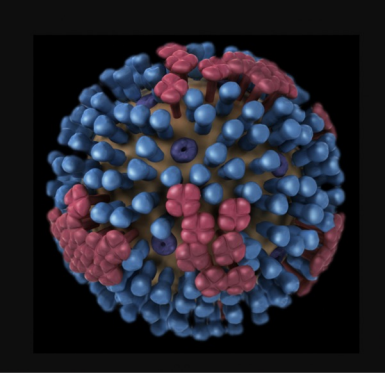
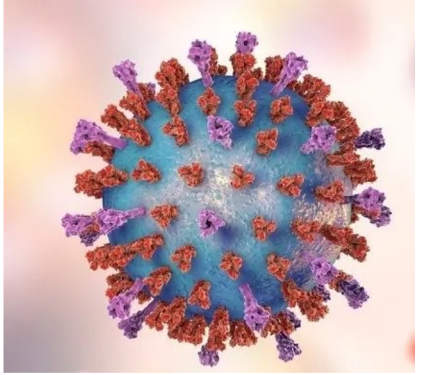
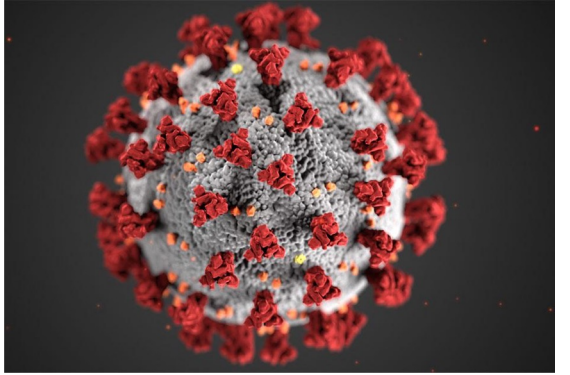




“Tripledemic”

Severe Pediatric Respiratory Illnesses in the ED

emRIC ECHO

12.12.2022

Emergency Medicine for Rural and Indigenous Communities (emRIC) ECHO

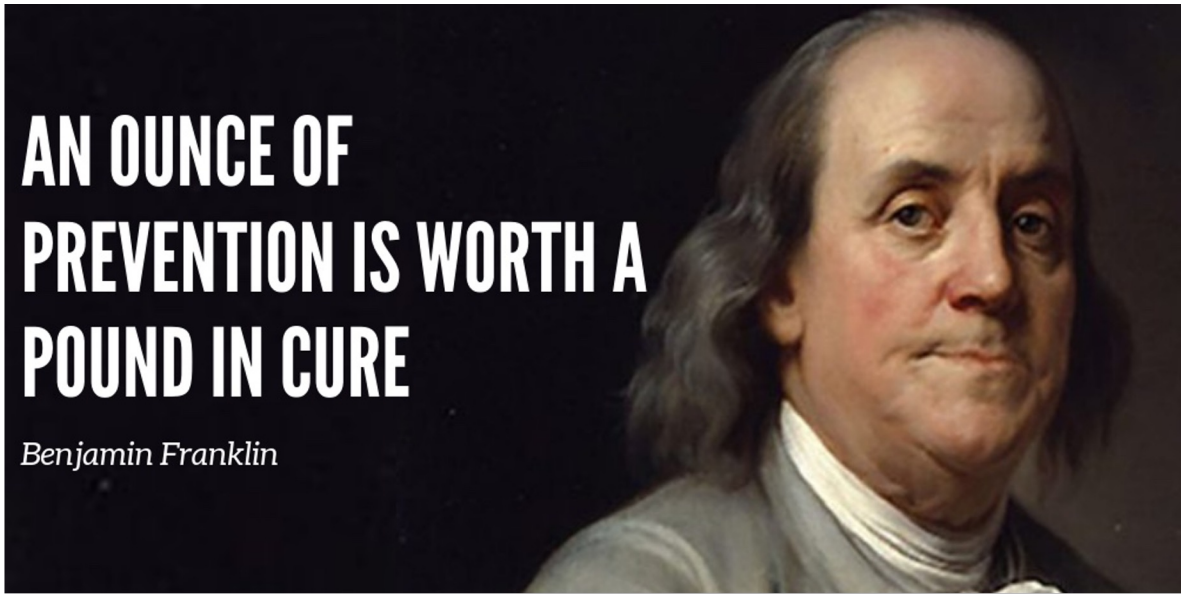
Panelists:

- Dr. Liz Sanseau, PEM Physician, Children's Hospital of Philadelphia
- Dr. Rachel Tuuri, University of New Mexico Peds EM Division Chief
- Dr. Tom Faber, IHS CCC for Pediatrics, CMO ABQ Area IHS
- Dr. Dan Schnorr, ED Director San Carlos Apache

Facilitator: Dr. Paul Charlton, IHS CCC for EM, ED Director GIMC

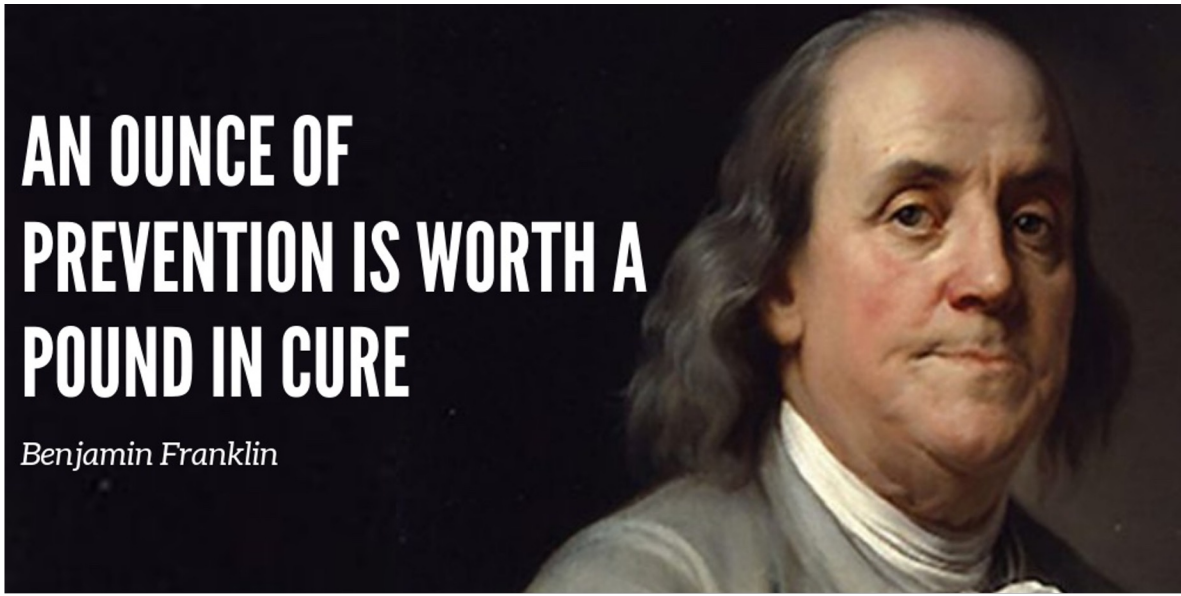
ECHO Objectives

- Discuss best practices in clinical EM and EM operations
- Share experiences & innovative strategies for solving clinical and operational challenges



