LOWERING THE CARBON FOOTPRINT OF DIALYSIS ACCESS

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Our planet
Our health

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NSW GOVERNMENT

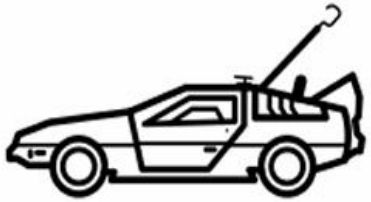
OVERVIEW



What is the NSW Net Zero initiative?



Renal Net zero



The future...



Net Zero Hubs program



Net Zero Hubs program

The Net Zero Hubs (2024-2027) is an Australian-first program establishing multi-disciplinary teams to lead decarbonisation activities in carbon hotspot areas. More information by service or specialty can be found below.



Surgery

→



Intensive care

→



ED

→



Endoscopy

→



Paediatrics

→



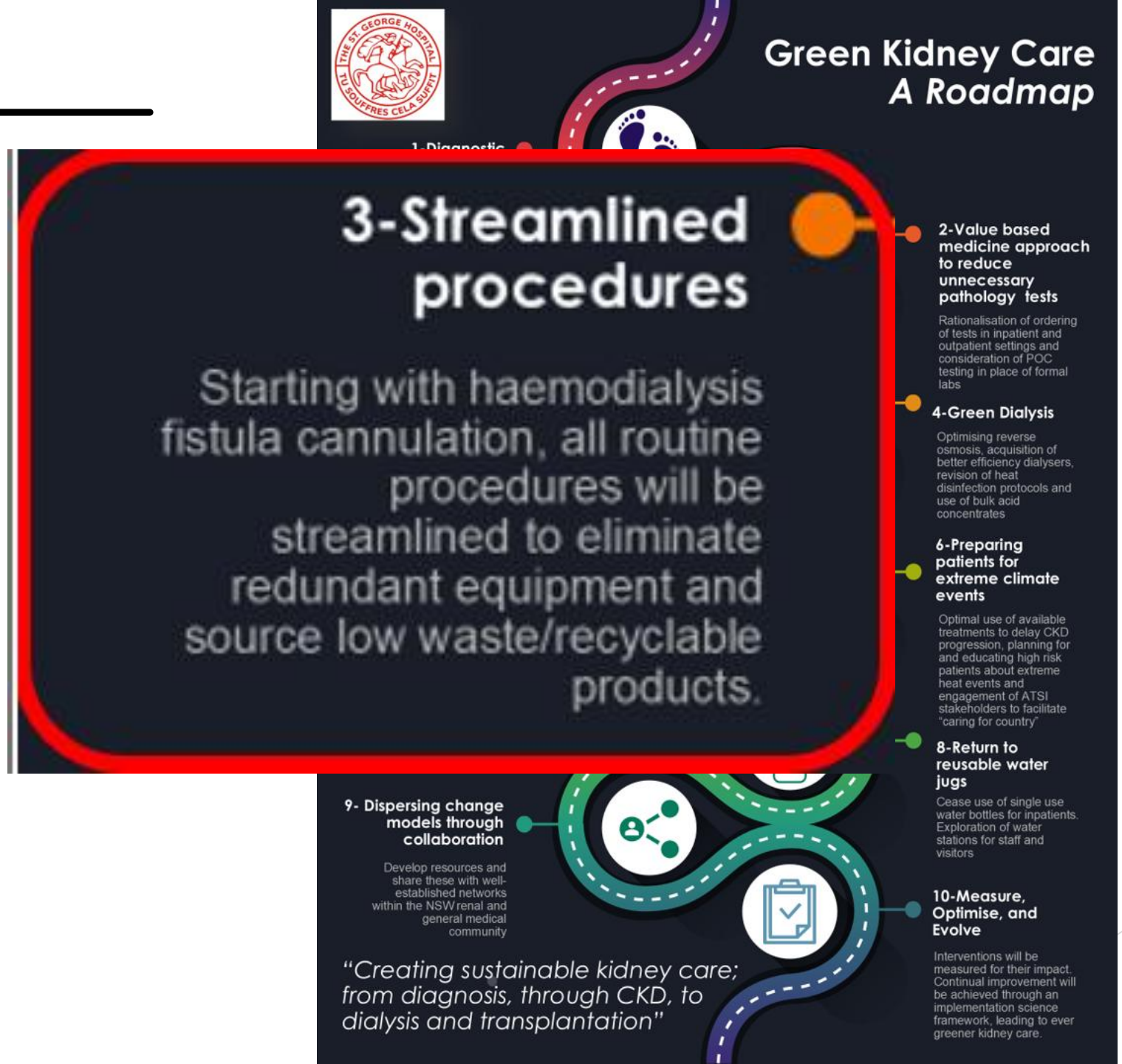
Infection Prevention Services

→



Renal

→


Green Kidney Care
A Roadmap
3-Streamlined procedures
Starting with haemodialysis fistula cannulation, all routine procedures will be streamlined to eliminate redundant equipment and source low waste/recyclable products.
2-Value based medicine approach to reduce unnecessary pathology tests
Rationalisation of ordering of tests in inpatient and outpatient settings and consideration of POC testing in place of formal labs
4-Green Dialysis
Optimising reverse osmosis, acquisition of better efficiency dialysers, revision of heat disinfection protocols and use of bulk acid concentrates
6-Preparing patients for extreme climate events
Optimal use of available treatments to delay CKD progression, planning for and educating high risk patients about extreme heat events and engagement of ATSI stakeholders to facilitate "caring for country"
8-Return to reusable water jugs
Cease use of single use water bottles for inpatients. Exploration of water stations for staff and visitors
9- Dispersing change models through collaboration
Develop resources and share these with well-established networks within the NSW renal and general medical community
10-Measure, Optimise, and Evolve
Interventions will be measured for their impact. Continual improvement will be achieved through an implementation science framework, leading to ever greener kidney care.
"Creating sustainable kidney care; from diagnosis, through CKD, to dialysis and transplantation"

St George Hospital Haemodialysis Unit is a 17 chair unit that runs morning and afternoon sessions.



Identifying Our Target

Kidney replacement therapy is highly carbon intensive

Haemodialysis uses large volumes of single use consumables

Focus Areas

- AVF cannulation
