



NEC

August 2023



NEC

NEC is a common but serious gastrointestinal disease affecting a newborn infant in which the lining of the tissues of the GIT tract becomes inflamed and dies. This is a medical and possible surgical emergency and may cause perforation. This is most commonly seen in premature infants (< 1 Year). This results in the inability of the neonate to digest their feeds.



A newborn baby is lying on a white surface, possibly a bed or blanket. The baby's face is partially visible in the upper left, showing their eyes, nose, and mouth. The baby's hands are clasped together, and an adult's hand is gently holding them from below. The adult's hand is positioned in the lower left, with fingers spread, supporting the baby's hands. The overall scene is soft and intimate, suggesting a moment of care and protection.

NEC

- **Definitions:**
- **Newborn:** >37 weeks
- **Premature Infant:** <37weeks gestation

NEC

- Signs and Symptoms
 - Abdominal distention/swelling
 - Discoloration of the abdominal area
 - Diarrhea
 - Bloody stool
 - Large green aspirates
 - Signs of sepsis



NEC

- **Diagnostics**

- Clinical diagnostics
- Blood Cultures-30% of neonates will culture a positive organism
- X-Rays's: Refer to CDC guidelines





NEC

- **CDC Criteria**
- The infant must have one of the clinical and one of the imaging test findings from the following list:



NEC

- **CDC Criteria**

- At least one of the clinical signs:
 - Bilious aspirate
 - Vomiting
 - Abdominal distention
 - Blood in the stool(with no rectal fissure)

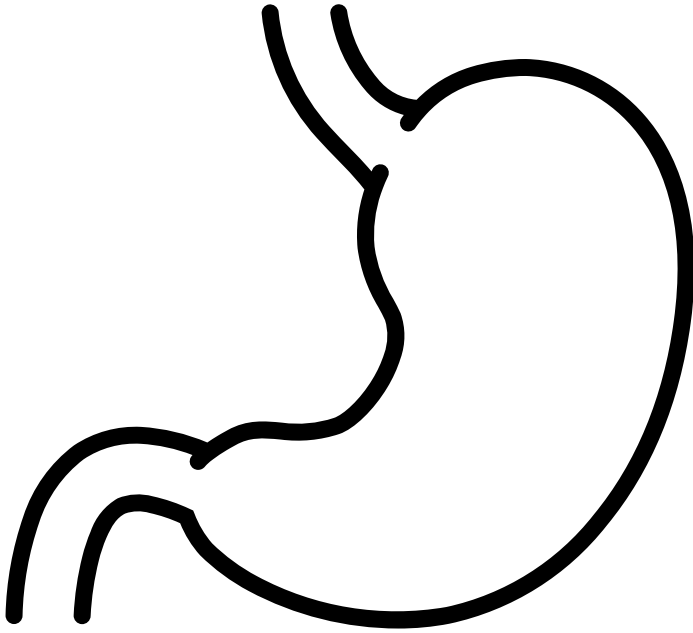




NEC



- **CDC Criteria**
- At least one imaging test findings:
 - Pneumatosis intestinalis
 - Portal venous gas
 - Pneumoperitoneum



NEC

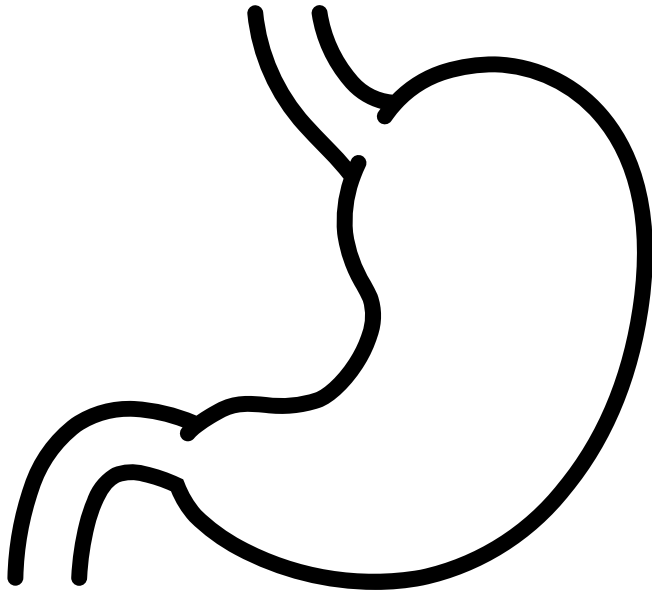
- **Pneumatosis**

- This is the presence of air in any portion of the gastrointestinal tract of which may present as a cyst or air bubbles

