

# BLUNT ABDOMINAL SOLID ORGAN INJURIES (SOI)

## PRACTICE GUIDELINE<sup>®</sup>

### DOCUMENT SUMMARY/KEY POINTS

- This document describes the management of the following blunt abdominal solid organ injuries:
  - Liver
  - Spleen
  - Pancreas
  - Kidneys
- Abdominal injuries are divided into two types according to the mechanism of injury either blunt or penetrating.
- Most paediatric blunt abdominal solid organ is managed non-operatively usually with strict bed rest, +/- indwelling urinary catheter, adequate analgesia and gentle chest physio.
- Penetrating injuries are more likely to require operative intervention and are not covered in this guideline.

This document reflects what is currently regarded as safe practice. However, as in any clinical situation, there may be factors which cannot be covered by a single set of guidelines. This document does not replace the need for the application of clinical judgement to each individual presentation.

<b>Approved by:</b>	SCHN Policy Procedure and Guideline Committee	
<b>Date Effective:</b>	1 <sup>st</sup> May 2020	<b>Review Period:</b> 3 years
<b>Team Leader:</b>	Trauma Clinical Nurse Consultant	<b>Area/Dept:</b> Surgical/Trauma Service

## CHANGE SUMMARY

- This is a new Practice Guideline

## READ ACKNOWLEDGEMENT

- Discretionary – local manager to determine which staff, if any, are to read and acknowledge the document or acknowledge the document only.

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## 1 Purpose and Scope

The purpose of this guideline is to assist the Medical Officers and Nurses in managing children with blunt abdominal solid organ Injuries (SOI).

The goal is to ensure that these injuries are managed in a consistent and appropriate manner.

This document describes the management of the following blunt abdominal SOI:

- Liver
- Spleen
- Pancreas
- Kidneys

## 2 Definition of Blunt Abdominal Solid Organ Injuries

Abdominal injuries are divided into two types according to the mechanism of injury either blunt or penetrating.

Blunt abdominal SOI results from a direct blow to the abdomen. These injuries can be difficult to detect initially if the patient has no signs of external trauma or alteration to their vital signs. The most common mechanisms of blunt abdominal SOI trauma are motor vehicle crashes, injury from sports, falls, and violence/abuse.

Most paediatric blunt abdominal SOI are managed non-operatively usually with strict bed rest, +/- indwelling urinary catheter, adequate analgesia and gentle chest physio.

Penetrating injuries are more likely to require operative intervention and are not covered in this guideline.

## 3 Grading of Blunt Abdominal Solid Organ Injuries

Abdominal SOI are scaled according to the American Association for Surgery of Trauma (AAST). They range from minor contusions (grade 1) to major devascularisation (grade V) of the organ with avulsion of the organ (grade VI) being generally non survivable.

If there are multiple injuries to the same organ the scale advances one grade up to grade III.