- Vascath connection and disconnection
- ASNTT vs sterile gloves

Initial Audit

- 181 Haemodialysis sessions captured
- 6 days audit.
- 82% AVF and 18% Vascath

Affix patient label

4West Sustainability Audit

Date: AM/PM Access: AVF/ Vascath Observer initials:

Pre dialysis and cannulation

No. of blankets		Syringes 10mls	
No, of sheets		Syringes 3mls	
No. of towels		Needle 18 g	
No. of pillowcases		Needle 25g	
Dressing pack		Sterile gloves	
Cannulas		NS gloves	
Saline 10ml		White aprons	
Torniquet	Yes ☐ No ☐	Yellow aprons	
HDF	Yes ☐ No ☐	Saline 1000ml	Yes ☐ No ☐
		(Blue)sheet	
Additional comments: (outline additional equipment used)			

Mid Shift (ask patient)

Cup hot beverage		Dessert pack	
Cup cold beverage		straws	
Sandwich pack		cutlery	
Additional comments: please comment if cutlery is reusable or disposable.			

Post dialysis

Kaltostat/seaweed	Yes ☐ No ☐	Straps	
Gloves		Duration of dialysis	
Gauze			
Additional Comments:			



How was it implemented?

- New WPI with help form Vascular access CNC’s, Dialysis CNE and unit nursing leads.
- Inservice's for all staff
- On ward support from nursing leads during role out
- Development of instructional video

Starting *August 2025*, we will use less plastic during your fistula access procedure.

- Your dialysis care will remain exactly the same - we're simply reducing plastic waste to help the environment.
- This change will not affect the quality or safety of your treatment.
- Please ask any of our team if you have questions!
- Better for the environment is better for all of us!



AVF/AVG cannulation

Old











New

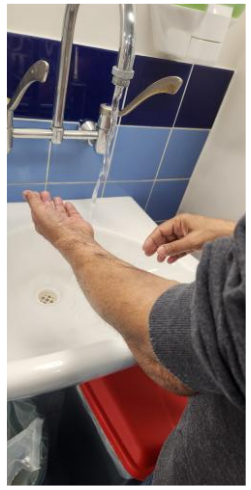




Key steps to ensure ANTT

- Hand hygiene- using handrub at all key steps.
- Preparing patient skin – was AVF washed with soap prior to cannulation?
- Clean with Chlorhexidine wipe.







Safety Monitoring- 1 month

Affix patient label

Staff Initials _____

4West sustainability cannulation Audit – 1 month.

Was new technique used as per updated WPI? Yes / no

If no, what was variation?

Dressing packs		3ml Syringes	
No. of gloves		Needle 18g	
No. wipes	Chlorhex/Betadine (circle)	Needle 25g	
Polyfush 10 mls		Sterile gloves	
Gauze		White Aprons	Multi or 1 pt (circle)
Torniquet		Yellow aprons	
Other		Blue sheet	

6 month audit

Date: Staff Initials:

Affix patient label

4West sustainability cannulation

Audit-6 month

Was new technique used as per updated WPI? Yes □ no □

If not, what was variation?

