Monthly Campaign Webinar

November 19, 2020

Today's Webinar

- Together 2 Goal® Updates
  - Webinar Reminders
  - ECHO Diabetes Webinar Series
- Addressing Kidney Health in Type 2 Diabetes: Gaps between Guidelines and Clinical Practice
  - AMGA Analytics
- Q&A
  - Use Q&A or chat feature

Webinar Reminders

- Webinar will be recorded today and available the week of November 23rd
  - www.Together2Goal.org

- Participants are encouraged to ask questions using the “Chat” and “Q&A” functions on the right side of your screen

ECHO Diabetes Webinar Series

https://med.stanford.edu/cme/diabetescovid.html

Today's Featured Presenters

John Cuddeback, M.D., Ph.D.

Chief Medical Informatics Officer
AMGA Analytics

Nikita Stempniewicz, M.Sc.

Director, Research & Analytics
AMGA Analytics

AMGA
Advancing High Performance Health

Addressing Kidney Health in Type 2 Diabetes: Gaps between Guidelines and Clinical Practice.

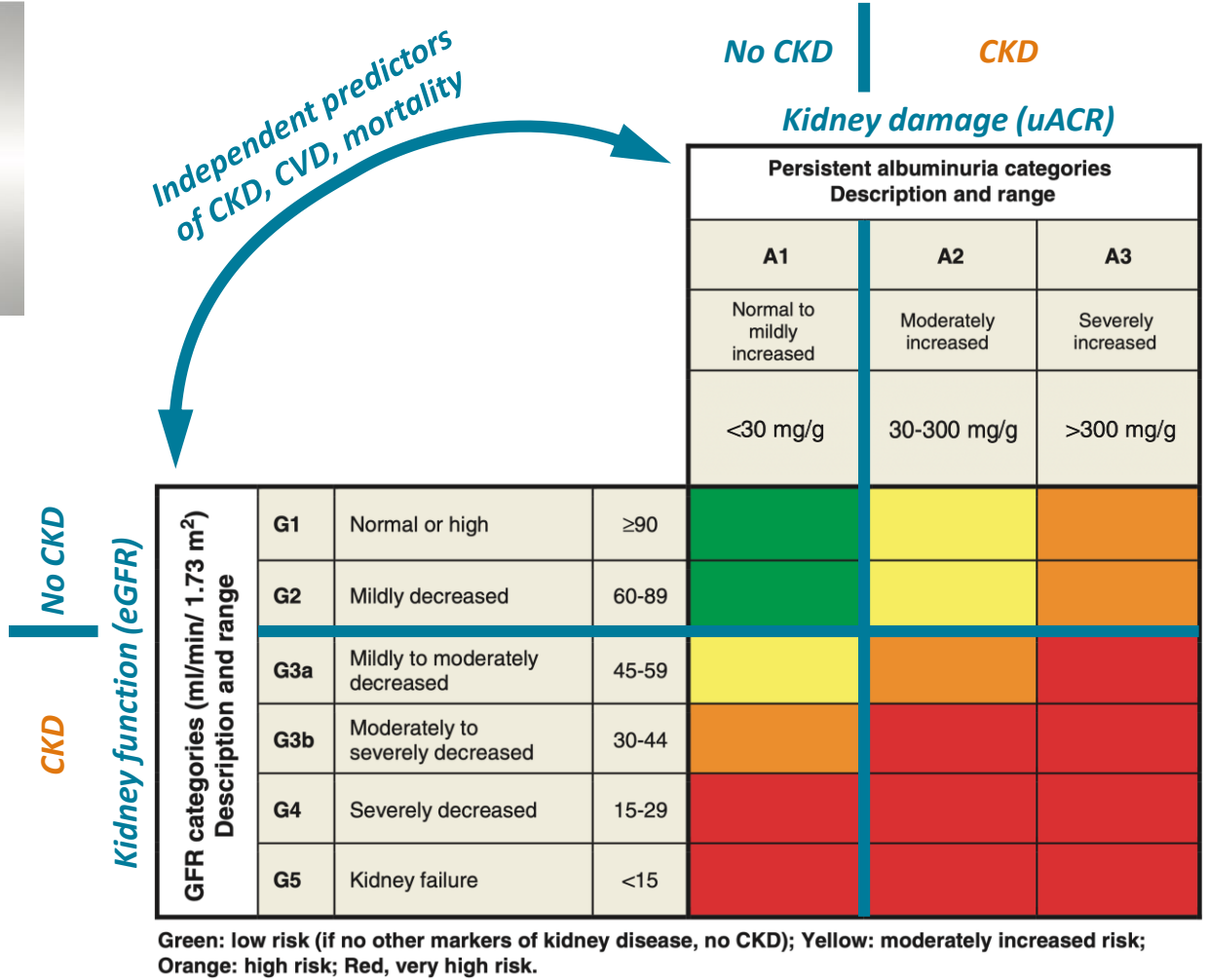
Nikita Stempniewicz, Cori Rattelman, John Cuddeback

