

KDIGO APAC Implementation Summit on Diabetes, Blood Pressure and CKD



NATIONAL HEALTH POLICIES AND STRATEGIES ON DIABETES AND CKD BURDEN IN THE ASIA PACIFIC REGION

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India

*Kuala Lumpur
Jan 19-20, 2024*

Goals

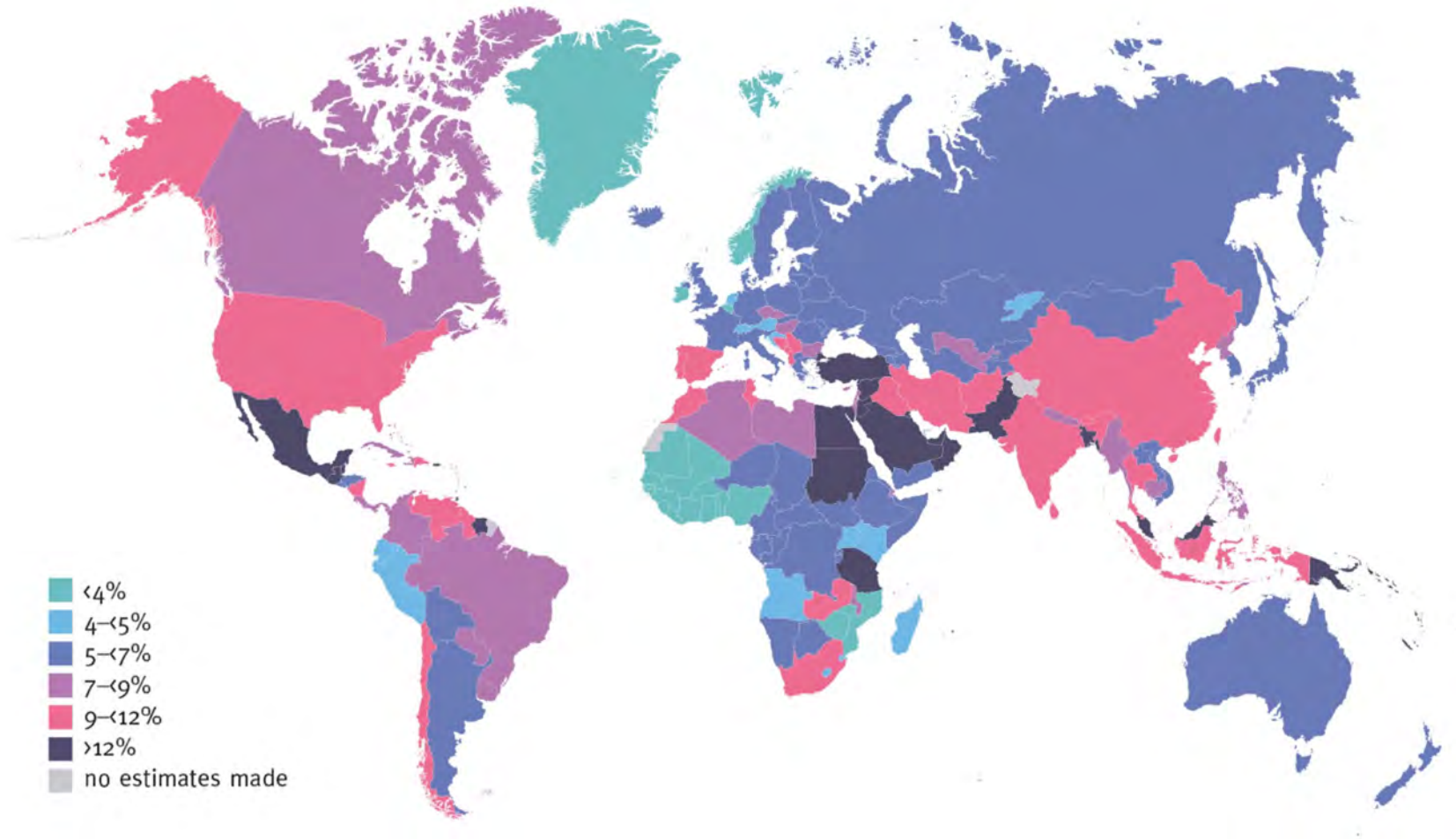
- 1. Review national health policies /programs/initiatives in prioritizing diabetes and CKD care in the Asian Pacific (AP) region as part of the non-communicable disease directives**
- 2. Discuss current gaps in diabetes and CKD care in the AP region in relation to countries of different income levels**
- 3. Provide insights on high level strategies to bridge gaps in care and to have healthcare sustainability**



Diabetes is a highly prevalent, global disease

Estimated age-adjusted comparative prevalence of diabetes

In adults aged 20–79 years in 2021

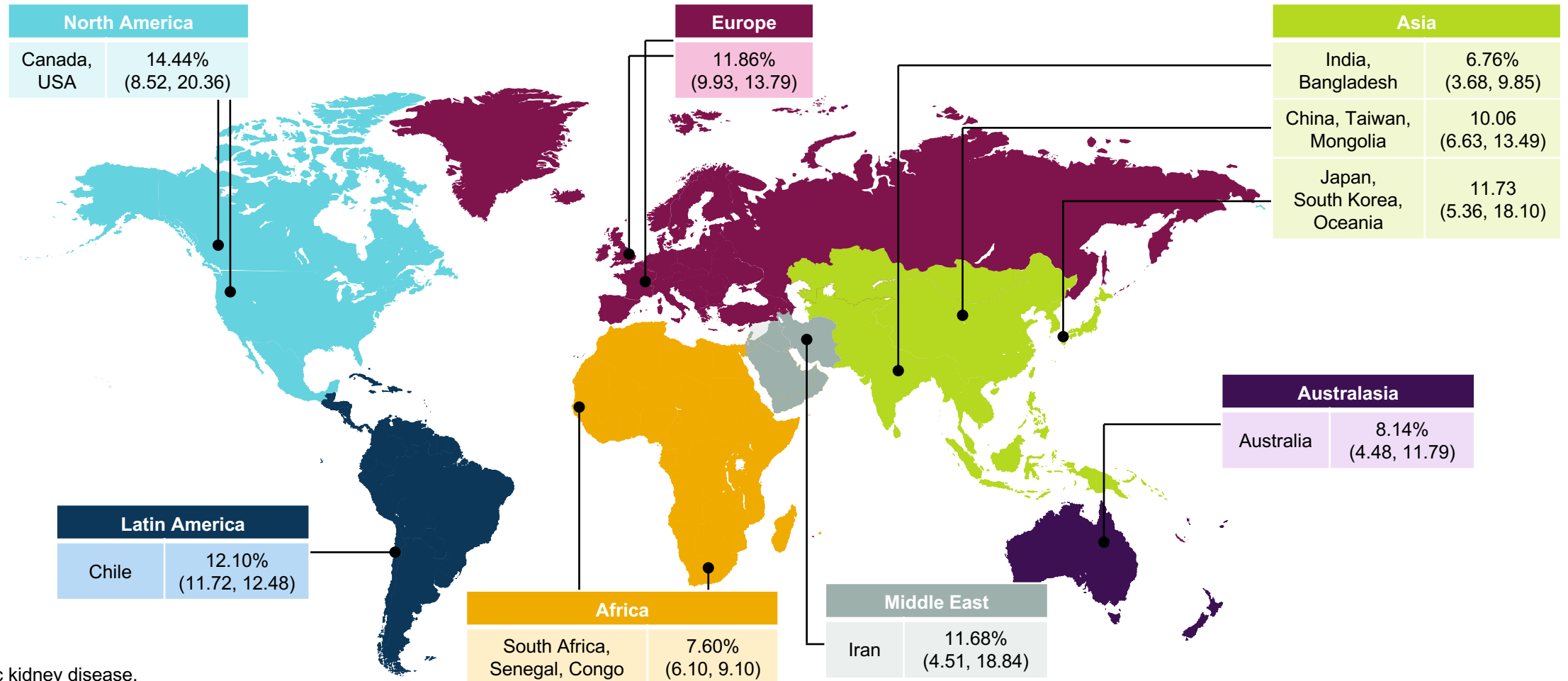


So is CKD...

The global prevalence of CKD is over **843 million**¹

The global incidence of CKD is over **19 million**²

Meta-analysis estimating the global prevalence of CKD (stages 3–5)³

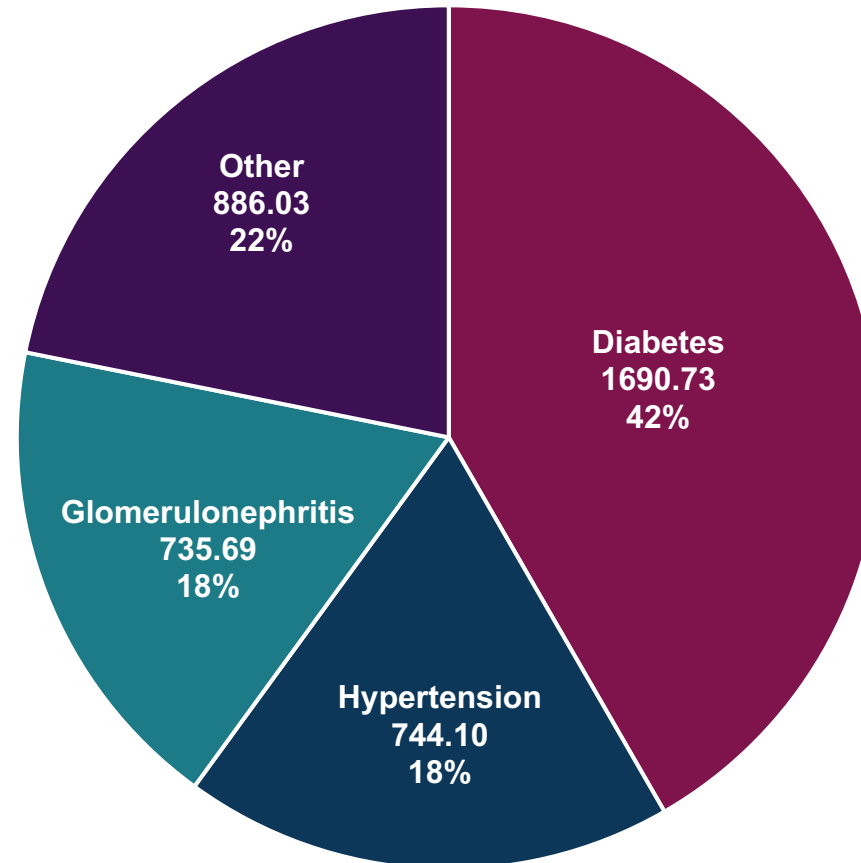


CKD = chronic kidney disease.

