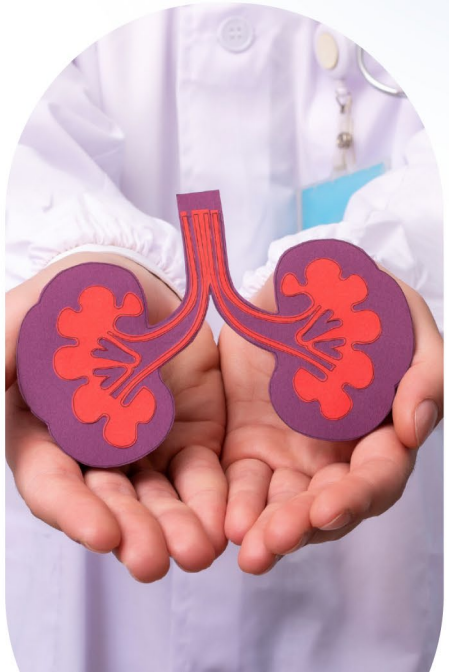
International Diabetes Federation

Diabetes and Kidney Disease: Latest data from the IDF Diabetes Atlas and the iCaReMe registry

Online event



14 May 2024
16:00-17:30 CEST

DIABETES AND KIDNEY DISEASE: LATEST DATA FROM THE IDF DIABETES ATLAS AND THE iCaReMe REGISTRY

WELCOME FROM THE MODERATOR

PROF EDWARD J BOYKO, M.D., M.P.H

Professor University of Washington, Staff Physician, VA Puget Sound, IDF Diabetes Atlas co-chair

United States of America (USA)

WELCOME FROM IDF

- This webinar will be recorded.
- You can activate Zoom-generated subtitles by clicking on the closed caption (cc) button at the bottom of your Zoom window. Please note these subtitles are not 100% accurate.
- The recording, slides and feedback questionnaire will be sent to all registrants in a few days.
- Participants who attend at least 80% of this event live will receive an attendance certificate only if they complete a feedback questionnaire. Please check your spam folders if you have not received them by 27 May.
- **Please use the Q&A function to post your questions to speakers and panellists.**

DIABETES AND KIDNEY DISEASE: LATEST DATA FROM THE IDF DIABETES ATLAS AND THE iCaReMe REGISTRY

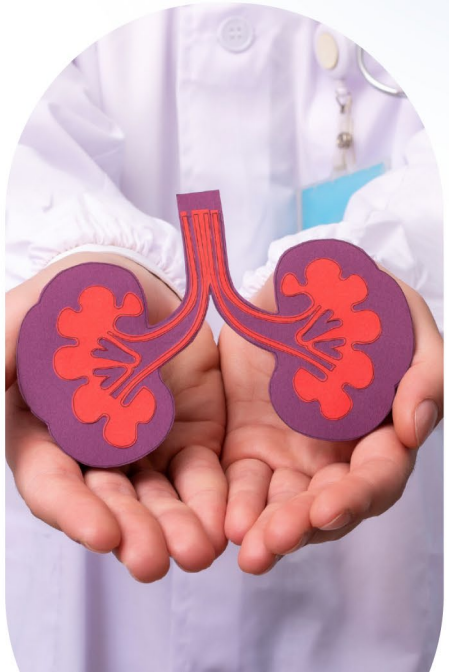
WELCOME FROM THE IDF PRESIDENT

PROF AKHTAR HUSSAIN

IDF President

Bangladesh/Norway

Setting the scene



DIABETES AND KIDNEY DISEASE: LATEST DATA FROM THE IDF DIABETES ATLAS AND THE iCaReMe REGISTRY

DIABETES AND KIDNEY DISEASE: DATA FROM THE IDF DIABETES ATLAS 2023 REPORT

PROF EDWARD J BOYKO, M.D., M.P.H

Professor University of Washington, Staff Physician, VA Puget Sound, IDF Diabetes Atlas co-chair

United States of America (USA)

IDF Atlas report – Diabetes and Kidney Disease

https://diabetesatlas.org/atlas-reports/

Diabetes and kidney disease: the latest data from the IDF Diabetes Atlas and the iCaReMe registry

Classification of CKD

- Low risk (if no other markers of kidney disease, no CKD)
- Moderately increased risk
- High risk
- Very high risk

Albuminuria is usually the first sign of diabetic kidney disease

				Persistent albuminuria categories Description and range		
				A1	A2	A3
				Normal to mildly increased	Moderately increased	Severely increased
				<30 mg/g <3 mg/mmol	30–300 mg/g 3–30 mg/mmol	>300 mg/g >30 mg/mmol
GFR categories Description and range	G1	Normal or high	≥90 ml/min per 1.73 m²			
	G2	Mildly decreased	60–89 ml/min per 1.73 m²			
	G3a	Mildly to moderately decreased	45–59 ml/min per 1.73 m²			
	G3b	Moderately to severely decreased	30–44 ml/min per 1.73 m²			
	G4	Severely decreased	15–29 ml/min per 1.73 m²			
	G5	Kidney failure	<15 ml/min per 1.73 m²			

Levin A, Stevens PE, Bilous RW, et al. Kidney Disease: Improving Global Outcomes (KDIGO) CKD Work Group. KDIGO 2012 clinical practice guideline for the evaluation and management of chronic kidney disease. Kidney Int Supp. 2013;3(1):1-150. (Adapted with permission.)

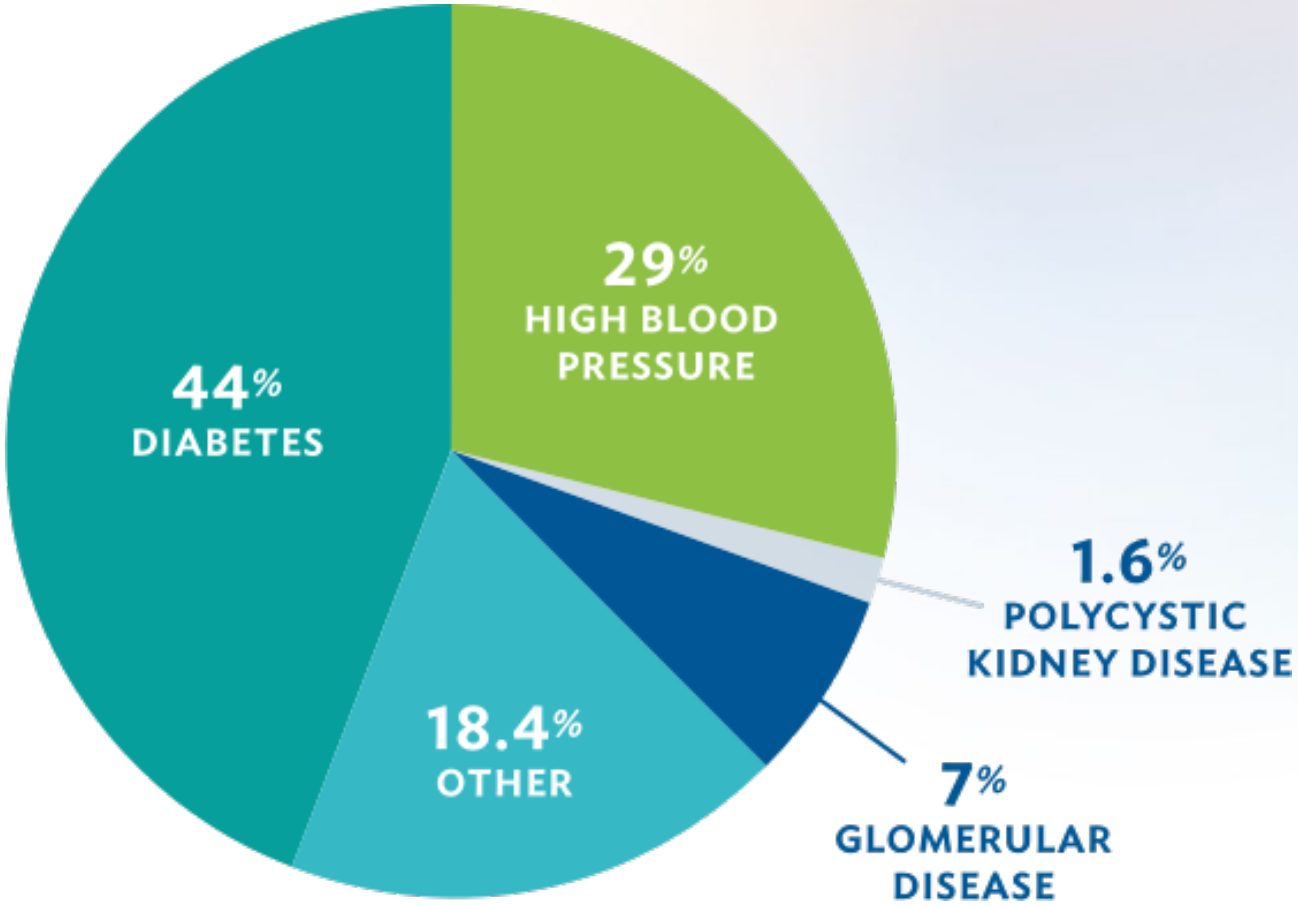
Kidney Disease Definitions

- **Acute kidney disease**
  - Potentially reversible, not progressive if the underlying cause is removed
  - Many causes – infection, obstruction, medications, toxin exposure, dehydration
- **Chronic kidney disease (CKD)**
  - Progressive
  - Caused by underlying systemic condition or local disease confined to the kidney
  - Systemic – diabetes, hypertension, systemic lupus erythematosus
  - Local – glomerulonephritis, polycystic kidney disease
- **End stage kidney disease (ESKD)**
  - The final stage of CKD
  - GFR < 15 ml/min per 1.73 m^2
  - Fatal unless treated with renal replacement therapy
  - Most persons with CKD due to diabetes or hypertension do not progress to ESKD and require renal replacement therapy

CKD – Signs, symptoms and risks

- **Uremia (ESKD)**
  - Nausea, vomiting, fatigue, anorexia, weight loss, muscle cramps, pruritus
  - Encephalopathy, coma, seizures
  - Pericarditis
  - Acidosis
  - Hyperkalemia
  - Pulmonary and peripheral edema
  - Anemia
  - Metastatic calcification
  - Renal osteodystrophy
  - Death
- **Stage 3-4 CKD**
  - Cardiovascular disease
  - Diabetic lower limb amputation

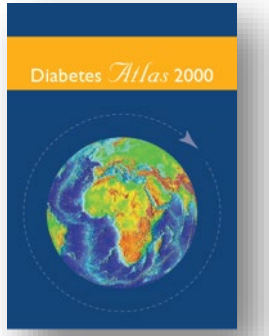
CKD causes



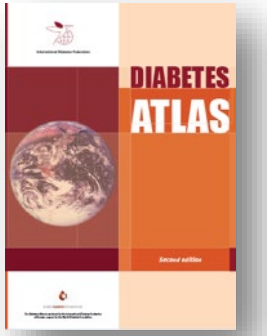
Diabetes and kidney disease: the latest data from the IDF Diabetes Atlas and the iCaReMe registry

