



# Irish Children's Triage System (ICTS)

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Our Lady's Children's Hospital, Crumlin

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# Triage

- *Trier*, to separate, sort, sift or select
- Process of determining priority of patient treatment based on severity of condition
- Allocates patient treatment efficiently and safely when resources are insufficient for all to be treated immediately

# Triage today

- Triage is an essential function of any Emergency Department where many patients attend simultaneously or in rapid succession
- It is a *dynamic* process of prioritising the order and urgency with which patients are seen by medical staff

# Manchester Triage System

- Advantage
  - Education available in Ireland
- Disadvantages
  - Acknowledgement that general triage scales are less reliable at the extremes of age
  - Abnormal physiological definitions for children are subjective
  - **1996** MTS- 52 flowcharts with 6 child specific flowcharts
  - **2006** revised MTS-- 50 flowcharts with 7 child specific flowcharts
  - **2014** revised MTS- 55 flowcharts with 10 child specific flowcharts

# What is the Irish Children's Triage System (ICTS)?

- Quality improvement initiative
- Evidence based tool incorporating many discriminators developed by nurses and doctors including vital signs and pain scores
- Aims to deliver consistent reproducible triage to children regardless of location of the ED in Ireland

# General Discriminators

Definition	Triage categories	General discriminators
Colour Triage category Meaning of triage category Recommended time to be seen by doctor/reassessment	<b>Red</b> 1 Immediate Immediate (ongoing assessment)	Airway compromise Inadequate breathing Exsanguinating haemorrhage Currently seizing Age related abnormal pulse and respiratory rate * GCS $\leq 12$ Oxygen saturations $\leq 90\%$
Colour Triage category Meaning of triage category Recommended time to be seen by doctor/reassessment	<b>Orange</b> 2 Very urgent $\leq 10$ minutes	Severe pain (pain score 7-10) Uncontrollable major haemorrhage GCS 13 or 14 Age related abnormal pulse and respiratory rate * Signs of compensated shock Oxygen saturations $\leq 92\%$
Colour Triage category Meaning of triage category Ideal time targets	<b>Yellow</b> 3 Urgent $\leq 60$ minutes	Moderate pain (pain score 4-6) Uncontrollable minor haemorrhage Age related abnormal pulse and respiratory rate * History of unconsciousness
Colour Triage category Meaning of triage category Ideal time targets	<b>Green</b> 4 Standard $\leq 120$ minutes	Mild pain (Pain score 1-3) Problem <48 hours
Colour Triage category Meaning of triage category Ideal time targets	<b>Blue</b> 5 Non urgent $\leq 240$ minutes	Problem > 48 hours

# Physiological assessment

- Children often present with subtle signs and symptoms of illness/injury
- Abnormal respiratory rate and heart rate may be the only indication of underlying sepsis or impending shock
- Respiratory rate and heart rate have defined age related parameters in ICTS

## Vital Signs Reference Grids

### Respiratory Rate Values

Table 1.

Age	$\leq -2$ S/D	- 1 S/D	Normal	+ 1 S/D	+ 2 S/D	$> +2$ S/D
0 – 3 months	< 20	21 – 30	30 – 60	60 – 70	70 – 80	> 80
4 – 6 months	< 20	20 – 30	30 – 60	60 – 70	70 – 80	> 80
7 -12 months	< 17	17 – 25	25 – 45	45 – 55	55 – 60	> 60
1 – 3 years	< 15	15 – 20	20 – 30	30 – 34	35 – 40	> 40
4 – 6 years	< 12	12 – 16	16 – 24	24 – 28	28 – 32	> 32
> 7 years	< 10	10 – 14	14 – 20	20 – 24	24 – 26	> 26

### Heart Rate Values

Table 2.

Age	$\leq -2$ S/D	- 1 S/D	Normal	+ 1 S/D	+ 2 S/D	$> +2$ S/D
0 – 3 months	< 65	65 – 90	90 – 180	180 – 205	205 – 230	> 230
4 – 6 months	< 63	63 – 80	80 – 160	160 – 180	180 – 210	> 210
7 -12 months	< 60	60 – 80	80 – 140	140 – 160	160 – 180	> 180
1 – 3 years	< 58	58 – 75	75 – 130	130 – 145	145 – 165	> 165
4 – 6 years	< 55	55 – 70	70 – 110	110 – 125	125 – 140	> 140
> 7 years	< 45	45 – 60	60 – 90	90 – 105	105 – 120	> 120



# Assessment during ICTS

- Presenting problem
- General appearance
- Physiological findings
- Age of the child
- Significant past medical history that may have an impact on the current attendance

