Implementing the AIM Sepsis in Obstetric Care Bundle Across the Women's Health Service Line 2024-2025

UPMC Magee-Womens

UPMC MAGEE-WOMENS

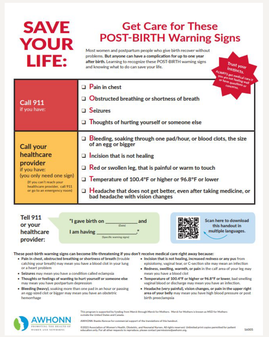
PA PQC Pennsylvania Perinatal Quality Collaborative

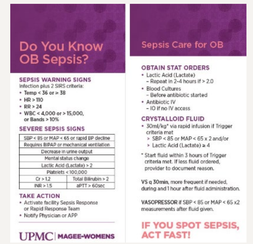
Problem Statement

- Obstetric (OB) sepsis is a life-threatening condition defined as organ dysfunction resulting from infection during pregnancy, delivery, post-abortion or postpartum
- OB sepsis is the 2nd leading cause of maternal mortality; 3rd leading cause of Severe Maternal Morbidity(SMM) at delivery; 1st leading cause of SMM during antepartum & postpartum periods
- An estimated 63-73% of maternal deaths from sepsis are preventable
- For each maternal death, there are 50 pregnant/birthing persons who experience life threatening morbidity from sepsis
- Significant racial inequities in the US related to OB sepsis cases that disproportionately affect those from underrepresented minority groups
- Changes in vital signs are an early indicator of infection but can be dismissed due to normal physiologic changes in pregnancy (e.g., decreased blood pressure, increased heart rate)

Key Interventions

- Developed system policy draft with multidisciplinary team
- Created OB sepsis education, including the patient voice
- Launched OB sepsis initiative during Maternal Health Awareness Day
- Scheduled system-wide multidisciplinary monthly meetings to review data using AIM SMM case review form
- Distributed OB sepsis badge buddies to staff
- Replaced CDC Urgent Warning Signs with the AIM Urgent Warning Signs- automatically sent to patients in 1st trimester through MYUPMC (QR code converts education to 80 languages)
- Distributed the revised AWHONN Post Birth Warning Signs magnet to patients during hospital discharge





Lessons Learned

- Recognizing changes in VS can aid in early identification of sepsis
- Full VS assessments are not completed (missing RR/MAP/temperature).
- A difference of 3-5 breaths a minute can be a crucial recognition
- Listening to patients, educating when to seek care, & ensuring they feel heard is essential
- Challenges with UPMC Daily Sepsis Report as it does not reflect OB criteria
- Dashboard for sepsis focuses on labor admission, opportunities to review
- Understanding risk factors & bias related to sepsis (consider SDOH, previous c-section, history of GBS, substance use disorder, mental health disorders, race)

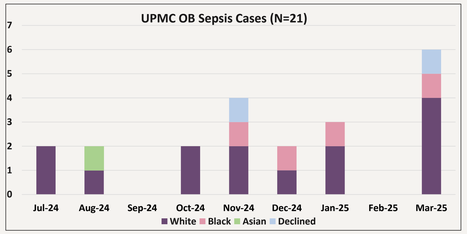
Focus Area & Status

- System-wide policy created, awaiting CMQCC updated tool kit before finalizing
- Staff education provided
- System-wide monthly case/data reviews
- Recognizing signs & symptoms of sepsis recognitions
- Identifying opportunities from lessons learned

Measures & Results

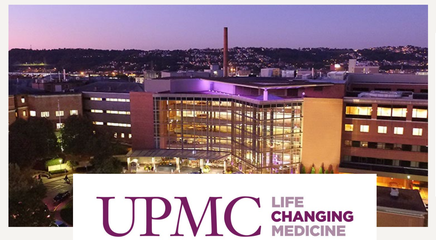
Link on QR code for individual hospital results

Altoona
Hamot
Hanover
Harrisburg
Horizon
Lititz
Magee-Womens
Wellsboro/Williamsport



18,171 total births across UPMC from July 2024 – March 2025

References



Advancing Obstetric Sepsis Recognition Through Social Determinants of Health Awareness & Team Training

