



SimSTaR

Travel safely



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Paediatrics



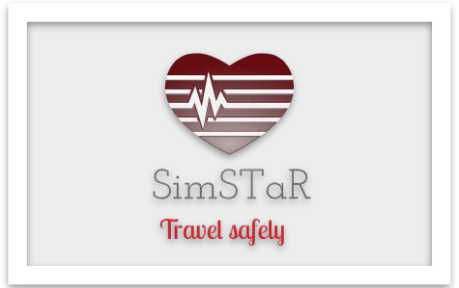
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Patient groups
Basic principles
Logistics

Overview

Presentations

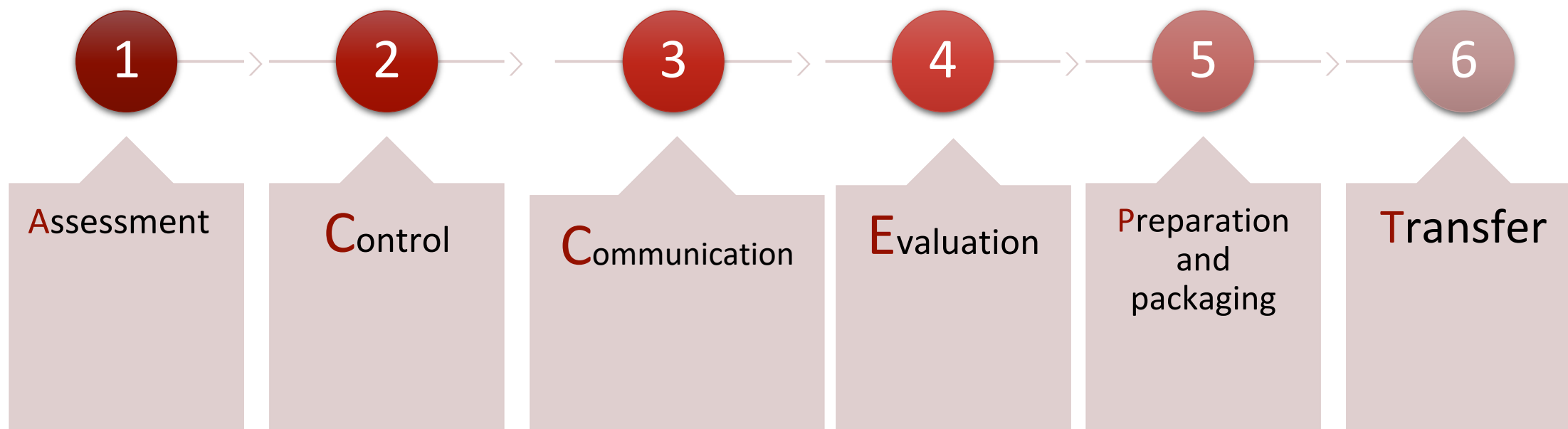
- Severe anaphylaxis
- Burns
- Meningitis/encephalitis
- Sepsis
- Croup/bronchiolitis
- Status - epilepticus & asthmaticus
- Head injuries
- Trauma





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4 year old boy

Scooter vs car

HR 150 BP 72/37 (46)

SaO₂ 96% 10L O₂ RR 10

Groaning with abnormal
flexion in response to
pain

Paediatric patient

AIRWAY

ETT size = (age/4) + 4

(3.5 if microcuff)

ETT length (cm) = (Age/2) + 12

(15 if nasal)

Bougie size depends on ETT
internal diameter

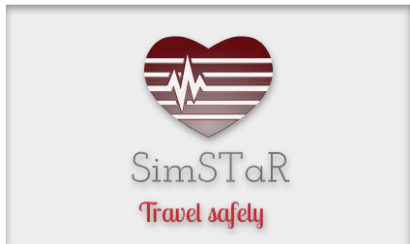


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AIRWAY

- Prepare for difficult airway

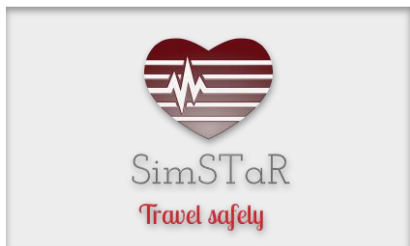


iGel

| i-gel size | Patient size | Patient weight guidance (kg) |
|------------|------------------|------------------------------|
| 1 | Neonate | 2-5 |
| 1.5 | Infant | 5-12 |
| 2 | Small paediatric | 10-25 |
| 2.5 | Large paediatric | 25-35 |
| 3 | Small adult | 30-60 |
| 4 | Medium adult | 50-90 |
| 5 | Large adult+ | 90+ |

