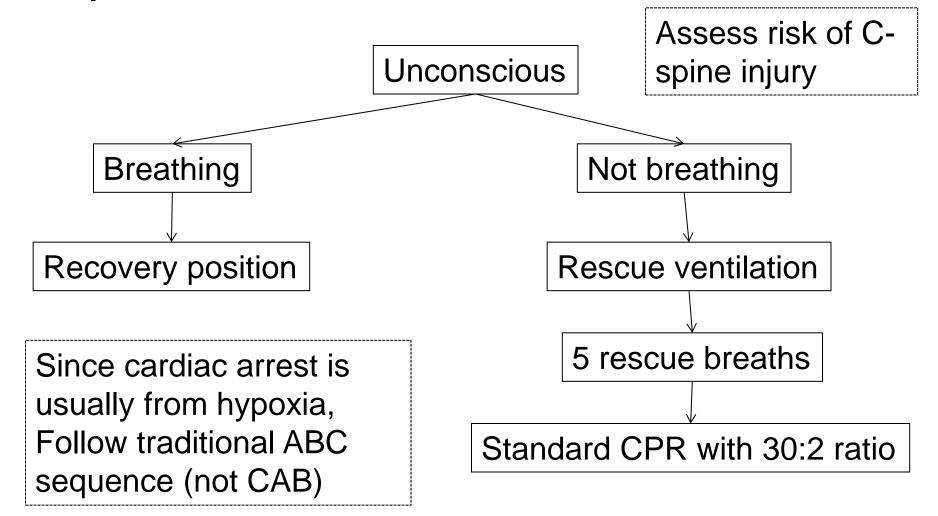
Pre-hospital management Near Drowning

In-water rescue and resuscitation

- Try rescues from shore (with objects such as pole/ tree branch) to avoid creating another victim
- If unconscious, in-water rescues can be provided by trained lifeguards (including rescue breathing, but not chest compressions) but very difficult
- C-spine immobilization is only necessary in certain cases

Prehospital on-land care



Szpilman 2012; Vanden Hoek 2010

Rescue breaths



- Take a normal breath
- Place lips over mouth,
 pitch the nose
- Blow until the chest rises
- Take about 1 second
- Allow chest to fall
- Repeat



CPR use in drowning

- When to start?
 - Submersion for less than 60 mins, and no obvious physical signs of death
- When to stop?
 - Once patient has been rewarmed (if hypothermic) and in asystole for more than 20 mins



Aspiration and vomiting

- Patients will usually swallow a large amount of water
- Most common complication is aspiration of stomach contents, and vomiting
- Have suction ready
- Remove wet clothing, reduce heat loss and re-warm patient

Advanced life support in the field

- A intubation may be indicated
- B high flow oxygen, maintain oxygen saturation between 92-96%
- C hypotension should be treated with crystalloid bolus and infusion
- Defibrillation if needed dry the chest!
- Protect airway from aspiration of vomit

C spine immobilization?

- Consider C-spine in certain cases only
- In a tertiary pediatric centre, 7 out of 143 patients (4.9%) had C-spine injuries, and 6 of those had a history of diving
- In another study including all age groups, 11 out of 2244 patients had C-spine injuries (0.5%) as a result of diving, and motorized water sports