T2G: Accomplishments

- Improved care for 1 million people with type 2 diabetes by 2019 Q1 (+336,000 remained in control)
- T2G Bundle Collaborative—A1c, BP, lipids/statins, nephropathy
- T2G Innovator Tracks
  - Cardiovascular disease (lipid management)
  - Retinopathy screening

Opportunities to raise the bar for people with diabetes

- Kidney Health Evaluation Measure (HEDIS): annual testing of urine albumin-to-creatinine ratio (uACR)
- Prescribing GLP-1s or SGLT2s for patients with ASCVD, CKD, or heart failure



Green: low risk (if no other markers of kidney disease, no CKD); Yellow: moderately increased risk; Orange: high risk; Red, very high risk.

Relative Risk of Complications of CKD, by eGFR and uACR

Ranking of adjusted relative risk

- Rank numbers 1-8
- Rank numbers 9-14
- Rank numbers 15-21
- Rank numbers 22-28

Absolute risk can be computed by multiplying the RRs in each cell by the incidence rate in the reference cell.

Cardiovascular mortality

	ACR <10	ACR 10-29	ACR 30-299	ACR ≥300
eGFR >105	0.9	1.3	2.3	2.1
eGFR 90-105	Ref	1.5	1.7	3.7
eGFR 75-90	1.0	1.3	1.6	3.7
eGFR 60-75	1.1	1.4	2.0	4.1
eGFR 45-60	1.5	2.2	2.8	4.3
eGFR 30-45	2.2	2.7	3.4	5.2
eGFR 15-30	14	7.9	4.8	8.1

All-cause mortality

	ACR <10	ACR 10-29	ACR 30-299	ACR ≥300
eGFR >105	1.1	1.5	2.2	5.0
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Acute kidney injury (AKI)

	ACR <10	ACR 10-29	ACR 30-299	ACR ≥300
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eGFR 45-60	2.2	4.9	6.4	5.9
eGFR 30-45	7.3	10	12	20
eGFR 15-30	17	17	21	29

Progressive CKD

	ACR <10	ACR 10-29	ACR 30-299	ACR ≥300
eGFR >105	Ref	Ref	0.4	3.0
eGFR 90-105	Ref	Ref	0.9	3.3
eGFR 75-90	Ref	Ref	1.9	5.0
eGFR 60-75	Ref	Ref	3.2	8.1
eGFR 45-60	3.1	4.0	9.4	57
eGFR 30-45	3.0	19	15	22
eGFR 15-30	4.0	12	21	7.7

Kidney failure (ESRD)

	ACR <10	ACR 10-29	ACR 30-299	ACR ≥300
eGFR >105	Ref	Ref	7.8	18
eGFR 90-105	Ref	Ref	11	20
eGFR 75-90	Ref	Ref	3.8	48
eGFR 60-75	Ref	Ref	7.4	67
eGFR 45-60	5.2	22	40	147
eGFR 30-45	56	74	294	763
eGFR 15-30	433	1044	1056	2286

Relative Risk of Complications of CKD, by eGFR and uACR

Relative risks of major complications of chronic kidney disease based upon categorical meta-analysis

Ranking of adjusted relative risk

- Rank numbers 1-8
- Rank numbers 9-14
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Absolute risk can be computed by multiplying the RRs in each cell by the incidence rate in the reference cell.

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Summary of categorical meta-analysis (adjusted relative risk) for general population cohorts with ACR. Mortality is reported for general population cohorts assessing albuminuria as urine ACR. Kidney outcomes are reported for general population cohorts assessing albuminuria as either urine ACR or dipstick. eGFR and albuminuria are expressed as categorical variables. All results are adjusted for covariates and compared with the Ref. Each cell represents a pooled RR from a meta-analysis; bold numbers indicate statistical significance at $p<0.05$. Incidence rates per 1000 person-years for the reference cells are 7.0 for all-cause mortality, 4.5 for CVD mortality, 0.04 for kidney failure, 0.98 for AKI, and 2.02 for kidney disease progression. Absolute risk can be computed by multiplying the RRs in each cell by the incidence rate in the reference cell. Colors reflect the ranking of adjusted RR. The point estimates for each cell were ranked from 1 to 28 (the lowest RR having rank number 1, and the highest number 28). The categories with rank numbers 1 through 8 are green; rank numbers 9 through 14 are yellow; rank numbers 15 through 21 are orange; and trank numbers 22 through 28 are colored red. (For the outcome of kidney disease progression, two cells with RR of 1.0 are also green, leaving fewer cells as orange.)