All editions of the IDF Diabetes Atlas

2000-2021

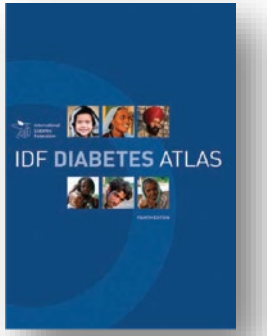


First edition, *2000*

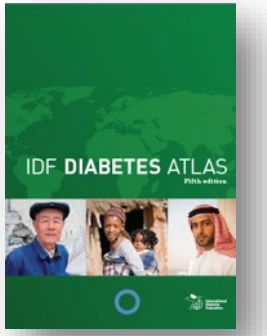


Second edition, *2003*

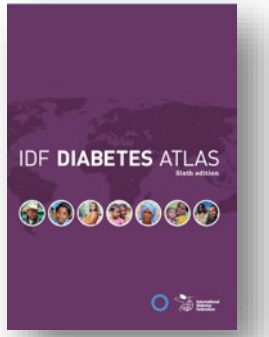
Third edition, *2006*



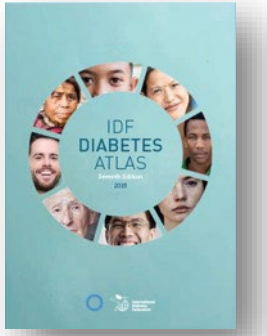
Fourth edition, *2009*



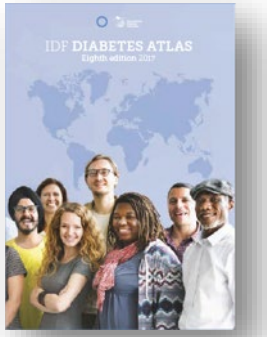
Fifth edition, *2011*



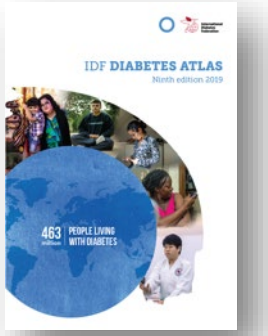
Sixth edition, *2013*



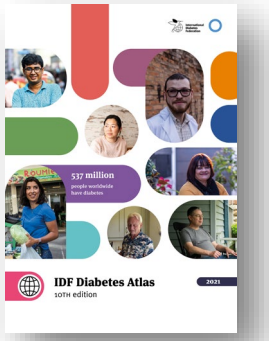
Seventh edition, *2015*



Eight edition, *2017*



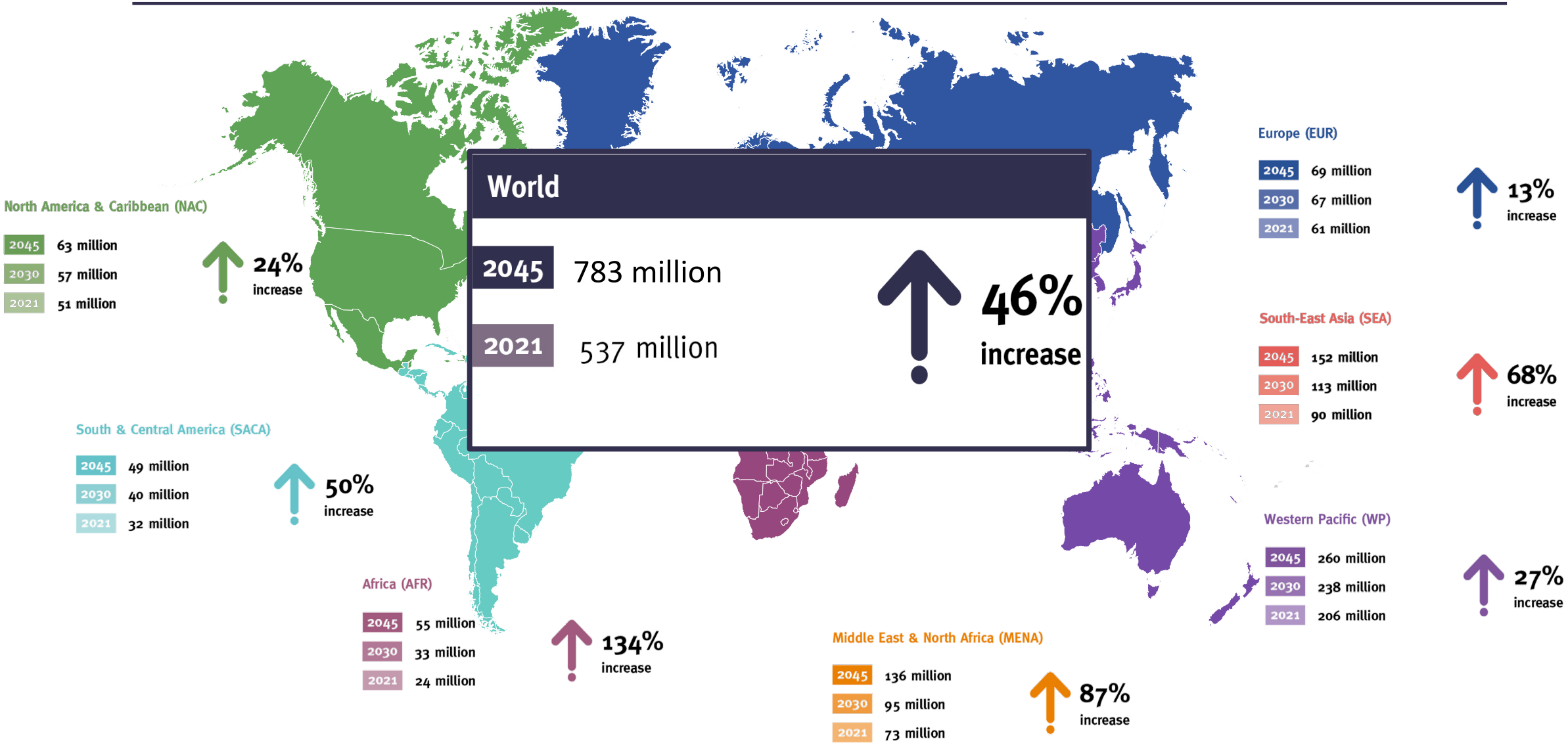
Ninth edition, *2019*



Tenth edition, *2021*

Number of people with diabetes in 2021 and predictions for 2045

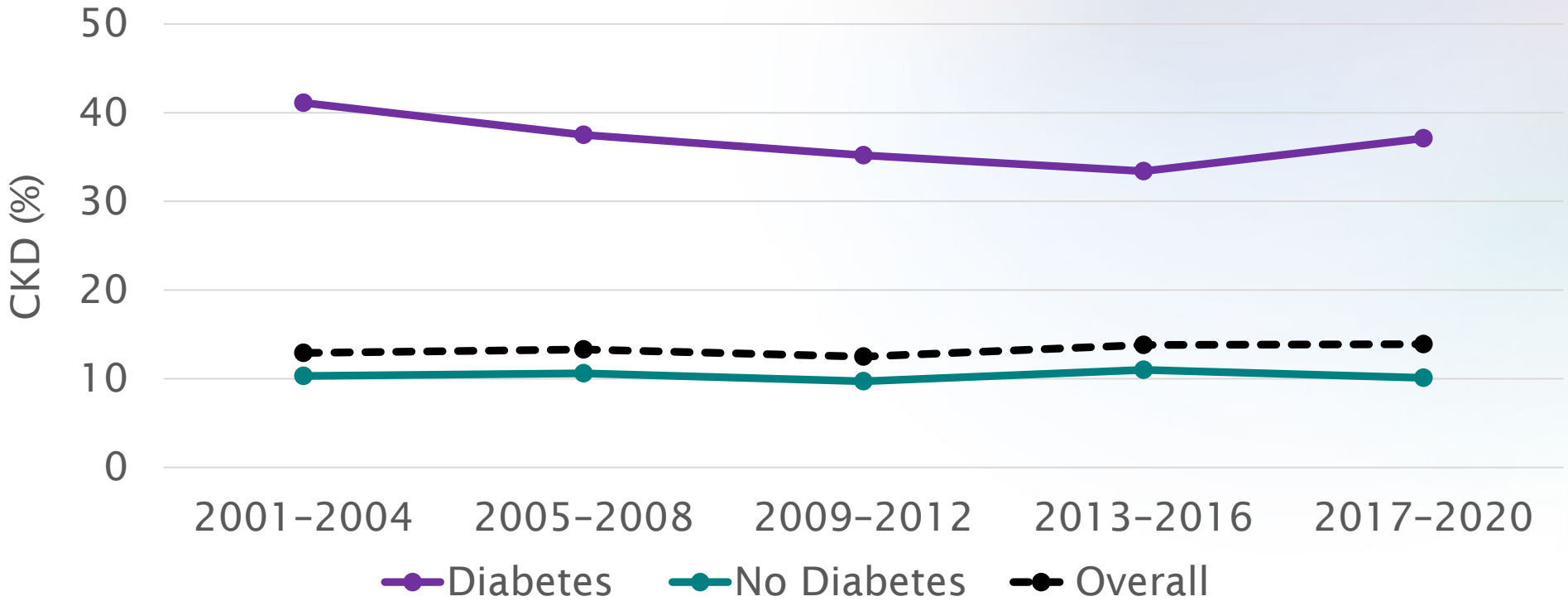
Aged 20–79 years by IDF region



Trends in CKD due to type 2 diabetes

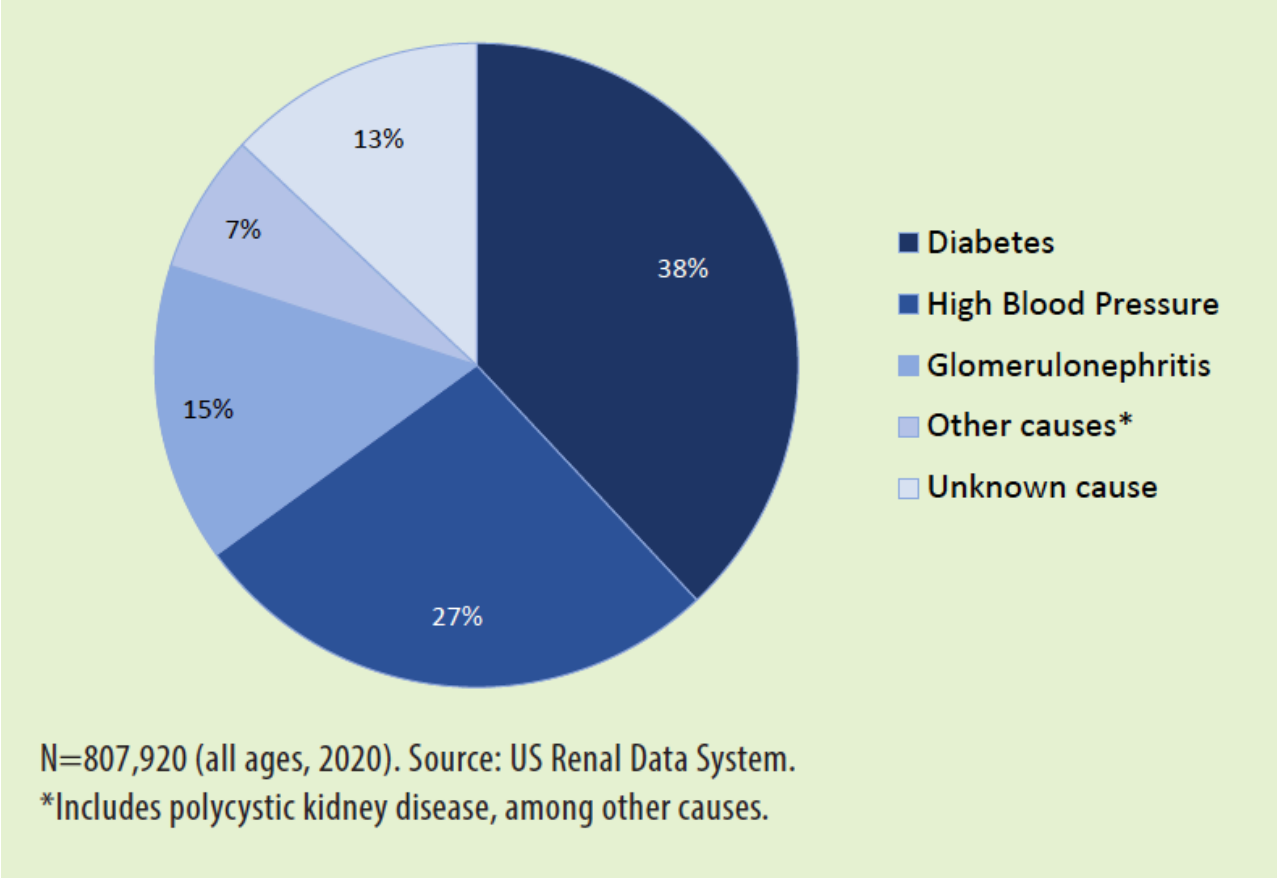
- Change in number of worldwide CKD cases:
  - 1990 - 1,354,548
  - 2017 – 2,352,496
  - 74% increase (mainly due to increase in number of persons with diabetes)
- The age standardized global incidence rate of CKD decreased slightly from 31.92 in 1990 to 29.15 in 2017 per 100,000.
- 1.3 to 4.3 fold higher odds of CKD in persons with compared to without diabetes
- One-third or more of adults with type 2 diabetes are estimated to have CKD

