The South African and African Renal Registries



Razeen Davids, Julian Jacobs, Sajith Sebastian

An epidemic of CKD

More than 500 million people, or **about one adult in ten**, have some form of chronic kidney disease



60% of all deaths are due to chronic diseases

Articles

The epidemiology of chronic kidney disease in sub-Saharan Africa: a systematic review and meta-analysis



Summary

Background Amid rapid urbanisation, the HIV epidemic, and increasing rates of non-communicable diseases, people in sub-Saharan Africa are especially vulnerable to kidney disease. Little is known about the epidemiology of chronic kidney disease (CKD) in sub-Saharan Africa, so we did a systematic review and meta-analysis examining the epidemiology of the disease.

Methods We searched Medline, Embase, and WHO Global Health Library databases for all articles published through March 29, 2012, and searched the reference lists of retrieved articles. We independently reviewed each study for quality. We used the inverse-variance random-effects method for meta-analyses of the medium-quality and highquality data and explored heterogeneity by comparing CKD burdens across countries, settings (urban or rural), comorbid disorders (hypertension, diabetes, HIV), CKD definitions, and time.

Findings Overall, we included 90 studies from 96 sites in the review. Study quality was low, with only 18 (20%) medium-quality studies and three (3%) high-quality studies. We noted moderate heterogeneity between the medium-quality and high-quality studies (n=21; I^2 =47·11%, p<0·0009). Measurement of urine protein was the most common method of determining the presence of kidney disease (62 [69%] studies), but the Cockcroft-Gault formula (22 [24%] studies) and Modification of Diet in Renal Disease formula (17 [19%] studies) were also used. Most of the studies were done in urban settings (83 [93%] studies) and after the year 2000 (57 [63%] studies), and we detected no significant difference in the prevalence of CKD between urban (12 · 4%, 95% CI 11–14) and rural (16 · 5%, 13 · 8–19 · 6) settings (p=0 · 474). The overall prevalence of CKD from the 21 medium-quality and high-quality studies was 13 · 9% (95% CI 12 · 2–15 · 7).

Interpretation In sub-Saharan Africa, CKD is a substantial health burden with risk factors that include communicable and non-communicable diseases. However, poor data quality limits inferences and draws attention to the need for more information and validated measures of kidney function especially in the context of the growing burden of non-communicable diseases.





Lancet Glob Health 2014; 2: e174–181

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This online publication has been corrected. The corrected version first appeared at thelancet.com/lancet.gh on April 24, 2014

See Comment page e124

Department of Medicine (J W Stanifer MD, S Tolan MD, U Patel MD), Duke Global Health Institute (J W Stanifer), Department of Biostatistics (B Jing BS), School of Medicine (N Helmke BS), and Duke Clinical Research Institute (R Mukerjee MD, U Patel), Duke University, Durham, NC, USA; and Department of Internal Medicine, University of Witwatersrand, Johannesburg, South Africa (Prof S Naicker MBChB)

Correspondence to: Dr John W Stanifer, Duke University Medical Center,

W Health in South Africa 4

The burden of non-communicable diseases in South Africa

Bongani M Mayosi, Alan J Flisher, Umesh G Lalloo, Freddy Sitas, Stephen M Tollman, Debbie Bradshaw

