



Sepsis in the Dakotas: Prevention, Identification, Treatment

August 20, 2024

Background

In North Dakota and South Dakota, sepsis is the #1 admission and readmission diagnosis. With sepsis, time is of the essence. For every hour of delayed treatment, the risk of death increases by between 4 and 9 percent.¹ Experts say that <u>80 percent</u> of sepsis deaths could be prevented if treated in time. (National Sepsis Alliance)

Sepsis-Related Deaths on the Rise

Sepsis is the third leading cause of death in U.S. hospitals. But quick action can save lives.



- Sepsis-related deaths declined from 2000 2019
- Increase noted in 2019, those age 65 and older
- Further increase in 2021, same age group
- 87% of cases start outside the hospital
- About 50% of cases experience Post Sepsis Syndrome
- Review Sepsis Guidelines, updated in 2021

Sepsis is the third leading cause of death in U.S. hospitals. But quick action can save lives. | AAMC

What is Sepsis?

Sepsis, which was often called "blood poisoning," is a lifethreatening emergency that happens when your body's response to an infection damages vital organs and, often, causes death.....[it] kills 350,000 adults each year in the United States.



Sepsis Alliance

Risk Factors for Sepsis

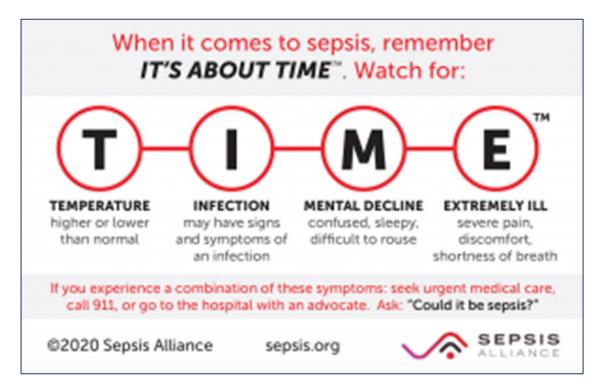
- Age
- Weakened Immune System
- Recent Severe Illness or Hospitalization
- Recent Surgery, Open wound/incision
- Indwelling Devices and Catheters
- Antibiotic Use and Corticosteroids



Sepsis Symptoms

Symptoms

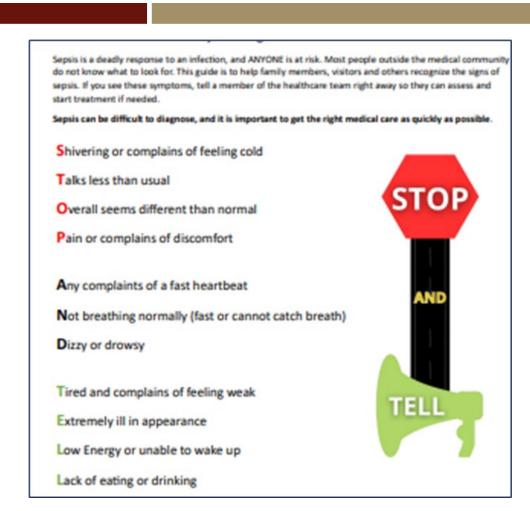
- Low Blood Pressure
- Low Oxygen Level
- Low Urine Output
- Absent Bowel Sounds
- Confusion
- Shortness of Breath
- Fever
- 'Feel like you are going to die'



"Could I have Sepsis?"

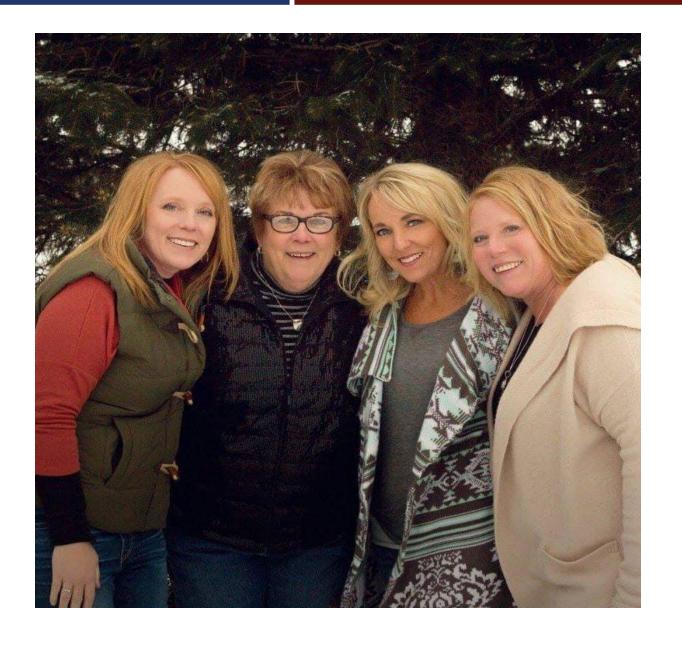
Sepsis Recognition Opportunities

- Protocols for early recognition of Sepsis symptoms
- Protocols for action and treatment
- Sepsis Stop and Tell Tool



A Patient Story





75 years old
No medication
No comorbidities
Never hospitalized
(besides deliveries)
Never had surgery

Healthy!

SYMPTOMS OF SEPSIS

Shivering, fever, or very cold

Extreme pain or general discomfort ("worst ever")

Pale or discolored skin

Sleepy, difficult to rouse, confused

"I feel like I might die"

