Kimberley Renal Services

Kimberley Renal Services is a wholly owned subsidiary of Kimberley Aboriginal Medical Services Ltd

Infection Prevention and Control Haemodialysis in Remote Communities

Presenters:

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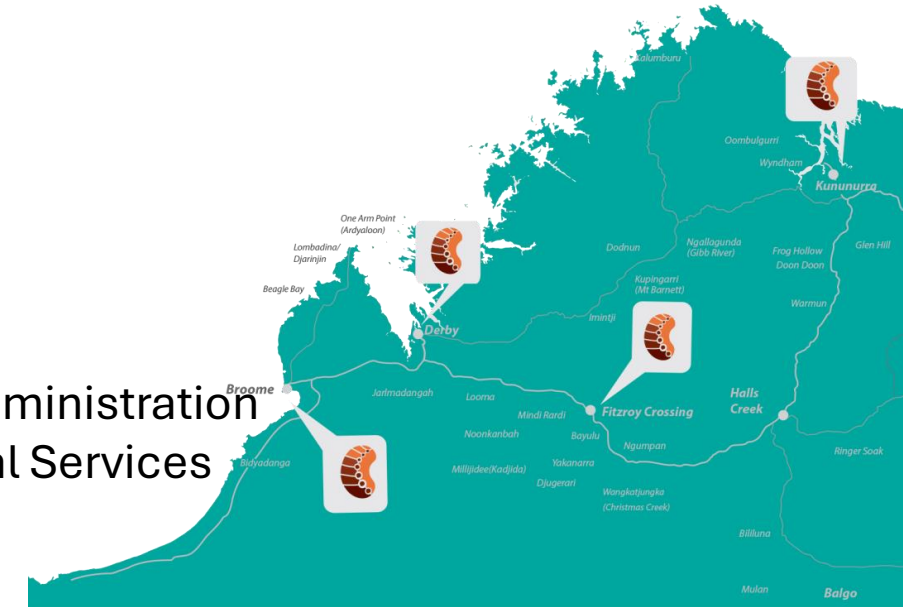

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Acknowledgement of Country

We would like to acknowledge the traditional owners of the land on which we are presenting today, the Wurundjeri Woi-Wurrung and Bunurong Boon Wurrung people of the Kulin nation.

We pay our deepest respects to the Elders, past and present. We acknowledge and honour the unbroken spiritual, cultural and political connection they have maintained to this unique place for more than 2000 generations.

Introduction

The Kimberley region has one of Australia's highest rates of kidney disease.

Kimberley Renal Services provides haemodialysis across four remote sites, facing unique infection control challenges.

This presentation highlights these challenges and presents approaches to addressing them.

Haemodialysis and Infection Risks

Patients attend 3 sessions per week, each lasting 4-5 hours.

Dialysis is delivered via a fistula or a central venous catheter(CVC).

The highest risk of healthcare acquired infection is in patients with CVCs.

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Patient Journey

- Education on pre-dialysis, vascular access, and fistula creation
- Initial dialysis at tertiary hospital in Perth
- Transport and accommodation support
- Ongoing dialysis sessions
- Post-dialysis care and risk management education

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The dialysis units in the Kimberley region are run by Kimberley Renal Services (KRS), a subsidiary of Kimberley Aboriginal Medical Services (KAMS).

There are currently four dialysis units and one mobile dialysis unit across the region.