Lancet 2009; 374: 934-47

Published Online August 25, 2009 DOI:10.1016/S0140-6736(09)61087-4

See Online/Comment DOI:10.1016/S0140-6736(09)61306-4

This is the fourth in a **Series** of six papers on health in South Africa

Department of Medicine, Groote Schuur Hospital and University of Cape Town, Cape Town, South Africa (Prof B M Mayosi DPhil); Division of Child and Adolescent Psychiatry, Red Cross War Memorial Children's Hospital and University of Cape Town, Cape Town, South Africa (Prof A J Flisher PhD); Department of Medicine, Inkosi Albert Luthuli Central Hospital and Nelson R Mandela School of Medicine, University 15 years after its first democratic election, South Africa is in the midst of a profound health transition that is characterised by a quadruple burden of communicable, non-communicable, perinatal and maternal, and injury-related disorders. Non-communicable diseases are emerging in both rural and urban areas, most prominently in poor people living in urban settings, and are resulting in increasing pressure on acute and chronic health-care services. Major factors include demographic change leading to a rise in the proportion of people older than 60 years, despite the negative effect of HIV/AIDS on life expectancy. The burden of these diseases will probably increase as the roll-out of antiretroviral therapy takes effect and reduces mortality from HIV/AIDS. The scale of the challenge posed by the combined and growing burden of HIV/AIDS and non-communicable diseases demands an extraordinary response that South Africa is well able to provide. Concerted action is needed to strengthen the district-based primary health-care system, to integrate the care of chronic diseases and management of risk factors, to develop a national surveillance system, and to apply interventions of proven cost-effectiveness in the primary and secondary prevention of such diseases within populations and health services. We urge the launching of a national initiative to establish sites of service excellence in urban and rural settings throughout South Africa to trial, assess, and implement integrated care interventions for chronic infectious and non-communicable diseases.

Introduction

South Africa is in the midst of a health transition that is characterised by the simultaneous occurrence of epidemic infectious diseases and a rise in non-communicable diseases, in a population facing a heavy burden of perinatal and maternal disorders, injury, and violence.¹⁻³ Cardiovascular disease, type 2 diabetes, cancer, chronic lung non-communicable diseases that confronts contemporary South Africa and makes recommendations to deal with the burden. We have used information from several key sources (panel 1), including the national burden of disease study, Statistics South Africa, the South African demographic and health surveys (SADHS), populationbased demographic surveillance systems, and sur-



Figure 2: Age-standardised mortality rates for broad cause groups by subdistrict, Cape Town 2006

in subsequent years (figure 3).⁶⁵ By contrast, sustained increases were seen for diabetes (38%), hypertensive heart disease (20%), ill-defined heart diseases (23%), and kidney disease (67%) from 1999 to 2006 (figure 3). These increases in mortality have prompted several calls for action to revent the impending epidemic of cardiovascular and metabolic disease in sub-Saharan Africa.^{53,66}

Clinical Kidney Journal Advance Access published January 17, 2017



Clinical Kidney Journal, 2016, 1–7

doi: 10.1093/ckj/sfw138 Original Article

ORIGINAL ARTICLE

Prevalence of chronic kidney disease and association with cardiovascular risk factors among teachers in Cape Town, South Africa

Aderemi B. Adeniyi¹, Carien E. Laurence², Jimmy A. Volmink^{2,3} and M. Razeen Davids¹

¹Division of Nephrology, Department of Medicine, Stellenbosch University and Tygerberg Hospital, Cape Town, South Africa, ²Centre for Evidence-based Health Care, Faculty of Medicine and Health Sciences, Stellenbosch University, Cape Town, South Africa and ³South African Cochrane Centre, South African Medical Research Council, Cape Town, South Africa

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Prevalence of CKD = 6.1%



RESEARCH ARTICLE

Open Access

Chronic kidney diseases in mixed ancestry south African populations: prevalence, determinants and concordance between kidney function estimators

Tandi E Matsha¹⁺, Yandiswa Y Yako¹, Megan A Rensburg², Mogamat S Hassan³, Andre P Kengne^{4†} and Rajiv T Erasmus^{2*†}

Prevalence of CKD = 17.3%

Renal replacement therapy ... a story of limited access







Expensive, variable government support

Half of dialysis patients in just 4 countries: Japan, USA, Brazil, Germany

Near zero in many African countries

Grassmann et al. Nephrology Dialysis Transplantation 2005

The Gap between Estimated Incidence of End-Stage Renal Disease and Use of Therapy

Shuchi Anand¹, Asaf Bitton², Thomas Gaziano³*

1 Division of Nephrology, Department of Medicine, Stanford University School of Medicine, Stanford, California, United States of America, 2 Division of General Medicine, Brigham and Women's Hospital, Harvard Medical School, Boston, Massachusetts, United States of America, 3 Cardiovascular Medicine, Brigham & Women's Hospital, Harvard Medical School, Boston, Massachusetts, United States of America

PLOS ONE

Abstract

Background: Relatively few data exist on the burden of end-stage renal disease (ESRD) and use of renal replacement therapy (RRT)-a life-saving therapy-in developing regions. No study has quantified the proportion of patients who develop ESRD but are unable to access RRT.

