



Stanford
MEDICINE

Children's Health

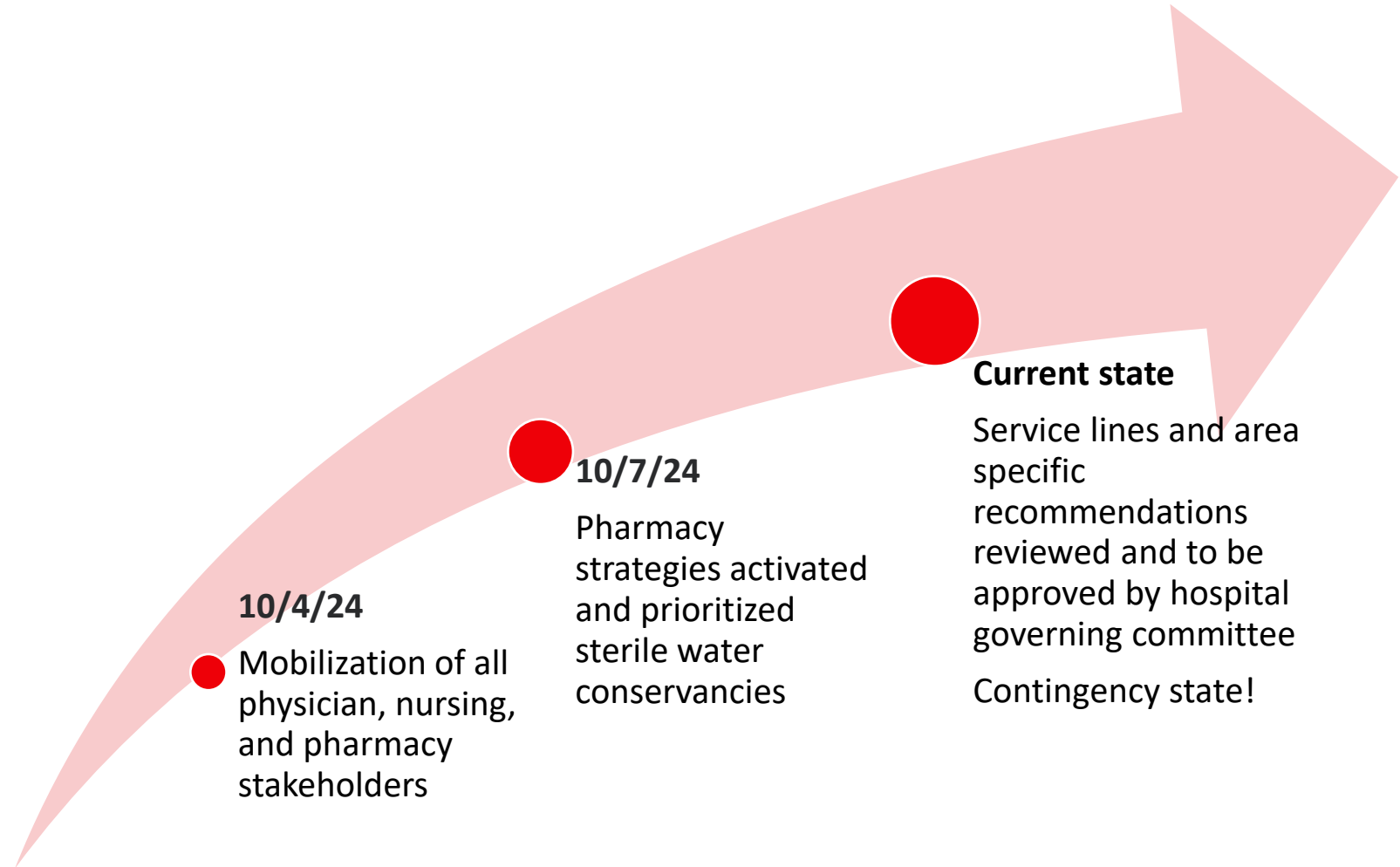
Baxter IV Fluid Disruption

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Fluid Disruption - Conservation and Mitigation Strategies