Short of breath

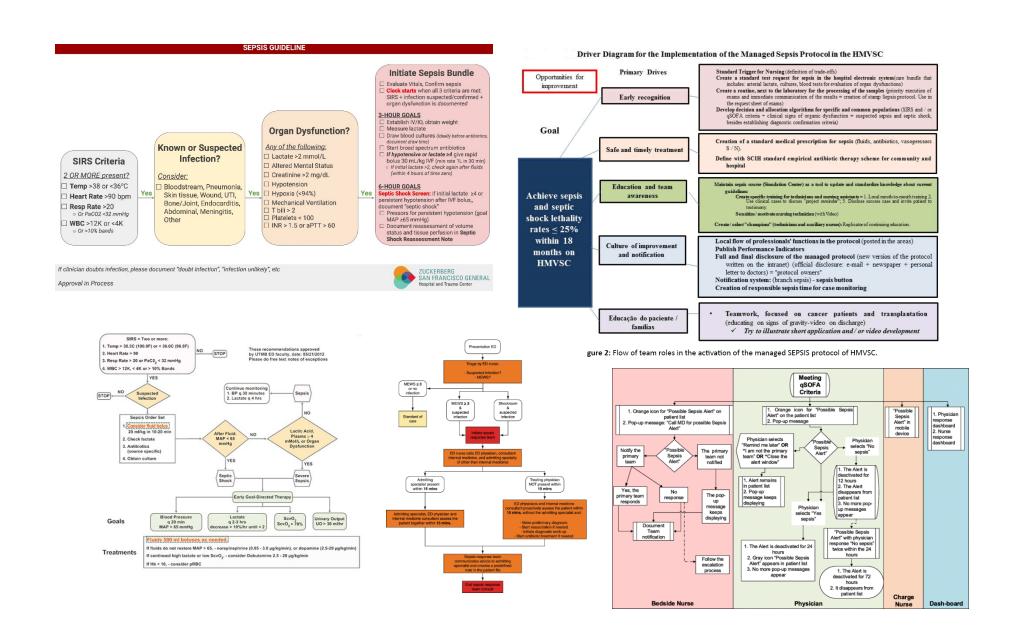


Watch for a combination of these symptoms. If you suspect sepsis, see a doctor urgently, CALL 911 or go to a hospital and say, "I AM CONCERNED ABOUT SEPSIS."

SEPSIS.ORG

IT'S A SIMPLE QUESTION, BUT IT COULD SAVE LIVES.

Compagned by the bar of chapter from



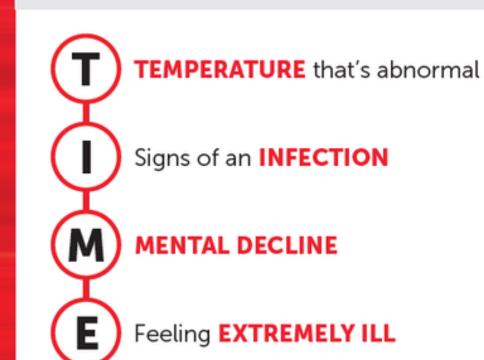


As many as

80% of sepsis deaths

could be prevented with rapid diagnosis and treatment.

When it comes to sepsis, remember: *IT'S ABOUT TIME*™. Watch for:

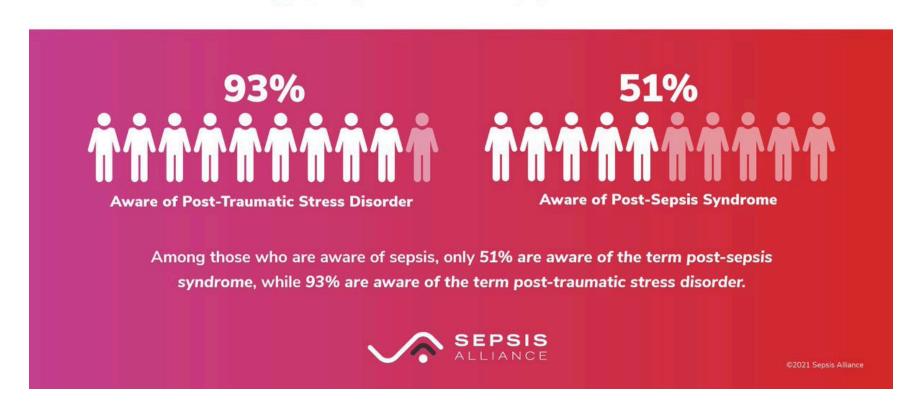


Take the time now to learn more at **sepsis.org**.



POST-SEPSIS SYNDROME AFFECTS MORE THAN HALF OF ALL SEPSIS SURVIVORS.

Many people – even those who are aware of sepsis – don't know that the debilitating psychological, emotional, and physical aftereffects exist.





Avera St. Lukes Hospital Sepsis Story



Improving Sepsis Compliance at Avera St. Luke's by Utilizing an Interprofessional Collaborative Approach

Melissa Waldner, RN, BSN



Moving Health Forward.

Objectives

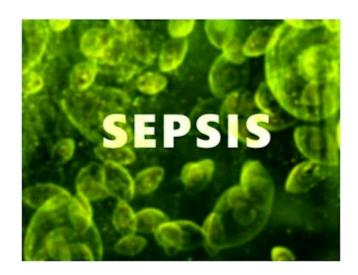


- Provide a general overview of sepsis.
- Discuss why SEP-1 compliance is important.
- Share changes ASL implemented to improve sepsis compliance.
- Provide visual data tracking sepsis compliance at ASL since changes implemented.
- Discuss challenges or barriers encountered.
- Share applicability to the rural healthcare setting and critical access hospitals.

Sepsis Definition



"Sepsis is a life-threatening condition that happens when the body's immune system has an extreme response to an infection, causing organ dysfunction. The body's reaction causes damage to its own tissues and organs and it can lead to shock, multiple organ failure and sometimes death, especially if not recognized early and treated promptly." (World Health Organization, 2024)



Sepsis Facts



- Costs for acute sepsis hospitalization and skilled nursing are estimated to be \$62 billion annually.
- Sepsis is the primary cause of readmission to the hospital, costing more than \$3.5 billion each year.
- On average, 30% of patients diagnosed with severe sepsis do not survive. It is the leading cause of death in U.S. hospitals.
- More than 1.7 million people in the U.S. are diagnosed with sepsis each year, with an estimated 270,000 deaths.

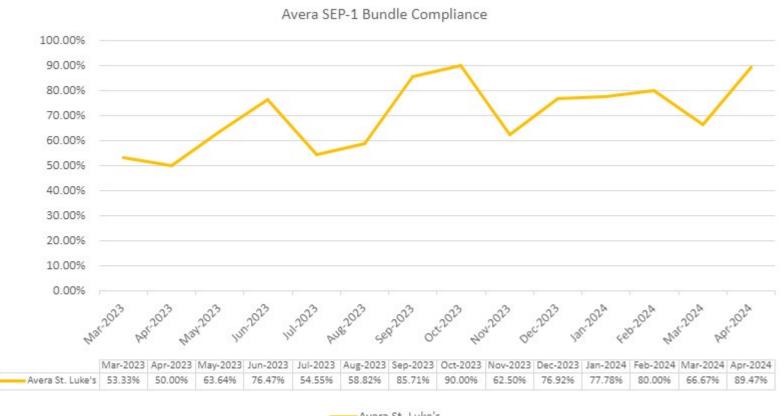


(Sepsis Alliance, 2024)