BREATHING

- Work of breathing
- Accessory muscle use
- Head bobbing
- Nasal flaring
- Grunting



| Age | RR at rest bpm |
|------------------|----------------|
| Birth – 3 months | 25 – 50 |
| 3 – 12 months | 20 – 40 |
| 12 – 24 months | 20 – 35 |
| 2 – 7 years | 20 – 30 |
| 7 – 11 years | 15 - 25 |
| > 12 years | 12 - 24 |

BREATHING

- DO NOT hand ventilate for transfer
- Tidal volumes 5-7mls/kg
- Capillary or arterial blood gases
- Monitoring



CIRCULATION

| Age | HR bpm | SBP mmHg |
|-----------|---------|----------|
| Birth | 120-170 | 65-105 |
| 1 month | | |
| 3 months | 115-160 | |
| 6 months | 110-160 | |
| 12 months | | 70-105 |
| 18 months | 100-155 | |
| 2 years | 100-150 | 70-110 |
| 3 years | 90-140 | |
| 4 years | 80-135 | |
| 5 years | | 80-120 |
| 6 years | 80-130 | |
| 8 years | 70-120 | |
| 11 years | | |
| 12 years | 65-115 | 90-140 |
| 14 years | 60-110 | |
| adult | | |

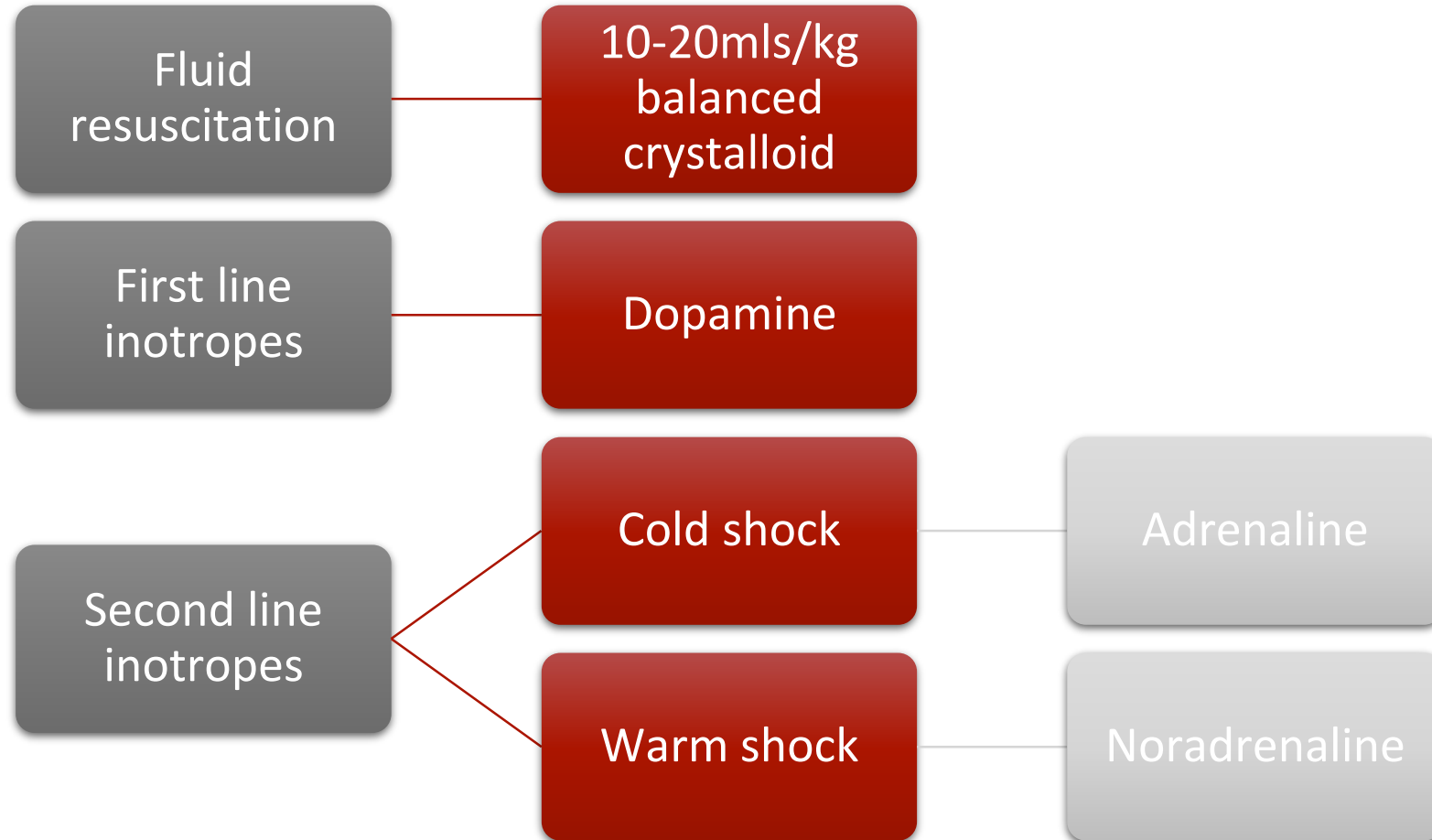
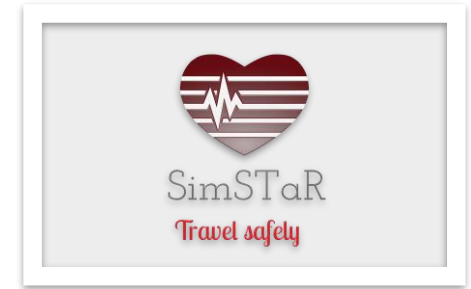
SHOCK ASSESSMENT

