Transplantation in Low-Resource Settings

Dr. Rhys Evans
Kidney Research UK Training Fellow
UCL Centre for Nephrology, UK
ISN Young Nephrologist Committee

Queen Elizabeth Central Hospital Renal Unit, Malawi

Overview

- Introduction to the ISN and the ISN Young Nephrologist Committee

Transplantation in Low Resource Settings (LRS)

- Burden of ESRD in LRS
- Current capacity for treatment of ESRD including transplantation in LRS
- Potential advantages of transplant as mode of treatment for ESRD in LRS
- Differences in transplantation in LRS
- Highlight challenges in setting up a transplant program in LRS
- ISN initiatives aimed at facilitating transplant in LRS

The International Society of Nephrology (ISN)

A global not-for-profit membership-based society dedicated to improving kidney care and reducing the incidence and impact of kidney disease worldwide

Vision

ISN aspires towards the elimination of kidney disease worldwide.

Mission

ISN is dedicated to advancing the diagnosis, treatment, and prevention of kidney diseases globally through collaborations, meetings, publications, outreach, and other activities that:

- Raise public awareness
- Connect professionals
- Support research
- Provide nephrology education and training worldwide
- Reduce the frequency and impact of kidney diseases and their associated conditions

ISN – MEDICAL SOCIETY

Our Members

Top 10 Countries (figures for 2015)

UNITED STATES 1,456	AUSTRALIA 335
JAPAN 654	CHINA 285
CANADA 542	IRAN 254
INDIA 522	UNITED KINGDOM 247
SOUTH KOREA 352	NETHERLANDS 244

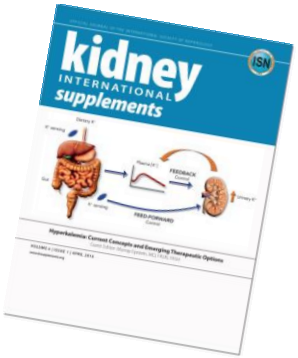
86 Affiliated Societies

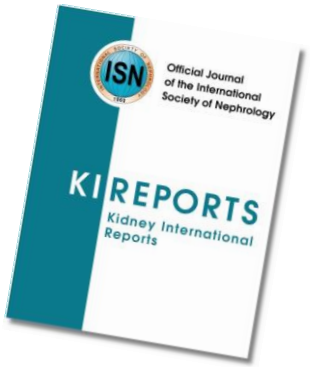
ISN reaches nearly 30,000 nephrology-related professionals through its partnerships with its affiliated societies.

Regional Breakdown of Members

ISN – MEDICAL SOCIETY

Publications





Kidney International
Kidney International Supplements
Kidney International Reports

6780
CIRCULATION
(in 2015)

8.563
IMPACT FACTOR
(in 2015)

ISN Research

ISN iNET-CKD NETWORK OF COHORTS

International Network of CKD cohorts, Network of existing cohort studies and leaders aiming to support investigators looking to establish CKD cohort studies

- Exchange of expertise
- Training
- Collaborative research

ISN – MEDICAL SOCIETY

ISN Research: 0by25

Evidence

Address the current lack of data on the global burden of AKI by collecting existing and prospective data

Awareness

Raise awareness of AKI across the global healthcare community through toolkit and information materials

Action

Develop a sustainable infrastructure through pilot projects and need driven approaches to education, training and care delivery

