

APPENDIX

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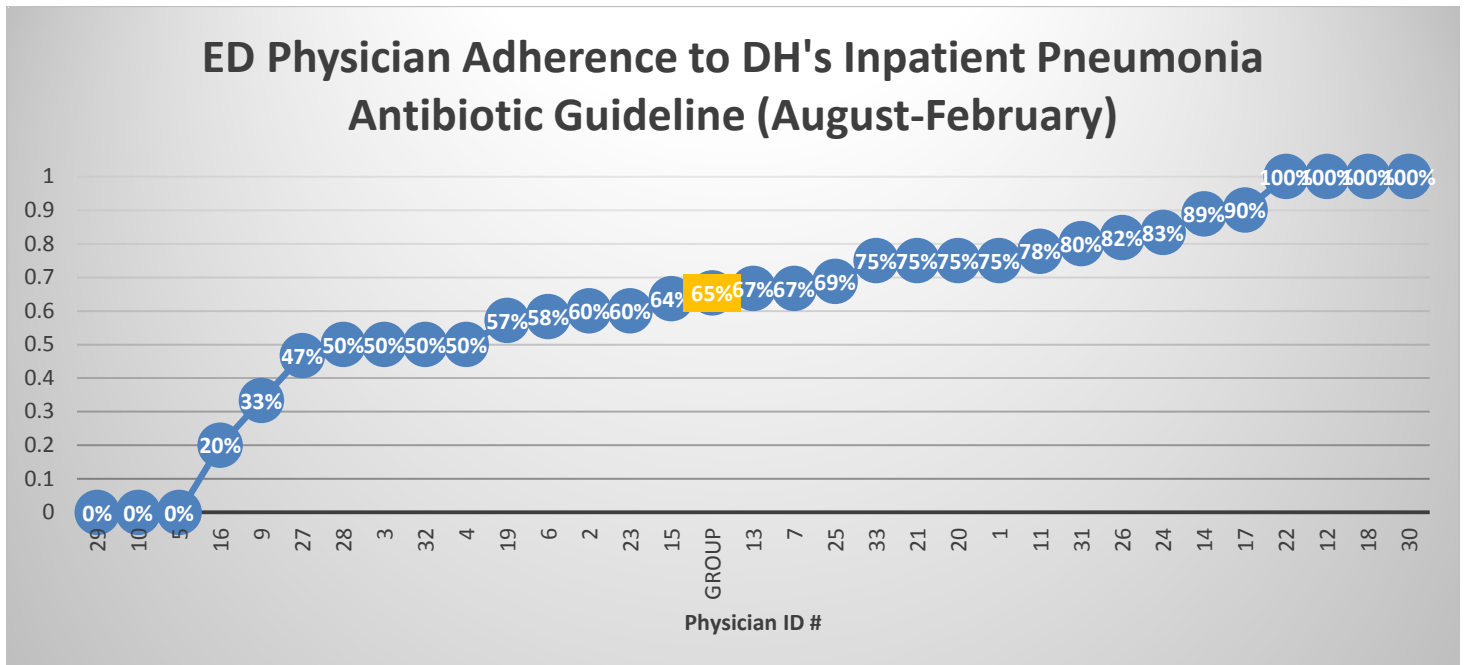
EXAMPLE FEEDBACK: Pneumonia

Dear Provider:

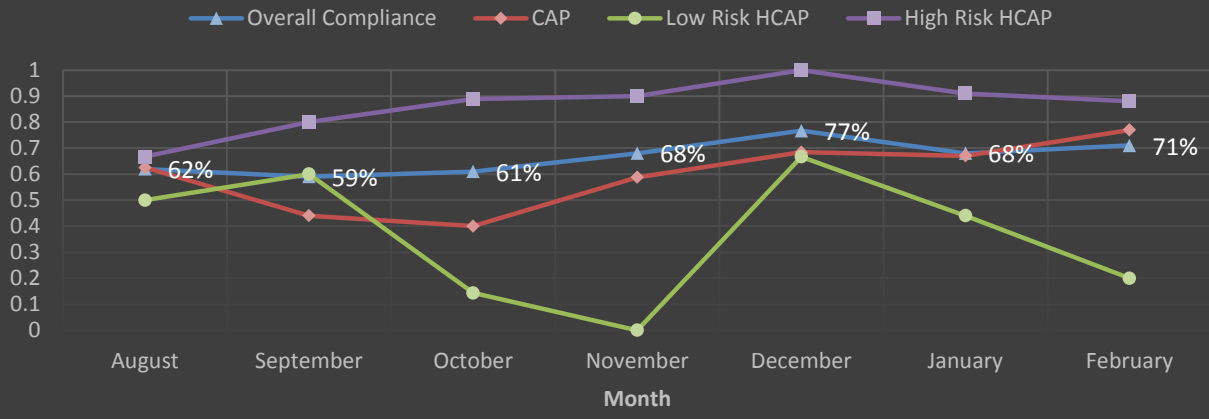
Below is a table detailing your compliance with Denver Health’s antibiotic guideline for inpatient pneumonia. Overall, your compliance is excellent (82%) as compared to your peers (65%). In the figures below, you are provider # 26. Additionally, please see the attached reference outlining Denver Health’ guideline for inpatient antibiotics for pneumonia.

Guideline Compliance for Adult Inpatient Pneumonia Treatment

MR	Date Encounter	Type of Pneumonia	Admitting Floor	Antibiotics	Compliance
		High Risk HCAP	Floor	Cefepime / Vancomycin	Yes
		CAP	Floor	Ceftriaxone / Azithromycin	Yes
		High Risk HCAP	ICU	Aztreonam/Vancomycin/Clindamycin	Yes
		CAP	ICU	Cefepime/Vanc	No
		High Risk HCAP	ICU	Cefepime	Yes
		CAP	Floor	Ceftriaxone/Azithro	Yes
		High Risk HCAP	Floor	Cefepime/Vanc	Yes
		High Risk HCAP	Floor	Cefepime/Vanc	Yes
		High Risk HCAP	Floor	Cefepime/Vanc	Yes
		CAP	Floor	Ceftriaxone/Azithromycin	Yes
		Low Risk HCAP	ICU	Cefepime/Vanc	No
					82%



Group Data
**Compliance with Guideline Antibiotic Therapy
for Inpatient Pneumonia**



EXAMPLE FEEDBACK: Severe Sepsis

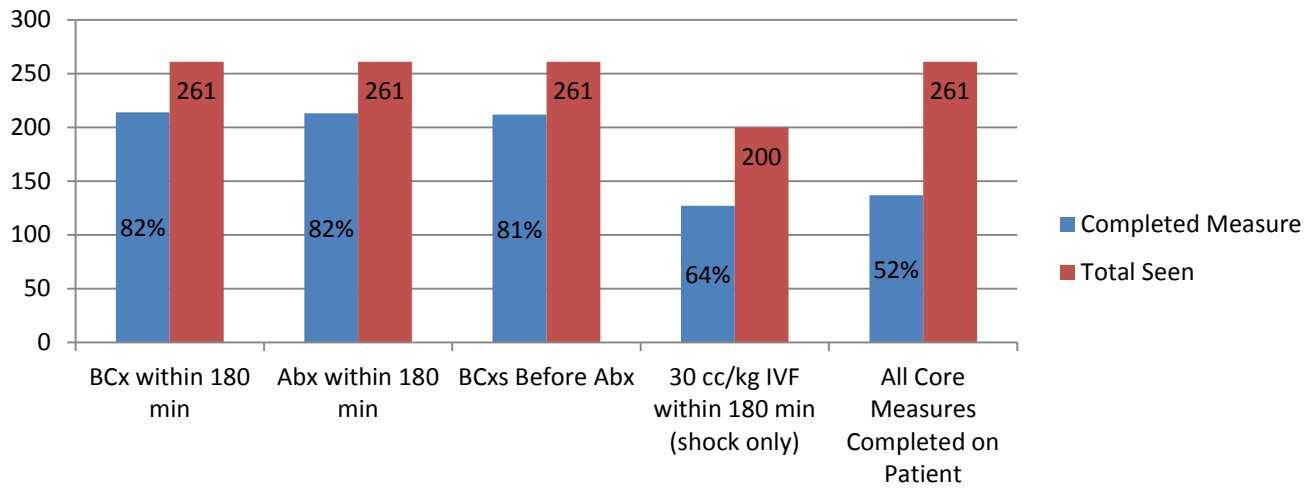
Dear Provider:

