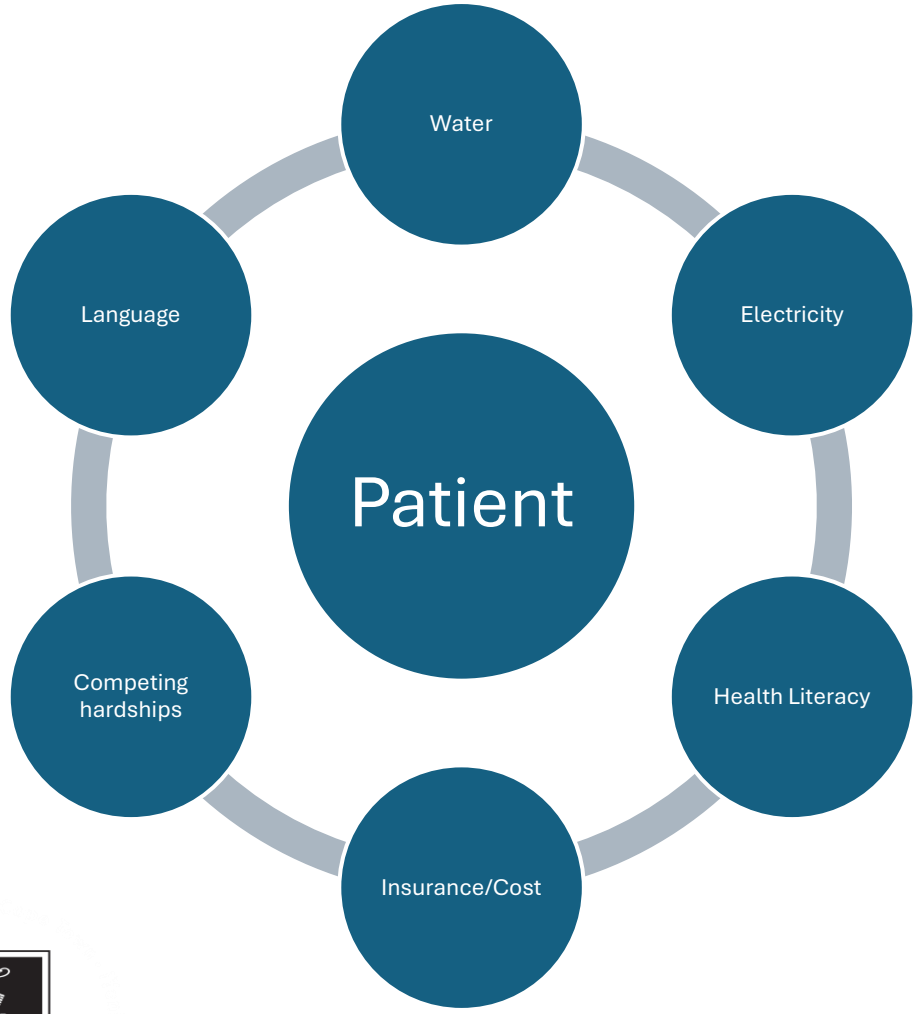
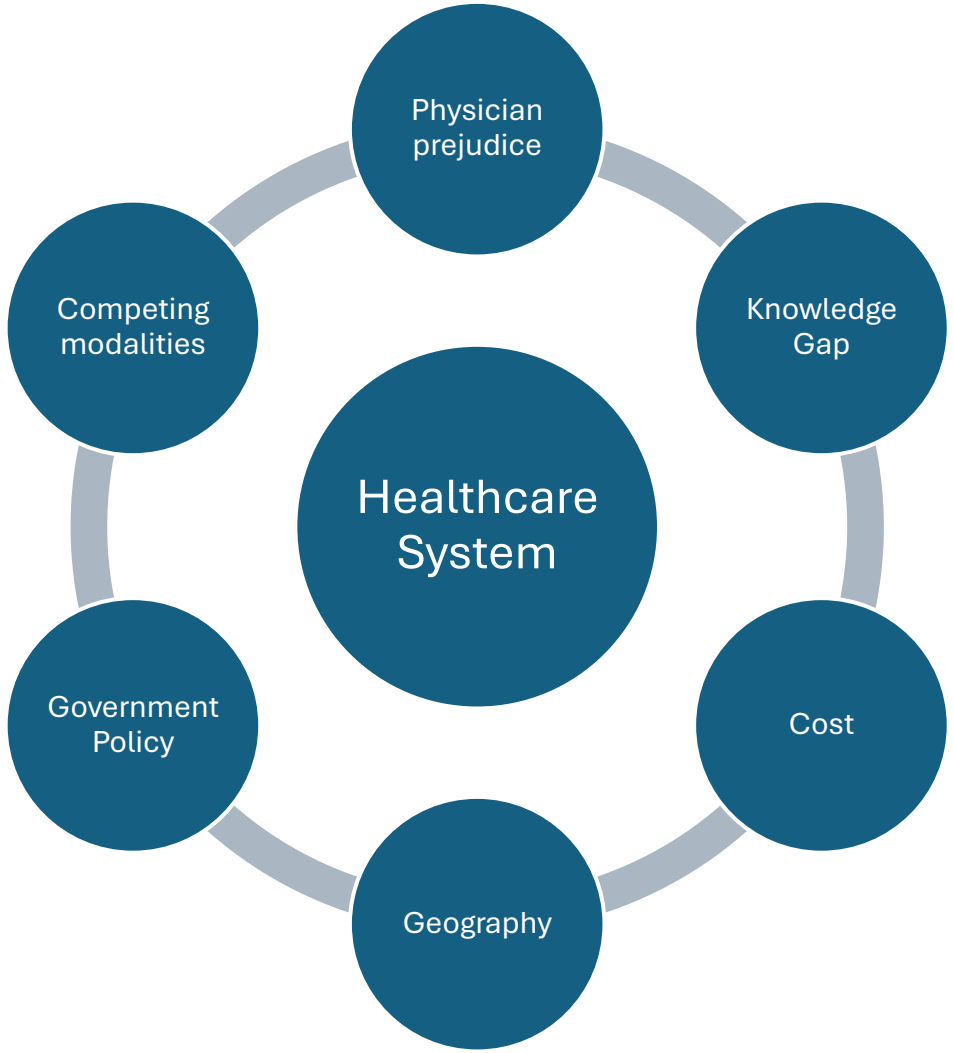
Strategies to Promote Implementation of Home-Based Dialysis Therapy in Low Resource Settings