Centralized Data Driven Strategy

Centralized Fluid Management

- Consolidated procurement and distribution
- Leveraging multiple vendors for optimal supply

Data Insights

- Real-time EMR data for accurate usage tracking
- Historical analysis to pinpoint high-consumption areas
- Data-driven dashboards to monitor progress

Strategic Collaboration


- Pharmacy-Led Conservation with Clinical Teams
- Foster collaborative discussions on medication optimization
- Identify opportunities for therapeutic interventions
- Promote evidence-based practices
- Securing Governing Committee approval for implementation

Evaluation

- Agile adjustments based on real-time data
- Alignment with broader organizational goals

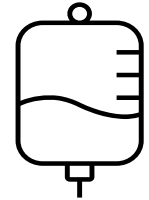
Conservation Initiatives

Clinical Practice

- Avoid ordering standby fluid
- Obstetrics – Normosol; Anesthesia – Lactate Ringer (LR) or Normosol
- Prioritize PO over IV route 
- Consider holding IV fluids when NPO
- Prefer saline locking PIV
- Use 30 – 50 mL aliquots of NS/Normosol/ LR to use flush for push meds

Parenteral Nutrition (PN)

- Delay PN initiation as clinically appropriate
- Consider discontinuation of PN if patient meets 50 – 75% enteral feeding advance
- Potential use of Home PN supply for inpatient use if criteria is met



Peritoneal Dialysis (PD) Fluid

- Keep all expired PD bags to return to supply chain
- Potential use of home supply



Nursing/ Radiology

- Minimize fluid use for line maintenance
- Consider oral hydration
- Frequent clinical assessment on fluid needs
- Return expired IV bags to supply chain

Fluid Disruption: Parenteral Nutrition Mitigation Strategies


- EPIC informative print group – went live 10/9
- Significant decrease with PN order for patients ≥ 5 kg
- Daily meeting and review of PN patient list
- Considerations for every other day PN eligibility
- Reduce overall PN days when advancing feeds
- Mitigation strategies to reduce sterile water include:
 - Reduce total fluids (increase IV lipids)
 - Increase dextrose %
 - Increase amino acid
 - Case-by-case evaluation for eligible patients using home PN supply

The screenshot shows the 'Orders' section of an EPIC interface. At the top left, there is a purple 'Orders' tab with a dropdown arrow. To the right of the tab is a 'Clear All Orders' button. Below the tab, the text 'Parenteral Nutrition With and Without Lipid' is displayed with an upward-pointing arrow. On the far right, there is a blue 'Remove Order Sets' button. A prominent notification is shown in a light gray box, featuring a red octagonal stop sign icon with a white hand symbol. The notification text reads: 'October 2024 – Critical Shortage of IV Solutions due to Hurricane Helene' in red, followed by 'Avoid parenteral nutrition whenever clinically appropriate' in black.

Fluid Disruption: Custom Fluids Mitigation Strategies

- EPIC informative print group – went live 10/9
- Standard base fluids use commercial IV solutions
- Custom dextrose consumes the most sterile water
- Dispensing final volume to reflect 24 hours or less to reduce waste
- Reduce high dextrose chasers
- Bridge off PN days with intermittent IV solutions or continuous standard base IV solutions (D10% or D20%)
- Standby fluids are discouraged
- Anesthesia to hand off IV fluids to receiving teams to finish bag
- Pharmacist review at initial ordering and med list review 2 times daily

Continuous Custom IV Fluid Infusion (Custom & Standard Bases) ✓ Accept

 **October 2024 – Critical Shortage of IV Solutions due to Hurricane Helene**
- Use enteral fluids for hydration over IV fluids whenever possible.
- If custom fluids required for patient, use STANDARD base fluid options in order panel below.

In POC

Custom fluids start with a "base" fluid bag (dextrose in water, sodium chloride (NaCl), lactated ringers (LR), dextrose+NaCl, or dextrose+LR).
Use a Standard Base option whenever possible for safety and to minimize impact on shortages.