Below is a table detailing your compliance with CMS’ Sepsis Core Measure (3 hours). While your compliance with the composite core measure is only 47%, your compliance with the each component ranges from 67% to 87%. Your compliance is below average (47%) as compared to your peers (52%) (see figure below). Additionally, please see the attached reference outlining the CMS Sepsis Core Measure.

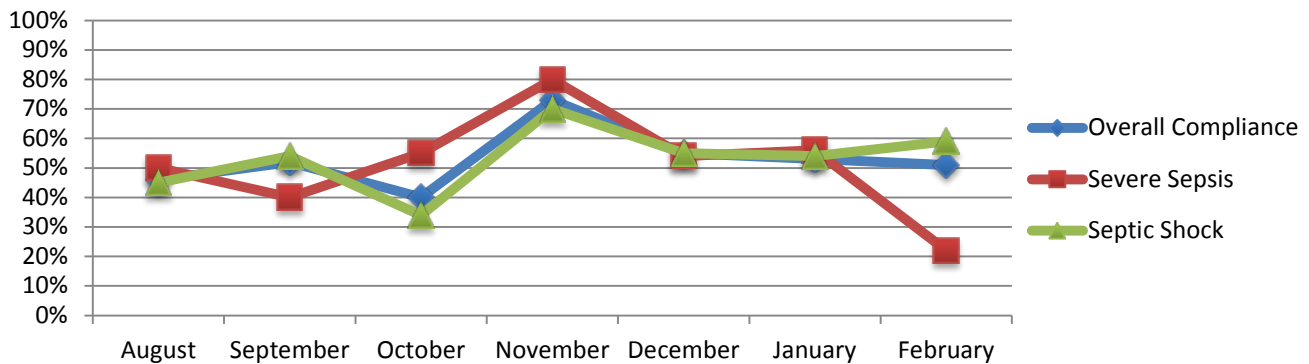
SEVERE SEPSIS / SHOCK CORE MEASURES

MR	Date Encounter	BCx < 180 min	Abx < 180min	BCx Before Abx	30mL/kg in 180 min	Notes/Comments
		Yes	Yes	Yes	Yes	
		No	No	Yes	Yes	ABx and BCx > 4 hrs
		Yes	Yes	Yes	Yes	
		Yes	Yes	No	No	ABx given 40 minutes before BCx; only 1L
		Yes	Yes	Yes	Yes	
		Yes	Yes	No	.	ABx given 40 minutes before BCx
		No	Yes	No	.	no blood cultures drawn
		Yes	Yes	Yes	Yes	
		Yes	Yes	No	No	ABx given immediately on arrival. 3L NS ordered but only 2L given
		Yes	Yes	Yes	Yes	
		Yes	No	Yes	.	ABx given 4.5 hours into ED stay
		Yes	Yes	Yes	No	2500cc in total ordered. 2L ordered w/in 2 hours of ED stay but took 3 hours to complete 2L (5 hours from triage)
		Yes	Yes	Yes	Yes	
		Yes	Yes	No	.	ABx given 5 minutes before BCx
		Yes	Yes	Yes	Yes	
		87%	87%	67%	73%	Component Compliance
					47%	Overall Compliance

