REDUCCTION
REDUcing the burden of dialysis Catheter ComplicaTIOns: a National approach

REDUCCTION – Interventions

1. At the time of catheter insertion
   1.1. Surgical aseptic technique (hand hygiene, sterile gloves, surgical mask, eye protection and gown), and a sterile environment (sterile surgical field on the patient) and/or a sterile room as per unit availability **MUST** be applied.
   1.2. An antiseptic solution using a minimum of 2% chlorhexidine with 70% alcohol **MUST** be used
      1.2.1. For those who cannot tolerate chlorhexidine, povidone–iodine or 70% alcohol may be used
   1.3. Site of insertion
      1.3.1. The right internal jugular vein is the best site for catheter insertion
      1.3.2. Catheters in the subclavian vein should be avoided due to incidence of central vein stenosis.
      1.3.3. Avoid femoral catheters where possible
   1.4. We do not recommend any specific catheter type
   1.5. Ultrasound guided catheter placement is recommended if the resources are available
   1.6. Semi permeable transparent dressing **MUST** be applied to the line. If a patient is allergic to these dressings, then an alternative appropriate dressing may be used.
   1.7. All patients **MUST** receive education on the following topics
      1.7.1. Vascular access care
      1.7.2. Hand hygiene
      1.7.3. Risks related to catheter use
      1.7.4. Recognizing signs of infection
      1.7.5. Instructions for access management when away from the dialysis unit
      1.7.6. To ensure that their catheter and exit site are kept dry.
      1.7.7. To seek assistance from dialysis should a dressing become wet, soiled or leak, or if the catheter itself begins to slip out
      1.7.8. To **NOT** shower in the first 72 hours after catheter insertion. After 72 hours, in order to have a shower, the catheter site must be covered with waterproof material.
   1.8. All patients **SHOULD** receive a copy of the REDUCCTION catheter care sheet

2. Catheter maintenance
   2.1. Hand hygiene, sterile gloves, a plastic apron, and aseptic technique (hand hygiene, gloves) **MUST** be applied at all occasions of catheter access
      2.1.1. An antiseptic solution using a minimum of 2% chlorhexidine with 70% alcohol must be used
      2.1.2. For those unable to tolerate chlorhexidine, povidone–iodine or 70% alcohol may be used
   2.2. Dressing must be changed at least every 7 days and each time the dressing appears visibly soiled or loose
   2.3. We do **NOT** recommend the routine use of mupirocin ointment or medicated honey at the catheter exit site.
   2.4. All units **MUST** use **at least one** of the following specific interventions aimed at prophylaxis against catheter related bacteraemia*
      2.4.1. Impregnated dressings (such as chlorhexidine impregnated patch or sponge) at the catheter exit site and/or
      2.4.2. Anti-microbial (e.g. citrate or taurolidine based) or anti-bacterial (e.g. gentamicin) catheter locking solutions #
   2.5. All patients must be advised to ensure that their catheter and exit site are kept dry. Patients must be advised to seek assistance from dialysis should a dressing become wet, soiled or leak, or if the catheter itself begins to slip out.
   2.6. All patients should receive a copy of the REDUCCTION catheter care sheet as above
   2.7. All patients must receive education on the following topics
      2.7.1. Vascular access care
      2.7.2. Hand hygiene
      2.7.3. Risks related to catheter use
      2.7.4. Recognizing signs of infection
      2.7.5. Instructions for access management when away from the dialysis unit
   2.8. All patients must be advised NOT to shower in the first 72 hours after catheter insertion. After 72 hours, in order to have a shower, the catheter site must be covered with waterproof material.

*check manufacturer's instructions when choosing the intervention to ensure compatibility with catheters

#with the use of gentamicin locks, monitoring of antibiotic resistance should be considered as per hospital policy

3. Catheter removal
   3.1. Catheters **MUST** be removed as soon as it is clinically identified that they are no longer needed and within a maximum of 2 weeks of their last use.
   3.2. Non-Tunnelled catheters should be changed to tunnelled catheters as soon as possible. Non-tunnelled femoral catheters should not be in place for more than 5 days, and non-tunnelled upper limb catheters– should not be in place for more than 7 days.
   3.3. Catheters must be removed when there are signs of catheter related infections except in extenuating cases
   3.4. Re-wiring of catheters is **NOT** recommended in the setting of any catheter related infection

FACT SHEET

Caring for your dialysis catheter

Your dialysis catheter is used for exchanging blood between yourself and the haemodialysis machine. Taking good care of your catheter helps make it last longer, and will reduce your risk of infections.

