

Impact of an Interdisciplinary Team on Time to Administration of Appropriate Initial Antibiotics in Suspected Septic Patients Presenting to the Emergency Department

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Background:

- Data suggests that when an ED clinical pharmacist was added to the multidisciplinary team antibiotics were not only given at a quicker rate, they were also more appropriate.

Methods:

- Baseline retrospective MUE on severe septic patients in the RPH ED from July 2019 – Sept. 2019.
- In November 2019, placed antibiotics into the ED Accudose for easier access.
- PGY1 Pharmacy resident and clinical pharmacist intervention on random BPA-alerted septic patients in RPH ED from Feb 1-29, 2019.

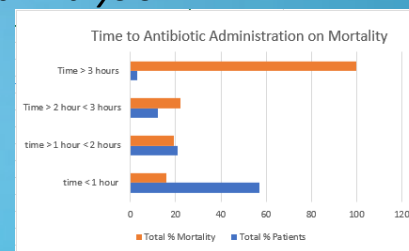
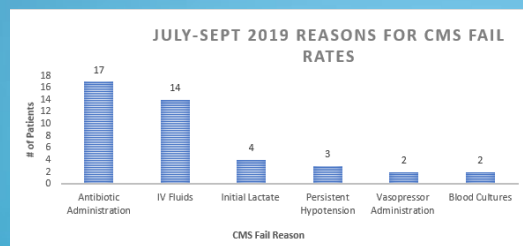
Discussion:

- 52.8% of sepsis indications were not included in RPH Sepsis Order Set.
- 59.5% did not match National Guidelines
- Mortality rates were highest when antibiotics took longer AND/OR were not appropriate.

Delays in time to appropriate initial antibiotic in suspected septic patients may worsen patient outcomes.

MUE Results

CMS Fail / Time Gap Analysis



	Time Zero to Order	Order to Verification	Verification to Administration	Total Time Order to Administration	Total Time Zero to Administration
Minimum	0:00:00	0:00:00	0:07:00	0:11:00	0:00:00
Q1	0:09:45	0:00:00	0:27:00	0:33:30	1:00:45
Median	0:48:00	0:02:00	0:43:00	0:45:30	0:42:30
Q3	1:09:45	0:04:00	1:07:15	1:11:30	1:46:45
Maximum	14:32:00	1:08:00	3:30:00	3:31:00	15:25:00

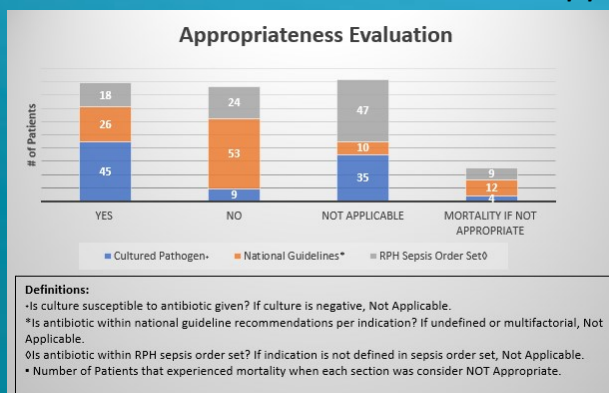
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Time to Admin
0:45:30

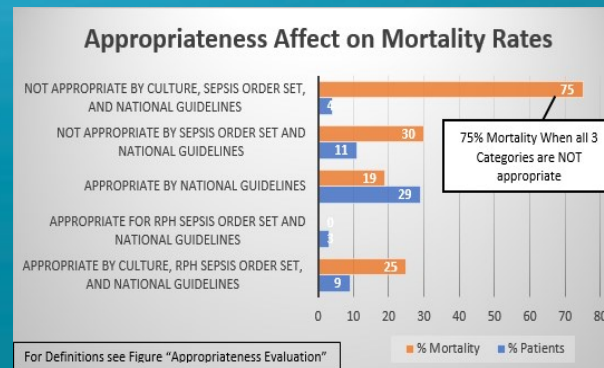


Time to Admin
01:24:00

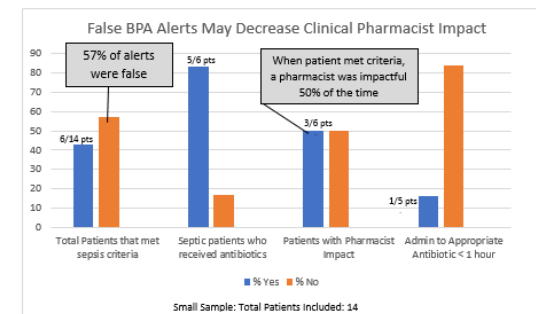
Appropriateness



Definitions:
 †Is culture susceptible to antibiotic given? If culture is negative, Not Applicable.
 *Is antibiotic within national guideline recommendations per indication? If undefined or multifactorial, Not Applicable.
 †Is antibiotic within RPH sepsis order set? If indication is not defined in sepsis order set, Not Applicable.
 • Number of Patients that experienced mortality when each section was consider NOT Appropriate.



February Intervention Results



Pharmacist impact:

- Introduced Idea of Sepsis
- Reminded RN about antibiotics ordered
- Reminded MD to order blood cultures and evaluated Drug-Induced Disease

Limitations to Pharmacist Intervention:

- False Alerts (Overly Sensitive BPA)
- Lack of Wolter's Kluwer AI Alert
- Lack of physical clinical presence in the ED
- High Censes Volume in ED
- Small sample size

	Time Zero to Order	Order to Verification	Verification to Administration	Total Time Order to Administration	Total Time Zero to Administration
Minimum	0:25:00	0:00:00	0:03:00	0:03:00	0:39:00
Q1	0:53:00	0:00:00	0:14:00	0:14:00	0:39:00
Median	1:05:00	1:00:00	1:20:00	1:24:00	2:29:00
Q3	3:44:00	0:04:00	1:22:00	1:45:00	5:29:00
Maximum	5:51:00	0:23:00	4:12:00	4:13:00	10:04:00

Information Displayed in hh/mm/ss format

Conclusion:

- Guthrie could benefit from an updated Sepsis Order Set.
- Antibiotics in the ED alone may not appear to decrease time to antibiotic administration.
- This study should be repeated on a larger sample size, with a clinical pharmacist present in the ED to truly evaluate results.