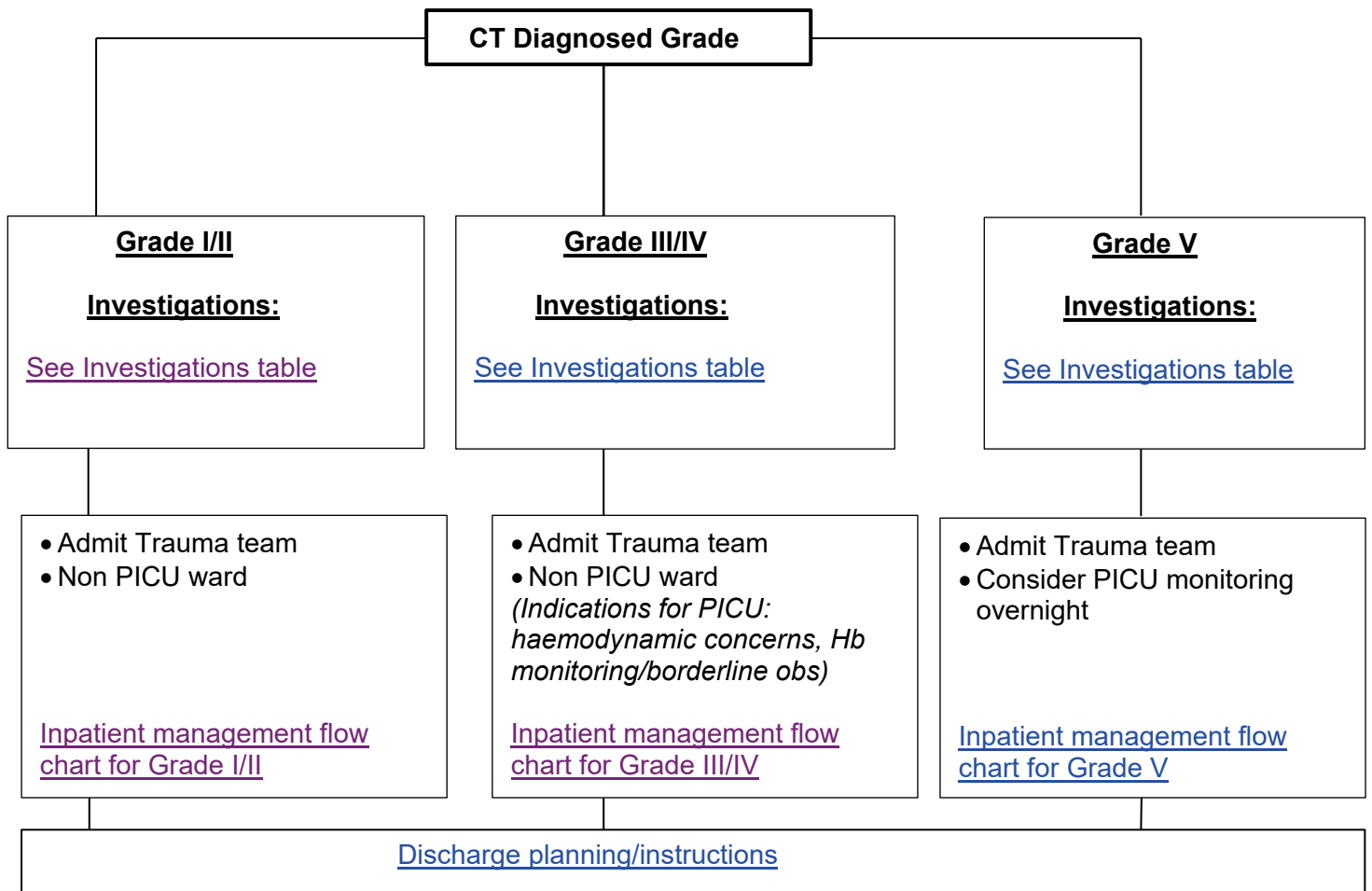
More information on grading of SOI can be found on the AAST website:

<http://www.aast.org/Library/TraumaTools/InjuryScoringScales.aspx>

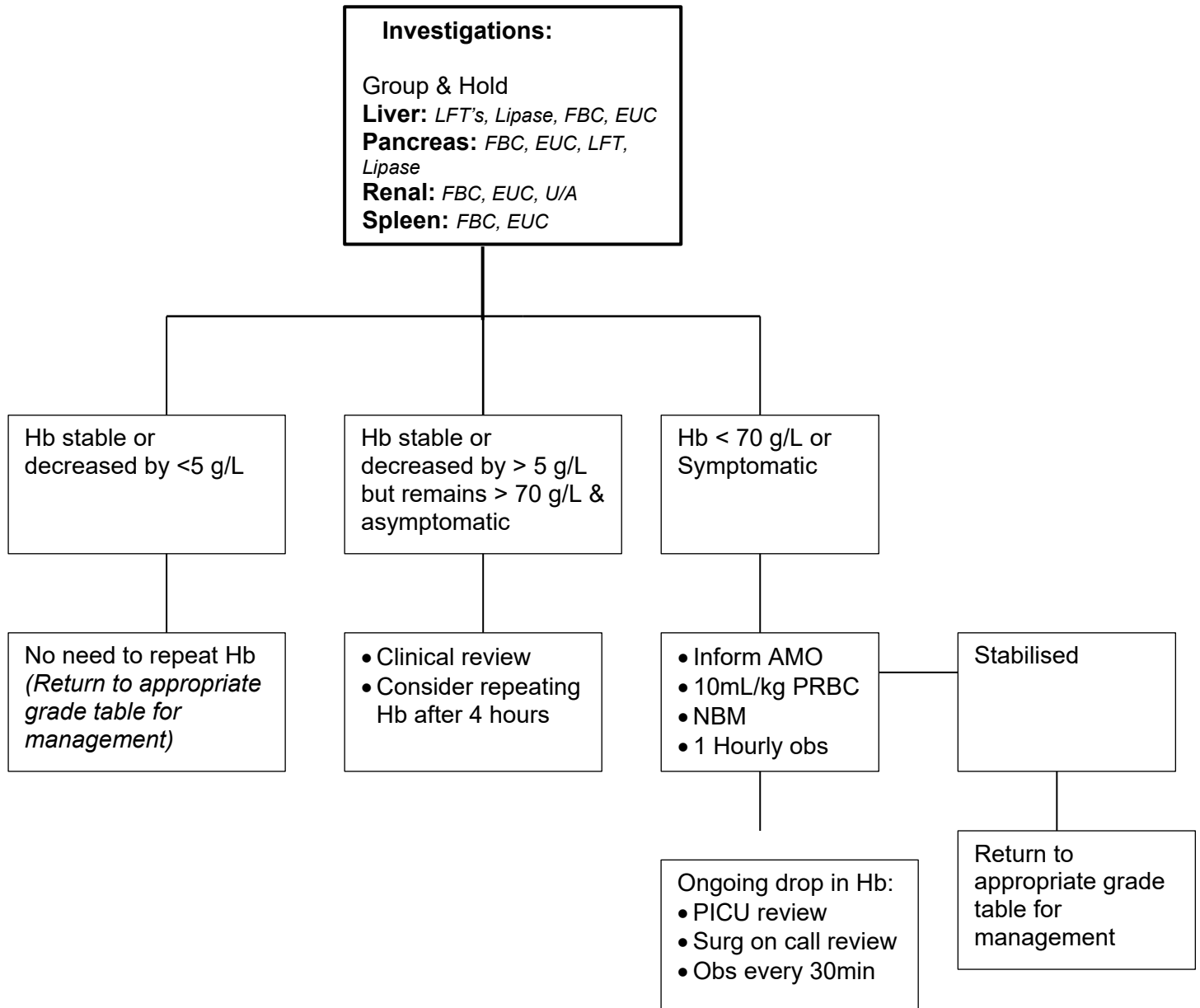
## 4 Management Flowchart

# BLUNT ABDOMINAL SOLID ORGAN INJURY

In the haemodynamically stable patient



## 5 Investigations



## 6 In-Patient Management Flowchart

### *Blunt Abdominal Solid Organ Injury Liver, Spleen and Kidney Grade I and II*

<u>ASPECT OF CARE</u>	<u>ED</u>	<u>Acute Care</u> <u>12 hours</u>	<u>Day 1</u>	<u>Day 2</u>	<u>Day 3</u>
<b>Pain and Analgesia</b>	Assess Pain 2-4 Hourly Simple analgesia +/- Oxycodone		Assess Pain 2-4 Hourly Simple analgesia		
<b>Monitoring</b>	Obs: 4 <sup>th</sup> hourly				
<b>Activity</b>	Toilet Privileges		Gentle ambulation	Ambulate	
<b>Diet</b>	Clear Fluids		Upgrade diet as tolerated	Diet as tolerated	
<b>Elimination</b>	Strict input and output				
<b>Laboratory</b>	Trauma bloods Urine analysis	As clinically Indicated			
<b>Medications</b>	Consider stool softener				
<b>Allied Health</b>	Chest physio +/- social work				
<b>Education &amp; Discharge Planning</b>	Provide safety education and reassurance.		Home restrictions Safety Instructions When ready for D/C	Grade I D/C if Stable	Grade II D/C if Stable