Trends in prevalence of CKD among US adults with diabetes, NHANES



Diabetes and kidney disease: the latest data from the IDF Diabetes Atlas and the iCaReMe registry

Reported cases of end-of-stage kidney disease in the US



N=807,920 (all ages, 2020). Source: US Renal Data System.
*Includes polycystic kidney disease, among other causes.

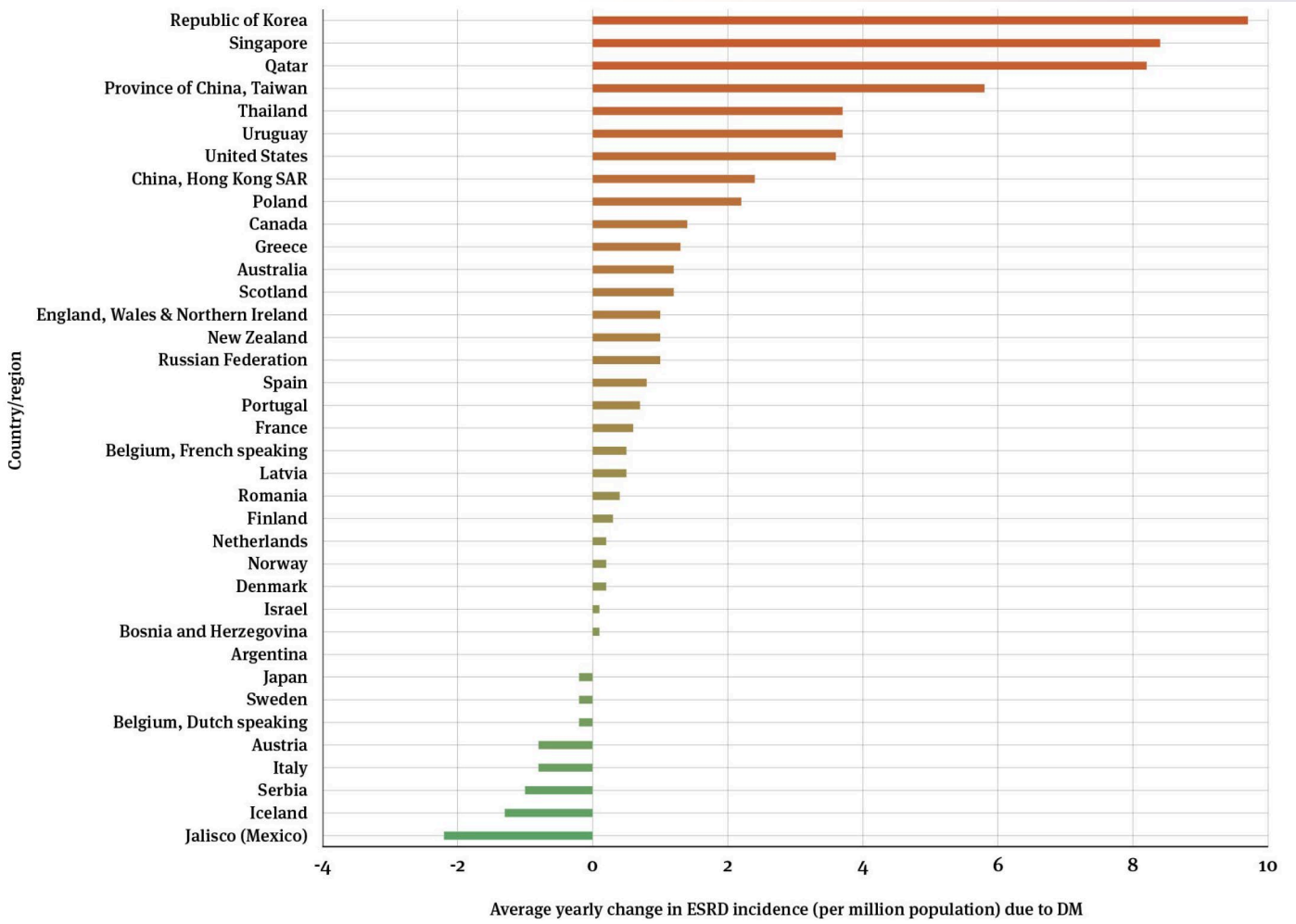
The proportion patients worldwide with ESKD who have diabetes increased from 19% in 2000 to 28% in 2017

Diabetes and kidney disease: the latest data from the IDF Diabetes Atlas and the iCaReMe registry

End Stage Kidney Disease (ESKD), formerly ESRD

- Treated with renal replacement therapy (hemodialysis, peritoneal dialysis, kidney transplant)
- Globally, 27% to 53% of persons requiring renal replacement therapy are estimated to have access to it. Access is limited in low and lower middle-income countries
- Highest incidence of ESKD is found in higher income countries (U.S. and some Asian countries)
- Prevalence of treated ESKD regardless of cause varies by country income level pmp:
  - High 966
  - Upper middle 550
  - Lower middle 321
  - Lower 4

Average yearly change in the incidence of treated ESKD attributed to diabetes, by country and region, 2010-2020



Conclusions

- CKD remains a continuing cause of morbidity, mortality, and economic loss in persons with diabetes worldwide.
- Prevalence shows little change over time despite the demonstration of reduced renal complications with better glycemic control.
- Financial barriers prevent some patients with ESKD from receiving life extending renal replacement therapy.
- Newer medications such as the SGLT2i and GLP-1RA have demonstrated benefit in slowing the progression of renal disease in persons with diabetes but cost may be prohibitive.
- The prevention and treatment of CKD remains a continuing challenge for diabetes caregivers and patients.

International Diabetes Federation

Thank you for your attention!

DIABETES AND KIDNEY DISEASE: LATEST DATA FROM THE IDF DIABETES ATLAS AND THE iCaReMe REGISTRY

REAL-WORLD EVIDENCE IN IMPROVING DIABETES KIDNEY DISEASE CLINICAL CARE: INSIGHTS FROM iCaReMe GLOBAL REGISTRY

PROF CAROL POLLOCK

Professor of Medicine, Northern Clinical School, Kolling Institute of Medical Research, University of Sydney

Australia

iCaReMe Registry

- iCaReMe Global Registry (NCT03549754) is an ongoing, prospective, multinational, multi-center, observational study collecting data on the management and quality of care in patients with CKD, T2D, HTN and/or HF We examined baseline characteristics and treatment patterns of adults with CKD and T2DM, enrolled between Feb 2018 and Dec 2022 in 21 countries.

- We examined baseline characteristics and treatment patterns of adults with CKD and T2DM, enrolled between Feb 2018 and Dec 2022 in 21 countries across the six WHO regions.

List of countries: Argentina, Costa Rica, Egypt, Ethiopia, Georgia, Greece, Hong Kong, Indonesia, India, Jordan, Kenya, Lebanon, Malaysia, Mexico, Russia, South Africa, Thailand, The Philippines, Turkey, Ukraine, United Arab Emirates **

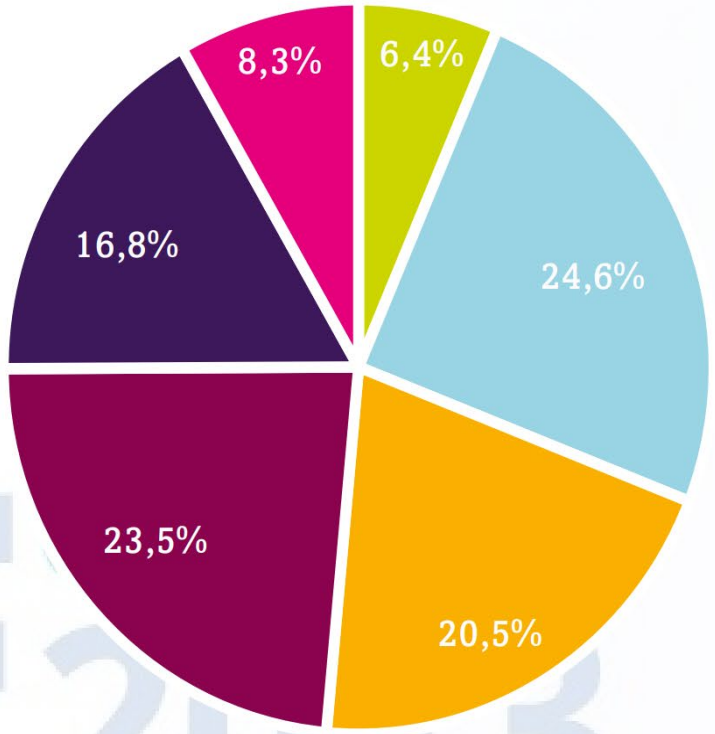
WHO regions: Africa, Americas,, Eastern Mediterranean, Europe, South-East Asia, Western Pacific

Demographic and clinical characteristics

Characteristics[Ψ]	CKD+T2D (N=2052)
Age (years)	62.8 ± 11.4 (N=2045)
Female, n (%)	971 (47.3)
BMI≥30kg/m², n (%)	591 (36.1) (N=1636)
Blood Pressure	
Systolic BP (mmHg)	133.0 ± 20.2 (N=1930)
Diastolic BP (mmHg)	76.7 ± 11.6 (N=1926)
HbA1c (%)	N=1581
Mean ± SD	7.8 ± 1.8
Median (IQR)	7,3 (6.5,8.8)
<6.5%, n (%)	376(23.8%)
<7%, n (%)	629(40%)
<8%, n (%)	984(62.2%)
Renal Function	
Sr Creatinine (mg/dL)	1.8 ± 1.4 (N=1820)
eGFR (mL/min/1.73m²)	48.6 ± 25.1 (N=1820)
UACR (mg/g)	406.3± 847.6 (N=669)
Comorbidities	
Stroke, n (%)	77/1261 (6.1)
CAD, n (%)	417/1255 (33.2)
HF, n (%)	523/1271(41.1)