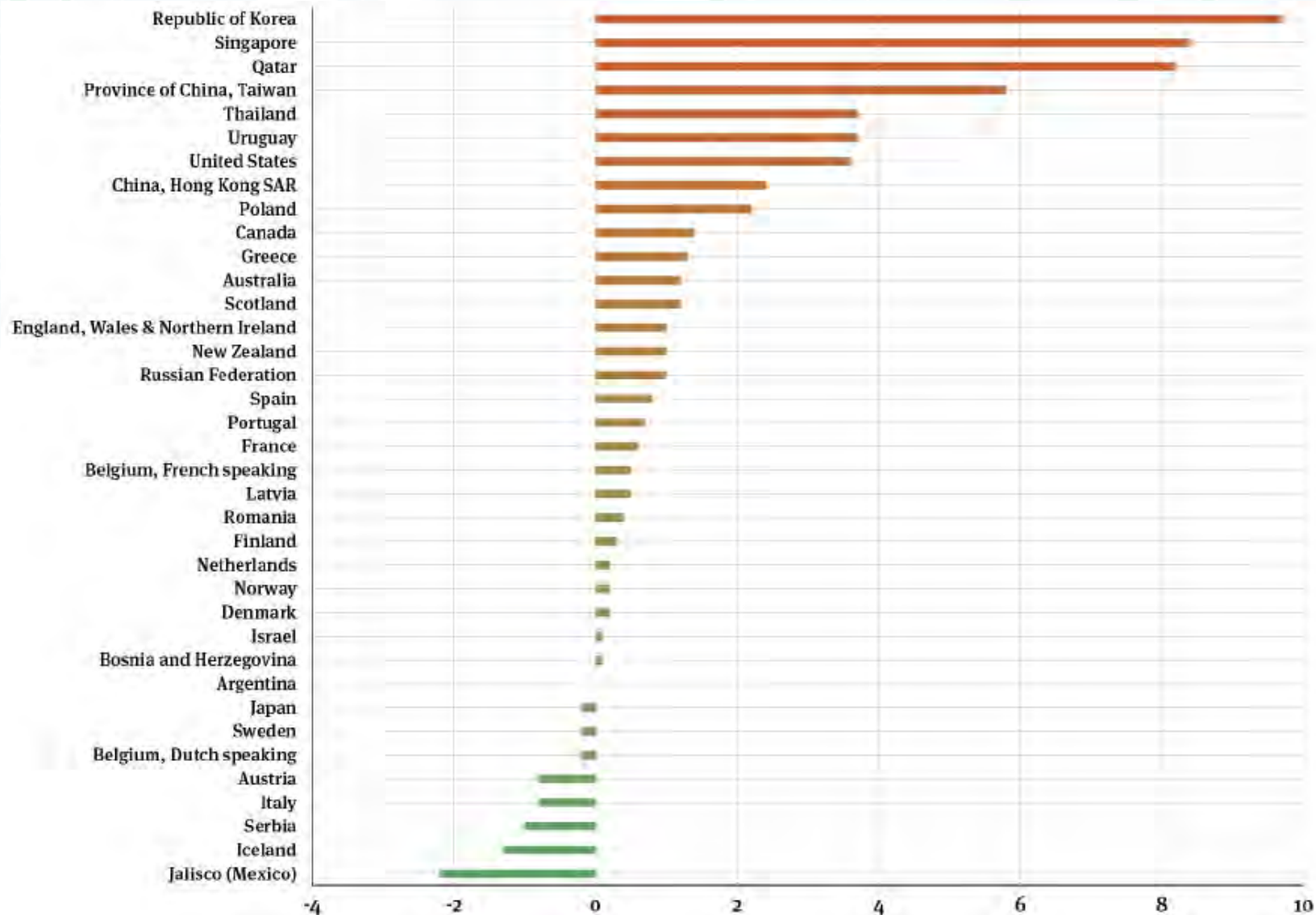
1. Jager KJ et al. *Nephrol Dial Transplant*. 2019;34:1803–1805; 2. GBD 2017 Disease and Injury Incidence and Prevalence Collaborators. *Lancet*. 2018;392:1789–1858; 3. Hill NR et al. *PLoS One*. 2016;11:e0158765.

The causes of CKD are diverse, with diabetes and hypertension responsible for more than half of all cases

Age-standardized global prevalence rate of CKD by cause per 100,000 persons in 2016



Average yearly change in incidence of treated ESKD attributed to diabetes, 2010-2020