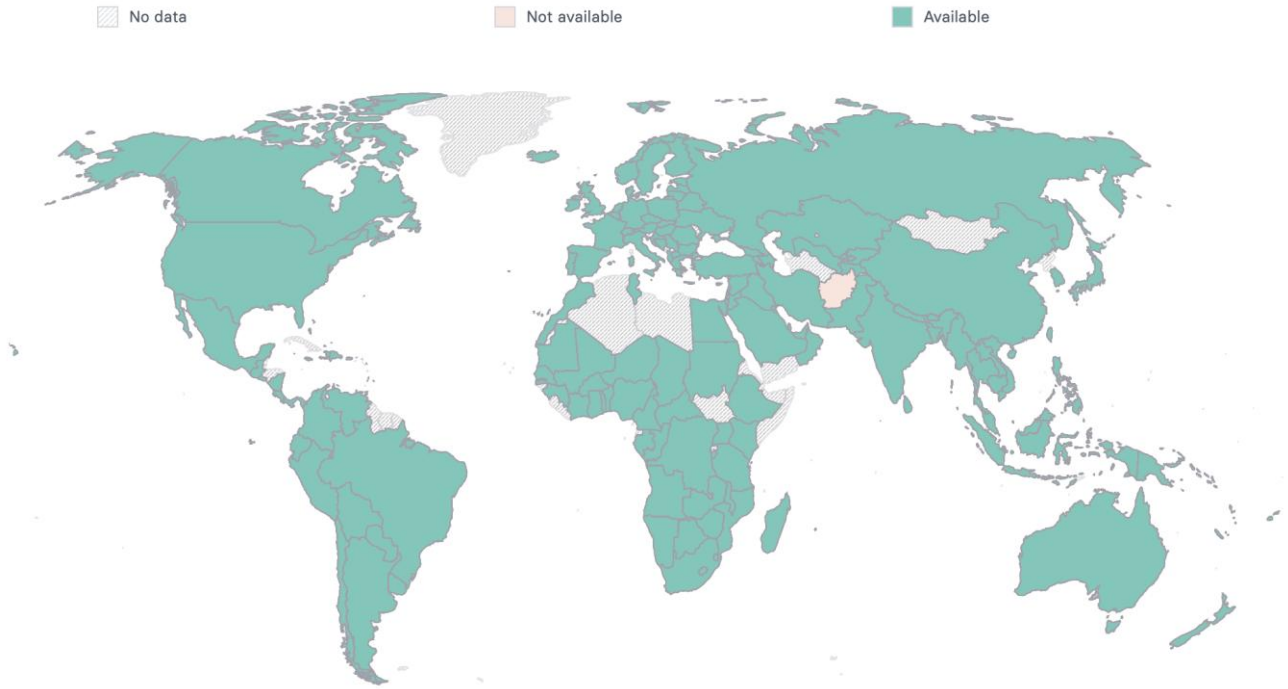
Brett Cullis

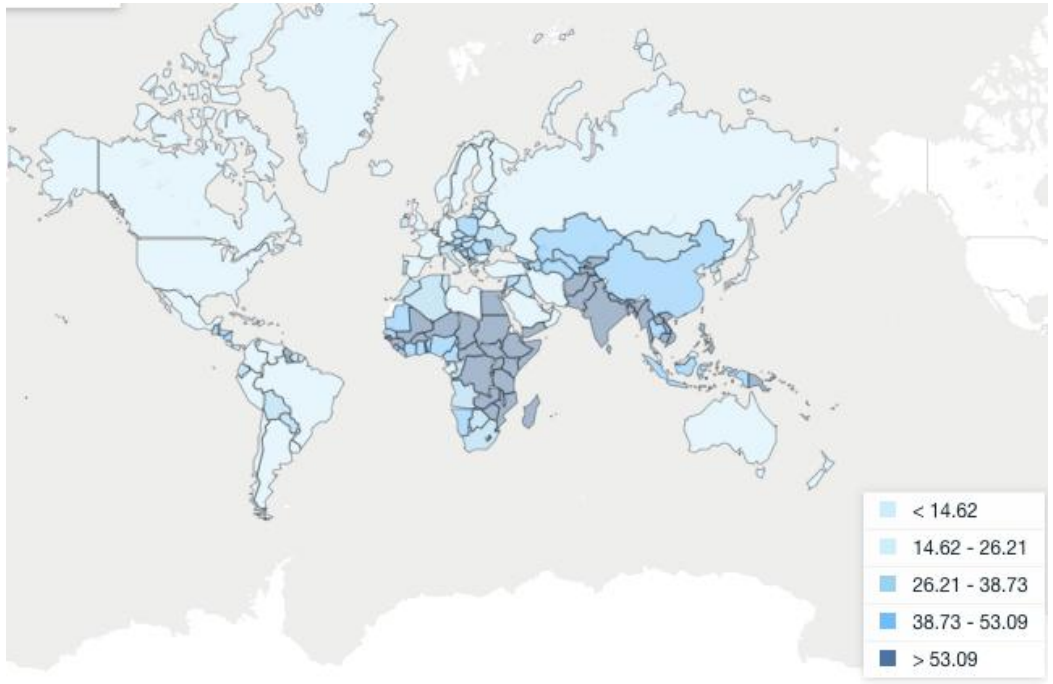
Barriers to PD in Low-Resource Environments





What is the alternative?