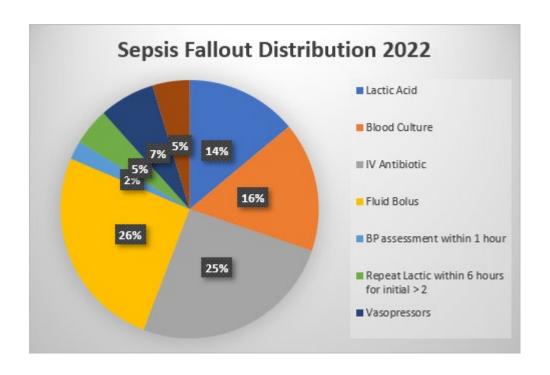
- Improve health outcomes for patients diagnosed with sepsis.
- Control healthcare costs related to sepsis treatment.
- CMS is proposing to adopt SEP-1 into its Hospital Value-Based
 Purchasing (VBP) Program beginning in the FY 2026 program year.
- Nationally, the average SEP-1 bundle compliance is only 50%.

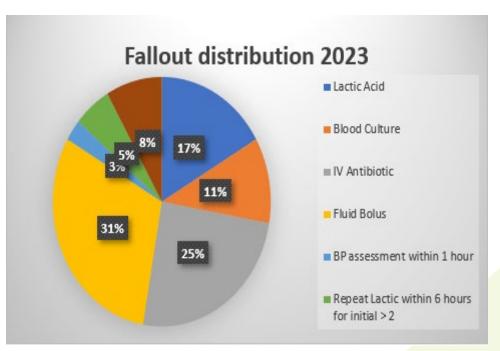
Avera St. Luke's SEP-1 Bundle Compliance





Sepsis Fallout Distribution







• Timeliness of blood culture collection

Confusion with workflow

Hand-off communication

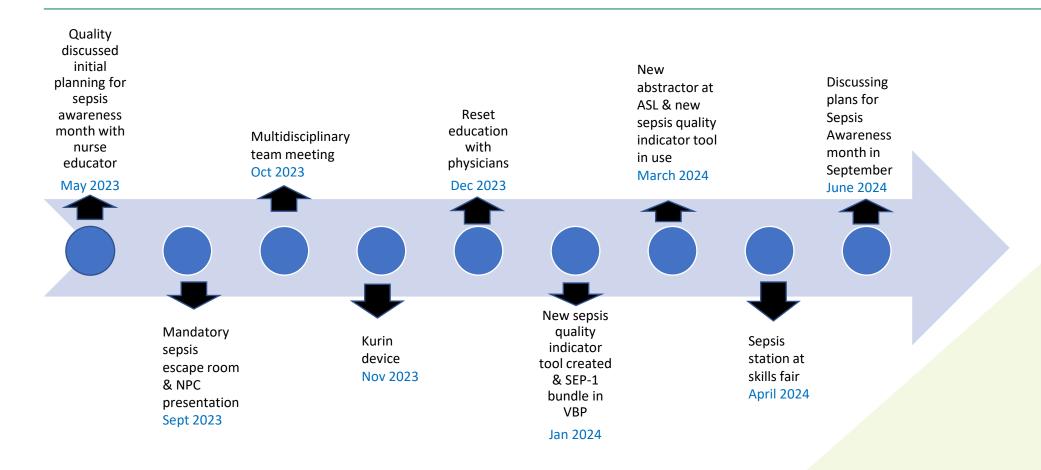
BREAK DOWN THE BARRIERS

Lack of utilization of order sets by providers

What did we identify as barriers to sepsis compliance?

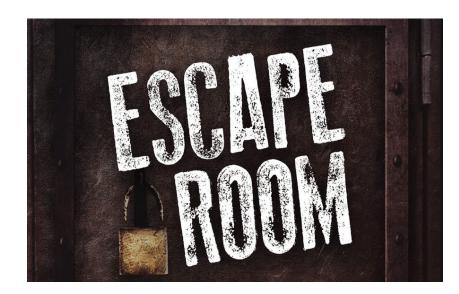


How did we improve compliance?





- Nurse educator approached by quality to provide sepsis education
- SD Association for Nursing Professional Development (SD ANPD) referral
- Discussed the idea of the sepsis escape room at our nurse practice council
- Developed the escape room by referencing materials provided by Michelle Hofer, BSN, RN, CPHQ





- Gaming is an emerging teaching methodology
- Increase in content retention
- Encourages critical thinking, strategizing, and performance under pressure
- Incorporates teamwork (TeamSTEPPS)
- Educational gaming develops active problem-based learning environments
 - Provide experiential education
 - Enhance learning
 - > Stimulate interest and motivation

(Gabriel et al., 2021)



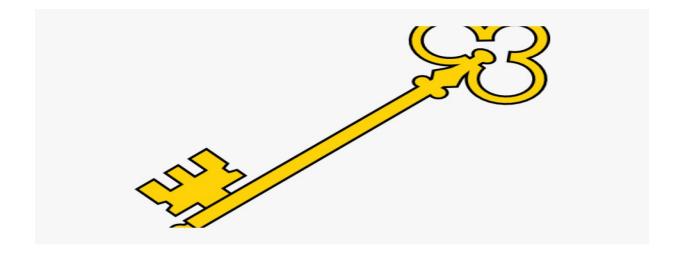
Objectives:

- Staff will identify infection screening symptoms
- Staff will identify SIRS, sepsis, severe sepsis & septic shock criteria
- Staff will follow the appropriate pathway on the sepsis quality indicator tool
- Staff will provide the patient the proper treatment protocol



Overview

- Teams will work through a sepsis case study by following multiple clues to treat the patient appropriately
 and "break out" of the room
- The team with the fastest time will be spotlighted in daily line-up and receive a sweet surprise





Sepsis Escape Room Considerations

- Establish rules for the escape room to ensure appropriate flow
- Develop a case study
- Location
- Equipment
- Clues
- **Ambiance**
- Pilot testing









Blood Culture Contamination

- "Blood culture contamination is associated with increased antimicrobial use, length of stay, and hospital
 cost. To address this problem, blood culture diversion has been developed as an additional measure to
 reduce contamination to targeted goals." (Mohajer & Lasco, 2023)
- "The estimated hospital cost for each false-positive blood culture is \$3073-\$4818, with an extended length of stay of 1-8.4 days leading to >\$1 billion in excess spending yearly." (Mohajer & Lasco, 2023)
- ED blood culture contamination rates exceed inpatient rates due to high staff turnover, patient acuity,
 limited time, and insufficient training. (Mohajer & Lasco, 2023)



How to minimize contamination rates?

