

National Green Theatres Programme

Prògram Nàiseanta Lannsaireachd Uaine

Lean Green Renal Checklist 2026

Lean Systems for Easy Wins: Local Quality Improvement Opportunities in the Renal Dialysis Unit (RDU).

Every item and behaviour at work has a financial cost for the National Health Service, as well as an environmental impact.

Checklist

Dialysate

1. Review patients on canisters and switch them to central dialysate where possible.
2. Adaptive dialysate flow is best – if a set flow rate, 500ml/min is preferable to higher.
3. Increasing blood flow is more effective than increasing dialysate flow.
4. Schedule dialysate deliveries: larger orders less often instead of frequent 'top-ups'.
5. If a patient passes enough urine, consider if incremental or decremental dialysis would align with their goals.

Resource use

6. Order only the blood tests that are required, when they are required.
7. Avoid printing.
8. Review Haemodialysis (HD) packs, contact the supplier to remove unused items, and ensure single items are available to prevent opening a whole pack for one purpose.
9. Linen on request rather than by default. Patients can bring their own blankets.

Waste

10. Waste segregation – know your clinical waste streams from your domestic. If you're unsure, update your knowledge via LearnPro or Turas.
11. Minimise waste generated, especially clinical waste, e.g. drain lines before binning.

Travel and Transport

12. Staff travel choices have different environmental impacts. Walking or cycling are the most sustainable options, followed by public transport, then car sharing, with driving alone being the least sustainable choice.
13. Encourage patients to maintain, or adopt, active lifestyles and a healthy diet.
14. Schedule patients' shared transport to reduce road miles and travel time.

Catering

15. Reduce food waste – do the menu choices align with patient preferences?
16. Increase plant-based meal options and dietetic advice.

Energy use

17. 'Prime on arrival': don't have the machine running in advance; use stand-by setting between shifts, turn off overnight.
18. Turn off lights and computers, dim monitor brightness settings, control heating.
19. Set dialysate temperature lower if tolerated, this also reduces 'crashes'.
20. Talk to estates and facilities teams about Light-Emitting Diode (LED) lights, solar panels, heat pumps, insulation.
21. Run dishwashers only when full, boil only as much water as needed, etc.

Medicines

22. Consider doses/dosing schedules, e.g. smaller bicarbonates, instead of weekly, iron as per Proactive IntraVenous Iron Therapy in haemodialysis Patients (PIVITOL), and Erythropoiesis-Stimulating Agent (ESA) default to fortnightly.
23. Switch medicines, especially antibiotics, from intravenous to oral (IVOST) when possible.
24. Discuss medicine concordance and ordering with patients to prevent stockpiling; stop those no longer required.
25. Review Pharmacy stock management in the Renal Dialysis Unit (RDU) to reduce medicines waste.

For additional How-To Guides, or if you are interested in being more involved in sustainability work, scan the QR code:



Sources

Dialysate

1. Canisters:
 - ☐ [Environmental Footprint of Types of Dialysate Containers](#)
 - ☐ [Life Cycle Assessment on Central Acid Delivery System](#)
2. Dialysate flow:
 - ☐ [Safety and adequacy of a water-saving dialysis prescription](#)
 - ☐ [Auto flow factor function on hemodialysis efficacy](#)
 - ☐ [Green Dialysis Review: Reducing Water, Energy, and Waste](#)
3. Blood flow:
 - ☐ [Effective Blood Flow Rate and Clinical Outcomes](#)
 - ☐ [The effect of increasing blood flow rate on dialysis adequacy](#)
4. Deliveries:
 - ☐ [Review of Delivery of Dialysis Fluid](#)
5. Incremental:
 - ☐ [Incremental HD Opportunity For Change - CfSD](#)
 - ☐ [Incremental HD How-To Guide - CfSD](#)
 - ☐ [Mainstream Incremental Haemodialysis](#)
 - ☐ [Incremental vs. Standard Haemodialysis](#)

Resource use

6. Blood tests:
 - ☐ [Rationalising Blood Tests](#)
 - ☐ [Reduce repetitive ordering of low-value inpatient lab tests](#)
7. Avoid printing:
 - ☐ [Environmental footprint of kidney care](#)
8. Haemodialysis (HD) packs, have unused items to be removed.
9. Linen/BYOB:
 - ☐ [Bring Your Own Blanket: A Waste Reduction Initiative](#)
 - ☐ [Environmental Footprint of Kidney Care Optimizations](#)

Waste

10. Waste segregation: LearnPro or [Safe disposal of waste Turas](#)
11. Minimise (clinical) waste.

Travel and transport

12. Staff travel.
13. Active lifestyles and a healthy diet:
 - ☐ [Exercise and Lifestyle in Chronic Kidney Disease - The Renal Association](#)
 - ☐ [Effect of a 3-Year Lifestyle Intervention in Patients with CKD](#)
14. Patients' shared transport:
 - ☐ [How to Guide - Sustainable Travel](#)
 - ☐ [Transportation for In-Centre Haemodialysis](#)
 - ☐ [Improving Patient-Centric Delivery of Dialysis](#)

Catering

15. Food waste:
 - ☐ [Improve Nutritional Intake and Reduce Food Waste](#)
 - ☐ [Reducing Food Waste](#)
 - ☐ [Patient Perceptions of the Inpatient Haemodialysis Menu](#)
16. Dietetic advice:
 - ☐ [Dietetic Action for Adoption - CfSD](#)

Energy use

- ☐ [Environmental Challenges Towards Sustainability in Haemodialysis](#)
 - ☐ [Ten Tips From The Swiss Working Group on Sustainable Nephrology](#)
17. 'Prime on arrival'
 18. Turn off lights
 19. Lower dialysate temperature.
 20. Talk to estates and facilities.
 21. Dishwashers, kettles, etc.

Medicines

22. Doses/dosing schedules
23. Switch medicines to oral:
 - ☐ [Prescribing Oral over Intravenous Medications](#)
 - ☐ [Case Study: Metronidazole IVOST](#)
24. Medicine concordance and ordering
25. Pharmacy stock management:
 - ☐ [Reducing drug waste in hospitals](#)
 - ☐ [Case Study: medicines waste segregation](#)
 - ☐ [Case Study: Pharmacy Stock Management](#)