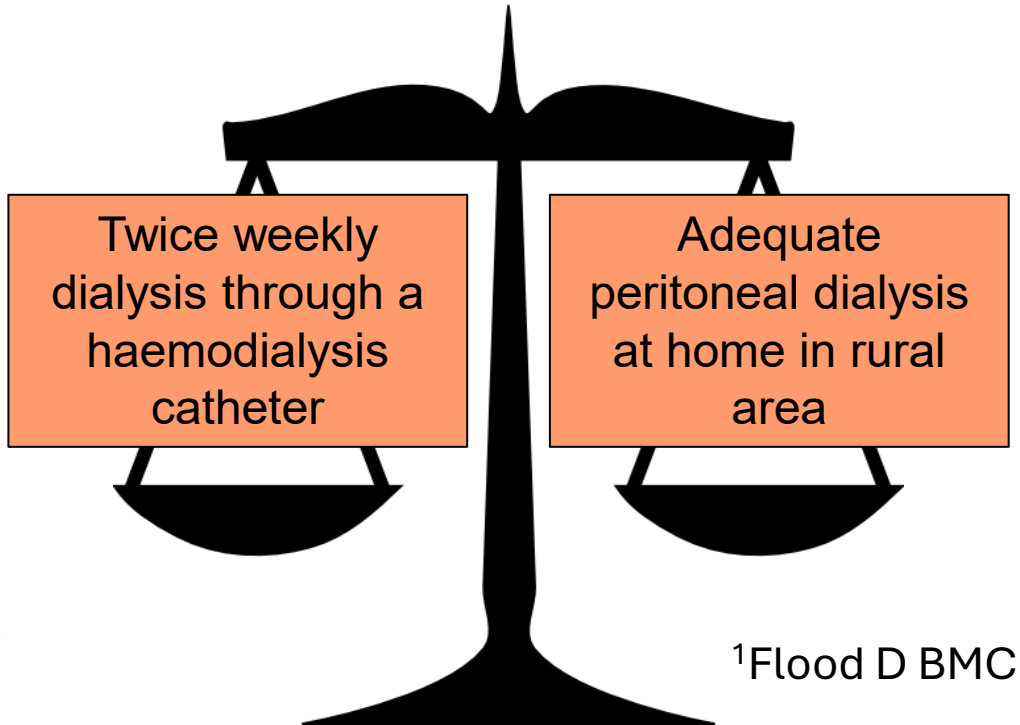


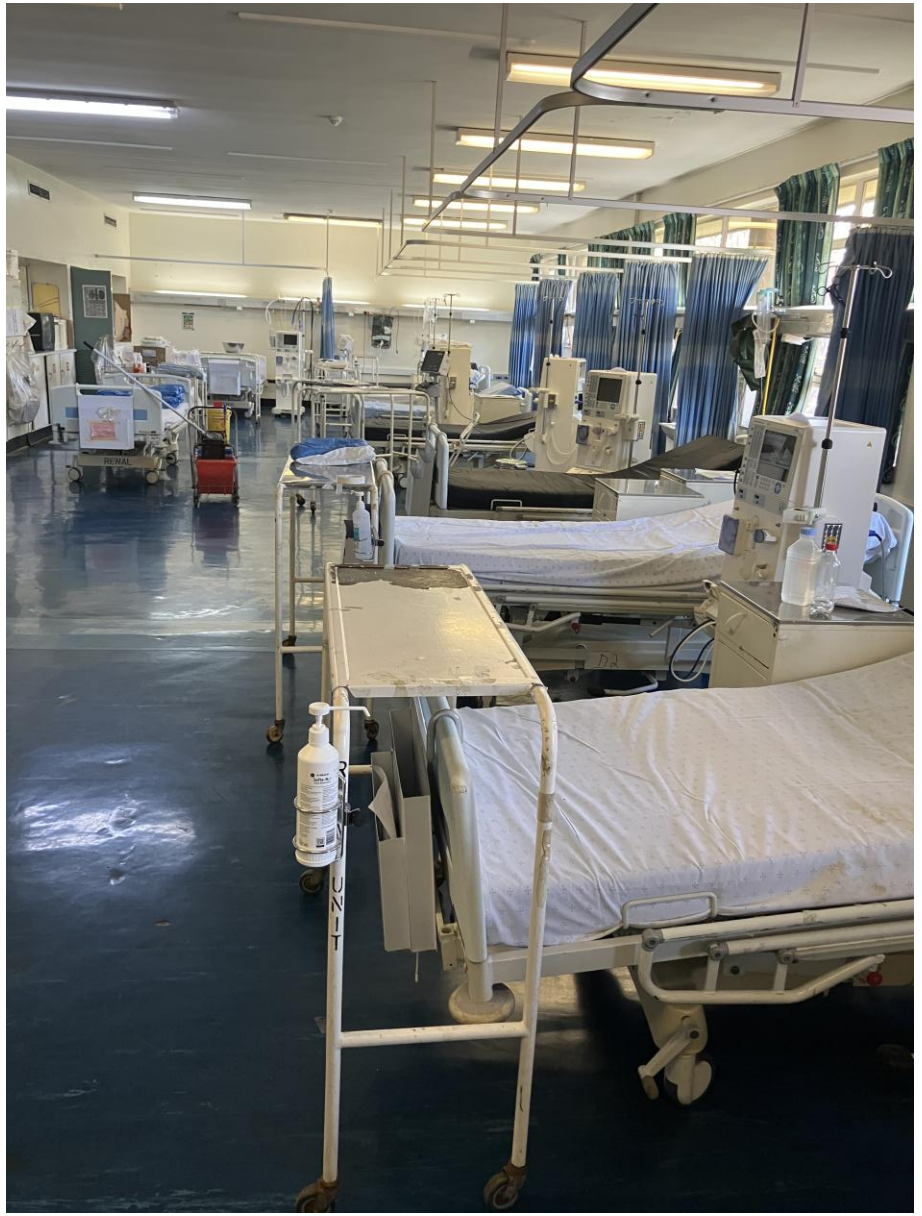


GKHA 2023, World Bank Report, KI Reports 2021

What is the alternative?