NEC

- **Portal Venous Gas**

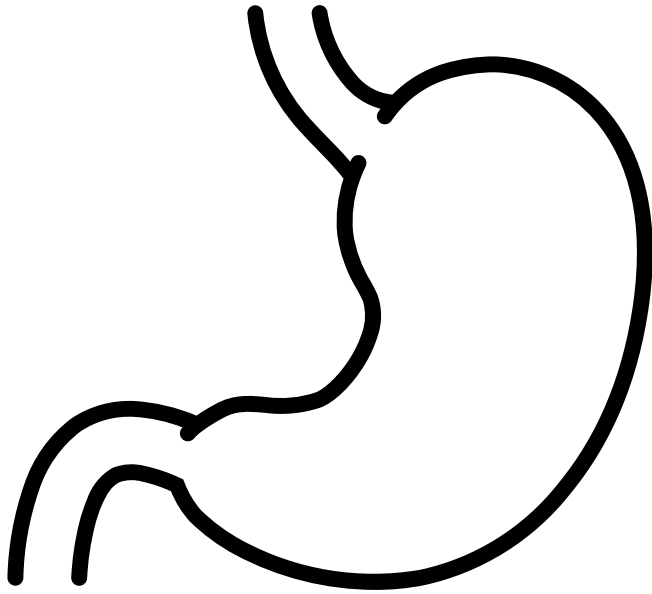
- This is usually associated with a pneumatosis. This is an accumulation of gas in the portal vein.



NEC

- **Pneumoperitoneum**

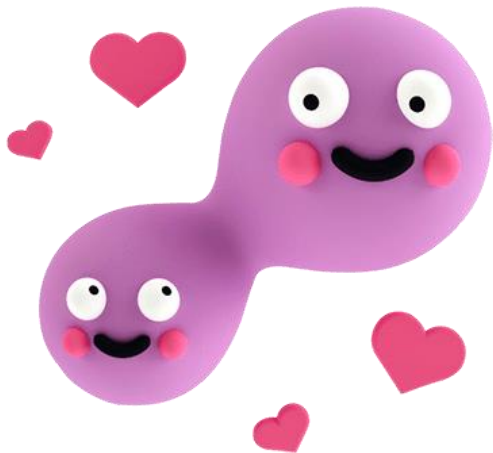
- This refers to the presence of air within the peritoneal cavity



NEC



NEC



Case Study

- Infant born at 26/40 as a result of premature rupture of membranes
- Infant delivered via C/section
- Infant intubated and umbilical lines inserted as well as an NG tube.
- Commenced on IVI fluids and antibiotics
- 24hrs later the infant was commenced onto EBM of which had been tolerated well with minimal aspirates.

NEC



Case Study

- 7 days later the infant presented with minimal aspirates although with a tinge of green in colour but continued to tolerate feeds well. The infant continued on EBM
- 3 days later the infant presented with signs of distress and discomfort. The abdomen was distended.
- Large green aspirates had also been noticed.
- The EMB feeds had immediately been discontinued

NEC



Case Study

- An NEC investigation was commenced: Imaging investigations-abdominal investigations and Blood cultures had been taken
- An NEC was diagnosed and classified meeting CDC guidelines:
 - ✓ Distended abdomen-Clinical sign
 - ✓ Bilious aspirates-Clinical sign
 - ✓ Pneumatosis presenting in the abdominal X-ray

NEC



Always classify an
NEC with the
Pediatrician



NEC

- **Contributing Intrinsic Factors**
 - Gestational Diabetes
 - Premature rupture of membranes
 - Premature birth-
Microprems
 - Low birth weight
 - Respiratory Distress syndrome
 - Preeclampsia
 - Chorioamnionitis-
Inflammation of the
placenta membranes



