A call for action: optimizing treatment in CKD

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4 Things to know about CKD and SGLT2i

A call for action: optimizing treatment in CKD

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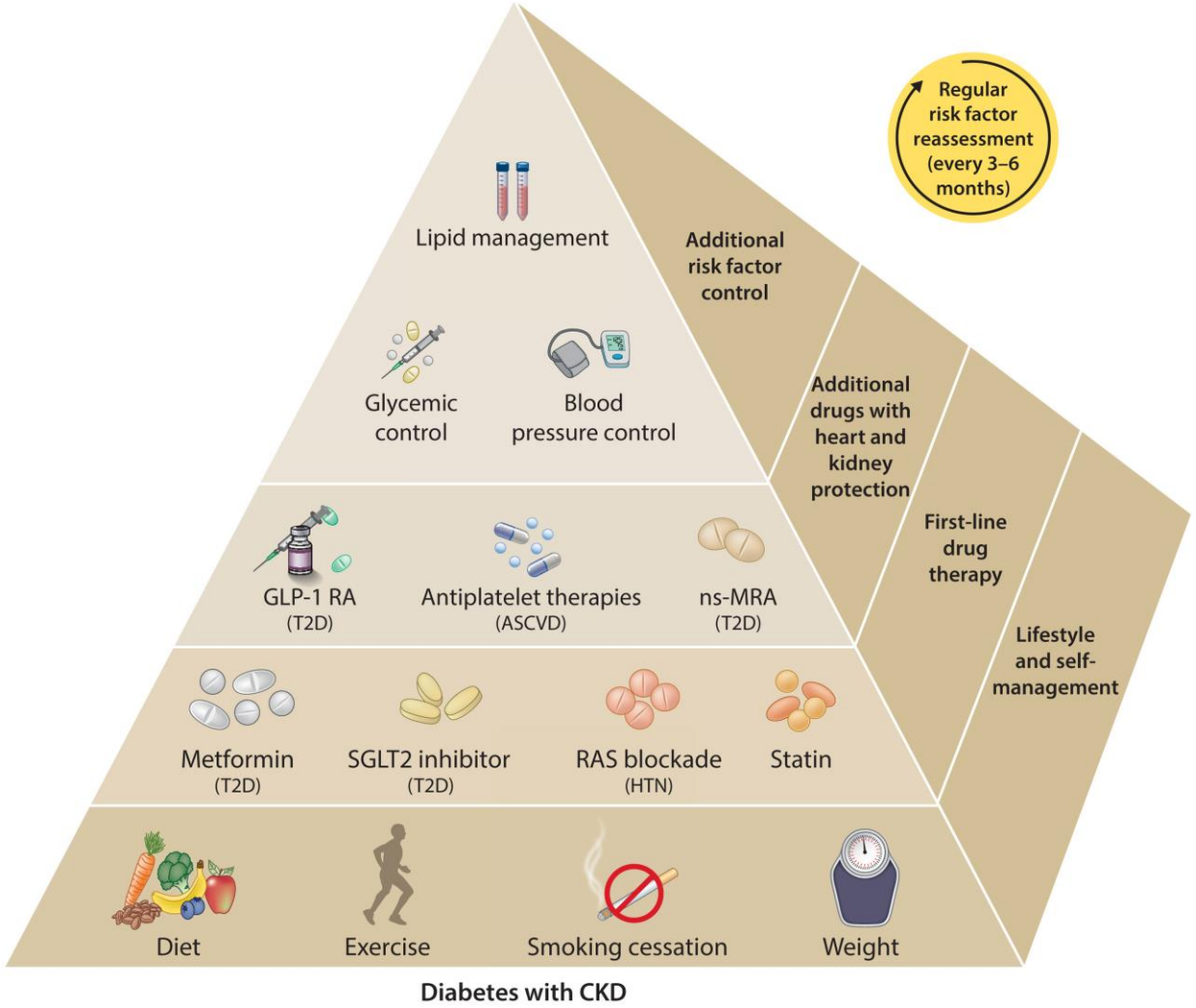
Disclosures

- Global Scientific Lead and Steering Committee member CREDENCE, trial sponsored by Janssen
- Advisory Boards and Scientific Presentation fees from Astra Zeneca & Boehringer Ingelheim, companies who make SGLT2 inhibitors

- Responsible for research projects that have received funding from Amgen, Baxter, CSL, Dimerix, Eli Lilly, Gambro, and MSD
- Have received fees for advisory, steering committee and/or scientific presentations from Akebia, Amgen, Astra Zeneca, Baxter, Bayer, Boehringer Ingelheim, Cesas Linx, Chinook, CSL, Janssen, Medscape, MSD, Occuryx, Roche and Vifor
- All consultancy, honoraria or travel support paid to my institution