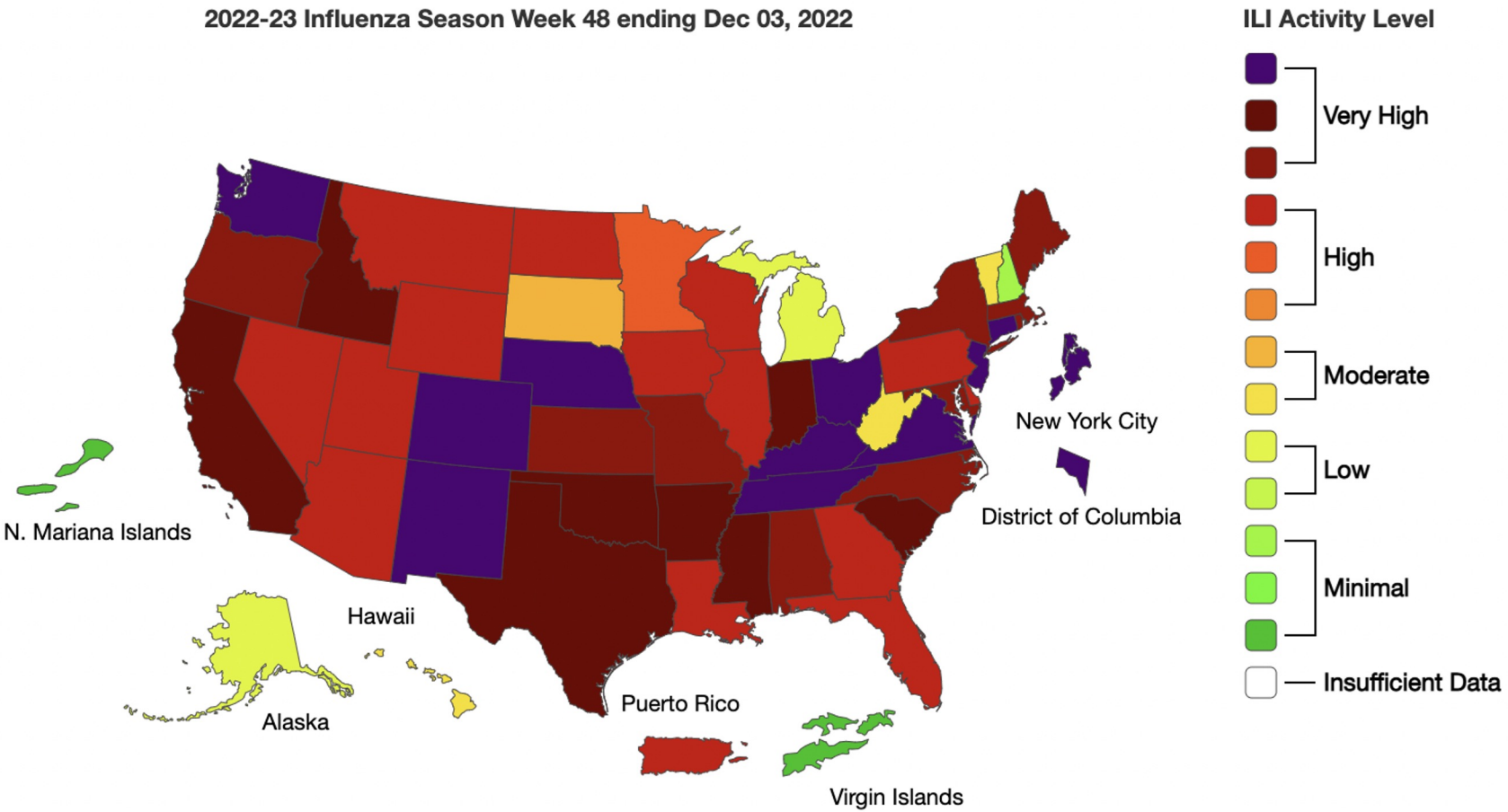
Objectives today

- **Nurses**: Recognizing sick kids, escalation pathways
- **Providers**: Escalation pathways, safe intubation considerations
- **Operations**: What equipment needs to be ordered/tracked



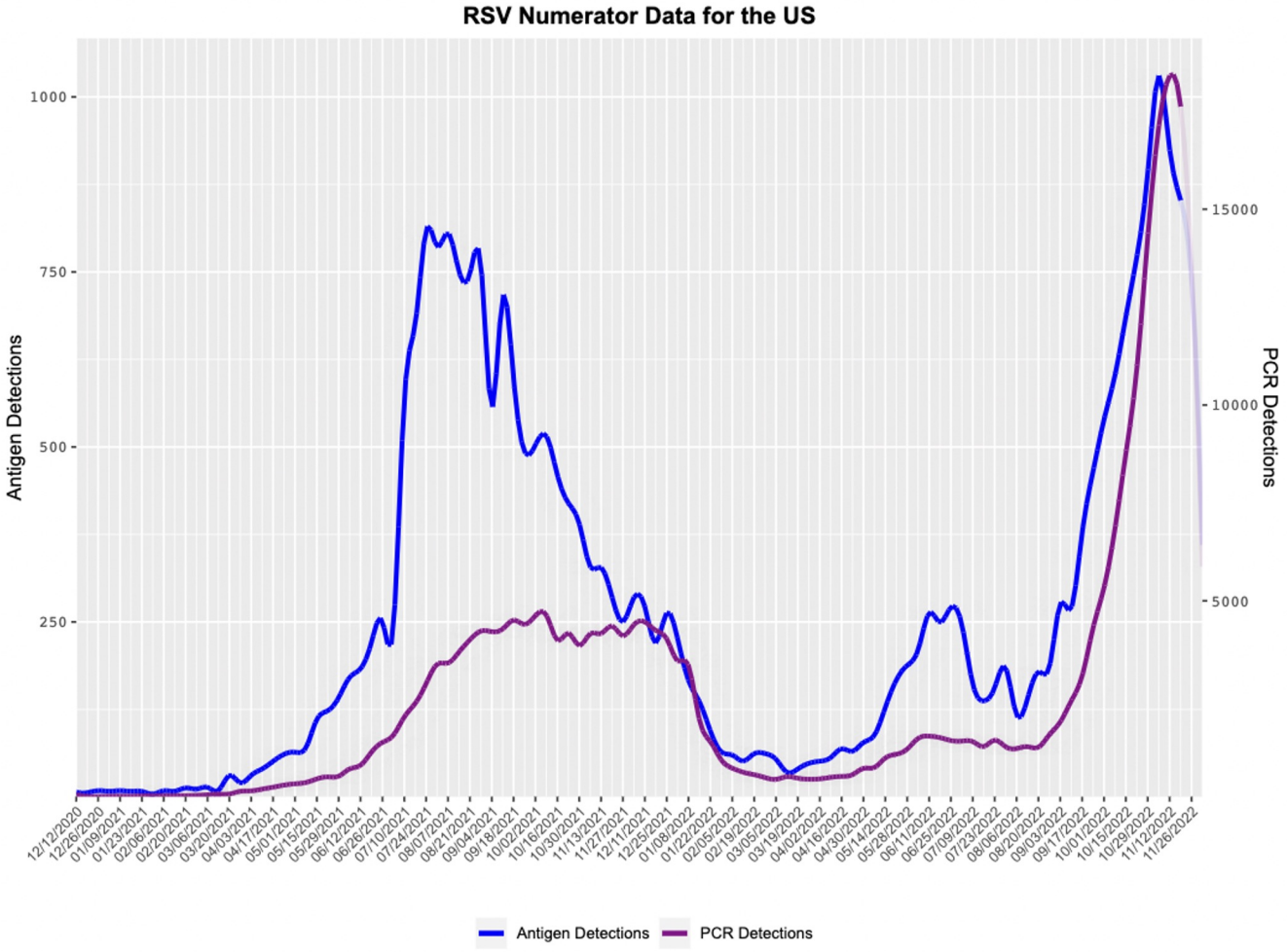
Session overview

1. Optimizing practice & preparations
2. Early recognition of sick kids
3. Plan for escalating respiratory support
4. Ensure adequate equipment/supplies
5. Optimizing preparations for intubation
6. Innovations



CDC US Weekly Influenza Surveillance Report, https://www.cdc.gov/flu/weekly/index.htm Accessed 12.9.22

Detections



RSV

CDC National Respiratory and Enteric Virus Surveillance System (NREVSS), https://www.cdc.gov/surveillance/nrevss/rsv/natl-trend.html accessed 12.9.2022

PEDIATRICS/ORIGINAL RESEARCH

Video-Assisted Laryngoscopy for Pediatric Tracheal Intubation in the Emergency Department: A Multicenter Study of Clinical Outcomes

- 11 Academic Pediatric EDs
- Prospective observational data
- N = 1412 tracheal intubations
- Primary outcome: First-attempt success & adverse outcomes

Miller et al, Annals of EM, 10.15.2022

Definitions

Adverse airway outcomes =

aspiration, cardiac arrest, dysrhythmia, hypotension requiring intervention, hypoxia (categorized as moderate when the lowest SpO2 was less than 90% and severe when less than 80%), laryngospasm, lip or dental injury, mainstem bronchial intubation, mucosal injury, pneumothorax or pneumomediastinum, unrecognized esophageal intubation with delayed recognition and vomiting.

