Actual Weight in Kilograms during Pediatric ED Visits Initiative

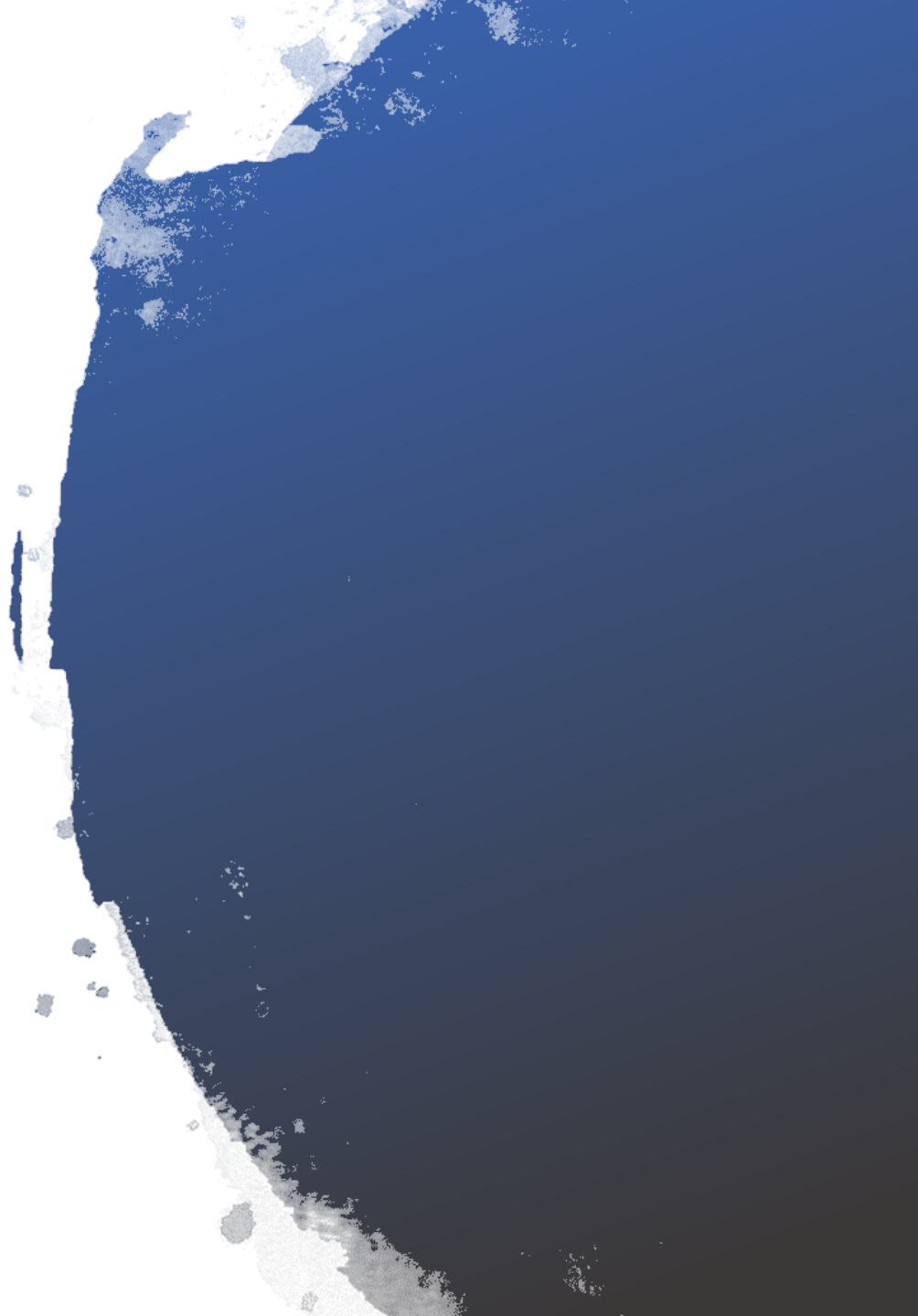
Why Weights in Kilograms?