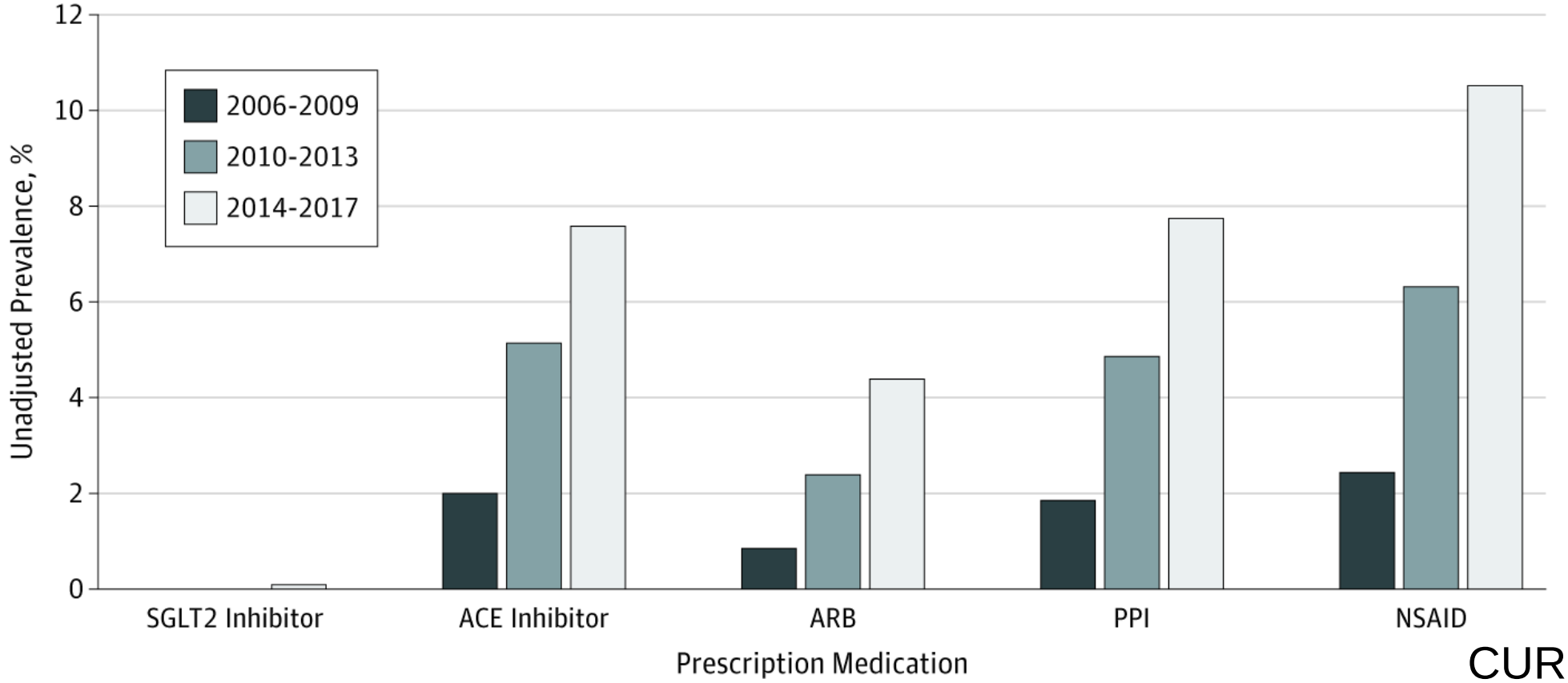
KDIGO 2022 DKD updated guideline



De Boer, Rossing et al. *Kidney International* 2022 102S1-S127

Time course for uptake of RAASi in CKD

Use of ACEi/ARB in adults with CKD - 20.5%