| | Mild Dehydration | Moderate Dehydration | Severe Dehydration |
|-------------------|------------------|----------------------|-------------------------|
| Heart Rate | Normal | Slight increase | Significant tachycardia |
| Capillary refill | Normal | Around 2 seconds | >3 seconds |
| Peripheral pulses | Normal | Slightly decreased | Difficult to palpate |
| Urine output | Normal | Decreased | Little or none |
| Fontanelle | Flat | Soft | Sunken |
| Eyes | Normal | Normal | Sunken |
| Mucus membranes | Normal | Dry | Extremely dry |
| Tear production | Normal | Diminished | No tears |



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CIRCULATION





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| Age | Estimated Blood Volume (mls/kg) |
|-------------------------|---------------------------------|
| Preterm newborn | 90 – 100 |
| Term newborn – 3 months | 80 – 90 |
| 3 months – 2 years | 70 – 80 |
| > 2 years | 70 |

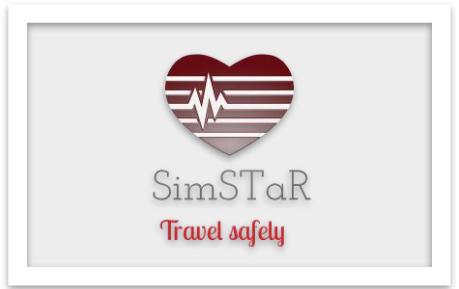
Neurological assessment

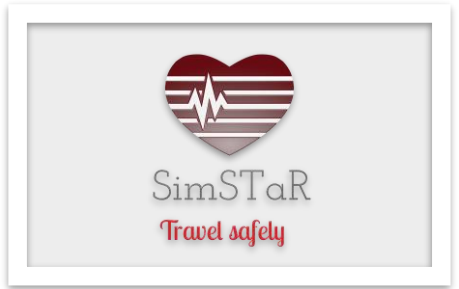


| PAEDIATRIC GLASGOW COMA SCALE | | | | |
|-------------------------------|----------------------------------|------------------------------|--|-------|
| | > 1 year | | <1 year | Score |
| Eye Opening | Spontaneously | | Spontaneously | 4 |
| | To verbal command | | To shout | 3 |
| | To pain | | To pain | 2 |
| | No response | | No response | 1 |
| Motor response | Obeys | | Spontaneous | 6 |
| | Localises pain | | Localises pain | 5 |
| | Flexion - withdrawal | | Flexion – withdrawal | 4 |
| | Flexion – abnormal (decorticate) | | Flexion – abnormal (decorticate) | 3 |
| | Extension (decerebrate) | | Extension (decerebrate) | 2 |
| | No response | | No response | 1 |
| Verbal response | > 5 years | 2 - 5 years | 0 – 23 months | |
| | Orientated | Appropriate words/phrases | Smiles/coos appropriately | 5 |
| | Disorientated confused | Inappropriate words | Cries, is consolable | 4 |
| | Inappropriate words | Persistent cries and screams | Persistent inappropriate crying or screaming | 3 |
| | Incomprehensible sounds | grunts | Grunts, agitated, restless | 2 |
| | No response | No response | No response | 1 |

Disability

- Adequate sedation, analgesia, paralysis
 - Morphine midazolam
- Seizure control
- Neuroprotection
 - CPP
 - ICP
 - 3% saline 3mls/kg





Exposure

- Temperature control
- Glucose
 - 2mls/kg 10% dextrose

Ready to
transfer?