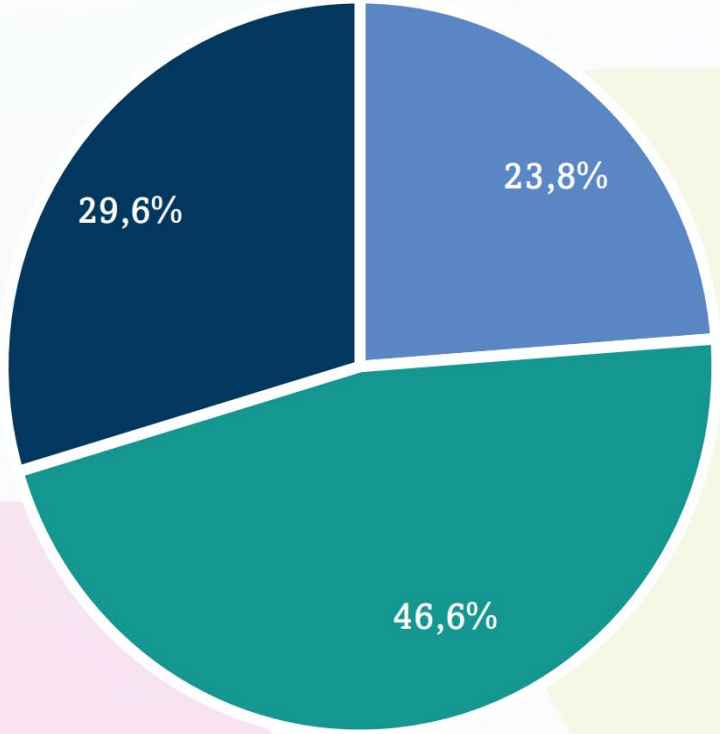
Diabetes and kidney disease: the latest data from the IDF Diabetes Atlas and the iCaReMe registry

KDIGO eGFR stages



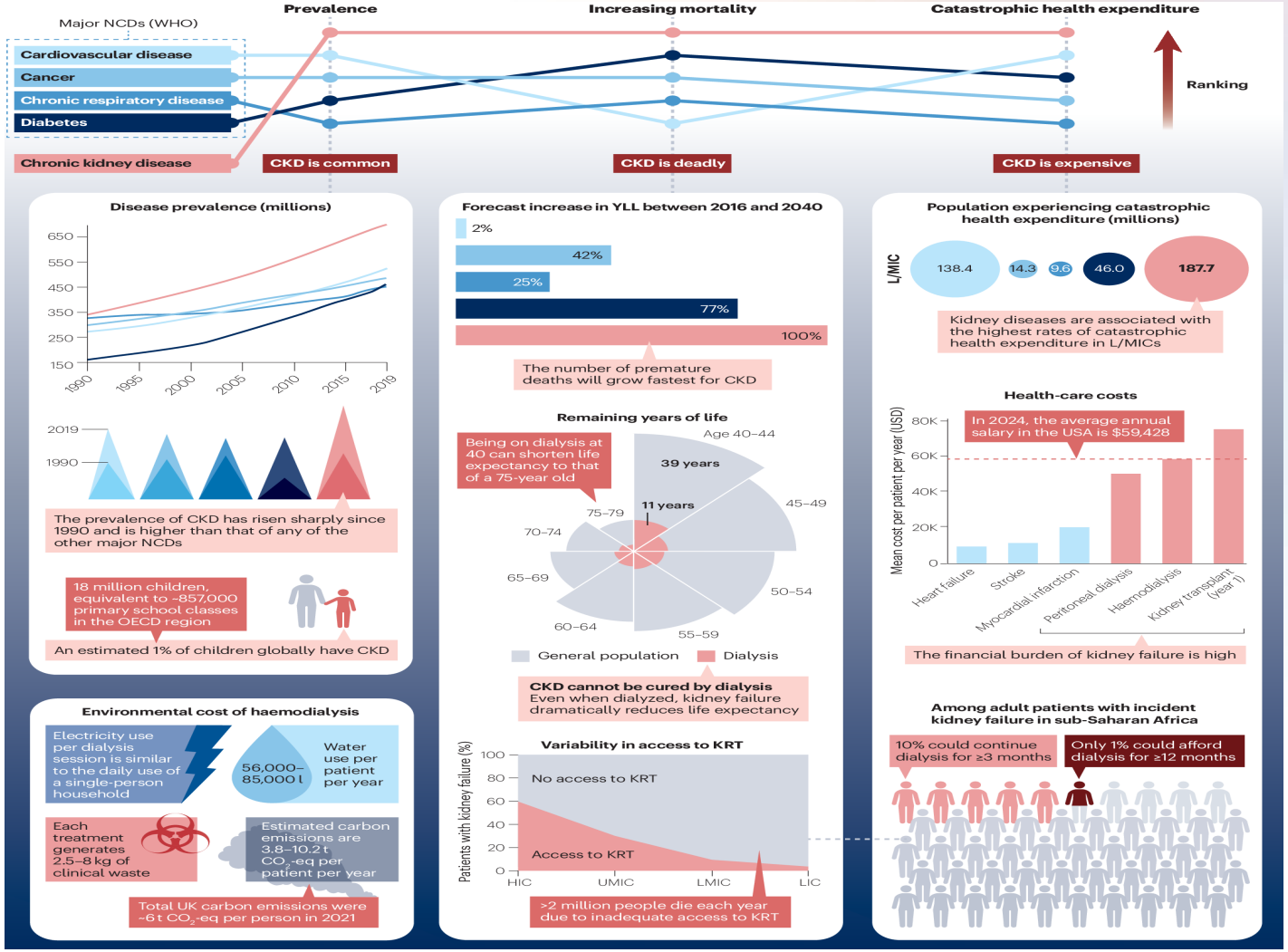
- G1 (≥ 90 mL/min/1.73m2)
- G2 (60<90 mL/min/1.73m2)
- G3a (45<60 mL/min/1.73m2)
- G3b (30<45 mL/min/1.73m2)
- G4 (15<30 mL/min/1.73m2)
- G5 (<15 mL/min/1.73m2)

UACR KDIGO categories



- A1 (<30 mg/g)
- A2 (30-300 mg/g)
- A3 (>300 mg/g)

Kidney disease: a global health priority



Diabetes and kidney disease: the latest data from the IDF Diabetes Atlas and the iCaReMe registry

RAASi (ACEi/ARB) is a cornerstone in the management of DKD/CKD

KDIGO 2021 CLINICAL PRACTICE GUIDELINE FOR THE MANAGEMENT OF BLOOD PRESSURE IN CKD

ACEi or ARB should be administered using the **highest approved dose that is tolerated** to achieve the benefits described because the proven benefits were achieved in trials using these doses[a]

KDIGO 2022 CLINICAL PRACTICE GUIDELINE FOR DIABETES MANAGEMENT IN CKD

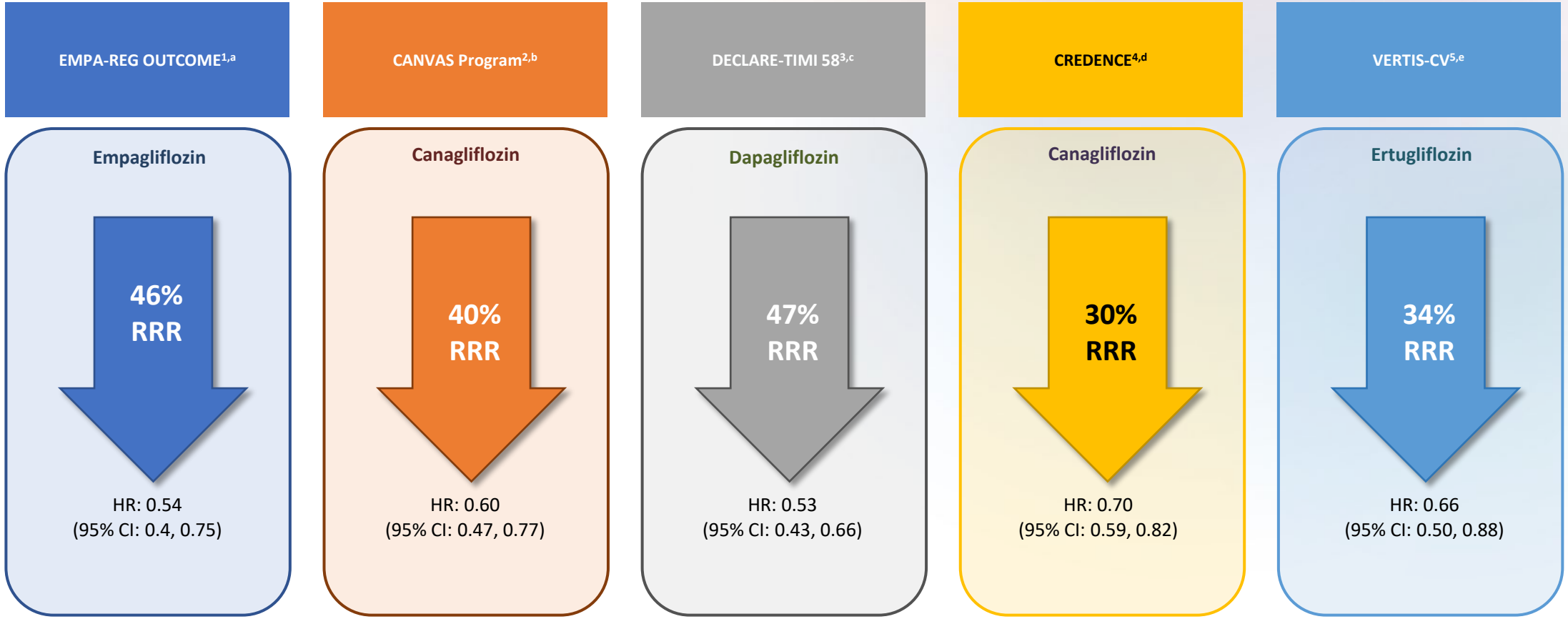
ACEi or ARB are recommended in adults with diabetes, hypertension, and albuminuria, and these medications should be titrated to the **highest approved dose that is tolerated** (*1B*)[b]

ADA 2023 STANDARDS OF CARE IN DIABETES

We recommend an **ACEi** or **ARB**, at the **maximum tolerated dose** indicated for blood pressure treatment, as the recommended first-line treatment for hypertension in patients with diabetes and urinary albumin-to-creatinine ratio >300 mg/g creatinine (A)

Diabetes and kidney disease: the latest data from the IDF Diabetes Atlas and the iCaReMe registry

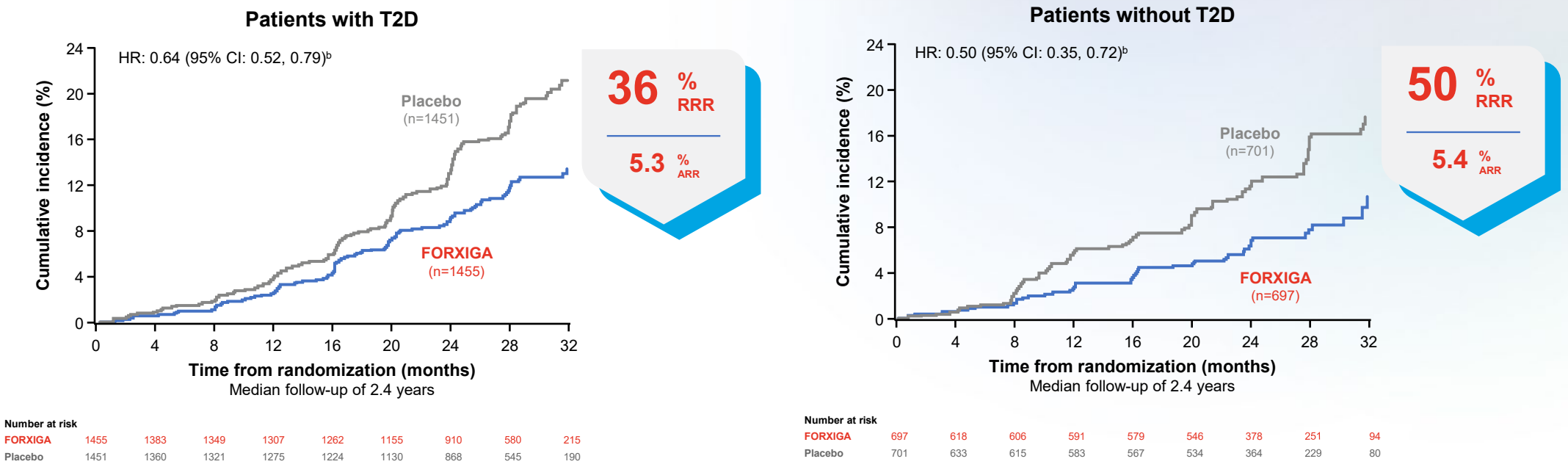
Renal risk reduction in outcome studies in patiens with diabetes