- Reduced frequency or adequacy [1,2]
- Temporary vascular access
- Poor water quality [3]
- High out of pocket expenses incl transport
- Social upheaval and loss of employment



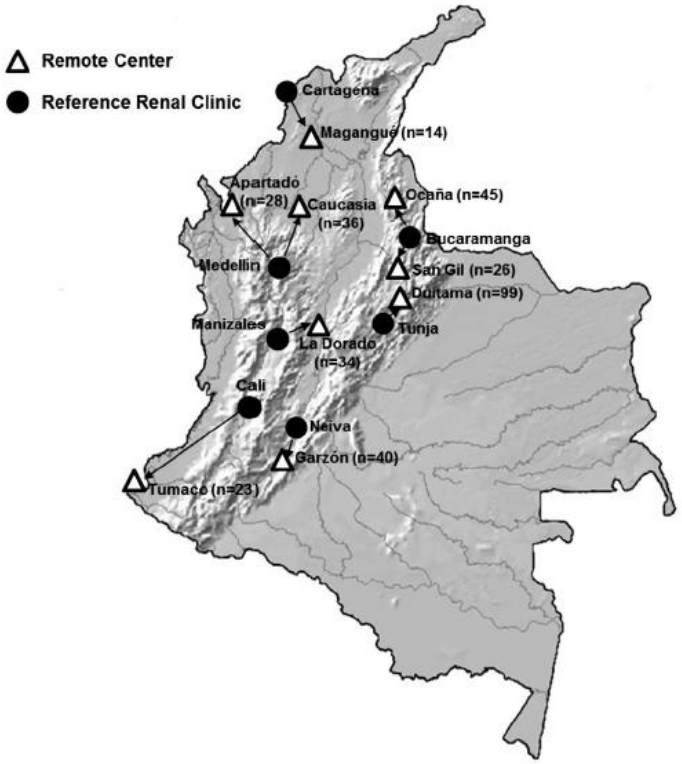


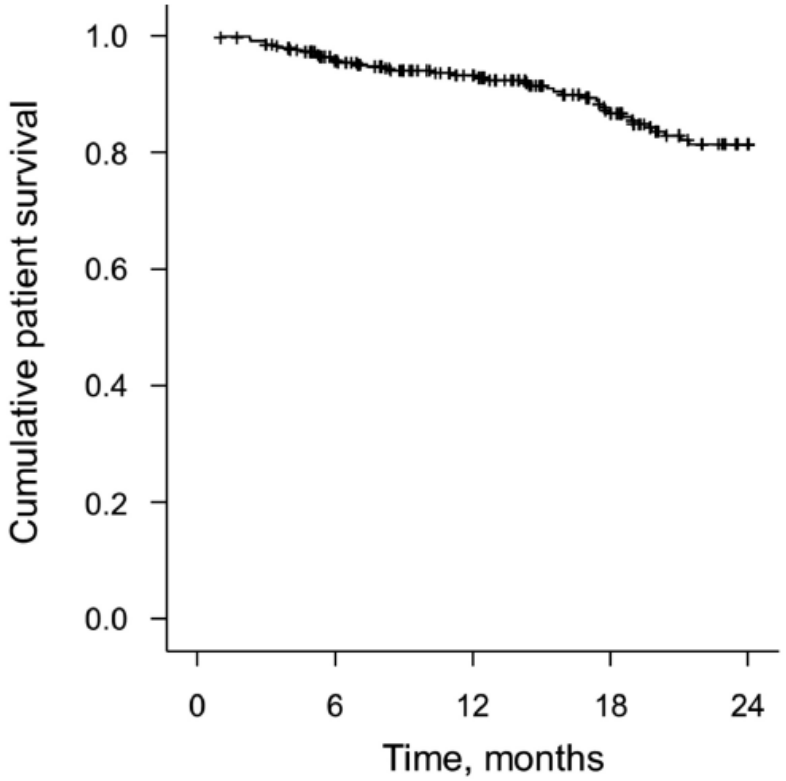
[1]Flood D BMC Nephrol 2020, [2]Htay H AJKD 2021, [3]Cullis B Kidney Int 2024

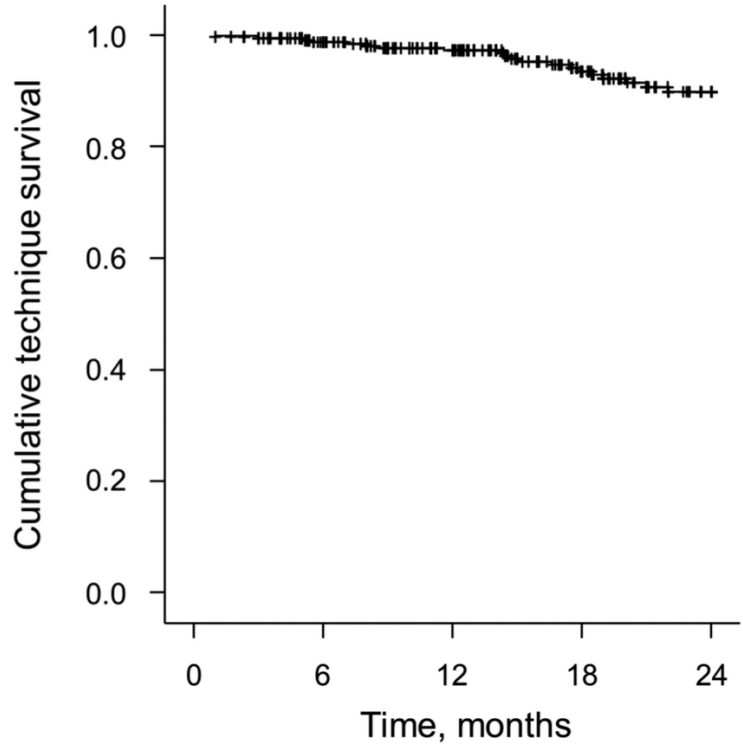
Is PD an option?

