Using an ABCDE (Airway, Breathing, Circulation, Disability, Exposure) approach, assess whether the patient is hypovolaemic and needs fluid resuscitation.

Assess volume status taking into account clinical examination, trends and context. Indicators that a patient may need fluid resuscitation include: systolic BP <100mmHg; heart rate >90bpm; capillary refill >2s or peripheries cold to touch; respiratory rate >20 breaths per min; NEWS ≥5; 45º passive leg raising suggests fluid responsiveness.

Assess the patient’s likely fluid and electrolyte needs:
- History: previous limited intake, thirst, abnormal losses, comorbidities.
- Clinical examination: pulse, BP, capillary refill, JVP, oedema (peripheral/pulmonary), postural hypotension.
- Clinical monitoring: NEWS, fluid balance charts, weight.
- Laboratory assessments: FBC, urea, creatinine and electrolytes.

Can the patient meet their fluid and/or electrolyte needs orally or enterally?

Ensure nutrition and fluid needs are met. Also see Nutrition support in adults (NICE clinical guideline 32).

Does the patient have complex fluid or electrolyte replacement or abnormal distribution issues?

Look for existing deficits or excesses, ongoing abnormal losses, abnormal distribution or other complex issues.

Algorithm 3: Routine Maintenance

Algorithm 2: Fluid Resuscitation

Algorithm 1: Assessment
Using an ABCDE (Airway, Breathing, Circulation, Disability, Exposure) approach, assess whether the patient is hypovolaemic and needs fluid resuscitation. Assess volume status taking into account clinical examination, trends and context. Indicators that a patient may need fluid resuscitation include: systolic BP <100mmHg; heart rate >90bpm; capillary refill >2s or peripheries cold to touch; respiratory rate >20 breaths per min; NEWS ≥5; 45° passive leg raising suggests fluid responsiveness.

Algorithm 2: Fluid Resuscitation

Initiate treatment
- Identify cause of deficit and respond.
- Give a fluid bolus of 500 ml of crystalloid (containing sodium in the range of 130–154 mmol/l) over less than 15 minutes.

Reassess the patient using the ABCDE approach
Does the patient still need fluid resuscitation? Seek expert help if unsure

Does the patient have signs of shock?
Yes
Assess the patient’s likely fluid and electrolyte needs (Refer algorithm 1 box 3)
No

>2000 ml given?
Yes
Seek expert help
No

Give a further fluid bolus of 250–500 ml of crystalloid
Using an ABCDE (Airway, Breathing, Circulation, Disability, Exposure) approach, assess whether the patient is hypovolaemic and needs fluid resuscitation. Assess volume status taking into account clinical examination, trends and context. Indicators that a patient may need fluid resuscitation include: systolic BP <100mmHg; heart rate >90bpm; capillary refill >2s or peripheries cold to touch; respiratory rate >20 breaths per min; NEWS ≥5; 45º passive leg raising suggests fluid responsiveness.

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Can the patient meet their fluid and/or electrolyte needs orally or enterally?

Does the patient have complex fluid or electrolyte replacement or abnormal distribution issues?
Look for existing deficits or excesses, ongoing abnormal losses, abnormal distribution or other complex issues.

Algorithm 2: Fluid Resuscitation

Algorithm 3: Routine Maintenance

Give maintenance IV fluids
Normal daily fluid and electrolyte requirements:
- 25–30 ml/kg/d water
- 1 mmol/kg/day sodium, potassium*, chloride
- 50–100 g/day glucose (e.g. glucose 5% contains 5 g/100ml).

Reassess and monitor the patient
Stop IV fluids when no longer needed. Nasogastric fluids or enteral feeding are preferable when maintenance needs are more than 3 days.

Algorithm 4: Replacement and Redistribution

Ensure nutrition and fluid needs are met
Also see Nutrition support in adults (NICE clinical guideline 32).

* Weight-based potassium prescriptions should be rounded to the nearest common fluids available (for example, a 67 kg person should have fluids containing 20 mmol and 40 mmol of potassium in a 24-hour period). Potassium should not be added to intravenous fluid bags as this is dangerous.

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Can the patient meet their fluid and/or electrolyte needs orally or enterally?

Assess the patient’s likely fluid and electrolyte needs orally or enterally:
- History: previous limited intake, thirst, abnormal losses, comorbidities.
- Clinical examination: pulse, BP, capillary refill, JVP, oedema (peripheral/pulmonary), postural hypotension.
- Clinical monitoring: NEWS, fluid balance charts, weight.
- Laboratory assessments: FBC, urea, creatinine and electrolytes.

Does the patient have complex fluid or electrolyte replacement or abnormal distribution issues?

Look for existing deficits or excesses, ongoing abnormal losses, abnormal distribution or other complex issues.

Ensure nutrition and fluid needs are met:
Also see Nutrition support in adults (NICE clinical guideline 32).

Algorithm 4: Replacement and Redistribution

Existing fluid or electrolyte deficits or excesses
Check for:
- dehydration
- fluid overload
- hyperkalaemia/hypokalaemia
Estimate deficits or excesses.

Ongoing abnormal fluid or electrolyte losses
Check ongoing losses and estimate amounts. Check for:
- vomiting and NG tube loss
- biliary drainage loss
- high/lowlow volume ileal stoma loss
- diarrhoea/excess colostomy loss
- ongoing blood loss, e.g. melaena
- sweating/fever/dehydration
- pancreatic/jejunal fistula/stoma loss
- urinary loss, e.g. post AKI polyuria.

Redistribution and other complex issues
Check for:
- gross oedema
- severe sepsis
- hypernatraemia/hyponatraemia
- renal, liver and/or cardiac impairment.
- post-operative fluid retention and redistribution
- malnourished and refeeding issues
Seek expert help if necessary and estimate requirements.

Prescribe by adding to or subtracting from routine maintenance, adjusting for all other sources of fluid and electrolytes (oral, enteral and drug prescriptions).

Monitor and reassess fluid and biochemical status by clinical and laboratory monitoring.

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