**Blunt Abdominal Solid Organ Injury Liver, Spleen and Kidney Grade III and IV**

<b>ASPECT OF CARE</b>	<b>ED</b>	<b>Acute Care 12 hours</b>	<b>Day 1</b>	<b>Day 2</b>	<b>Day 3</b>	<b>Day 4</b>
<b>Pain and Analgesia</b>	Assess Pain 2-4 Hourly Simple analgesia +/- PCA/NCA – APS involvement		Assess Pain 2-4 Hourly Simple analgesia +/- Oxycodone			Simple analgesia
<b>Monitoring</b>	Obs 1 hourly	Obs 2 <sup>nd</sup> hourly for 8 hours	Obs 4 <sup>th</sup> hourly			
<b>Activity</b>	Strict Bed Rest		Toilet Privileges	Gentle ambulation	Ambulate as tolerated	
<b>Diet</b>	Nil by mouth		Clear Fluids	Upgrade as tolerated		Diet as tolerated
<b>Elimination</b>	Strict Input and output					
<b>Laboratory</b>	Trauma bloods Urine analysis	Repeat in 2-4 hours if concerned	As clinically Indicated			
<b>Medications</b>	Consider stool softener. No NSAIDs					No NSAIDs
<b>Allied Health</b>	Chest physio +/- social work					
<b>Education &amp; Discharge Planning</b>	Provide safety education and reassurance. Injury Prevention			Home restrictions Safety Instructions When ready for D/C		

**Blunt Abdominal Solid Organ Injury Liver, Spleen and Kidney Grade V**

<b>ASPECT OF CARE</b>	<b>ED</b>	<b>Acute Care 12 hours</b>	<b>Day 1</b>	<b>Day 2</b>	<b>Day 3</b>	<b>Day 4</b>	<b>Day 5</b>	<b>Day 6</b>
<b>Pain and Analgesia</b>	Assess Pain 2-4 Hourly PCA/NCA – APS involvement			Assess Pain 2-4 Hourly Simple analgesia +/- PCA/NCA APS involvement		Simple analgesia +/- Oxycodone		Simple analgesia
<b>Monitoring</b>	Obs 1Hourly	Obs 2 <sup>nd</sup> hourly for 8 hours	Obs 4 <sup>th</sup> hourly					
<b>Activity</b>	Strict Bed Rest				Toilet privileges	Gentle Ambulation as indicated	Ambulate as tolerated	
<b>Diet</b>	Nil by mouth		Clear Fluids	Upgrade as tolerated		Diet as tolerated.		
<b>Elimination</b>	Strict Input and output							
<b>Laboratory</b>	Trauma bloods Urine analysis	Repeat in 2-4 hours if concerned	As clinically Indicated					
<b>Medications</b>	Consider stool softener No NSAIDs					No NSAIDs		
<b>Allied Health</b>	Chest physio +/- social work							
<b>Education &amp; Discharge Planning</b>	Provide safety education and reassurance Injury Prevention				Home restrictions Safety Instructions When ready for D/C			



## 7 Discharge Instructions

### ***Blunt Abdominal Solid organ injury discharge instructions***

Discharge Instruction	Grade I	Grade II	Grade III/IV	Grade V
<b>Return to School</b>	1 week post injury			2 weeks post injury
<b>No contact sports/ competitive sports or play/weight lifting *</b>	5 weeks	6 weeks	3 months	
<b>Follow up</b>	<ul style="list-style-type: none"> <li>Trauma CNC phone call in 2 weeks</li> <li>No follow up imaging required</li> </ul>		<ul style="list-style-type: none"> <li>Trauma CNC phone call in 2 weeks</li> <li>Follow up in OPD 4-6 weeks</li> <li>follow up imaging may be required</li> <li>Renal injury: regular BP checks with GP</li> </ul>	
<b>Other instructions</b>	<ul style="list-style-type: none"> <li>Injury prevention education</li> <li>Rest at home for 1 week with gentle mobilisation only</li> <li>No wrestling/rough play/climbing/jumping on the bed.</li> <li>Consider stool softener to avoid constipation</li> </ul>			
<b>Return to ED</b>	Fever, Increasing pain, pallor, dizziness, vomiting, worsening shoulder pain, jaundice, blood in the urine, stool or vomit, or further injury to the abdomen			
<p><i>*Contact sport includes any sport or physical activity (including trampolining) that could lead to a hit to the abdomen. Light swimming only in a private pool is allowed but no diving, or playing with friends/siblings in the pool.</i></p>				

## 8 References

1. Daudo. O *et al.* Outcomes of an accelerated care pathway for pediatric blunt solid organ injuries in a public healthcare system. *Journal of Pediatric Surgery* 52 (2017) 826–831
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5. The American Association for The Surgery Of Trauma, *Injury Scoring Scale*, The American Association for The Surgery Of Trauma, Viewed 27 December 2019, <<http://www.aast.org/Library/TraumaTools/InjuryScoringScales.aspx#htmlBody>>

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