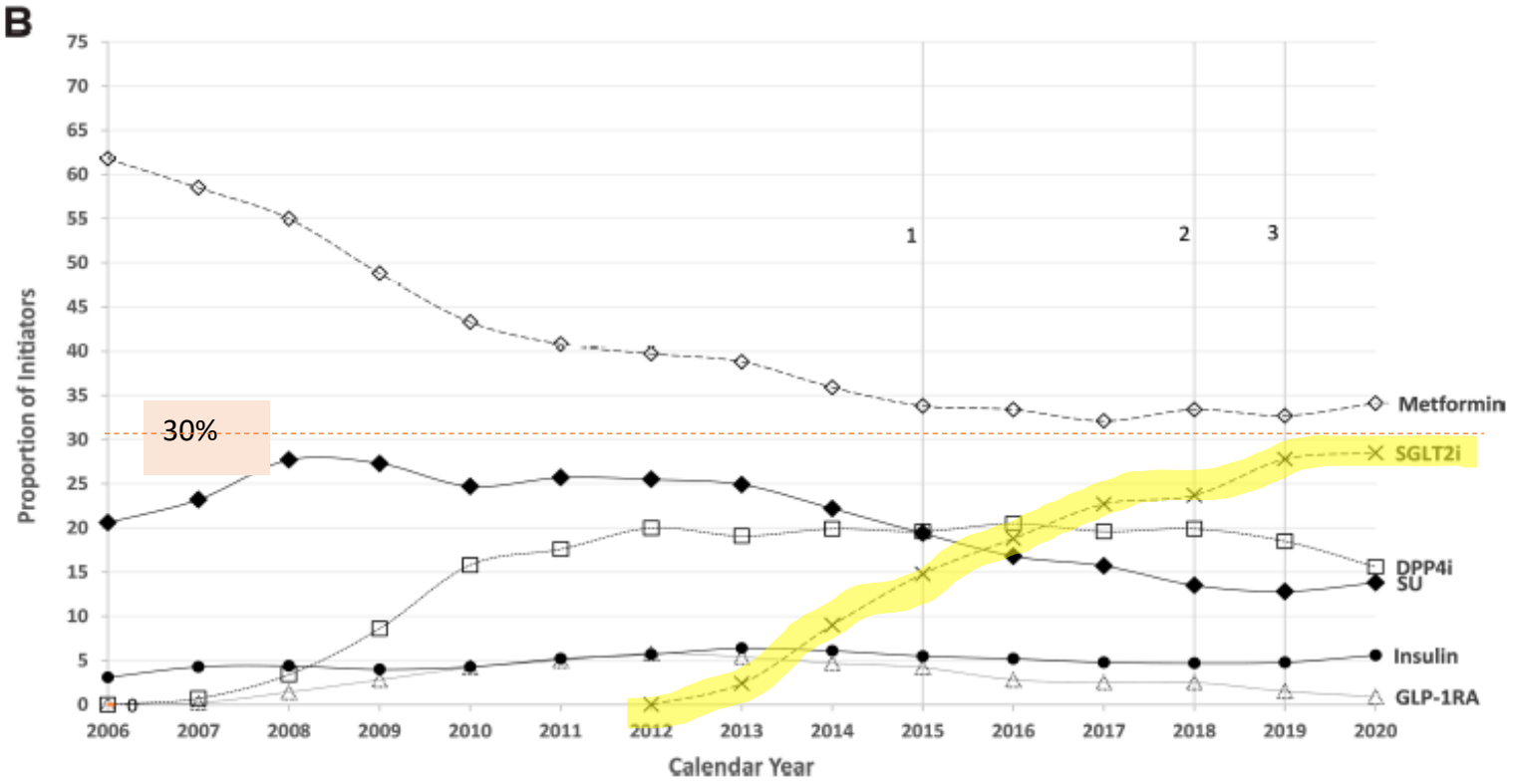


CURE-CKD registry

Two large US healthcare providers

Tuttle KR *et al. JAMA Netw Open* 2019;2:e1918169

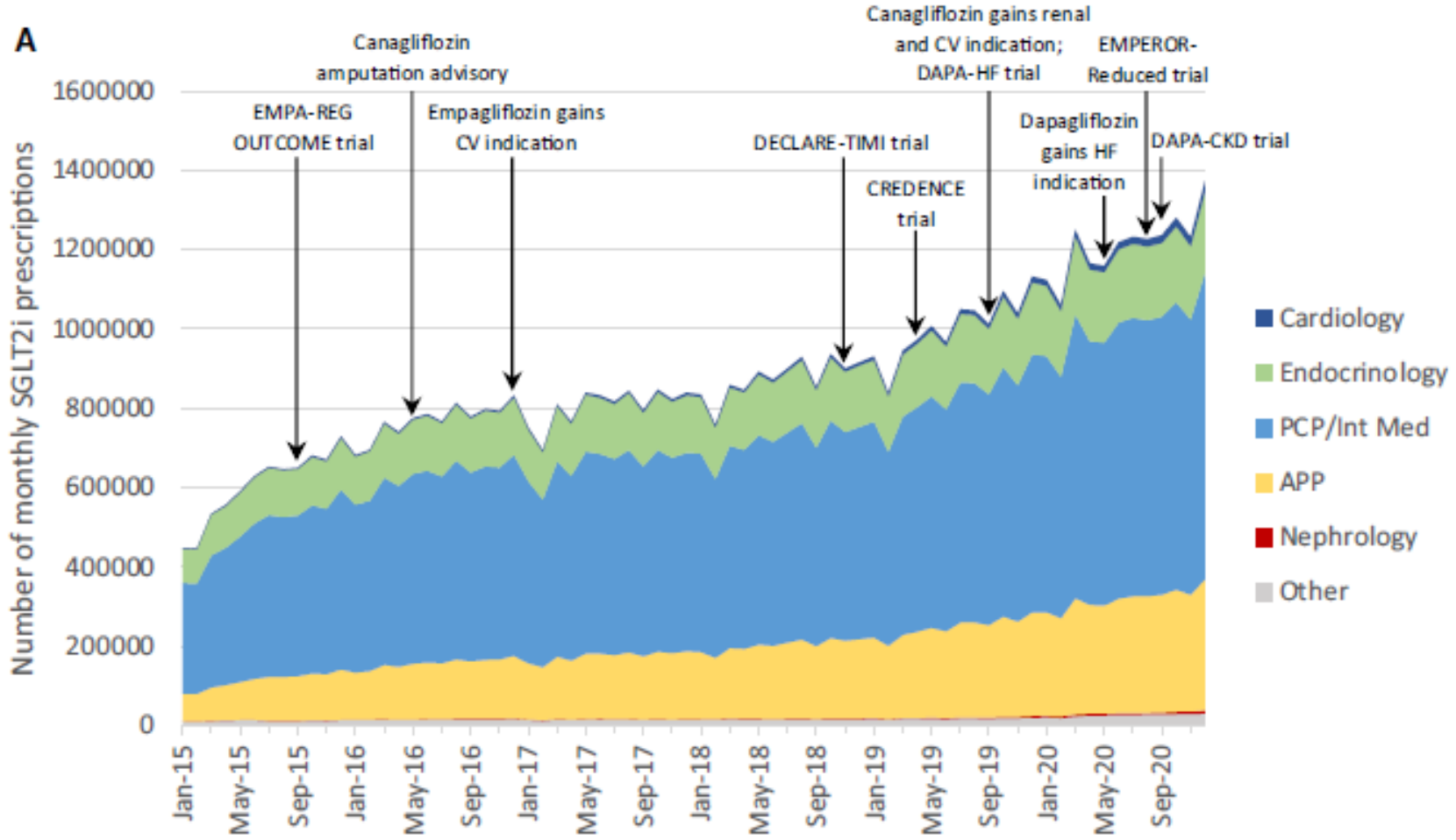
UK: Increasing SGLT2i use in T2DM without CKD



