



## Clinical Practice Guidelines: Trauma/Post submersion

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<b>Date</b>	January, 2019
<b>Purpose</b>	To ensure a consistent approach to the management of a patient with post submersion.
<b>Scope</b>	Applies to Queensland Ambulance Service (QAS) clinical staff.
<b>Health care setting</b>	Pre-hospital assessment and treatment.
<b>Population</b>	Applies to all ages unless stated otherwise.
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**Post submersion** refers to survival following immersion where potential or actual respiratory compromise has occurred.<sup>[1]</sup>

Presentation may range from asymptomatic, with only a history of submersion, to significant respiratory and cardiovascular compromise deteriorating to cardiac arrest.

Secondary complications post submersion include noncardiogenic pulmonary oedema, aspiration pneumonia and anoxic encephalopathy.

A clear history regarding the circumstances surrounding the patient's presentation should be gained, including time frames, mechanism of trauma or medical conditions such as intoxication, seizure, stroke or acute coronary syndromes (ACS) that may have precipitated the submersion.<sup>[2]</sup>

## Clinical features



### Neurological:

- ALOC
- confusion
- agitation

### Cardiovascular:

- dysrhythmias (usually associated with hypothermia, unless patient has an underlying cardiac condition)<sup>[2]</sup>
- hypotension
- cardiac arrest

## Clinical features (cont.)



### Respiratory:

- dyspnoea
- non-cardiogenic pulmonary oedema
- acute respiratory distress syndrome (ARDS)
- aspiration pneumonia
- respiratory arrest

### Other clinical features may include:

- spinal injury
- vomiting and nausea
- hypothermia
- diving injury.

## Risk assessment



- All post submersion patients should be transported to hospital for assessment, due to the potential for developing complications such as pulmonary oedema and aspiration pneumonia. These conditions may occur in patients with few initial symptoms and normal initial vital sign survey.<sup>[2]</sup>

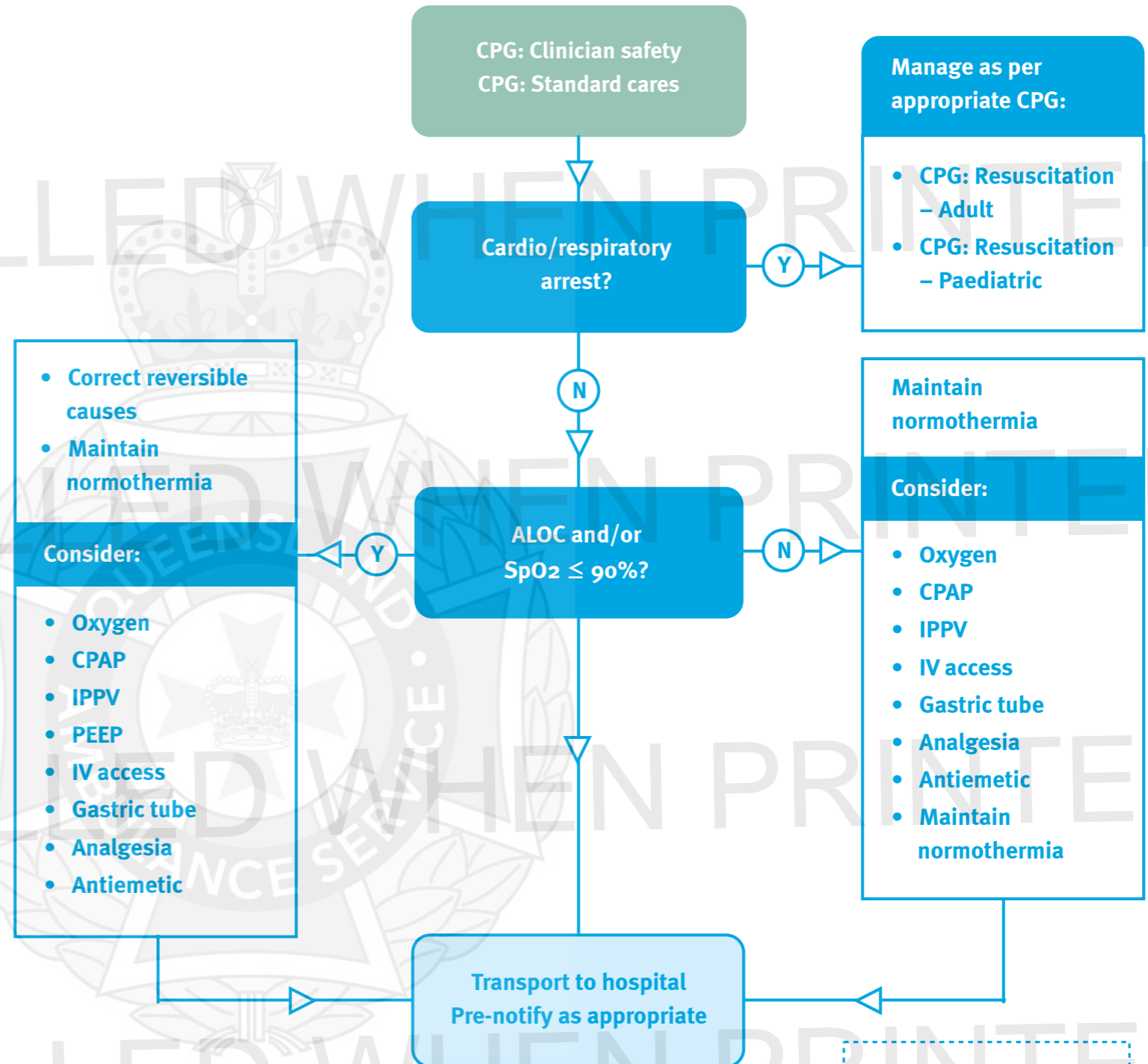
## Risk assessment (cont.)



- Hypothermia can occur as a secondary result of submersion or through evaporative heat loss after rescue.
- Spinal motion restriction is important in all patients with significant mechanism of injury or GCS < 15.
- Gastric tubes should be considered in all intubated post-submersion patients especially children, to alleviate diaphragmatic splinting and secondary gastric distention.

### + Additional information

- Ensure treatable underlying conditions (e.g. overdose, hypoglycaemia, seizure and/or trauma) are managed concurrently.
- If the patient is hypothermic, with no pulse and apnoeic, manage as a hypothermic cardiac arrest.



**Note:** Clinicians are only to perform procedures for which they have received specific training and authorisation by the QAS.