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Pediatric Triage and the Principles of Caring for Kids

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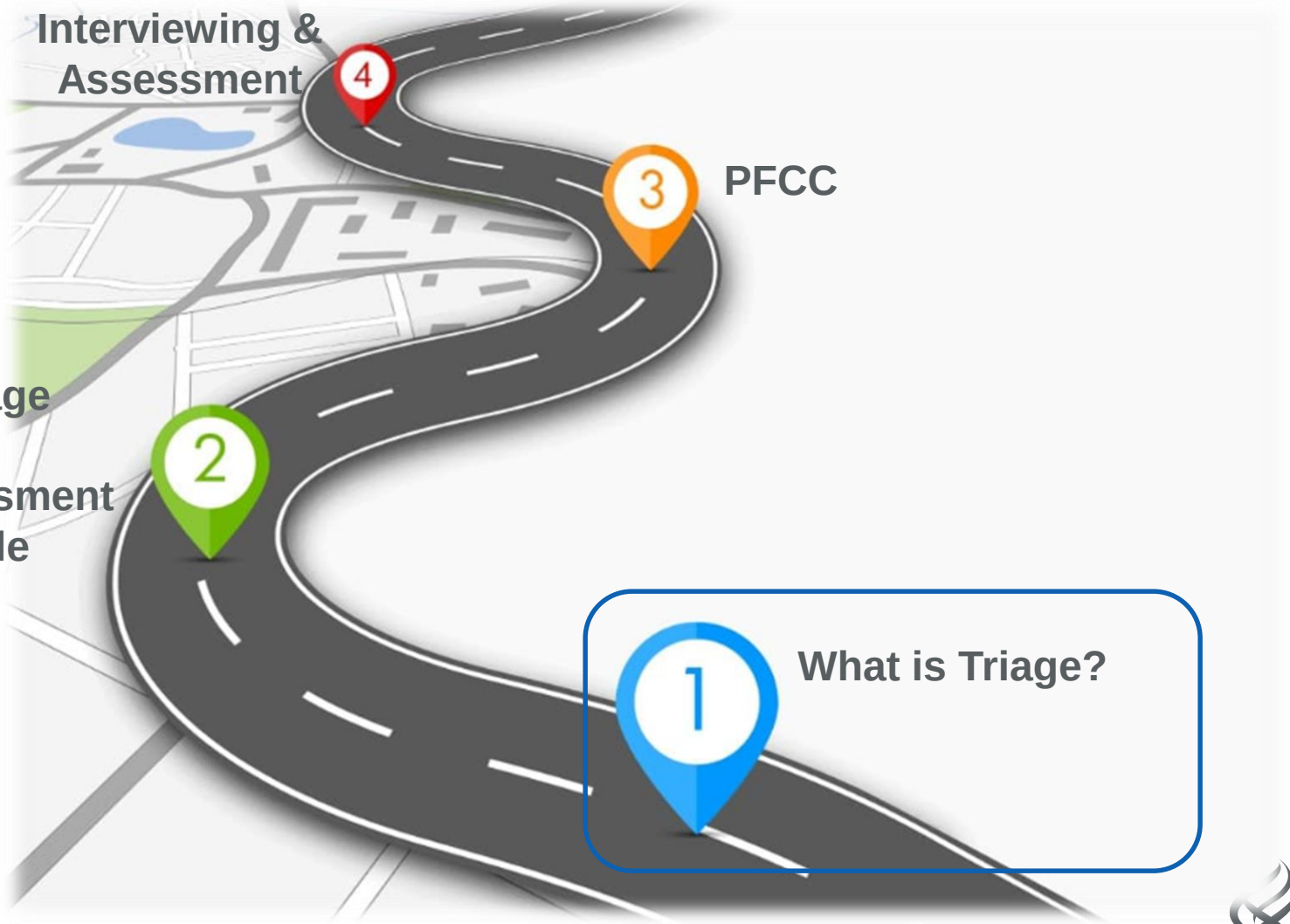
Roadmap


Interviewing &
Assessment
4
PFCC
3
ESI Triage
&
The Assessment
Triangle
2
What is Triage?
1

What it is triage?

- From the French word *tier*, meaning sorting or sifting

- The assigning of priority and the sorting of patients according to the urgency of their need for care

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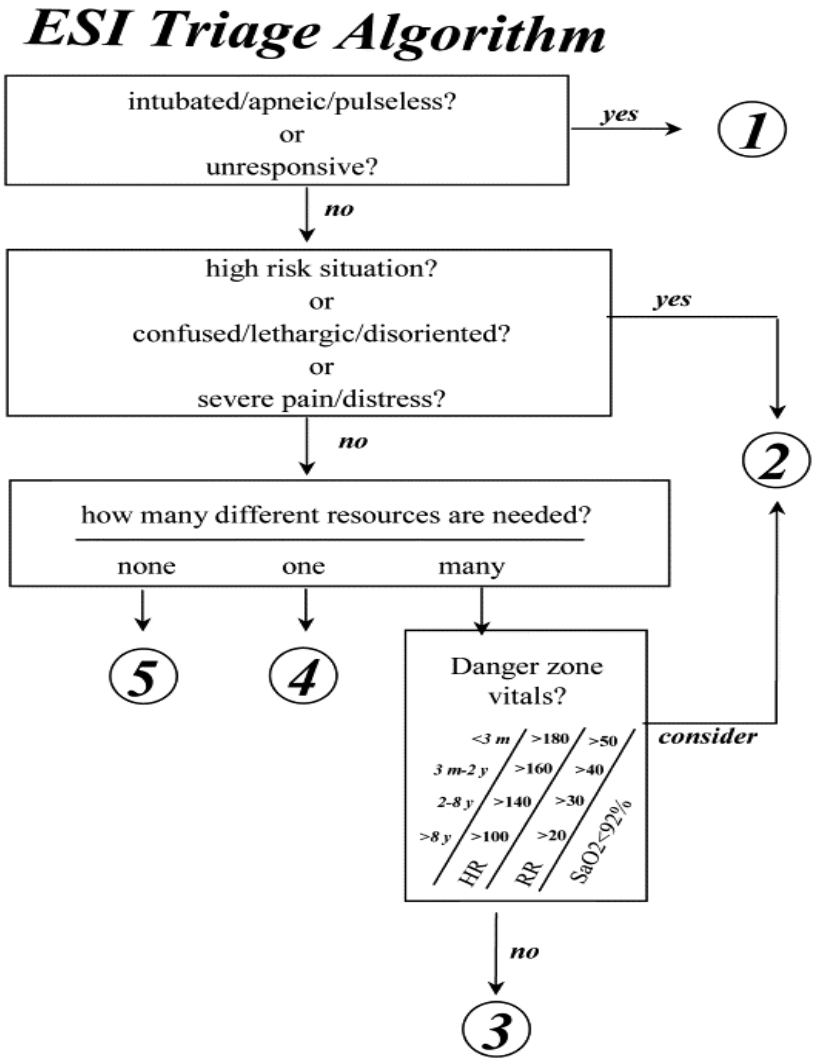
ESI history & overview

- The emergency severity index (ESI) was developed by a group of emergency physicians and nurses in the late 1990s.
- 5 Level acuity system that also addresses potential resource utilization.
- In 2004-05 ESI was updated to version 4. The entire ESI handbook is available for free at: http://www.ahrq.gov/professionals/systems/hospital/esi/esihandbk.pdf
- Version 4 takes into account new consensus data on pediatric fevers and revises and expands the ESI level 1 criteria.