Methods: We performed a comprehensive literature search to estimate use and annual initiation of RRT worldwide, and present these estimates according to World Bank regions. We also present estimates of survival and of etiology of diseases in patients undergoing RRT. Using data on prevalence of diabetes and hypertension, we modeled the incidence of ESRD related to these risk factors in order to quantify the gap between ESRD and use of RRT in developing regions.

Results: We find that 1.9 million patients are undergoing RRT worldwide, with continued use and annual initiation at 316 and 73 per million population respectively. RRT use correlates directly (Pearson's r=0.94) with regional income. Hemodialysis remains the dominant form of RRT but there is wide regional variation in its use. With the exception of the Latin American and Caribbean region, it appears that initiation of RRT in developing regions is restricted to fewer than a quarter of patients projected to develop ESRD. This results in at least 1.2 million premature deaths each year due to lack of access to RRT as a result of diabetes and elevated blood pressure and as many as 3.2 million premature deaths due to all causes of ESRD.

Conclusion: Thus, the majority of patients projected to reach ESRD due to diabetes or hypertension in developing regions are unable to access RRT; this gap will increase with rising prevalence of these risk factors worldwide.

Citation: Anand S, Bitton A, Gaziano T (2013) The Gap between Estimated Incidence of End-Stage Renal Disease and Use of Therapy. PLoS ONE 8(8): e72860. doi:10.1371/journal.pone.0072860

Uses of disease registries

Powerful tool to study:

course of disease; care patterns, including disparities in delivery; factors that influence prognosis and quality of life; variations in treatment and outcomes; assess effectiveness and safety of therapies; improve standards through feedback of data



improving <u>access</u> to and <u>quality</u> of dialysis and transplantation services

TÜRK NEFROLOJİ DERNEĞİ YAYINLARI PUBLISHED BY THE TURKISH SOCIETY OF NEPHROLOGY



Latin American Dialysis and Transplant Registry: 200 prevalence and incidence of end-stage renal diseas and correlation with socioeconomic indexes

Ana M. Cusumano¹, Guillermo Garcia-Garcia², Maria C. Gonzalez-Bedat³, Sergio Marinovich⁴, Jocemir Lugon⁵, Hugo Poblete-Badal⁶, Susana Elgueta⁶, Rafael Gomez⁷, Fabio Hernandez-Fonseca⁸, Miguel Almaguer⁹, Sandra Rodriguez-Manzano¹⁰, Nelly Freire¹¹, Jorge Luna-Guerra¹², Gaspar Rodriguez-Tommaso Bochicchio¹⁴, Cesar Cuero¹⁵, Dario Cuevas¹⁶, Carlos Pereda¹⁷ and Raul Carlini¹⁸

TÜRKİYE'DE NEFROLOJİ, DİYALİZ VE TRANSPLANTAS

REGISTRY OF THE NEPHROLOGY, AND TRANSPLANTATION IN TURI

19[™]REPORT OF THE MALAYSIAN DIALYSIS & TRANSPLANT REGISTRY 2011

USRDS 2013 Annual Data Report Overview

Scottish Renal Registry Report 2011

With demographic data to 2011 and audit data to 2012



Allan J. Collins, MD, FACP Professor of Medicine University of Minnesota

Director, United States Renal Data System Coordinating Center

Minneapolis, Minnesota

African renal registries

Many not sustainable.

SA Dialysis and Transplant Registry established in 1977. Last data 1994 then almost two decades without data on RRT.





USRDS Report

Chapter on international comparisons

Prevalence of ESRD, 2011 Rate per million population

No data from Africa





South African Dialysis and Transplantation Registry

Julian Jacobs Razeen Davids



26 November 2005

SARS Renal Forum

The new South African Renal Registry



Secure Web-based platform

Central server housing the data Data encrypted and password-protected

The Team

Chairs: Drs Jacobs and Davids Directors: Drs Jacobs, Davids, Sebastian

JHB: Developer – Stefano Mestriner Data manager – Nicola Marais Data capturer – Susan Baloyi

CPT: Data manager Volunteers, students



Funding

Department of Health: R350,000 p.a. Industry: approx. R200,000 p.a. data capture help