# ICTS

## Step 1

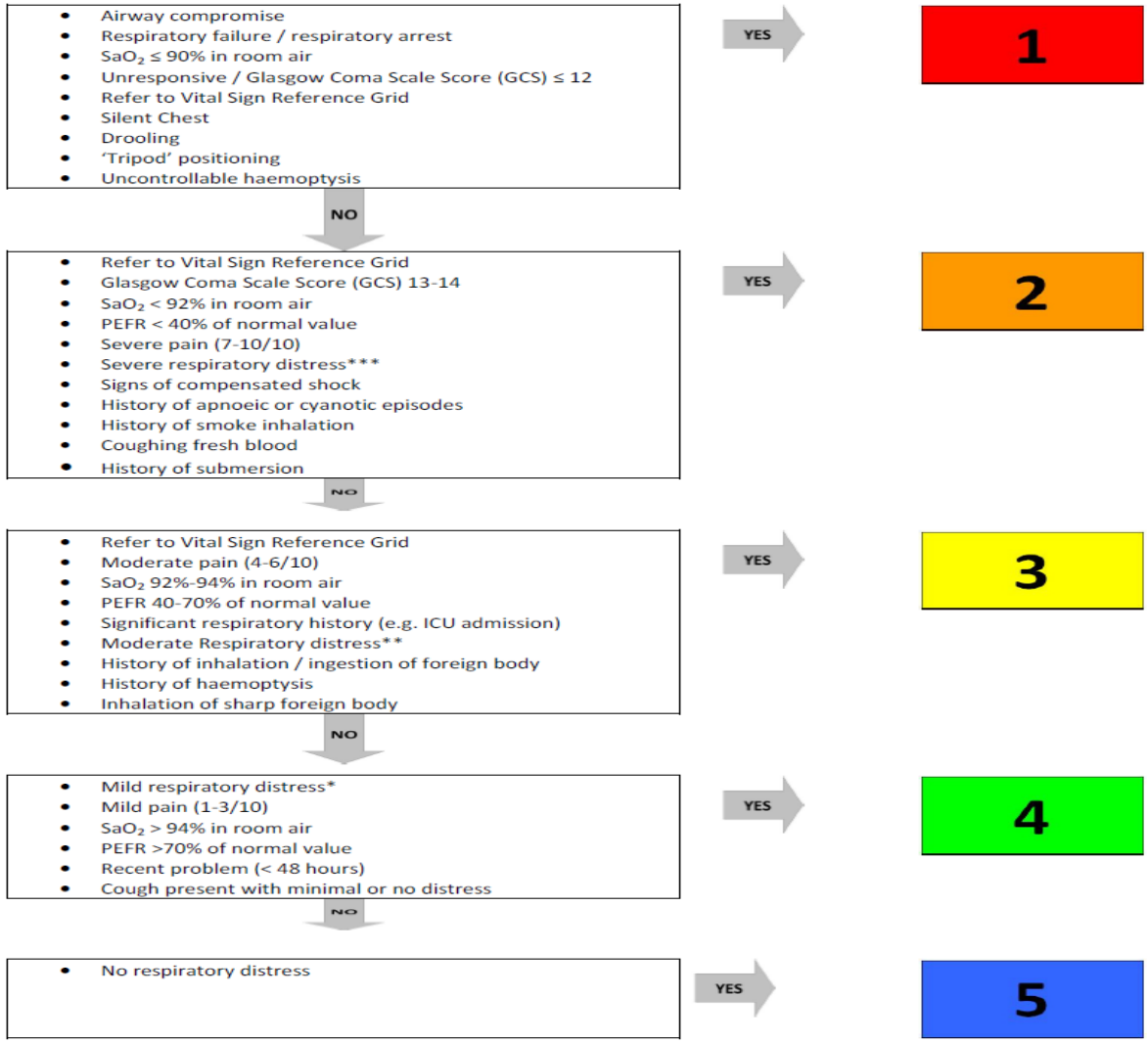
(24 flow sheets)

- Abdominal pain / isolated abdominal injury
- Airway / breathing difficulty
- Altered blood glucose (to include patients with diabetes mellitus)
- Back pain / isolated neck and or back injury
- Burns / scalds
- Chest pain / isolated chest injury
- Dental problem
- Ear / nose problem
- Eye injury / problem
- Foreign body – not inhaled
- Genitourinary problem
- Head injury/ Headache / VP shunt
- Limb problem / limb injury
- Major trauma
- Overdose and poisoning
- Psychosocial problem (including self harm)
- Rashes (blanching/non blanching)
- Seizures/ Absent episode / Collapse
- Testicular pain
- Throat problem
- Unwell child (including pyrexia)
- Unwell infant (including pyrexia)
- Vomiting diarrhoea
- Wounds/Signs of local inflammation