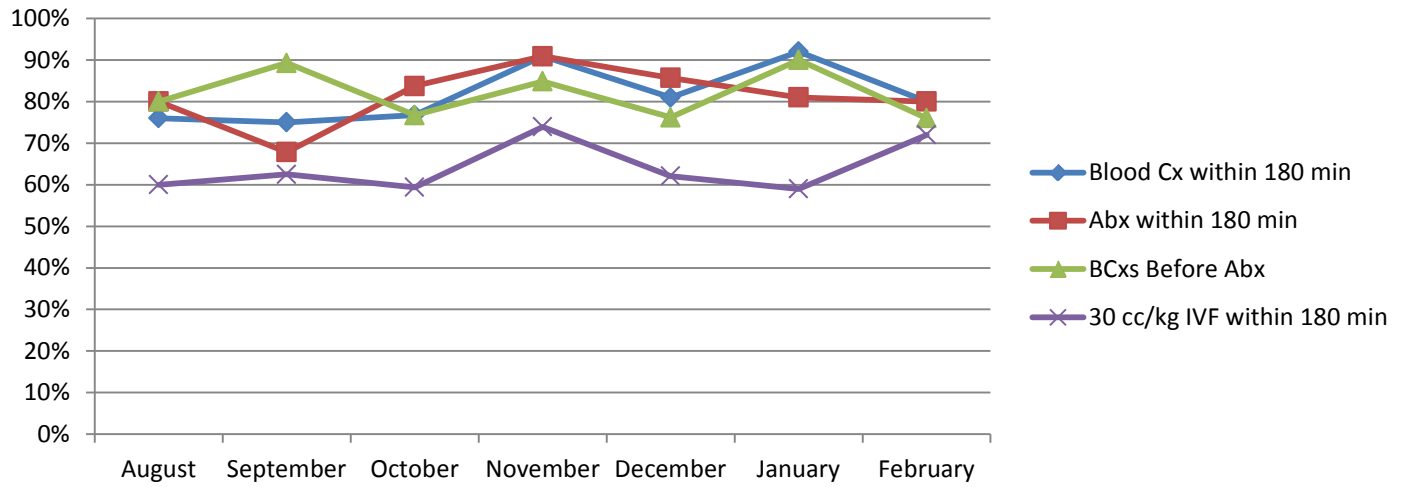
Overall ED Compliance with the 3 Hour CMS Sepsis Core Measure (August - February)



Group Data Complete Compliance w/ 3 Hr Sepsis Core Measures



Group Data Compliance with Components of 3 Hour Sepsis Core Measures



Audit and Feedback of Adherence to Clinical Practice Guidelines for Community Acquired Pneumonia in the ED

Data Collection Instrument

PI: Stacy Trent, MD MPH

<u>Patient Identifiers</u>	
MR #:	
Encounter #:	
Date of Admission:	D/C:

<u>Provider Identifiers</u>
ED Attending:

Step 1: Does the patient meet criteria for inclusion?

Inclusion Criteria:

- (1) Age \geq 18 YES NO
- (2) Hospital discharge diagnosis of **pneumonia** YES NO
- (3) ED diagnosis or initiated treatment for the above diagnoses YES NO
- (4) Admission to the hospital from the ED YES NO

Exclusion Criteria:

- (1) Transfer from another facility YES NO

Step 2: Review the medical record and answer the question below.

What was the date / time of ED arrival? _____

How did the patient arrive to the ED? _____

Patient's age ____ Gender ____ Race ____ Language ____ Insurance _____

What was the patient's chief complaint in the ED? _____

What was the primary diagnosis in the ED? _____

What service admitted the patient? Medicine Other _____

What type of floor was the patient admitted to? Floor ICU

Did the patient have any of the following comorbidities?

(review ED note, inpatient H&P, or another note from < 1 year from admission)

- diabetes AIDS immunosuppressed (e.g. meds / cancer)
- ESLD alcohol abuse tobacco use
- COPD / structural lung disease

Step 3: Risk Factors for HCAP

What are the patient's risk factors for HCAP?