Severe adverse airway outcomes =

aspiration, cardiac arrest, hypotension, severe hypoxia, and unrecognized esophageal intubations.

Miller et al, Annals of EM, 10.15.2022

Results

- **First-attempt success overall = 70%**
- Experienced at least 1 adverse airway outcome = 30.2%
- **Experienced severe adverse airway outcome = 17.3%**
- Experienced cardiac arrest = 2.0%
- Experienced severe hypoxia (spo2 <80%) = 18.7%

Miller et al, Annals of EM, 10.15.2022

Other findings

- Use of VL = 30% reduction in odds ratio for experiencing severe adverse airway outcome
- Age <12 months and a respiratory indication for intubation = associated with decreased odds of 1st attempt success
- Use of NMB agent associated with higher odds of 1st attempt success

Miller et al, Annals of EM, 10.15.2022

Other findings

- Pts receiving apneic oxygenation = 42.6%
- Most commonly used meds: Ketamine and Rocuronium
- Sites with high-use of VL (use VL >80% of time) had a higher rate of first-attempt success

Miller et al, Annals of EM, 10.15.2022

My article take away

- Higher risk than adult intubations
- Preparation & practice may save lives and careers

IT'S TUNE UP TIME

SimBox Telesim

Telesim led by Dr. Liz Sanseau

SimBox Telesim Debrief:

How to recognize sick kids?

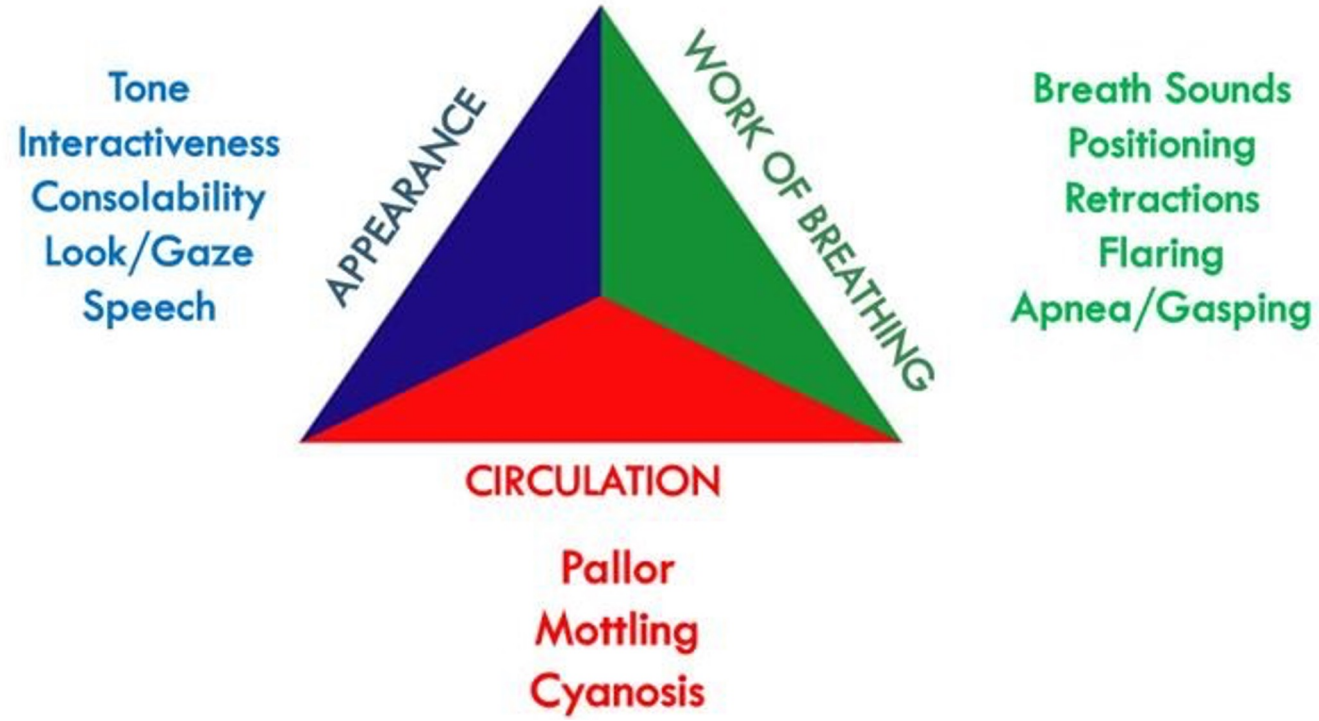
Mental framework of escalating steps of respiratory support?

How to arrange telesim or low fidelity sims?

Session overview

1. High stakes
2. **Early recognition of sick kids**
3. Escalating resp support
4. Equipment/supplies
5. Optimize intubation
6. Innovations

Recognizing Sick Kids: Pediatric Assessment Triangle



Dieckmann et al. Pediatr Emerg Care. 2010 Apr;26(4):312-5.

For panelists: Use sick/not sick gestalt? Or get specific?

RESPIRATORY SCORE (RS)

Variable	0 points	1 point	2 points	3 points
RR				
<2 mo		≤60	61-69	≥70
2-12 mo		≤50	51-59	≥60
1-2 yr		≤40	41-44	≥45
Retractions	None	Subcostal or intercostal	2 of the following: subcostal, intercostal, substernal, OR nasal flaring (infant)	3 of the following: subcostal, intercostal, substernal, suprasternal, supraclavicular OR nasal flaring / head bobbing (infant)
Dyspnea				
0-2 years	Normal feeding, vocalizations and activity	1 of the following: difficulty feeding, decreased vocalization or agitated	2 of the following: difficulty feeding, decreased vocalization or agitated	Stops feeding, no vocalization or drowsy and confused
Auscultation	Normal breathing, no wheezing present	End-expiratory wheeze only	Expiratory wheeze only (greater than end-expiratory wheeze)	Inspiratory and expiratory wheeze OR diminished breath sounds OR both

https://www.seattlechildrens.org/pdf/bronchiolitis-pathway.pdf accessed 12.9.2022

Session overview

1. High stakes
2. Recognize sick kids
3. **Plan escalating respiratory support**
4. Equipment/supplies
5. Optimize intubation
6. Innovations