Magee-Womens, UPMC Hamot

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Problem

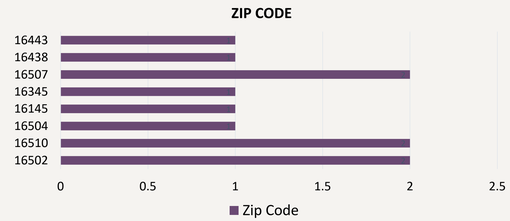
- Obstetric (OB) sepsis is a major contributor to pregnancy-related deaths, with over 60% of these deaths deemed preventable. Black birthing individuals are over three times more likely to die from sepsis compared to white individuals. Similar disparities are observed among American Indian (AI), Alaskan Native (AN), rural, and public health insurance birthing populations. Social determinants of health (SDOH) and disparities may impact patients at risk for OB sepsis or those diagnosed with sepsis at Magee-Womens and UPMC Hamot.

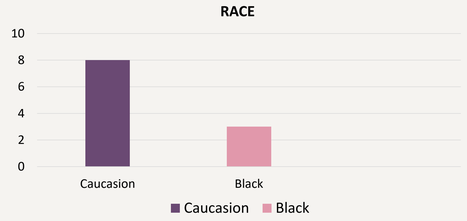
- Due to the rarity of OB sepsis during pregnancy and postpartum, maternity nurses might overlook patient concerns and subtle changes in status related to sepsis. Variations in vital signs, lab results, and patient complaints are often dismissed as normal physiological changes associated with pregnancy and childbirth.

Key Interventions

- Identified cases via automated daily sepsis report or in real time Completed OB sepsis & serious infection chart reviews to identify trends related to SDOH & disparities
- Reviewed charts with the multidisciplinary team from the Women's Hospital Patient Safety Quality (WH PSQ) Committee to discuss SDOH, disparities, & opportunities to enhance patient care
- Analyzed chart reviews to create educational materials for staff, aiming to improve equitable care & patient outcomes
- Developed an OB sepsis simulation scenario for staff to demonstrate knowledge, clinical assessment skills, & effective communication
- Administered a pre & post knowledge survey during the education & simulation sessions
- Relayed information to staff & providers monthly

Results from July 1, 2024 – March 31, 2025

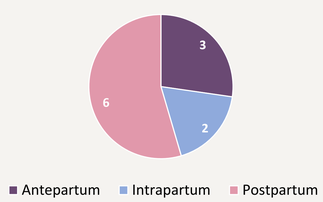


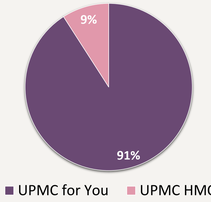


- Due to low numbers of OB sepsis cases, charts for serious infection during antepartum, intrapartum, & postpartum were also reviewed
- 11 patient charts were reviewed by the Programmatic Nurse Specialist & OB Triage Physician Assistant
- 10 patients were on Medicaid (UPMC for You)
- 7 patients reside in the City of Erie, while 4 patients reside in Erie County
- 2 patients lived 60 miles from the hospital
- 3 patients were transferred to the Intensive Care Unit
- Average of 32 minutes from identification of serious infection/sepsis to provider order entry
- Average of 2.29 hours from identification of serious infection/sepsis to antibiotic administration
- Common etiologies included pyelonephritis, endometritis, intraamniotic infection, & probable virus with positive sepsis vital sign triggers

1468 Births
81.2% White
11.6% Black
4.0% Asian
2.0% Declined
1.0% Unknown
0.3% AI/AN

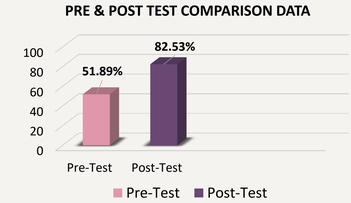
The most critical patient was a black female admitted on postpartum day 23 for abdominal pain & vomiting. SDOH included Medicaid coverage & residence in a high-poverty zip code. Substance use & mental health disorders were also noted in the medical record. Due to a worsening clinical status, the patient was transferred to the operating room for an exploratory laparotomy that resulted in a total abdominal hysterectomy. Uterine cultures were positive for Group B Strep & blood cultures were positive for Group A Strep. During the chart review, a delay in antibiotic administration was identified during the hospitalization.