20 *«Endorsed by more than 20 national and regional nephrology societies»*

ISN 0BY25 AKI INITIATIVE

ISN Events

World Congress of Nephrology

WCN attracts approximately 5000 nephrologists from all over the world

ISN Programs

Fellowship Program

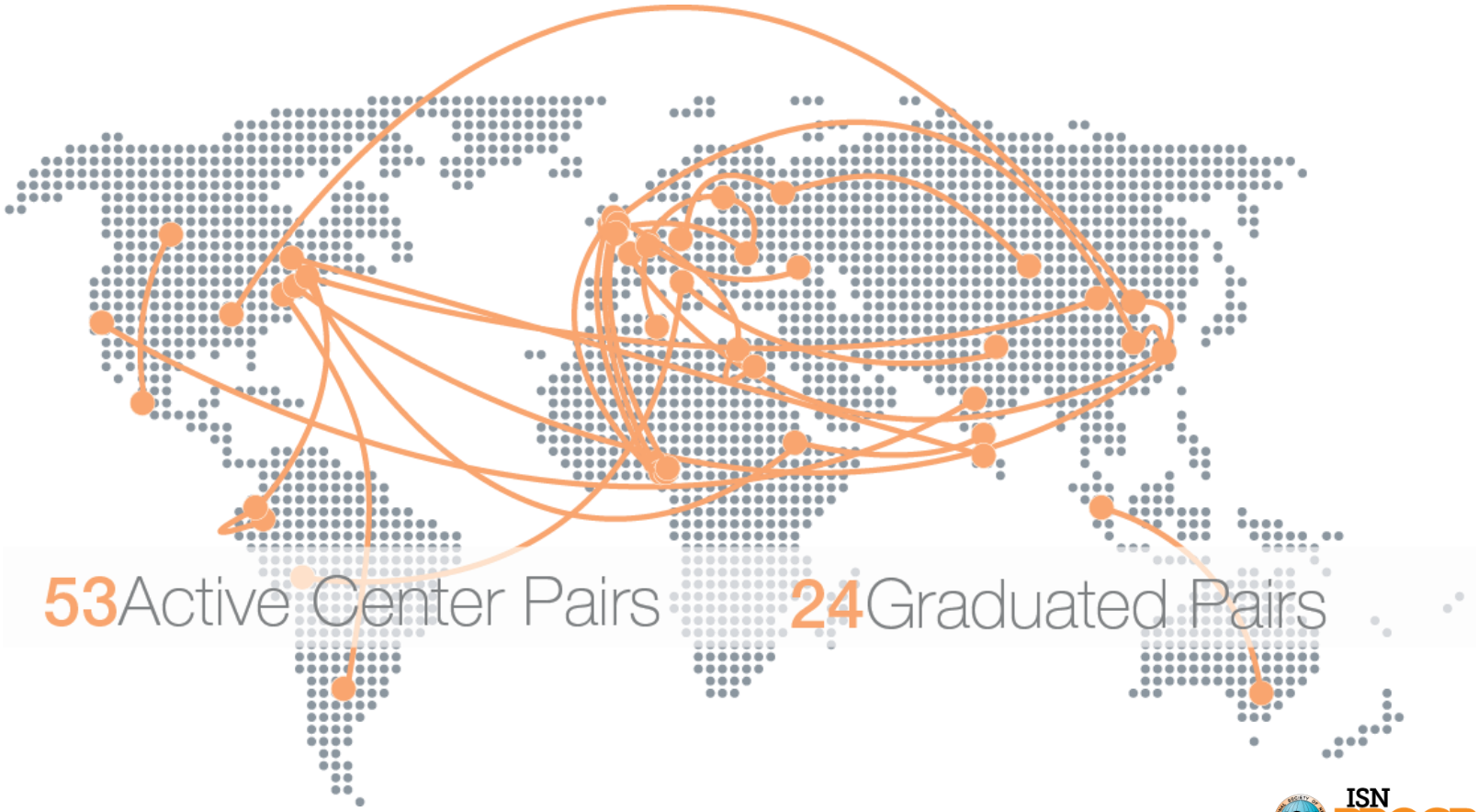
738 FELLOWS SINCE 1995

www.theisn.org/fellowship

ISN – Sustainable Kidney Care Capacity Builder

ISN Programs

Sister Renal Centers Program (SRC)



ISN PROGRAMS
EDUCATION, TRAINING & RESEARCH

ISN Programs

CME Program

www.theisn.org/cme

ISN – Sustainable Kidney Care Capacity Builder

ISN Programs

Educational Ambassadors Program

115 EDUCATIONAL EVENTS SINCE 2010

www.theisn.org/eap

ISN PROGRAMS EDUCATION, TRAINING & RESEARCH

ISN Programs

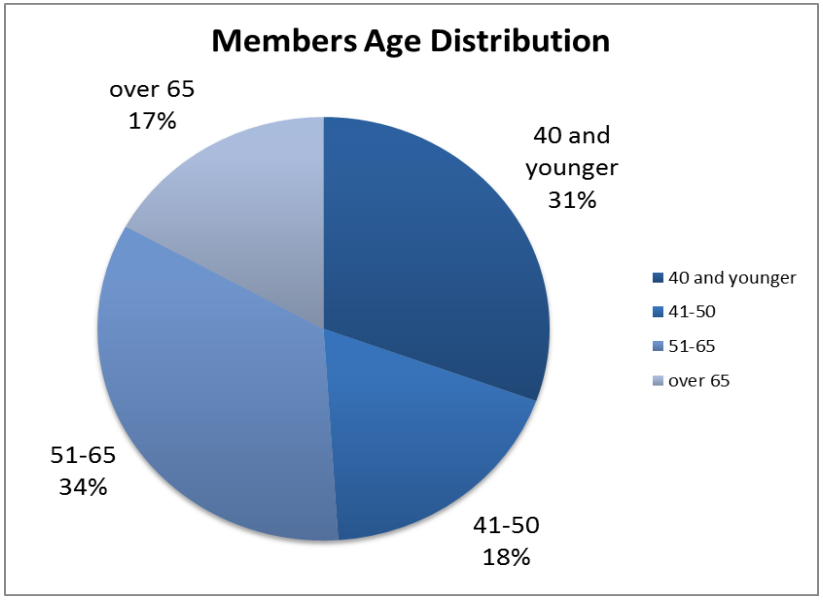
Clinical Research

www.theisn.org/cr

Membership

Members In Training and Young Nephrologists

- Members age spread



- 1907 Members under 40 &
  1123 Members In Training

Young Nephrologists Committee

- Young Nephrologists Committee (YNC) created in 2007

Goals:

- To help better engage its younger members in shaping the future of the Society
- Evaluate and understand the needs of young physicians and scientists in order to
  - develop education and research
  - facilitate professional development and leadership opportunities within the Society

- The Committee consists of a core group of members, representing the various geographic regions of the ISN.

Over recent years, YN workshops have been organizing at different congress over the world (in Bolivia, in China, in Dubai, in Greece etc.)
…now in Bosnia

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Burden of ESRD: Case example Malawi

- Alex, 32 year-old male
- Worked in bank
- High blood pressure for many years – taking tablets
- No previous investigation in to cause of HTN
- Presented to hospital with difficulties breathing
- End stage kidney failure
- No resources for dialysis
- No recovery of kidney function
- Palliative care
- RIP within 1 week