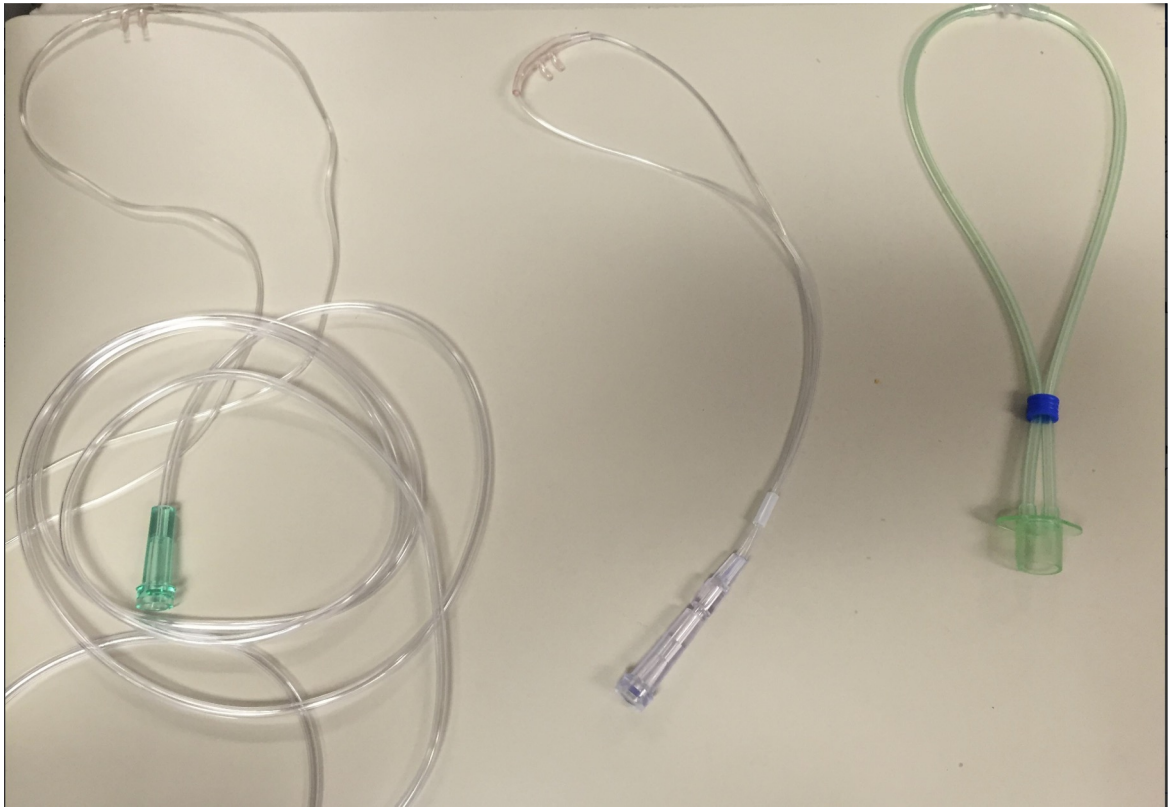
Sample Respiratory Support Escalation Guideline

Dr. Dom Maggio /
White River Apache
ED, Arizona

Escalation of Respiratory Support for Patients with Bronchiolitis

1. Nasal cannula 0-2L/min
    a. Antipyretics
    b. Suctioning q 2 hours
2. If persistent increased work of breathing or hypoxia -> HHFNC
    a. Start @ 2 L/kg/min (max)
    b. Titrate down based on WOB
    c. Place IV / Consider IVF bolus
3. Persistent increased work of breathing -> CPAP (Hamilton setting "NIV")
    a. PEEP = 5 - Titrate as needed up to PEEP of 10
    b. NPO
    c. IVF bolus / Maintenance IVF
    d. Appropriately sized RAM Cannula
4. Persistent increased work of breathing -> BiPAP (Hamilton setting "NIV-ST")
    a. Fi02 = 100% and titrate down - 02 sat target >93%
    b. Back up rate = 25% of RR
    c. Pinsp = 5 - Titrate by 2 up to 15 (remember, this is a delta number)
    d. PEEP = 5-10 (or what cpap was at) - Titrate to 10 as needed
5. Indications for Intubation
    a. Episodes of apnea
    b. Episodes of hypoxia on BIPAP
    c. Persistent increased work of breathing despite maximal BIPAP settings

High Flow Nasal Cannula



Left: low-flow NC

Middle: HFNC

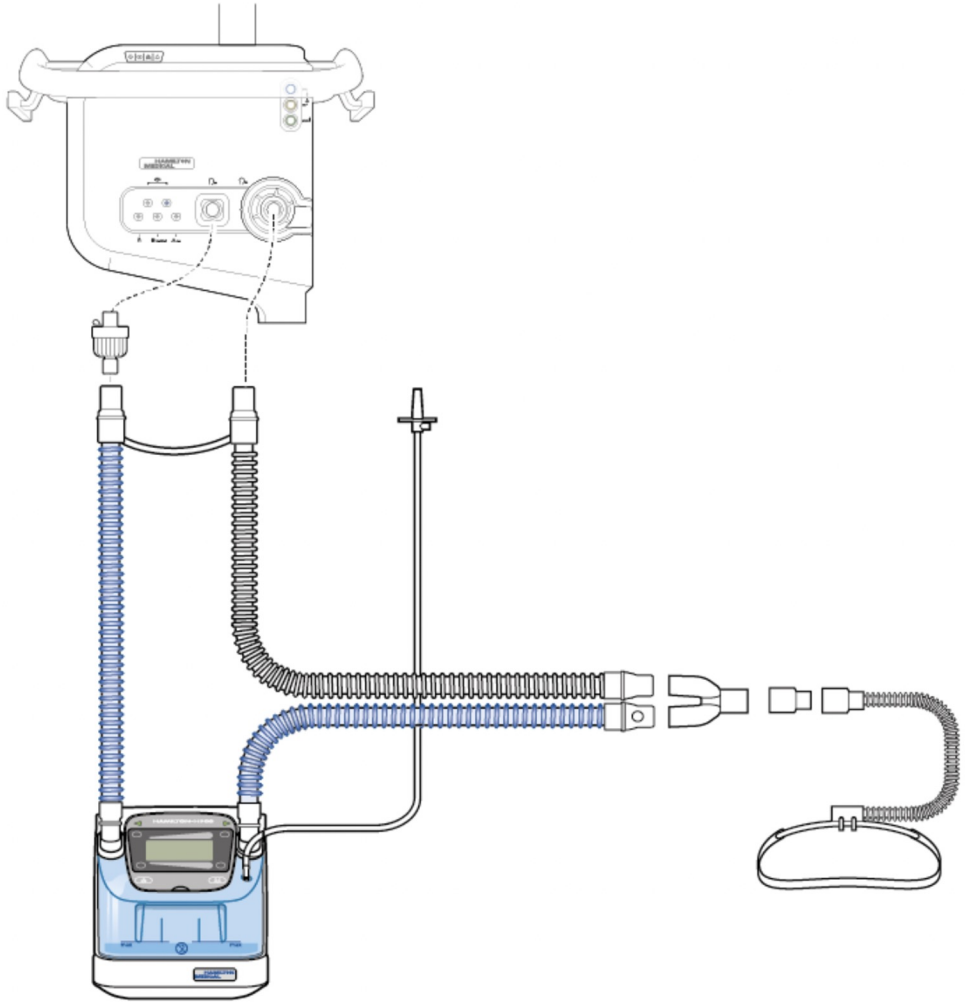
Right: Neotech “RAM” HFNC

https://www.pedsurglibrary.com/apsa/view/Pediatric-Surgery-NaT/829021/all/Adjuncts_in_Respiratory_Care#:~:text=The%20RAM%20nasal%20cannula%20(NeoTech,of%20breathing%20during%20

Example:
Hamilton machine for HHFNC

Some machines can be used for mechanical ventilation

https://www.hamilton-medical.com/en_US/Products/Technologies/High-flow-nasal-cannula-therapy.html



Clarifying terms

RAM cannula = brand name HFNC

Heated / humidified high flow vs simple HFNC

Bubble CPAP (photo on right)