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ESI Validity & Reliability

- Validated evidenced based triage acuity rating instrument in the United States and more reliable than other triage models
- Reliability and validity worldwide has been found to be variable and cross-cultural adaptation may be necessary
- ESI has a tendency for allocating patients to levels 2 and 3

Rater group	Statistics				Correlation 95% CI
	Correlation	Lower limit	Upper limit	Z value	*P* value
Expert-Expert	0.900	0.570	0.980	3.497	0.000
Nurse-Expert	0.732	0.625	0.812	9.142	0.000
Nurse-Nurse	0.799	0.739	0.846	14.551	0.000
Nurse-Physician	0.760	0.582	0.868	5.919	0.000
Physician-Expert	0.840	0.813	0.863	28.404	0.000
Physician-Physician	0.842	0.479	0.959	3.407	0.001
Overall	0.820	0.797	0.840	33.937	0.000

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ESI for Pediatric Triage

- ESI was originally intended for adult triage populations only, but the more current versions are designed to ***triage patients of any age***.
- In pediatric populations, mistriage usually occurs on patients < 1year of age and on patients with medical complaints (e.g. rashes) rather than traumatic complaints.
- On average 11-12% of pediatric patients are over or under-triaged.

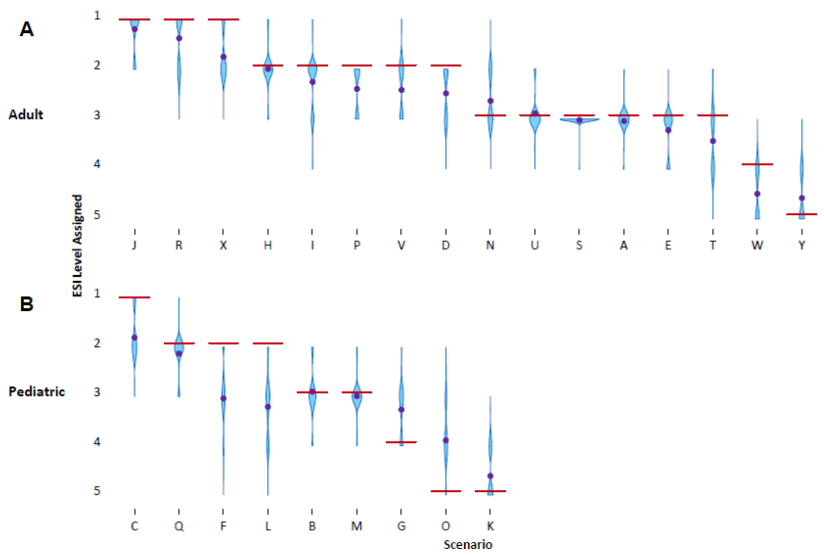

Figure. Violin plots showing range and distribution of nursing score assignments for each standardized triage scenario. Scenarios are grouped by patient population (*A*, adult; *B*, pediatric) and presented in descending order of *ESI Implementation Handbook* answer key assigned triage acuity. Letters correspond to scenario identification and values in parentheses to the triage level designated by the ESI handbook key. Black dots correspond to mean value of nursing responses for each scenario.

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ESI triage

Over Triage	Under Triage
When a patient is assigned an acuity higher than their clinical condition warrants. This can tax the department's limited resources but usually does not cause harm to the patient.	When the patient is assigned a lower acuity than their clinical condition warrants. This can lead to deterioration in their condition and increase mortality. This delay may result in negative patient outcomes. • ***Under triage is more common than over triage***