MD/APPs with limited experience with custom IV fluid composition should consult pharmacy for assistance avoiding unintentionally hypotonic or hypertonic IV fluids.

Dextrose in NaCl/LR Base Fluid
 Dextrose in Water Base Fluid
 NaCl/LR Base Fluid

Next Required

- CUSTOM IV INFUSION (DEXTROSE + SODIUM CHLORIDE/LACTATED RINGERS BASES)
- CUSTOM IV INFUSION (ONCOLOGY)-STANDARD BASES
- CUSTOM IV INFUSION (STANDARD DEXTROSE BASES: D5W,D10W,D20W)-NACL REQUIRED
- CUSTOM IV INFUSION (CUSTOM DEXTROSE BASES)-NACL REQUIRED
- CUSTOM IV INFUSION (STANDARD DEXTROSE BASES- NO NACL ADDITIVE)
- CUSTOM IV INFUSION (CUSTOM DEXTROSE BASES)-NO NACL

Fluid Disruption: IV to Enteral Mitigation Strategies

- **Alternative enteral products:** sodium phosphate solution, PHOS-NAK oral packets/solutions, K-PHOS Original
- EPIC LMA – went live 10/10 for IV sodium phosphate and IV potassium phosphate
- High usage IV electrolyte repletion requiring sterile water for dilution
- Enteral alternative products are recommended
- Reduction of both PIV concentrations of potassium and sodium phosphate

Expiring Medications

acetaminophen (OFIRMEV) 10 mg mg

Potassium Phosphate IV - KPhos

KPhos inj - Central access e

Central access available fo

Central KPhos - Phos <1.5

Central KPhos - Phos 1.6-2.

Central KPhos - Phos 2.3-3

0.16 mmol/kg, IV, Administer o

(22 mEq for 15 mmol/dose). Ma

the infusion rate must be spec

KPhos inj - Peripheral access o

Place Orders or Order Sets

Alternative Selection

Alternative Recommended

You selected:

potassium phosphate 7.1676 mmol in sodium chloride 0.9% 59.73 mL IV infusion (Central line only): 7.1676 mmol (rounded from 7.168 mmol = 0.84 mmol/kg × 11.2 kg Dosing weight), IV, Administer over 12 Hours, once, today at 1230, For 1 dose Guidelines: For serum Phosphate level < 1.5 mmol/L, Maximum of 15 mmol/dose. Contains 0.93 mEq/kg potassium (22 mEq for 15 mmol/dose). Maximum rate 0.06 mmol/kg/hr; may administer faster if risks of rapid infusion (hypocalcemia, hypotension) are outweighed by benefits - the infusion rate must be specified by MD/APP

Details

The medication you are trying to order is on severe drug shortage. Please select one of the alternatives below. Continue to order this medication when it is absolutely necessary for patient care.

Alternatives

Alternative
<input type="radio"/> Na di- & mono-phosphate/K mono-phosphate (PHOSPHA 250 NEUTRAL) tab
<input type="radio"/> potassium, sodium phosphates (PHOS-NAK) 280-160-250 mg pwd pkt
<input type="radio"/> potassium phos/sodium phos (PHOS-NAK) cpd soln

Continue with:

potassium phosphate 7.1676 mmol in sodium chloride 0.9% 59.73 mL IV infusion (Central line only): 7.1676 mmol (rounded from 7.168 mmol = 0...