Added extra equipment □ list here: _____

_____

Used old technique in whole or in part □ list details here:

_____

Other:

_____

Was the fistula washed? Yes □ no □ nurse □ patient □

Dressing packs		3ml Syringes	
No. of gloves		Needle 18g	
No. wipes	Chlorhex/Betadine (circle)	Needle 25g	
Polyfush 10 mls		Sterile gloves	
Gauze		White Aprons	Multi or 1 pt (circle)
Torniquet		Yellow aprons	
Other		Blue sheet	

Misc Comments:





Instructional video



- 100% compliance from all nursing staff
- No BSI

Benefits achieved

- Quality of clinical techniques has improved.
- Standardising across the units has made practise safer.

Benefits achieved.

- 6,604 fewer dressing packs per year

- 6,864 fewer pairs of sterile gloves per year

Environmental Benefits



- 46,228 fewer single-use items to landfill per year
- Significant reduction in high CO_2e consumables

Financial benefits



Saving of 98c per session

Total $7071 per year.

This is just from 1 unit alone

Financial benefit



242 public dialysis units in Australia

15 public dialysis units in New Zealand

Estimated weekly savings $40,628 per week

Estimated yearly savings $2,112,649 per year.



Whakarewarewa Forest (The Redwoods) Rotorua New Zealand



Looking forward

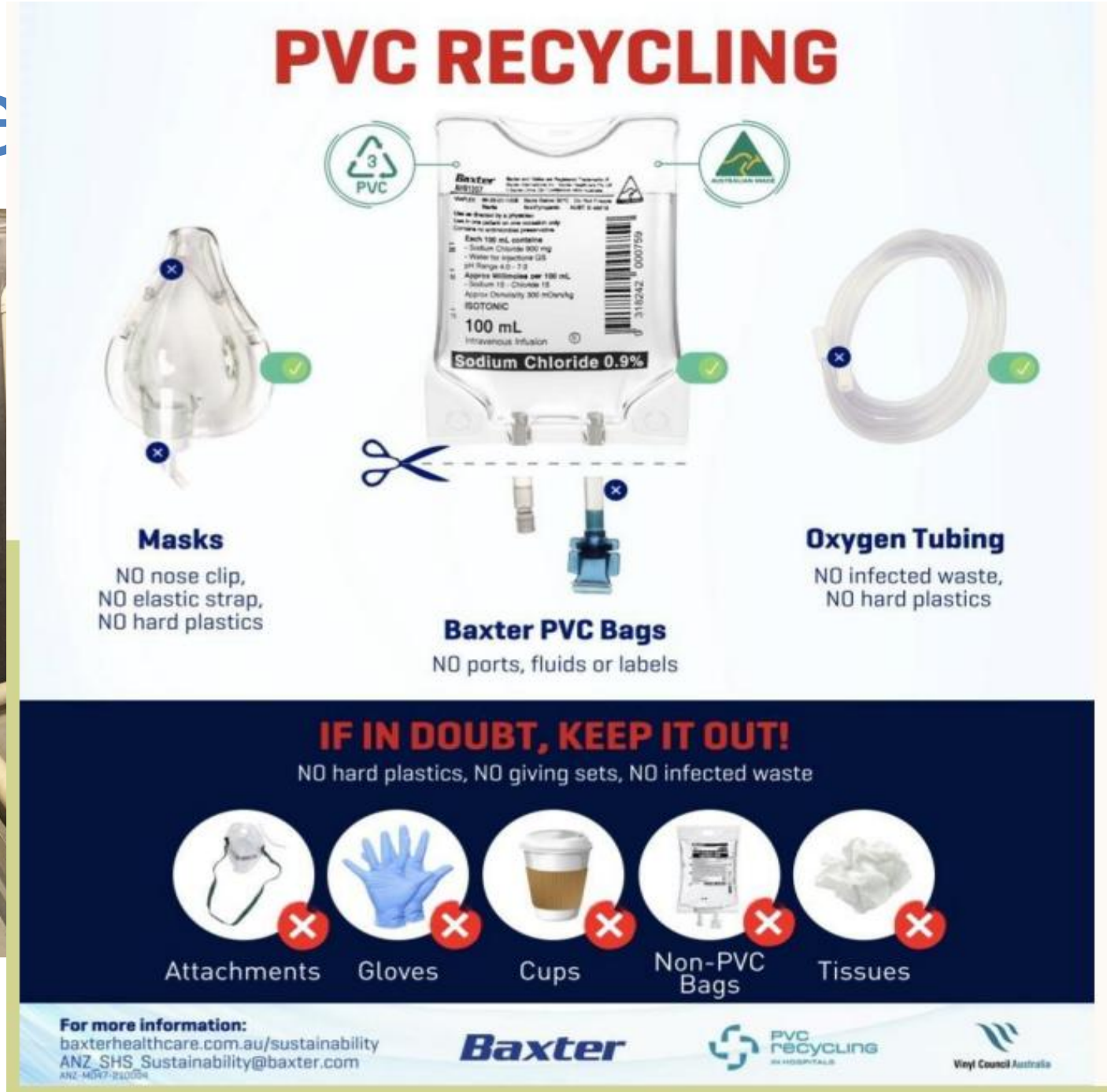
Rollout our Vascath WPI

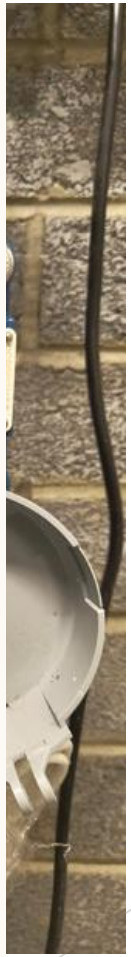
Scale to satellite dialysis unit

Expand across LHDs

Othe




PVC RECYCLING
3
PVC
Baxter
ISOTONIC
100 mL
Intravenous Infusion
Sodium Chloride 0.9%
Masks
NO nose clip,
NO elastic strap,
NO hard plastics
Baxter PVC Bags
NO ports, fluids or labels
Oxygen Tubing
NO infected waste,
NO hard plastics
IF IN DOUBT, KEEP IT OUT!
NO hard plastics, NO giving sets, NO infected waste
Attachments
Gloves
Cups
Non-PVC Bags
Tissues
For more information:
baxterhealthcare.com.au/sustainability
ANZ_SHS_Sustainability@baxter.com
Baxter
PVC recycling
Vinyl Council Australia