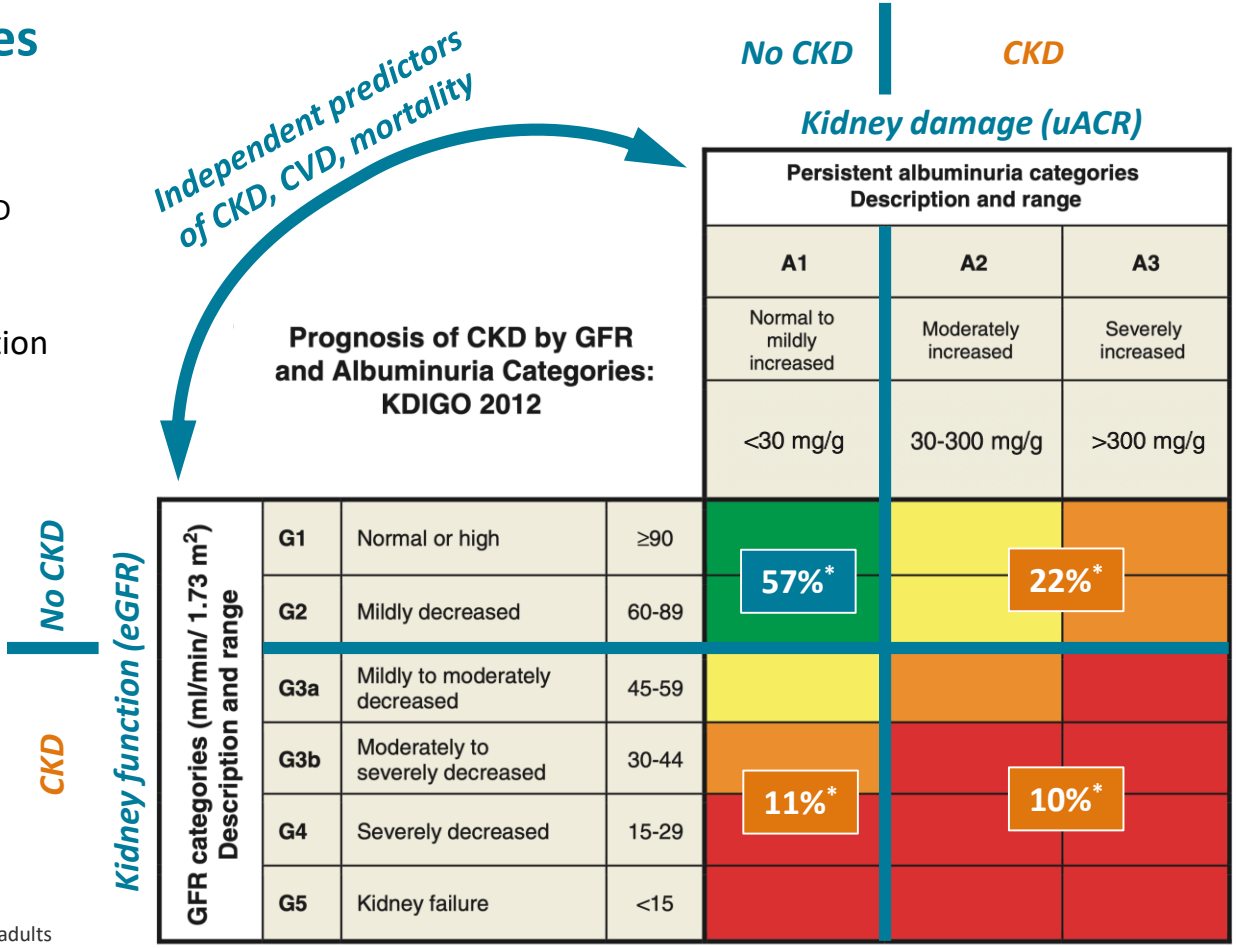
RR: relative risk; ACR: albumin creatinine ratio; eGFR: estimated glomerular filtration rate; Ref: reference cell; ESRD: end-stage renal disease; AKI: acute kidney injury; CKD: chronic kidney disease; CVD: cardiovascular disease.
* Dipstick included (-, ±, +, ≥++).

Background

- Among people with type 2 diabetes, ~33% also have chronic kidney disease (CKD)
  - Most people with CKD are unaware of it
- For screening and management, ADA recommends testing at least annually with:
  - Estimated glomerular filtration rate (eGFR), from serum creatinine, ***and***
  - Urinary albumin-creatinine ratio (uACR)
    - Multiple methods of testing for urine protein are used in clinical practice
    - uACR is recommended: standardized, sensitive, and specific
- Specific ADA recommendations for second-line agents for glycemic control
  - GLP-1 RAs or SGLT2 inhibitors are preferred for patients with established, or high risk of, ASCVD, CKD, or heart failure
  - Reduce risk of CKD progression and cardiovascular events

eGFR and uACR Categories

- Both tests must be used
  - to identify new or undiagnosed CKD
  - to risk-stratify patients with CKD
- CKD diagnosis: decreased kidney function or increased damage for ≥ 3 months
  - eGFR < 60 ml/min/1.73m^2 **or**
  - uACR ≥ 30 mg/g
- **Half** of patients with CKD had elevated uACR *without* decreased eGFR (= 22/43)
  - These patients not identified by eGFR