4 year old boy

Scooter vs car

HR 150 BP 72/37 (46)

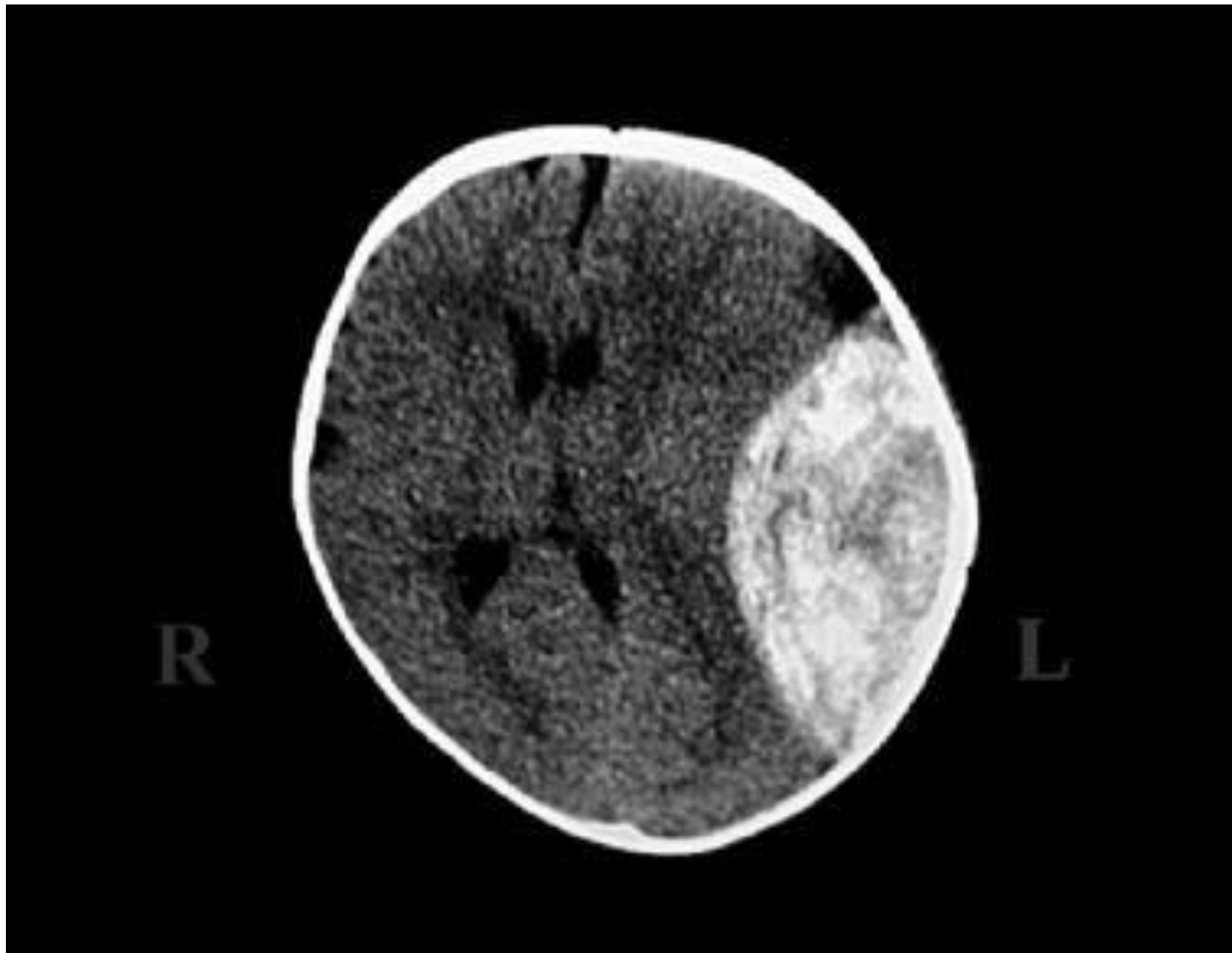
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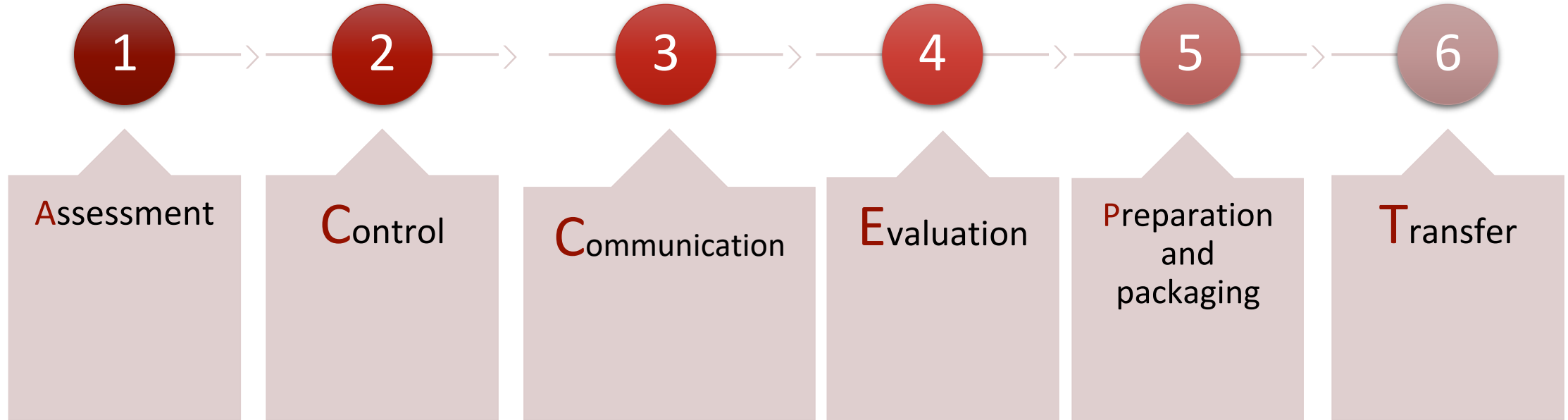
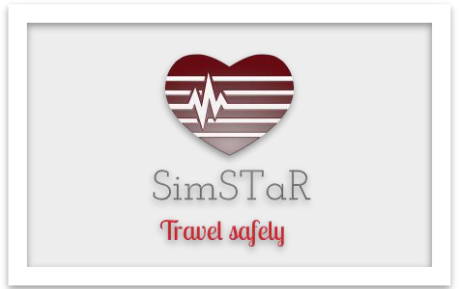
Groaning with abnormal flexion in response to pain