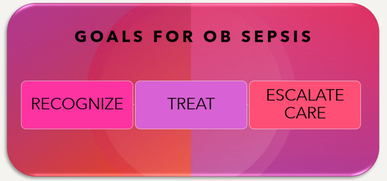




Education & Simulation

- Educational module focused on OB sepsis signs & symptoms, bedside evaluation components, patient education, & patient voice testimonial videos
- 100% of staff received education during simulation sessions
- UPMC OB sepsis badge buddies provided to all staff
- Ongoing data updates & education presented at WH PSQ, OB Department Meetings, & Nursing M & M Meetings





Future Goals

- Collaborate with UPMC to develop a system policy for OB sepsis that addresses racial disparities, mortality, & severe maternal morbidity related to sepsis
- Create patient education related to serious infection/sepsis
- Conduct OB sepsis in-situ simulations on all OB units
- Continue chart reviews to improve equitable care & patient outcomes
- Our teams would most like to learn about electronic medical record alerts for OB sepsis criteria

UPMC | MAGEE-WOMENS

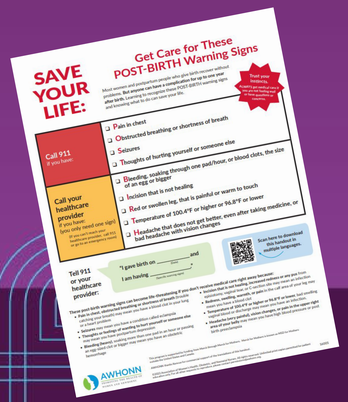
Maternal Sepsis: Are we listening?

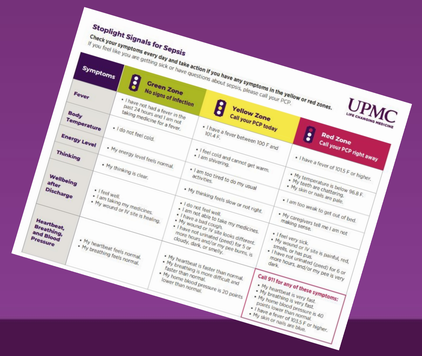
Equity Pause

- Implemented into Patient Safety Rounds

Patient Voice

- Two-sided handout with POST-BIRTH warning signs & Sepsis warning signs
  - Given on day of discharge from post-partum
  - Follow up with patient at 2 weeks post-partum





Wellsboro

Implementation still in progress

Williamsport

Equity Pause: 85% (7/1/24-2/28/25)

Patient Voice:

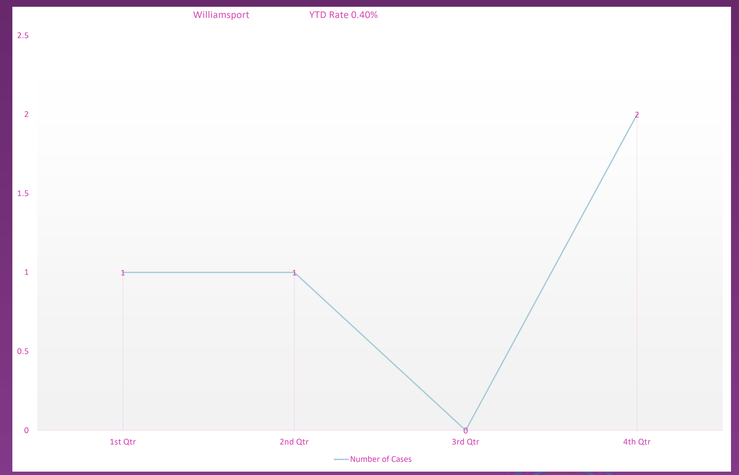
35% of patient reached at 2 weeks postpartum

63% recalled receiving handout

54% found it helpful

No patient suggestions for change

Wellsboro YTD Rate 0.0% No cases in 2024



North Central Pennsylvania (NCPA): Wellsboro & Williamsport

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UPMC Magee-Womens Hospital AIM OBSTETRIC SEPSIS Bundle Lessons Learned:

Jacob Larkin, MD; Anna Binstock, MD; Amber Oakes, Pharm D, BCPS; Lisa Carozza, RN, MSN, CPHQ; Caitlin O'Bryan, BSN,RN, c-EFM; Jamie Clark, MSN, RNC-OB, c-EFM, CBC; Vivian Petticord, DNP, RNC, CNL

Patient Voice

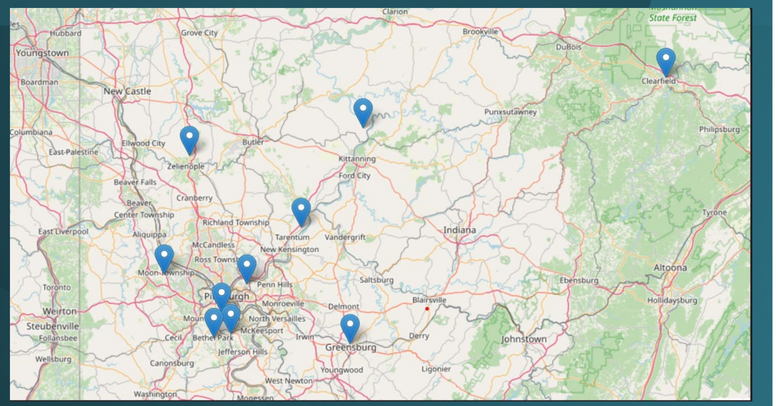
- April's story integrated into staff education in inpatient / outpatient settings
- Maternal Health Awareness Day Grand Rounds launched sepsis provider /staff education with Ryan Hansen- creator of MHAD presenting the Tara Hansen story

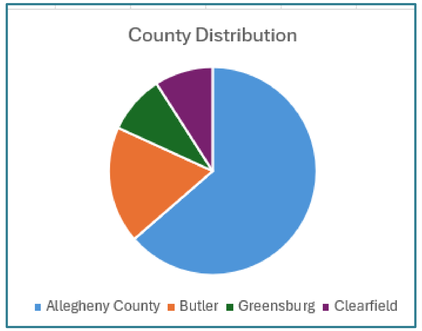
Health Equity

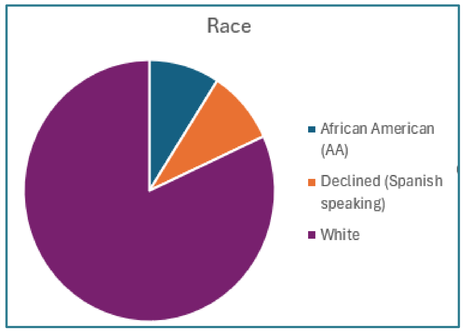
- SDOH : Majority of cases- English speaking, White race, Medicaid insured, living in Allegheny County. No trend in cases by zip code.
- No sepsis cases readmitted within 30 days.
- All sepsis cases timely identified.

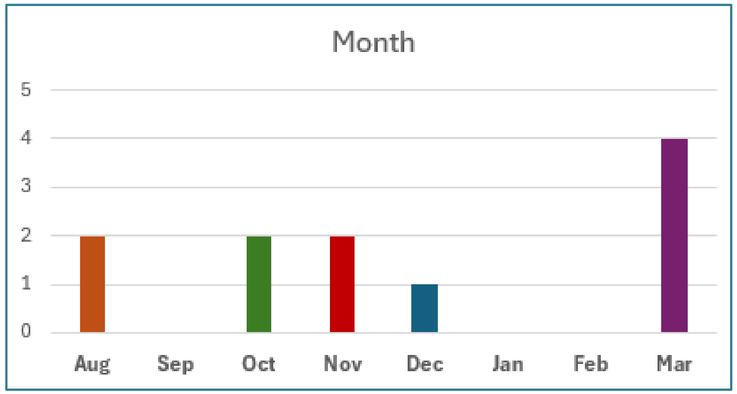
Lessons Learned/ Opportunities

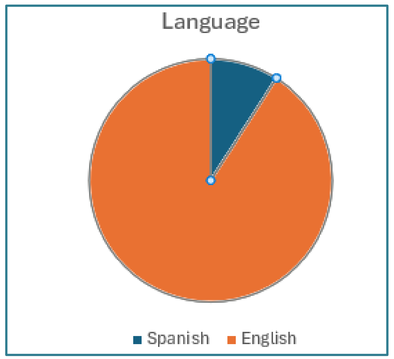
- Fever most common symptom.
- Puerperal sepsis most common
- Most cases associated with chorio
- Missing documentation was respiratory rate
- and map
- Need to capture sepsis cases outside of birth encounter