CPAP

BiPAP

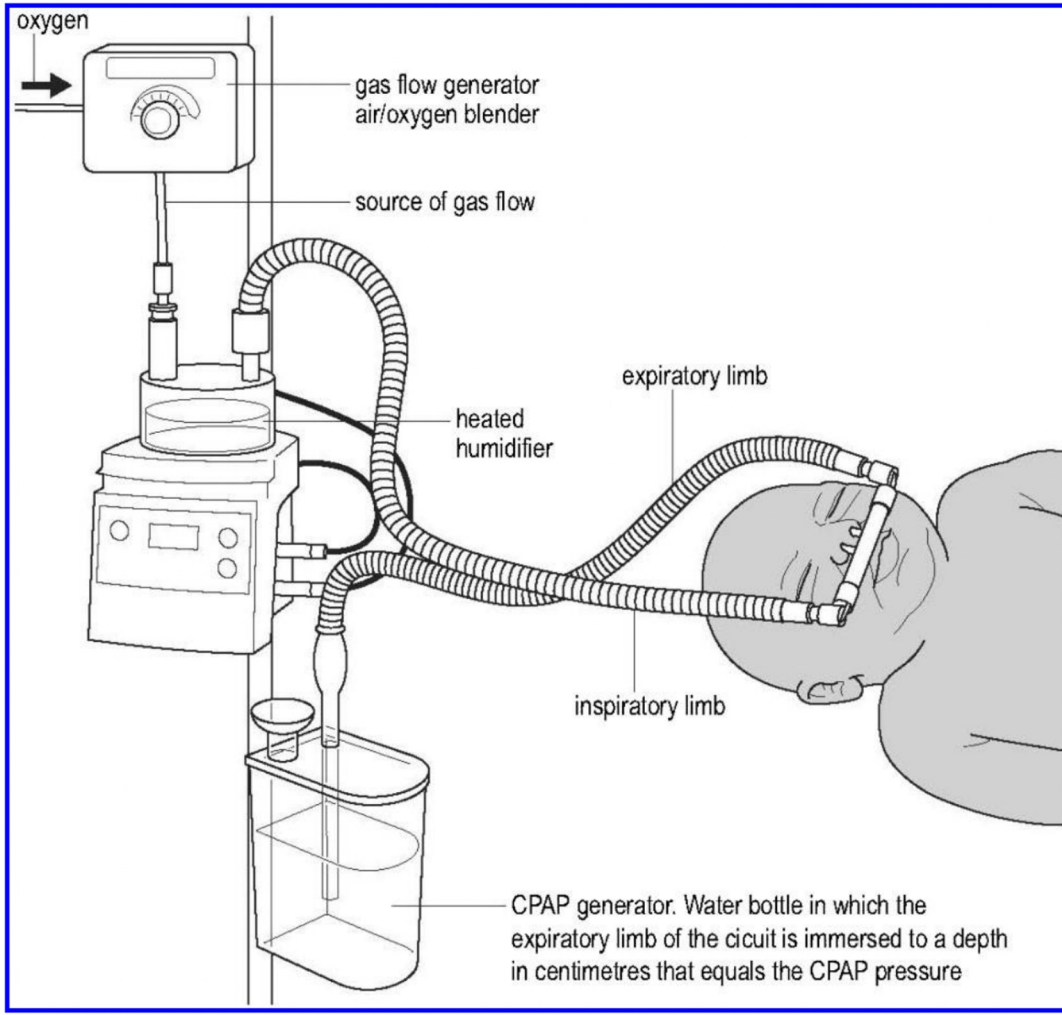


Figure 1 Schematic diagram of commercially available bubble CPAP system connected to an infant using close-fitting nasa prongs

Image: Duke, CPAP: a guide. Paediatrics and International Child Health, 34(1), 2014.

EMS transfers

What can transport teams fly?

Avoid having EMS arrive and need to trial pt on lower level care for transport

K1 | additional notes

	A	B	C	D	E	F	G	H	
1	**Transport Agency**	**HFNC**	**NIPPV**	**Intubated**	**Bariatric**	**Pediatric**	**Limitations**	**Contact Info**	**W**
2	**Eagle AirMed / Gallup MedFlight/ AeroCare / Sunrise (Guardian Flight)^ (updated 12/01/2022)**	Yes COVID	Yes COVID	Yes COVID	up to 400-450, (may be able to do up to 600lbs, width max 35-40" (cabin 60" across) - no set limits to reviewed by crew	>1 month and >5 kg generally (may be able to go lower)	RW+ FW - have RAM cannula for HFNC up to 25lpm, can do humidified can't heat yet. Will be getting Hamilton this year at somepoint (which will be able to humidify and heat). Bubble c-pap (max 12L and 10 PEEP). CPAP/BiPap. Case by case basis for O2 so make sure they know patient's settings.	1-877-488-8148 Gallup MedFlight	A
3	**Lifeguard (UNM) (updated on 12/01/2022)**	Yes COVID**	Yes COVID	Yes COVID	up to 400lbs, width 33" unofficially	Has neonatal resus team; + cooling, oscillaror, all resp	RW - intubated or low flow O2 only; **FW - no more than combo of 30LPM, 100% FiO2 (or 60LPM, 50%) due to O2 supply FW: has better capability INO	1-505-272-3115	A
4	**Flight for Life CO (Air Methods-RW, Mayo-FW)**	COVID	Yes COVID	Yes COVID	RW (=/- 350 lbs, 24" width) & FW (325 lb max, 24" width at widest point)	No RT and > 5 kg	**Will transfer to BIPap/CPAP, no rotor, only fixed wing	1-800-332-3123	R m o
5	**Classic Air Medical**	Yes COVID	Yes COVID	Yes COVID	Max width 26"	> 5 kg; has specialty NICU team though	* If RR<28, able to ambulate and low-mod risk of airway deterioration then they will use helmet CPAP **Will transfer to BiPap	1-801-383-3700	I A s
6	**Guardian Air/ Northern AZ Healthcare**	Yes COVID	Yes COVID	Yes COVID	Weight limit ~ 350 lbs, width 26-28"	Has neonatal team	Will take pts out of AZ if urgent (not licensed in NM); **will put on RAM cannula or BiPAP; need to know settings for O2	1-800-523-9391	T

Pediatric	Limitations
>1 month and >5 kg generally (may be able to go lower)	RW+ FW - have RAM cannula for HFNC up to 25lpm, can do humidified can't heat yet. Will be getting Hamilton this year at somepoint (which will be able to humidify and heat). Bubble c-pap (max 12L and 10 PEEP). CPAP/BiPap. Case by case basis for O2 so make sure they know patient's settings.
Has neonatal resus team; + cooling, oscillaror, all resp	RW - intubated or low flow O2 only; **FW - no more than combo of 30LPM, 100% FiO2 (or 60LPM, 50%) due to O2 supply FW: has better capability INO

Panelist question

What are the common problems you've faced regarding HFNC, CPAP, BiPAP escalation plan?

Equipment availability?

How to use it?

Decision making?

Escalating too early / too late?

Session overview

1. High stakes
2. Recognize sick kids
3. Escalating resp support
4. **Do we have equipment/supplies?**
5. Optimize intubation
6. Innovations

Operations: Equipment

For panelists: what equipment are you already running short on?

Advice on equipment people should look through now, to make sure they are prepared for what's coming?

And if you don't have X or Y, then order it now?

- Pediatric BP cuffs
- Peds pulse ox
- Peds size IVs
- Peds nasal cannula
- Peds HFNC
- Peds ETT sizes
- VL Miller 0 and 1 blades

Session overview

1. High stakes
2. Recognize sick kids
3. Escalating resp support
4. Equipment/supplies?
5. **Optimize prep for safe intubations**
6. Innovations

Panelist: Intubation tips

Shared mental model?

Use of checklist?

DL vs VL?

Apneic oxygenation?

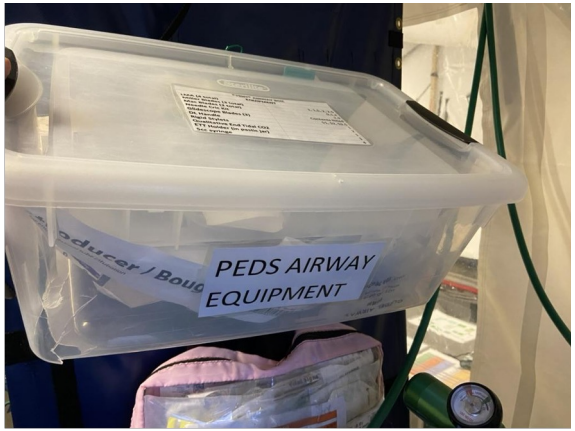
Frequent pitfalls?

Operations: How do you organize things?

For panelists: Recommendations for making supplies accessible and reliable?

Pediatric airway cart? Airway bags? Airway box with a checklist taped to the side?

How do you ensure it is restocked correctly?