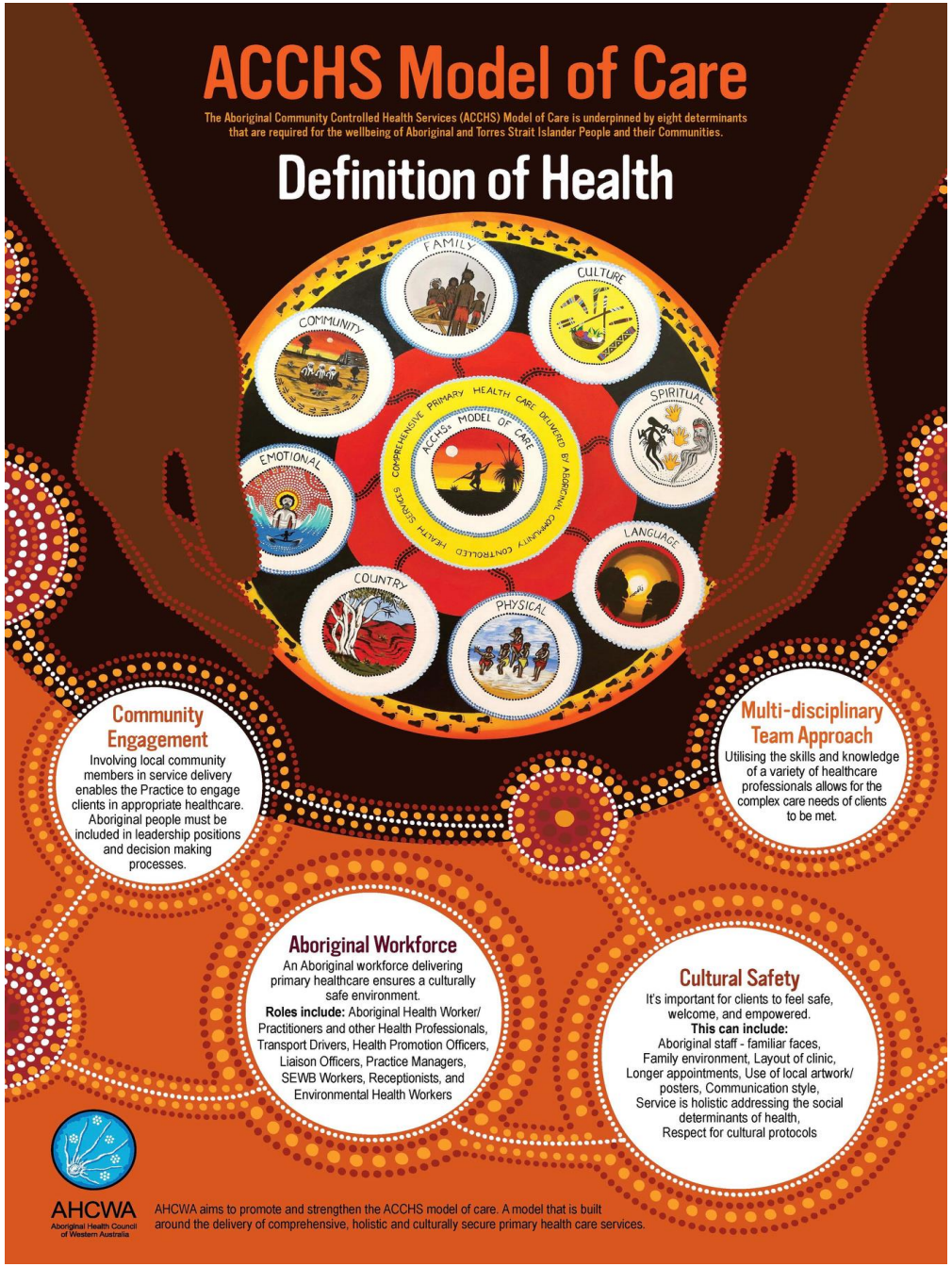
What is an ACCHS?

ACCHS stands for Aboriginal Community Controlled Health Service

What is Aboriginal community control?

The National Aboriginal Community Controlled Health Organisation (NACCHO), the national peak body for all ACCHOs, defines Aboriginal community control in health services as:

'a process which allows the local Aboriginal community to be involved in its affairs in accordance with whatever protocols or procedures are determined by the Community'.