Stellenbosch University: office, students, staff (1 day/week)

South African Renal Society



SOUTH AFRICAN RENAL REGISTRY



AFRICAN RENAL REGISTRY December 2016 year-end assessments are now due! Please note that December 2017 assessments should be captured from 01 December 2017 to 31 January 2018. NB: The Registration of new patients, Transfers, End of Treatment entries and Transplant Procedures should be completed as these events occur, or at least monthly

Username:	razeendavids	
Password:	•••••	

Log in

Only authorised personnel may access the Registry, logging in with the username and password provided. For security, an audit trail of all activity is recorded. This includes the IP address of the computer used to gain access.

Please contact Nicola Marais if any assistance is required.

nicola.marais@gmail.com

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		Year-end assessr	nents		
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2014/12/31	TX	Davids, Razeen	Tygerberg Hospital		
2013/12/31	ТХ	Davids, Razeen	Tygerberg Hospital		
2012/12/31	TX	Davids, Razeen	Tygerberg Hospital		Ŧ
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Add new assessment

View / Edit assessment

Transplant procedures

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 Transplant centre
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Reports

Delete

PATIENT ANNUAL ASSESSMENT FORM										
(Data as at 31 December, or closest available data)										
ID number (or passport no.)					As	sessmer	nt date:			
Last name					Fir	st Name	e:			
City of residence										
Province of	East Cape	Free State	Gaute	eng KZN	Li	impopo N	lpumalanga	North V	Vest North Cape	West Cape
residence										
CURRENT modality	🗖 Haemo	dialysis 🛙	HDF	HomeHD	-				Transplant	-
Current Rx Unit										
Sector	D Public s	ector		Private se	ctor		Ē] Public	>Private Initiativ	2
Doctor				-						

Comorbidity – current status

	Not diabetic	Unknown	Type 1 DM	Type 2 DM	Post-transplant DM	Diabetic, type unknown	
Diabetes status							
Hep B status	□ Negative	Negative 🗖 Immune		D Pos	itive	Unknown	
Hep C status	□ Negative		D Pos	itive	Unknown		
HIV status	□ Negative			D Pos	itive	Unknown	

Additional information for patients on dialysis

Albumin (g/l):

Haemoglobin (g/dl):

Number of HD sessions/week (HD patients only):

First report: December 2012

(published 2014)



SOUTH AFRICAN Renal Registry Annual Report 2012

MR Davids, N Marais and JC Jacobs

© South African Renal Society 2014



SA Renal Registry 2017







Population data by province

	2017	2017 %
Eastern Cape	6.50	11.5
Free State	2.87	5.1
Gauteng	14.28	25.3
KwaZulu-Natal	11.07	19.6
Limpopo	5.78	10.2
Mpumalanga	4.44	7.9
North West	3.86	6.8
Northern Cape	1.21	2.1
Western Cape	6.51	11.5
Total	56.52	100.0

Stats SA: 2017 mid-year estimates

Population data by province

	1994	2017	∆ (%)
Eastern Cape	6.40	6.50	2
Free State	2.74	2.87	5
Gauteng	6.91	14.28	107
KwaZulu-Natal	8.53	11.07	30
Limpopo	5.23	5.78	10
Mpumalanga	2.93	4.44	52
North West	3.31	3.86	17
Northern Cape	0.74	1.21	64
Western Cape	3.65	6.51	78
Total	40.44	56.52	100

Stats SA: 2017 mid-year estimates

Population (millions) for 2017

Gender				
48.9%	51.1%			
Female	Male			

	2017	2017 %
Black	45.65	80.8
Coloured	4.96	8.8
White	4.49	8.0
Indian/Asian	1.41	2.5
Total	56.52	100.0

Stats SA: 2017 mid-year estimates

Treatment centres reporting data

	1994	2012	2014	2017	2017 %
Public sector	26	28	29		
Private sector	5	163	196		
Total	31	191	225		100.0

How many patients do we treat?