OUTCOMES OF A PERITONEAL DIALYSIS PROGRAM IN REMOTE COMMUNITIES WITHIN COLOMBIA

Mauricio Sanabria,[1] Martha Devia,[1] Gilma Hernández,[2] Kindar Astudillo,[1] Carlos Trillos,[2]
Mauricio Uribe,[1-3] Catalina Latorre,[2] Astrid Bernal,[1] and Angela Rivera,[3]
on behalf of the local investigators in the study







Perit Dial Int 2015

Strategies to promote PD uptake

- Patient related factors
  - Enhanced education and healthcare worker support
- Clinician related factors
  - Manpower investment, role shifting and education
  - Clinical team perception
  - PD Access teams/investment
- Fluid procurement and Distribution
- Policy development with bilateral collaboration

Support for the patient

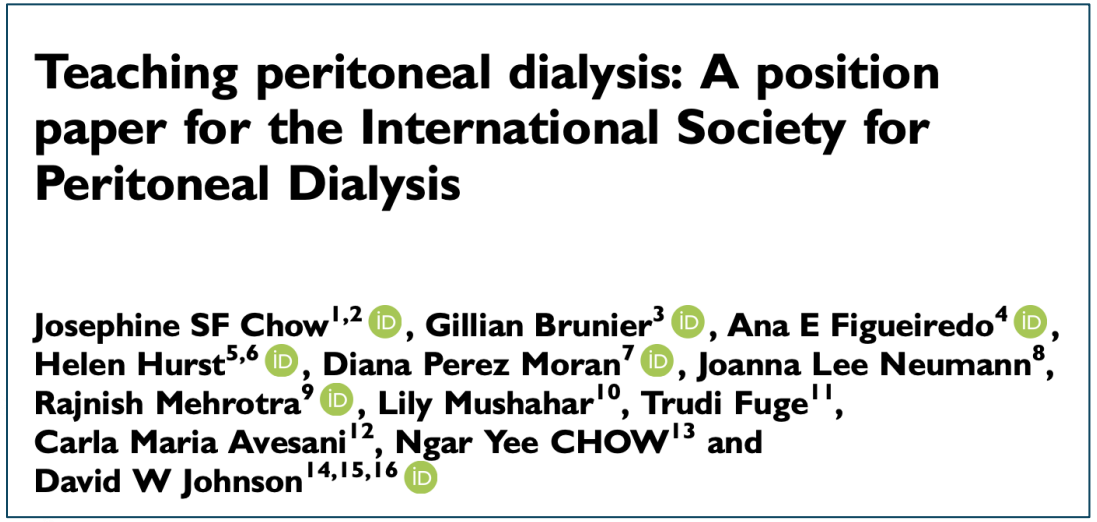
Virtual home visits

HAND HYGIENE IN PERITONEAL DIALYSIS PATIENTS: A COMPARISON OF TWO TECHNIQUES

Ana Elizabeth Figueiredo,[1,2] Soraia Lemos de Siqueira,[2] Carlos Eduardo Poli-de-Figueiredo,[2] and Domingos O. d'Avila[2]

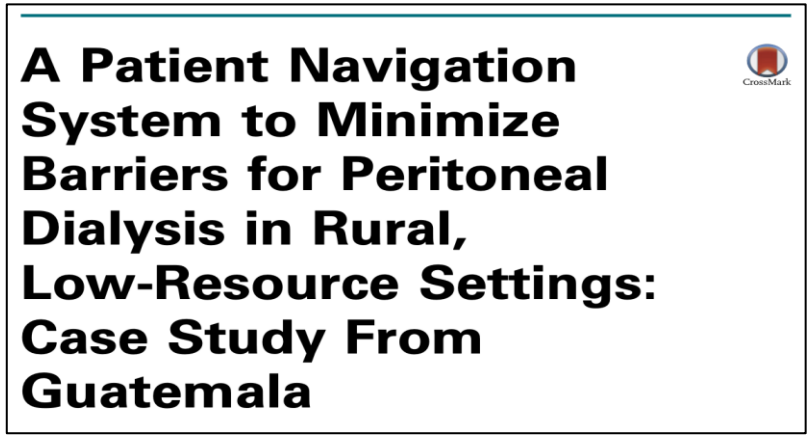
Enhanced Training

- Virtual home visit before training to troubleshoot
- Ensuring training in home language
- Tailored to level of literacy
- Focus on flexibility and boundaries



Teaching peritoneal dialysis: A position paper for the International Society for Peritoneal Dialysis

Josephine SF Chow[1,2], Gillian Brunier[3], Ana E Figueiredo[4], Helen Hurst[5,6], Diana Perez Moran[7], Joanna Lee Neumann[8], Rajnish Mehrotra[9], Lily Mushahar[10], Trudi Fuge[11], Carla Maria Avesani[12], Ngar Yee CHOW[13] and David W Johnson[14,15,16]



A Patient Navigation System to Minimize Barriers for Peritoneal Dialysis in Rural, Low-Resource Settings: Case Study From Guatemala

Chow J Perit Dial Int 2025, Flood, D KI Reports 2017

Leverage charitable support

Tackling the Fallout From Chronic Kidney Disease of Unknown Etiology: Why We Need to Focus on Providing Peritoneal Dialysis in Rural, Low-Resource Settings

Nishanthe Nanayakkara[1], A.W.M. Wazil[1], Lishanthe Gunerathne[2], Sewmini Dickowita[1], Robert Rope[3], Charaka Ratnayake[1], Anjali Saxena[3,4] and Shuchi Anand[3]

KI Reports 2017

Nephrol Dial Transplant (2001) 16: 2395–2400

Nephrology Dialysis Transplantation

Original Article

An African community-based chronic ambulatory peritoneal dialysis programme

Ivor J. Katz, Lana Sofianou and Mark Hopley

Division of Nephrology, Department of Medicine, Chris Hani Baragwanath Hospital Renal Unit, University of the Witwatersrand, Soweto, South Africa

No relationship of peritonitis to housing or education level

Peritonitis rate – 1:27 months

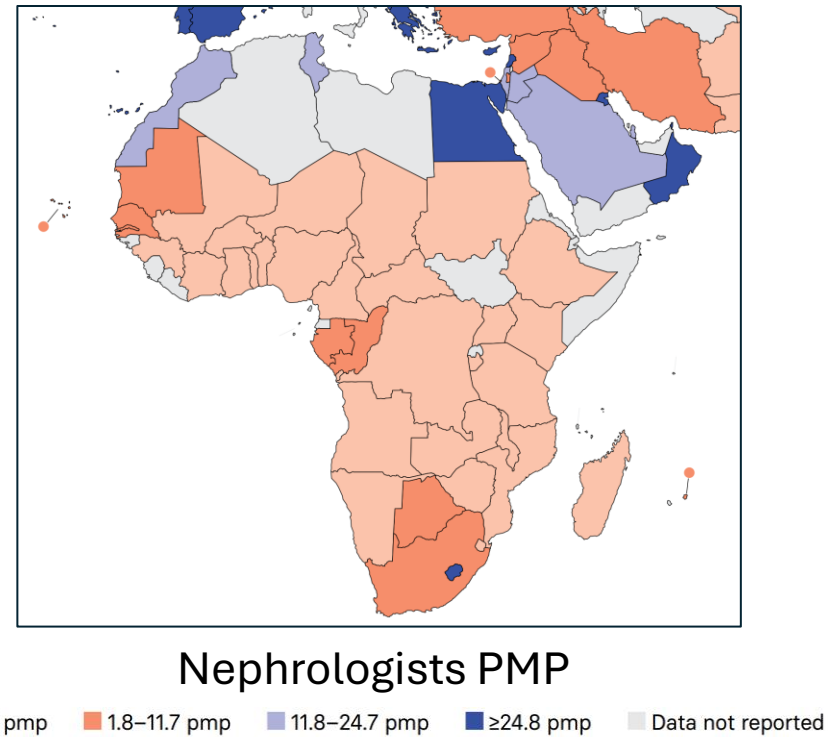
Table 2. Housing conditions, education, and employment