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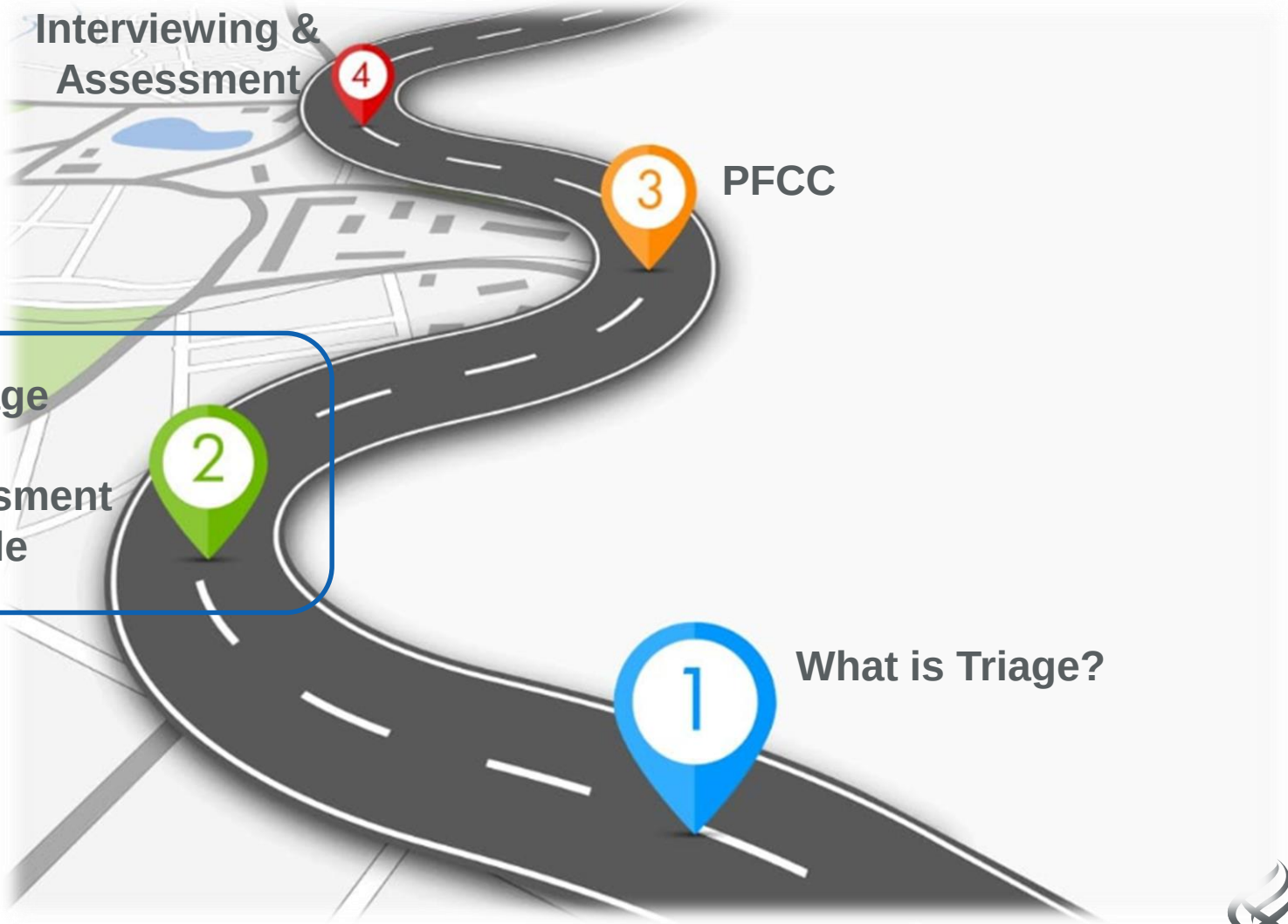
Roadmap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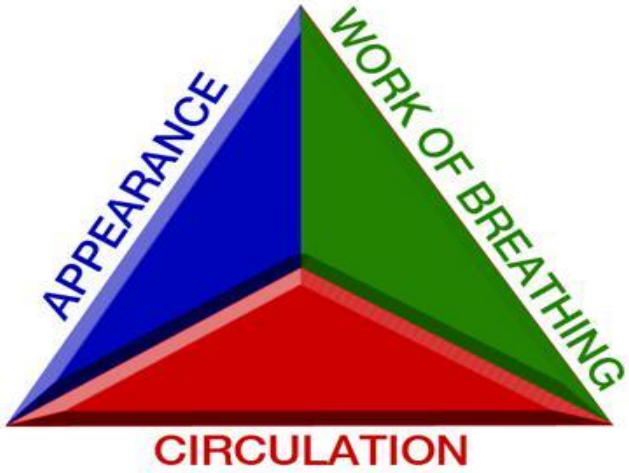
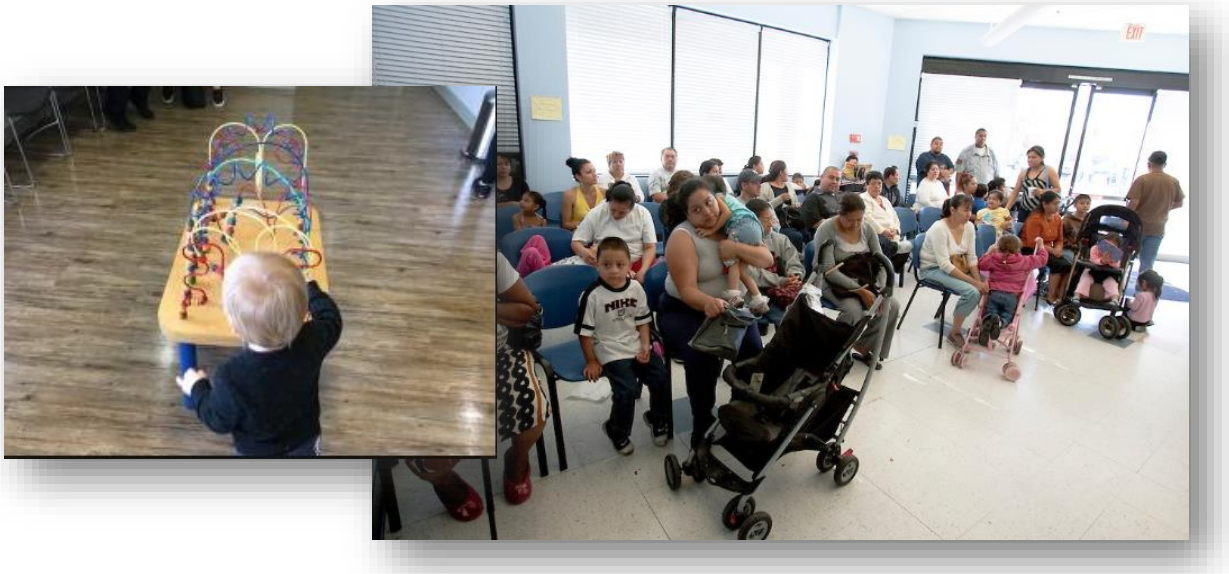
Standardized Triage Approach

1. **Across the room quick look—*appearance*, *work of breathing*, *circulation***
2. ***ABCDE***





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Key Point

- The patient does not have to prove that he/she is sick. The triage RN must prove that the patient(s) is not sick.

- Always key to start at the top of the triage algorithm and work your way down.

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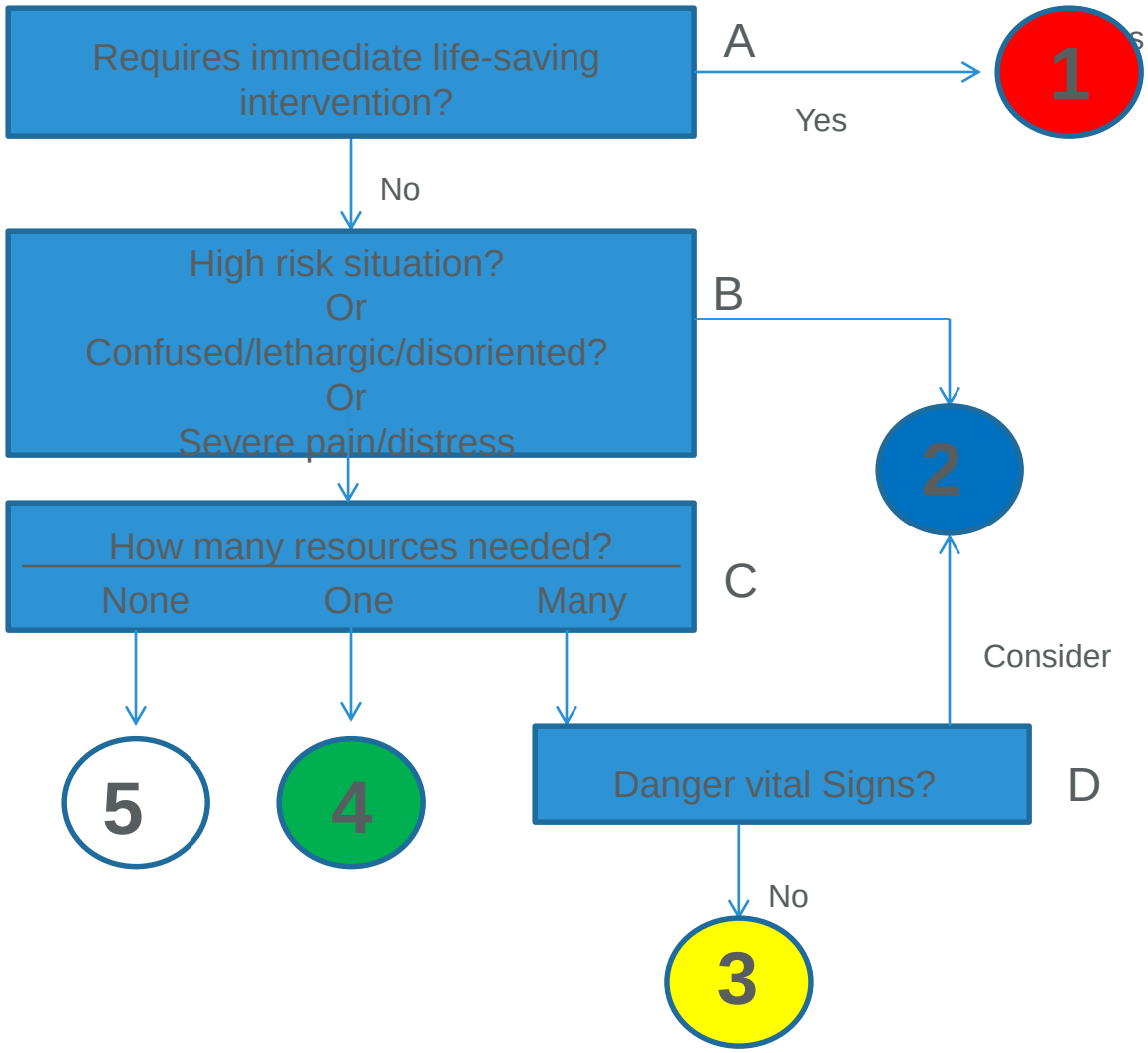
ESI Version 4 Algorithm