- Education
- Skin disinfection
- Avoid using catheters to draw blood
- Use aseptic technique
- Prepackaged blood culture kits
- Monitor contamination rates and report surveillance data to phlebotomists and nurses

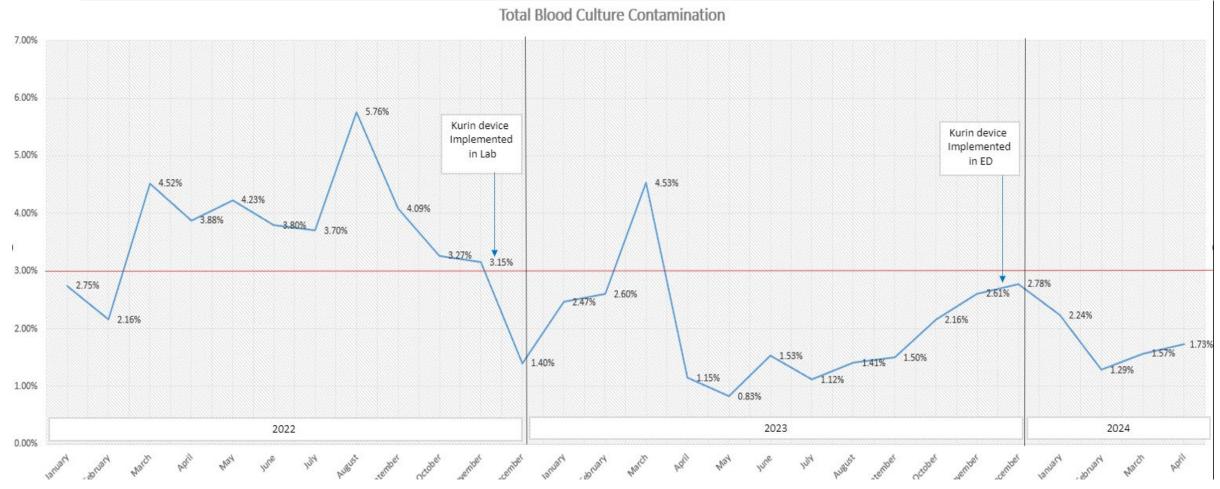


Specimen Diversion Systems

- Eliminates the first 0.15 to 1 milliliter of blood containing non-sterile skin fragments
- Improves clinical value of blood culture (reduces false-positives)
- Provides safer, more effective, and lower cost treatment.
 - > Appropriate antibiotic therapy
 - > Decreases length of stay
 - ➤ Combats MDROs (Kurin, 2024)
- Systematic literature review found diversion devices are capable of reducing blood culture contamination and identifying a true infection (Callado et al., 2023)



Specimen Diversion Systems





ASL Blood Culture Contamination Rates for March 2024

- ED collections
 - > Total of 44 blood cultures collected
 - > 17 were documented as having used a Kurin device and 0 of those were contaminated
 - > There were 3 contaminated cultures for a percentage rate of 6.8%
- Lab collections
 - > Total of 213 blood cultures were collected
 - > There was 1 contaminated culture for a percentage rate of 0.5%
- Total statistics
 - ➤ 4 contaminated of 257 for a percentage rate of 1.6%