Notes:

Post-Intubation Steps

Actions:

- ❑ **Ensure tube placement** and security
  - Verify placement (auscultation, capnography)
  - Secure tube
  - **Place OG tube (optional)**
  - Obtain CXR
- ❑ **Review CXR**
- ❑ **Order vent settings**
- ❑ **Ensure post-intubation sedation**
- ❑ **Avoid hyperoxia**

UNM EDRU Emergency Department Resuscitation Unit

UNM SCHOOL OF MEDICINE DEPARTMENT OF EMERGENCY MEDICINE PEDRU

Created 2019 by David Jolley MD, Michael Lauria MD NRP FP-C, Isaac Tawil MD FCCM, Rachel Tuuri MD, and Darren Braude MD

UNM ED Intubation Tool

Intubation Briefing

Pre-arrival when possible

Actions:

- ❑ **Assemble team**
  - Call RT, pharmacy (P/EDRU page), DART
- ❑ **Gather equipment**
- ❑ **Verbalize primary and backup plan**
- ❑ **Verbalize drugs & doses**
- ❑ **Address potential problems**
  - Evaluate for difficulty, hypoxia, hypotension
- ❑ **Initiate preoxygenation**

DIFFICULT AIRWAY RESPONSE TEAM (DART) CALL 333

Intubation Timeout Checklist

Actions:

CALL	RESPONSE
Equipment	
❑ **Suction**	Out and ready
❑ **Backups** (Bougie, iGel, BVM, OPA/NPA)	Out and ready
Patient	
❑ **Monitors & end tidal CO_2**	Attached and working
❑ **Vascular access…**	IV working
❑ **Positioning…**	Optimized
❑ **Apneic oxygenation**	Nasal canula on at 5 Lpm
Medications	
❑ **Induction agent…**	___ mg of ___ ready
❑ **Paralytic…**	___ mg of ___ ready
❑ **Vasopressor…**	Out and ready
Resuscitation	
❑ **Last set of vitals…**	BP is ___, HR ____, sats ____

❑ **What concerns does anyone have?**

Quiet for induction please! Push medications.

UNM ED Intubation Tool Supplemental Material

Pre-med (optional)	Weight-Based Dose	Max Dose
Atropine	0.02 mg/kg	0.5 mg
Commonly used in infants < 1 year, or children < 5 years when using succinylcholine		

Induction	Weight-Based Dose	Max Dose
Etomidate	0.2 - 0.4 mg/kg	30 mg
Ketamine	1.5 – 2 mg/kg	0.5 – 2 mg/kg
Ketamine IM Dosing	5 – 10 mg/kg IM	250 mg IM
Propofol	1.5 mg/kg	1.5 mg/kg

Paralytic	Weight-Based Dose	Max Dose
Rocuronium	1.2 - 1.5 mg/kg	80 mg
Succinylcholine*	1.5 mg/kg	1.5 mg/kg
Vecuronium	0.1 mg/kg	10 mg

*Beware malignant hyperthermia. Do not use in severe crush injury, rhabdo, muscular dystrophy, cerebral palsy, 48 hours after burns, multiple trauma, denervating injury, or hyperkalemia.

Vasopressor	Weight-Based Dose	Max Dose
Epinephrine* 1:10,000	0.01 mg/kg 0.1 mL/kg	0.5 mg
*For PALS or ACLS		
Epinephrine – Push Dose	Data limited	10 - 100 mcg
Phenylephrine – Push Dose	Data limited	10 - 100 mcg

UNM ED Intubation Tool Supplemental Material

Peds Ventilator Strategies*

Mode	SIMV + VC
PEEP	5 cm H_2O
Tidal Volume	8 mL/kg
Pressure Support	10 cm H_2O
Backup Rate	24 breaths/min

*Routine settings (healthy lungs). Discuss settings with ICU **immediately** for patients with profound acidosis or those with asthma, bronchiolitis, or DKA.

Peds Post-Intubation Sedation

Push Dose (Recommended)

	Weight-Based Dose	Max Dose**
Fentanyl*	1-2 mcg/kg q5 min PRN	25 to 75 mcg q5-20 min PRN
Lorazepam	Not recommended	2-4 mg boluses q10-30 min PRN
Midazolam	0.1-0.2 mg/kg q5 min PRN	1-4 mg boluses q10-30 min PRN
Ketamine	0.5 mg/kg PRN (data limited)	0.5 mg/kg q10-20 min PRN

Infusions (Not-recommended)

Fentanyl*	Starting dose 1-2 mcg/kg/hr Titrate by 1 mcg/kg/hr	Starting dose 25-75 mcg/hr Titrate by 25 mcg/hr
Lorazepam	No data available	Starting dose 0.5-2 mg/hr Titrate by 0.5 mg/hr
Midazolam	Starting dose 0.06-0.12 mg/kg/hr Titrate by 0.06 mg/kg/hr	Starting dose 1-4 mg/hr Titrate by 1-2 mg/hr
Propofol	Starting dose 5-10 mcg/kg/min Titrate by 5 mcg/kg/min	Starting dose 5-10 mcg/kg/min Titrate by 5 mcg/kg/min

*Used for analgesia, not sedation
**Also see UNM Policy "Adult ICU Analgesia and Sedation"

Implementing Sims and Practice drills

Question for panelists: how are you preparing for these higher-risk situations?

Use of sims / hands on sessions?

Practice with VL vs DL?

Pediatric Endotracheal Intubation, Josh Nagler:
https://www.youtube.com/watch?v=nEa3E5tuVJM

https://www.maskinduction.com/atlas-of-pediatric-intubation-technique.html

Session overview

1. High stakes
2. Recognize sick kids
3. Escalating resp support
4. Equipment/supplies?
5. Optimize intubation
6. **Innovations**

ED Observation Plan when no inpatient Peds

Dr. Dan Schnorr sharing innovation from San Carlos Apache ED

January 25, 2023 ECHO 9:30-11:00am MT

Dr. Dom Maggio / White River Apache ED, Arizona

Escalation of Respiratory Support for Patients with Bronchiolitis

1. Nasal cannula 0-2L/min
    a. Antipyretics
    b. Suctioning q 2 hours
2. If persistent increased work of breathing or hypoxia -> HHFNC
    a. Start @ 2 L/kg/min (max)
    b. Titrate down based on WOB
    c. Place IV / Consider IVF bolus
3. Persistent increased work of breathing -> CPAP (Hamilton setting "NIV")
    a. PEEP = 5 - Titrate as needed up to PEEP of 10
    b. NPO
    c. IVF bolus / Maintenance IVF
    d. Appropriately sized RAM Cannula
4. Persistent increased work of breathing -> BiPAP (Hamilton setting "NIV-ST")
    a. Fi02 = 100% and titrate down - 02 sat target >93%
    b. Back up rate = 25% of RR
    c. Pinsp = 5 - Titrate by 2 up to 15 (remember, this is a delta number)
    d. PEEP = 5-10 (or what cpap was at) - Titrate to 10 as needed
5. Indications for Intubation
    a. Episodes of apnea
    b. Episodes of hypoxia on BIPAP
    c. Persistent increased work of breathing despite maximal BIPAP settings

Questions

Summary

1. High stakes, good time to optimize practice & preparations
2. Early recognition of sick kids
3. Plan for escalating respiratory support
4. Ensure adequate equipment/supplies
5. Optimizing preparations for intubation
6. Innovations

References

Dieckmann RA, Brownstein D, Gausche-Hill M. The pediatric assessment triangle: a novel approach for the rapid evaluation of children. Pediatr Emerg Care. 2010 Apr;26(4):312-5. doi: 10.1097/PEC.0b013e3181d6db37. PMID: 20386420.

Duke,T. CPAP: a guide for clinicians in developing countries, Paediatrics and International Child Health, 34(1), 2014, pp1-11.

Miller et al, Video Assisted Laryngoscopy for Pediatric Tracheal INtubation in the Emergency Department, Annals of EM, 10.15.2022.

Seattle children's links: https://www.seattlechildrens.org/healthcare-professionals/gateway/clinical-resources/pathways/

CHOP links: https://www.chop.edu/pathways-library/emergency

Guidelines for Shared Mental Models

What open-access resources are people using?