[a]Post-hoc endpoint defined as dSCr accompanied by eGFR ≤45 mL/min/1.73 m², KRT, or renal death; [b]Exploratory endpoint defined as: 40% reduction in eGFR, KRT, or death from kidney causes; [c]Exploratory endpoint defined as: eGFR decrease ≥40% to <60 mL/min/1.73 m², ESKD, or renal death; [d]Primary composite of ESKD, dSCr, or death from kidney or cardiovascular disease; [e]Exploratory endpoint defined as sustained 40% decrease from baseline in eGFR, chronic kidney dialysis/transplant, or renal death in the overall population1. Wanner C, et al. N Engl J Med 2016;375:323–334; 2. Neal B, et al. N Engl J Med 2017;377:644–657; 3. Mosenzon O, et al. Lancet Diabetes Endocrinol 2019;7:606–617; 4. Perkovic V, et al. N Engl J Med 2019;380:2295–2306; 5. Cherney DZI, et al. Diabetologia 2021;64:1256–1267

Dapaglifozin reduced the risk of the primary composite endpoint in patients with or without T2DM[1,a]

DAPA-CKD exploratory subgroup analysis:
Declining kidney function, ESKD, and renal or CV death[1,a]

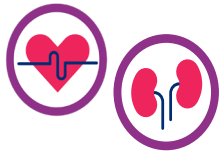


Figures adapted from Wheeler DC, et al. 2021.[1] [a]Primary composite endpoint of ≥50% sustained decline in eGFR, reaching ESKD, and renal or CV death. ESKD defined as the need for maintenance dialysis (peritoneal or hemodialysis) for at least 28 days, and renal transplantation or sustained eGFR <15 mL/min/1.73 m² for at least 28 days;[2] [b]There was no significant interaction of the effect on the primary composite endpoint by diabetes status (P for interaction = 0.98)

ARR, absolute risk reduction; CI, confidence interval; CKD, chronic kidney disease; CV, cardiovascular; eGFR, estimated glomerular filtration rate; ESKD, end-stage kidney disease, HR, hazard ratio; RRR, relative risk reduction; T2D, Type 2 diabetes 1. Wheeler DC, et al. Lancet Diabetes Endocrinol 2021;9:22–31; 2. Heerspink HJL, et al. N Engl J Med 2020;383:1436–1446

EMPA KIDNEY Efficacy results

Composite primary outcome



CV death or kidney disease progression (first)

RRR 28%
P<0.001

✓

Key secondary outcomes

All-cause hospitalisation (first and recurrent)

RRR 14%
P=0.003

✓

HHF or CV death (first)

P=0.15
Nominal RRR 16%

✗

All-cause death

P=0.21
Nominal RRR 13%

✗

Meta analysis of 90,413 people with CKD, heart failure, or Type 2 diabetes + CVD (13 Trials)

An estimate of absolute rates, benefits and harms of SGLT2 inhibitors showed that:

- For every 1000 patients with CKD and type 2 diabetes treated for one year with an SGLT2 inhibitor, there would be:
  - 11 fewer patients would develop kidney disease progression
  - 4 fewer patients would have acute kidney injury and there would be
  - 11 fewer cardiovascular deaths or hospitalisations for heart failure

There would be one episode of ketoacidosis and one lower limb amputation.

Management – RASi and SGLT2i

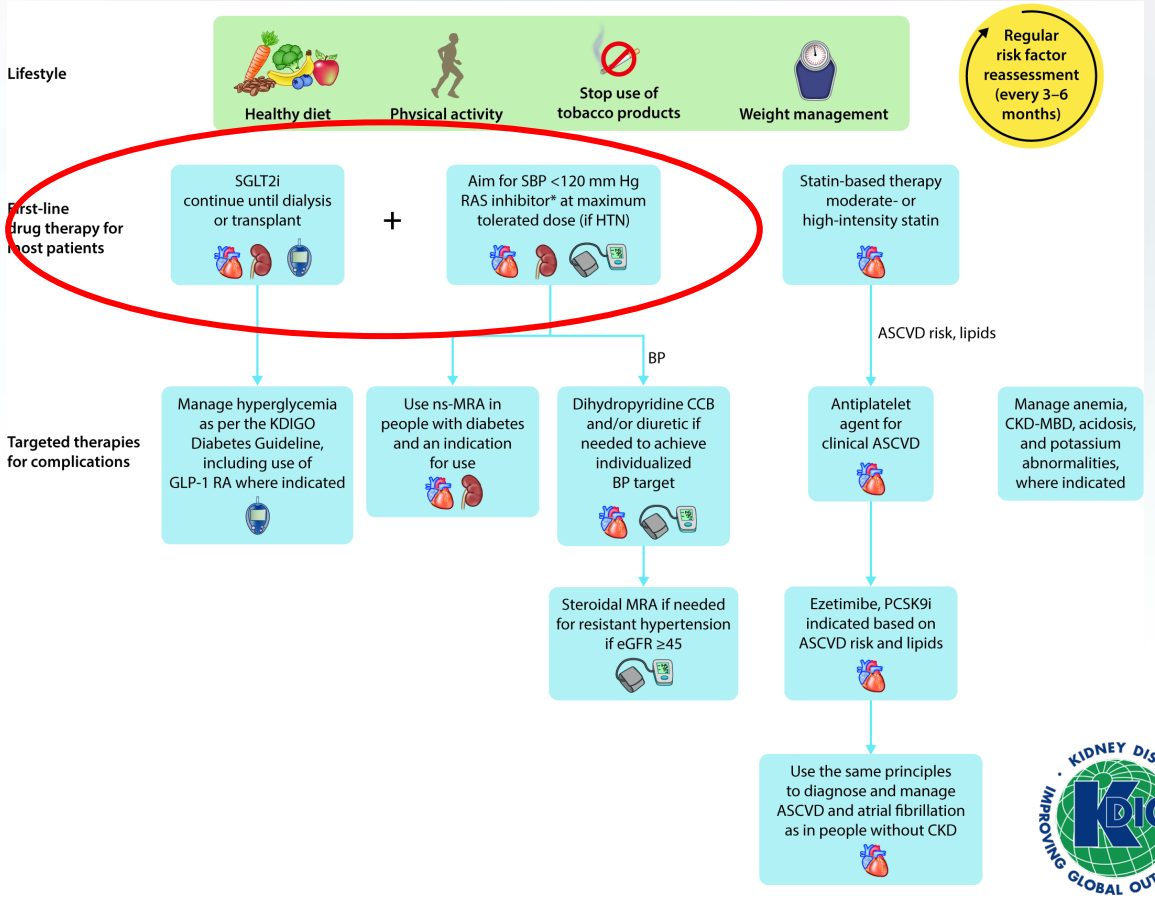
Treatments that delay progression of CKD with a strong evidence base include RASi and SGLT2i. In people with CKD and heart failure, SGLT2i confer benefits irrespective of albuminuria.

3.7 Sodium-glucose cotransporter-2 inhibitors (SGLT2i)

Recommendation 3.7.1: We recommend treating patients with type 2 diabetes (T2D), CKD, and an eGFR ‡20 ml/min per 1.73 m2 with an SGLT2i (1A).

Recommendation 3.7.2: We recommend treating adults with CKD with an SGLT2i for the following (1A):
- eGFR ‡20 ml/min per 1.73 m2 with urine ACR ‡200 mg/g (‡20 mg/mmol), or
- heart failure, irrespective of level of albuminuria.

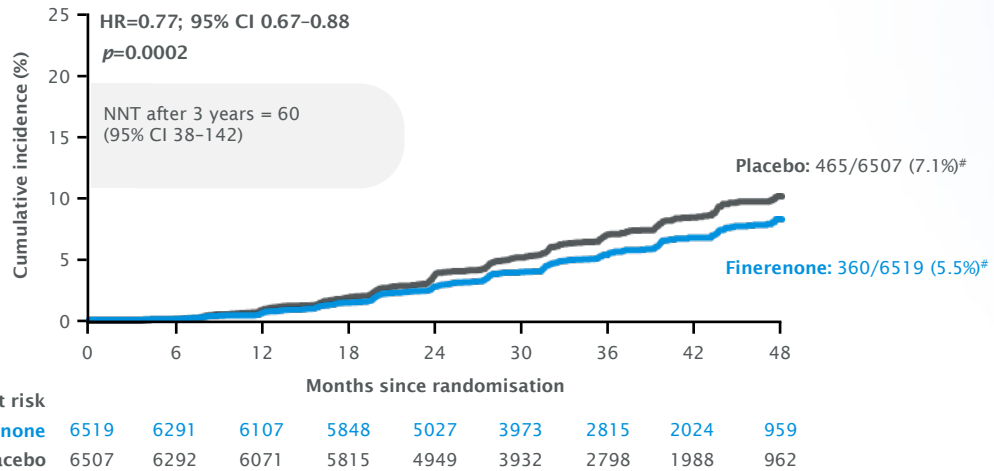
Recommendation 3.7.3: We suggest treating adults with eGFR 20 to 45 ml/min per 1.73 m2 with urine ACR <200 mg/g (<20 mg/mmol) with an SGLT2i (2B).