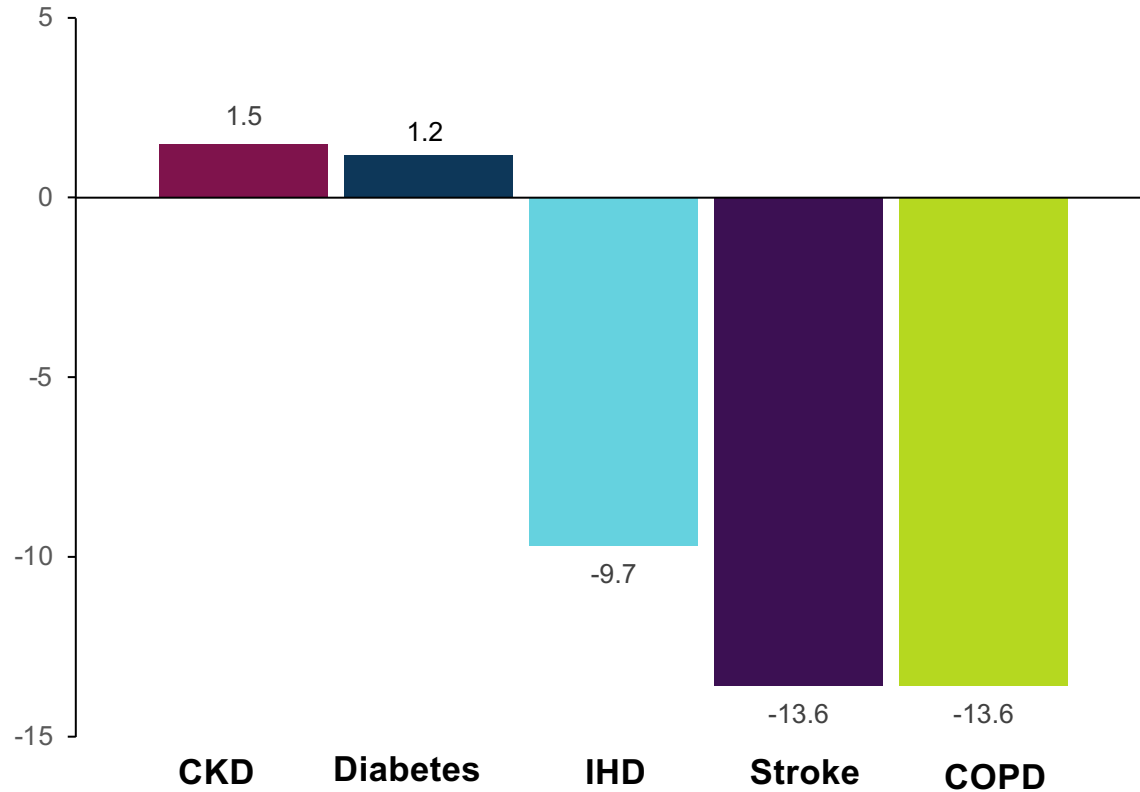


<https://diabetesatlas.org/>

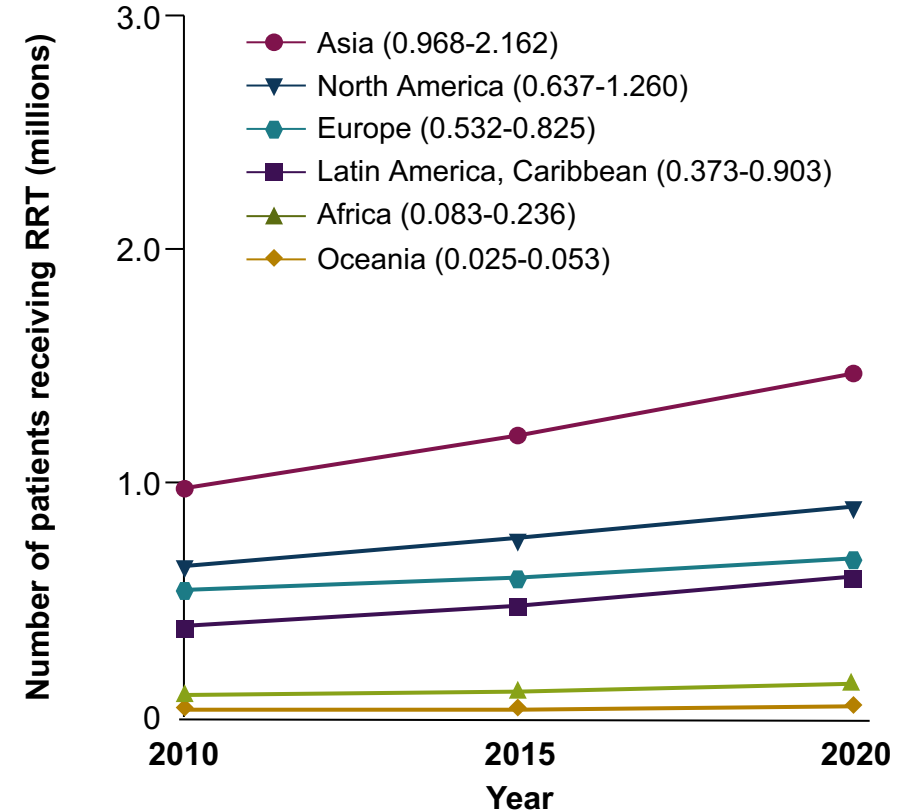


Improvement in Diabetes and CKD Mortality Has Been Limited

Global Age-standardized Mortality Rate (per 100,000)
Percent Change, 2007-2017¹



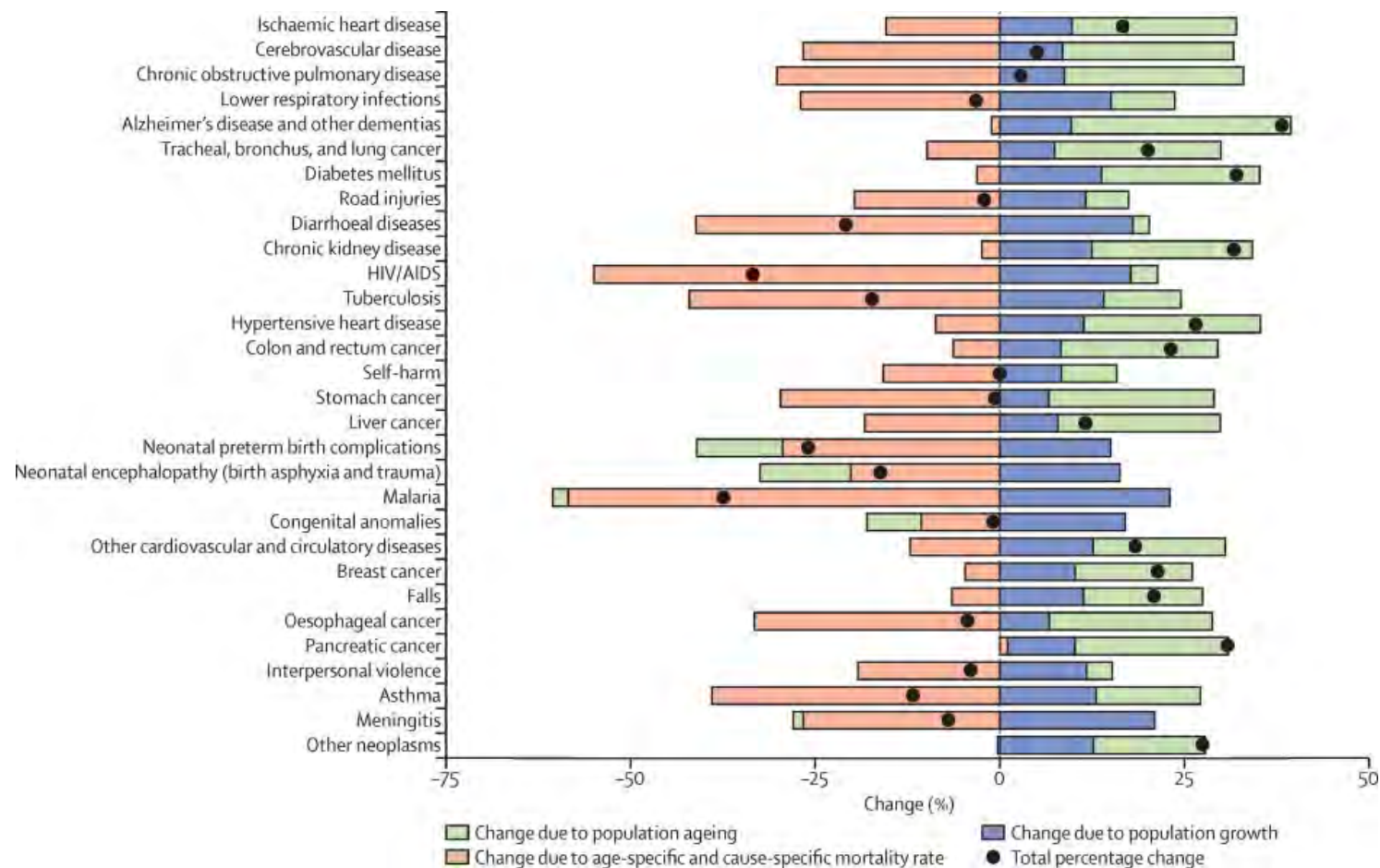
Number of Patients Receiving KRT, 2010-2020²



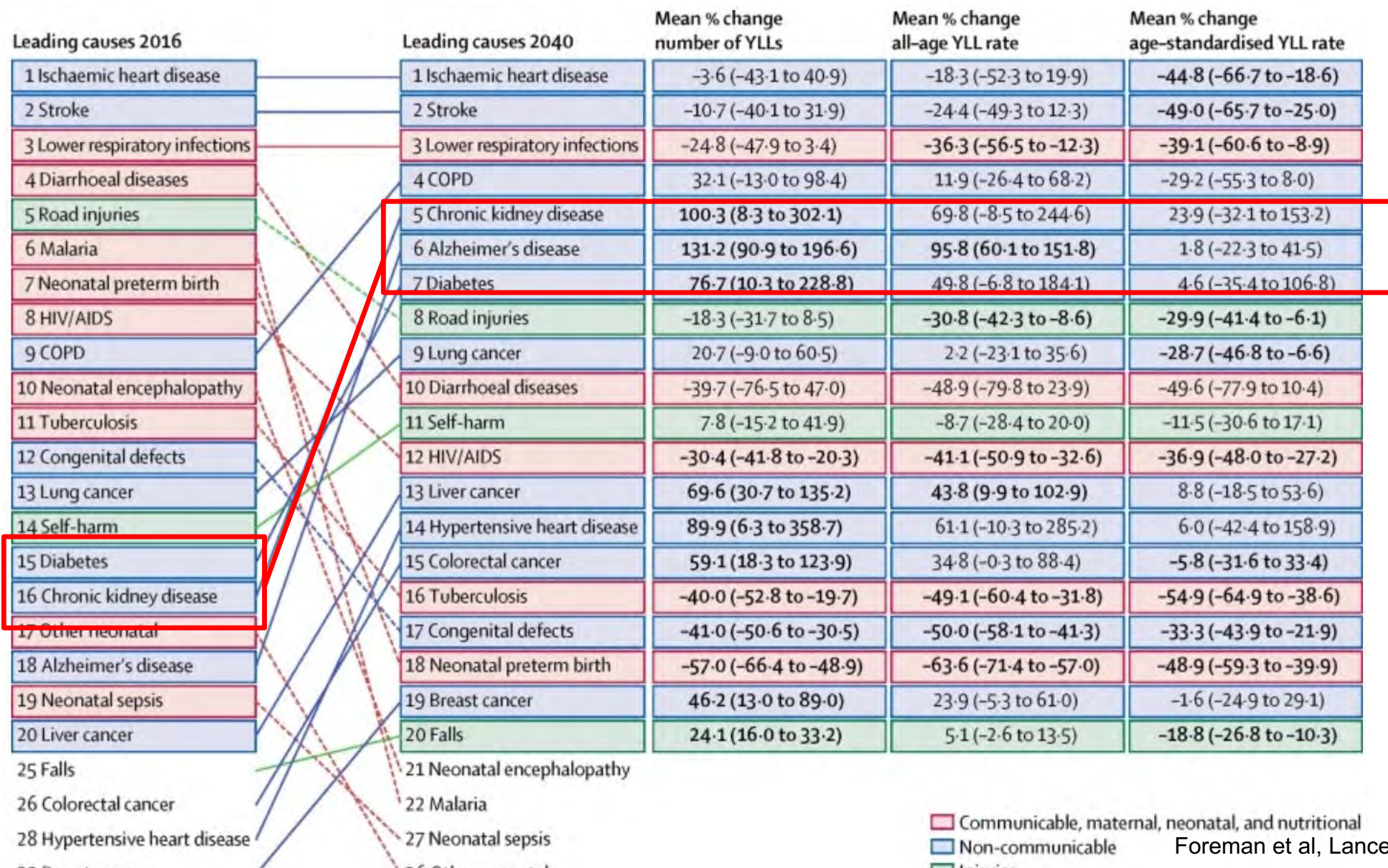
CKD = chronic kidney disease; COPD = chronic obstructive pulmonary disorder; RRT = renal replacement therapy.

1. GBD 2017 Causes of Death Collaborators. *Lancet*. 2018;392:1736-1788; 2. Liyanage T, et al. *Lancet*. 2015;385:1975-1982.

Diabetes and CKD are 2 of the top 3 fastest growing causes of death in the world



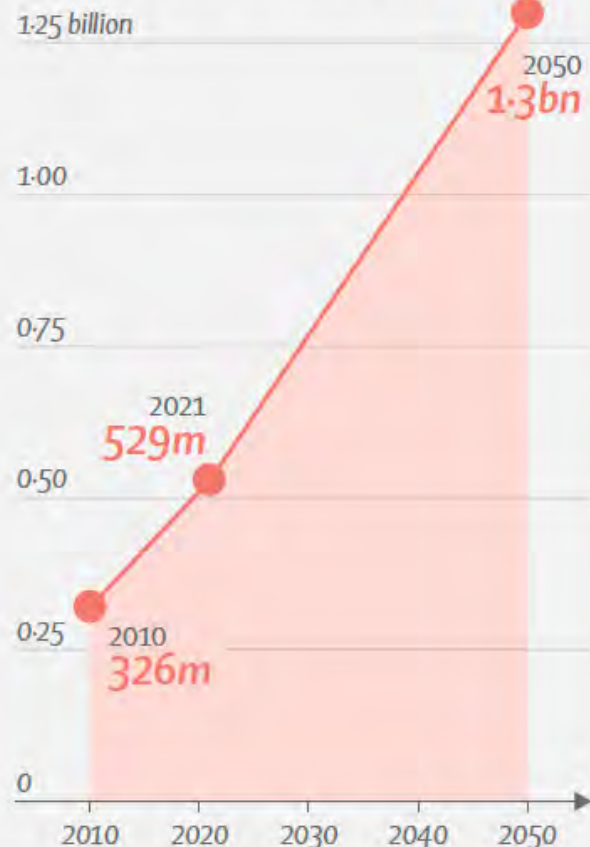
CKD and Diabetes will become the 5th and 7th leading COD in 2040



Global inequity in diabetes

In the next 30 years, the number of adults with diabetes worldwide will more than double. Minoritised communities are disproportionately affected by the disease.

Number of adults with diabetes worldwide



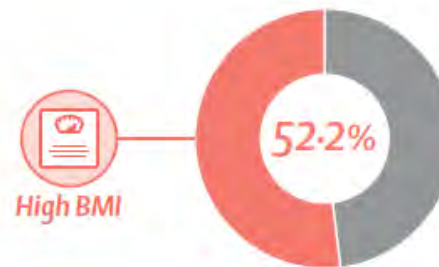
By 2045, three in four adults with diabetes will be from low-income and middle-income countries (LMICs)



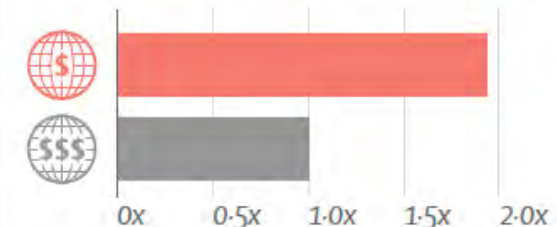
Within high-income countries (HICs), such as the USA, prevalence of diabetes in minoritised groups is nearly 1.5 times higher than in White groups