Method
UK Clinical Practice Research Datalink (2006–2020)
Patients with T2DM with CKD (n = 38,622) or without CKD (n = 230,963)

J Liaw et al *Diabetes Care* 2022;45:2316–2325 | https://doi.org/10.2337/dc22-0224

Who's prescribing SGLT2 inhibitors - US

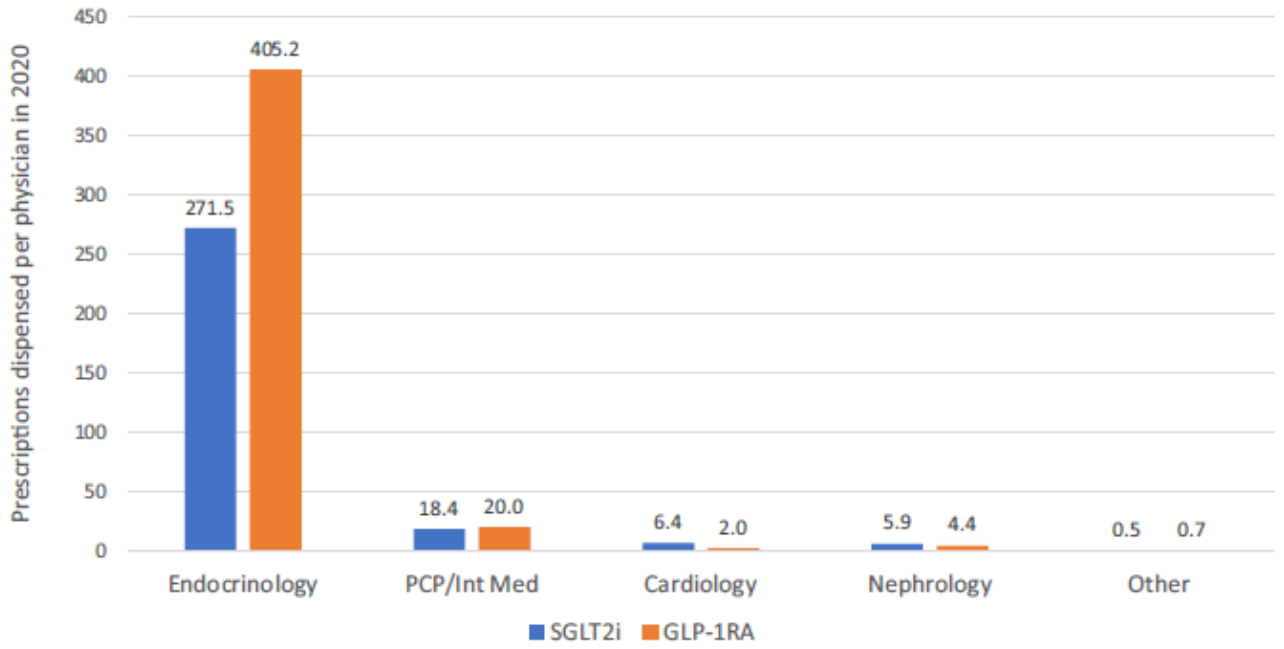


Methods: serial, cross-sectional data, IQVIA National Prescription Audit, audit capturing ≈90% of US retail dispensing

R Adhikari et alJ *Am Heart Assoc.* 2022;11:e023811. DOI: 10.1161/JAHA.121.023811

Who is prescribing SGLT2i, GLP1RAs in the US

- This analysis of a near–census-level audit of the US retail prescriptions shows that since 2015, cardiologists have increased use of SGLT2is and GLP-1RAs 12-fold and 4-fold, respectively.
- Nonetheless, cardiologists accounted for <2% of all SGLT2i and GLP-1RA use in 2020.