Danger Vital Signs:

- **<3 mo**:
  - HR >180
  - RR >50
  - sat <92%
- **3m-3y**:
  - HR>160
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  - HR>100
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Decision Point A:
Is the Patient Dying?

- Does the patient have a patent airway?
- Is the patient breathing? Is ventilation effective or require assistance?
- Does the patient have a pulse?
- Is there an alteration in cap refill >3-4 seconds?
- Is the patient responsive?
- Does the patient require an immediate life saving intervention?

- If the patient does not have a patent airway, is apneic, pulseless, unresponsive, and/or needs an immediate life saving intervention or they may die then the patient is **ESI 1**.

Requires immediate life-saving intervention? → **1**

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Acute Mental Status Changes

- Reminder:
  - A: Alert
  - V: Verbal stimuli to elicit a response
  - P: Painful stimuli to elicit a response
  - U: Unresponsive

- **Key point**: Any “U” on the scale meets Level 1 criteria

- For example, a patient actively seizing should be ESI 1

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Immediate Life-Saving Interventions

YES	NO
Airway & Breathing: • BVM ventilation • Intubation • Surgical Airway • CPAP/BiPAP • HFNC	**Airway & Breathing**: • Nasal cannula • Non-rebreather mask
Electrical Therapy: • Defibrillation • Emergent cardioversion • External pacing	**Electrical Therapy:** • Cardiac monitor
Procedures: • Needle Decompression • Pericardiocentesis • Open thoracotomy	**Procedures:** • Diagnostic tests • ECG • Labs
Hemodynamics: • Significant IV fluid resuscitation • Control of Major bleeding • Massive Transfusion	**Hemodynamics:** • IV access
Medications: • Narcan • Dextrose • Dopamine • Atropine • Adenosine	**Medications:** • Aspirin • Nitroglycerin IV • Antibiotics • Heparin • Pain medications

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Examples of Pediatric ESI 1 Conditions

Respiratory Arrest
Cardiopulmonary Arrest
Major head trauma with hypoventilation
Active Seizures
Peticheal rash in a patient with altered mental status changes
Respiratory Failure • Hypoventilation • Cyanosis • Decreased muscle tone • Decreased mental status • Bradycardia (*Late finding; concern for impending arrest)*
Shock/Sepsis with signs of Hypoperfusion • Tachycardia • Tachypnea • Altered pulses = bounding or diminished • Altered Cap Refill >3-4 seconds • Altered Skin Appearance = cool/mottled or Flushed • Widened Pulse Pressure • Hypotension (*Late Finding*)
Anaphylactic Reaction with signs of… • Respiratory Compromise (dyspnea, wheeze, stridor, hypoxemia) • Reduced Systolic BP • Hypoperfusion • Mucosal involvement (hives, swollen lips, swollen tongue, swollen uvula) • Persistent gastrointestinal symptoms

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Quick Review

7 day old arrives in the arms of his father. Pt is floppy and minimally responsive. Pt is quickly noted to have a bulging fontanelle and a HR of 80. What is the appropriate ESI?

ESI 1

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Quick Review

- 8 year old female arrives in dad's arms to the front triage desk. Pt is awake with weak pulses, cool, pale, capillary refill 3-4 seconds. Pt's father reports patient was hit by a car ten minutes ago. Pt has repetitive questioning and no event recall and does not appropriately follow commands. What ESI level?

ESI 1

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Standardized Triage Approach

1. Across the room quick look
2. *ABCDE*

3. Pertinent History

4. Vital Signs
5. Fever
6. Pain

CIAMPEDS	
C	Chief Complaint
I	Immunizations/Isolation
A	Allergies
M	Medications
P	Past Medical History
E	Events preceding problem
D	Diapers/Diet
S	Symptoms associated with the Problem

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Key Point

- Consider the worst case scenario associated with the chief complaint, complete the assessment using a standardized approach, and then make a decision based on your assessment, NOT on your assumptions or biases.

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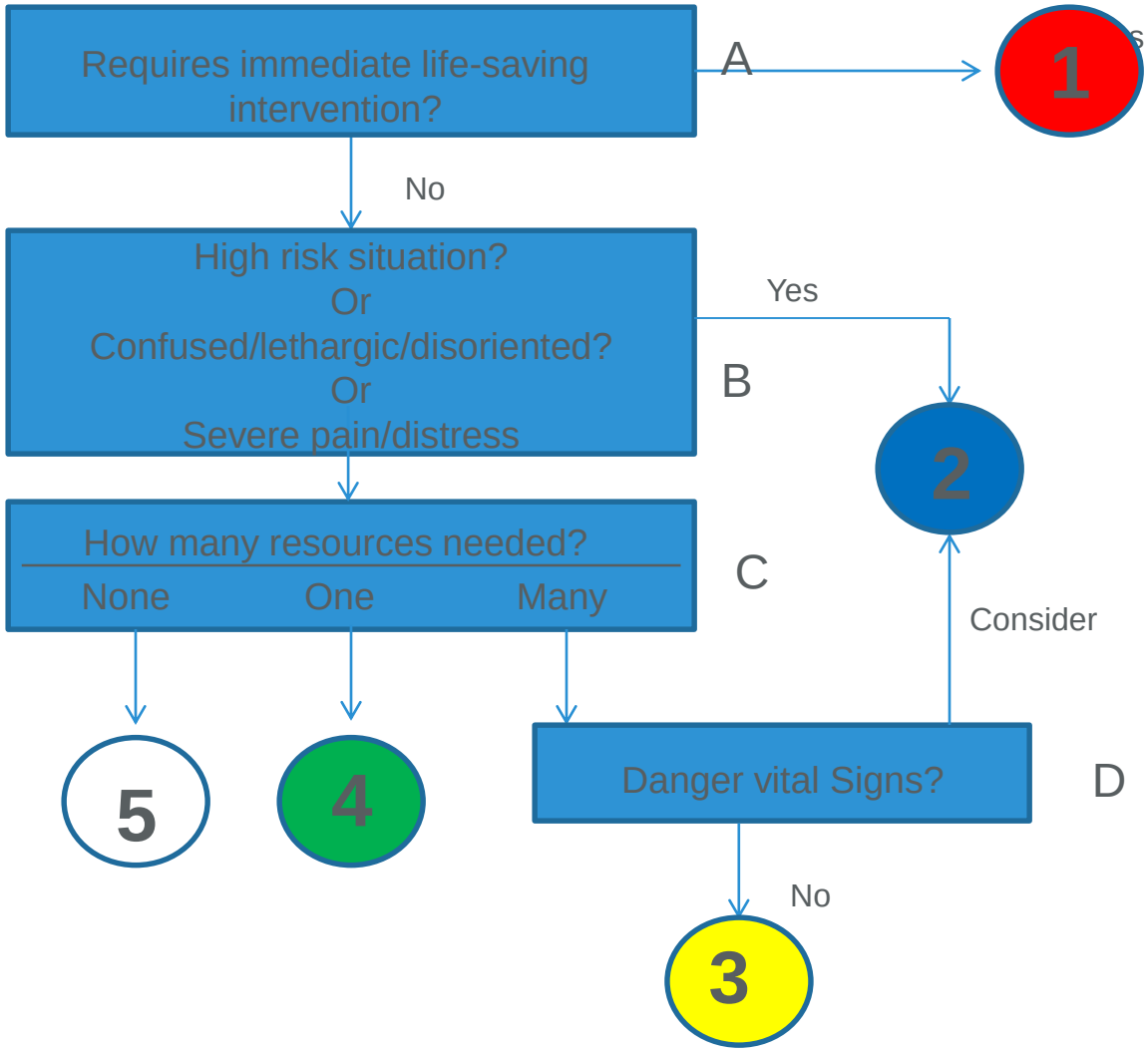
ESI Version 4 Algorithm