Your healthcare team will teach you about how to look after your catheter. Follow their instructions on how to care for your catheter and use the information below as a reminder.

Do's

- ☑ Ensure that your catheter dressing is intact, clean and dry at all times.
- ☑ Your dressing must be changed at least every 7 days, and each time the dressing appears visibly dirty or loose.
- ☑ 3 days after the catheter has been put in, you can shower with a waterproof cover over the catheter dressing. Should your dressing become wet whilst washing, it will need to be changed promptly by renal unit staff or someone who has received education in catheter care.
- ☑ If you have fevers and/or chills, then present to the Emergency Department IMMEDIATELY as this may mean that you have a very serious infection.
- ☑ Contact your renal unit as soon as possible if there is:
    - Discomfort/pain
    - Redness
    - Swelling
    - Discharge from your catheter exit site
- ☑ Thoroughly wash your hands before touching your catheter and dressing.
- ☑ Check your catheter for any damages such as cracks or holes.
- ☑ If your catheter moves around, or becomes caught in clothing, use tape to attach it to your skin.
- ☑ Make sure that your catheter is well protected when playing contact sports.
- ☑ Always ask your healthcare team if you are unsure about caring for your catheter.
- ☑ Discuss with your renal team whether you should have an Arteriovenous Fistula (AVF) created if you are going to have haemodialysis for a long time.

Don'ts

- ☒ Do not touch, pull, scratch or pinch your catheter or the catheter dressing.
- ☒ Do not use sharp objects near your catheter.
- ☒ Do not shower or bath in the first 3 days after your catheter is put in.
- ☒ Do not swim until receiving advice from your healthcare team.
- ☒ Do not let anyone access your catheter for any purpose other than dialysis (other than for a major medical emergency).
- ☒ Do not allow anyone to touch your catheter without washing their hands, wearing gloves, and a plastic apron.
- ☒ Do not place or apply any pressure to your catheter (such as when holding or carrying an object).

Acknowledgements

This fact sheet was developed and reviewed by the REDUCCTION Project Investigators, Kidney Health Australia, and the Kidney Health Australia National Consumer Council.

For more information about caring for your dialysis catheter please contact the Kidney Health Australia free call Kidney Helpline on 1800 454 363, or visit kidney.org.au to access free health literature.

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Appendix 3: Interview Guide

PRE-IMPLEMENTATION INTERVIEWS

1. What's your experience of being a part of the REDUCCTION project?
    - Do you understand the aims of the project?
    - What/how was the **previous data collection method before the REDUCCTION data collection** process started?
    - What are your views about **both methods of data collection**? You find the REDUCCTION tool **easier or harder** to use? **Easier to find the infection rate**? how often do you check for infection rate?

2. What are your views about the REDUCCTION project?
    - Do you know of any other units doing this project?
    - What does your unit want to achieve from this?
    - What do you think the difficulties would be in implementing a new intervention?
3. Do you know what the intervention is going to be? What do you think the intervention will/should be?
4. Have you had any experience in implementation of other interventions? Describe?
    - *If yes*, How did it go? *(If it went well*) Why do you think it was accepted and implemented easily? What do you think were the enablers for implementation (*if it had flopped*) What do you think went wrong?
5. Is there any other quality improvement initiatives that have been started after the commencement of REDUCCTION

Any other comments, suggestions, experiences in relation to haemodialysis and REDUCCTION.

Demographic questions:

- How old are you?
- How many years have you been working in nephrology?
- What is your current job title?

POST-IMPLEMENTATION INTERVIEWS

What do you understand the care bundle to be? Is this what you *thought* the care bundle would be?