Prevalence of patients on RRT

	1994	2017
Population in millions	40.4	56.52
ESRD patients on treatment	2843	10553
Treatment rate (pmp)	70	187



Prevalence of ESRD patients on RRT 2016

Rate per million population, USRDS Report

4,000



Prevalence of ESRD patients on RRT 2016

Rate per million population, USRDS Report

4,000

Prevalence by sector

	Public	Private
Population in millions	47.65	8.87*
ESRD patients on treatment	3135	7418
Treatment rate (pmp)	66	836

* Council for Medical Schemes Annual Report 2017/18



Public	Private
66	836


How many patients should we be treating?

	GNI per capita US\$	Prevalence
Bangladesh	1330	119
Indonesia	3540	206
Philippines	3850	319
Colombia	6310	624
Egypt	3410	624
Thailand	5640	1485
South Africa	5490	187

Prevalence and numbers of patients on RRT by province



Province	EC	FS	GT	KZ	LP	MP	NW	NC	WC	All
Patients	1 027	577	3 525	1 959	388	252	428	128	2 269	10 553

Numbers of patients by province and sector

Sector	EC	FS	GT	KZ	LP	MP	NW	NC	WC	All
Public	304	239	1 005	326	143	5	155	66	892	3 135
Private	723	338	2 520	1 633	245	247	273	62	1 377	7 418
Total	1 027	577	3 525	1 959	388	252	428	128	2 269	10 553

Prevalence of RRT by province and sector



Treatment modality



Treatment modality	Patients 1994	%	Patients 2016	%
Haemodialysis	846	29.8	7487	71.0
Peritoneal dialysis	419	14.7	1200	11.4
Transplant	1578	55.5	1866	17.7

RRT modality by sector



Treatment modality	Public	sector	Private	sector
	Patients	%	Patients	%
Haemodialysis	1282	40.9	6205	83.7
Peritoneal dialysis	814	26.0	386	5.2
Transplant	1039	33.1	827	11.2

Distribution by ethnicity: 1994



Data on ethnicity based on all patients on file.

RRT patient numbers and prevalence by ethnicity 2017



Data on ethnicity available for 10 329 patients

Most commonly reported causes of ESRD

	% of total
Hypertensive renal disease	35.2
Cause unknown	31.5
Diabetic nephropathy	15.4
Glomerular disease	10.1
Cystic kidney disease	3.0
Obstruction and reflux	1.8

Patients on RRT with diabetes

	Diabetics	% of total
Public (n = 2996)	571	19.1
Private (n = 6991)	3511	50.2
All (n= 9987)	3779	38.7



No. of patients with data on diabetes = 9987

Hepatitis B status



Hepatitis C status



HIV status



Vascular access

	Public	Private	All sectors
AV fistula	476 (45.6%)	1863 (52.4%)	2339 (50.9%)
AV graft	17 (1.6%)	262 (7.4%)	279 (6.1%)
Tunnelled catheter	516 (49.5%)	1230 (34.6%)	1746 (38.0%)
Temporary catheter	34 (3.3%)	200 (5.6%)	234 (5.1%)
All access types	1043	3555	4598

Age by sector

Median age of all patients: 52.5 years (IQR 41.6-62.3 years)



Haemoglobin by sector



Albumin by sector



One-year patient survival

Incident patients: Overall survival 90.4% No difference in public vs. private sectors (p = 0.18)







One-year survival by HIV status

Incident patients: Survival 95.9% and 94.2% in HIV-positive and HIV-negative patients, respectively. Survival in those without data on HIV status 77.1%.



One-year survival by hepatitis B and C status



RRT vintage (years)



RRT vintage (years)



The African Renal Registry



Accra 2013 ... Cape Town 2015 ... Yaoundé 2017 ... Johannesburg 2018

SARS-AFRAN-ERA-EDTA Renal Registry Workshop – 12 March 2015

Supported by the International Society of Nephrology and hosted by the South African Renal Society Venue: Meeting room 4053B, 4th floor, Faculty of Medicine and Health Sciences, Stellenbosch University, Cape Town, South Africa



UNIVERSITY



Advantages of one platform

- All countries access a reliable platform
- Joint fundraising and cost sharing
- Updates available to all immediately
- Single data dictionary
- Sharing of expertise
- Platform for research and training
- Foster sense of unity and common purpose