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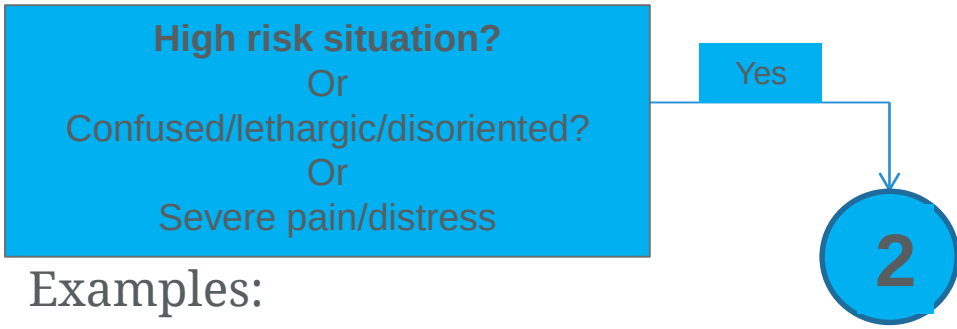
Decision Point B:

Is this a high risk situation?

- A high risk patient is someone you would want to put into your last open bed
- A high-risk patient is one whose condition could easily deteriorate
- A high risk patient presents with symptoms suggestive of a condition requiring time-sensitive treatment.
- Frequently RISK is influenced by age and past medical history



Examples:

- Immunocompromised patients
- 1-28 days old with fever>38C
- Suicidal/homicidal patient
- Acute chest pain
- New neurological signs and symptoms

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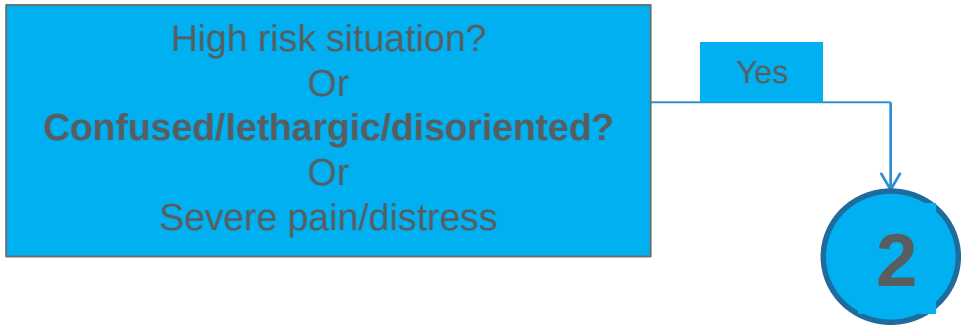
Decision Point B continued:

Is the patient confused, lethargic, or disoriented?



- The concern here again is whether the patient is demonstrating an acute change in level of consciousness.
- Patients with a baseline mental status of confusion do not meet level-2 criteria.
- Is the patient's brain structurally or chemically compromised? (i.e. overdose, alcohol intoxication, etc.)

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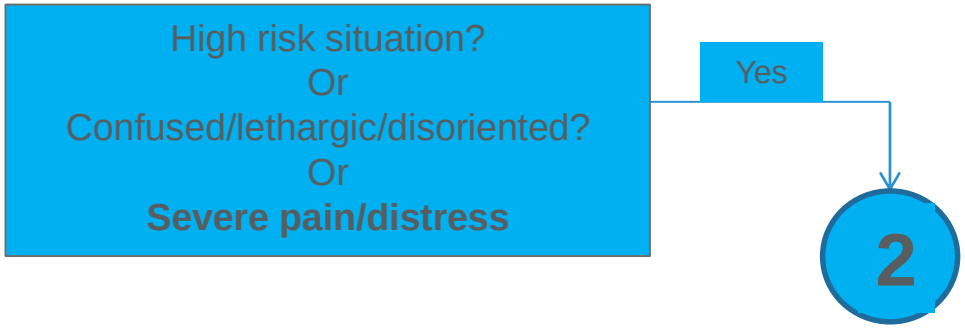
Decision Point B continued:

Is the patient in severe pain or distress?



- The concern here is whether the patient is severe pain >7/10 and the RN cannot intervene AND they require interventions.
- Is this patient in physiological or psychological distress?
- Would you want to give your last bed to this patient?
- **Key point**: A patient's pain is what the patient says it is but it is crucial to use an age appropriate validated pain scale to assess pain

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Examples of Pediatric ESI 2 Conditions

Syncope
Immunocompromised patients with fever
Febrile Infant < 28 days of age with fever ≥ 38C rectal
Hypothermic infants < 90 days of age with temperature < 36.5C
Suicidality
Hemophilia patients with possible acute bleeds • Joint pain or swelling • History of fall or injury • Vital signs and/or mental status outside of baseline
Rule out meningitis (headache/stiff neck/fever/lethargy/irritability)
Probable Shunt failure or malfunction
Seizures—prolonged postictal period (altered level of consciousness)
Moderate to Severe Croup
Lower airway obstruction (moderate to severe) • Bronchiolitis • Reactive airway disease (asthma) • Respiratory distress ▪ Tachypnea ▪ Tachycardia ▪ Increased effort (nasal flaring, retractions) ▪ Abnormal sounds (grunting) ▪ Altered mental status

ESI 1 & 2 Summary

ESI 1-

- Does the patient require an ***immediate*** life-saving intervention?
- Does not have a patent airway? Apneic? Pulseless? Unresponsive?