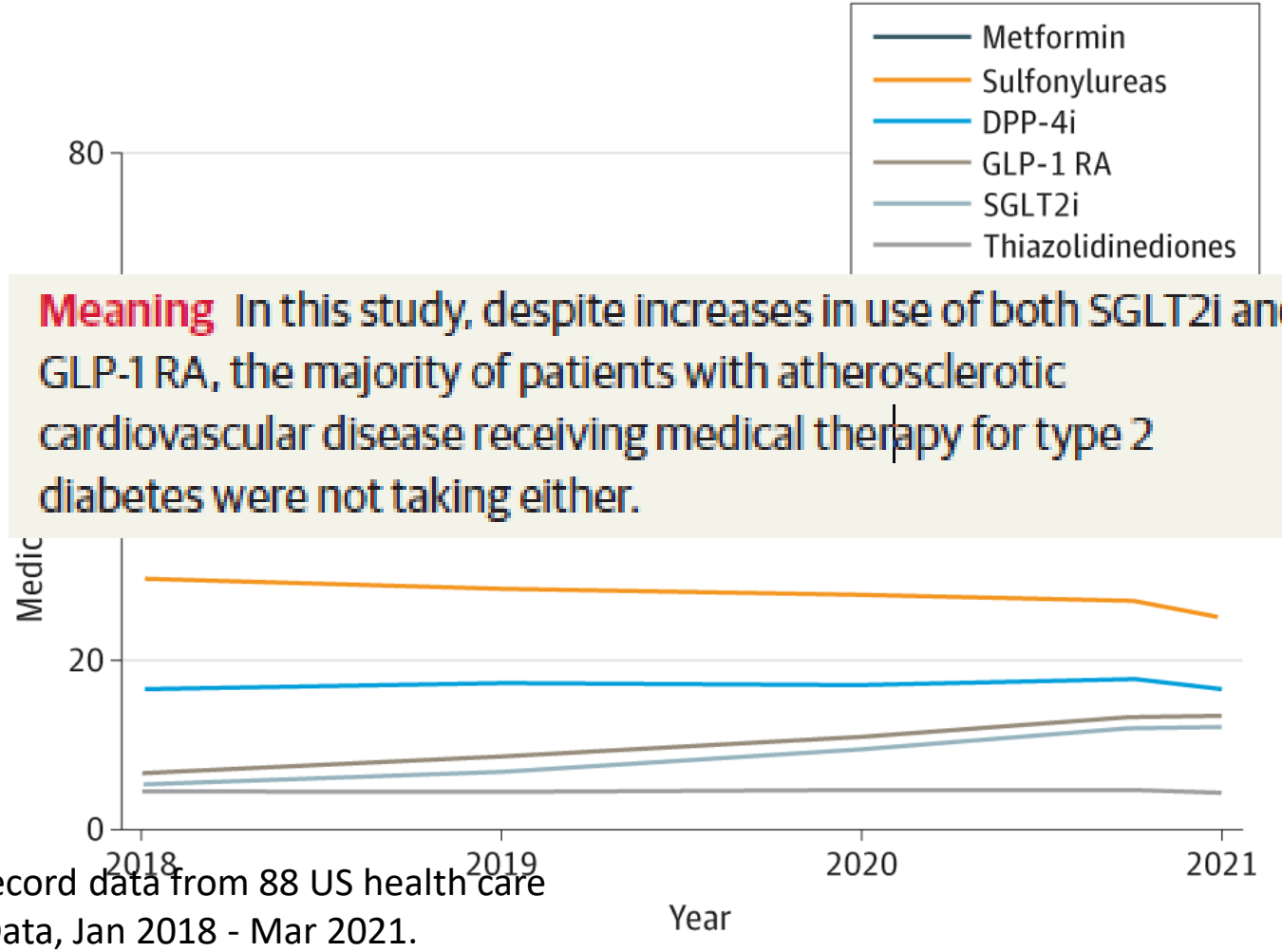
Prescriptions dispensed per physician in 2020

Methods: serial, cross-sectional data, IQVIA National Prescription Audit, audit capturing ≈90% of US retail dispensing

R Adhikari et alJ *Am Heart Assoc.* 2022;11:e023811. DOI: 10.1161/JAHA.121.023811

Prescription in high risk patients

SGLT2i/GLP1RA use in US Atherosclerotic CV Disease, Diabetes, 2018-2021



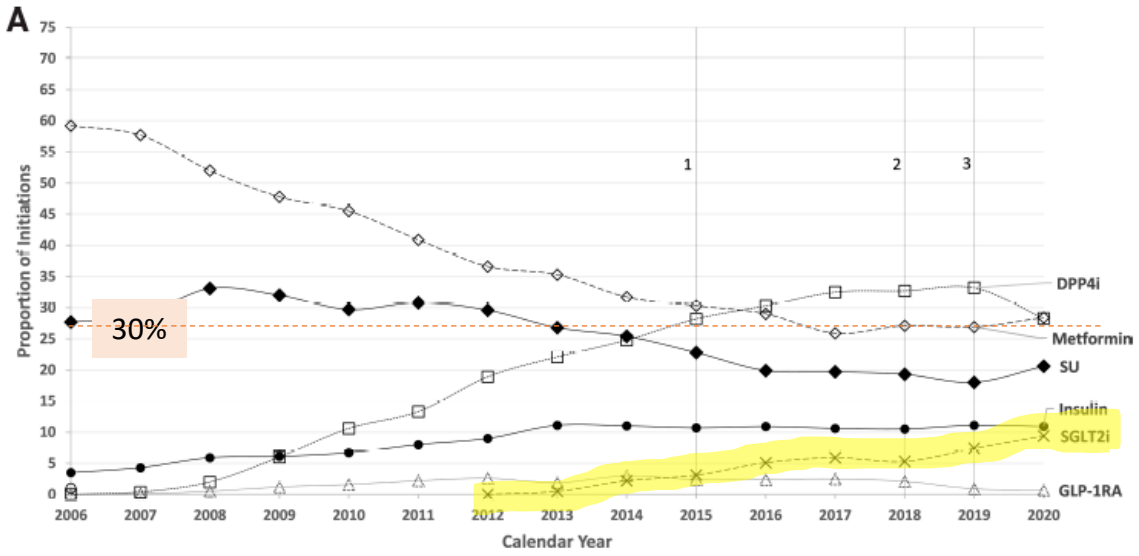
Meaning In this study, despite increases in use of both SGLT2i and GLP-1 RA, the majority of patients with atherosclerotic cardiovascular disease receiving medical therapy for type 2 diabetes were not taking either.