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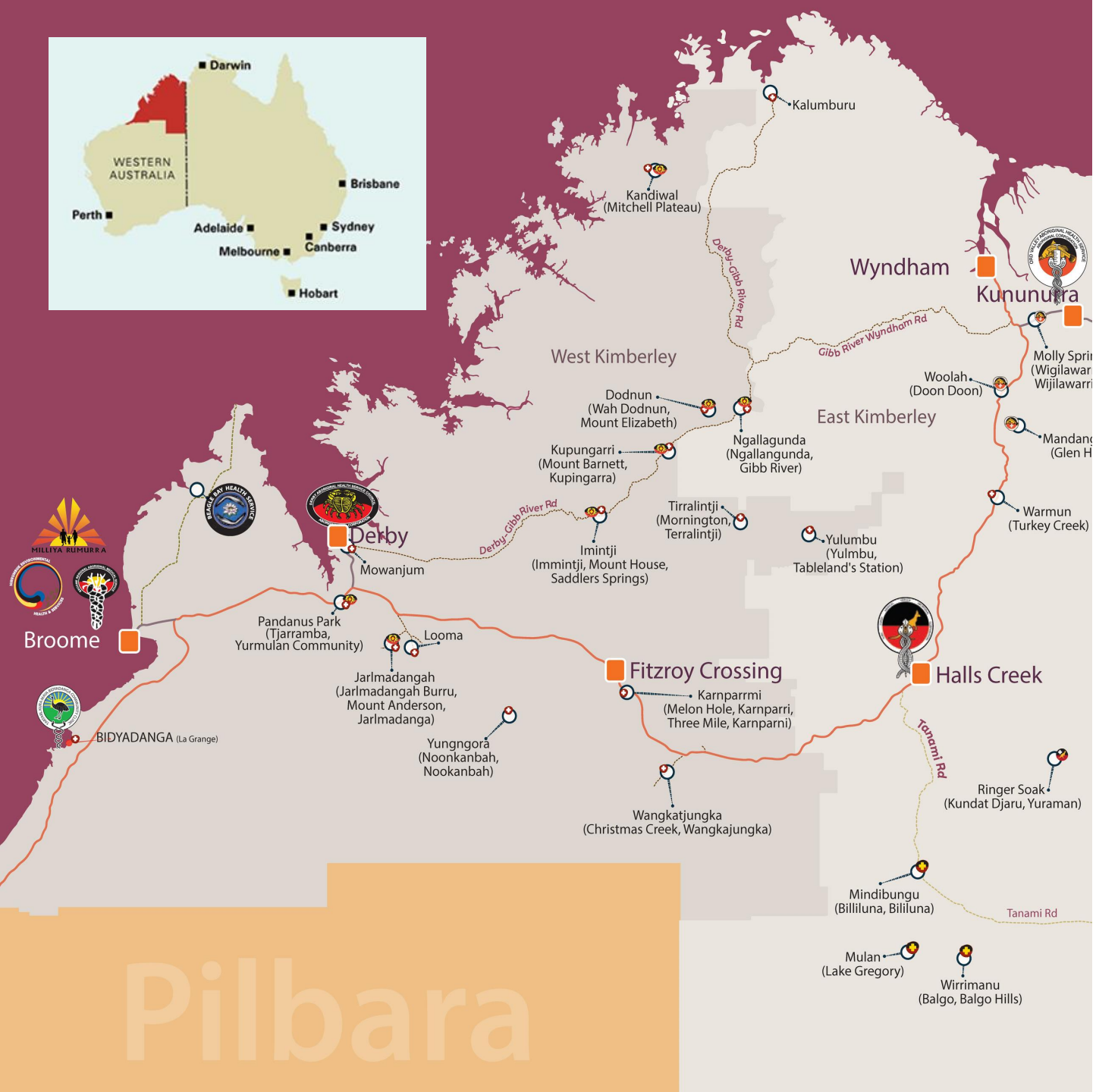
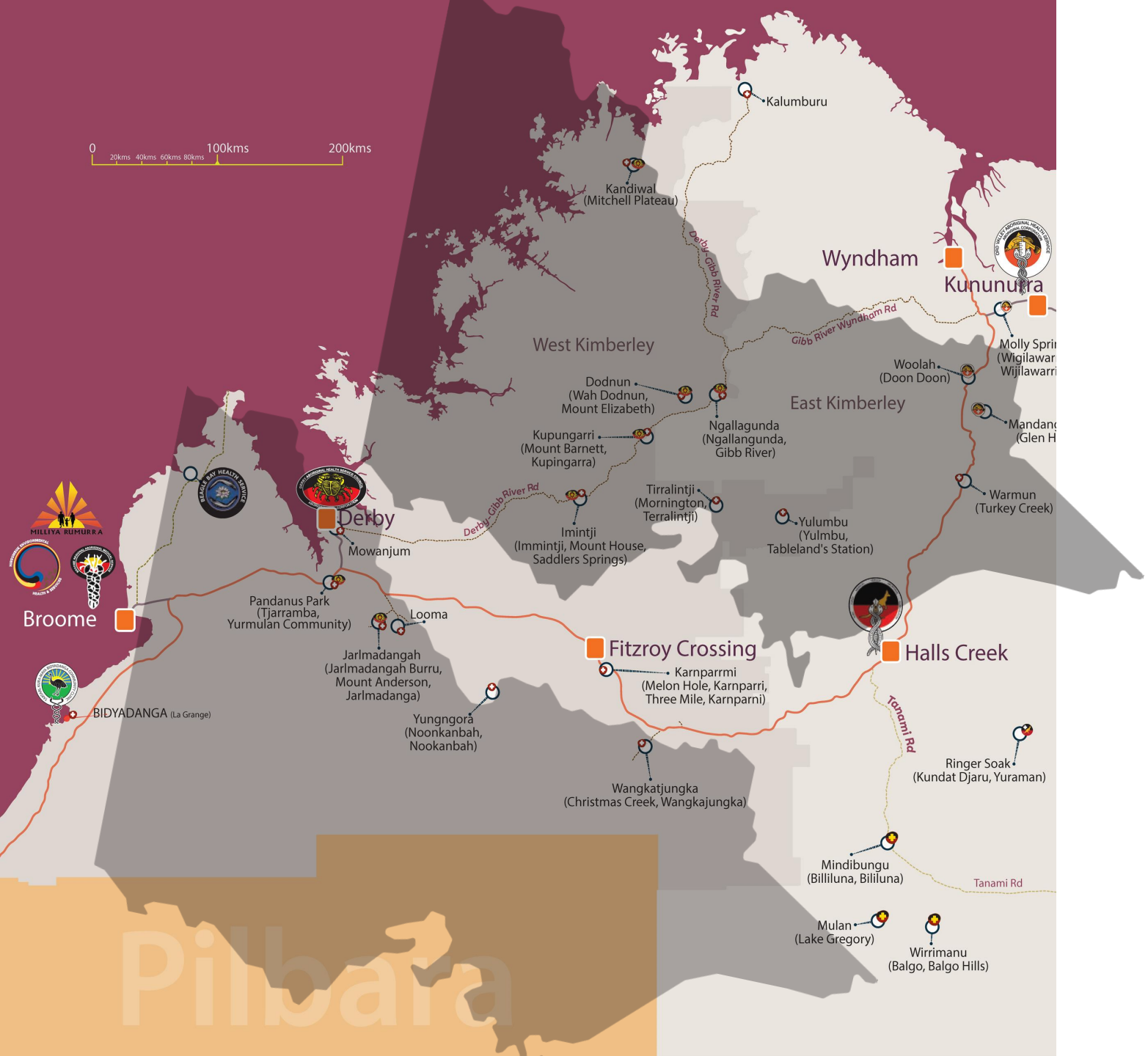
Program Challenges