- **Enhancing Safety of Infants and Children:**
  - Medication dosing and fluid resuscitation are calculated in kilogram measurements
  - PALS and Broselow Tape use kilograms
  - Estimated, stated, and historical are unreliable and introduce risk of error
  - Human error contributes to a large portion of negative healthcare outcomes
  - Pediatric specific dosing is much more sensitive to under and over-dosing medication administration errors
- **Continuation of Pediatric Readiness Quality Collaborative Weights in Kilograms work:**
  - Scales purchased
  - Reports developed
  - Participating hospitals made progress towards goals

3 Measures Include:

- **Structural Measure**: Hospital has a policy that outlines standards for weighing pediatric patients in kilograms.
- **Process Measure**: Percentage of pediatric patients presenting to the emergency department exclusively weighed in kilograms, and whose weight is exclusively documented in the medical records in kilograms.
- **Outcome Measure**: Percentage of medication dosing errors identified during the reporting period.

7 Key Drivers



Policy Statement:

- Weight taken and recorded in kilograms at every encounter.
- Actual weight obtained unless clinically contraindicated.
- Age and weight used for all resuscitations.
- Medication administration is based on per kilogram dosing.

Infrastructure Changes:

- Scales locked to kilograms only.
- Scales readily available.
- Use weight and age-based tapes.
- Use single formulation for each medication.
- Could use bed scales but will not be accurate for infants and toddlers.

Electronic Health Record Optimization:

- Alert or hard stop when weight not recorded.
- Alert when weight does not match patient’s height and age.
- Weight entry required for resuscitations.
- Automatic medication dosing calculations.
- Emergency medication sheets visible in EMR and printable.

Education:

Care team education (online, in-person meetings, huddles and peer-to-peer) that includes:

- proper use of weight and age-based tapes,
- necessity of weight measurement for resuscitations,
- safety issues (e.g., number of reported medication errors),
- case review,
- methods of measuring weight,
- growth charts,
- clinical pathways,
- family engagement, and
- hospital policies

Knowledge Reinforcement:

- Posters in triage and treatment areas.
- Feedback to care team following chart audits, such as through monthly reports or 1:1 peer counseling.

Prescribing Patterns and Medication Administration:

- Process to track medication dosing and administration in the absence of actual weight in kilograms.
- Process to track common prescribing or medication administration errors for high-risk conditions.
- Reference tool for medication dosing.
- Consider:
  - Independent verification and/or cross-check process for high-risk patients and medications.
  - Defined chart audit.
  - Notification system if prescribed medication is not standard practice.

Patient and Family Engagement:

- Family-centered care elements including use of weight conversion documents during triage with families.
- Consider process where family advised of medication and/or modification of dose prior to administration.
- Address language and literacy needs of the family.
- Consider providing common medication administration guidelines (e.g., acetaminophen and ibuprofen).

Identify Weight in Kilograms Goal - How do we get to XX% by MM/DD/YY?

- Identify project champions
- Ensure access to data
- Develop workgroup and reporting structure
- Engage local teams to own this as their initiative
- Regular cadence of sharing results and engaging stakeholders

PROVIDENCE Children's Health

Acetaminophen (Tylenol®) Dosing for Infants and Children

Uses include: fever reduction and pain management

Age (years)	Weight (lbs. = pounds)	Weight (kg = kilograms)	Dose (mg = milligrams)	Suspension: 160mg/5mL (mL = milliliter)	Children's Chewable (160 mg tablets)	Adult Strength (325mg tablets)	Adult Extra Strength (500mg tablets)
*	6-11lbs.	3-5kg	40 mg	1.25 mL	--	--	--
*	12-17 lbs.	6-7 kg	80 mg	2.5 mL	--	--	--
*	18-23 lbs.	8-10 kg	120 mg	3.75 mL	--	--	--
2-3 years	24-35 lbs.	11-15 kg	160 mg	5 mL	1 tablet	--	--
4-5 years	36-47 lbs.	16-21 kg	240 mg	7.5 mL	1.5 tablets	--	--
6-8 years	48-59 lbs.	22-27 kg	320 mg	10 mL	2 tablets	1 tablet	--
9-10 years	60-71 lbs.	28-32 kg	400 mg	12.5 mL	2.5 tablets	1 tablet	--
11 years	72-95 lbs.	33-43 kg	480 mg	15 mL	3 tablets	1.5 tablets	1 tablet
Older than 11 years	More than 95 lbs.	More than 43 kg	640 mg	20 mL	4 tablets	2 tablets	1 tablet

Frequency: Repeat every 4-6 hours as needed. Do not give more than 5 doses in 24 hours.

