

Nurse
- Unawareness that cow cards are a part of the process
  - New initiative
  - Staffing needs
    - Multiple critical patients
  - Sepsis needs in the first hour of sepsis concern
    - Lack of signs and symptoms
- Extra paperwork
  - Lack of understanding of the importance of the cow cards
  - Materials

Attending/Resident
- Unawareness that cow cards are a part of the process
  - New initiative
- Lack of signs and symptoms
- Diagnosis vs. concern/possibility
  - Time to treat
- Unawareness of when to hand out the cow card
  - Unawareness of who turns in the cow cards
  - Unawareness of where to turn in the cow cards
- Patients transferred from other units
  - Does not fit into the standard workflow on the unit
  - Requires memory
  - The cow cards are only on the C.O.W.s

Nurse
Identify Root Cause

- Unaware that COW cards are part of the process by both the bedside nurse and the attending and/or resident.
- Unaware of where to turn in the COW cards
Develop and Implement Countermeasures

Develop and Implement Countermeasures: PICK Chart

- ED Process Implementation
- COW Card Text
- Communication with ED
- CAS pick up COW cards
- Sepsis RN
- 3** pager with Sepsis RN
- Sepsis Week
- Bathroom flyer
- COW cards at Nurses station
- Power Point
Sepsis Week 2019

SEPSIS WEEK
Jan. 6th – 12th

Does your patient have a POSSIBLE diagnosis of sepsis?
Grab a Sepsis COW Card!

What? The Sepsis COW Card is a checklist with interventions to complete within the first 60 minutes after a suspected sepsis diagnosis.

Why? The Sepsis CPG recommends the 6 interventions be completed within the first 60 minutes of a sepsis diagnosis to improve patient outcomes. The PRIS trial averaged 77 minutes to administer antibiotics and 110 minutes for fluids in these patients.

Who? Physicians and nurses can initiate use of the COW card any time sepsis is suspected. Sepsis diagnosis does not have to be confirmed.

When? Does your patient have a fever? Starting antibiotics? Initiating fluids? Anytime you have a patient with a POSSIBLE sepsis diagnosis, grab a COW Card! The diagnosis does not need to be definitive.

Where? The COW cards are in the pocket on the back of the COWs. When you are done with the COW card, turn it in to the labeled SEPSIS in the old pharmacy work room, above the education code cart.
Sepsis Week 2019

**Push-Pull Competition**

**Sepsis BINGO**

<table>
<thead>
<tr>
<th></th>
<th>call for help</th>
<th>1st hour</th>
<th>sepsis palp</th>
<th>looks sick</th>
<th>hurting</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>something is not right</td>
<td>decreased perfusion</td>
<td>febrile</td>
<td>decreased loc</td>
<td>increased work</td>
</tr>
<tr>
<td>2</td>
<td>cultures</td>
<td>Oxygen</td>
<td>save the patient</td>
<td>new antibiotic order</td>
<td>breathing fast</td>
</tr>
<tr>
<td>3</td>
<td>labs</td>
<td>antibiotics</td>
<td>pain</td>
<td>septic</td>
<td>poop and in nap, screen</td>
</tr>
</tbody>
</table>

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*Image: Children's Mercy Kansas City*
Countermeasures

- Revised Sepsis COW Card

### SEPSIS COW CARD

Your patient has a possible diagnosis of **SEPSIS** at

*Once completed, return to the old pharmacy workroom SEPSIS bin above the code cart

*To be completed within the 1st hour*

**Start Time:**

**Time completed:**

- [ ] Initiate Supplemental Oxygen
- [ ] Obtain IV Access
- [ ] Obtain Cultures
- [ ] Obtain Labs
- [ ] Start IV Fluids
- [ ] Start 1st Dose of Antibiotics

Completion time of all tasks:

Initials of RN:

*If unable to complete ANY of the above tasks, contact your attending ASAP.
Check Results and Process

Cumulative COW Cards Received in the PICU

Target: 4 COW Cards by 2/1/19
Check Results and Process
Check Results and Process

**Q1 Have you taken care of a septic patient?**

<table>
<thead>
<tr>
<th>ANSWER CHOICES</th>
<th>RESPONSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>58.54%</td>
</tr>
<tr>
<td>No</td>
<td>41.46%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100%</td>
</tr>
</tbody>
</table>

**Q2 If you have taken care of a patient with a diagnosis of sepsis, did the provider utilize the yellow sepsis COW card?**

<table>
<thead>
<tr>
<th>ANSWER CHOICES</th>
<th>RESPONSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>10.51%</td>
</tr>
<tr>
<td>No</td>
<td>9.51%</td>
</tr>
<tr>
<td>N/A</td>
<td>0.0%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100%</td>
</tr>
</tbody>
</table>
Q3 Select tasks that need to be completed within the first hour of sepsis diagnosis:

- Initiate Supplemental Oxygen
- Obtain Chest X-ray
- Obtain IV access
- Obtain cultures
- Obtain blood gas
- Obtain labs
- Start IV fluids
- Administer antipyretic
- Start first dose of...
Standardize and Follow Up

- COW Cards were revised
- Continuing to improve sepsis interventions in the PICU
- The next group of Nurse Residents will focus on promoting the revised COW Card, and implementing a designated Sepsis RN in the PICU.

**SEPSIS COW CARD**

Time of PICU admission OR possible sepsis diagnosis:

*Once completed, return to the old pharmacy workroom SEPSIS bin above the code cart*

+To be completed within the 1st hour*

Start time:
*Admitted to PICU and/or interventions were started

Time completed:
- Initiate Supplemental Oxygen
- Obtain IV access
- Obtain Cultures
- Obtain labs
- Start IV Fluids
- Start 1st Dose of Antibiotics

Completion time of all tasks:

Initials of RN:
*If unable to complete ANY of the above tasks, contact your attending ASAP.*


Questions