Burden of ESRD: Case example Malawi

- Harsh reality of ESRD in LRS
- Epidemiology of CKD in LRS

-often advanced

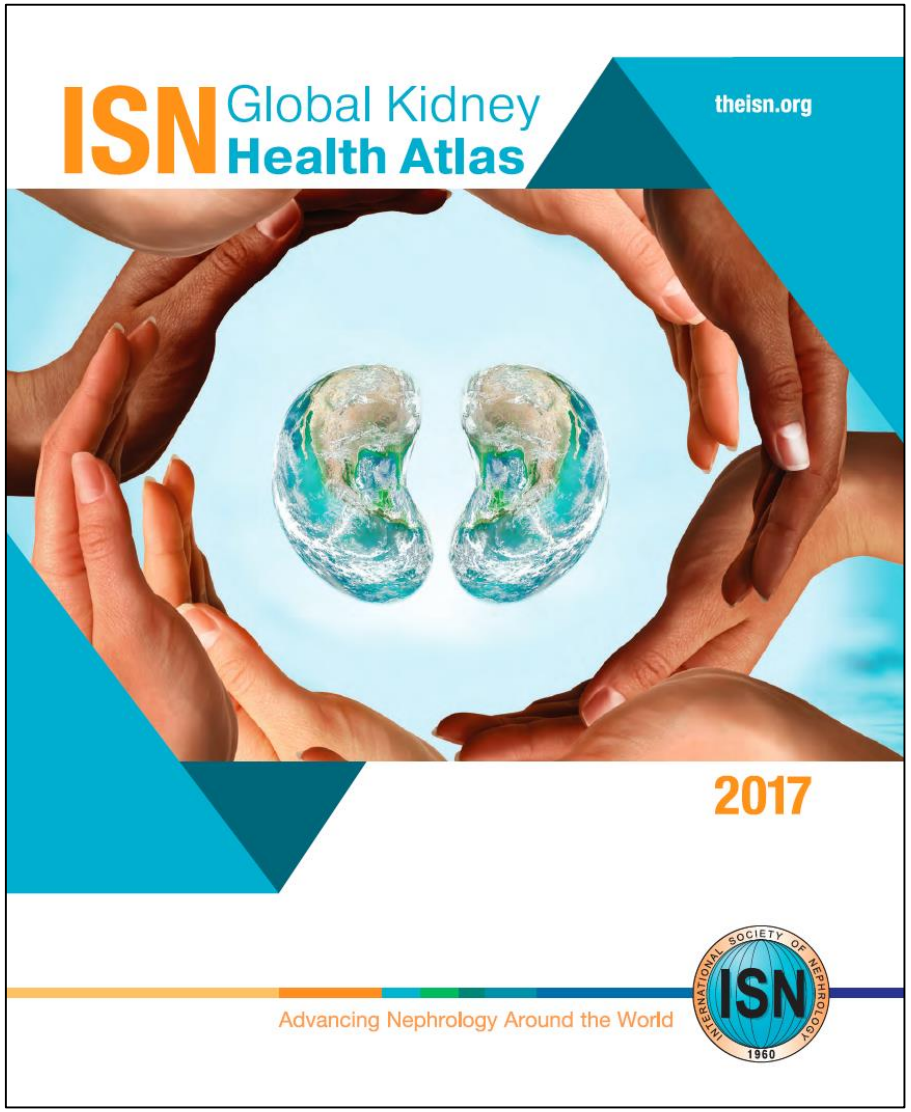
-cause often unknown

-young

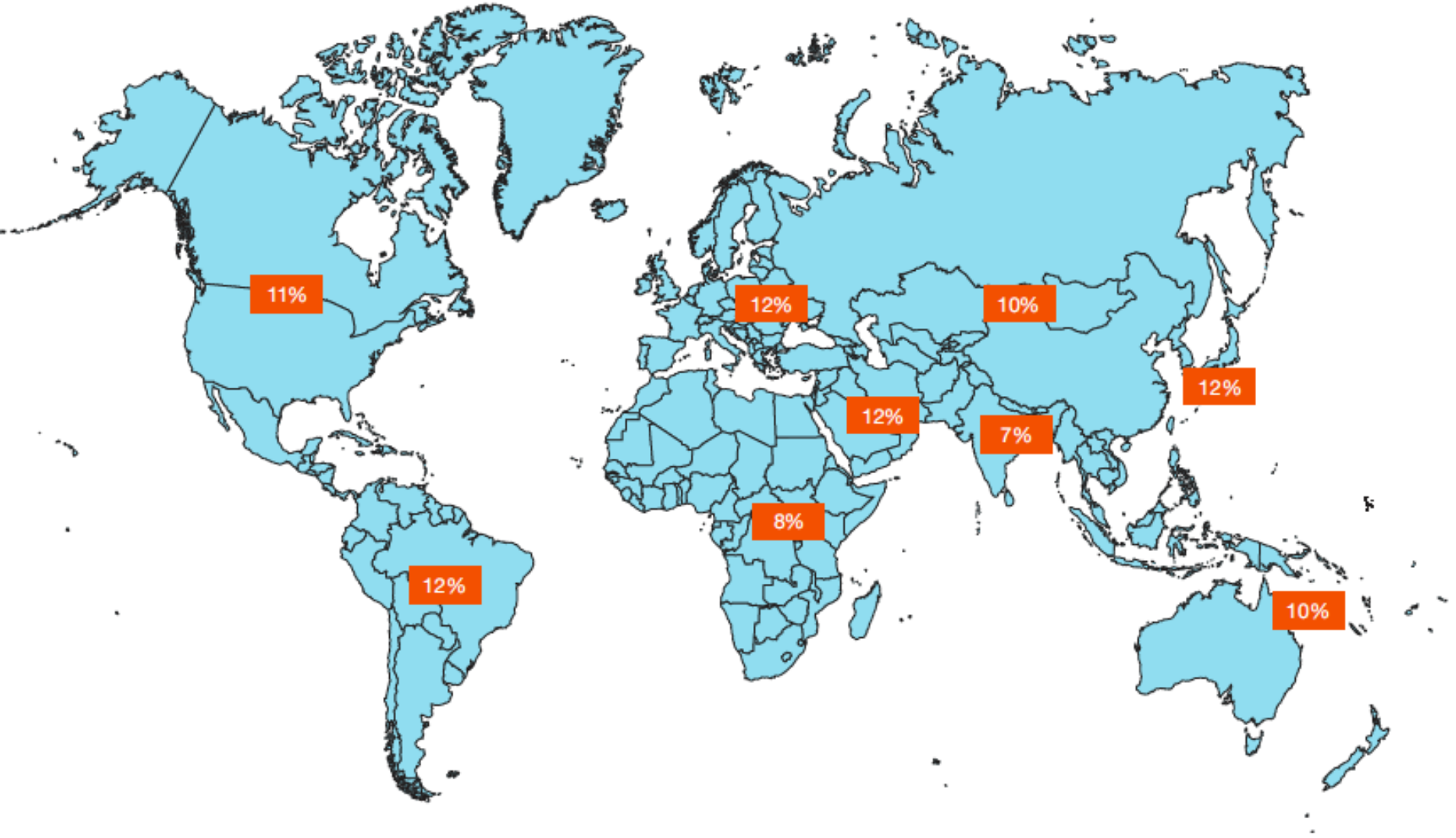
- Lack of awareness
- Missed opportunities for diagnosis
- Resource limitations and access to care inc RRT