Previous Sepsis Quality Indicator Tool

SEPSIS Quality Indicator To	Patient	LUDEY
nfection present or suspected? Infection Screening Symptoms ne or more of these symptoms, continue with screening ☐ Altered Mental Status	Time "Zero" is the ED Triage Time or direct admission to the floor/unit per Avera. ALWAYS continue to monitor for worsening symptoms of Sepsis – there are more orders needed in these situations!	
Cough/Short of breath Fever/Chills Purulent Wound Drainage Red Warm Skin Painful Urination No Infection Suspected	YES YES	Sepsis unlikely, consider othe underlying diagnosis bu continue to monitor for sepsi
ystemic Inflammatory Response Syndrome: two or more	of the following	1.Communicate to MD Positive
☐ Temp <96.8, >100.9 Time: ☐ Heart Rate (Pulse) >90 Time: ☐ Respirations > 20 Time:		Sepsis Screening 2. MD places standing Sepsi
☐ WBC <4,000, >12,000 or bands >10%; Time: ☐ Provider Documents Sepsis in EMR	Date/Time of + Screening Criteria Met:	order set 3.Follow treatment ONE protoco
☐ Screening Criteria WNL – Do NOT need to continue	MD Notified:	for SEP1 3hr and 6hr bundles a appropriate*below REASSESS & CONTINUE TO
	YES	MONTIOR
evere Sepsis: Sepsis + Organ Dysfunction - Must be met w/in 6 h	nours of each other	1.Follow treatment ONE & TWO
□ Sepsis criteria met □ Organ Dysfunction (any 1 criteria) within 6 hours of Sepsis criteria being met ○ Lactic Acid > 2		protocol for SEP1 3hr and 6h bundles as appropriate *See below
 ARF w/ new need for CPAP/BiPAP/Vent Support SBP<90, MAP<65 or SBP decreased by >40 point 	ts from normal Criteria Met:	REASSESS & CONTINUE TO MONITOR
 Decreased Urine Output: <0.5 ml/kg/hr for 2 co Total Bilirubin > 2.0 mg/dl 	nsecutive hours MD Notified:	
o INR > 1.5		
o Platelet < 100,000		
☐ Provider Documents Severe Sepsis in EMR	YES	
eptic Shock: Severe Sepsis + decreased tissue perfusion OR Lact	ic Acid > or = 4	1.Follow treatment ONE, TWO
☐ Severe Sepsis criteria met	YE	
☐ Lactic Acid > or = 4		SEP1 3hr and 6hr bundles a appropriate
 Persistent hypotension 2 or more consecutive low blood pressures within one hour 	Date/Time Septic Shock	*See below
infused (SBP<90, MAP <65)	Criteria Met:	REASSESS & CONTINUE T
□ Provider Documents Septic Shock in EMR	MD Notinea:	MONITOR
Treatment ONE Protocol SEPSIS/SEVERE SEPSIS/SEPTIC		
Treatment ONE Protocol SEPSIS/SEVERE SEPSIS/SEPTIC Lactic Acid Drawn (6 hours before - 3 hours after Sepsis criteria me	et)	-1
Treatment ONE Protocol SEPSIS/SEVERE SEPSIS/SEPTIC Lactic Acid Drawn (6 hours before - 3 hours after Sepsis criteria me If Lactic Acid > 2, Repeat LA if ordered within 3 hours (Re	et) epeat after highest Lactate in the time frame	e)
Treatment ONE Protocol SEPSIS/SEVERE SEPSIS/SEPTIC: Lactic Acid Drawn (6 hours before - 3 hours after Sepsis criteria m If Lactic Acid > 2, Repeat LA if ordered within 3 hours (Re Blood Culture: drawn BEFORE antibiotic started (24hours before 1).	et) speat after highest Lactate in the time frame sefore -3 hours after criteria met)	
Treatment ONE Protocol SEPSIS/SEVERE SEPSIS/SEPTIC Lactic Acid Drawn (6 hours before - 3 hours after Sepsis criteria me If Lactic Acid > 2, Repeat LA if ordered within 3 hours (Re	et) speat after highest Lactate in the time frame sefore -3 hours after criteria met) liture drawn (Must be IV 24 hours before-3 hours a	
Treatment ONE Protocol SEPSIS/SEVERE SEPSIS/SEPTIC Lactic Acid Drawn (6 hours before - 3 hours after Sepsis criteria m If Lactic Acid > 2, Repeat LA if ordered within 3 hours (Re Blood Culture: drawn BEFORE antibiotic started (24hours b Broad Spectrum or other antibiotic hung AFTER blood cu	et) speat after highest Lactate in the time frame sefore -3 hours after criteria met) liture drawn (Must be IV 24 hours before-3 hours a	
1. Treatment ONE Protocol SEPSIS/SEVERE SEPSIS/SEPTIC Lactic Acid Drawn (6 hours before - 3 hours after Sepsis criteria m If Lactic Acid > 2, Repeat LA if ordered within 3 hours (Re Blood Culture: drawn BEFORE antibiotic started (24hours b Broad Spectrum or other antibiotic hung AFTER blood cu 2. Treatment TWO Protocol SEVERE SEPSIS/SEPTIC SHOCK	et) speat after highest Lactate in the time framefore-3 hours after criteria met) fiture drawn (Must be IV 24 hours before-3 hours a (3hr and 5hr bundles)*	fter criteria met}
1. Treatment ONE Protocol SEPSIS/SEVERE SEPSIS/SEPTIC Lactic Acid Drawn (6 hours before - 3 hours after Sepsis criteria m If Lactic Acid > 2, Repeat LA if ordered within 3 hours (Re Blood Culture: drawn BEFORE antibiotic started (24hours b Broad Spectrum or other antibiotic hung AFTER blood cu 2. Treatment TWO Protocol SEVERE SEPSIS/SEPTIC SHOCK ALL ORDERS IN TREATMENT ONE *above* Initial Hypotension: 2 low BP's within 3 hts of each other Lactic Acid > or = 4	et) speat after highest Lactate in the time frame sefore -3 hours after criteria met) liture drawn (Must be IV 24 hours before-3 hours a (3hr and 6hr bundles)* (5BP<90, MAP <65) 6 hours before or 6hrs	fter criteria met)
1. Treatment ONE Protocol SEPSIS/SEVERE SEPSIS/SEPTIC Lactic Acid Drawn (6 hours before - 3 hours after Sepsis criteria m: If Lactic Acid > 2, Repeat La fi ordered within 3 hours (Re Blood Culture: drawn BEFORE antibiotic started (24hours b Broad Spectrum or other antibiotic hung AFTER blood cu Treatment TWO Protocol SEVERE SEPSIS/SEPTIC SHOCK ALL ORDERS IN TREATMENT ONE *above* Initial Hypotension: 2 low BP's within 3 https://deach.other Lactic Acid > or = 4 Crystalloid IV fluids at 30 ml/kg: kgx 30 = b.	et) speat after highest Lactate in the time frame sefere -3 hours after criteria met) iture drawn (Must be IV 24 hours before-3 hours a (3hr and 6hr bundles)* - (SBP<90, MAP <65) 6 hours before or 6hrs olius doseml	after criteria met
1. Treatment ONE Protocol SEPSIS/SEVERE SEPSIS/SEPTIC Lactic Acid Drawn (6 hours before - 3 hours after Sepsis criteria m If Lactic Acid > 2, Repeat LA if ordered within 3 hours (Re Blood Culture: drawn BEFORE antibiotic started (24hours b Broad Spectrum or other antibiotic hung AFTER blood cu 2. Treatment TWO Protocol SEVERE SEPSIS/SEPTIC SHOCK ALL ORDERS IN TREATMENT ONE *above* Initial Hypotension: 2 low BP's within 3 https://doi.or/10.1008/10.100	et) peat after highest Lactate in the time frame pefore -3 hours after criteria met) ifture drawn (Must be IV 24 hours before-3 hours a (3hr and 6hr bundles)* (58P<90, MAP <65) 6 hours before or 6hrs olus doseml	after criteria met after criteria met Bolus start time: Completion time:
1. Treatment ONE Protocol SEPSIS/SEVERE SEPSIS/SEPTIC Lactic Acid Drawn (6 hours before - 3 hours after Sepsis criteria m: If Lactic Acid > 2, Repeat La fi ordered within 3 hours (Re Blood Culture: drawn BEFORE antibiotic started (24hours b Broad Spectrum or other antibiotic hung AFTER blood cu Treatment TWO Protocol SEVERE SEPSIS/SEPTIC SHOCK ALL ORDERS IN TREATMENT ONE *above* Initial Hypotension: 2 low BP's within 3 https://deach.other Lactic Acid > or = 4 Crystalloid IV fluids at 30 ml/kg: kgx 30 = b.	et) speat after highest Lactate in the time frame spear after highest Lactate in the time frame spear a hours after criteria met) liture drawn (Must be IV 24 hours before a hours a (Shr and 6hr bundles)* (SBP<90, MAP <65) 6 hours before or 6hrs olus doseml for BMI > 30 *Document the order and use!*	after criteria met
1. Treatment ONE Protocol SEPSIS/SEVERE SEPSIS/SEPTIC Lactic Acid Drawn (6 hours before - 3 hours after Sepsis criteria m: If Lactic Acid > 2, Repeat LA if ordered within 3 hours (Re Blood Culture: drawn BEFORE antibiotic started (24hours b Broad Spectrum or other antibiotic hung AFTER blood cu 2. Treatment TWO Protocol SEVERE SEPSIS/SEPTIC SHOCK ALL ORDERS IN TREATMENT ONE *above* Initial Hypotension: 2 low BP's within 3 hus of each other Lactic Acid > or = 4 Crystalloid IV fluids at 30 ml/kg: kg x 30 = bi Document rate of infusion "IBW Galc Sepsis Fluid Bolus" order used ONLY in the company of the patient have ESRD or CHF (*Provided Control or the company of the patient have ESRD or CHF (*Provided Control or CHF	et) speat after highest Lactate in the time frams effore -3 hours after criteria met) ilture drawn (Must be IV 24 hours before-3 hours a (3hr and 6hr bundles)* -{SBP<90, MAP <65} 6 hours before or 6hrs olius doseml for BMI > 30 *Document the order and use!* tot giving 30mls/kg ilder must document why fluids given were <30ml/kg	after criteria met after criteria met Bolus start time: Completion time: BP 1 hr. post infusion due at: "" "See back for other examples"
1. Treatment ONE Protocol SEPSIS/SEVERE SEPSIS/SEPTIC: Lactic Acid Drawn (6 hours before - 3 hours after Sepsis criteria must be factic Acid > 2, Repeat LA if ordered within 3 hours (Re Blood Culture: drawn BEFORE antibiotic started (24hours be Broad Spectrum or other antibiotic hung AFTER blood cu Treatment TWO Protocol SEVERE SEPSIS/SEPTIC SHOCK ALL ORDERS IN TREATMENT ONE *above* Initial Hypotension: 2 low BP's within 3 hgs of each other Lactic Acid > or = 4 Crystalloid IV fluids at 30 ml/kg: kg x 30 = bi o Document rate of infusion o "IBW Gglg, Sepsis Fluid Bolus" order used ONLY if Use the "Sepsis Fluid Bolus Exception" order if n Does the patient have ESRD or CHF ** (*Provd If SEVERE SEPSIS or SEPTIC SHOCK occurs 6 hours after admit: repeat LA If its sepsit in the sepsit of the sep	et) speat after highest Lactate in the time frame spear after highest Lactate in the time frame spear after and spear and s	after criteria met after criteria met Bolus start time: Completion time: BP 1 hr. post infusion due at: "" "See back for other examples"
1. Treatment ONE Protocol SEPSIS/SEVERE SEPSIS/SEPTIC Lactic Acid Drawm (6 hours before - 3 hours after Sepsis criteria m If Lactic Acid > 2, Repeat La fi ordered within 3 hours (Re Blood Culture: drawn BEFORE antibiotic started (24hours b Broad Spectrum or other antibiotic hung AFTER blood cu 2. Treatment TWO Protocol SEVERE SEPSIS/SEPTIC SHOCK ALL ORDERS IN TREATMENT ONE *3bove* Initial Hypotension: 2 low BP's within 3 https://decatholicle.com/sepsis/sepsis/septic/sepsis	et) speat after highest Lactate in the time frame spear after highest Lactate in the time frame spear after and spear and s	after criteria met after criteria met Bolus start time: Completion time: BP 1 hr. post infusion due at: "" "See back for other examples"
1. Treatment ONE Protocol SEPSIS/SEVERE SEPSIS/SEPTIC Lactic Acid Drawn (6 hours before - 3 hours after Sepsis criteria m: If Lactic Acid > 2, Repeat LA if ordered within 3 hours (Re Blood Culture: drawn BEFORE antibiotic started (24hours b Broad Spectrum or other antibiotic hung AFTER blood cu 2. Treatment TWO Protocol SEVERE SEPSIS/SEPTIC SHOCK ALL ORDERS IN TREATMENT ONE *3bove* Initial Hypotension: 2 low BP's within 3 https://deach.other Lactic Acid > or = 4 Crystalloid IV fluids at 30 ml/kg: kg	et) speat after highest Lactate in the time frami effore -3 hours after criteria met) ifture draWn (Must be iV 24 hours before-3 hours a (3hr and 6hr bundles)*	after criteria met after criteria met Bolus start time: Completion time: BP 1 hr. post infusion due at: 2) "See back for other examples" es if not done in the last 48 hours
1. Treatment ONE Protocol SEPSIS/SEVERE SEPSIS/SEPTIC Lactic Acid Drawm (6 hours before - 3 hours after Sepsis criteria m If Lactic Acid > 2, Repeat La fi ordered within 3 hours (Re Blood Culture: drawn BEFORE antibiotic started (24hours b Broad Spectrum or other antibiotic hung AFTER blood cu 2. Treatment TWO Protocol SEVERE SEPSIS/SEPTIC SHOCK ALL ORDERS IN TREATMENT ONE *3bove* Initial Hypotension: 2 low BP's within 3 https://decatholicle.com/sepsis/sepsis/septic/sepsis	et) speat after highest Lactate in the time framefore-3 hours after criteria met) liture drawn (Must be IV 24 hours before-3 hours a (3hr and 6hr bundles)* (58P<90, MAP <65) 6 hours before or 6hrs olus doseml for BMI > 30 *Document the order and use!* oot giving 30mls/kg ider must document why fluids given were <30ml/kg not done within the last 6 hours, repeat Blood Cultur undles)* In the hour AFTER target volume of fluid given.	after criteria met after criteria met Bolus start time: Completion time: BP 1 hr. post infusion due at: 1 *See back for other examples* es if not done in the last 48 hours en;