The FIDELITY primary analysis showed significant risk reductions in CV and kidney outcomes with finerenone

Kidney composite

Time to kidney failure,* sustained ≥57% decrease in eGFR from baseline, or kidney-related death

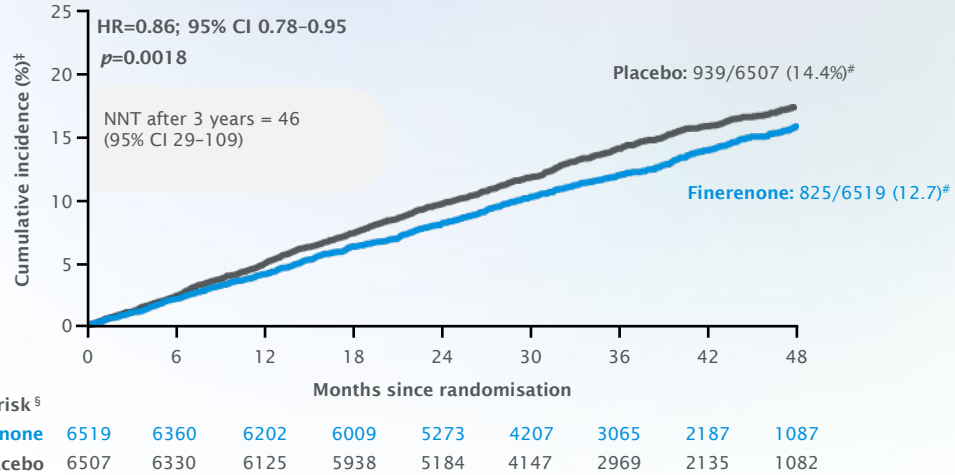


No. at risk									
Finerenone	6519	6291	6107	5848	5027	3973	2815	2024	959
Placebo	6507	6292	6071	5815	4949	3932	2798	1988	962

23% reduced **risk of CKD progression*** versus placebo (HR=0.77; 95% CI 0.67–0.88)

CV composite

Time to CV death, non-fatal MI, non-fatal stroke or HHF



No. at risk§									
Finerenone	6519	6360	6202	6009	5273	4207	3065	2187	1087
Placebo	6507	6330	6125	5938	5184	4147	2969	2135	1082

14% reduced **risk of CV morbidity and mortality** versus placebo (HR=0.86; 95% CI 0.78–0.95)

^The eGFR ≥40% composite kidney outcome was the primary or secondary outcome in FIDELIO & FIGARO however, a sustained ≥57% decrease in eGFR (equivalent to doubling of serum creatinine) was selected in FIDELITY because it is a classic outcome in diabetic nephropathy studies and is a more robust kidney failure surrogate outcome. This outcome was selected before data pooling and analysis and was a predefined outcome in the complementary trials.

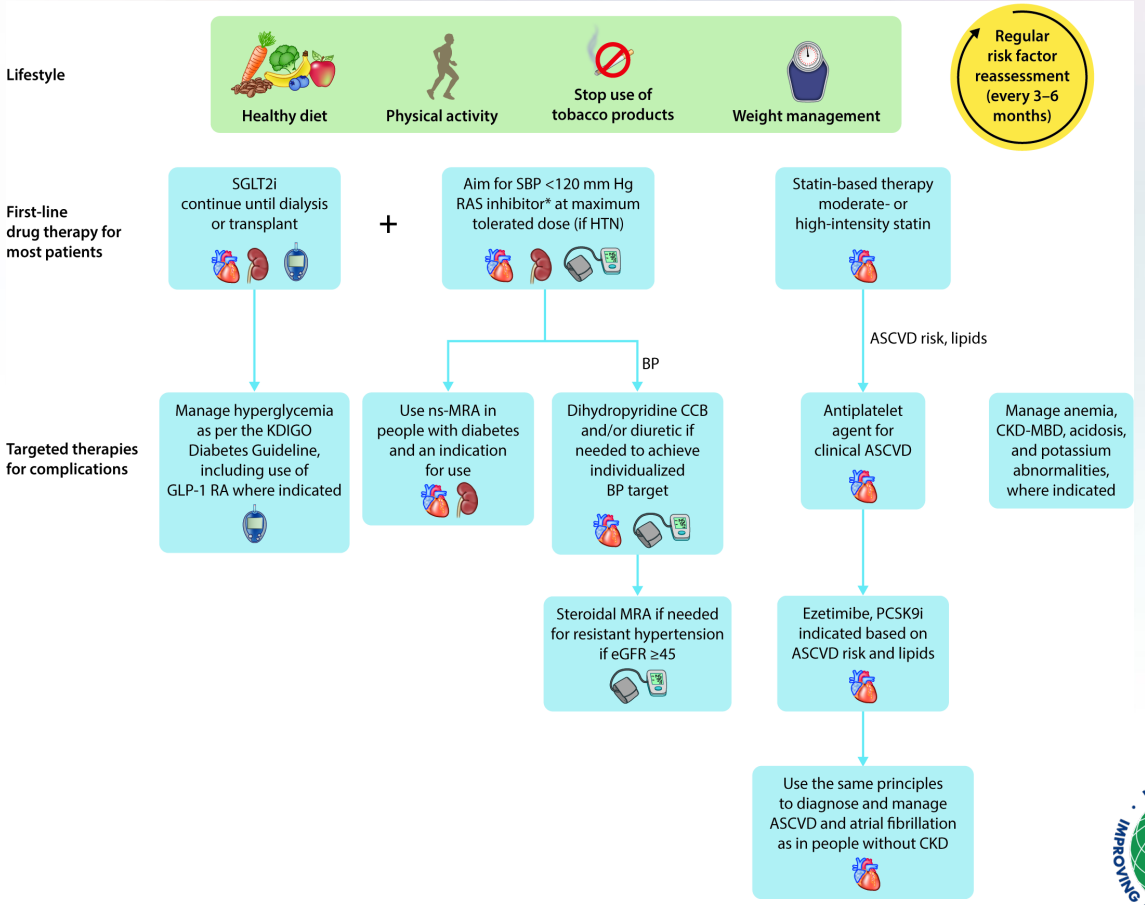
*ESKD or an eGFR <15 ml/min/1.73 m2; events were classified as renal death if: (1) the patient died; (2) KRT had not been initiated despite being clinically indicated; and (3) there was no other likely cause of death; #number of patients with an event over a median of 3.0 years of follow-up; ‡cumulative incidence calculated by Aalen–Johansen estimator using deaths due to other causes as competing risk; § at-risk subjects were calculated at start of time point. KRT, kidney replacement therapy; NNT, number needed to treat

Management – comprehensive treatment strategy

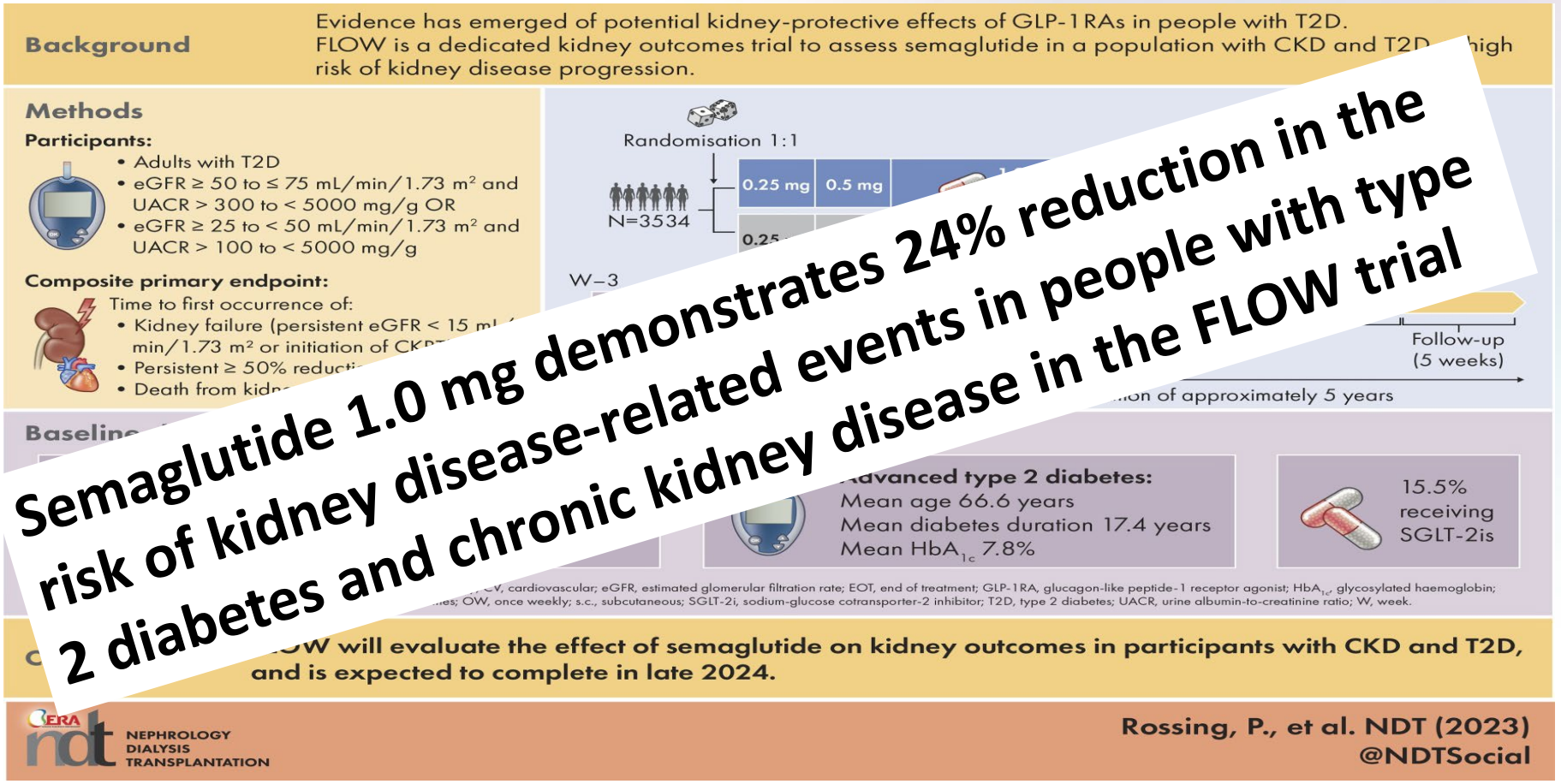
Treat people with CKD with a comprehensive treatment strategy to reduce risks of progression of CKD and its associated complications encompassing education, lifestyle, exercise, smoking cessation, diet, and medications, where indicated.

3.8 Mineralocorticoid receptor antagonists (MRA)

Recommendation 3.8.1: We suggest a nonsteroidal mineralocorticoid receptor antagonist with proven kidney or cardiovascular benefit for adults with T2D, an eGFR >25 ml/min per 1.73 m_2, normal serum potassium concentration, and albuminuria (>30 mg/g [>3 mg/mmol]) despite maximum tolerated dose of RAS inhibitor (RASi) (2A).