Methods: electronic health record data from 88 US health care systems, Cerner Real World Data, Jan 2018 - Mar 2021.
Excluded: Adults with ESKD or stage 5 chronic kidney

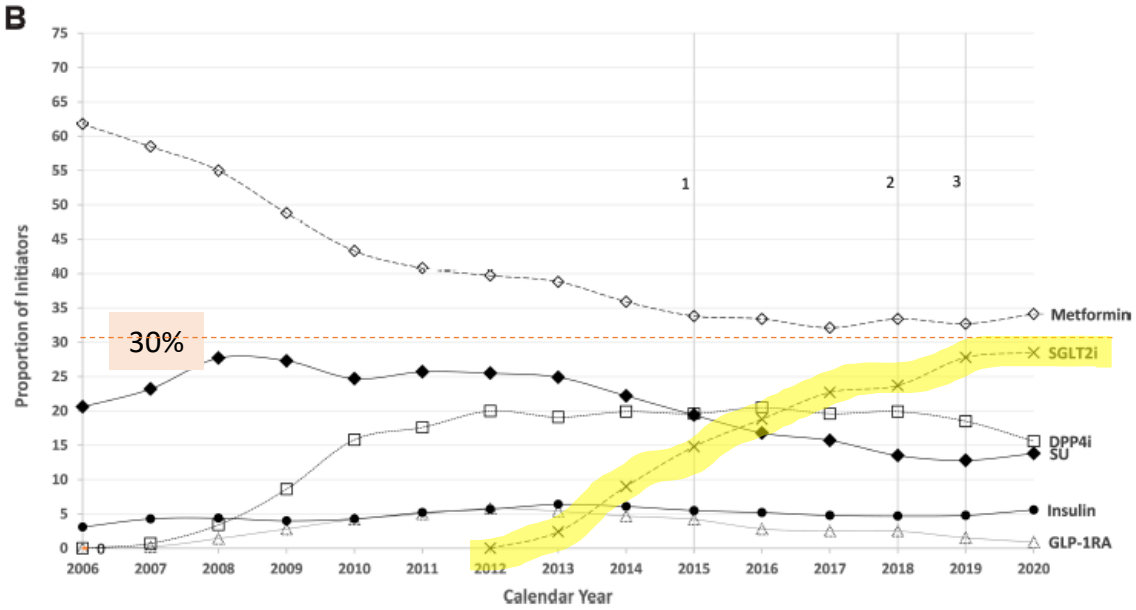
MG Nanna et al *JAMA Cardiol*. 2023;8(1):89-95.
doi:10.1001/jamacardio.2022.3839

UK: SGLT2i prescription in CKD

With CKD



Without CKD



Method
UK Clinical Practice Research Datalink (2006–2020)
Patients with T2DM with CKD (n = 38,622) or without CKD (n = 230,963)

Conclusions
SGLT2i use increased among patients with T2DM, but this increase was largely driven by patients without CKD.

J Liaw et al *Diabetes Care* 2022;45:2316–2325 | https://doi.org/10.2337/dc22-0224

Patient Characteristics of Those Treated in the US

Variable associated with SGLT2i use	More Likely	Less Likely
Age	Younger age	Older age
Sex	Male sex	Female sex
Race	White, Asian	Black or African American
Ethnicity	Hispanic or Latino	Non-Hispanic or Latino
Weight	Higher weight	Lower weight
HbA1c	Higher HbA1c	Lower HbA1c
Clinical scenario	Other kidney or Cardioprotective meds	CKD, Prior MI, prior stroke/TIA, any PAD, AF, Heart failure * Hospitalised in last year
Setting	Academic centre setting	
Insurance	Private insurance	
Not Associated with SGLT2i use		
	Encounter year (2018-21), Outpatient encounter in last year	

Methods: electronic health record data from 88 US health care systems, Cerner Real World Data, Jan 2018 - Mar 2021. Excluded: Adults with ESKD or stage 5 chronic kidney

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Medication adherence in the trials

Trial	Median Fu	Adherence total	Adherence SGLT2i	Adherence Pbo
CREDENCE	2.6 years	84%		
DAPA-CKD	2.4 years		87.3%	85.6%
EMPA-Kidney	2.0 years		83.1%	80.6%