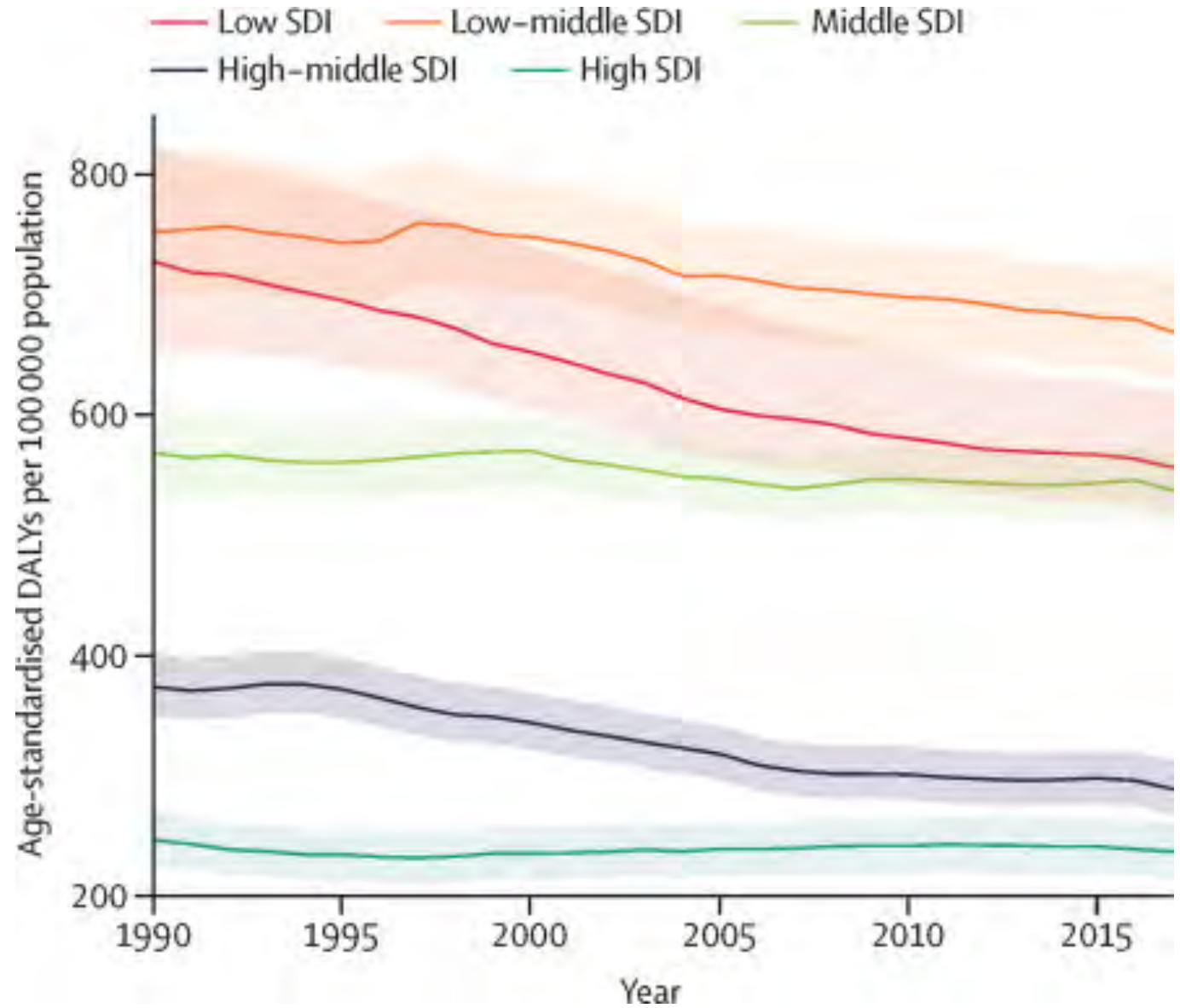
In 2021, approximately half of global disability-adjusted life-years due to type 2 diabetes was attributed to high BMI



As of 2019, diabetes-related mortality rates and disability-adjusted life-years were nearly double in LMICs compared with HICs



Age-standardized CKD DALYs rate by SDI quintiles



The actual burden in LMICs of APAC may be greater than previously estimated

Kidney disease

in Uddanam, Andhra Pradesh

Out of every 100 persons



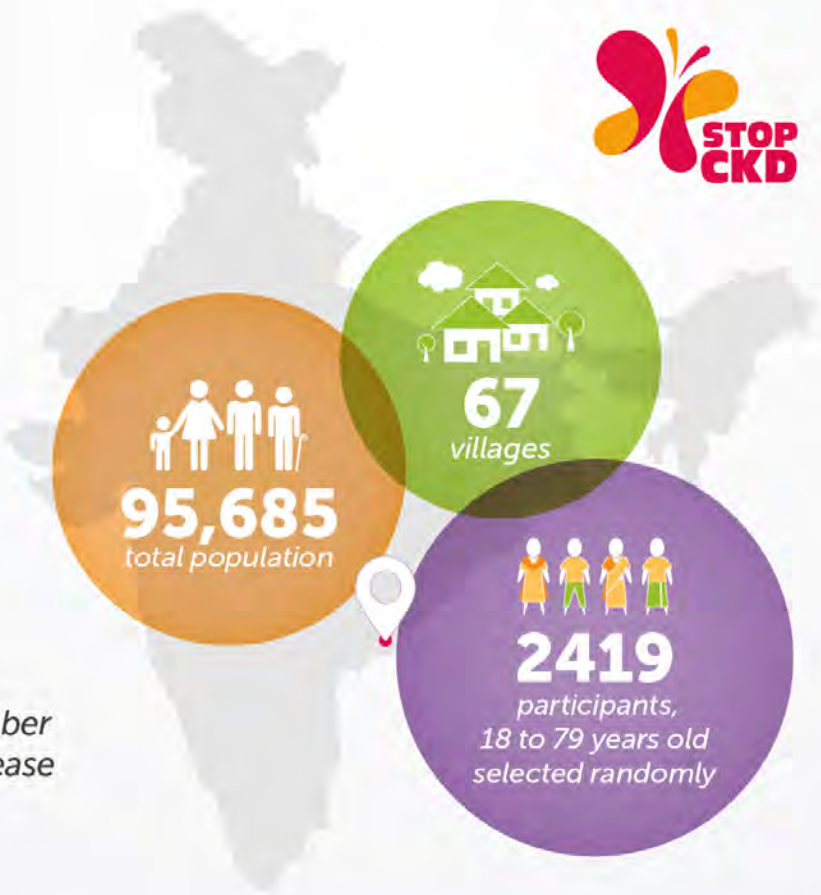
42 had high blood pressure



13 had diabetes



14 had another family member affected with kidney disease



THERE IS A LARGE UNDIAGNOSED CKD BURDEN IN INDIA

Kidney disease

in Uddanam, Andhra Pradesh



Out of every 100 persons



21 had kidney disease

67 villages

9 out of every 10 persons with CKD did not know they had the disease

16 showed increased loss of protein by kidneys

2419 participants 18 to 79 years old selected randomly

Summary of KDIGO 2012 CKD Guideline: beyond the scenes, need for guidance, and a frame for moving forward

Adeera Levin¹ and Paul E. Stevens²

meeting report

www.kidney-international.org

Understanding kidney care needs and implementation strategies in low- and middle-income countries: conclusions from a “Kidney Disease: Improving Global Outcomes” (KDIGO) Controversies Conference

Vivekanand Jha^{1,2}, Mustafa Arici³, Allan J. Collins^{4,5}, Guillermo Garcia-Garcia⁶, Brenda R. Tazeen H. Jafar^{8,9,10}, Roberto Pecoits-Filho¹¹, Laura Sola¹², Charles R. Swanepoel¹³, Irma Tchokhanelidze¹⁴, Angela Yee Moon Wang¹⁵, Bertram L. Kasiske¹⁶, David C. Wheeler Goce Spasovski¹⁸; for Conference Participants¹⁹

The case for early identification and intervention of chronic kidney disease: conclusions from a Kidney Disease: Improving Global Outcomes (KDIGO) Controversies Conference

Michael G. Shlipak^{1,2}, Sri Lekha Tummalapalli^{1,2}, L. Ebony Boulware³, Morgan E. Grams^{4,5}, Joachim H. Ix^{6,7,8}, Vivekanand Jha^{9,10,11}, Andre-Pascal Kengne^{12,13}, Magdalena Madero¹⁴, Borislava Mihaylova^{15,16}, Navdeep Tangri¹⁷, Michael Cheung¹⁸, Michel Jadoul¹⁹, Wolfgang C. Winkelmayer²⁰ and Sophia Zoungas^{21,22}; for Conference Participants²³

Executive summary of the KDIGO 2022 Clinical Practice Guideline for Diabetes Management in Chronic Kidney Disease: an update based on rapidly emerging new evidence

Peter Rossing^{1,2}, M. Luiza Caramori³, Juliana C.N. Chan^{4,5}, Hiddo J.L. Heerspink⁶, Clint Hurst⁷, Kamlesh Khunti⁸, Adrian Liew⁹, Erin D. Michos¹⁰, Sankar D. Navaneethan^{11,12}, Wasiu A. Olowu¹³, Tami Sadusky¹⁴, Nikhil Tandon¹⁵, Katherine R. Tuttle¹⁶, Christoph Wanner¹⁷, Katy G. Wilkens¹⁸, Sophia Zoungas¹⁹, Jonathan C. Craig^{20,21}, David J. Tunnicliffe^{21,22}, Marcello A. Tonelli²³, Michael Cheung²⁴, Amy Earley²⁴ and Ian H. de Boer²⁵



OPEN

Check for updates

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www.kidney-international.org

KDIGO executive conclusions

Executive summary of the KDIGO 2021 Clinical Practice Guideline for the Management of Blood Pressure in Chronic Kidney Disease

Jonathan C. Craig¹, William C. Cushman³, Susan L. Furth^{4,5}, Fan Fan Hou⁶, Joachim H. Ix^{7,8}, Jonathan C. Craig^{9,10}, Roberto Pecoits-Filho^{11,12}, Mark J. Sarnak¹³, Sheldon W. Tobe^{14,15}, Jonathan C. Craig^{16,17,18}, Jonathan C. Craig^{19,20}, David J. Tunnicliffe^{20,21}, Marcello A. Tonelli²², Michael Cheung²³, Amy Earley²³ and Johannes F.E. Mann²⁴

Check for updates

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Check for updates

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Challenges to traditional outcomes research

It takes an average of 17 years of
before **research findings** are
translated to practice

Prescription Practices in Patients with Mild to Moderate Chronic Kidney Disease in India



Cohort



Indian Chronic Kidney Disease cohort



Prospective, Observational



11

Tertiary care centers



Chronic Kidney Disease (stage 1-4)