- Geographic Isolation
- Limited Resources
- High rates of chronic illness and multi-resistant organisms
- Environmental and Infrastructural limitations
- Healthcare workforce challenges



The Kimberley Region

- Tropical environment
- 30 traditional language groups across the region
- Population fluctuates from 36,00 to 50,000 in ‘Dry season’



Geographically large:
Twice the size of the state of Victoria

6 townships and over 200 small remote communities

Climate and Extreme Weather Events

Climate and extreme weather challenges include:

- Clinical stock management issues
- Mould and bacterial growth
- Increase in infections in Wet Season
- Travel restrictions

The Team

91 members of staff across the Renal Centres

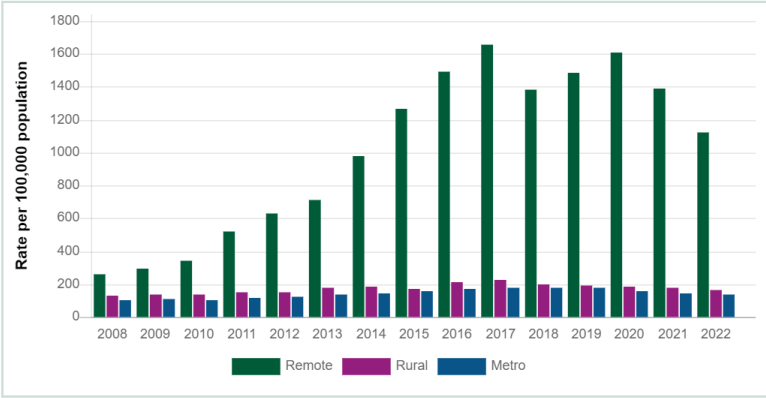
Includes:

- Patient care assistants
- Aboriginal Health Worker and Practitioners
- Nursing staff
- Medical Staff and Nurse Practitioner
- Admin staff
- Management staff
- Chronic Kidney Disease Educators
- Pre-dialysis Coordinators
- Aboriginal Care Coordinators
- Vascular Access Nurse
- Transplant Coordinator

High Rates of Chronic Illness and Multi-Resistant Organisms

- Higher prevalence of chronic kidney disease(CKD) in the Kimberley region.
- CKD impacts on immune function, increasing infection susceptibility.
- High rates of MROs in region.

Community-associated methicillin-resistant *Staphylococcus aureus* (CA-MRSA)



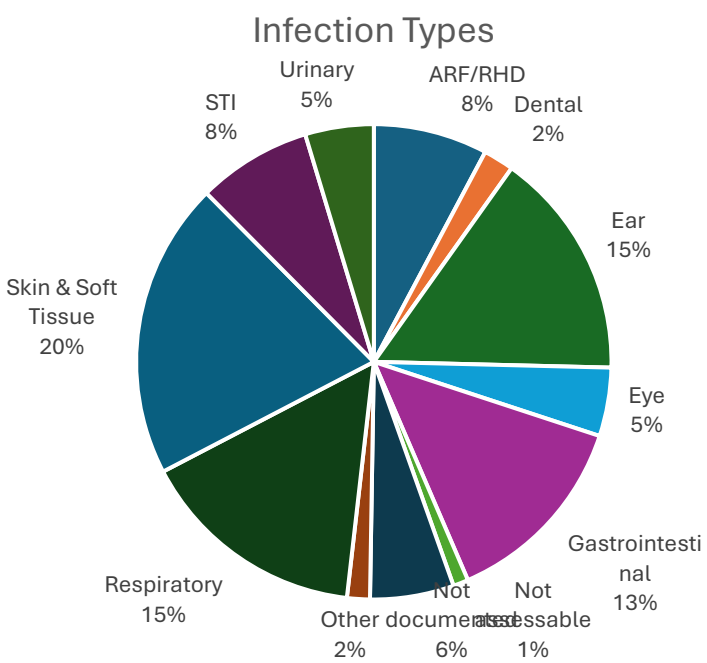
The graph above shows the annual rate since 2008 of community-associated methicillin resistant *Staphylococcus aureus* (CA-MRSA) infections per 100,000 of the population, by 3 geographically distinct areas in Western Australia (WA). For the purpose of this information, the WA areas are divided as:

- **Remote:** Kimberley, Pilbara, Midwest and Goldfields.

Reference: Western Australia Department of Health – Data – Community Acquired methicillin-resistant Staphylococcus aureus (CA-MRSA)

Resource Limitations

- Limited resources as smaller organisation.
- Example of adaption to limited resources:
  Antimicrobial Stewardship
  - Collaboration
  - Creation of internal tools
  - Communication resources



Kimberley ACCHOs
Antimicrobial Stewardship 2024 Update

Antimicrobial Stewardship
What is it?

Antimicrobials are medications used to treat infections. These medicines include antibiotics, antivirals, antifungals and antiparasitics.

Antimicrobial resistance (AMR) is where bacteria, virus' and parasite transform over time and no longer respond to certain antimicrobial medicines.

Antimicrobial stewardship refers to the coordinated programs used by health services to improve antimicrobial use, enhance patient outcomes, reduce AMR and reduce the spread of infections caused by antimicrobial resistant organisms.

Antimicrobial resistance (AMR) is one of the top global public health and development threats.
World Health Organization, 2023

What are we doing?

The Kimberley ACCHS are collaborating to bring antimicrobial stewardship activities into all Kimberley Aboriginal Medical Services.

Current stewardship activities include:

- Kimberley ACCHS Antimicrobial Stewardship Program Meeting
  - Last held in Kununurra at the Lead Clinicians Forum in August
- NACCHO Antimicrobial Stewardship Academy
  - 6 month training program with fortnightly lectures, run biannually
  - Open for application from all AMS staff
- Internal Audits of Antimicrobial Prescribing and management of AMR infections
  - KAMS developed Antimicrobial Stewardship Audit Tool (Available to all AMS')
  - Final year Notre Dame University students assigned audit topics for their projects on antimicrobial related topics for the Kimberley ACCHs
  - Kimberley Pharmacy Services audits on antibiotic prescribing

Key Messages for Prescribers

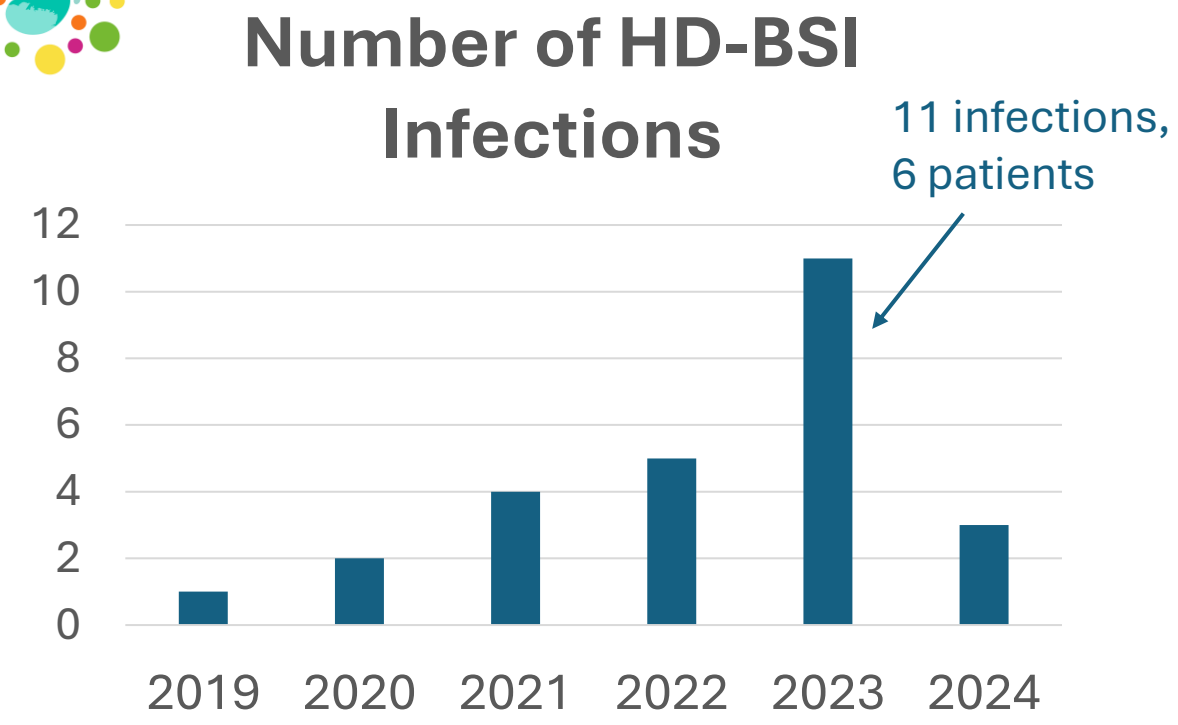
Recording Duration on MMEx
When adding a new prescription in MMEX, ensure duration advice is given to the patient in the 'Other Patient Instructions' box.
Check that quantity prescribed **and** dispensed matches the specified duration.