Adherence and persistence in real world

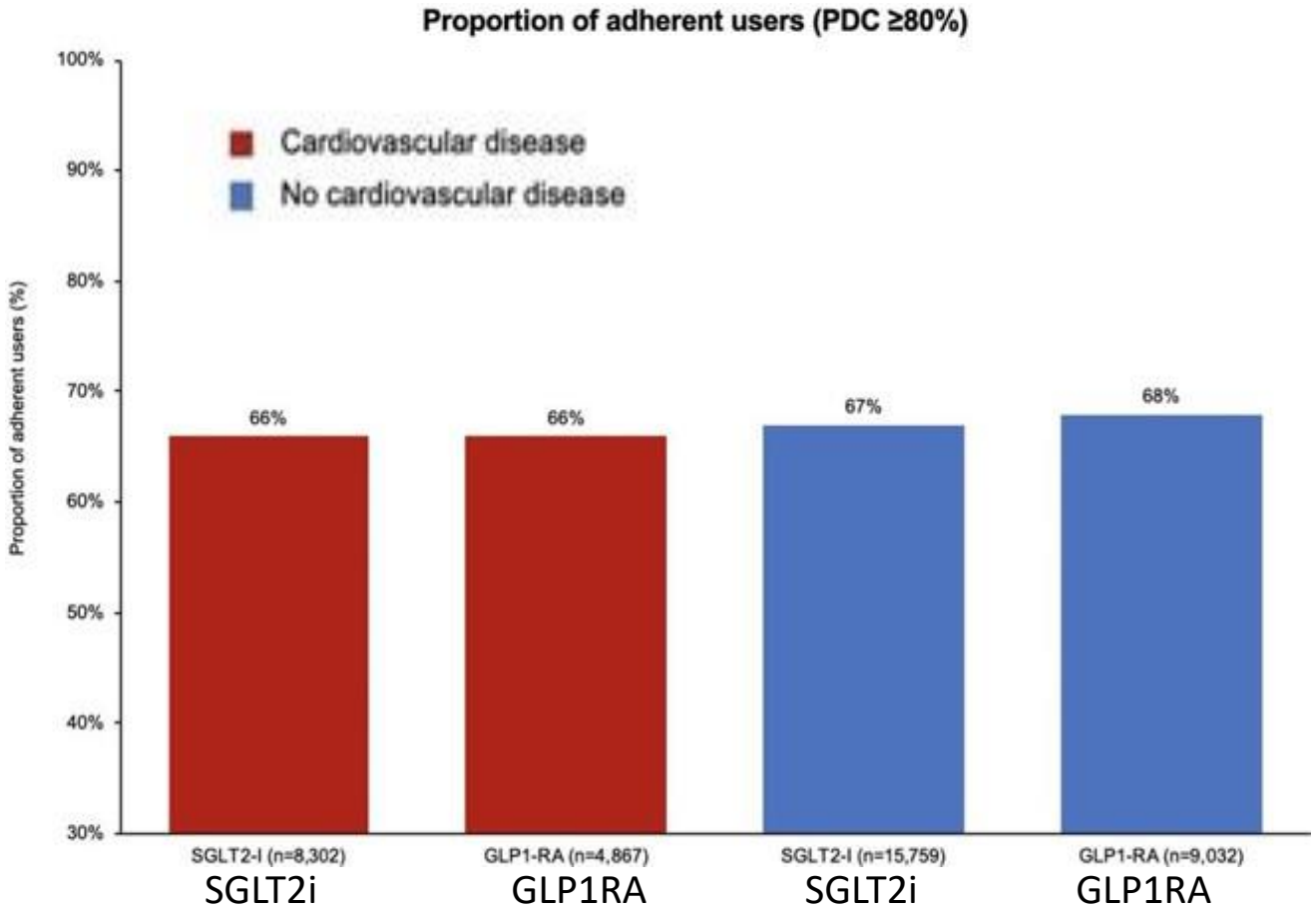
Meta-analysis (to Oct 2019): results of proportion adherent, and the proportion persistent at selected follow-up periods

Outcome	Number of studies	Number of cohorts	Sample size	Pooled results (95% CI)	I^2
% Adherent (PDC ≥0.80)					
6 months	4	7	34 667	59.5 (52.9–65.9)	99.2%
1 y	5	10	28 808	49.0 (42.3–55.8)	99.2%
% persistent					
1 y					
All definitions	10	16	79 181	61.8 (57.8–65.7)	99.2%
≥90-day gap	6	11	33 729	58.9 (53.1–64.6)	99.1%
2 y					
All definitions	4	5	51 510	45.9 (35.5–56.5)	99.8%
≥90-day gap	2	2	7182	34.7 (33.6–35.8)	0.0%

[a]Some studies did not report SD and therefore could not be included in the meta-analysis.
Abbreviations: CI, confidence interval; PDC, proportion of days covered.

R. Ofori-Asenso *Diabetes Metab Res Rev*. 2021;37:e3350.

Adherence to SGLT2i and GLP1RA in Denmark



Adherence at one year

Malik. *Pharmacology and Pharmacotherapy – Cardiovascular Pharmacotherapy 2022*/43/Supplement_2/ehac544.2692/6746166

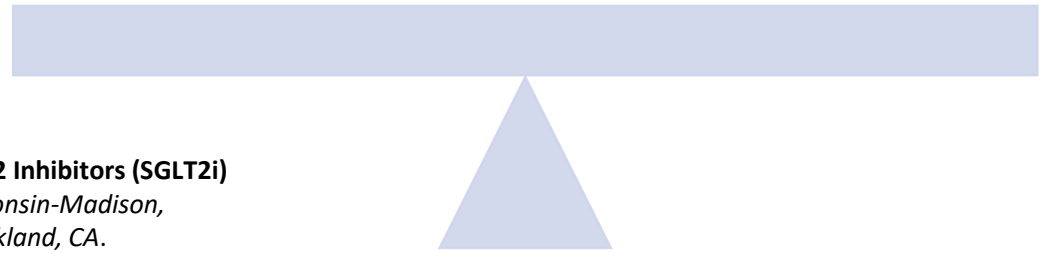
Clinician barriers to uptake

Survey SGLT2i prescribing patterns among nephrologists globally and identify barriers to SGLT2i prescribing