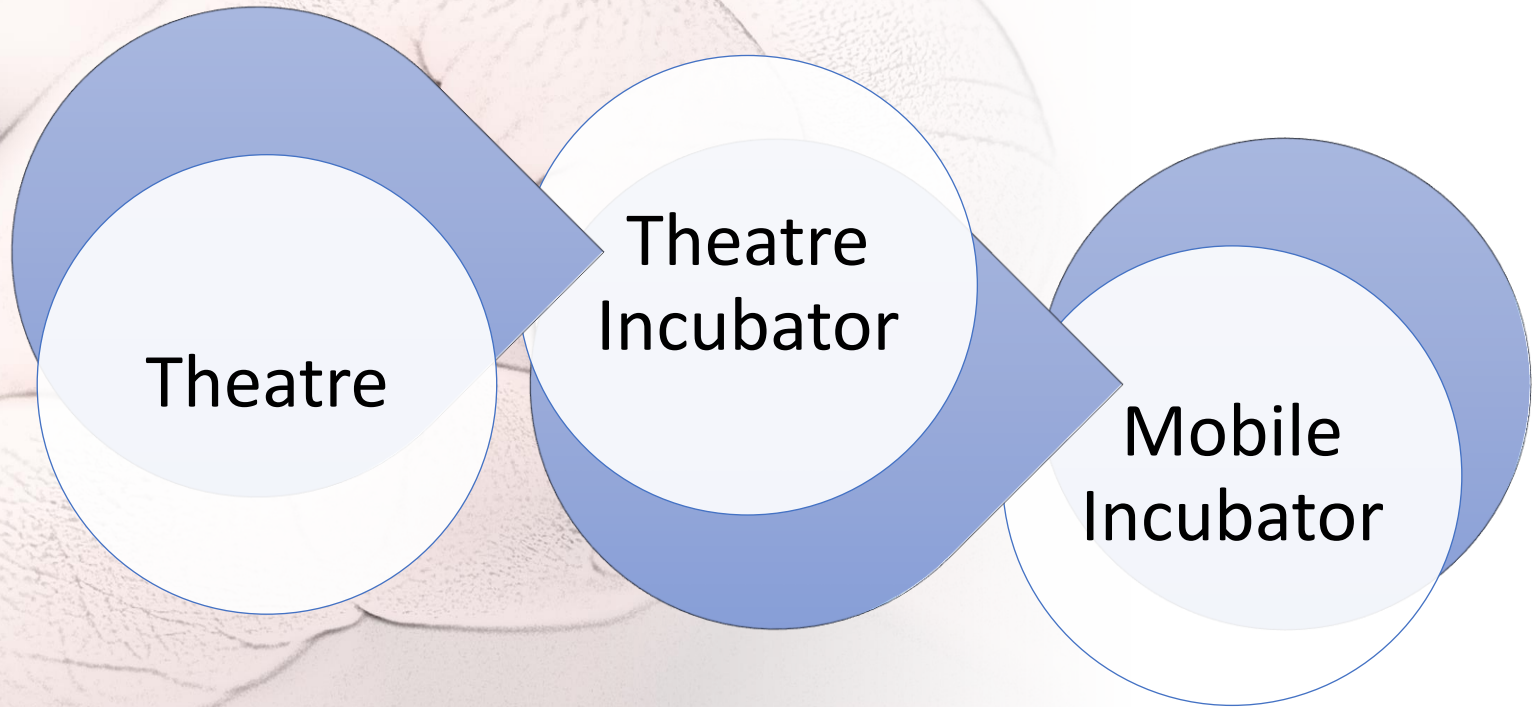
NEC

- **Contributing Extrinsic Factors**

- The use of Formula
- Environmental cleanliness
 - NICU & Milk kitchen
- Milk fridge temperature maintained
- Hand Hygiene-BBE
 - HCW's
 - Parents- How is EBM being expressed at home??

NEC

What is the Journey of the Neonate?



NEC

What is the Journey of the Neonate?

A logo consisting of two overlapping circles. The top circle is white with a thin blue outline, and the bottom circle is a solid blue color. The text 'NICU' is centered in the white circle.

NICU

NEC

- Mico-organisms Associated with NEC

- E-coli
- Klebsiella pneumoniae
- Staphylococci



NEC

- Medical Treatment

- NPO
- Remove Umbilical lines
- Commence Antibiotic Therapy
- Commence ITN



NEC

Take Action

- ✓ Assess compliance to the milk kitchen W/P
- ✓ Ensure the milk temp is maintained vigilantly at 0-4°C
- ✓ Assess the milk bottle disinfectant procedure
- ✓ Environmental Cultures
- ✓ Educate breast feeding mothers regarding the safe expressing and handling of EBM
- ✓ Ensure vigilant IP practices
- ✓ Ensure exclusive EBM or DBM <35weeks