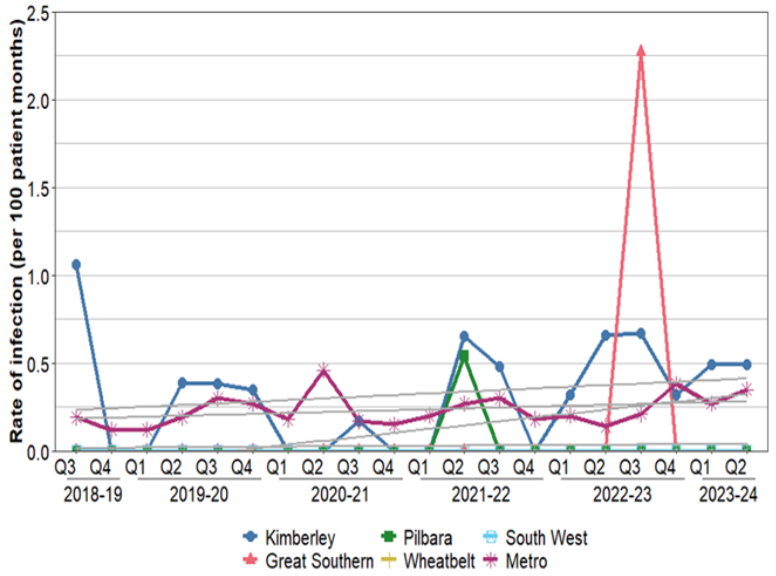
UTI Prescribing
When prescribing for UTIs consider geographical trends of resistance for antibiotic choice. Regional antibiograms show significant Trimethoprim resistance in the Kimberley. If prescribing empirically, consider cephalexin or nitrofurantoin.

M/C/S When Prescribing
Please ensure that if you are prescribing antibiotics for an infection that can be cultured, M/C/S pathology is sent. This allows for early detection of resistance and a change in antimicrobial for effective treatment if required.

Kimberley ACCHOS Antimicrobial Stewardship Newsletter - November 2024

Haemodialysis
Blood Stream Infections





***Note*: Metro includes both metro tertiary and metro non-tertiary.**

Figure 1 WA AVF and cuffed catheter BSI rate by region

Reference: Infection Prevention, Policy and Surveillance Unit – HD-BSI data supplied 2024

Investigating HD-BSIs

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Date:		**Pt Identifier:**	
Identified Pathogen:		**Associated Site:**	
Date sample taken:		**Date of Insertion:**	
LogicQ Incident Number:		**HISWA Reportable:**	Y / N If yes, please attach screenshot to second page of doc

Situation:
Description of patient situation that gives context to blood strea

Example: Patient afebrile and obs WNL on arrival. During dialys
38.9, blood cultures taken from CVC. Medical review called.
Site of CVC red, nil exudate. Dx CD+I on arrival.
Nil recent history of illness. Nil symptoms.

Identified Risk Factors:
Description of any present risk factors that could contribute to b
infection.
Examples: Patient presents with nil dressing. Staff shortages or
Lack of documentation for dressing change. Faulty equipment l
Trouble with line access.

Related documentation:
List documentation related to CVC/Acoess that relates to infecti

Examples:
- **Documentation of site redness / swelling / exudate**
  eg. Progress note 11/02/2023 – RN Bell – Site descriptio
- **Relevant Pathology**
  Eg. Blood Cultures – MMEx – 7/02/2023
- **Relevant Discharge Summaries**
  Eg. Broome hospital D/C Summary – 11/02/2023 – Sum
  infection

Recommendations:
Description of any preventative measures that could be implem
infections.
Example: Further staff education. Review of line by vascular ac
patient if concerns about home environment. Increased assessr
ongoing dressing issues). Equipment review.