Category	Type	Per cent (%)
Housing conditions	Brick	63
	Shack	19
	Flat	5
	Room	8
	Other	5
Level of education	Primary	25
	Secondary	62
	Tertiary	8
	Unknown	5
Employment	Unemployed	49
	Employed	43
	Students	8

Clinician Related Factors

Nephrologists

- Nephrologists are often migratory and scarce in many countries
- Dialysis patients often treated by non-nephrologist physicians
- PD not incorporated in the curriculum for postgraduate training



Solution:

- Incorporation of PD training in the curriculum – IHDC Manifesto
- ISPD/ISN/IPNA fellowships
- Short term fellowship training for non-nephrologist physicians
- Guidelines and protocols
- Acute PD as a launch platform

Role shifting

- **Nurse led PD programs**
- **Hub and spoke models**

1

ISPD INTERNATIONAL SOCIETY FOR PERITONEAL DIALYSIS

S.E.N. Sociedad Española de Nefrología

Directrices de la ISPD para la diálisis peritoneal en la lesión renal aguda: actualización de 2020 (adultos)

Brett Cullis, https://orcid.org/0000-0001-8909-686X [1,(2] , Abdullah Al-Hwiesh https://orcid.org/0000-0001-5494-1963[(3)], Kajiru Kilonzo[(4)], Mignon McCulloch https://orcid.org/0000-0003-2876-4785[(2)], Abdou Niang[5], Peter Nourse https://orcid.org/0000-0002-5456-4456[2], Watanyu Parapiboon https://orcid.org/0000-0001-8758-7382[68], Daniela Ponce https://orcid.org/0000-0002-6178-6938[7], y Fredric O Finkelstein https://orcid.org/0000-0003-3086-3977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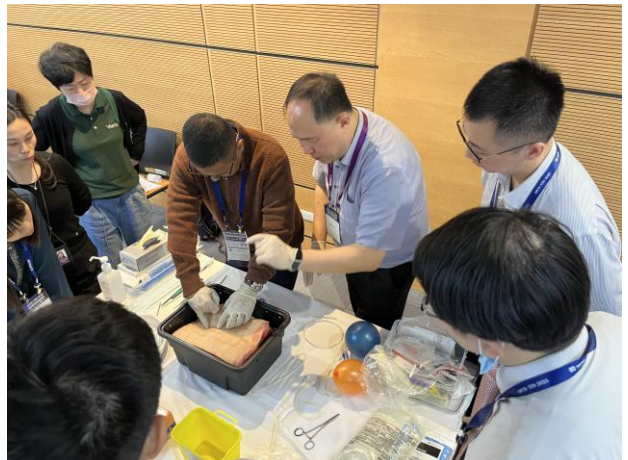
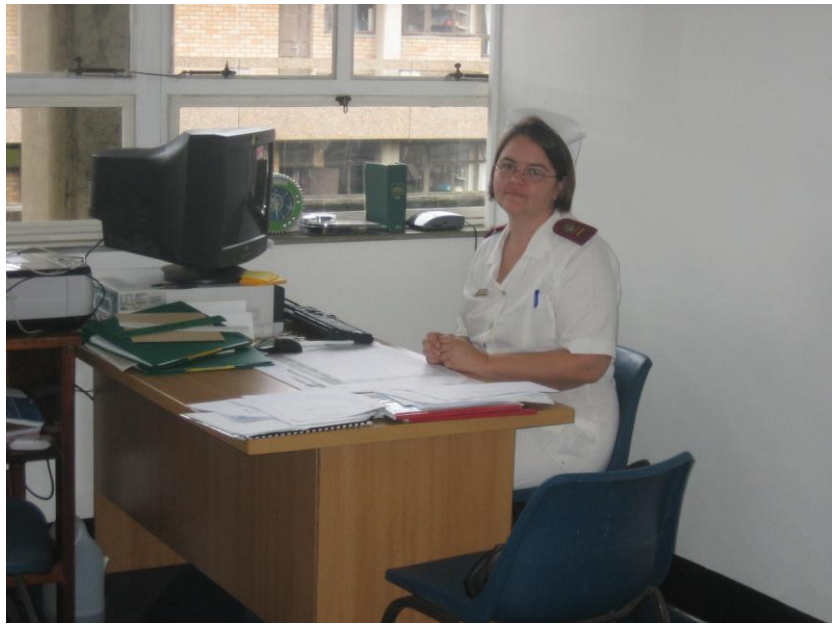


Nurse Led PD programs

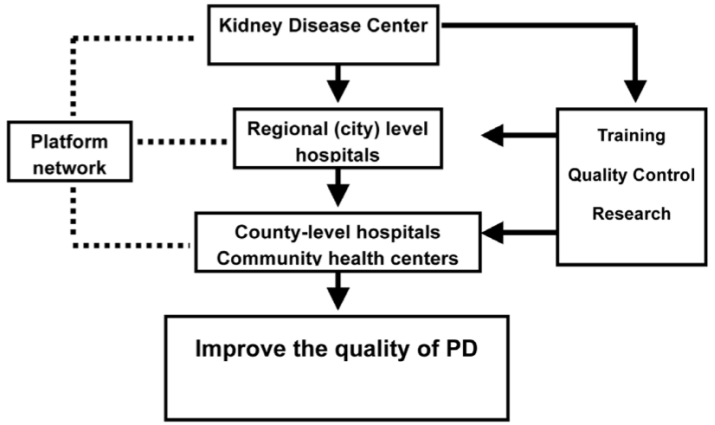
- PD is ideally suited to management by advanced nurse practitioners with indirect supervision and protocolization
- ANP have demonstrated clear benefits managing patients with CKD
- Limited written evidence in PD
- Local experience – PD nurse run program, 95 patients, 1 year – peritonitis rate 0.47 episode per year.