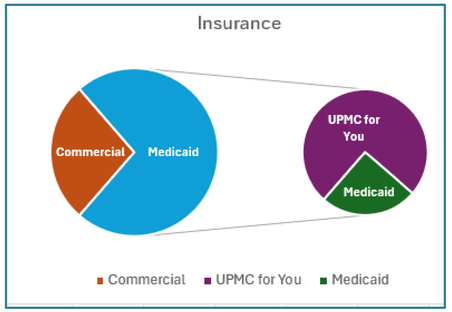












UPMC Altoona

- **No sepsis cases**
  - Qliksense is showing 0 for sepsis for Q 4 2024 and Q 1 2025. However, there were 3 chorio cases for Q4, and 7 chorio for Q1 2025. Charts were reviewed for opportunities, especially with early onset sepsis (EOS) in the newborn. There were some false positives on the Sepsis report due to infant vital signs being charted in mother chart-education was provided to not chart infant vitals on maternal chart.
  - Opportunities were: identify chorio risk factors and share at huddles (patients of concern); review FAST protocol and signage on cribs.
  - Staff are working on completing ACOG Maternal Sepsis education.

- **Patient Voice**
  - Staff watching “April’s Story” and discussions (90% completed and shown to new hires)
    - MI AIM Sepsis Collaborative Patient Story

- **Health Equity**
  - SSI numbers, reinforcing incision care and education for patients to improve (low socioeconomic status had higher rates) 2025 YTD=1 SSI.
  - Reviewed SSI chart: opportunity for azithromycin to be ordered for laboring patient.
  - UPMC Altoona participated in Moment of Silence during Black Maternal Health Week April 11-17, 2025 to emphasize the Stop, Look, and Listen to promote better outcomes for our patients. Obstetricians also participated in the Moment of Silence.

PA Perinatal Quality Collaborative 2024-2025
UPMC Hanover – Maternal Sepsis Initiative

UPMC MAGEE-WOMENS

Amanda Lawrence, DNP, RN, AGCNS-BC, RNC-OB, C-EFM, C-FMC, EBP-C; Colleen Dixon, BSN, RN; Katherine Johnson, CNM; Amy Hursh, MSN, RN, C-EFM

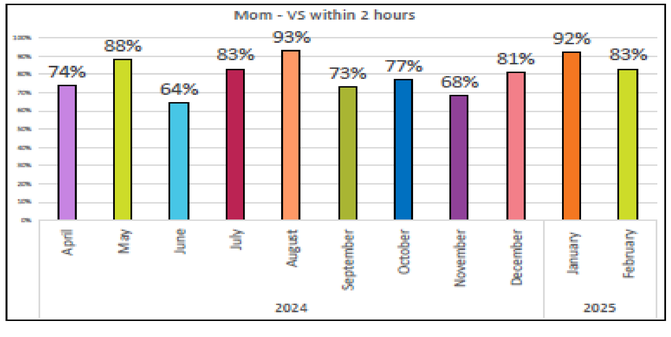
- AIM: 1) Complete a quarterly review of patients with sepsis to identify social determinants of health that may impact their health equity and share with staff/providers at department and staff meetings, 2) Educate staff on Maternal Sepsis including patient testimonial videos, and 3) Increase the number of patients that receive vital signs within 2 hours prior to discharge