Timeline
For patients with HD-BSI – begin infection from 21 days prior to the positive culture

Patient KS Identifier:
Patient URNM:
Patient DOB: **Age:**

Date of infection:
Infection:

Insertion:

Example:
30/06/2001 – Hickman line inserted to Internal Jugular (Right)
CVC inserted at RPH

Timeline from 21 days pre-positive B/C:

Example:
06/02/2001
Dialysis session. Patient stable treatment.
CVC used for dialysis due to venous blow. CVC CD+I.

07/02/2001
Patient admitted hospital.

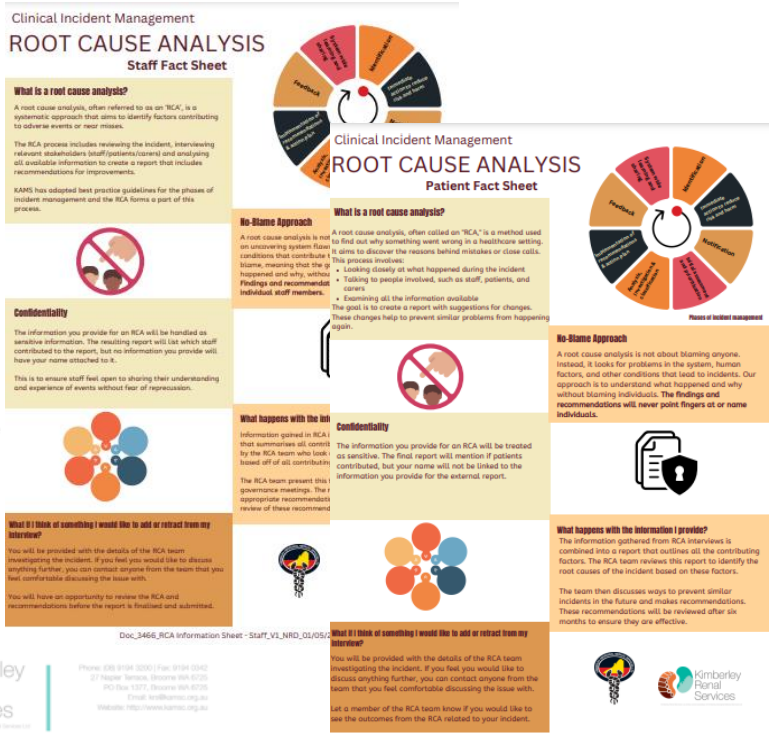
08/02/2001
Dialysis session. Nil documented concerns.

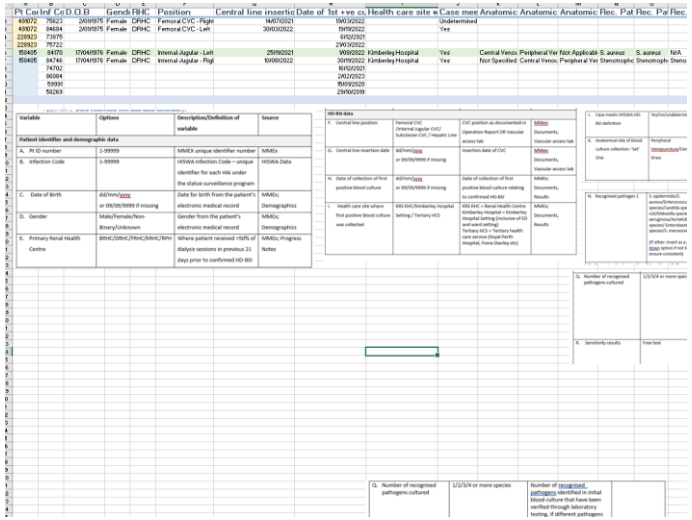
13/02/2001
Dialysis session. Cramping. Ended 10 minutes early.
CVC documentation: CVC dressing peeling. Redressed

15/02/2001
Patient reviewed by Primary Health GP for multiple iss
infection.

Post infection:

Example
29/02/2001
CVC removed at Tokyo Hospital. IVABs continue.