African Renal Registry: Ghana

Registration form for Razeen Davids

		Logout
First name Razeen Surname Davids ID Number Folder/passport no.	Date of birth17/12/1963iii53 yeaDate ESRD02/09/2004iiiOn RF YearsTreating doctorBoima, VincentUnit Korle-Bu Teaching HospitalSector State	rs old T for 12
Primary renal disease Autosomal dominant (AD) polycystic kidney disease Province of residence G-Accra Western Ga Akan Central Northern Eastern Upper E/W Volta Outside Ghana Ethnicity Image: Other/Unknown Image: Other/Unknown Image: Other/Unknown Image: Other/Unknown Image: Other/Unknown Image: Other/Unknown Image: Other/Unknown	Gender Male Female Female First modality HD PD TX Unknown	Diabetes Non diabetic Unknown Type 1 DM Type 2 DM
HepB Negative Carrier Negative Immune Unknown		Diabetic (type unknown)

Current status

- Ethics approval obtained for ARR
- Registry platform adapted
- Ghana: Vincent Boima
- Burundi: Joseph Nyandwi
- Zambia: Kenneth Kapembwa
- Kenya: Jonathan Wala
- Botswana: Walter Moloi



Clinical Kidney Journal, 2016, vol. 9, no. 1, 162–167

doi: 10.1093/ckj/sfv122 Advance Access Publication Date: 25 November 2015 CKI Review

CKJ REVIEW

A renal registry for Africa: first steps

M. Razeen Davids¹, John B. Eastwood², Neville H. Selwood³, Fatiu

A. Arogundade⁴, Gloria Ashuntanta Faiçal Jarraya⁷, Iain A.M. MacPhee², Charles R. Swanepoel¹⁰ and Dwom Nephrology and the African Paedia



Strengthening Renal Registries and ESRD Research in Africa



M. Razeen Davids, MBChB, FCP(SA), MMed, PhD,^{*} Fergus J. Caskey, MBChB, MSc, MD, FRCP,[†] Taryn Young, MBChB, FCPHM(SA), MMed, PhD,[‡] and Gillian K. Balbir Singh, MBChB, FRACP, MPH^{*}

Summary: In Africa, the combination of noncommunicable diseases, infectious diseases, exposure to environmental toxins, and acute kidney injury related to trauma and childbirth are driving an epidemic of chronic kidney disease and end-stage renal disease (ESRD). Good registry data can inform the planning of renal services and can be used to argue for better resource allocation, audit the delivery and quality of care, and monitor the impact of interventions. Few African countries have established renal registries and most have failed owing to resource constraints. In this article we briefly review the burden of chronic kidney disease and ESRD in Africa, and then consider the research questions that could be addressed by renal registries. We describe examples of the impact of registry data and summarize the sparse primary literature on country-wide renal replacement therapy in African countries over the past 20 years. Finally, we highlight some initiatives and opportunities for strengthening research on ESRD and renal replacement therapy in Africa. These include the establishment of the African Renal Registry and the availability of new areas for research. We also discuss capacity building, collaboration, open-access publication, and the strengthening of local journals, all measures that may improve the quantity, visibility, and impact of African network.

Semin Nephrol 37:211-223 © 2017 Elsevier Inc. All rights reserved.

Keywords: Renal registry, translational research, open access, Africa, research impact

he World Health Organization (WHO) estimates that approximately 60% of global deaths are caused by noncommunicable diseases (NCDs),¹ with most occurring in low- and middleincome countries (LMICs). Africa is a continent consisting of 54 low- and middle-income countries, home their economic productivity. This has serious economic consequences for families and communities. Health care costs for chronic diseases can drain household resources and result in the loss of breadwinners, thereby contributing to the persistence of poverty and the lack of economic growth in many African countries.





Challenges

- data completeness, accuracy
- funding
- human resources
- mandatory data submission
- access to other data sources
- privacy and consent issues
- roll-out to other countries





mrd@sun.ac.za

RRT vintage (years)

	All RRT	HD	PD	ТХ
Public sector	6.4	6.3	4.3	10.5
Private sector	3.4	3.2	2.4	6.6
All	4.2	3.7	3.5	8.3
Centres by province and sector

	EC	FS	GT	KZ	LP*	MP	NW	NC	WC	ALL
Public	3	6	7	5	0	0	3	1	5	30
Private	18	13	67	61	13	11	11	4	32	230
Total	21	19	74	66	13	11	14	5	37	260

* One privately-owned unit in Limpopo operates as a public-private partnership on the premises of a public hospital and serves mainly state patients.

