CLINICAL PATHWAY:

Management of Lead Toxicity

THIS PATHWAY SERVES AS A GUIDE AND DOES NOT REPLACE CLINICAL JUDGMENT.

Inclusion Criteria: asymptomatic patients with venous lead levels 45-70
Exclusion Criteria: symptomatic patients*, venous lead >70, venous lead <45

In Emergency Room

- Obtain I-STAT chem 10, CBC w diff, ALT/AST, urinalysis, KUB
- Obtain venous lead and zinc protoporphyrin (ZPP) to be sent to Quest outpatient lab (Quest will not result for 3-5 days; chelation will be determined by previous outpatient lead result)
- Obtain careful history and physical to determine if symptomatic*
- Call on-call Lead Team provider to discuss admission (listed in Intellidesk)

*** Signs/Symptoms of Lead Toxicity**

- **GI**: anorexia, constipation, abdominal pain, vomiting
- **CNS**: irritability (may be subtle), lethargy, change in sleep/behavior, HA, decreased play, ataxia, decreased coordination, vomiting
  - **Severe involvement**: seizures, coma, HTN, papilledema, cranial nerve paralysis

Lead < 45 and asymptomatic

Discharge:

- Notify PCP
- Notify Lead Program to arrange f/u for same week (on-call Lead Team provider listed in Intellidesk)

Lead 45-69 and asymptomatic

While still in ED:

- Obtain vitals, blood pressure and weight
- Careful physical
- When results available, call on-call Lead Team provider who will confirm appropriate pathway (listed in Intellidesk)

Admission:

- PHM or PCP w/Lead Team consult

Lead ≥ 70 or symptomatic at any lead level*

Notify on-call Lead Team provider (listed in Intellidesk)

Preparation for chelation:

- **Thorough history (document in chart):**
  - Absence of allergy to Succimer, EDTA, BAL, and other chelating agents
  - Absence of pre-existing renal or hepatic disease
  - No treatment with other chelating agents in past 2-4 weeks (wait 2-4 weeks between consecutive Succimer courses)
  - Exposure history (including parental occupational)
- **Review KUB:**
  - If lead in colon/rectum: no GI decontamination required
  - If lead in small intestine or stomach: GI decontamination
    - Polyethylene glycol until bowel movement
    - Obtain a subsequent confirmatory KUB to ensure no radiopaque material is in the small intestine or stomach before starting chelation
- **Stop any iron supplementation**

ANC ≥ 1200 LFTS WNL

Succimer:

10 mg/kg/dose TIDx5 days, then BIDx14 days for total of 19 days

Succimer only available in 100 mg caps; use dosing below:

- 8-15 kg: 100 mg (1 cap/dose)
- 16-23 kg: 200 mg (2 caps/dose)
- 24-34 kg: 300 mg (3 caps/dose)
- 35-44 kg: 400 mg (4 caps/dose)
- >45 kg: 500 mg (5 caps/dose)

Monitoring:

- Urine Specific Gravity q shift
  - If >1.015, start maintenance IVF
- BP q4hr, neuro check q4hr

DAY 3 Labs

- To be drawn first thing in the morning, ideally after the 9th dose
- Venous lead**, CBC w diff, AST, ALT, BUN, Creatinine

Labs abnormal OR ANC <1200

Labs WNL & ANC ≥ 1200

Discharge Criteria/Instructions

- Normal labs (day 3 for PO, day 5 for IV chelation)
- If required, ensure discharge chelation medication (Succimer) delivered to bedside
- Health Department identified lead safe environment for child
- CT Children's Lead Program appointment confirmed

ANC < 1200 LFTS WNL

- Call on-call Lead Team provider to discuss treatment plan
- Ensure urine spec grav <1.020
- Obtain calcium + phosphorous if not done

$CaNa_2EDTA$:

250mg/m^2/dose IV q6hr x5 days
(dose administered over 4-5 hrs)

Monitoring:

- Daily Urinalysis
- Urine Specific Gravity q shift
  - If >1.015, start maintenance IVF
- BP q4hr, neuro check q4hr
- Continuous CV monitoring during infusion
- PIV site: infiltration can cause sloughing

If hypotension, arrhythmias, infiltration, hematuria, proteinuria, call on-call lead physician ASAP.

Day 3 Labs (two hours after EDTA):

- Venous lead**, Chem 10, CBC w diff, AST, ALT
- If normal, continue IV chelation

Day 5 Labs (two hours after EDTA):

- Venous lead**, ZPP, chem 10,
- CBC w diff, AST, ALT

****Day 3/Day 5 Venous Lead Instructions:**

- Venous lead to be drawn in a tan or lavender top tube
- Place order as "miscellaneous" and write in "Venous lead; send to Rocky Hill State Lab"
- Notify HH Specimen Processing that sample will need to be sent by courier

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