Dialysis is a renal replacement therapy used when kidney function no longer sustains life. The patient is required to undergo treatment on a regular basis (typically 3 times per week, for 4 hours).

SOME IMPORTANT CONSIDERATIONS:

• Patients who are dialysed at home have undergone extensive training and maintain a record of their treatment.
• Use this and any further information provided by the patient and/or carer – they are very familiar with the process.
• Fistula access is the patient’s life line. Vessels should be preserved for future fistula creation – therefore **ONLY** cannulate if necessary and use the cubital fossa or hand.
• *If still in situ, you may use the venous (blue) dialysis cannula/line to administer fluid and/or medication. Flush the line after each dose, with 5 – 10ml of normal saline.*
• Most calls to dialysis patients are not related to their dialysis.

IF STILL DIALYSING, REMOVE THE PATIENT FROM THE MACHINE:

• STOP the dialysis machine pump using the stop pump button:

  \[\text{Do not}\] turn the machine OFF until the patient is removed.

• Clamp the two lines running from the dialysis machine, and the two lines from the patient’s fistula/graft/central line.
• Unscrew the luer locks joining the machine lines and the fistula lines.
• Use the venous (blue) dialysis cannula/line to administer fluid/medications as required.
• Leave the dialysis cannulae/lines in situ. Reinforce with taping and protect during transit, as these are metal needles and can cause damage to the vessels if mishandled.
• If cannula removal is essential, remember there is a **high flow-in access** (1000ml/minute), so use a protective mask and goggles. Moderate digital pressure is needed on the exit site for 10 – 15 minutes.

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CALLS TO PATIENTS ON DIALYSIS:

**HYPOTENSIVE EPISODE**
This can occur due to excess fluid removal.
Assess the situation – if the patient / carer can replace fluid (including their blood, from the dialysis machine), this is the best option.
Remember that these patients are often on fluid restrictions. 100 – 200ml IV fluids will often resolve an hypotensive episode.
Consult the patient’s treatment records to ascertain their usual blood pressure.

When the Paramedic is required to replace fluid:

<table>
<thead>
<tr>
<th>ICP</th>
<th>Action</th>
<th>AP</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICP</td>
<td>Posture patient with legs elevated</td>
<td>AP</td>
</tr>
<tr>
<td>ICP</td>
<td>Administer oxygen</td>
<td>AP</td>
</tr>
<tr>
<td>ICP</td>
<td>Remove patient from machine (as previous)</td>
<td>AP</td>
</tr>
<tr>
<td>ICP</td>
<td>Fluid replacement as per CMG 14</td>
<td></td>
</tr>
</tbody>
</table>

**BLEEDING**
This may occur due to excess thinning of the blood by the heparin used in dialysis.
Heparin has a half life of 92 minutes.

<table>
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<th>Action</th>
<th>AP</th>
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</thead>
<tbody>
<tr>
<td>ICP</td>
<td>Only light to moderate pressure on cannula site is required (10 – 15 minutes)</td>
<td></td>
</tr>
<tr>
<td>ICP</td>
<td>DO NOT apply too much pressure to the site, as cutting off the flow of blood through the fistula/graft may cause clots</td>
<td></td>
</tr>
<tr>
<td>ICP</td>
<td>Use Dia-stop / Tipstop (compression dressing) devices where available.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Digital pressure is the best option).</td>
<td></td>
</tr>
<tr>
<td>ICP</td>
<td>DO NOT APPLY TIGHT BANDAGES</td>
<td></td>
</tr>
</tbody>
</table>
CALLS TO PATIENTS ON DIALYSIS:

**HAEMOLYSIS**
Caused by damage to the blood cells due to an inappropriate dialysate (overheating, toxins such as copper, chloramines, bleach, formaldehyde)

**Signs and symptoms:**
- chest pain / back pain
- dyspnoea
- localised burning and pain in access return site
- blood turns a characteristic port wine colour

**Treatment:**
- ICP: Stop dialysis and disconnect patient (as previous)
- ICP: Treat symptomatically, as per appropriate CMG (e.g. CMG 6 Cardiac Arrhythmias, CMG 9 Respiratory Distress, CMG 16 Suspected Acute Coronary Syndrome, etc.)
- ICP: Fluid replacement if indicated, as per CMG 14

**VENOUS AIR EMBOLISM**
Suspect if there is air in the venous (blue) line

**Treatment:**
- ICP: Stop dialysis treatment immediately using the stop pump button:
- ICP: Disconnect patient (as previous)
- ICP: Treat with 100% oxygen
- ICP: Posture left-lateral and flat (i.e. no head elevation)

**CHEST PAIN**
This may be caused by excess fluid removal during dialysis or other cardiac event.

**Treatment:**
- ICP: Stop dialysis and disconnect patient (as previous)
- ICP: Use venous (blue) cannula/line as access for fluid/medication administration, if required
- ICP: Treat chest pain as per appropriate CMG (e.g. CMG 16 Suspected Acute Coronary Syndrome, etc.)