Crystalloid Fluid Administration: Ordering physician/APN/PA must have documented within a single note in the medical record:

*January-June 2022

- A physician/APN/PA order for less than 30 mL/kg of crystalloid fluids is acceptable for the target ordered volume if all of the following criteria were met:
 - There is a physician/APN/PA order for the lesser volume of crystalloid fluids as either a specific volume (e.g. 1500 mL) or a weight-based volume (e.g., 25 mL/kg).
 - The ordering physician/APN/PA documented within a single note in the medical record all of the following:
 - The volume of fluids to be administered as either a specific volume (e.g., 1500 mL) or a weight-based volume (e.g., 25 mL/kg).
 - AND a reason for ordering a volume less than 30 mL/kg of crystalloid fluids. Reasons include and are not limited to:
 - Concern for fluid overload
 - Heart failure
 - Renal failure
 - Blood pressure responded to lesser volume
 - A portion of crystalloid fluid volume was administered as colloids (if a portion consisted of colloids, there must be an order and documentation that colloids were started or noted as given.
- Crystalloid fluid volumes ordered that are equivalent to 30 mL/kg or a lesser volume with a reason for a lesser volume specifically documented by the physician/APN/PA are the target ordered volume.
- A physician/APN/PA order for a volume of crystalloid fluids that is within 10% less than 30 mL/kg is acceptable for the target ordered volume. Documentation of a reason for a volume that is within 10% less than 30 mL/kg is not required.