- a) Hospitalization in past 3 months (# days _____) YES NO
- b) Antibiotics in past 6 months YES NO
- c) Immunosuppression YES NO
- d) Poor functional status YES NO
- e) SNF YES NO
- f) Chronic hemodialysis YES NO
- g) Home infusion or wound care therapy YES NO

Audit and Feedback of Adherence to Clinical Practice Guidelines for Community Acquired Pneumonia in the ED

Data Collection Instrument

PI: Stacy Trent, MD MPH

Step 4: CAP or HCAP

How many risk factors for HCAP does the person have? _____

(1) Was the patient admitted to the floor? _____

(2) Did the patient receive the appropriate antibiotics based on type of pneumonia and floor status? _____

What antibiotics did the patient receive? _____

Date/time antibiotics given? _____

Table 1: Recommended Antibiotic Selection

CAP (Floor and ICU)	Low Risk HCAP	High Risk HCAP
Ceftriaxone (1gm) + Azithro (500mg IV or PO)	Ceftriaxone (1gm) + Azithro (500mg IV or PO)	Vancomycin + Cefepime (2gm)
OR	OR	OR
Levaquin (750mg IV)	Levaquin (750mg IV)	Vancomycin + Levaquin (750mg)
+ Vanc (only if ICU)	+ Vanc (only if ICU)	

Low Risk HCAP = 1 Risk Factor HCAP

High Risk HCAP = >2 Risk Factors HCAP or > 5 days hospitalization within 3 months

Audit and Feedback of Adherence to Clinical Practice Guidelines For Severe Sepsis and Septic Shock in the ED

Data Collection Instrument

PI: Stacy Trent, MD MPH

<u>Patient Identifiers</u>	
MR #:	
Encounter #:	
Date of Admission:	D/C:

<u>Provider Identifiers</u>
ED Attending:

Step 1: Does the patient meet criteria for inclusion?

Inclusion Criteria:

- (1) Age \geq 18 YES NO
- (2) Hospital discharge diagnosis of **sepsis, severe sepsis or septic shock** YES NO
- (3) ED diagnosis or initiated treatment for the above diagnoses YES NO
- (4) Admission to the hospital from the ED YES NO

Exclusion Criteria:

- (1) Transfer from another facility YES NO

Step 2: Review the medical record and answer the question below.

What was the date/time of ED arrival? _____

What service admitted the patient? Medicine Other _____

What type of floor was the patient admitted to? Floor ICU

Step 3: Review the medical record to answer the following questions.

Did the patient meet sepsis criteria? YES NO ?

What was the presumed source of infection in the ED? _____

Circle the additional criteria met

Temp $<$ 36 or $>$ 38.3 (max temp _____ or min temp if $<$ 36 _____)

HR $>$ 90 (max HR _____)

RR $>$ 20 (max RR _____)

WBC $<$ 4 or $>$ 12 (WBC _____)

Altered mental status (in absence of chronic AMS)

Glucose $>$ 140 mg/dL (in absence of diabetes) (glucose _____)

If the patient does not meet sepsis criteria in the ED, STOP.

Audit and Feedback of Adherence to Clinical Practice Guidelines For Severe Sepsis and Septic Shock in the ED

Data Collection Instrument

PI: Stacy Trent, MD MPH

Step 4: Review the medical record to answer the following questions.

(1) Was a lactate ordered in the ED? YES NO ?

What was the initial lactate? _____

What was date / time of initial lactate? _____

How much IV fluid was given prior to lactate being drawn? _____

(2) Did the patient meet criteria for severe sepsis in the ED? YES NO ?

Circle the end-organ that was **acutely** dysfunctional

SBP < 90 mmHg or MAP < 65 mmHg

SBP decrease > 40 mmHg from baseline

Kidneys (Cr > 2 mg/dL)

Lungs (acute hypoxia)

Liver (bilirubin > 2mg/dL)

Coags (INR > 1.5 in absence of coumadin)

Platelets (< 100 k/uL)

Cellular (lactate >2 mmol/L)

(4) Was the initial lactate \geq 4mmol/L or the SBP < 90mmHg? YES NO ?

What was the initial lactate? _____

What was the initial systolic BP? _____

(5) Were antibiotics given in the ED? YES NO ?