## Step 3

- Start at the top of the flow sheet and work down
- Allocate the highest category based on descriptors

## Airway / Breathing Difficulty

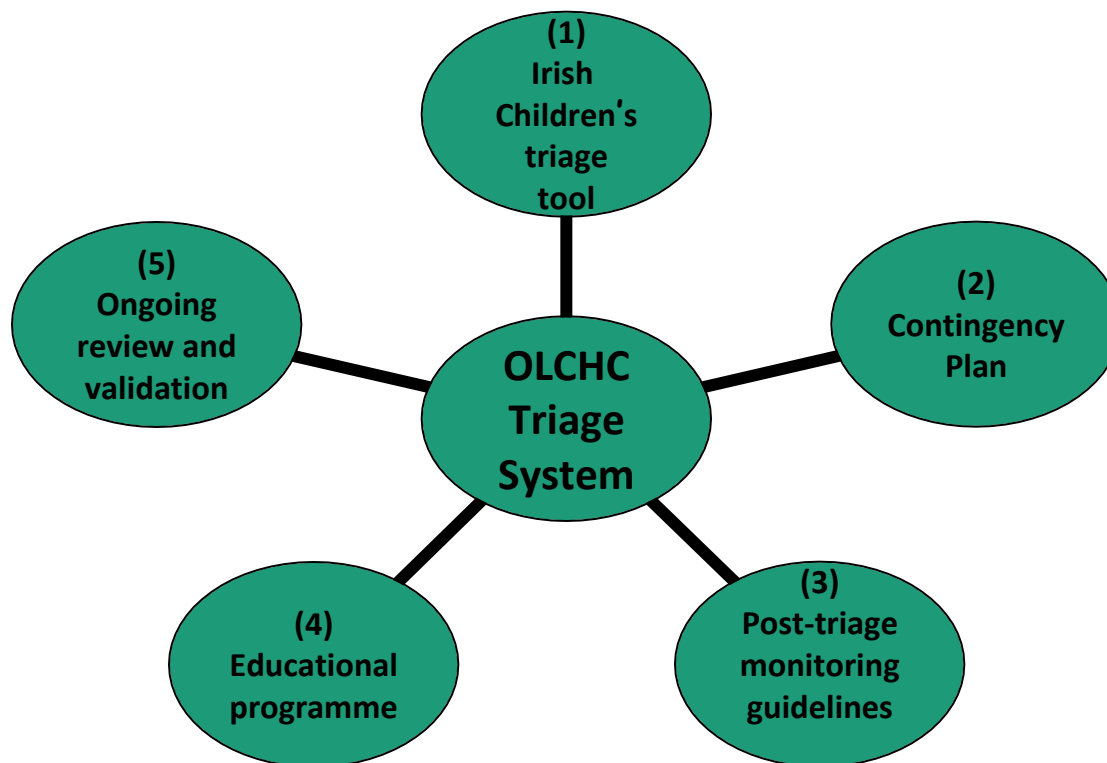


## Step 4

- Allocate the patient to the appropriate area (waiting room, sub-waiting area, treatment room, etc)
- Implement appropriate post-triage monitoring
- Ensure appropriate handover of care
- Reassess
- Documentation

# Modified Paediatric Triage System

(Our Lady's Children's Hospital, Crumlin - OLCHC)



# ICTS

## Step 1

(24 flow sheets)

- Abdominal pain / isolated abdominal injury
- Airway / breathing difficulty
- Altered blood glucose (to include patients with diabetes mellitus)
- Back pain / isolated neck and or back injury
- Burns / scalds
- Chest pain / isolated chest injury
- Dental problem
- Ear / nose problem
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- Foreign body – not inhaled
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- Head injury/ Headache / VP shunt
- Limb problem / limb injury
- Major trauma
- Overdose and poisoning
- Psychosocial problem (including self harm)
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- Seizures/ Absent episode / Collapse
- Testicular pain
- Throat problem
- Unwell child (including pyrexia)
- Unwell infant (including pyrexia)
- Vomiting diarrhoea
- Wounds/Signs of local inflammation