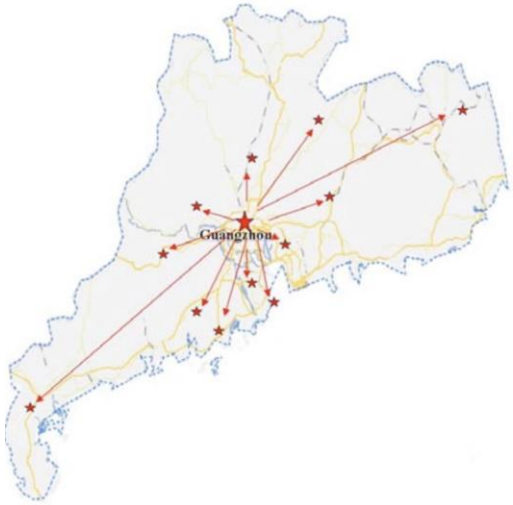


[1] Ju H J Clin Nurs 2017, [2] McCrory G J Ren Care 2018

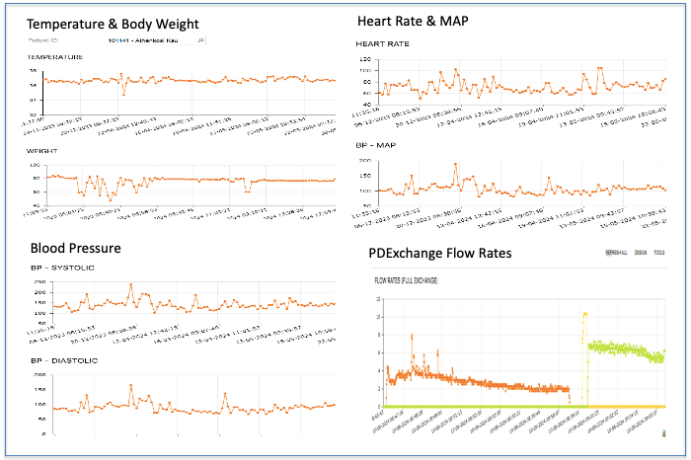
Hub and Spoke Model

- Central hospital responsible for PD access, training, troubleshooting and transplant workup
- Peripheral hospitals/PD centres managed by non-nephrologists or nurses trained for 3 months in central hospital.
  - Monthly visits and prescribing
  - Mild peritonitis
  - Catheter complications
- Preferably shared records