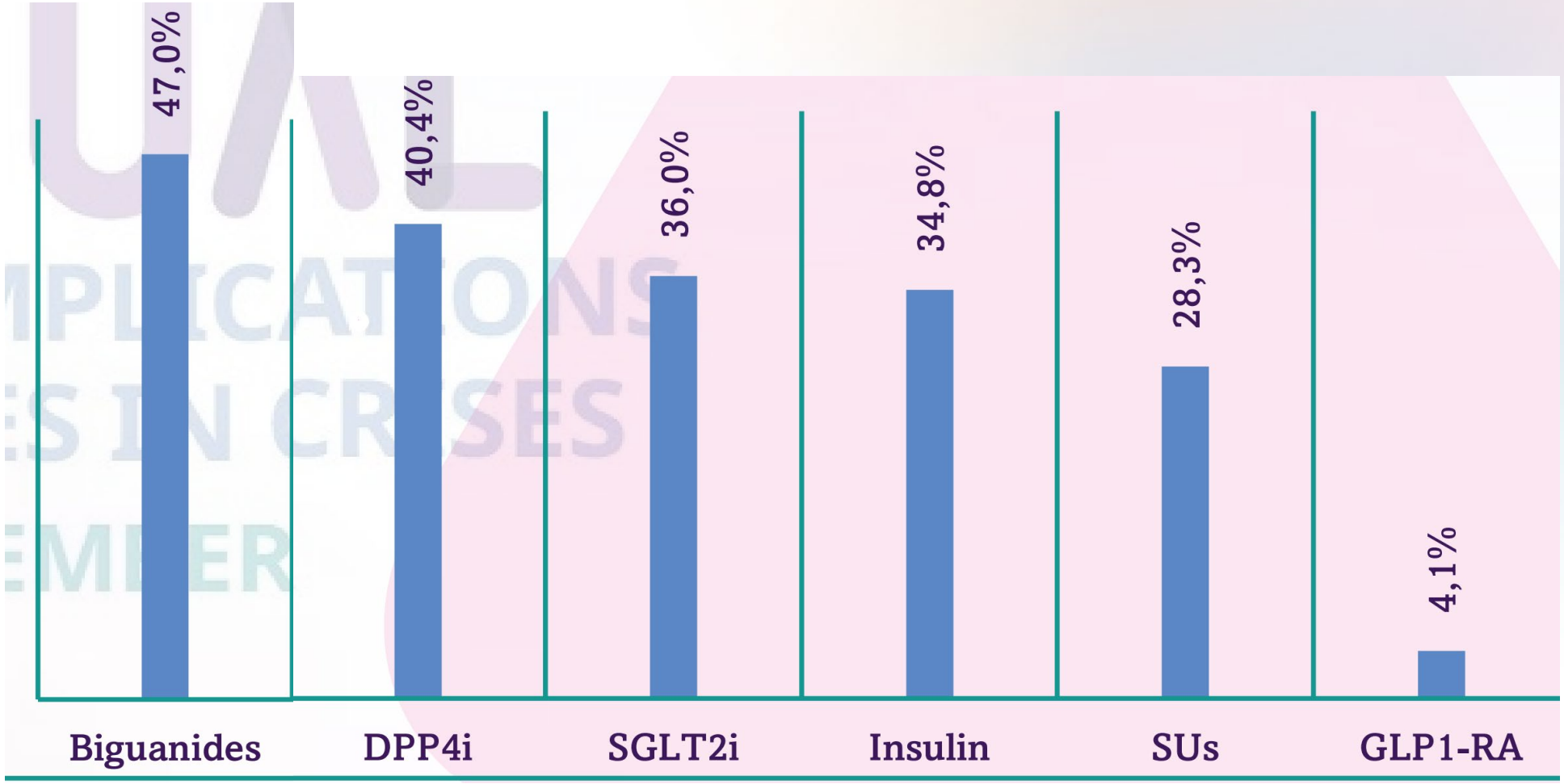


The rationale, design and baseline data of FLOW, a kidney outcomes trial with once-weekly semaglutide in people with T2DM & CKD



Semaglutide 1.0 mg demonstrates 24% reduction in the risk of kidney disease-related events in people with type 2 diabetes and chronic kidney disease in the FLOW trial

T2DM treatment patters



Diabetes and kidney disease: the latest data from the IDF Diabetes Atlas and the iCaReMe registry

CKD is associated with high economic and environmental burden

Economic

>77%
increase in RRT costs

>23%
increase in CKD-associated ER visits / hospitalizations

$37 billion
lost in tax revenue[a]

By 2032…

Environmental

440 million m^3
freshwater consumption

11 billion kg
oil eq. of fossil fuel use

29 billion kg
CO_2 eq. of carbon use

Rao N, et al. Presented at World Congress of Nephrology (WCN); April 13–16, 2024; Buenos Aires, Argentina. Poster WCN24-AB-1204

Data from

DIABETES AND KIDNEY DISEASE: LATEST DATA FROM THE IDF DIABETES ATLAS AND THE iCaReMe REGISTRY

HOW HEALTHCARE PROFESSIONALS CAN WORK BETTER WITH PEOPLE LIVING WITH DIABETES

DR MISHARY ALASSIRI

Medical intern, IDF Young Leaders in Diabetes Mentor and MENA Region Representative

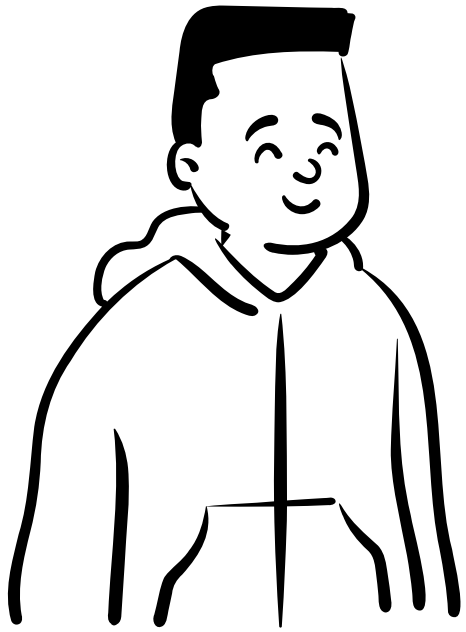
Saudi Arabia

Diabetes care is multidisciplinary. Diabetes education is too!

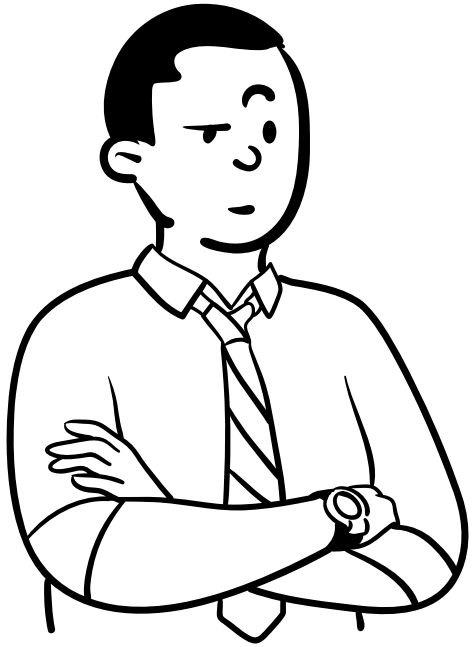
- **People living with diabetes (PLWD)** have various **levels** of **knowledge**, perceptions, and expectations regarding the amount of information that they need.
- Our goal is to treat our **patients as a whole**, which includes their **psychological** well being.

Therefore, **addressing** complications and **preventing** them is **challenging!**

Examples and my own perspective

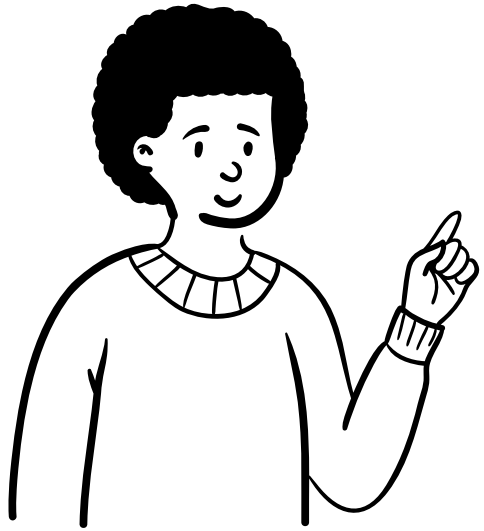


Great for HCP, not so much for PLWD



Diabetes and kidney disease: the latest data from the IDF Diabetes Atlas and the iCaReMe registry

What can we do?



- Choose the right time, place and stage to communicate
- Encourage role models to speak up.
  Both to PLWD and with HPC who are not directly taking care of PLWD
- Clarify the purpose of each intervention to increase compliance
- Manage clinics and inpatient loads efficiently to give each patient the time they deserve

DIABETES AND KIDNEY DISEASE: LATEST DATA FROM THE IDF DIABETES ATLAS AND THE iCaReMe REGISTRY

KIDNEY DISEASE IN THE GLOBAL ADVOCACY AGENDA

DR VALÉRIE LUYCKX, MBBCh, MSc, PhD

Chair, Advocacy Working Group. International Society of Nephrology

Switzerland

ISN
INTERNATIONAL SOCIETY OF NEPHROLOGY

3.1 million people died of kidney dysfunction in 2019

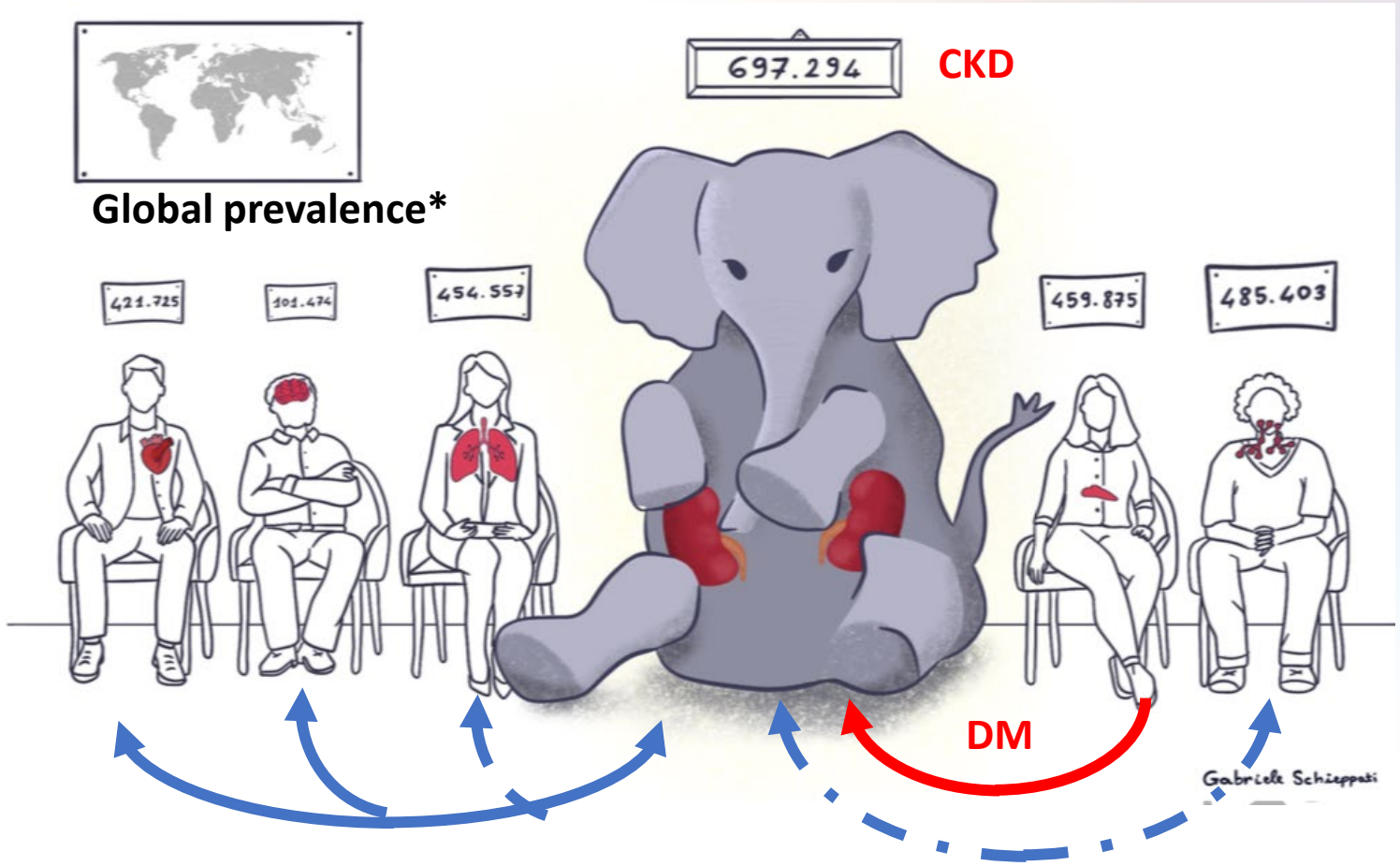
That's 1 person every 6 seconds!

7th leading global risk factor for death!

http://vizhub.healthdata.org/gbd-compare.