Burden of CKD

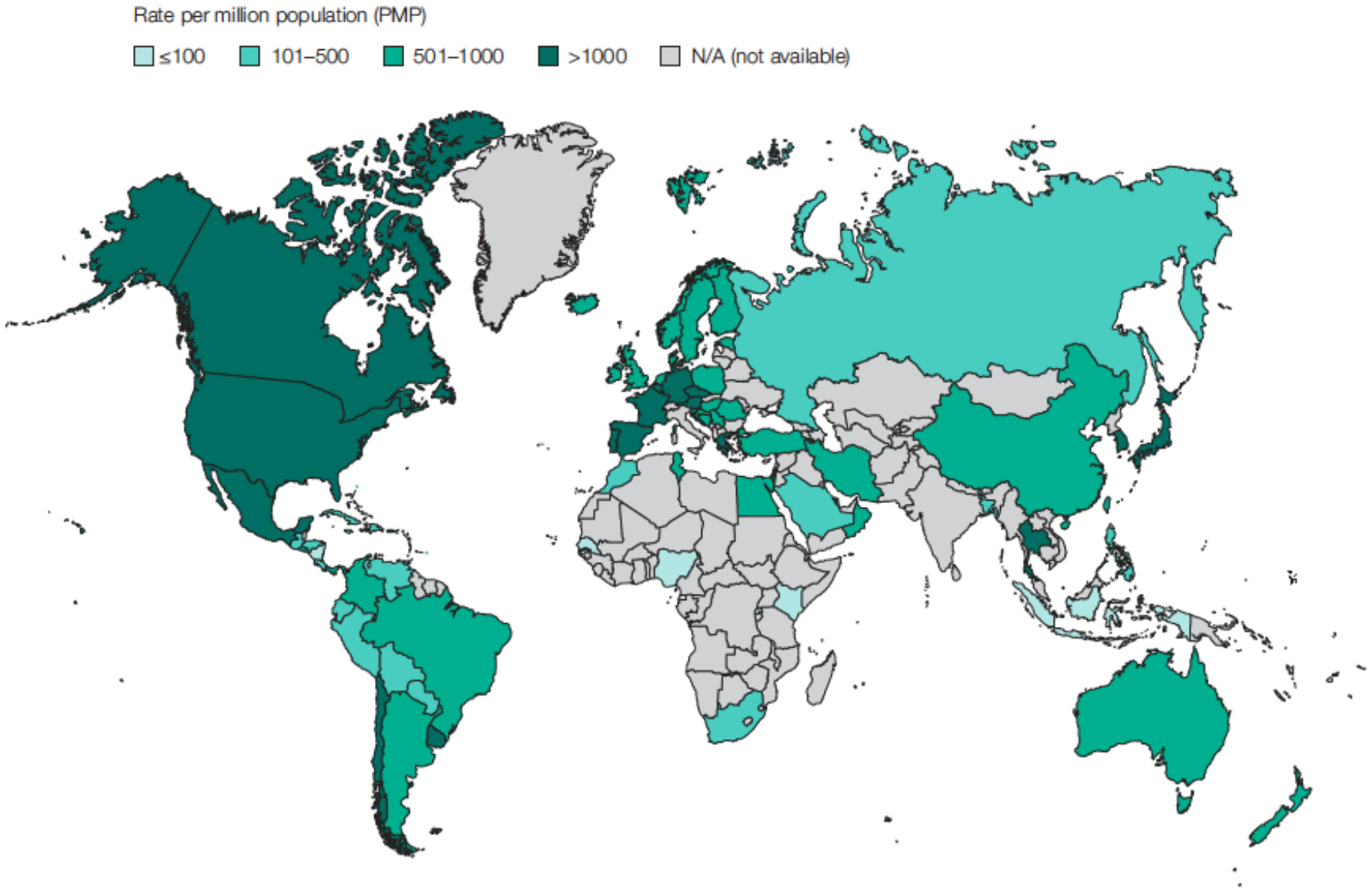
- **Objective**: to collect information on the current state of readiness, capacity, and competence for the delivery of kidney care across countries and regions of the world
- Literature review of current evidence on epidemiology of CKD worldwide (and its risk factors)
- Survey of current capacity for CKD care in 125 countries (93% worlds population)