* Bailey RA, Wang Y, Zhu V, Rupnow MF. Chronic kidney disease in US adults with type 2 diabetes: an updated national estimate of prevalence based on Kidney Disease: Improving Global Outcomes (KDIGO) staging. *BMC Res Notes*. 2014;7:415. Published 2014 Jul 2. doi:10.1186/1756-0500-7-415

eGFR and uACR Categories

- CMS HCC RAF scores
  - CKD Stage 3 (HCC 138, RAF 0.069)
  - CKD Stage 4 (HCC 137, RAF 0.289)
  - CKD Stage 5 (HCC 136, RAF 0.289)
- Predictors of future health care costs and utilization

Class	*PMPM*	*Admission per 1,000*
1	$ 650	95
2	$ 932	165
3	$ 1,306	363
4	$ 1,172	312
5	$ 2,362	591

Vassalotti JA, DeVinney R, Lukasik S, et al. CKD quality improvement intervention with PCMH integration: health plan results. *Am J Manag Care.* 2019;25(11):e326-e333.

Prognosis of CKD by GFR and Albuminuria Categories: KDIGO 2012

Kidney damage (uACR)

Kidney function (eGFR) GFR categories (ml/min/ 1.73 m²) Description and range				Persistent albuminuria categories Description and range		
				A1	A2	A3
				Normal to mildly increased	Moderately increased	Severely increased
				<30 mg/g	30-300 mg/g	>300 mg/g
	G1	Normal or high	≥90	1	2	3
	G2	Mildly decreased	60-89	1	2	3
	G3a	Mildly to moderately decreased	45-59	2	3	4
	G3b	Moderately to severely decreased	30-44	3	4	4
	G4	Severely decreased	15-29	4	4	5
	G5	Kidney failure	<15	5	5	5

Green: low risk (if no other markers of kidney disease, no CKD); Yellow: moderately increased risk; Orange: high risk; Red, very high risk.

Quality Measures for CKD in Diabetes

Quality Measures for CKD in Diabetes

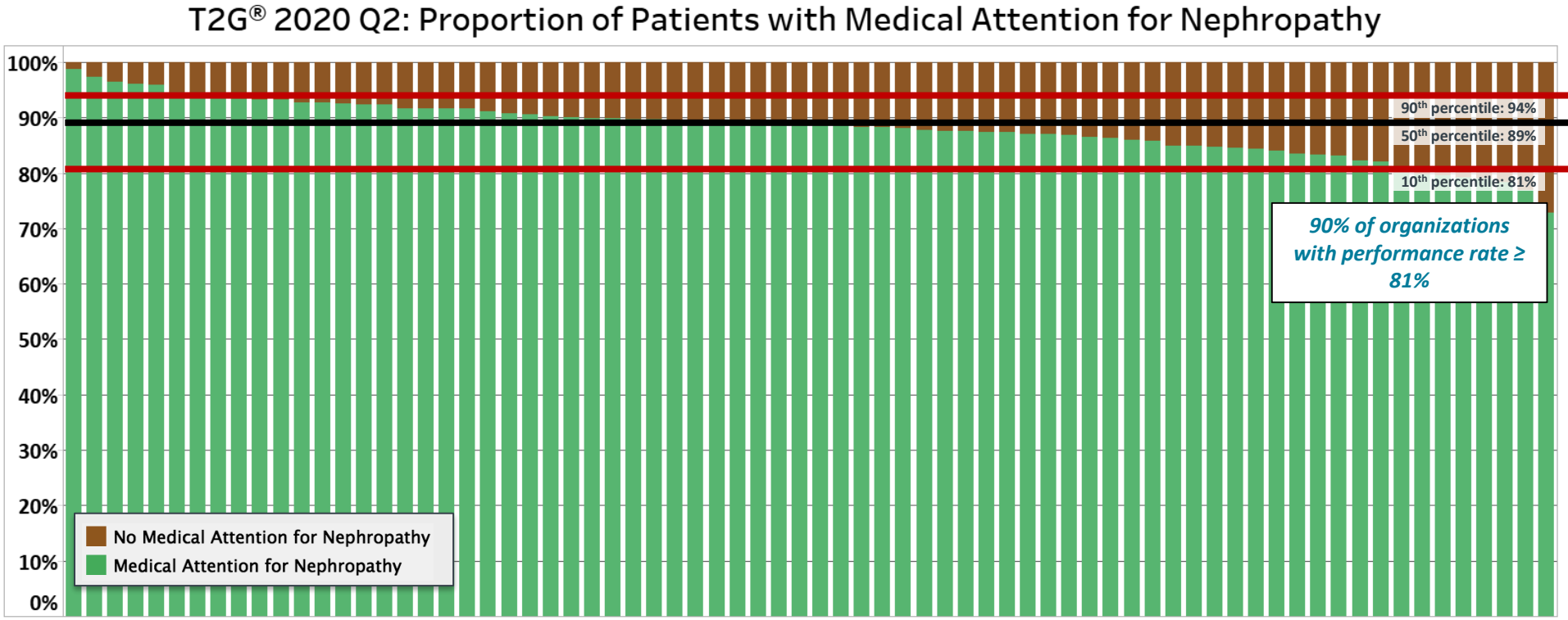
- **Medical Attention for Nephropathy (traditional measure, used in T2G):**
  Percentage of patients who had a nephropathy screening test or evidence of nephropathy
  - any urine protein test **OR**
  - diagnosis of nephropathy **OR**
  - visit with a nephrologist **OR**
  - prescribing ACE-i or ARB