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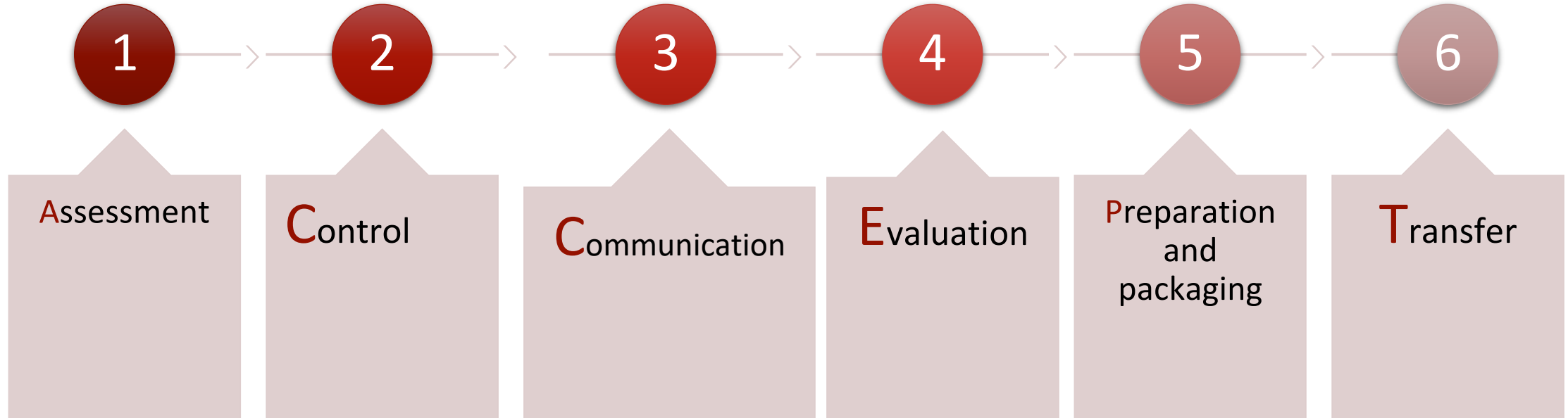
Communication

- Paediatric team involvement
- Early communication with PICU/NISTAR team
- Specialist advice
- Parents
- Transfer team





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PICU Calculator



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PICU Calculator





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Summary

- General principals are similar to adults
- Multi-speciality input
- Early referral to tertiary unit
- Know what is normal
- Anticipation and Preparation
- Buy PICU calculator!