Estimated global prevalence of CKD

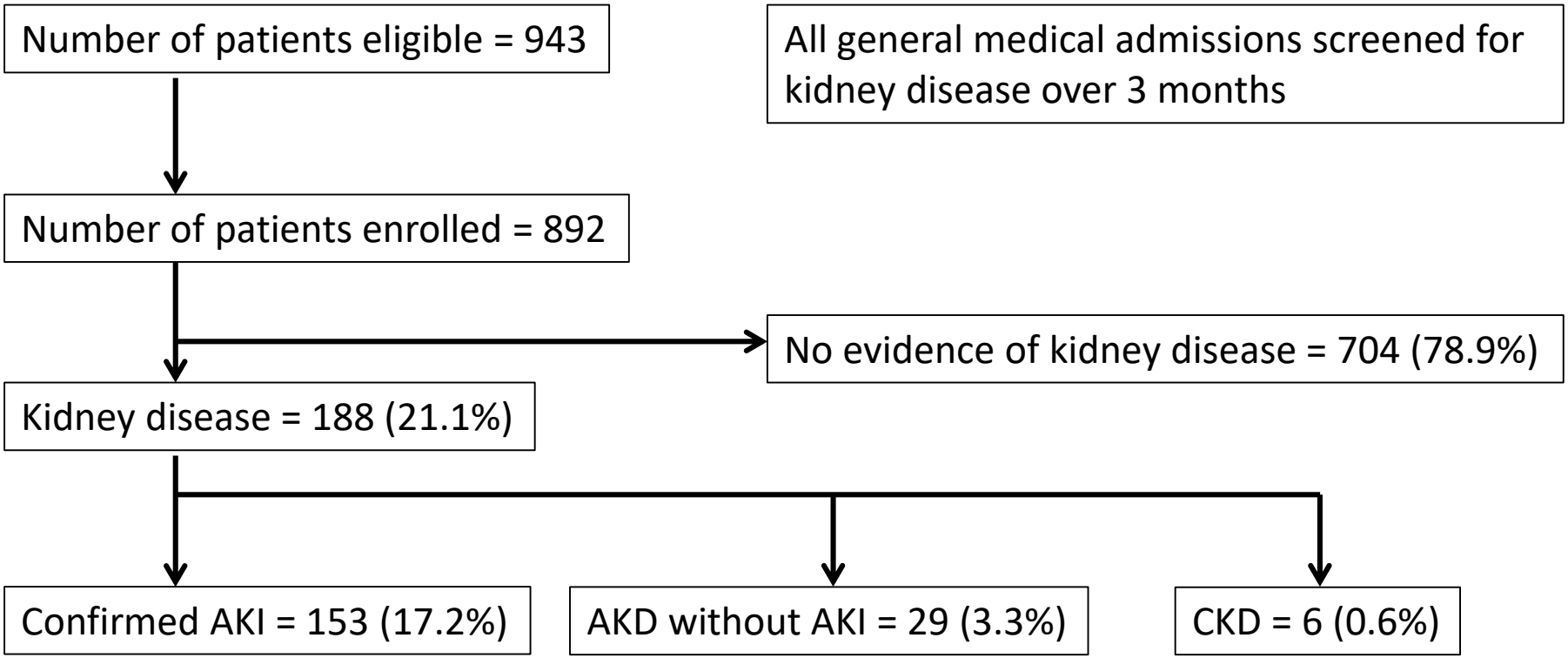


Estimated global prevalence of *treated* ESRD



STOP AKI in Malawi

Potential burden of Kidney Disease – The Malawi Acute Kidney Injury Study



Evans, R. D. R. *et al*. *BMC Nephrol.* **18,** 21 (2017).