- **Kidney Health Evaluation (new measure, HEDIS Measurement Year 2020):**
  Percentage of patients who received kidney health evaluation
  - eGFR **AND**
  - Urine Albumin-Creatinine Ratio (uACR)

Issues with Current Medical Attention for Nephropathy Measure

- Does not include eGFR, an important test for CKD detection and risk stratification
- “Topped-out” at most health systems, giving a false sense of optimal kidney care for people with diabetes

Medical Attention For Nephropathy (T2G 2020 Q2)

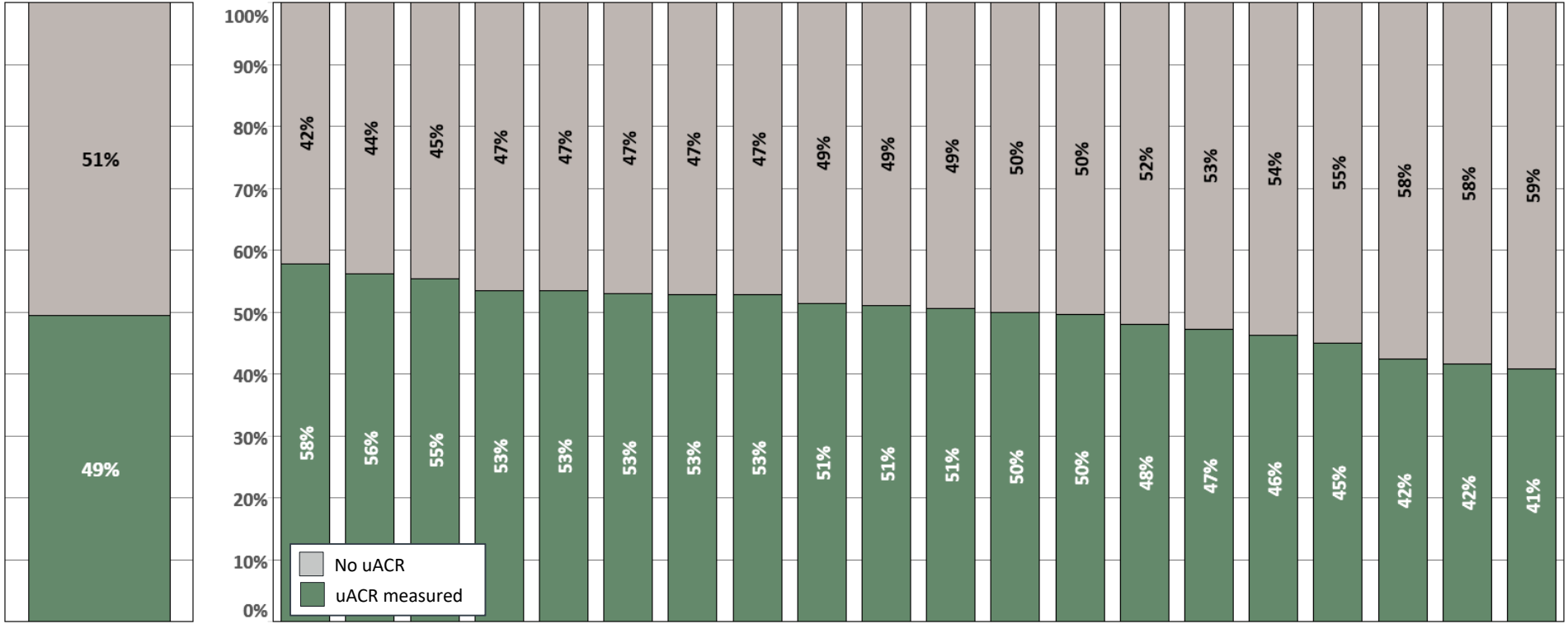


Issues with Current Medical Attention for Nephropathy Measure

- Does not include eGFR, an important test for CKD detection and risk stratification
- "Topped-out" at most health systems, giving a false sense of optimal kidney care for people with diabetes
- Convoluted measure: can meet the numerator in multiple ways—interventions that may or may not have been intended to address nephropathy

uACR Measurement Rates

- 685,000 patients age 18 – 75 with type 2 diabetes and at least 2 visits with a PCP, cardiologist, endocrinologist, or nephrologist.
- Overall, 49% of patients (in green) had a urine albumin to creatinine test in the 12-month measurement period.
- Rates ranged from 41 – 58% across individual organizations.