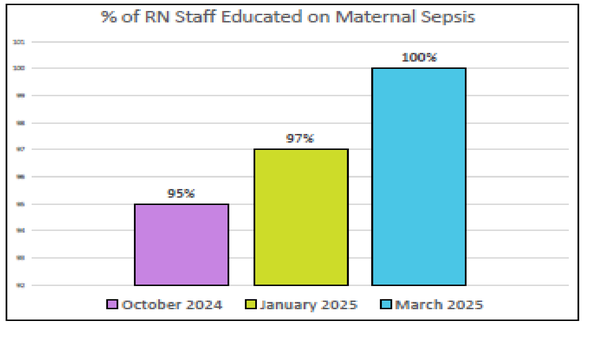
- FOCUS: 1) Identify patients with intraamniotic infection (due to non-existent/low cases of sepsis), 2) Review social determinants of health for the patients identified with an intraamniotic infection diagnosis, 3) Present education to staff including patient testimonials, and 4) Educate staff regarding the importance of vital signs within 2 hours prior to discharge

- MEASURES: number of patients who met criteria for intraamniotic infection, demographic data, proper diagnosis in the chart / coded for intraamniotic infection, criteria that increases the risk of intraamniotic infection (e.g., length of rupture), number of staff educated on Maternal Sepsis and the number of patients who did and did not have vital signs obtained within 2 hours of discharge

- INTERVENTIONS: Quarterly reports of patients with intraamniotic infection and a review of their social determinants of health, staff education and periodic reminders with real time data regarding the importance of vital signs within 2 hours of discharge, and education during skills day with a PowerPoint module and 2-4 patient testimonial videos of patients who had real life experiences with sepsis.

- RESULTS: Social determinants of health of patients with intraamniotic infection were shared with staff at staff meetings, and almost monthly at Department of Obstetrics meetings. Education was presented to 100% of RN staff regarding sepsis. Six out of ten months over 80% of patients had recorded vital signs within 2 hours prior to discharge. The other months ranged from 64% - 77%.





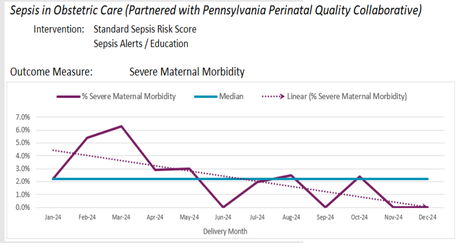
Magee Women's at UPMC Horizon

Lisa Lehett, RN, BSN, RNC-OB, Clinician; Christine Becker, PhD, MBA/HCM, RN, Unit Director

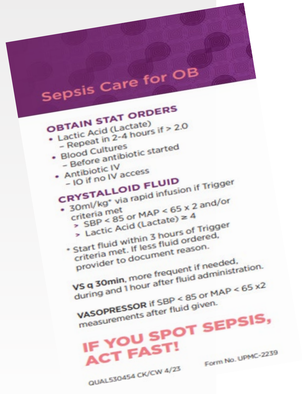
UPMC LIFE CHANGING MEDICINE

AIM Sepsis in Obstetric Care

Severe Maternal Morbidity



Sepsis Hang Tags



AIM

- Improve recognition, treatment, and escalation of care of sepsis in obstetric care.

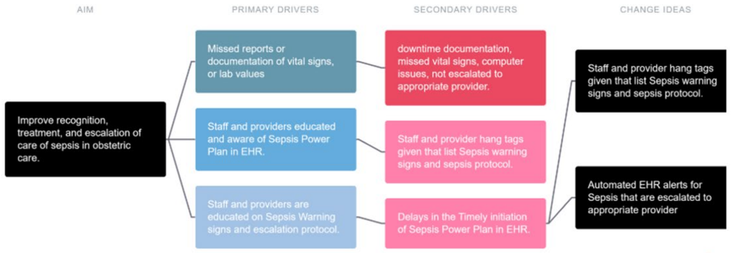
Problem

- Undiagnosed / underdiagnosed sepsis in pregnant women increases maternal morbidity and mortality and results in delays in treatment.

Rationale

- Improve recognition of sepsis leads to timely intervention and better patient outcomes.

Driver Diagram



Sepsis Cases

2023:
No (0) cases

2024:
No (0) cases

Jan-Mar 2025:
No (0) cases

Education

October 2024

- Obstetric Sepsis
  - Providers
  - Nursing staff
- Respectful and Equitable Care
  - Providers
  - Nursing staff