Example documentation:

Physician documentation: Lactate 5.0, heart failure concerns, 20 mL/kg NS start now, then reevaluate.

Orders: NS 0.9% IV, 20 mL/kg over 2 hours

MAR: NS 0.9% IV 20 mL/kg, start time 1500, completed time 1700

OR

Physician documentation: septic shock, renal failure, 1500 mL NS evaluate for response

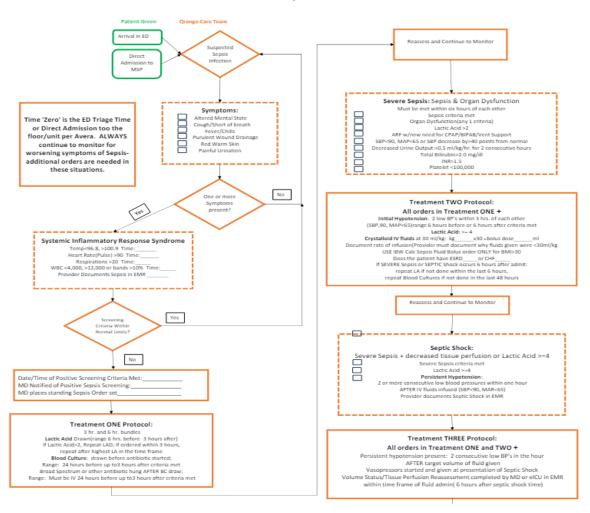
Orders: 1500 mL NS IV at 1000 mL/hr.

MAR: IV NS 1500 mL at 1000 mL/hr start time 0800 Patient weight is 74 kg, 30 mL/kg is 2220 mL



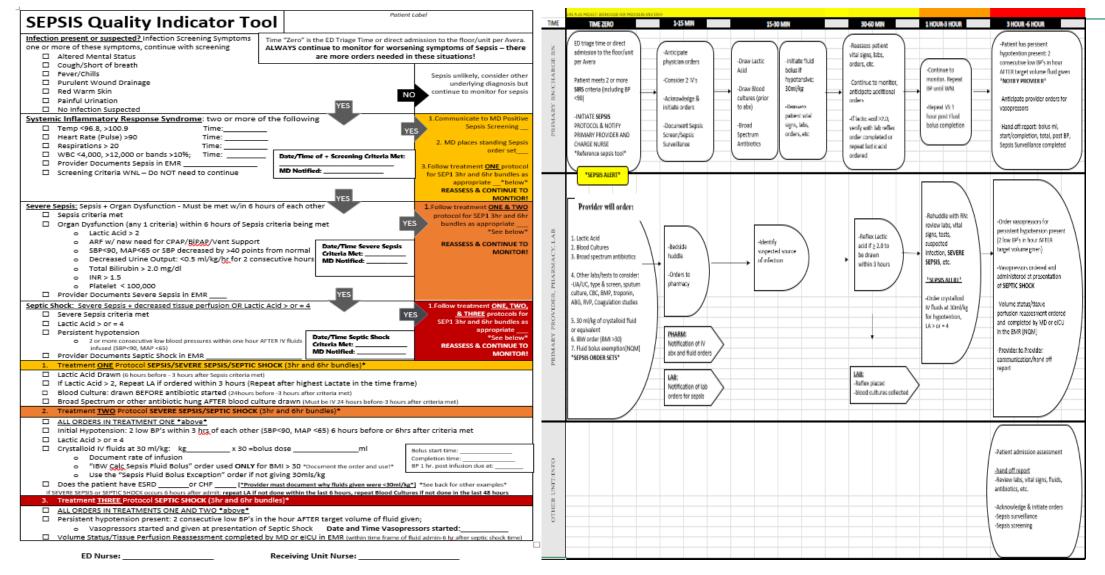
Potential Sepsis Quality Indicator Tool

SEPSIS Quality Indicator Tool



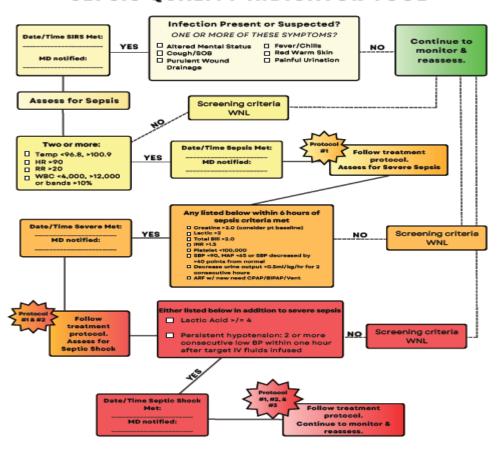


Edited Sepsis Quality Indicator Tool



Current Sepsis Quality Indicator Tool

SEPSIS QUALITY INDICATOR TOOL



SEPSIS PROTOCOLS

PROTOCOL # 1- SEPSIS

Lactic Acid Drawn (3 hours after sepsis criteria met or 6 hour before) If Lactic > 2, Repeat draw in 3 hours Blood Cultures Drawn PRIOR to antibiotics being hung (3 hours after sepsis criteria met or 24 hours before) IV Broad Spectrum Antibiotic (or provider order) AFTER blood cultures drawn (3 hours after sepsis criteria met or 24 hours before) If fluids administered prior to arrival, ensure to document amount in I&O	
PROTOCOL # 2 - SEVERE SEPSIS Complete Protocol # 1 Provider order set: Crystalloid IV Fluid Bolus @ 30mL/kg Does patient have ESRD, CSF, or concerns for overload? If so provider will consider less of a fluid bolus. Provider must document why 30mL/kg was not used. If Septic Shock cocurs 6 hours after admission: Repeat Lactic Acid draw if not done within the last 6 hours Repeat Blood Culture draw if not done within the last 48	
PROTOCOL # 3 - SEPTIC SHOCK Complete Protocols # 1 & # 2 If persistent hypotension after target fluid volume given begin Vasopressors Date & Time Started: Volume Status/Tissue Perfusion Reassessment completed by MD or eICU in EMR within 6 hours of fluid administration Palliative Care consult ordered	
NURSING CONSIDERATIONS Be on the lookout for the sepsis surveillance being triggered on your patient. If triggered, follow flowsheet for sepsis screening and ensure to notify the provider. If labs were not drawn or antibiotic hung within timeframe, ensure to enter nursing note as to why. If LA >2, ensure reflex order remains in and does not get canceled. Ensure to chart on the septic shock reassessment within the time frame.	