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Documentation on CVC:

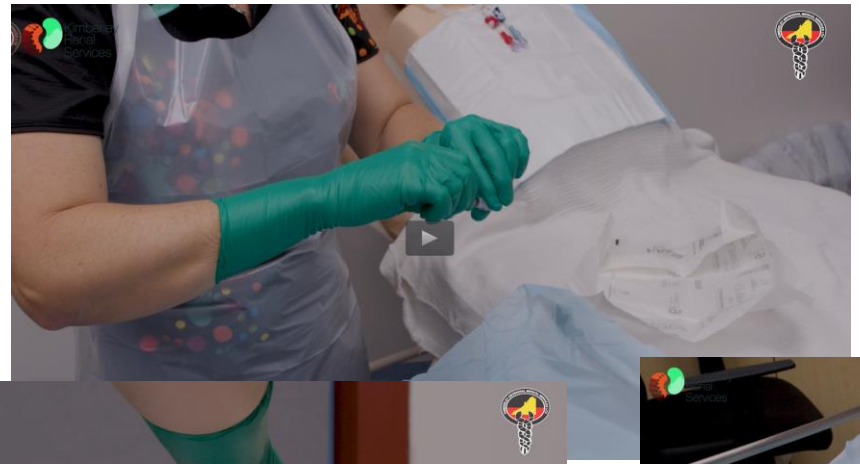
Below grey text is an example of what to record. Delete this text and the examples when filling in with your own audit information.

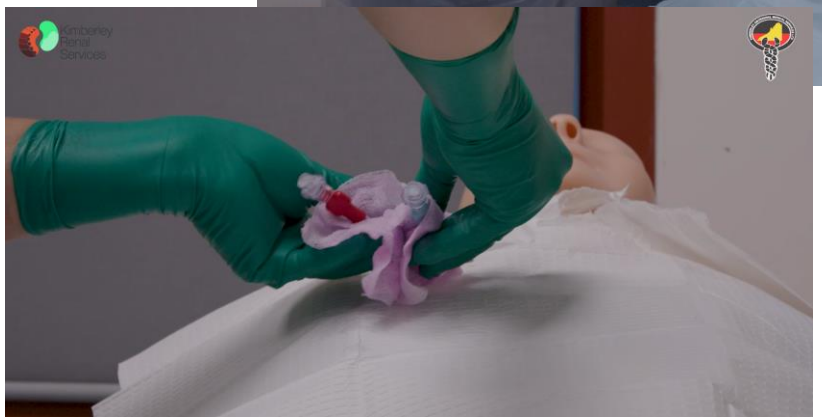
Session Date	Vasc Access Assessment – Pre-dialysis Assessment	Vasc Access Comments	Progress Note assessment	Post dialysis Cannulation /CVC Issue	Other
09/01/2000	CVC: - Dry and intact - Dressing changed	Nil	CVC dressing and Gentex changed. Hep locked post treatment.	No	
11/01/2000	Nil – not available	Nil	Nil	No	
13/01/2000	Missed dialysis session				
16/01/2000	CVC: - Dry and intact - Dressing changed	Nil	CVC dressing was clean and intact, no sign of infection	No	

Root Cause Analysis Findings

RCA Patient Incidents Main Findings	RCA Organisation Infection Rate Increase Main Findings
Dressing integrity	Patient engagement with pre-dialysis decreased over COVID-19 due to reduced number of field trips meaning increased number of patient not engaged with service and vascular access pre-dialysis
Patient non-attendance	Support services are a strengthening factor to the patient journey – e.g. vascular access, pre-dialysis, aboriginal care coordinators
Presence of two access sites (e.g. fistula and CVC)	Nil surgical capacity to remove CVC unless booked months in advance or emergency removal
Incomplete documentation on assessment and management of device	Environmental health: weather, housing, overcrowding
Limited staff education resources	Limited education and competency for staff
Lack of context and culturally appropriate patient education resources	Reporting processes through incident management system increased awareness and management
Recurrent and concurrent skin infections and environmental health issues	Documentation of CVC cares not capturing scope of required information and electronic medical record system not set up to capture two access site assessment per treatment
CVC removal wait time due to remote location	Compliance with policy and procedures and variability in interpretation of these
Chlorhexidine reactions	Chlorhexidine reactions and unclear alternative dressing plans

Implementation of Online Education Packages





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Haemodialysis Connection via Central Venous Catheter

S – Supervised I – Independent

Criteria	Date	Date	Date	
Expected Performance	S	S	I	Comments
Adheres to infection prevention and control best practice				
Performs procedure as per Doc_1012 'Haemodialysis – Commencement via central line catheter'				
Completes appropriate documentation on MMEX				

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What more?

- Focus on patient experience of managing infection risks, including invasive devices through consultation and research
- Would like to see AMS continue to grow with an inclusive approach for all health disciplines and with a patient comms element strengthened
- Continued collaboration with IP&C teams

References

- Western Australia Department of Health – Data – Community Acquired methicillin-resistant Staphylococcus aureus (CA-MRSA). Sourced from https://www.health.wa.gov.au/Reports-and-publications/ca-mrsa/data?report=mrsa_data

- Western Australia Department of Health. Infection Prevention, Policy and Surveillance Unit – HD-BSI data supplied 2024


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