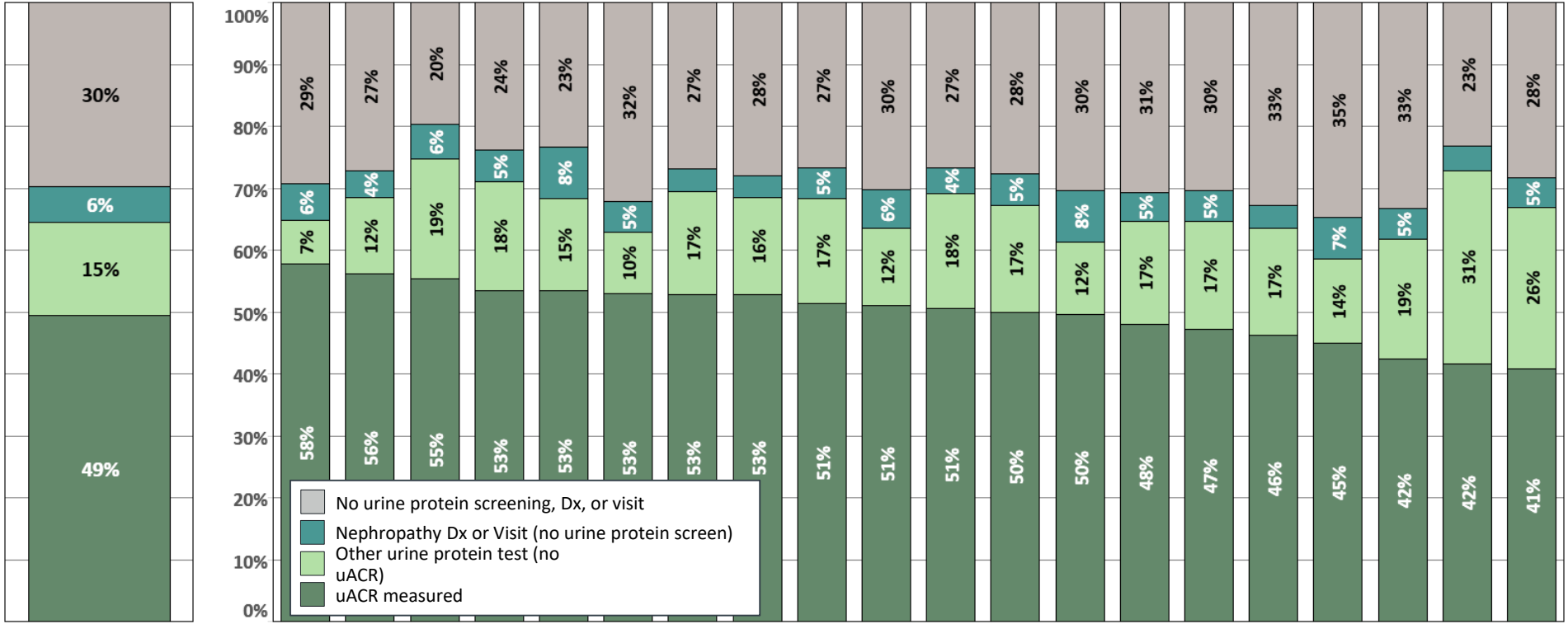


Urine Protein Test for Nephropathy Screening or Monitoring

- 685,000 patients age 18 – 75 with type 2 diabetes and at least 2 visits with a PCP, cardiologist, endocrinologist, or nephrologist.
- Overall, 15% of patients (in light green) had a urine protein test in the 12-month measurement period other than uACR.
- Rates ranged from 7 – 31% across individual organizations.