## Post-Triage Monitoring Guidelines

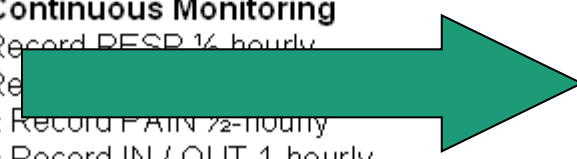
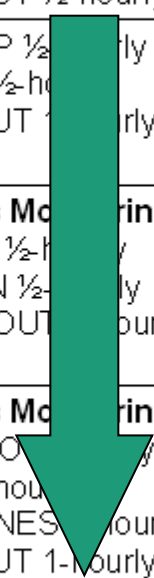
	CATEGORY 1	CATEGORY 2	CATEGORY 3	CATEGORY 4	CATEGORY 5
<b>Abdominal Pain / Isolated Abdominal Injury</b>	<b>Continuous Monitoring</b> Record NEURO 15-hourly Record PAIN 15-hourly Record IN / OUT 1-hourly	<b>± Continuous Monitoring</b> Record TPRBP 15-hourly Record PAIN 15-hourly Record IN / OUT 15-hourly	Record TPRBP 1-hourly Record PAIN 1-hourly Record IN / OUT 1-hourly	Record TPRBP 2-hourly Record PAIN 1-hourly ± Record IN / OUT 2-hourly	Record PAIN as required
<b>Acute Testicular Pain</b>	<b>Continuous Monitoring</b> Record NEURO 15-hourly Record PAIN 15-hourly Record IN / OUT 1-hourly	Record TPRBP 15-hourly Record PAIN 15-hourly Record IN / OUT 1-hourly			
<b>Airway / Breathing Difficulty</b>	<b>Continuous Monitoring</b> Record RESP 15-hourly Record NEURO 15-hourly ± Record PAIN 15-hourly ± Record IN / OUT 1-hourly	<b>± Continuous Monitoring</b> Record RESP 15-hourly ± Record PAIN 15-hourly ± Record IN / OUT 1-hourly	Record RESP 1-hourly ± Record PAIN 1-hourly ± Record IN / OUT 1-hourly	Record RESP 2-hourly ± Record PAIN 1-hourly	Record RESP as required Record PAIN as required
<b>Altered Blood Glucose</b>	<b>Continuous Monitoring</b> Record NEURO 15-hourly Record BM 1-hourly Record KETONES 1-hourly Record IN / OUT 1-hourly	<b>± Continuous Monitoring</b> Record NEURO 15-hourly Record BM 1-hourly Record KETONES 1-hourly Record IN / OUT 1-hourly	Record NEURO 1-hourly Record BM 1-hourly Record KETONES 1-hourly Record IN / OUT 1-hourly	Record TPRBP 2-hourly Record IN / OUT 2-hourly Record BM prior to meals	
<b>Asthma / Wheeze</b>	<b>Continuous Monitoring</b> Record RESP 15-hourly Record NEURO 15-hourly ± Record PAIN 15-hourly ± Record IN / OUT 1-hourly	<b>± Continuous Monitoring</b> Record RESP 15-hourly ± Record PAIN 15-hourly ± Record IN / OUT 1-hourly	Record RESP 1-hourly ± Record PAIN 1-hourly ± Record IN / OUT 1-hourly	Record RESP 2-hourly ± Record PAIN 1-hourly	Record RESP as required Record PAIN as required
<b>Back Pain / Isolated Neck and / or Back Injury</b>	<b>Continuous Monitoring</b> Record NEURO 15-hourly Record PAIN 15-hourly Record IN / OUT 1-hourly	<b>± Continuous Monitoring</b> Record NEURO 15-hourly Record PAIN 15-hourly Record IN / OUT 1-hourly	Record TPRBP 1-hourly Record PAIN 1-hourly ± Record NEURO 1-hourly ± Record CMST 1-hourly ± Record IN / OUT 1-hourly	Record TPRBP 2-hourly Record PAIN 1-hourly ± Record NEURO 2-hourly	Record PAIN as required
<b>Burns / Scalds</b>	<b>Continuous Monitoring</b> Record NEURO 15-hourly Record SAO2 15-hourly Record PAIN 15-hourly Record IN / OUT 1-hourly ± Record RESP 15-hourly	<b>± Continuous Monitoring</b> Record TPRBP 15-hourly Record IN / OUT 1-hourly ± Record NEURO 15-hourly ± Record SAO2 15-hourly ± Record PAIN 15-hourly	Record TPRBP 1-hourly Record PAIN 1-hourly ± Record IN / OUT 1-hourly	Record TPRBP 2-hourly Record PAIN 1-hourly Record IN / OUT as required	Record PAIN as required
<b>Chest Pain / Isolated Chest Injury</b>	<b>Continuous Monitoring</b> Record NEURO 15-hourly Record SAO2 15-hourly Record PAIN 15-hourly ± Record RESP 15-hourly ± Record IN / OUT 1-hourly	<b>± Continuous Monitoring</b> Record TPRBP 15-hourly Record SAO2 15-hourly Record PAIN 15-hourly ± Record RESP 15-hourly ± Record IN / OUT 1-hourly	Record TPRBP 1-hourly Record SAO2 1-hourly Record PAIN 1-hourly ± Record IN / OUT 1-hourly	Record TPRBP 2-hourly Record SAO2 2-hourly Record PAIN 1-hourly	Record PAIN as required
<b>Dental Problem</b>	<b>Continuous Monitoring</b> Record NEURO 15-hourly Record SAO2 15-hourly Record PAIN 15-hourly ± Record RESP 15-hourly ± Record IN / OUT 1-hourly	<b>± Continuous Monitoring</b> Record TPRBP 15-hourly Record SAO2 15-hourly Record PAIN 15-hourly ± Record RESP 15-hourly ± Record NEURO 15-hourly ± Record IN / OUT 1-hourly	Record TPRBP 1-hourly Record SAO2 1-hourly Record PAIN 1-hourly	Record TPRBP 2-hourly Record SAO2 2-hourly Record PAIN 1-hourly	Record PAIN as required
<b>Ear / Nose Problem</b>	<b>Continuous Monitoring</b> Record NEURO 15-hourly Record SAO2 15-hourly Record PAIN 15-hourly ± Record RESP 15-hourly ± Record IN / OUT 1-hourly	<b>± Continuous Monitoring</b> Record TPRBP 15-hourly Record SAO2 15-hourly Record PAIN 15-hourly ± Record RESP 15-hourly ± Record NEURO 15-hourly ± Record IN / OUT 1-hourly	Record TPRBP 1-hourly Record SAO2 1-hourly Record PAIN 1-hourly	Record TPRBP 2-hourly Record SAO2 2-hourly Record PAIN 1-hourly	Record PAIN as required
<b>Eye Injury / Problem</b>	<b>Continuous Monitoring</b> Record NEURO 15-hourly Record PAIN 15-hourly	<b>± Continuous Monitoring</b> Record NEURO 15-hourly Record PAIN 15-hourly	Record TPRBP 1-hourly Record PAIN 1-hourly	Record TPRBP 2-hourly Record PAIN 1-hourly	Record PAIN as required