Age precaution: For children under 12 weeks of age, check with your child's provider prior to giving.

Be aware: Please read the label on the bottle carefully. Concentration of infant and children's acetaminophen (Tylenol®) are the same.

If you think your child has a fever, take a temperature with a thermometer. Learn how to take your child's temperature at:
https://www.healthychildren.org/English/health-issues/conditions/fever/Pages/How-to-Take-a-Childs-Temperature.aspx

For more information, visit www.healthychildren.org

Acetaminophen (English Version) Rev 2.25.20

Why Weights in Kilograms?

- **Standard dosing of acetaminophen in children:**
  - 10-15 mg/kg/dose every 4-6 hours, not more than 5 doses in 24-hour period
- **What happens when weight in pounds accidentally used?**
  - 20-pound patient at 10-15 mg/kg/dose = 300mg per dose
  - 5 doses in 24-hour period = 1,500 mg
- **What would dose had been if correctly weight in kilograms and used for calculation?**
  - 9.09 kg patient at 10-15 mg/kg/dose = 136 mg per dose
  - 5 doses in 24-hour period = 681 mg
  - 2.25 times the maximum dose of acetaminophen
  - Side effects include loss of appetite, nausea, vomiting, abdominal pain, increase in blood pressure and liver damage

We must get a weight in kilograms to provide the best care for your child!

Every child –

Every Time!

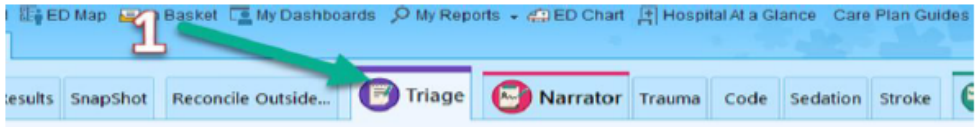
STOP:

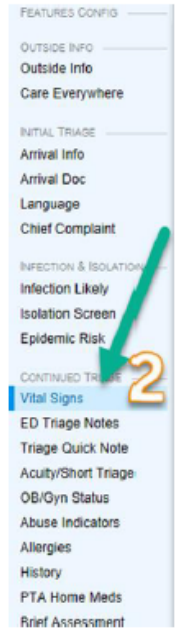
Obtain an actual weight in kilograms on all patients under the age of 18 during triage

Entering Actual Weights in Kilograms during Pediatric ED Visits in Epic

Medications and fluid resuscitation require an actual weight in kilograms to be obtained for accurate dosing and/or volume calculations to be performed.

FIRST: Open *Triage Navigator*.





SECOND: Click on *Vital Signs* to enter an actual weight in kilograms.

THIRD: Enter *Weight method* using one of 3 acceptable methods:

- Standing;
- Infant Scale; or
- Bed/crib

AVOID: Use of unacceptable *Weight methods*, which include:

- Stated;
- Estimated; or
- Declined

NOTE: If taking an actual weight in kilograms is not clinically possible without creating a negative risk to the patient's health, immediately notify provider.

Lessons Learned…

- Importance of project champions
- Access and visibility of data
- Small tests of change/obtainable goals
- Recognize and celebrate accomplishments often

Wrap-Up & Round Table

- Next Bi-monthly Education Session & Check-in: June 24th 8:00-9:00am
- Access to Basecamp
- Peer-to-peer Joint Problem-Solving:
  - Melinda Hartenstein, OHSU Doernbecher Assistant Nurse Manager, Pediatric Emergency Services: hartenst@ohsu.edu
  - Lynne Frost, Providence Regional Program Manager - Children's Clinical Standardization: Lynne.Frost@providence.org
  - Rachel Ford, Oregon Emergency Medical Services for Children Program Manager: rachel.l.ford@dhsoha.state.or.us
- Pediatric Readiness Program Toolbox available at www.pedsreadyprogram.org