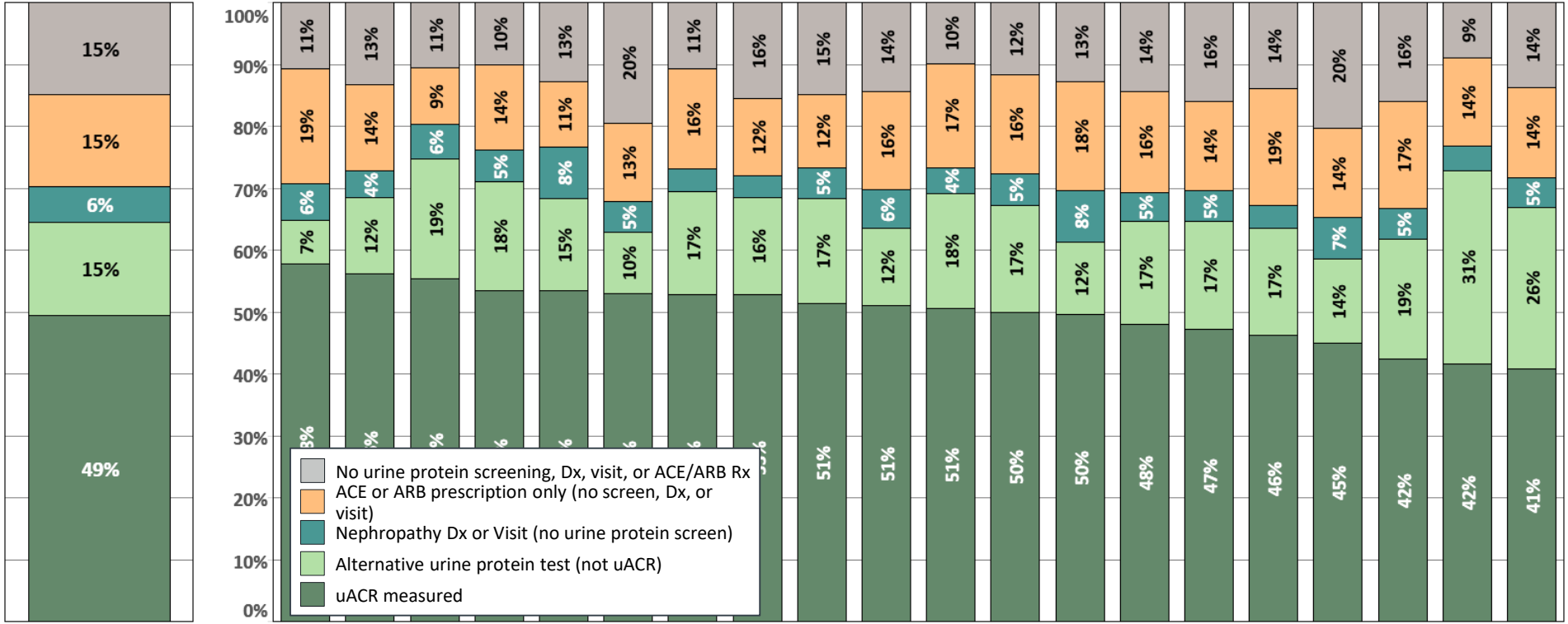
Diagnosis or Treatment of Nephropathy or Visit with Nephrologist

- Overall, 6% of patients (in teal) had a diagnosis for nephropathy, treatment for nephropathy, or a visit with a nephrologist, and no urine protein test.
- Rates ranged from 3 – 8% across individual organizations.



ACE-i or ARB Prescription

- Overall, 15% of patients (in orange) had an ACE-i or ARB prescription and no urine protein test, nephropathy Dx, nephropathy treatment, or visit with a nephrologist.
- Rates ranged from 12 – 19% across individual organizations.