Next Required

Continue Remove Order

- IV to PO conversion examples:
 - Antimicrobials
 - Anti-seizures
 - Stress ulcer prophylaxis
 - Immunosuppressants
 - Electrolyte replacements

Ethical Framework for Crisis Standards of Care (NAM)



Duty to implement distributive justice (socially just allocation of goods)



Duty to care: treat people with dignity and respect, and make decisions based on an individualized assessment based on objective medical evidence

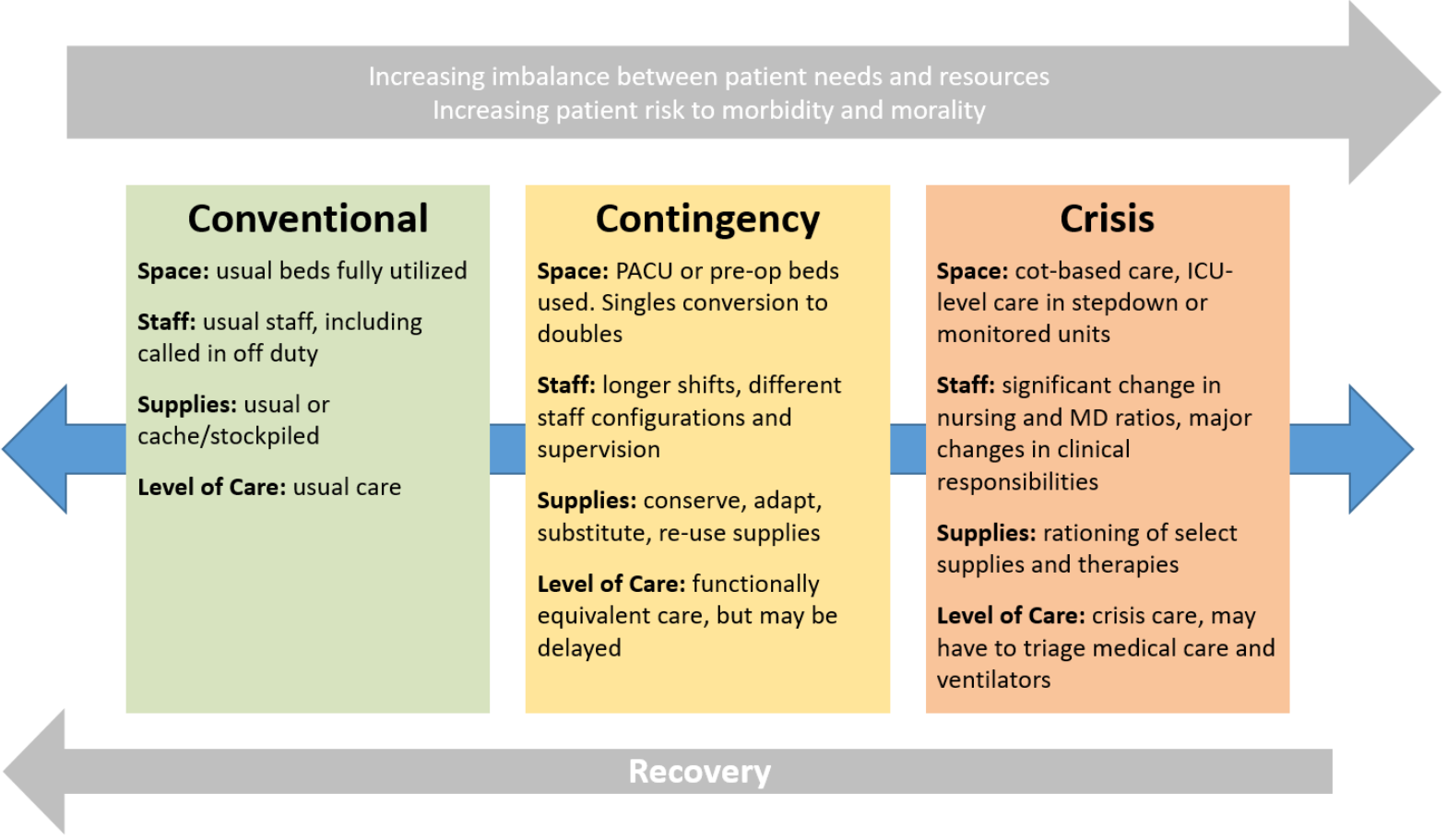


Duty to plan: steward resources and promote instrumental value

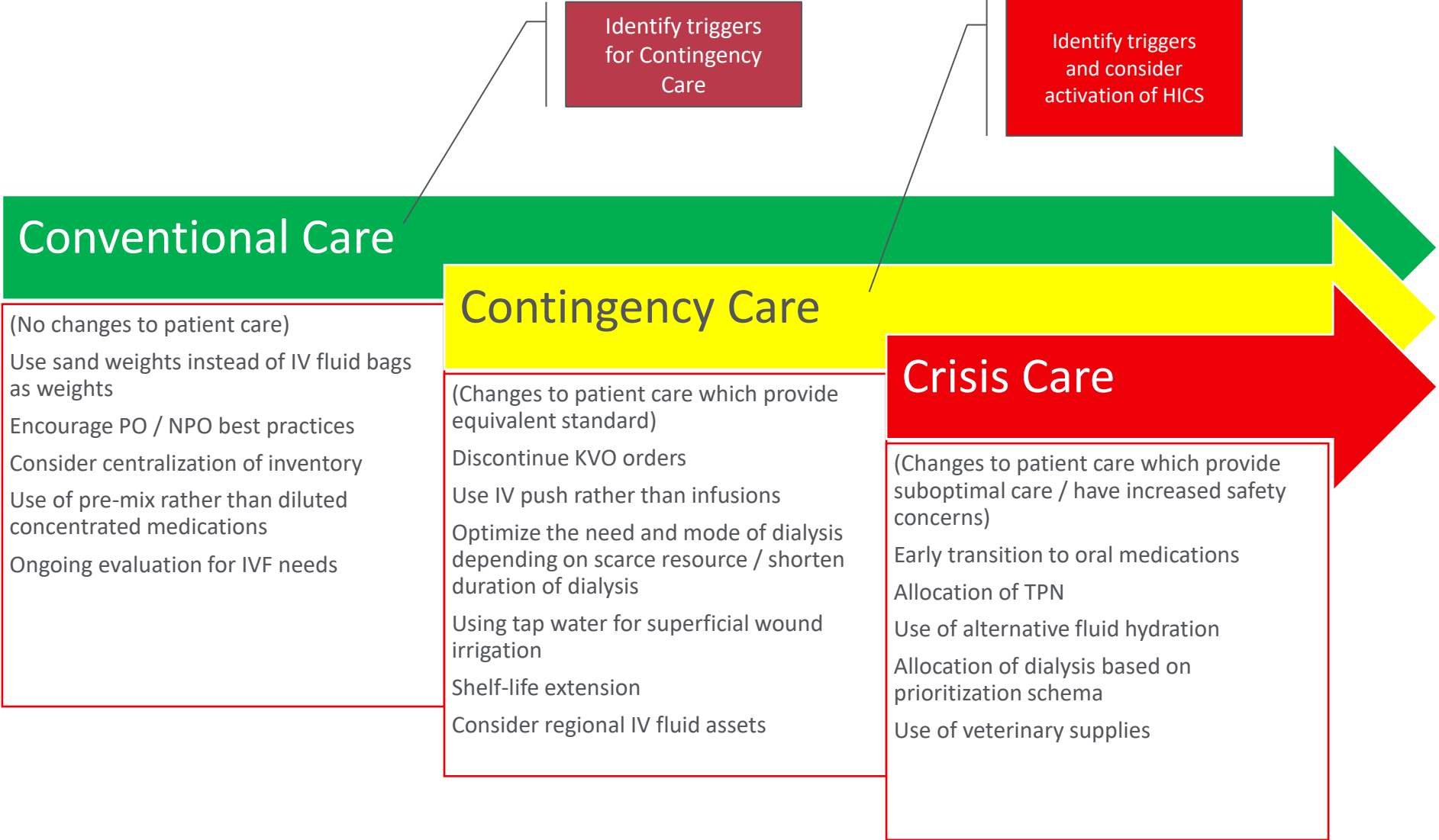


Duty to transparency (in planning and implementation)

Continuum of Care: Conventional to Crisis



Continuum of Care



Stanford Medicine Children's Health Presenters



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