San Carlos Apache - Peds Respiraory Obs (PRO) Unit

Accepted admitting diagnosis:
Bronchiolitis
COVID
Flu
Pneumonia
Croup

Exclusion criteria:
Age < 3 months, corrected for gestational age
Pre-existing neurologic, cardiac or pulmonary comorbidity (except asthma, which is permitted as a comorbidity but not as an admitting diagnosis)
Status asthmaticus
Requires suctioning more frequently than Q2H
Requires racemic epinephrine > 2 doses
Requires > 2L O2
PO intolerance
Stridor at rest

SCAHC PRO Order Set

Nursing

*Place on respiratory observation

*Vital Signs on arrival to observation unit and Q6H

*Activity level (ad lib)

*Diet (normal diet)

*Call ED Physician at x7327 for any concerns until 0600

*Continuous pulse oximetry

*Oxygen to maintain O2 sat > 94%

*Bulb suctioning Q2H PRN

Insert IV

PRN Medications

Oral

*Acetaminophen suspension __ mg Q6H PRN fever

*Ibuprofen suspension __ mg Q6H PRN pain or fever not resolved with Acetaminophen

*Ondansetron suspension __ mg Q6H PRN nausea or vomiting

Nebulized

Albuterol 2.5mg nebulized Q2H PRN wheezing or shortness of breath

Albuterol 5mg/hr nebulized for _ hours

Racemic Epinephrine Q1H PRN stridor (in comments: call the responding clinician)

Antibiotics

Ceftriaxone 50mg/kg IV daily

Azithromycin 10mg/kg IV daily

Azithromycin suspension 5 mg/kg PO daily

Doxycycline 2.2 mg/kg IV BID

Doxycycline 2.2 mg/kg PO BID

Amox-Clav suspension 45 mg/kg PO BID

Cefdinir suspension 7 mg/kg PO BID

Consults

Pediatrics

Seattle Children's: https://www.seattlechildrens.org/healthcare-professionals/gateway/clinical-resources/pathways/

https://www.seattlechildrens.org/globalassets/documents/healthcare-professionals/clinical-standard-work/bronchiolitis-pathway.pdf (Good for HFNC)

chop.edu/clinical-pathway/bronchiolitis-emergent-evaluation-clinical-pathway

Emergency Department Clinical Pathway for Evaluation/Treatment of Children with Bronchiolitis

Goals and Metrics

Patient Education

Provider Resources

Related Pathways

Bronchiolitis, Inpatient

Bronchiolitis, Oral/Enteral Feeding, ED and Inpatient

Quality Story

Reducing Albuterol Use in Children with Bronchiolitis

Supportive Care

Suction

Hydration, nutrition

Supplemental oxygen

Pulse oximetry

Fever Management

Infant With Typical Bronchiolitis

Triage

History and Physical

Initial Respiratory Assessment

Additional Treatment Considerations

Albuterol Trial

Racemic epinephrine

Antibiotics

Hypertonic Saline

Further Diagnostic Testing

Consider ED Asthma Pathway if:

Recurrent wheezing / prior steroid use

Age > 12 months

Strong response to albuterol

Mild

Consider Suction-bulb

Moderate

Suction: Bulb

Bronchodilators not recommended for typical bronchiolitis. If used, document reason and response.

Severe

Suction: Bulb or wall

Bronchodilators not recommended for typical bronchiolitis. If used, document reason and response.

If no improvement after suctioning, assess with attending at bedside to discuss additional treatment including initiating HFNC oxygen at 1.5 L/kg/minute – View Job Aid

See Enteral Feeding Guidelines

If required FiO2 > 0.4 or continued severe distress despite increase to 2 L/kg/min / Max HFNC settings, initiate CPAP at 8 cm/0.4 Fio2 and consult PICU.

Sample Bronchiolitis Pathway Patient Progression

Sample Bronchiolitis Pathway Patient Progression on HFNC

Discharge Criteria

Oxygen saturation > 90% awake

Adequate oral intake

Mild/moderate work of breathing

Reliable caretaker

Able to obtain follow-up care

MDI/spacer teaching if response to albuterol

Admission Criteria

Base decision on:

Repeated assessments

Response to therapy

Stage of illness

Admit if discharge criteria not met:

Inpatient: Requires HFNC, O_2 or progression expected

EDECU: Mild disease with expected LOS < 24 hours

ICU: Apnea, severe distress

Evidence

Reducing Albuterol Use in Children With Bronchiolitis

Clinical Practice Guideline: The Diagnosis, Management, and Prevention of Bronchiolitis

A Randomized Trial of High-Flow Oxygen Therapy in Infants with Bronchiolitis

Educational Media

Bronchiolitis: A Scenario-Based Primer

MD/APP Learning Module

PEM Podcast: Bronchiolitis

Bronchiolitis Educational Video for Families

CHOP

https://www.chop.edu/clinical-pathway/bronchiolitis-emergent-evaluation-clinical-pathway

Bronchiolitis / Wheezing – 3-24 Months

Wheezing is a common complaint on radio traffic. In infants, wheezing is most likely due to bronchiolitis or asthma. Listen carefully for a history of recurrent whe
past as a clue toward asthma. For infants presenting for the first time or with associated stridor, think foreign body. Wheezing in older children should not be dia
"bronchitis" as this is not a disease seen in children. Older wheezing children have asthma, a viral process or pneumonia. Be tuned in to a reported past history
undiagnosed bronchiectasis (productive cough greater than 3 months). These children should be seen in Pediatric Clinic for an evaluation.

Diagnosis: based on history and clinical presentation
Demographics: hospitalization rate for Alaska Native children 3x general population in some studies
Signs/Symptoms: cough, rhinorrhea, wheezing, respiratory distress, poor feeding
Risk Factors for Severe Disease:

- less than 12 weeks old
- prematurity <34 weeks
- history of cardiopulmonary disease
- anatomic airway defects
- neuromuscular disease
- immunodeficiency
- tobacco smoke exposure

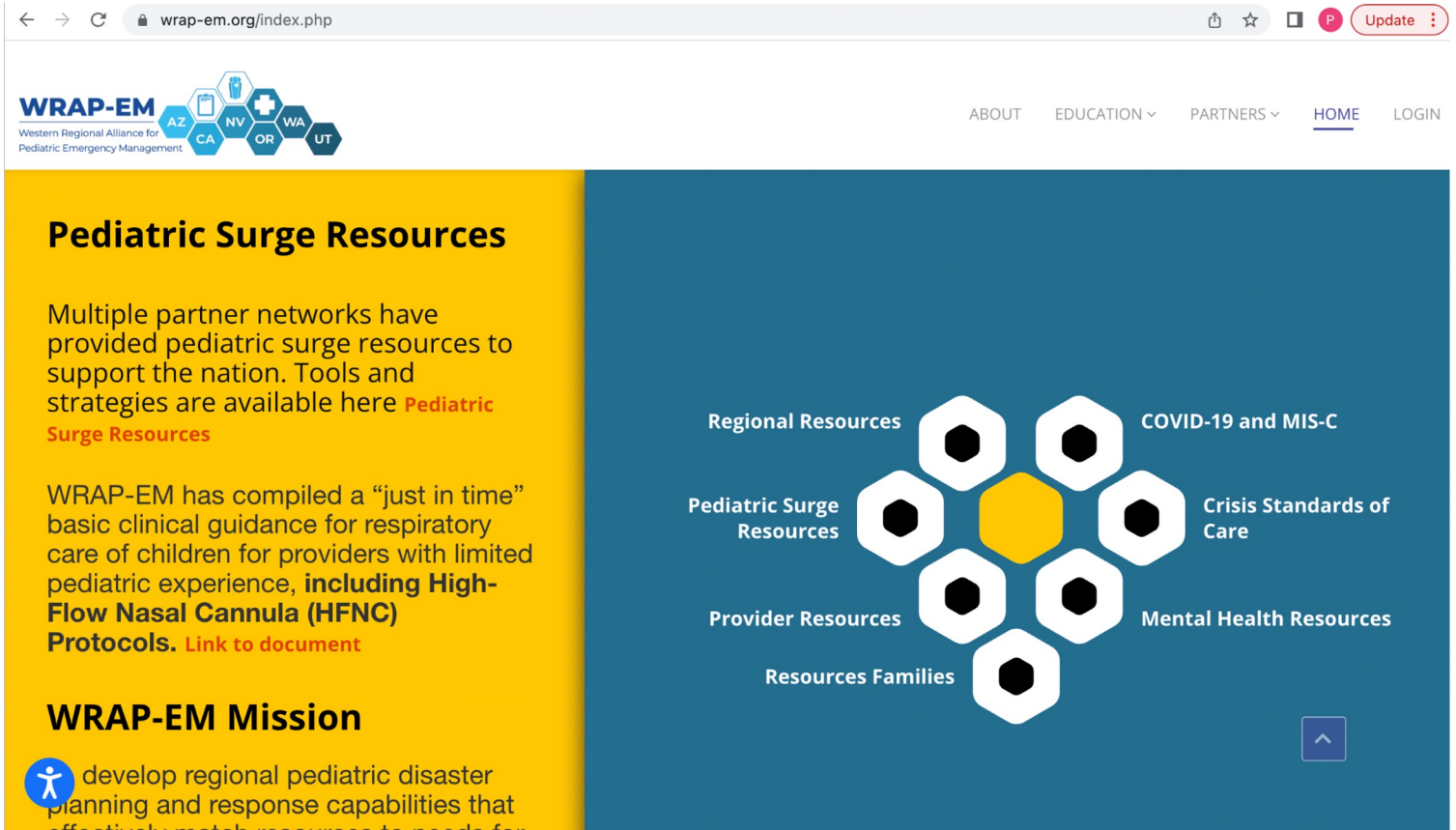
Risk for Apnea:

- postconception age <48 weeks
- low birth weight
- tachypnea or respiratory depression
- low room air oxygen saturations

Management: see Bronchiolitis/Wheezing YKHC Clinical Guideline
Prevention:

- Good Hand Hygiene

WRAP-EM


wrap-em.org/index.php
Update
WRAP-EM
Western Regional Alliance for Pediatric Emergency Management
AZ
CA
NV
OR
WA
UT
ABOUT
EDUCATION
PARTNERS
HOME
LOGIN
Pediatric Surge Resources
Multiple partner networks have provided pediatric surge resources to support the nation. Tools and strategies are available here Pediatric Surge Resources
WRAP-EM has compiled a "just in time" basic clinical guidance for respiratory care of children for providers with limited pediatric experience, including High-Flow Nasal Cannula (HFNC) Protocols. Link to document
WRAP-EM Mission
develop regional pediatric disaster planning and response capabilities that
Regional Resources
COVID-19 and MIS-C
Pediatric Surge Resources
Crisis Standards of Care
Provider Resources
Mental Health Resources
Resources Families

WRAP-EM
Western Regional Alliance for Pediatric Emergency Management

AZ CA NV OR WA UT

https://wrap-em.org/

Just-in-Time Basic Clinical Guidance for Pediatric Respiratory Illness

Version 1

Background: This document addresses a unique educational need for physicians caring for pediatric patients in receiving center emergency departments. There are multiple facilities with limited pediatric capabilities that care for children as they await transfer or the opening of more high-level pediatric beds. Our intent is to provide basic clinical guidance for respiratory care for children to help in these circumstances. It is expected that this is most valuable as a "just in time" reference for providers with limited pediatric experience. It is not intended in scope to be a pediatric intensive care manual for respiratory illness, but rather the management of patients as they await transfer to a higher level or improvement in their clinical condition.

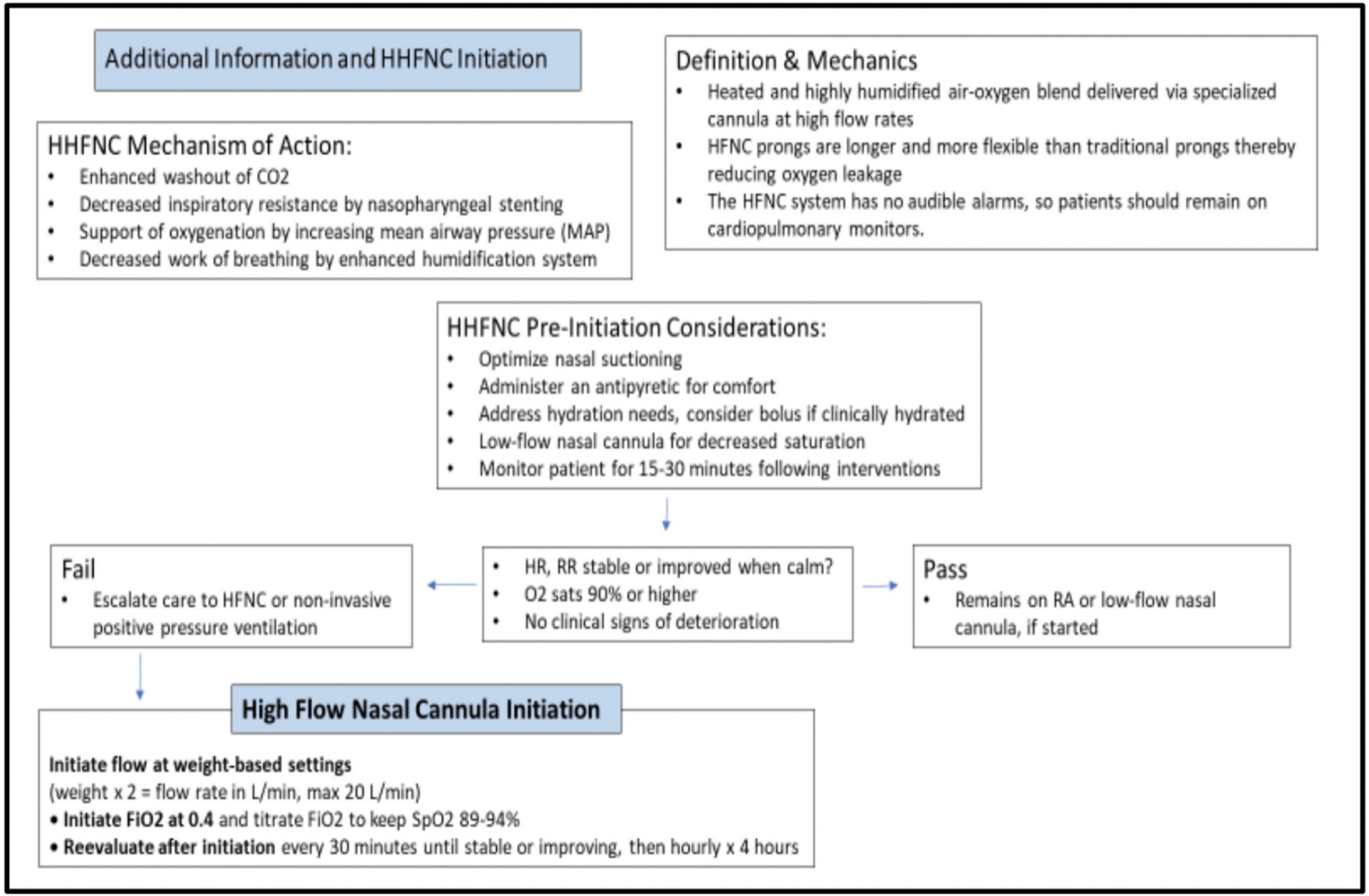
Critical disclosures:

*This document presents an evidence-based approach that is appropriate for most patients. It should be adapted to meet the needs of individual patients and situations and should not replace established protocols or clinical judgment.

*Ideal care for some of these children may be to transfer to a higher level of care and this guidance should not be used as a substitute for that when transfer is possible and clinically appropriate.

WRAP-EM
Western Regional Alliance for Pediatric Emergency Management
AZ CA NV OR WA UT

HHFNC logistics



https://wrap-em.org/index.php, then links to
https://files.asprtracie.hhs.gov/documents/aspr-tracie-ta---pediatrics-and-high-flow-nasal-cannulas.pdf