

## Ethanol Lock Therapy (ELT)

### **Purpose Statement**

- To prevent central line associated blood stream infection (CLABSI) in patients with recurrent infections and/or limited intravenous (IV) access.
- Attempt to salvage central venous catheters (CVC) in children with limited intravascular access.

### **Goal**

- To standardize the ordering and administration of ethanol locks.

# ETHANOL LOCK THERAPY (ELT) For Salvage of Central Venous Catheters (CVC)

## PURPOSE:

To attempt salvage of central venous catheters (CVC) in children with limited intravascular access.

## Ethanol Lock Therapy (ELT) may be considered for:

1. Prevention of central line associated blood stream infection (CLABSI) in patients with recurrent infections and/or limited intravenous (IV) access
2. Require salvage of the current CVC due to inability to place catheter elsewhere

## Inclusion Criteria:

- Weight  $\geq$  5 kg
- Must be an uncomplicated CLABSI without persistent bacteremia
- Must have another intravenous site available for medications during the ethanol lock period, if required
- Must have an ethanol compatible central catheter. Review manufacturer's instructions for use.

## Exclusion Criteria:

- Weight < 5 kg
- Any signs of exit site infection, sepsis, tunnel infection, or hemodynamic instability
- <2Fr catheter due to thrombosis risk
- Polyurethane catheter
- Known allergy or sensitivity to ethanol, or genetic inability to metabolize ethanol (e.g. aldehyde dehydrogenase deficiency)
- Receiving any of the following medications (PO/IV) within the designated time (days/hours)
  - Heparin, including TPN (currently)
  - Metronidazole (48 hours)
  - Disulfuram (7 days)
  - Isoniazid (24 hours)
  - Rifampin (24 hours)
  - Pyrazinamide (24 hours)
- Use with caution in patients with liver disease/dysfunction
- Objections due to social or religious reasons/recovering alcoholics
- **NOT** compatible with polyurethane

## Catheter Exclusion Criteria:

- Catheter tip not located in a central vein
- Catheter manufactured from material other than silicone
- Catheter impregnated with antibiotic or other chemical
- Catheter type unknown

LIP/RN should determine and document type of catheter placed

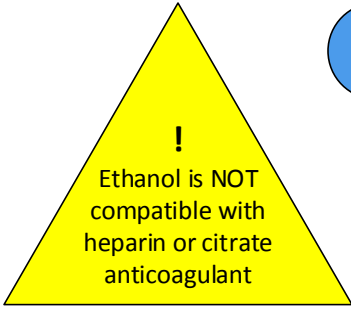
**!**  
**Consult**  
**Infectious Diseases**

LIP orders 70% ethanol

LIP orders dwell time between 2-4 hours (maximum dwell time is 8 hours)

**Inpatient: Renew ethanol lock therapy every 7 days.**  
**Upon Discharge: Duration at discretion of physician in charge of ongoing care.**

# ETHANOL LOCK ADMINISTRATION



Flush CVC with normal saline before and after administration of other medications and TPN, as well as before instillation and after aspiration of ethanol

Ethanol is instilled in all lumens of the catheter once a day during the longest period of time the patient is not receiving IV medications and/or parenteral nutrition

**Review LIP order including:**

- Catheter to be locked
- Volume to be instilled
- Length of dwell time

**Supplies:**

- Gloves
- Normal saline flush
- Syringe with ordered volume of ethanol lock solution
- Chlorhexidine (CHG) prep pads to clean hub prior to instillation of ethanol

Explain procedure to patient and/or family. Inform them about:

- Risk of systemic exposure
- Advise to avoid heat or fire as ethanol is flammable
- Family should not smoke around the child when ELT is in place

**DO NOT proceed if patient and/or family have objections**

1. Aseptic technique should be used throughout the procedure
2. Scrub access hub with CHG and let dry
3. Flush catheter with normal saline to ensure patency
4. Instill ethanol lock solution

Place ethanol lock sticker on catheter for the duration of the instillation

Place sign at head of bed stating, "Ethanol lock in use, do not mix with heparin"

Re-clamp catheter and allow to dwell. Time determined by LIP order (Maximum time is 8 hours)

Document on MAR the lumen treated and the time the ethanol was instilled

After completion of dwell time, unclamp tubing, withdraw ethanol and discard. Flush the catheter lumen with an appropriate volume of normal saline (DO NOT use heparin flushes as heparin is incompatible with ethanol) to clear the catheter lumen. Repeat process to each lumen of the catheter as directed by the LIP order if there are multiple lumens.

At the end of the designated instillation time restart previously ordered IV fluids

**Problems during therapy should be immediately reported to the LIP**

Document in the comment section of the MAR the time the ethanol was removed

## **Metrics**

In progress...

**Contributing Members**

Michelle Honeycutt  
Carol Oldridge  
Elizabeth Marrero  
Catherine Rayburn  
Kevin Patton  
Dr. Holly Maples  
Emily Rader  
Dr. Jose Romero  
Dr. Vini Vijayan

## References

[https://www.nebraskamed.com/sites/default/files/documents/for-providers/asp/tnmc\\_etohlock\\_final.pdf](https://www.nebraskamed.com/sites/default/files/documents/for-providers/asp/tnmc_etohlock_final.pdf)

<https://apps.umchealthsystem.com/forphysicians/medicalorders/Ref%20-%20Ethanol%20Lock%20for%20Central%20IV%20Cath%20Guidelines%20-%20WithOUT%20Table%202.pdf>