New kidney transplants in 2016

	Deceased donor		Living related		Living unrelated		Total
	С	Α	С	Α	С	А	
Western Cape - Public	3	38	1	16	0	3	61
Western Cape - Private	0	22*	0	25	0	9	56
Gauteng - Public	3	25	0	4	0	0	32
Gauteng - Private	3**	30***	5	20	0	11	69
KwaZulu-Natal - Public	0	0	0	9	0	0	9
KwaZulu-Natal - Private	1	11	0	10	0	3	25
Free State - Public	0	0	0	0	0	0	0
Free State - Private	0	0	0	2	0	0	2
Total	10	126	6	86	0	26	254

C = child recipient <18 years; A= adult recipient 18 years and older.

*Includes 1 adult kidney-liver transplant **Includes 1 child kidney-liver transplant.

^{***}Includes 2 adult kidney-liver transplants and 1 adult kidney-pancreas transplant. The kidney transplant rate for 2016 was 4.5 pmp.

Data supplied by the SA Organ Donor Foundation.

The African Renal Registry

	Burundi	Ghana	Kenya	Zambia
HD	44	740	509	105
PD	1	2	0	15
тх	0	25	0	7
All	45	767	509	127

Areas for improvement

- basic data: age, RRT start date
- primary renal diagnosis
- diabetes status, HIV status
- end of treatment data
- year-end assessments

New kidney transplants

Year	Total	% Living donor
2012	248	46.4
2013	246	43.9
2014	219	44.7
2015	261	39.1
2016	254	46.5
2017		
2018		

Death rate from NCDs highest in developing countries



Strong, Lancet 2005

Response to release of the first SA Renal Registry Report



SOUTH AFRICAN Renal Registry Annual Report 2012

MR Davids, N Marais and JC Jacobs

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Presentation to Health Minister Aaron Motsoaledi





Summit on an effective approach to CKD

HEALTHCARE DELIVERY

An effective approach to chronic kidney disease in South Africa

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Very few patients with end-stage kidney disease in South Africa receive renal replacement treatment (RRT), despite the rapidly growing demand, because of resource constraints. Nephrologists who agonise daily about who to treat and who not to, and have been doing so since the inception of dialysis in this country, welcomed the opportunity to interact with the National Department of Health at a recent summit of stakeholders. The major challenges were identified and recommendations for short- to long-term solutions were made. While the renal community can still improve efficiencies, it is clear that much of the responsibility for improving access to RRT and reducing inequities must be borne by the national government. The summit marks the first step in a process that we hope will ultimately culminate in universal access to RRT for all South Africans.

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Fewer than 5% of all patients with end-stage kidney disease (ESKD) in sub-Saharan Africa receive dialysis, with patients in several countries having no access at all.^[1] While the situation is somewhat less dire in South Africa (SA), we compare very poorly

with countries that are our economic peers (Fig. 1). The recent release of the South African Renal Registry by the South African Renal Society^[2] produced data that were so alarming that the National Department of Health (NDoH) convened a national summit to discuss the challenges faced in SA. Delegates to the summit included relevant stakeholders: public and private sector clinicians, healthcare funders, representatives of the pharmaceutical industry and the NDoH, a representative of the World Health Organization made a minimum prescribed benefit, the private sector facilities have grown by over 3 000% over two decades, but in contrast there has been no significant growth in renal services in the public sector that serves over 80% of the country's population.^[2] The renal community faces a major shortage of skilled personnel and reflects the national skills challenges.^[5]

The lack of appropriate and adequate skilled personnel has hampered the development of renal care in SA. Insufficient numbers of personnel are being trained and effective retention strategies are lacking. To address the situation, the summit proposed medium- and long-term strategies. In order to ensure high-quality renal care it was agreed that a nephrologist (or a specialist physician where no nephrologist is available) should be attached to every dialysis unit. SA currently