What antibiotics were given? _____

At what time were antibiotics given? _____

(6) How much IVFs were initially ordered? _____

Time Order? _____ Start? _____ Stop? _____

How much total fluid was ordered? _____

When were all fluids completed? _____

If the initial lactate \geq 4mmol/L or the SBP < 90mmHg at any time, continue below

(7) Were blood cultures obtained in the ED? YES NO ?

(8) Was a minimum of 30mL/kg of IVFs given? YES NO ?

Was a weight documented either in the ED or in the inpatient setting? _____

If no weight, was at least 3L NS given? _____ Stop? _____

Figure: Frequency of Patients Seen by Physician

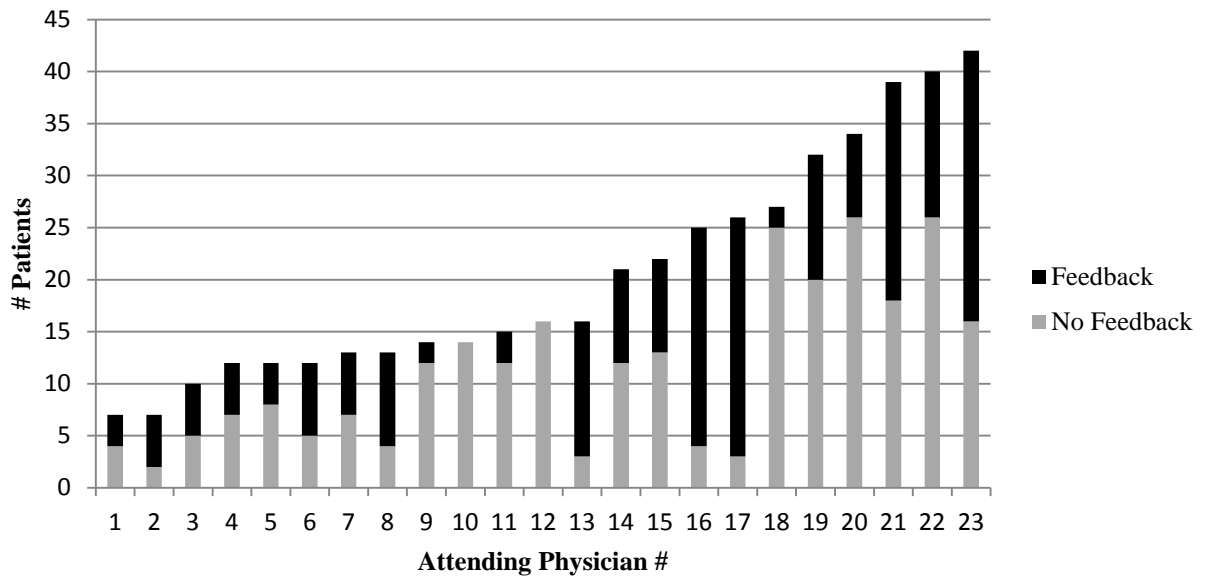


Table: Unadjusted Effect of Feedback on Adherence to Components of Sepsis Guideline

	N [‡]	No Feedback		Feedback		Median Difference (95% CI)	
		N	Median (95% CI)	N	Median (95% CI)		
Lactate Collected (%)	245	145	100 (96-100)	145	100 (97-100)	0	(-4 to 3)
Time to BCx (min)	229	138	62 (32-118)	91	56 (33-102)	-6	(-26 to 15)
BCx before ABx (%)	245	145	81 (74-87)	100	82 (73-88)	1	(-10 to 10)
Time to ABx (min)	242	143	97 (54-156)	99	119 (73-173)	22	(-4 to 48)
30mL/kg IVF Given [†] (%)	181	116	110 (80-138)	65	103 (83-135)	-7	(-17 to 4)

BCx = blood cultures, ABx = antibiotics, min = minutes; CI = confidence interval

[†] septic shock patients only

[‡] excludes 16 patients who did not receive blood cultures and 3 patients who did not receive antibiotics