Diabetes and kidney disease: the latest data from the IDF Diabetes Atlas and the iCaReMe registry

Kidney disease – the elephant in the room

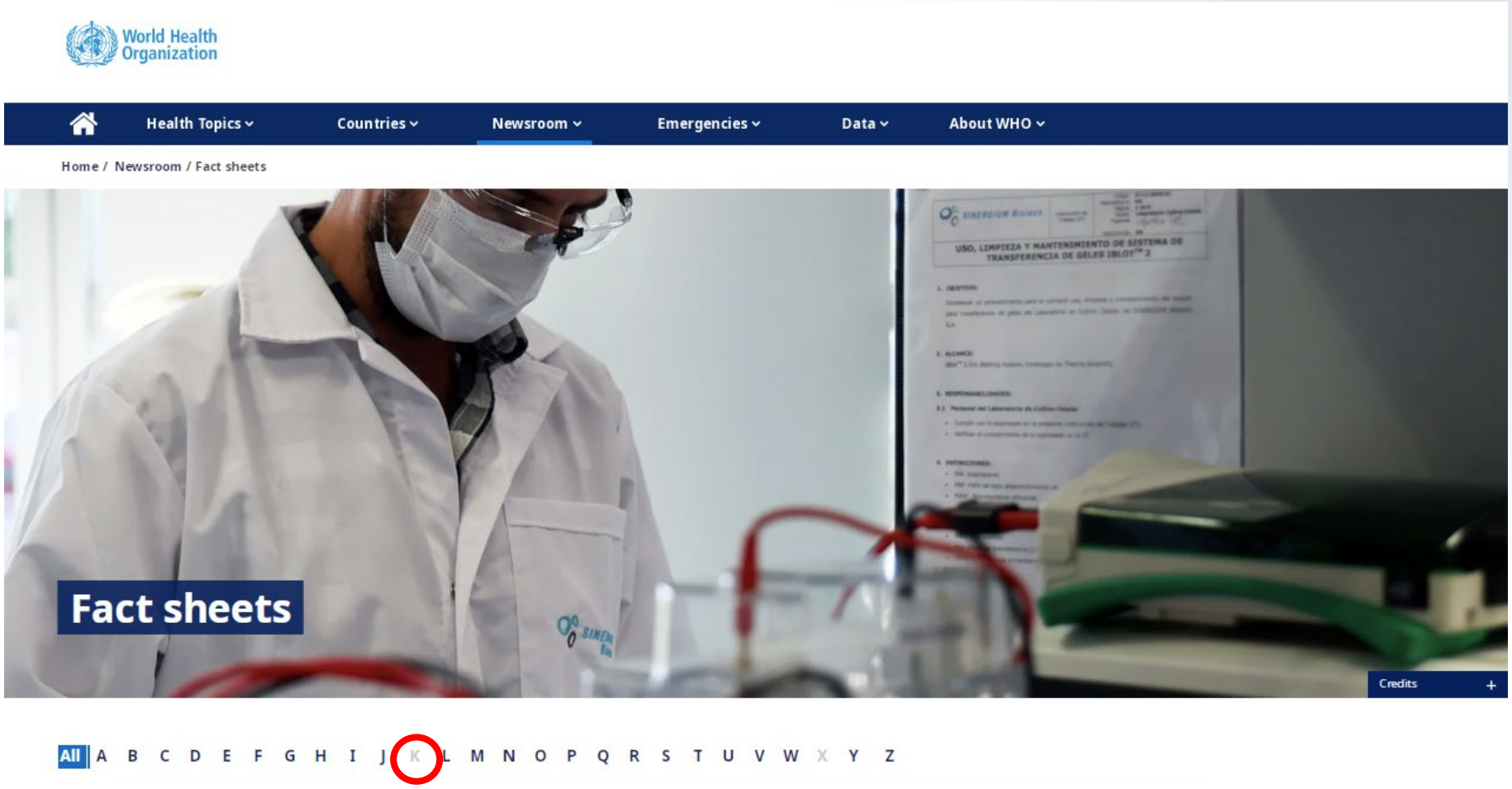


*Torra, R. Nephrology Dialysis Transplantation, gfae083, https://doi.org/10.1093/ndt/gfae083. April 2024. * Global Prevalence Data Data from Global Burden of Disease study, 2019: http://vizhub.healthdata.org/gbd-compare*

5x5 diseases

https://conscienhealth.org/wp-content/uploads/2019/05/NCD-Alliance-5x5.jpg;
https://ncdalliance.org/sites/default/files/NCDA%20Webinar%205x5%20Air%20Pollution%20and%20Mental%20Health%2024th%20April%202019_.pdf

ISN working with WHO to get the “k” back into the alphabet of the global stage



https://www.who.int/news-room/fact-sheets

ISN
INTERNATIONAL SOCIETY OF NEPHROLOGY

ABOUT ISN | JOIN THE ISN | IN ACTION | INITIATIVES | NEWS

ISN-GLOBAL KIDNEY HEALTH ATLAS 2023 EDITION

RESEARCH

Explore new resources available:

- *The Lancet Global Health* publications
- Regional manuscripts in *Kidney International Supplements*

Access all resources here

Advancing Kidney Health Worldwide. Together.

The International Society of Nephrology is a global professional association dedicated to advancing worldwide kidney health.

Join the ISN → | About us → | Support our cause →

https://www.theisn.org/

Kidney Health For All

Advancing equitable access to care and optimal medication practice

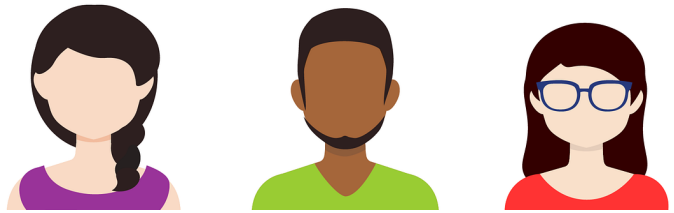
World Kidney Day
14 MARCH 2024

#worldkidneyday
#kidneyhealthforall
www.worldkidneyday.org

World Kidney Day is a joint initiative of
ISN IFKF-WKA

https://www.worldkidneyday.org/

Greater awareness is urgently needed



- 1 in 3 people with diabetes have CKD
- 1 in 5 people with hypertension have CKD
- Obesity exacerbates risk in CKD
- 80 - 90% of people are UNAWARE of their CKD

Ene-Lordache et al., Lancet Glob Health. 2016 May;4(5):e307-19; Luyckx et al., Am J Nephrol. 2023 Dec 18. doi: 10.1159/000535864; Tangri et al., BMJ Open. 2023 May 22;13(5):e067386

How to advance kidney care

- Accurate data on disease burdens
- Greater awareness of risk
- Affordable, acceptable, equitable access to care
- Quality diagnostics and therapeutics
- Fair prices for life-saving medications
- Empowered health workforce
- Empowered patients and communities

https://www.who.int/publications/i/item/9789240080379

DIABETES AND KIDNEY DISEASE: LATEST DATA FROM THE IDF DIABETES ATLAS AND THE iCaReMe REGISTRY

LIVING WITH DIABETES AND KIDNEY DISEASE

MR MICHAEL DONOHOE

Founder & Program Lead, Donohoe Diabetes, IDF Blue Circle Voices Member

United States of America (USA)

Family History, Diagnosis & Action

- **T2D and CKD are in my father's family bloodline**
  - My father passed in 2006 and Grandmother in 1977 from CKD caused congestive heart failure.
- **My diagnosis was in late 2019**
  - Simply, I cried; to me it appeared to be a "death sentence".
- **My healthcare team worked with me to take action**
  - The nephrologist, cardiologist and primary-care physician worked together to stabilize the conditions, as I self-advocated and managed per their advisement.

Results, But…

- **This was all throughout 2020 at the height of the COVID pandemic; We went into action:**
  - I met with a nutritionist, who educated me on the best ways to lower protein, potassium and phosphorus levels in the kidneys and urine output using dietary pathways.
  - The doctors removed and replaced a triglyceride medication (Tricore with an Omega-based Rx).
  - The two specialists recommended an SGLT-2 (Invokana) to improve urine throughput to help kidney function and to remove sugars; I decided with my PCP to try it.

- **Being a results-oriented persona**
  - Kidney's stabilized in six months, and confirmed after one year.
  - As of May 2023, the kidney, continued to be stable.

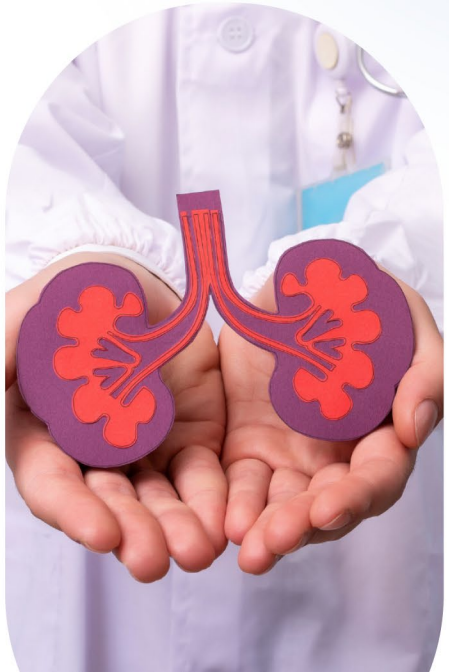
- **But…**

For Me, I Must Keep Success in Today

- **Living with Type 2 Diabetes is an "all of the time" job**
  - Kidney disease, heart disease, diabetic retinopathy, diabetic neuropathy and my mental health (Anxiety & ADHD) are directly affected by the T2D, plus other conditions
- **My diagnosis was in late 2019**
  - I cried, as to me it appeared to be a "death sentence."
- **My Upcoming Kidney Appointment is Next Week**
  - Six blood tests, a conversation,
    - I only lost five of the twenty-five pounds I said I would try too; Simply, I failed.
- **Remember, in the diabetes life…**
  - You are only on target if your numbers are on target
    - Blood sugar and ALL required blood tests
  - Best way to handle CKD, lis to live your life with diabetes:
    - Proper⇒ Nutrition, Exercise, Medical Professional Cooperation (be an advocate, and share your experience with the HCP), Stress-levels and Sleep
    - Just a reminder, be mindful of protein, potassium and phosphorus intake

Thank you for your time and interest.

Discussion panel and Q&A



DIABETES AND KIDNEY DISEASE: LATEST DATA FROM THE IDF DIABETES ATLAS AND THE iCaReMe REGISTRY

CLOSING REMARKS AND THANKS

PROF EDWARD J BOYKO, M.D., M.P.H

Professor University of Washington, Staff Physician, VA Puget Sound, IDF Diabetes Atlas co-chair

United States of America (USA)

Closing remarks and thanks

- The recording, slides and feedback questionnaire will be sent to all registrants in a few days.
- Please respond to the feedback questionnaire to help us improve future IDF online events.
- Send any questions you may have to advocacy@idf.org.

Upcoming IDF online event

International Diabetes Federation

Diabetes and well-being: more than access to care

IDF side event at the 77th WHA

Geneva | Online

28 May 2024
18:00-20:00 CEST

REGISTER HERE

IDF 2025 BANGKOK 7-10 APRIL

Shape the future of diabetes

IDF World Diabetes Congress

Bangkok, Thailand, 7 – 10 April 2025

Why attend

- **10** programme streams
- **130** hours of scientific sessions
- **250** international speakers

Key dates

- **1 Apr 2024** Registration opens
- **15 Jul – 15 Sep 2024** Abstract submissions
- **31 Oct 2024** Early rate deadline

Thank you!