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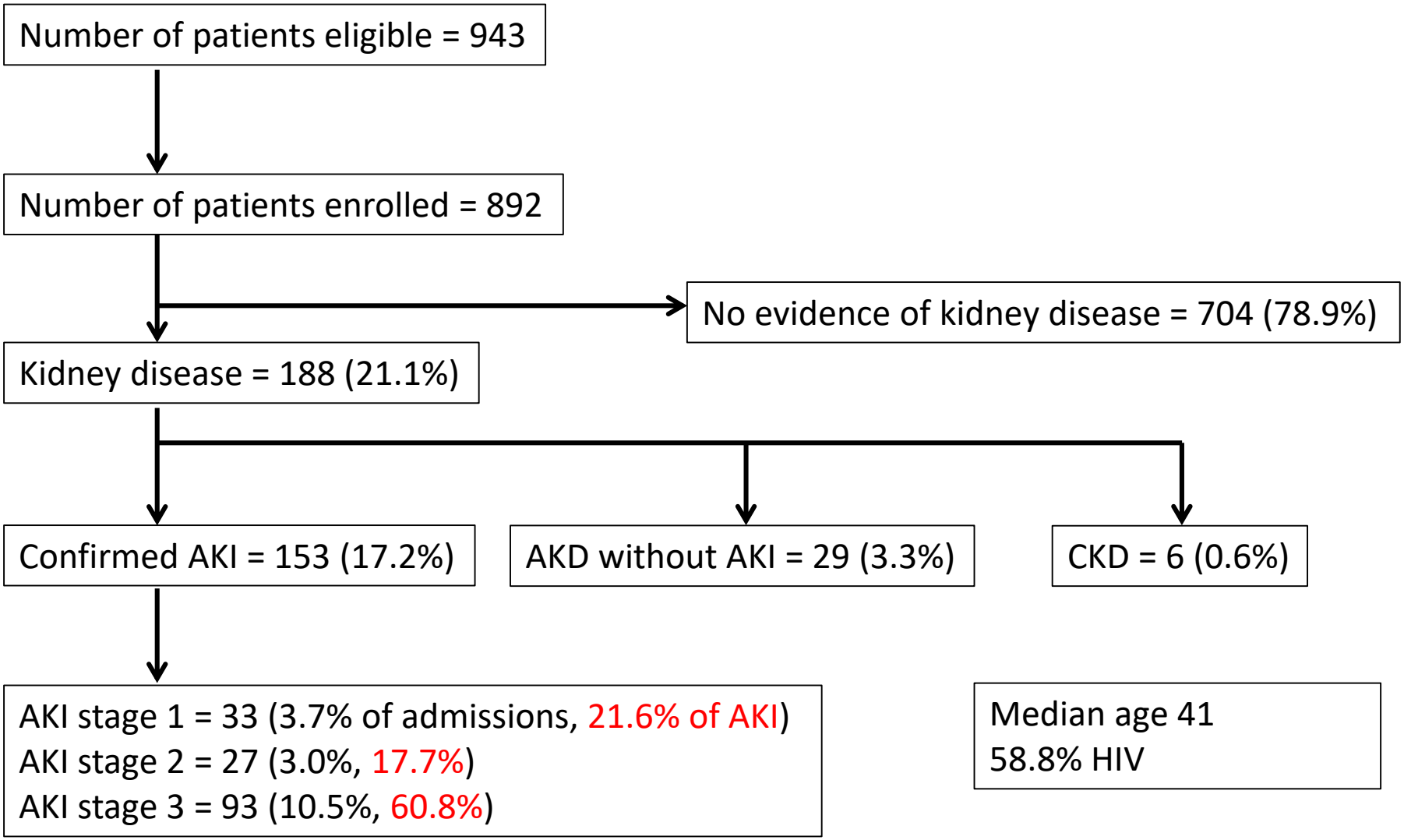
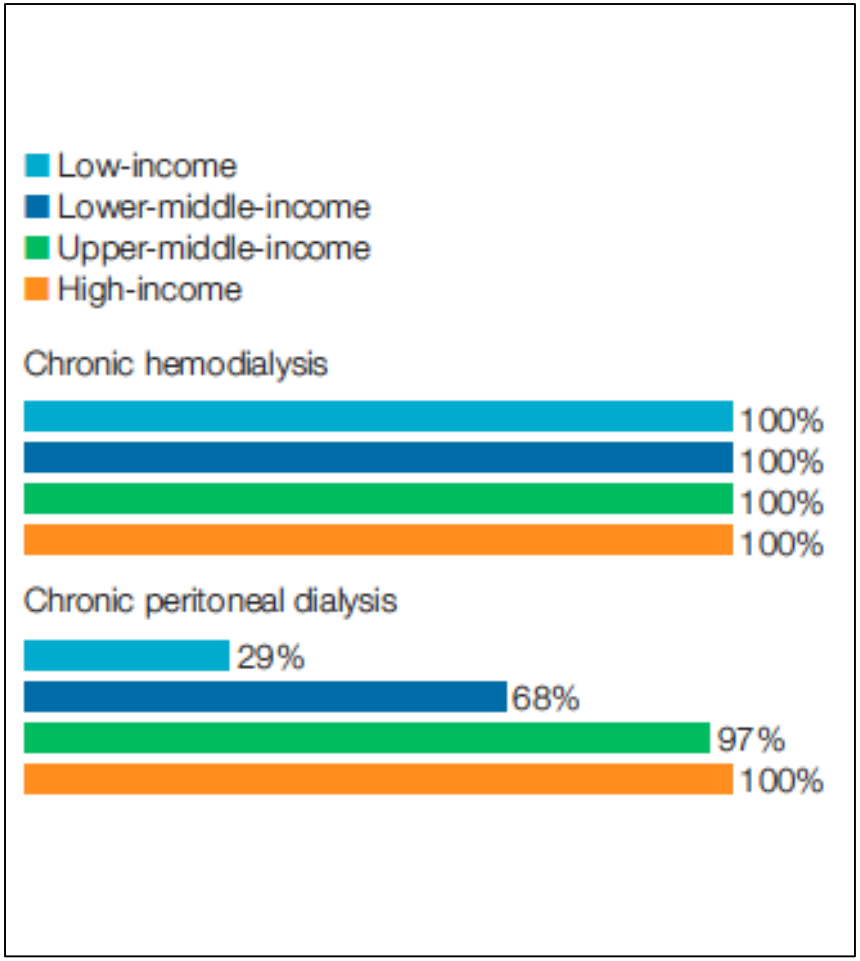
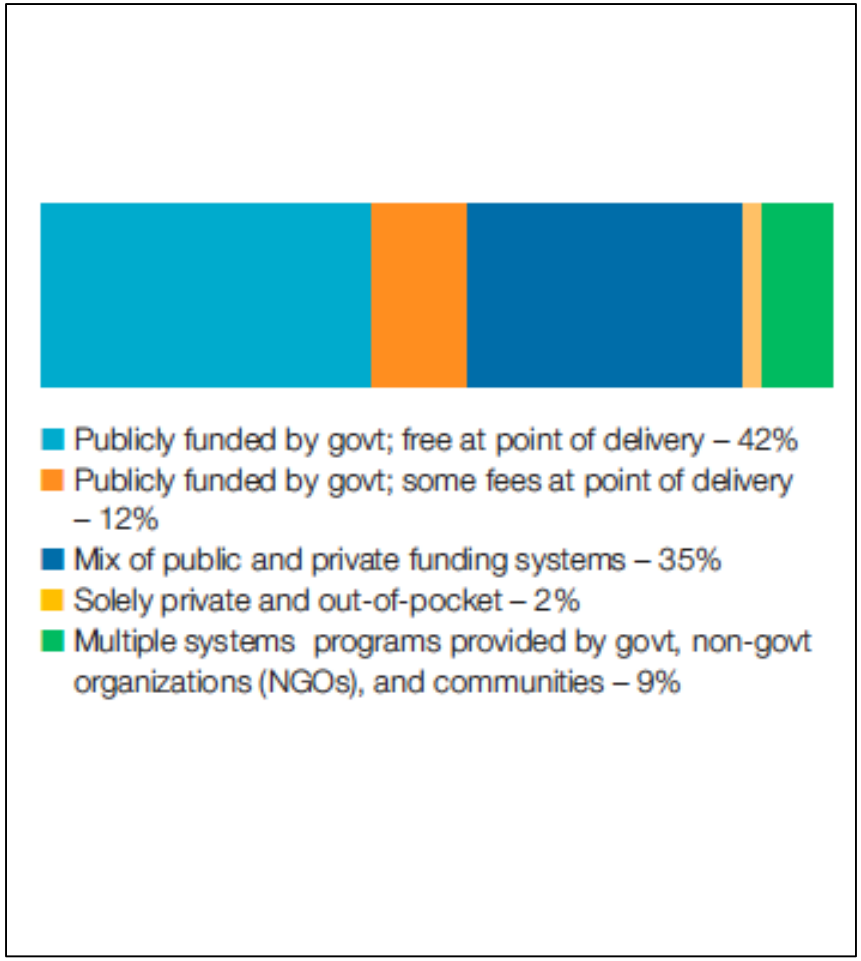


Evans, R. D. R. *et al*. *BMC Nephrol.* **18,** 21 (2017).