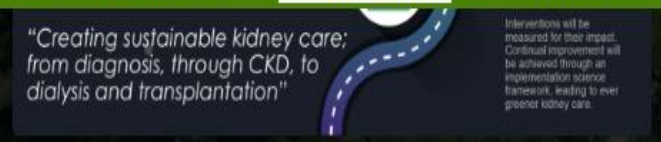


What we did not know

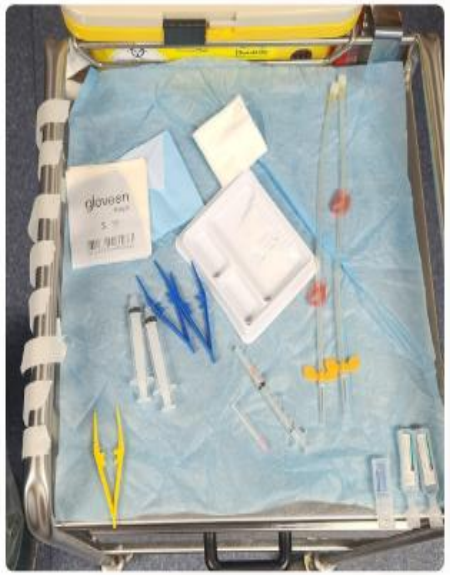
- Haemodialysis is highly carbon intensive
- Single-use consumables are major Scope 3 emitters
- Sterile gloves have higher CO_2e due to packaging and transport
- Reducing high use items results in significant carbon savings.

NSW Health SharePoint Search this site

MOH1-NetZero Home Net Zero Roadmap Getting to Net Zero Resources Recycle bin



Projects



Green Dialysis Access

The Renal Hub is actively lowering the environmental impact of dialysis by minimising the use of consumables during cannulation for both Arteriovenous Fistula (AVF) and Arteriovenous Graft (AVG). Additionally, the team is streamlining the connection and disconnection processes for Vascaths in chronic expanded haemodialysis, contributing to a more sustainable renal care pathway. The changes are estimated to deliver annual savings of $12,729.62 for a single 17-chair dialysis unit. Environmentally, this prevents 46,228 single-use items and 6,864 pairs of sterile gloves from entering landfill each year, significantly reducing CO_2e impact.

Find out more

Helen Veros (South Eastern Sy...
CNS

Comments from nursing staff

I did not realise the impact on the enviroment

After seeing the difference it makes,this is an eye opener!

It's good to see the bigger picture

The change is time efficient without compromising safety

Conclusion

Embed sustainability into routine care

Small routine changes can create large environmental gains

Reference List

- Photos by Dr Alex Gallagher, used with permission.
- Slide 28. https://nswhealth.sharepoint.com//sites/NetZero-MOH/SitePages/Renal-Hub.aspx
- Slide 26 https://www.baxterprofessional.com.au//sustainability/pvc-recycling-hospitals
- https://freseniusmedicalcare.com/en/healthcare-professionals/hemodialysis/water-technology/dialysis-water-supply/

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