3966 of 4056
Subjects with complete prescription data

79%

Chronic kidney disease

Hypertension

26% Moderate-severe proteinuria

Findings

RAAS blockers



40%

40% patients



Metformin



26%

patients with diabetes

Iron 31%

ESA 3%

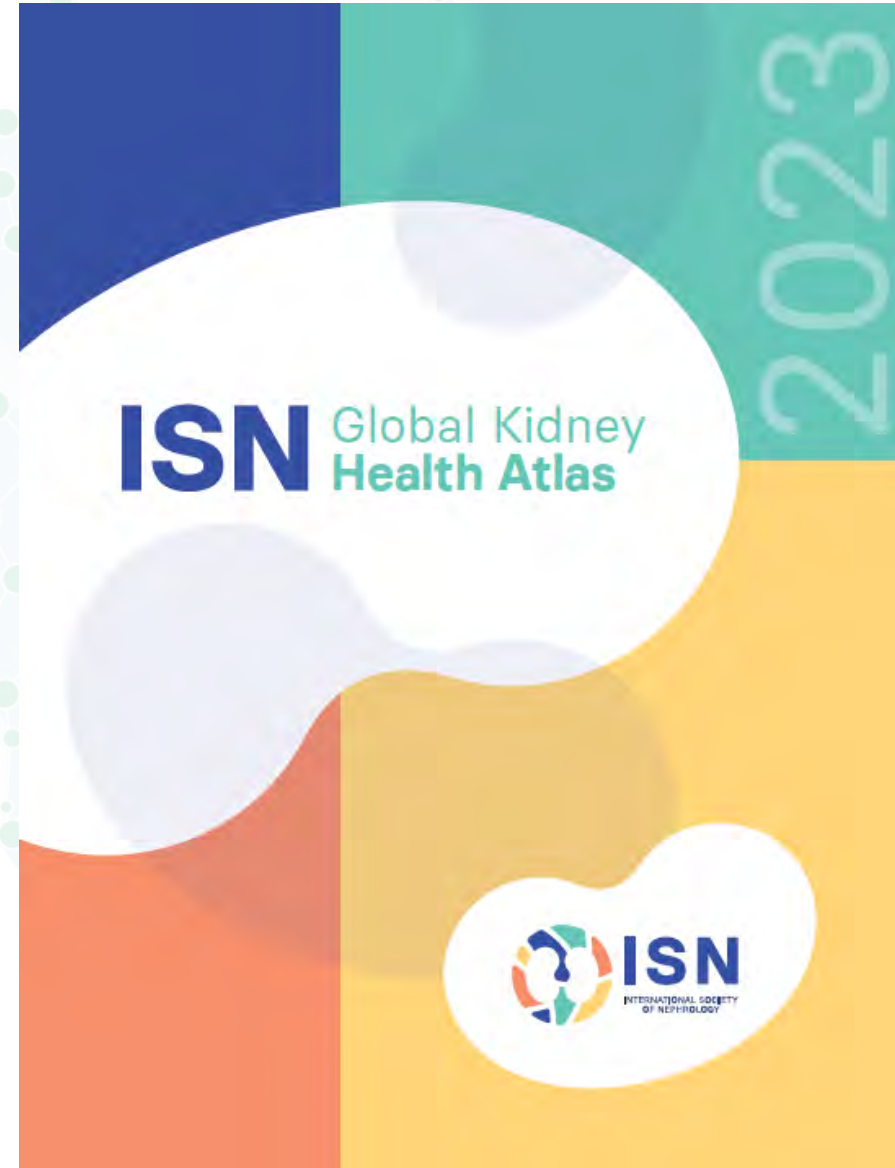
in anemic patients



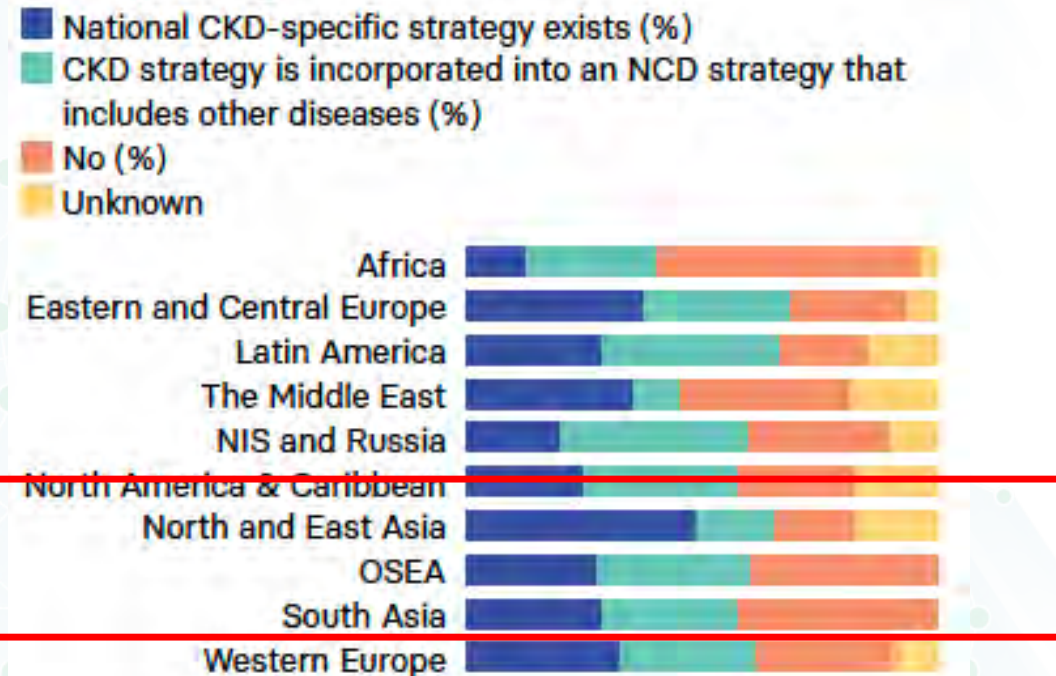
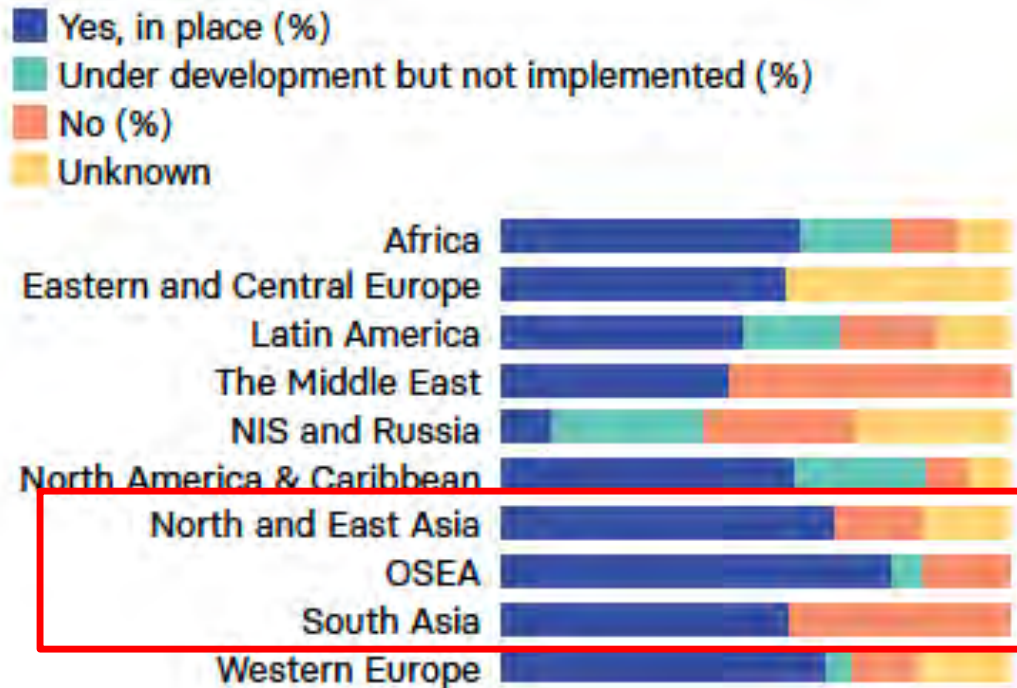
RAAS: Renin-Angiotensin-Aldosterone System, ESA: erythropoietin stimulating agent

Why does it take so long and why is the uptake so poor?