ESI 2-

- High Risk Situation?
- New onset confusion? Lethargy? Disorientation?
- Severe pain >7/10 or distress?

❖ The triage nurse must rule out each of these criteria before moving forward in the algorithm and considering resource utilization. Skipping acuity assessment (Level 1 and 2 criteria) and immediately considering expected resource utilization may lead to mistriages and potential poor patient outcomes . Acuity must always be assessed before considering resource utilization.

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Quick Review

- "I don't know what is wrong with my son," reports a worried and anxious mother of an 8 year old patient in your triage room. "He's been losing weight over the last month and more cranky. Last night he was up to the bathroom every hour. Oh, and he cannot seem to get enough to drink and he has been breathing so fast." VS: RR 32, HR 119, BP 92/78. What ESI?

ESI 2

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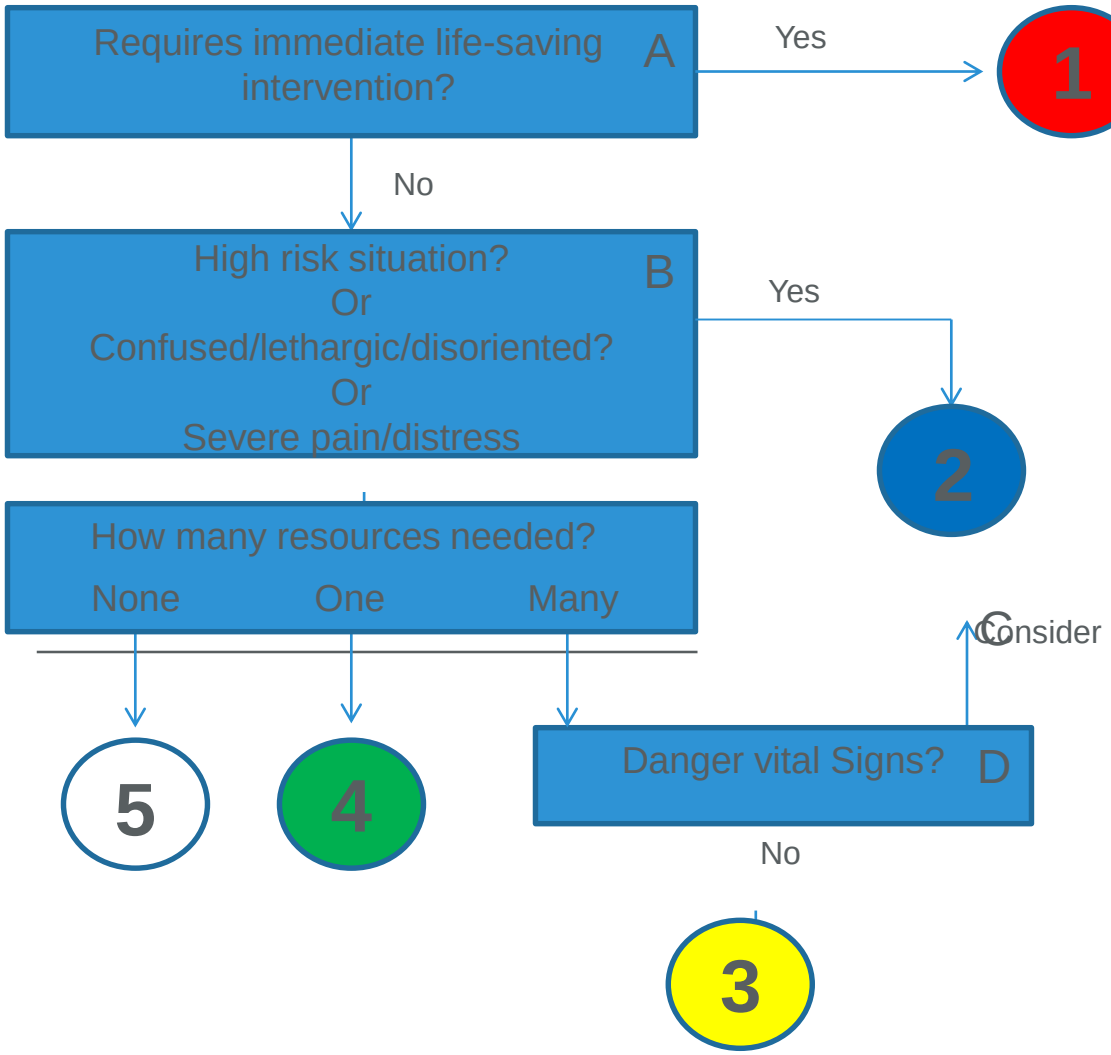
ESI Version 4 Algorithm



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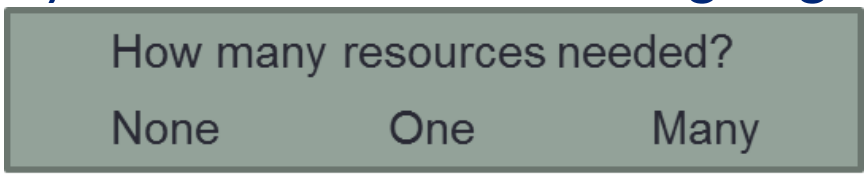
Decision Point C:

How many different resources are going to be needed?



- Consider how many resources will be needed in order for the physician to reach a disposition decision?
  - Discharge?
  - Admit?
  - Transfer?

- Once a triage

nurse has identified two probable resources, there is no need to continue to estimate resources. Counting beyond two resources is not necessary.

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Decision Point C:

What constitutes a resource?

Resource	Not a Resource
• Labs • ECG • X-ray, CT, MRI, US • Angiography	• History & physical exam (including pelvic exam) • Point of care testing
• IV fluids (hydration)	• Saline Lock
• IV or IM or Nebulized medications	• Po medications • Tetanus immunization • Prescription refills
• Specialty consultations	• Phone call to PCP
• Simple procedures = 1 (lac repair, straight cath, Foley, etc.) • Complex procedures = 2 (sedation required)	• Simple wound care (dressing change, wound check) • Crutches, splints, slings

How many resources needed?

None One Many

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How many resources?

- 10 month old male resting quietly on his mother's lap with nausea, vomiting, and diarrhea since this morning. Normal wet diapers.