Sepsis Alert

• Escape Room

Hand-off communication

Order sets



Challenges identified with implemented changes

Real-time feedback



Critical Access Hospitals



Designation:

- 25 or fewer acute care inpatient beds
- Located more than 35 miles from another hospital
- Annual average length of stay 96 hours or less for acute care patients
- Provide 24/7 emergency care services



(Rural Health Information Hub, 2024)

- Poverty
- Lower education level
- Unemployment
- Lack of health insurance
- Transportation
- Poor health (chronic illness)
- Psychological distress
- Lack of providers
- Lack of resources
- Lack of exposure to high-acuity patients



(Seright & Winters, 2015)



- Sepsis screening
- Sepsis quality indicator tool
- Report quality measures
 - Decreases mortality
 - > Increases guideline compliance
- Education (ongoing)
- Engage in knowledge sharing
- Infection control protocols
- Telemedicine
- Communication when transferring patients to other facilities

(Greenwood-Erickson et al., 2019)





References

- Callado, G. Y., Lin, V., Thottacherry, E., Marins, T. A., Martino, M. D. V., Salinas, J. L., & Marra, A. R. (2023).
 Diagnostic stewardship: a systematic review and meta-analysis of blood culture collection diversion devices used to reduce blood culture contamination and improve the accuracy of diagnosis in clinical settings. *Open Forum Infectious Diseases*, 10(9), 1–10.
 https://eds.p.ebscohost.com/eds/pdfviewer/pdfviewer?vid=11&sid=13141ce2-3bca-49d9-9c33-5514e45d1c2b%40redis
- Gabriel, P. M., Lieb, C. L., Sara Holland, Ballinghoff, J., Cacchione, P. Z., & McPeake, L. (2021). Teaching evidence-based sepsis care: a sepsis escape room. *Journal of Continuing Education in Nursing*, 52(5), 217–225.
 https://doi.org/https://journals-healio-com.eu1.proxy.openathens.net/doi/10.3928/00220124-20210414-05
- Greenwood-Erickson, M. B., Rothenberg, C., Mohr, N., Andrea, S. D., Slesinger, T., Osborn, T., Whittle, J., Goyal, P., Tarrant, N., Schurr, J. D., Yealy, D. M., & Venkatesh, A. (2019). Urban and rural emergency department performance on national quality metrics for sepsis care in the United States. *The Journal of Rural Health*, 35(4), 490–497.

https://doi.org/https://eds.p.ebscohost.com/eds/pdfviewer/pdfviewer?vid=18&sid=13141ce2-3bca-49d9-9c33-5514e45d1c2b%40redis



References

- Kurin® Blood Culture Collection set: Better specimens for better outcomes. Kurin. (2024, March 14).
 https://www.kurin.com/
- Mohajer, M. A., & Lasco, T. (2023b). The impact of initial specimen diversion systems on blood culture contamination. *Open Forum Infectious Diseases*, 10(5), 1–6.
 https://eds.p.ebscohost.com/eds/folder?vid=6&sid=13141ce2-3bca-49d9-9c33-5514e45d1c2b%40redis
- Rural Health Information Hub. (2024). https://www.ruralhealthinfo.org/
- Sepsis Fact Sheets. (2024). Sepsis Alliance. https://www.sepsis.org/education/resources/fact-sheets/
- Sepsis. (2024). World Health Organization. https://www.who.int/news-room/fact-sheets/detail/sepsis
- Seright, T. J., & Winters, C. A. (2015). Critical care in critical access hospitals. Critical Care Nurse, 35(5), 62–67. https://doi.org/https://eds.p.ebscohost.com/eds/pdfviewer/pdfviewer?vid=16&sid=13141ce2-3bca-49d9-9c33-5514e45d1c2b%40redis



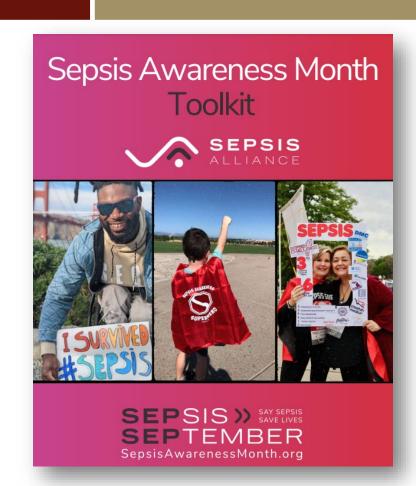
Thank You!



Moving Health Forward.

Sepsis Alliance Tools

- Faces of Sepsis | Sepsis Alliance
- Sepsis Awareness Month Toolkit
- Sepsis Alliance Resource Hub
- Help spread Sepsis Awareness Month across social media by sharing posts throughout the month! Remember to tag @SepsisAlliance and use the hashtags #SepsisAwarenessMonth and #SAM2024.



Questions?



Stay Connected!



Podcast: Q Tips for Your Ears
Looking for health care information and quality resources?
greatplainsqin.org/q-tips-for-your-ears/



Join Our Community Coalition Listserv gaggle.email/join/communitycoalition@groups.greatplainsqin.org



Connect with QI Advisors greatplainsqin.org/about-us/who-we-are/

Thank You!





This material was prepared by Great Plains Quality Innovation Network, a Quality Innovation Network – Quality Improvement Organization, under contract with the Centers for Medicare & Medicaid Services (CMS), an agency of the U.S. Department of Health and Human Services (HHS). Views expressed in this material do not necessarily reflect the official views or policy of CMS or HHS, and any reference to a specific product or entity herein does not constitute endorsement of that product or entity by CMS or HHS. 12SOW/GPQIN/QIN-QIO-521/0824