Jiang Z Perit Dial Int 2010, Zhang Perit Dial Int 2014

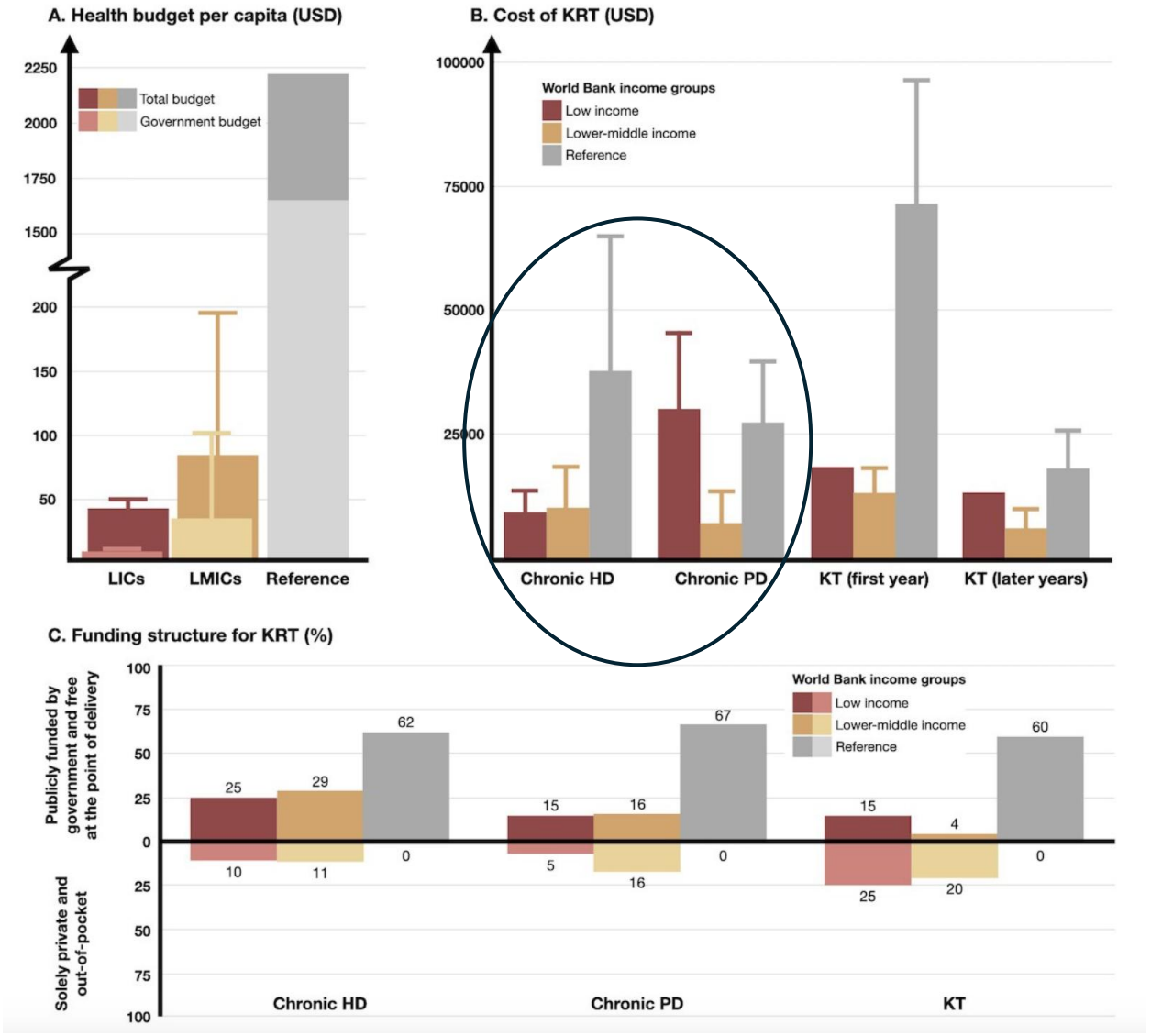


Sharesource

Vivatum Alba

Costs of PD

- High cost of importing fluid
- Corruption
- “Middle-man” scenario



Nkunu V Plos Global Health 2024

Solution: Costs of PD

- Engage with health ministry
- Build an economy of scale (PD first)
- Nurse:Patient Ratio significantly lower with PD
- Local production of PD fluid is not necessarily the answer
- Reminder of the costs of inadequate HD

Inadequate dialysis – recurrent admissions for fluid overload or sepsis

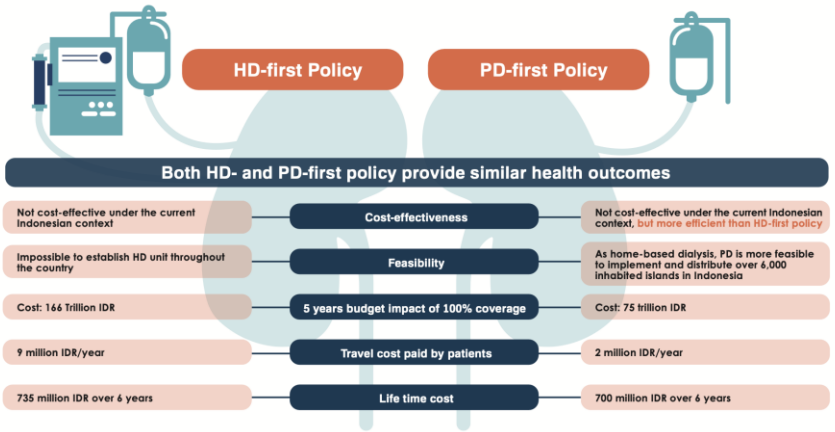
Temporary vascular access – bacteraemia and central vein occlusion

Poor quality consumables- wastage and morbidity

Inadequate training of nurses in PD – increased peritonitis rates

Poor dialysis water quality – chronic inflammation and high use of Erythropietin Stimulating Agents (ESA's)

Figure 11. Health Technology Assessment for dialysis for patients with kidney failure in Indonesia



RESEARCH Open Access

Cost-effectiveness and budget impact analysis of peritoneal dialysis and haemodialysis in South Africa

Evelyn Thsehla[1*], Micheal Kofi Boachie[1] and Susan Goldstein[1]

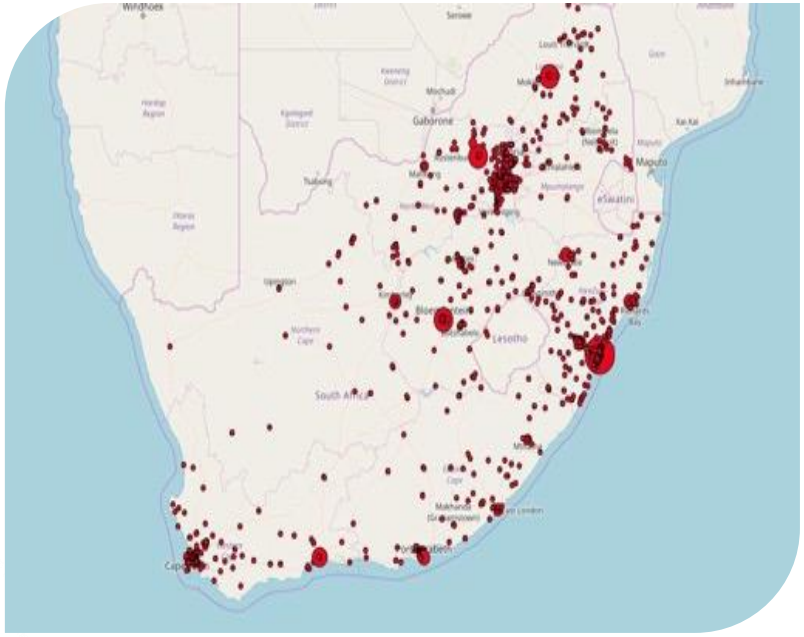
Table 3 Budget impact

Year	88% HD and 12% PD	70% HD and 30% PD	HD only	PD only	50% HD and 50% PD
1	4 544 659 926	4 355 173 124,21	4 670 984 460	3 618 280 008	4 144 632 234
2	4 839 927 666	4 602 946 120,01	4 997 915 363	3 681 351 219	4 339 633 291
3	5 129 621 138	4 845 380 786,58	5 319 114 706	3 740 001 642	4 529 558 174
4	5 413 865 949	5 082 640 420,15	5 634 682 969	3 794 541 140	4 714 612 054
5	5 194 147 912	4 872 221 201,83	5 408 765 718	3 620 283 997	4 486 884 014
Total	25 122 222 591	23 758 361 652,79	26 031 463 216	18 454 458 006	22 215 319 768

ISN Framework for Developing Dialysis Programs in Low Resource Settings, BMC Health Service Research 2025

Fluid Distribution

- Needs to form part of the supply of fluids or be built into the funding model
- Geolocation for fluid deliveries has simplified this signifcantly



1600km

Advocacy

1. Team based approach
2. Lobby with patient groups
3. Target import tariffs, middlemen and central procurement
4. Produce roadmaps to policy makers
5. Focus on PD as a modality not a consumable

30 September – 3 October 2026

ISPD 2026 CONGRESS

Cape Town International Convention Centre (CTICC)

Cape Town, South Africa

In conjunction with the South African Renal Congress




www.ispd2026.org.za