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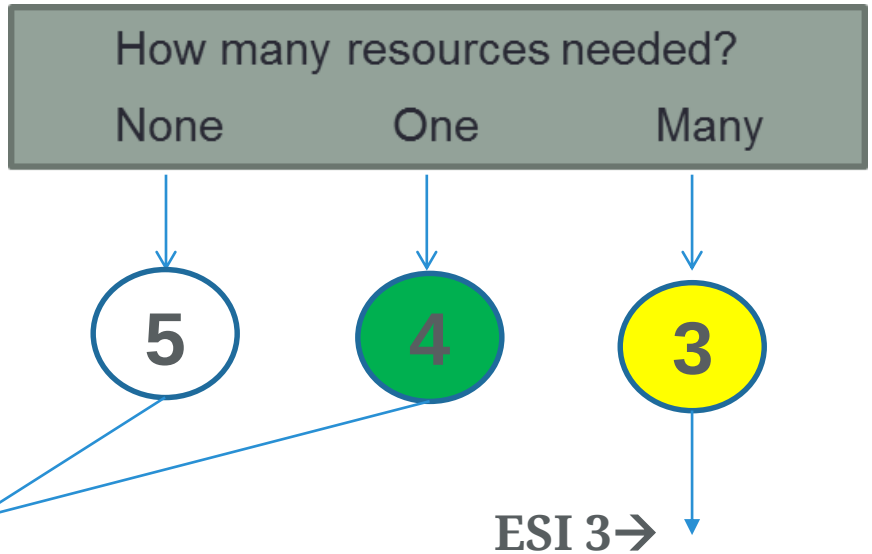
Decision Point C:

How many different resources are going to be needed?



ESI 4 & 5→

- Predicted that level 4 would only need 1 resource and level 5 no resources
- Typical "fast track" patients
- Common in communities with poor access to primary care

ESI 3→

- Predicted to need 2 or more resources
- Chief complaints that require more in-depth evaluations
- Stable in the short-term but may have a longer length of stay

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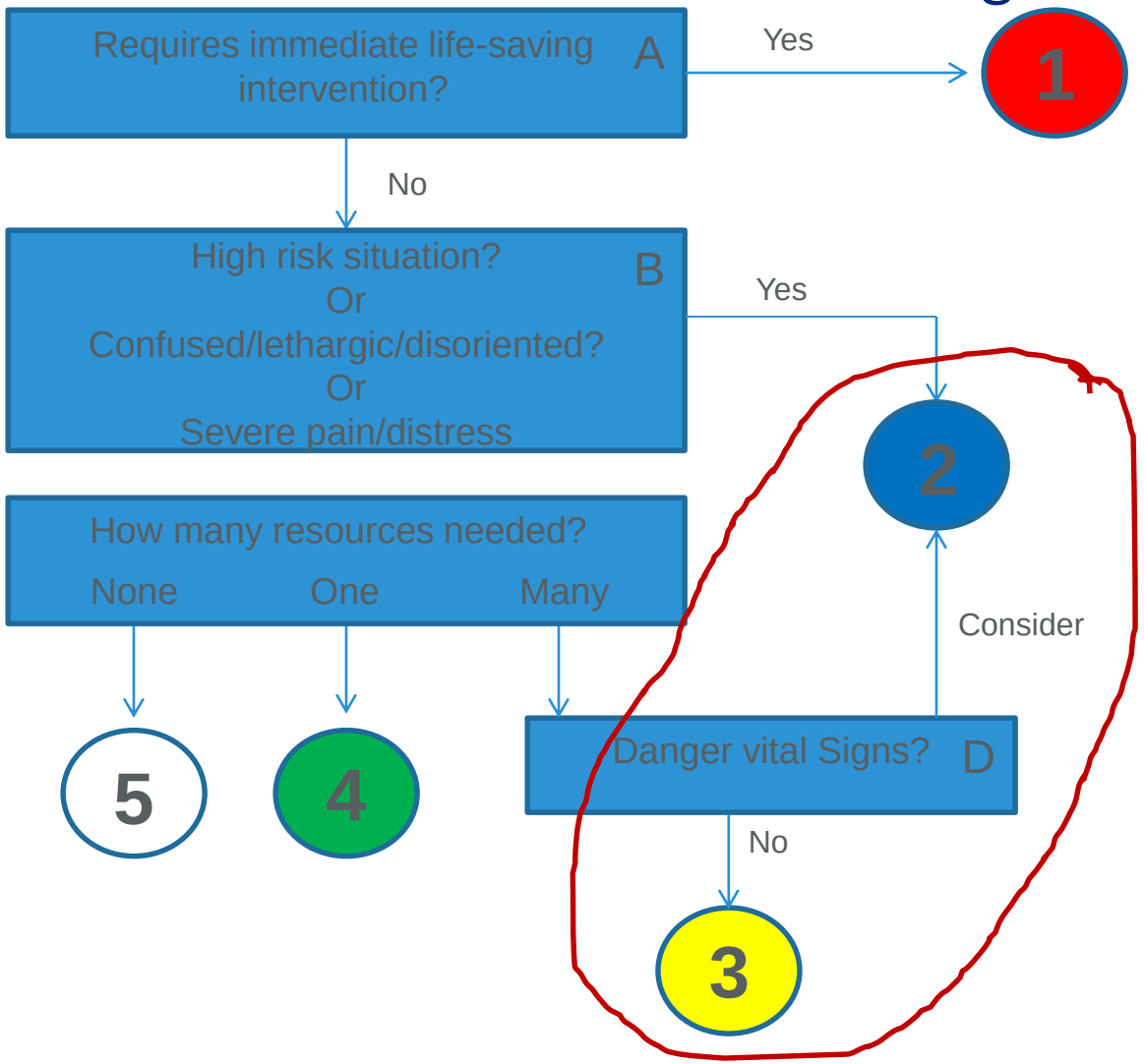
Decision Point D:

Patient Vital Signs?



- Finally the triage nurse needs to look at the patient's vital signs and decide whether they are outside the accepted parameters for patient age and if they are felt to be meaningful.

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Decision Point D:

Patient Vital Signs?

Danger Vital Signs:

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Summary Review

- Always start at the top of the algorithm
- Consider the worst case scenario and then rule out from there
- Any Unresponsive patient is an ESI 1
- If you decide your patient is safe to wait, then consistently re-assess for changes in mentation, worsening symptoms, changing vital signs
- Any patient with danger zone vital signs should be considered for upgrading ESI, or be able to justify with pertinent negative or pertinent positives your decision.