National
health
policies for
CKD in
APAC region



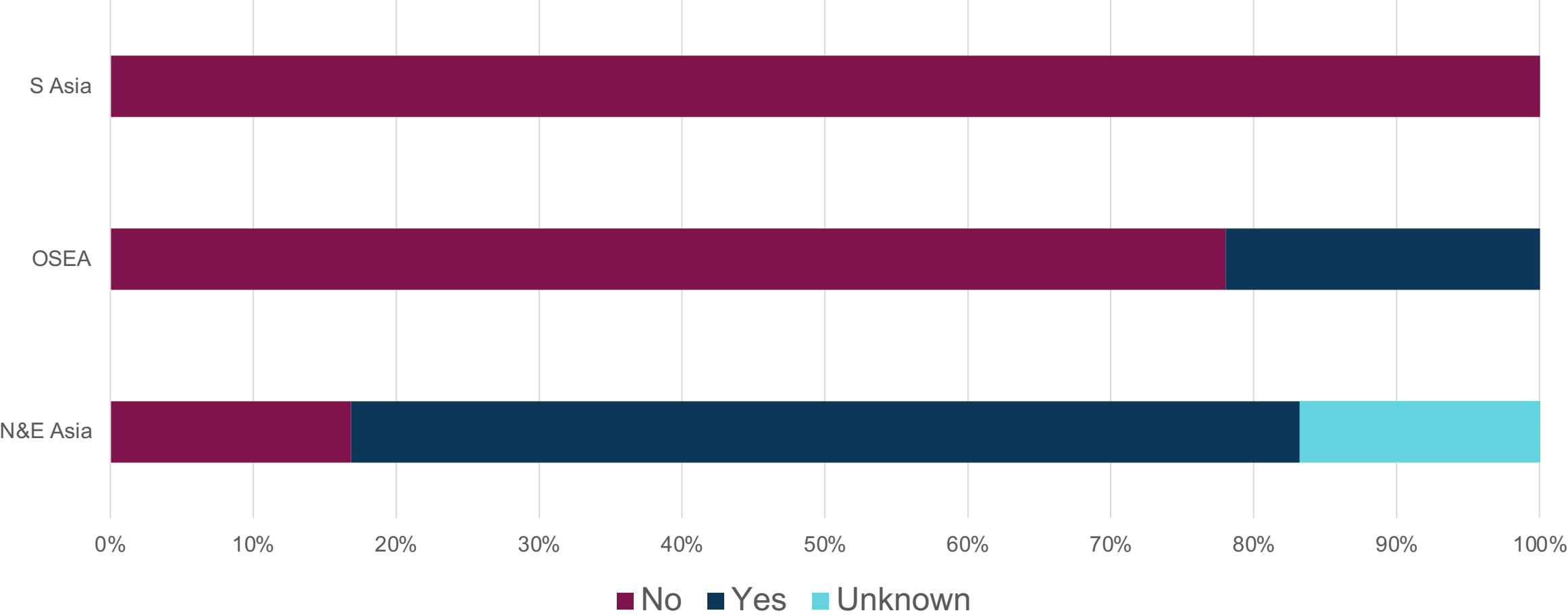
Existence of national strategies



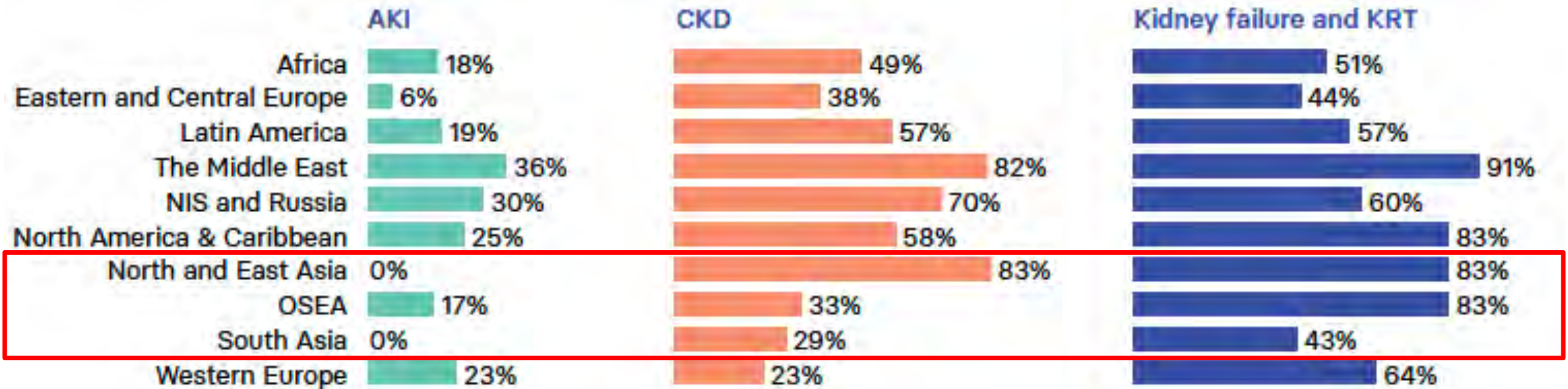
National Strategies for NCD care

National Strategies for CKD care

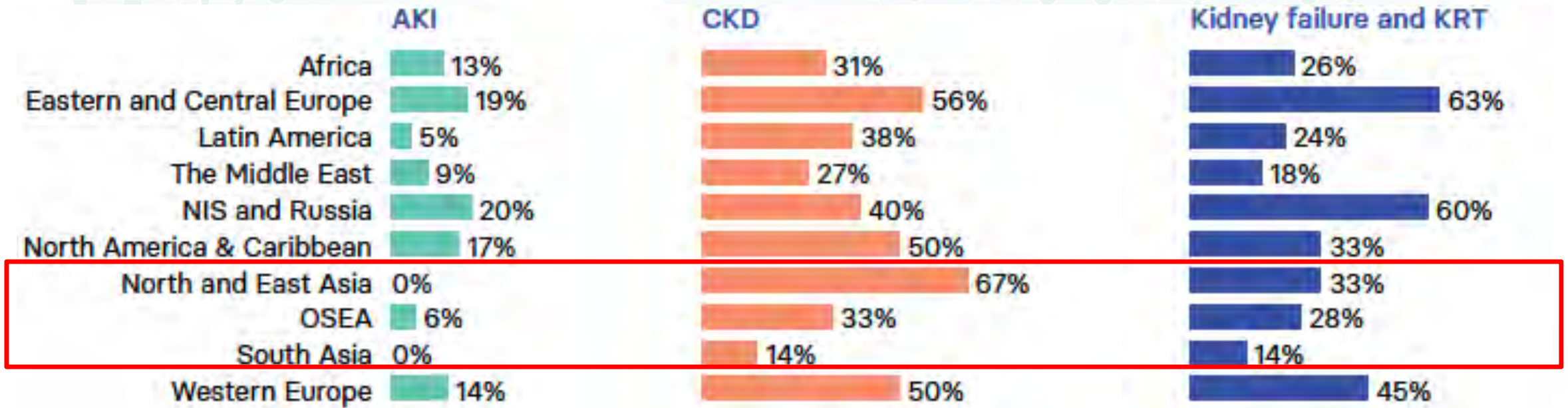
Existence of kidney disease specific policies



Government recognition of kidney disease as health priorities



Treatment availability for kidney diseases



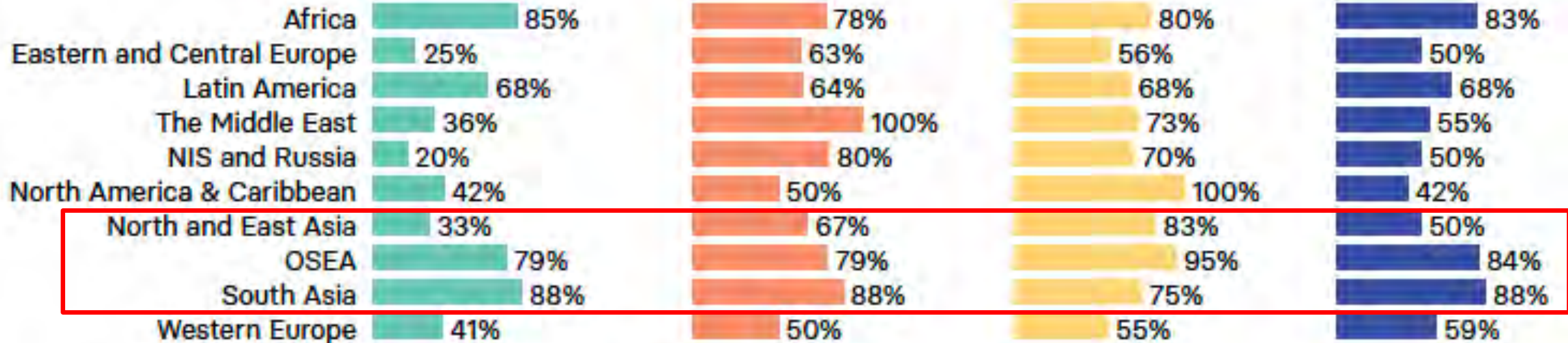
Barriers to care

Distance from care,
Geography

Physician availability/
access

Knowledge/
attitude
amongst
PLWKD

Nephrologist
knowledge/
attitude



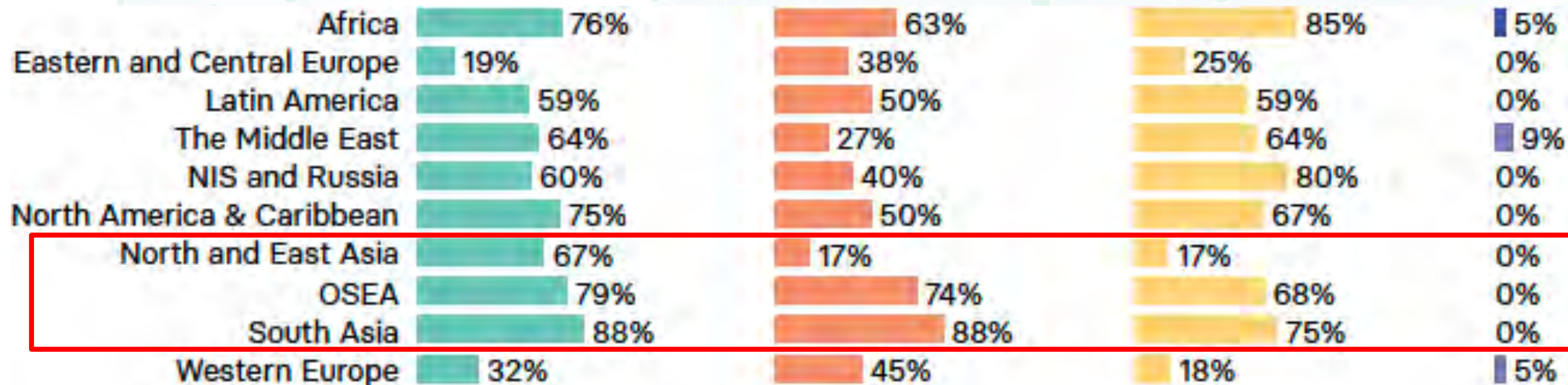
Barriers to care (contd)