# Post triage monitoring guidelines

- **Benefits staff/children/ parents**
  - Recommendations for frequency and type of observations
  - Triage nurse available to triage new children as they present
  - One sheet for easy reference
  - Improves patient safety and contact
  - Assists in the development of care pathways
- **Challenge**
  - Significant increase in nurses workload

	CATEGORY 1	CATGEGORY 2	CA
<b>Abdominal Pain / Isolated Abdominal Injury</b>	<b>Continuous Monitoring</b> Record NEURO ½-hourly Record PAIN ½-hourly Record IN / OUT ½-hourly	<b>± Continuous Monitoring</b> Record TPRBP ½-hourly Record PAIN ½-hourly Record IN / OUT ½-hourly	Record T Record P Record I
<b>Acute Testicular Pain</b>	<b>Continuous Monitoring</b> Record NEURO ½-hourly Record PAIN ½-hourly Record IN / OUT 1-hourly	Record TPRBP ½-hourly Record PAIN ½-hourly Record IN / OUT 1-hourly	
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<b>Altered Blood Glucose</b>	<b>Continuous Monitoring</b> Record NEURO ½-hourly Record BM 1-hourly Record KETONES 1-hourly Record IN / OUT 1-hourly	<b>± Continuous Monitoring</b> Record NEURO ½-hourly Record BM 1-hourly Record KETONES 1-hourly Record IN / OUT 1-hourly	Record M Record E Record K Record I
<b>Asthma / Wheeze</b>	<b>Continuous Monitoring</b> Record RESP ½-hourly ± Record PAIN ½-hourly ± Record IN / OUT 1-hourly	<b>± Continuous Monitoring</b> Record RESP ½-hourly ± Record PAIN ½-hourly ± Record IN / OUT 1-hourly	Record P ± Record ± Record
<b>Back Pain / Isolated Neck</b>	<b>Continuous Monitoring</b>	<b>± Continuous Monitoring</b>	Record T





Thank you

Questions and comments



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