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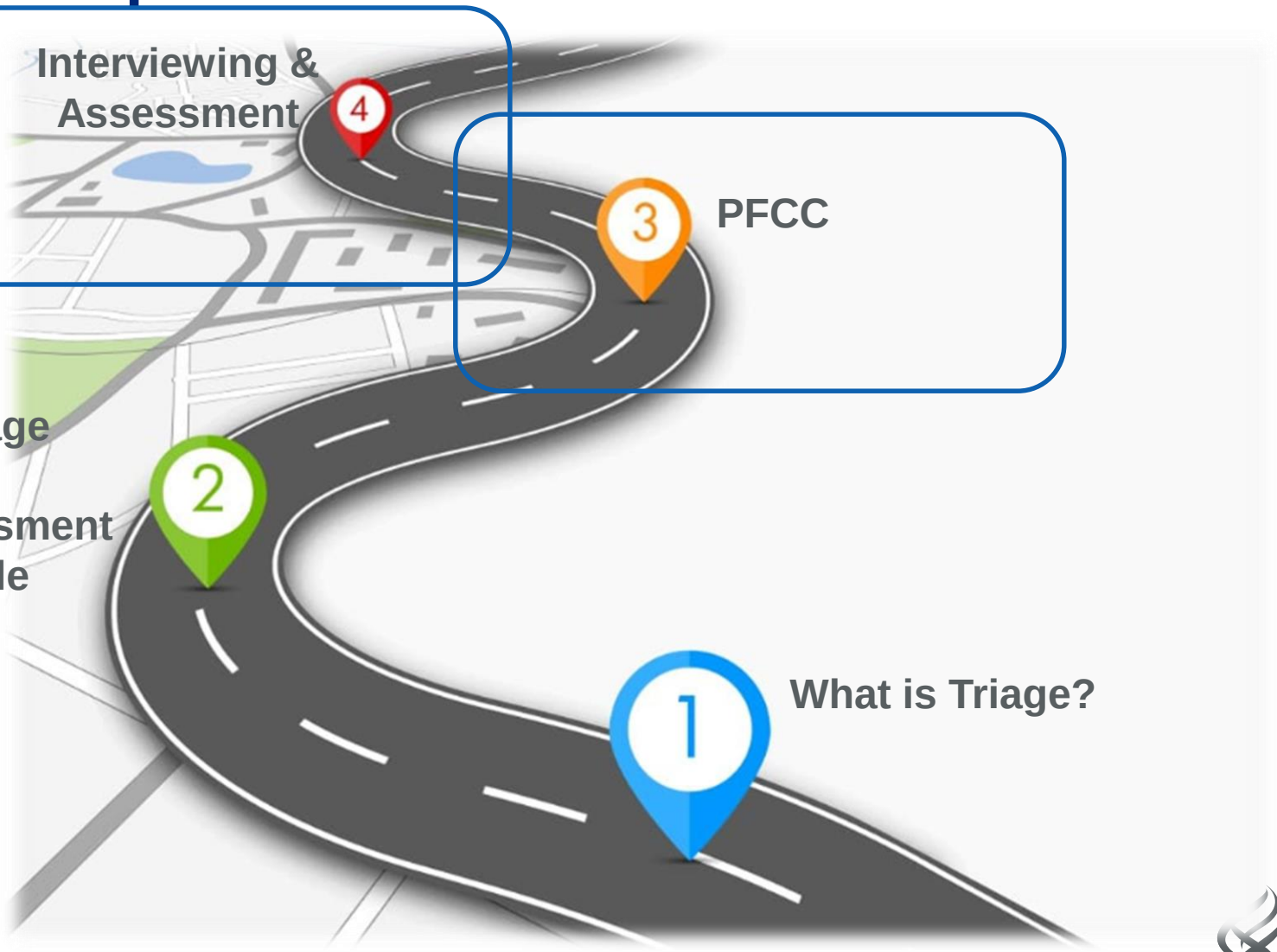
Roadmap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Pediatric Tips and Tricks

- Kids in the ED
- Patient- and Family-Centered Care
- Interviewing kids and families
- Examining Kids
- Closing the Visit

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Yeah, but how much do I need to know about dealing with kids?

- Number of ED visits: 130.4 million per year

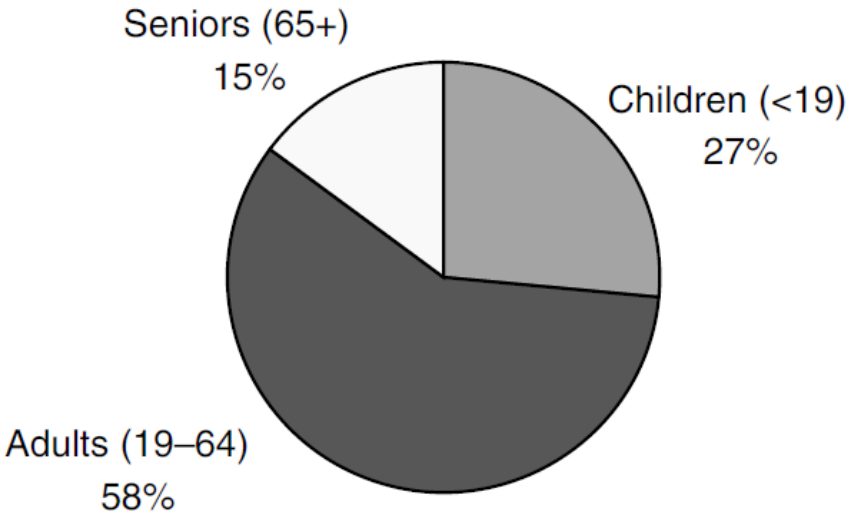

FIGURE 1-1 Emergency department visits by age, 2002.
SOURCE: 2002 NHAMCS data, calculations by IOM staff.

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Guiding principle

Patient- and Family-Centered Care

What is Patient- and family-centered care?

"...health care that is grounded in a mutually beneficial partnership among patients, families, and providers that recognizes the importance of the family in the patient's life."

—Patient and Family Centered Care and the Pediatrician's Role, AAP Policy Statement

Keys for Pediatric Emergency Medicine

- Respectful listening
- Practicing flexibility
- Information sharing
- Inviting presence

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1. Respectful Listening

2. Practicing flexibility

3. Information Sharing

4. Inviting Presence

Why PFCC?

- Provide key information and facilitate communication
- During procedures, decreases anxiety for child and parents
- It's what families want!
- Benefits to health care professionals

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Practical Examples to Create a PFCC Environment

- Avoid separating kids from parents where possible
- Child life
- Revisit policies that mandate parental exclusion
- Consider family centered rounds at change of shift

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Interviewing kids and families

Examining Children

Examining Children

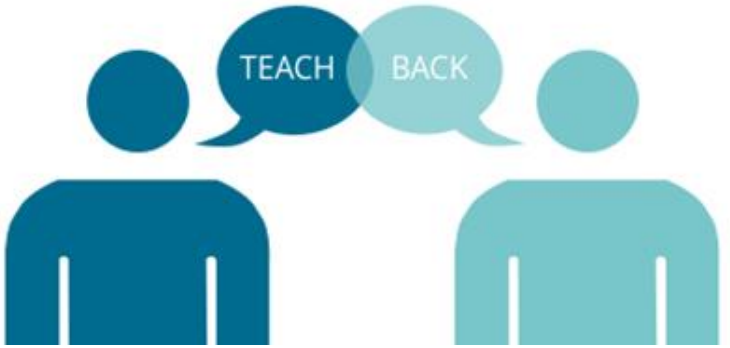
Closing the Visit

1) What is going on with my kid?
2) Is my child okay?
3) Why are you worried or not worried?
4) How do I take care of them at home?
5) When do I need to bring them back?

Ways to Ensure Understanding

Ask Me 3®

- What is the main problem?
- What do we need to do?
- Why is it important for me to do this?



- State in their own words what you need to know or do about your health problem

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Summary

- PFCC places the family and child at the center of the healthcare experience
- Listen, be flexible, share information, and invite family presence
- Demonstrate caring and ‘think like a child’

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Thank You