Health system availability/
access/
capability

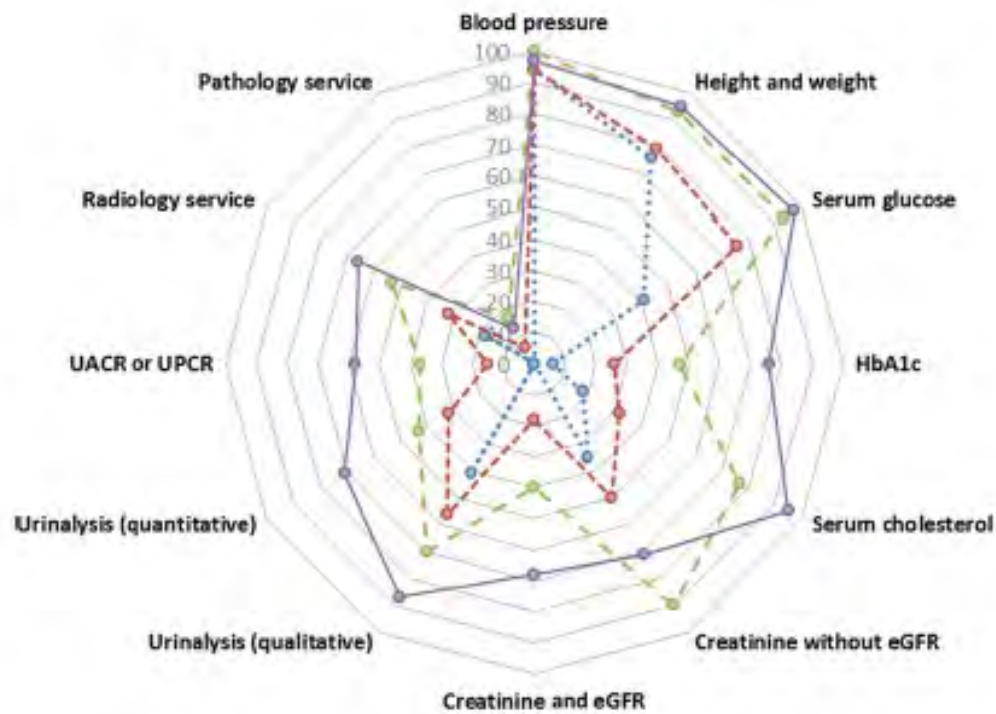
Lack of
political
priority

Poor funding/
reimbursement

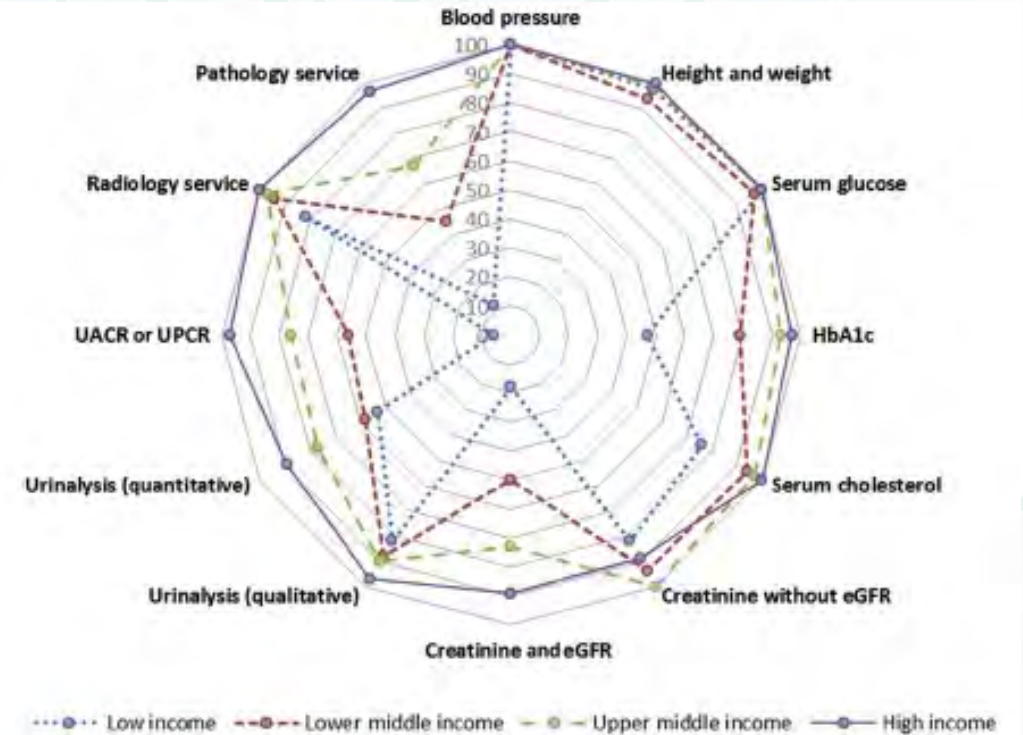
Other
factors



Healthcare services for diagnosis and management of CKD



Primary care



Secondary/Tertiary care

Funding for non-dialysis CKD

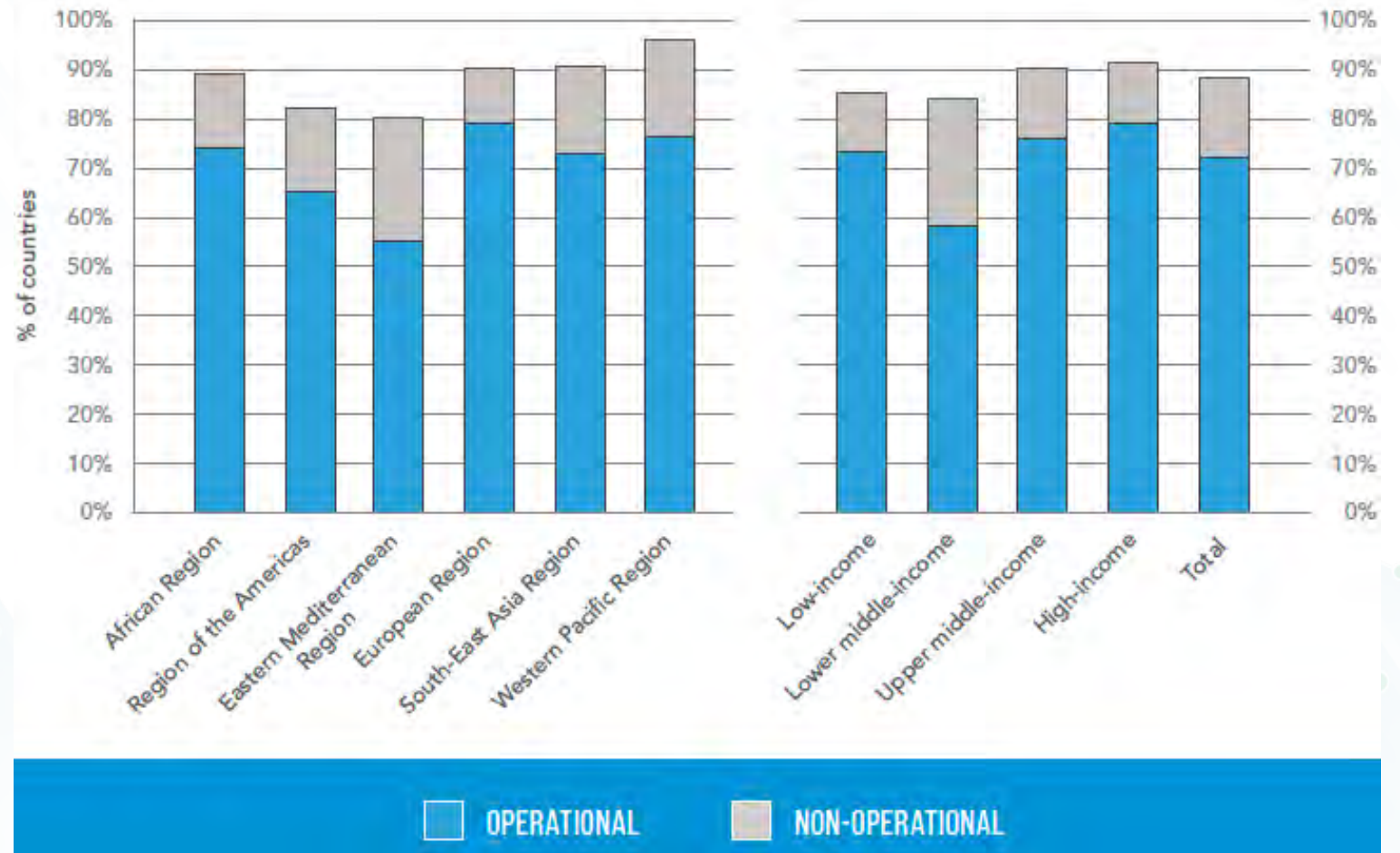
Category	Total	Publicly funded by government and free at point of delivery n (%)		Publicly funded by government but with some fees at point of delivery n (%)		A mix of publicly funded (whether or not publicly funded component is free at point of delivery) and private systems. N (%)		Solely private and out-of-pocket n (%)		Solely private through health insurance providers n (%)		Multiple systems: programs provided by government, NGOs, and communities. N (%)		Other n (%)	
Overall	167	45	(27)	32	(19)	62	(37)	8	(5)	1	(1)	15	(9)	4	(2)
ISN region															
Africa	41	4	(10)	10	(24)	14	(34)	7	(17)	0	(0)	4	(10)	2	(5)
Eastern & Central Europe	16	7	(44)	4	(25)	5	(31)	0	(0)	0	(0)	0	(0)	0	(0)
Latin America	22	1	(5)	3	(14)	13	(59)	0	(0)	0	(0)	5	(23)	0	(0)
Middle East	11	3	(27)	1	(9)	6	(55)	0	(0)	0	(0)	1	(9)	0	(0)
NIS & Russia	10	3	(30)	3	(30)	3	(30)	0	(0)	0	(0)	1	(10)	0	(0)
North America & the Caribbean	12	3	(25)	3	(25)	6	(50)	0	(0)	0	(0)	0	(0)	0	(0)
North & East Asia	6	1	(17)	3	(50)	2	(33)	0	(0)	0	(0)	0	(0)	0	(0)
OSEA	19	4	(21)	3	(16)	9	(47)	1	(5)	0	(0)	2	(11)	0	(0)
South Asia	8	3	(38)	0	(0)	2	(25)	0	(0)	0	(0)	2	(25)	1	(13)
Western Europe	22	16	(73)	2	(9)	2	(9)	0	(0)	1	(5)	0	(0)	1	(5)