Current Practice

1. If you think about your current practice using this bundle, which aspects of the bundle have been easy to use/do? Which have been difficult?
2. Has using the care bundle/intervention been a change in practice for you?
    - **If yes:** Describe how it is different now? Which aspects are different from what you did before?
3. Do you do anything additional or different from the care bundle? If yes, please describe.
    - **NB:** If participant is already doing what is in the care bundle, go through each process, eg, What is the skin preparation they are doing now? Was it the same earlier too? Same for dressing…
4. Is there somewhere you document if you vary from the bundle?
5. Have you noticed others doing anything different or additional? Describe.

Process of implementing Intervention/Care Bundle

6. Can you think back to when it was implemented and tell me what happened?
   (Prompts: was there in-service? Meetings? Sessions? Online modules? Does someone have the role to implement the bundle? Make sure staff follow it?)

7. How did you feel about the implementation? (prompts: was it enough, too much?)
8. OK so, how did it go?
   - *(If it went well*) Why do you think it was accepted and implemented easily? What do you think helped the implementation to go well?
   - (*If it had flopped*) What do you think went wrong/what was not helpful?
9. How do new staff (since the bundle started) find out how to implement/use the care bundle?

For sites which have had the intervention running for a longer period:

10. Are you still using the care bundle the same way that it was implemented initially?
    - If yes - what has sustained the practice change?
    - If not - what do you do now? Was there a problem? What do you think could have been done to make it feasible?)
11. Have there been any other changes to practice or quality improvement initiatives that have started since the commencement of the new care bundle?

Catheter Care Sheet for patients:

12. Do you give the REDUCCTION catheter care sheet to the patients?
    - When? Is there any other information you give them?
    - If yes: How is it received?

Data Collection:

13. Are you still using the REDUCCTION data collection tool (on the iPAD)?
14. What are your views about the REDUCCTION tool? Is it easy to use?
15. Can you find the infection rate? If yes, how often do you check for infection rate?
16. Are you going to continue using the <u>REDUCCTION data collection tool even after the project is completed? Why</u>?
    - *If not:* would you like to change to another method? Why?
17. With the sorts of patients you see, do you find the care bundle appropriate for their specific needs? If No, explain, give an example.

2 Study Investigators

2.1 List of Trial Investigators

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Canberra Hospital	Alison	Winsbury
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John Hunter Hospital	Ginger	Chu
John Hunter Hospital	Leanne	Garvey
John Hunter Hospital	Alastair	Gillies
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Liverpool Hospital	Josephine	Chow
Liverpool Hospital	Imelda	De Guzman
Liverpool Hospital	Jeanny	Gando
Liverpool Hospital	Jeffrey	Wong
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Mackay Hospital	Raye	Gillard
Mackay Hospital	Rachel	James
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Mater Hospital	Shimbie	Lewis
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Monash Health	Peter	Kerr
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Royal Darwin Hospital	Madhivanan	Sundaram
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Sir Charles Gairdner Hospital	Ingrid	Holmes
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St George Hospital	Jayson	Catiwa
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The George Institute for Global Health	Jayanthi	Mysore
The George Institute for Global Health	Joseph Alvin	Santos
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Toowoomba Hospital	Shannon	Nugent
Toowoomba Hospital	Ian	Fox
Toowoomba Hospital	Sree	Venuthurupalli
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Western Health	Ruth	Thachaw
Western Health	Sandra	Crikis
Wollongong Hospital	Pauline	Byrne
Wollongong Hospital	Karumathil	Murali
Wollongong Hospital	Hicham	Cheikh Hassan
Western Sydney Local Health District	Lin	Huang
Western Sydney Local Health District	Romiereeza	Dizon
Western Sydney Local Health District	Deepika	Joshi
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2.2 Steering committee members

All above listed site investigators participated in the Steering Committee.

2.3 Trial Executive Management Committee members

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2.4 Data Collection Sub-committee members

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2.6 Interventions Sub-committee members

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2.7 Study Adjudicators

Ben Talbot; David Semple; Peter Kerr; Matthew Roberts

The data collection tool was custom made for the REDUCCTION study and was developed by The Project Factory (https://www.theprojectfactory.com/) together with The George Institute study team.