Current capacity for treatment of ESRD worldwide: HD and PD





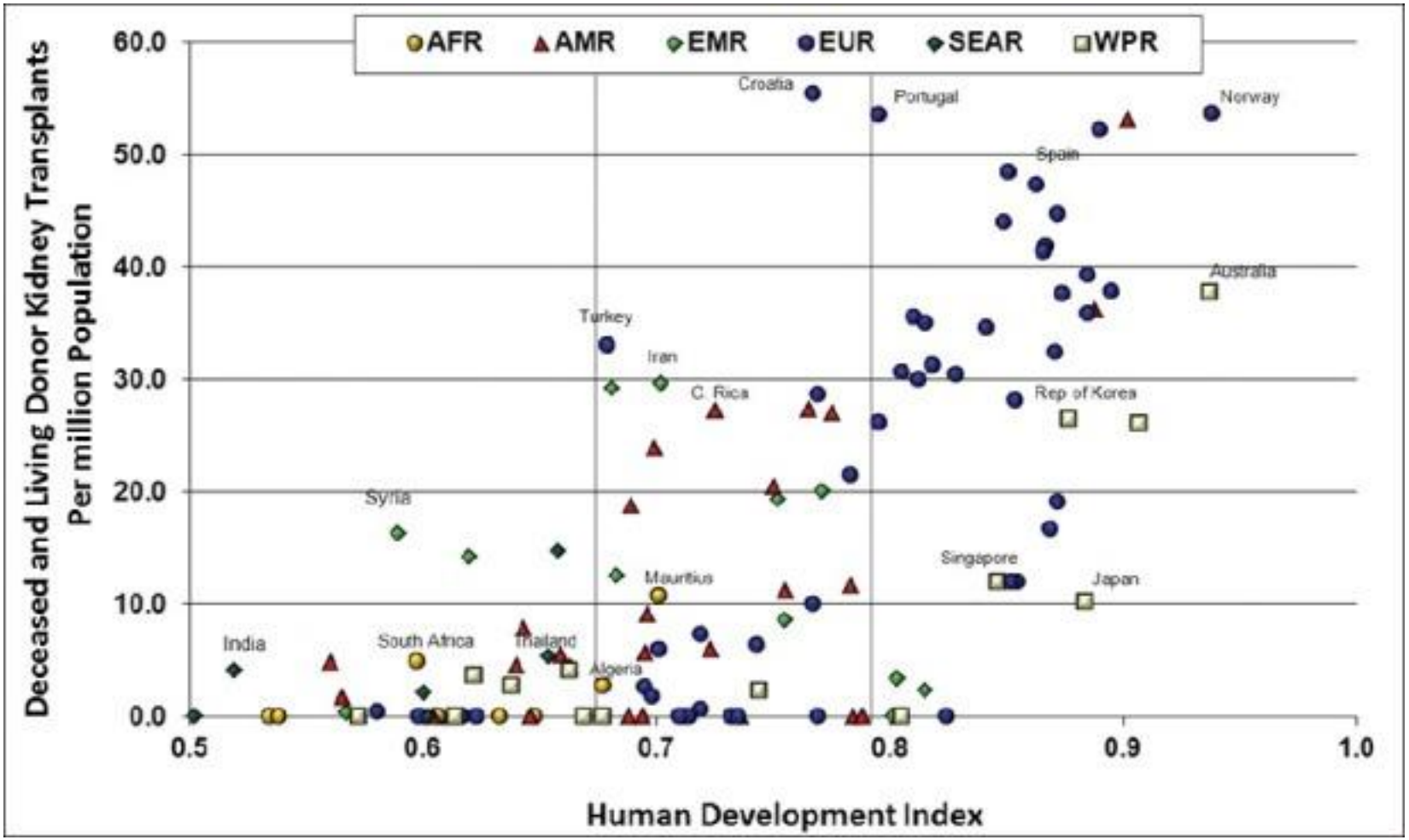
Current capacity for treatment of ESRD worldwide: Transplantation

	Kidney transplantation N (%)[1]	Donor type		
		Deceased only N (%)[2]	Live only N (%)[2]	Combination N (%)[2]
Overall	**94 (79)**	**1 (1)**	**23 (24)**	**70 (74)**
ISN regions				
Africa	12 (36)	1 (8)	7 (58)	4 (33)
Eastern & Central Europe	16 (100)	0 (0)	2 (13)	14 (88)
Latin America	16 (100)	0 (0)	2 (13)	14 (88)
Middle East	13 (100)	0 (0)	5 (38)	8 (62)
NIS & Russia	6 (100)	0 (0)	2 (33)	4 (67)
North America	2 (100)	0 (0)	0 (0)	2 (100)
North & East Asia	6 (100)	0 (0)	0 (0)	6 (100)
Oceania & South East Asia	9 (69)	0 (0)	2 (22)	7 (78)
South Asia	5 (100)	0 (0)	3 (60)	2 (40)
Western Europe	9 (100)	0 (0)	0 (0)	9 (100)
World Bank income groups				
Low-income	2 (12)	0 (0)	2 (100)	0 (0)
Lower-middle-income	26 (76)	1 (4)	16 (62)	9 (35)
Upper-middle-income	28 (93)	0 (0)	4 (14)	24 (86)
High-income	38 (100)	0 (0)	1 (3)	37 (97)

1 Percentages are calculated relative to the corresponding number of countries that responded to the question.

2 Percentages are calculated relative to the corresponding number of countries where kidney transplantation is available.

Current capacity for treatment of ESRD worldwide: Transplantation



Garcia et al, Indian Journ Neph, 2012

Current capacity for treatment of ESRD worldwide: Transplantation Sub-Sahara Africa

- Currently performing living transplantation

S. Africa ≈ 100/year

Sudan ≈ 165/year

Kenya ≈ 60/year

Nigeria ≈ 14/year

Ghana

Cameroon

- Currently performing deceased donor transplantation

S. Africa ≈ 130/year

Mix of private and state funded

Multiple countries with small numbers transplants abroad

Muller et al, Transplantation 2014 ;Muller et al, Clin Neph, 2016

Advantages of transplantation as mode of RRT in LRS

- Cheaper overall (after first year)
- Provision of gold standard treatment of ESRD (not suboptimal HD)
- Quality of life
- Personal/family economic benefit
- Best outcomes (esp if preemptive transplant)

Also:

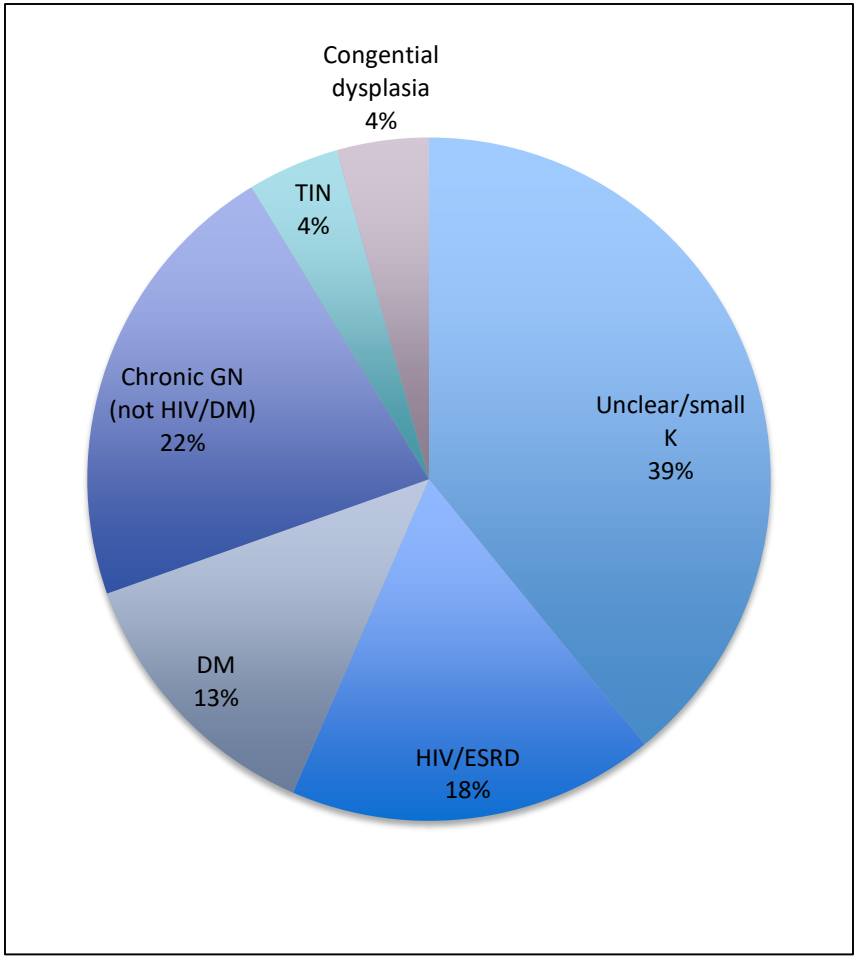
An appetite for service improvement and learning

Experience of managing immunocomprimised patients

Willing cohorts of young donors and relatively fit recipients

Patients Characteristics on HD in Malawi

- Total = 20
- 11 female, 9 male
- Mean age 35
- 4 HIV R
- Limited information on causes
- 15 presented at end stage



Patient experience in high income country

- **Pre-operatively**

-review by full MDT (nephrologist, surgeon, specialist nurse, psychologist, pharmacist)

-ax of fitness (CV investigations)

-infectious screening

-tissue typing, HLA ab screen

- **Peri-operatively**

-access to critical care

- **Post-operatively**

-biochemistry

-drug levels

-virology

-biopsy and histopathology

-imaging

-novel treatment options

-surgical expertise

Patient experience in Malawi

- 31 year old female
- Lupus Nephritis 2012

-ESRD 2014

-HD since 2014 (x/3 week, line, privately funded)

- Interested in transplantation and sister and cousin willing to donate

-contacted transplant centre in India

-virology negative

-sister screening in Malawi: BP, blood group, creatinine, urine dip

-no HLA typing/cross match

- August 2016: travelled to India with sister, and cousin (back-up)
- Successful transplant: ATG induction, tacrolimus, MMF, prednisolone weaning
- Valgancyclovir and septrin prophylaxis
- Returned to Malawi after 4 weeks (stent removed)
- Creatinine 80umol/L, latest tacrolimus level 6.1 prior to return

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- Creatinine 80umol/L, latest tacrolimus level 6.1 prior to return
- Attended QECH gen neph clinic (not met before)

-creatinine 146umol/l, urine NAD, WCC 1.9, no tac level available, no CMV level available

-USS normal

-held valgancyclovir, CMV and tac level sent to Zambia

- 2/52 later

-well, creatinine 156umol/l, WCC 1.6, no tac level yet

-pred increased to 10mg, MMF reduced

- 2/52 later

-tac level 5.9 (from 4 weeks previously), CMV neg, WCC 4.1, creatinine 133 umol/L

- Creatinine 130-150 Oct-Dec 2016 (tac levels lower end range 4-6)
- Jan 2017: travel back to India for review

-tac level in India 15, reduced and creatinine around 110 since (no biopsy)

Barriers to overcome in Malawi and LRS elsewhere

- Legal framework
- Tissue typing facility
- Surgical expertise and post operative care
- Affordable immunosuppression
- Reliable biochemistry
- Drug level monitoring (efficient and reliable)
- Biopsy service and histopathology
- Nephrologists and nurses with appropriate transplant experience and training

ISN Initiatives

International Society of Nephrology

Advancing Nephrology Around the World

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Sister Transplant Centers Program

ISN-TTS Sister Transplant Centers Program

The ISN-TTS Sister Transplant Centers Program is a joint partnership set up between ISN and The Transplantation Society (TTS) to create new kidney transplant centers and develop existing kidney transplant programs in emerging countries. Following the success of the ISN Sister Renal Centers Program, this initiative encourages transplant centers to work together to increase opportunities for kidney transplant patients in developing countries.

An experienced transplant center in the developed world lends its support to an emerging transplant center to facilitate vital multidisciplinary training and encourage both centers to exchange their knowledge and expertise.

The results are beneficial to both sides. Supporting centers get involved in global health, spread ethical and competent transplantation to regions of the world with limited or no current access to transplantation. Emerging centers connect with a multidisciplinary team of international experts in transplantati on from a world-leading center.

Application deadline October 1st every year

Click here to **APPLY ONLINE**

Summary

- Highlighted some of the activities of the ISN
- CKD is common worldwide, need more epidemiological studies in LRS
- ESRD is challenging to treat in LRS and transplant is underused
- Transplantation offers multiple advantages including cost
- Multiple barriers to overcome in setting up transplant programme
- ISN there to help

Thank you

Dr. Rhys Evans
rhysdrevans@gmail.com; rhys.evans@ucl.ac.uk
@rhysdrevans