153 survey participants

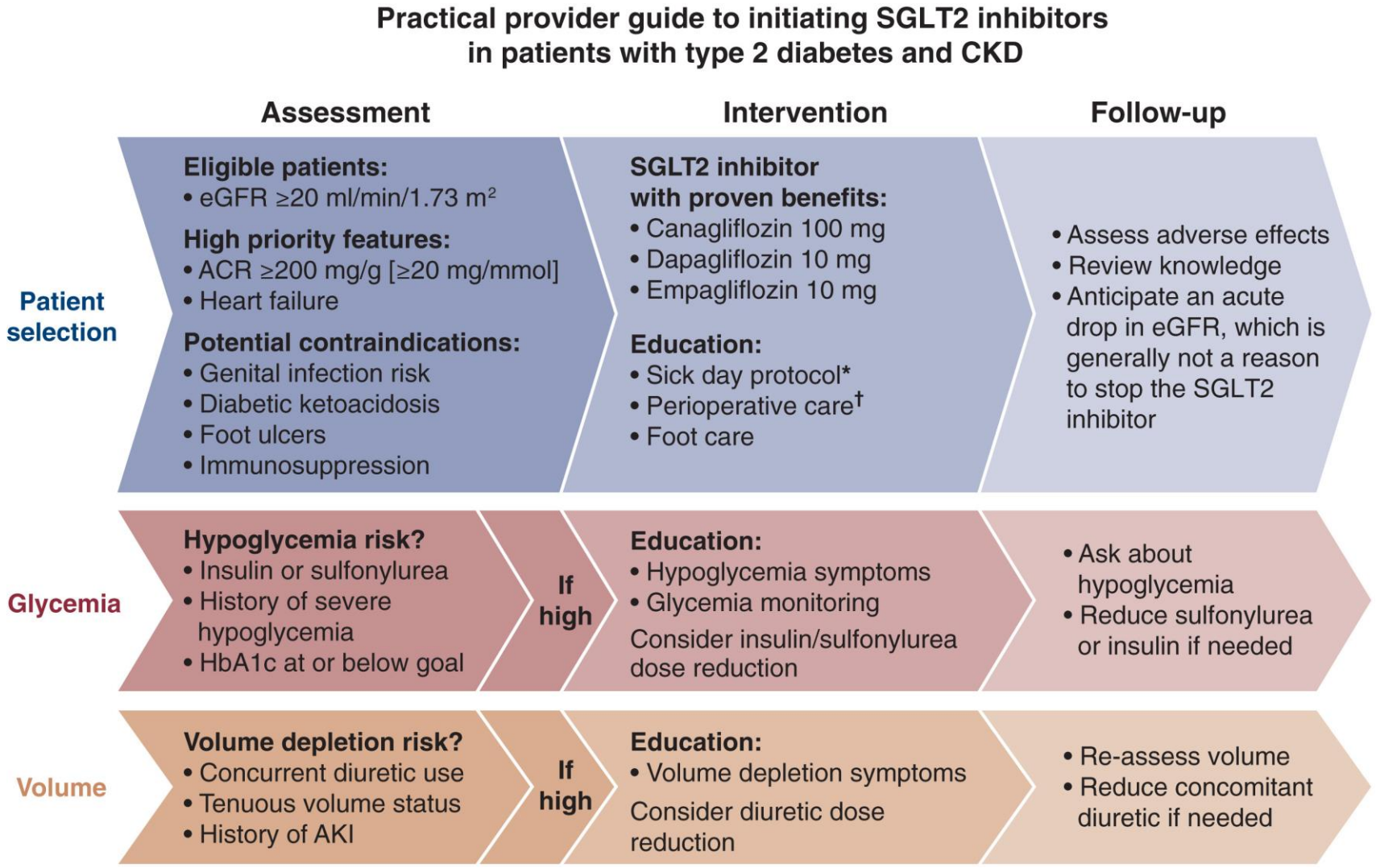
49% nephrology fellows or graduates ≤ 5 years, 51% practicing > 5 years
42% US, 58% outside US
52% university hospital, 48% private practice
64% of total respondents, 68% of trainees/recent graduates said knew indications for SGLT2i very well
53% from the US vs. 80% outside the US responded that they knew indications of SGLT2i very well (P 0.001).
33.6% of respondents said they prescribe SGLT2i to>50% of patients meeting requirements for SGLT2i.

Most common barriers to prescribing SGLT2i	Mechanisms that helped in prescribing SGLT2i
Lack of time and personnel to manage the side effects (11%)	Participation in professional conferences (18%)
Lack of experience or comfort in prescribing sglt2i (29%)	Readily available medical knowledge through social media (26%)
Cost of medication or high co-pay (34%)	Professional Guidelines (29%)



Nephrologists Survey to Learn Prescribing Patterns of Sodium-Glucose Cotransporter 2 Inhibitors (SGLT2i)
Tripti Singh,1 Tingting Li,2 Didier A. Mandelbrot,1 Ali Poyan-Mehr.3 *1University of Wisconsin-Madison, Madison, WI; 2Washington University in St Louis, St Louis, MO; 3Kaiser Permanente, Oakland, CA*.

KDIGO Tool for SGLT2i initiation



De Boer, Rossing et al. *Kidney International* 2022 102S1-S127

Conclusions

- SGLT2 inhibitors safely provide kidney and cardiac protection for people with diabetes and/or with CKD (eGFR ≥20 mL/min/1.73 m^2)
- Uptake appears better than for RAASi but is patchy
- Ways to safely keep patients on proven treatments needs better understanding
- Implementation trials and activities for both uptake and maintenance warranted