National
capacity for
prevention
and control
of diabetes

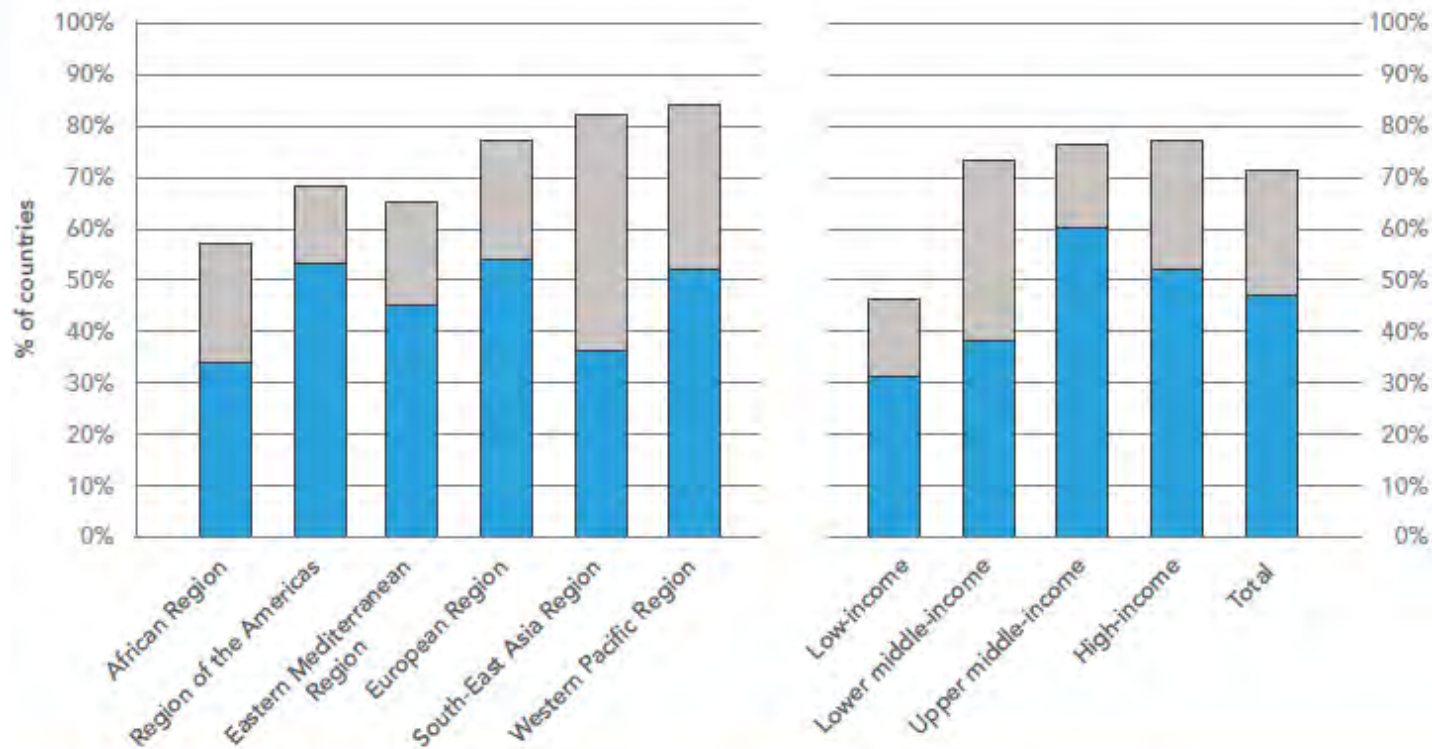
GLOBAL REPORT ON DIABETES



Countries having national diabetes policy

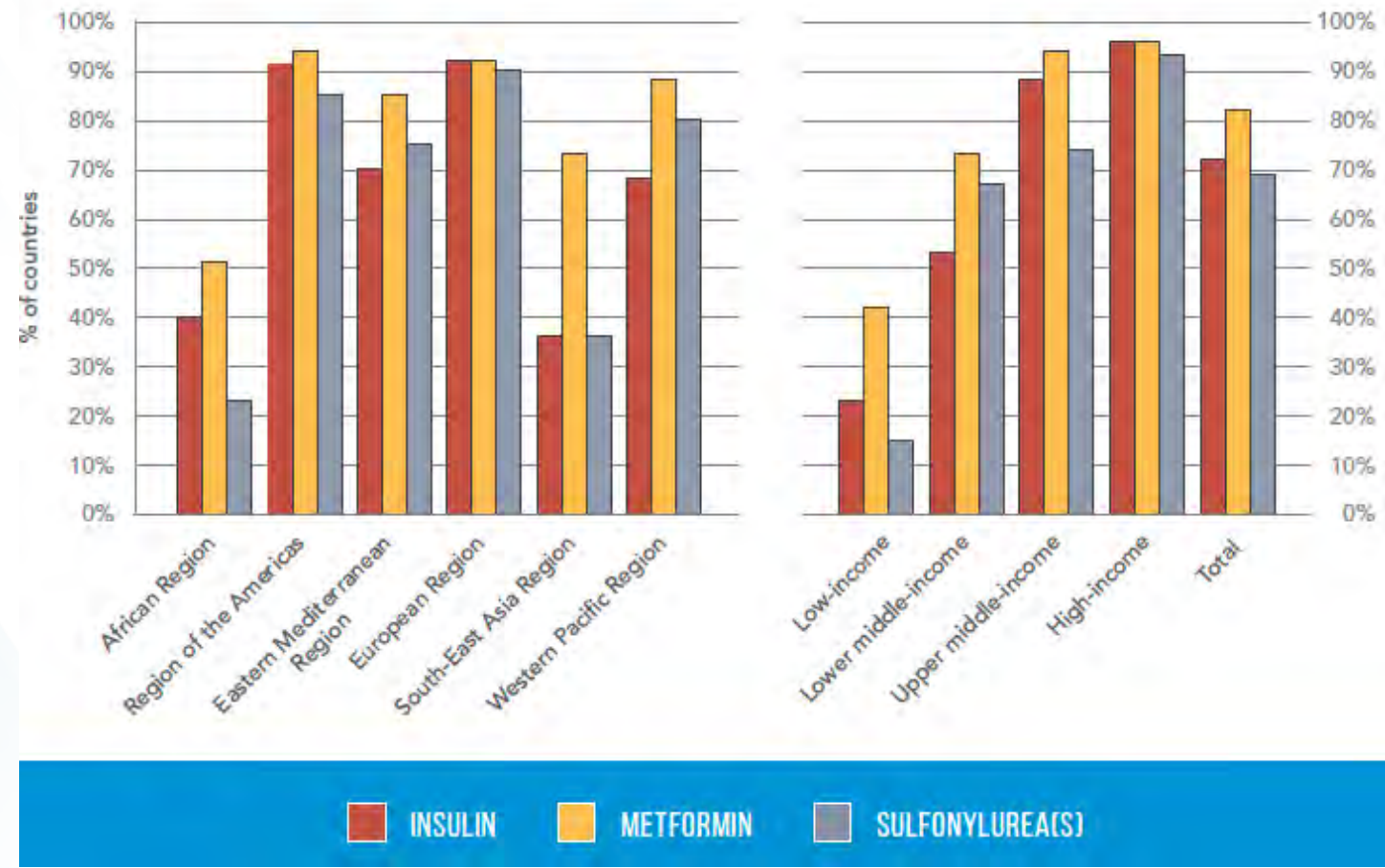


Countries with diabetes guidelines

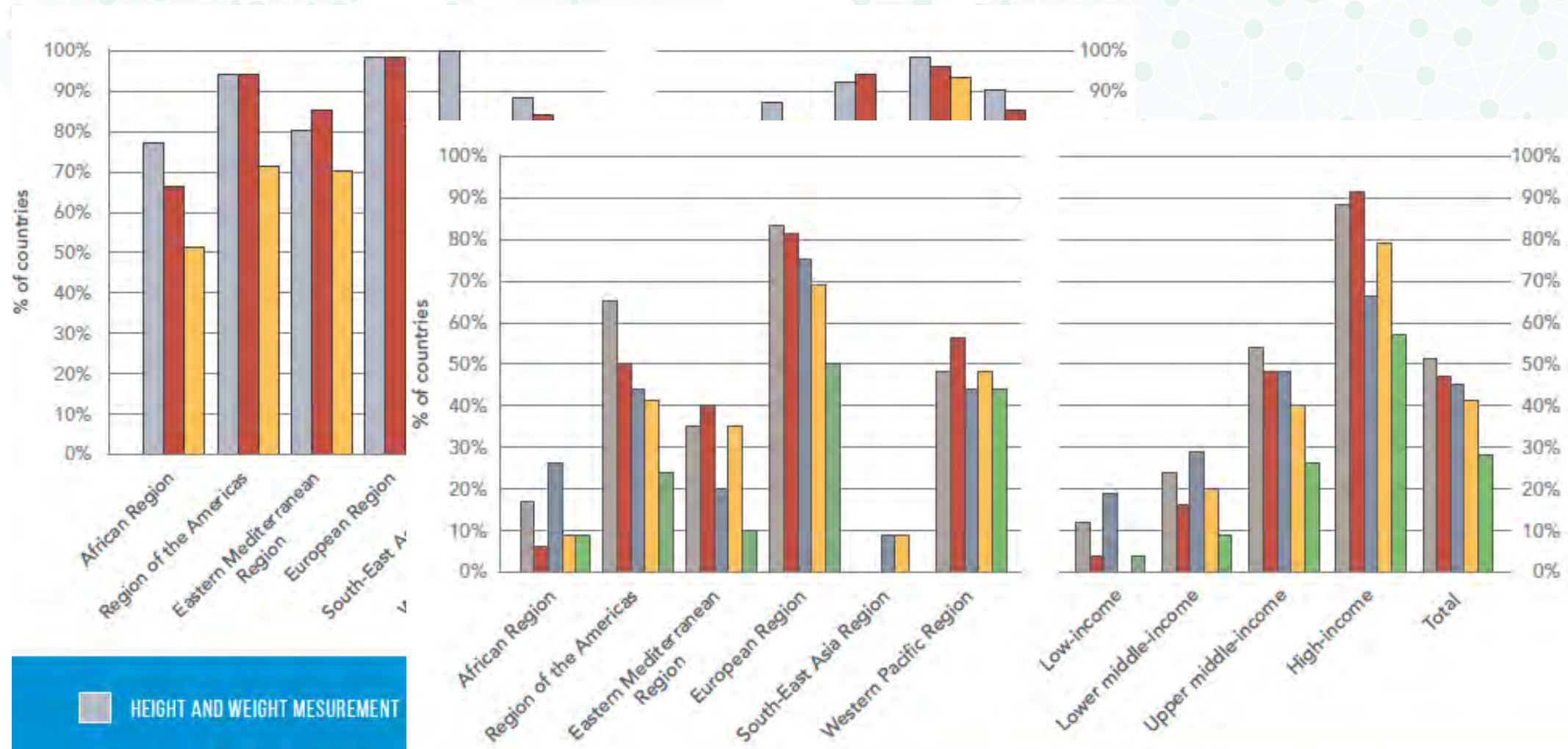


FULLY IMPLEMENTED PARTIALLY IMPLEMENTED

Essential diabetes medicines in public pharmacies



Availability of basic technologies for diabetes care



HEIGHT AND WEIGHT MEASUREMENT

ORAL GLUCOSE TOLERANCE TEST HBA1C TEST DILATED-PUPIL FUNDUS EXAMINATION
 FOOT VIBRATION PERCEPTION BY TUNING FORK FOOT VASCULAR STATUS BY DOPPLER

Other findings

- Insulin is generally available only in 23% of LICs
- Blood glucose measurement generally available in 50% of LICs
- < 50% of countries have conducting a national population-based survey with blood glucose measurement
- Only 1 in 3 LICs report general availability of the most basic technologies for diagnosis and management of diabetes

KDIGO Controversies Conference on Maintaining Kidney Health and Preventing CKD



Implementation strategies

- Aim for a lifespan approach to health
 - **Ensure a healthy state free from illness and development of disease** that results in premature death or functional disability. It may focus on, but not limit to, kidney health.
- **Generalization and equality** for all people act as the supreme and universal principle, supported by policies of governments and resources from public and private sectors.
- **Medical professionals and health workers collaborate with patients and citizens**, promoting the concepts and conducting the behaviors of healthy lifestyle.
- Early detection through **optimal screening project** prevents the development of disease.
- Appropriate management by medical treatment and care, based on **comprehensive researches and update guidelines**, retard the disease progression.

Implementation strategies

- Engagement of policymakers and public in a different way
- Breaking down CKD prevention into smaller, attainable goals
- Don't set your goal with policymakers too far (reduce incidence of CKD)
 - Set more near-term horizon with objectives that you can reach and maintain momentum
 - Move beyond medical issues to include SDOH/economic determinants of well being
- New therapies promise more readily available cost-effectiveness data to justify ROI
 - Models can be used to show potential benefits to government
 - Inputs of economic models are similar internationally except for costs of drugs
- Consider missing perspectives (e.g. Africa v. health systems in developed countries)

Seeing
is
Believing



CONCLUSIONS

Huge unmet need for care of CKD subjects in globally, more so in resource poor regions

Large demand-supply gaps

Western “nephrologist-centric” models of care unlikely to work

We need to become smarter to manage this burden

Nephrologists and community physicians have to work together

Implementation of smart preventive methods