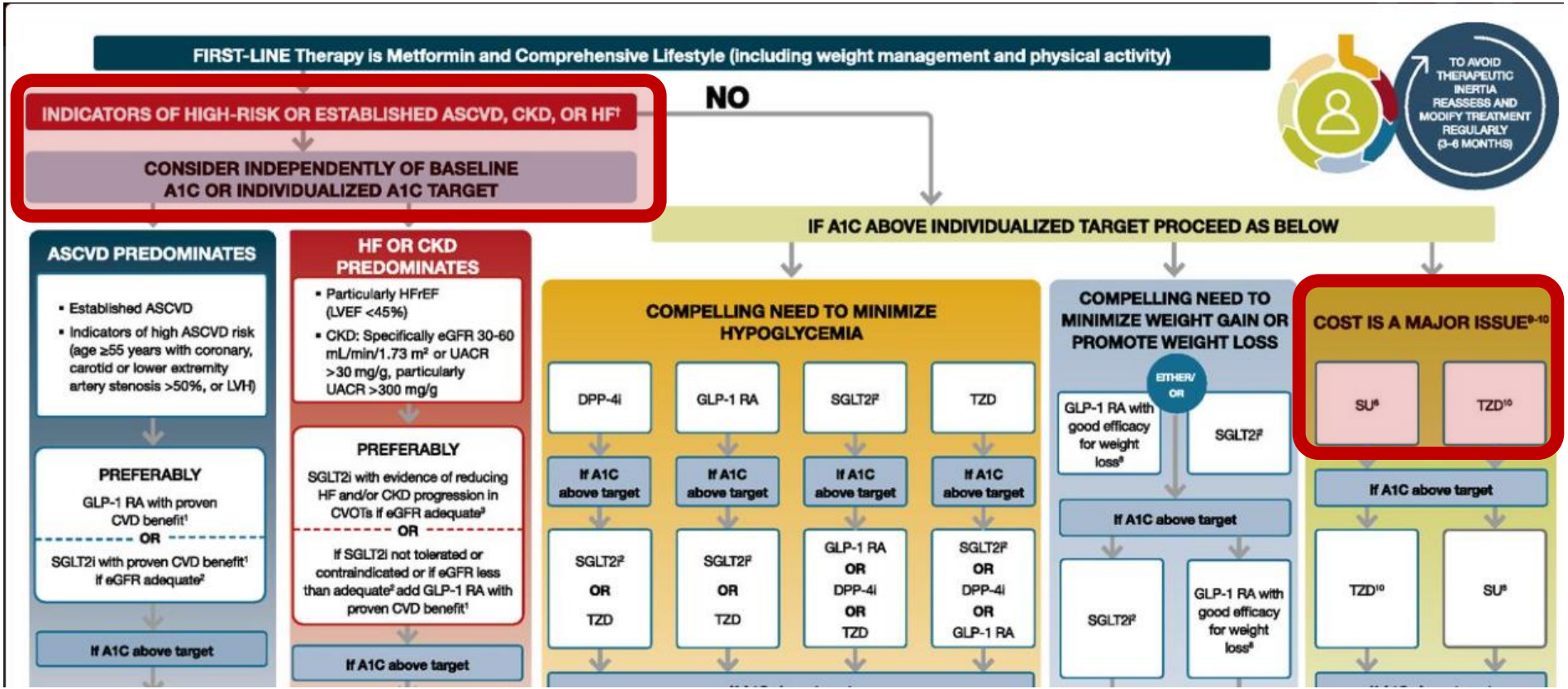
Pushback on Including ACE-i/ARBs

- ACE-i/ARBs are recommended among patients with T2DM and albuminuria
  - Initiate at maximum tolerated dose indicated for blood pressure
- Also used to treat hypertension, but generally at lower doses
  - Medical attention for nephropathy only requires a prescription, with or without albuminuria
- ~15% of patients met the measure only through Rx for ACE-i/ARB[1]
  - < 1% of patients who met the measure solely on ACE-i/ARBs use had a Dx for microalbuminuria
  - ~75% had a diagnosis for cardiovascular disease (e.g., hypertension)
- *"Use of these medications does not obviate the need for a nephropathy screening in [people with diabetes]. Inclusion of these medications as numerator compliance leads to overreporting and may contribute to underscreening of a population at risk."*[1]

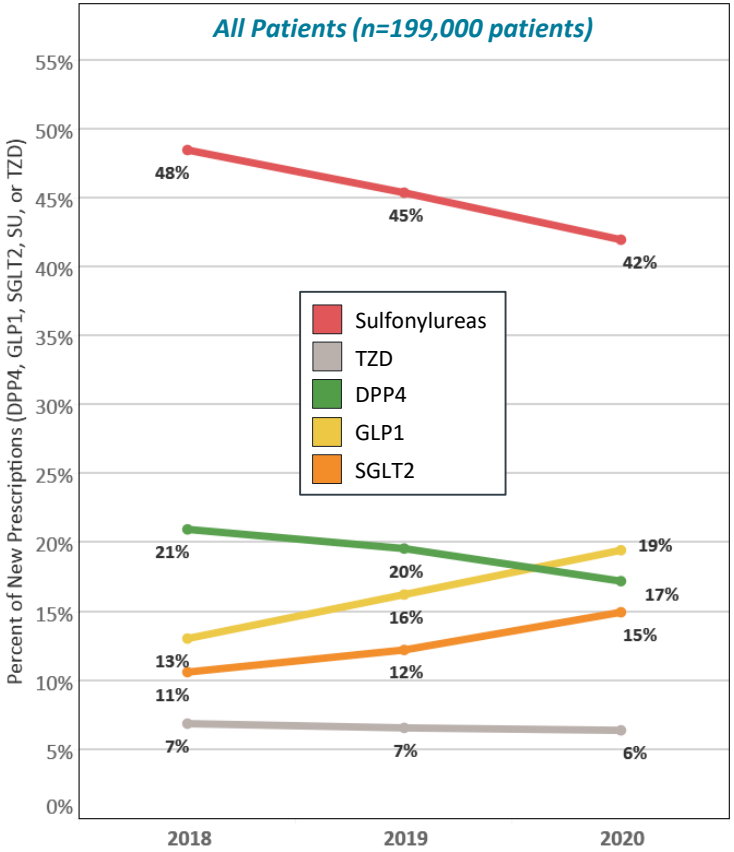
[1] Krause TM, Ganduglia-Cazaban C, Finkel KW. Rates for HEDIS Screening for Diabetic Nephropathy Quality Measure May Be Overstated. *Manag Care.* 2018;27(8):45-49.

Prescribing of Newer Medications

Cori Rattelman, Nikita Stempniewicz, John Kennedy, John Cuddeback



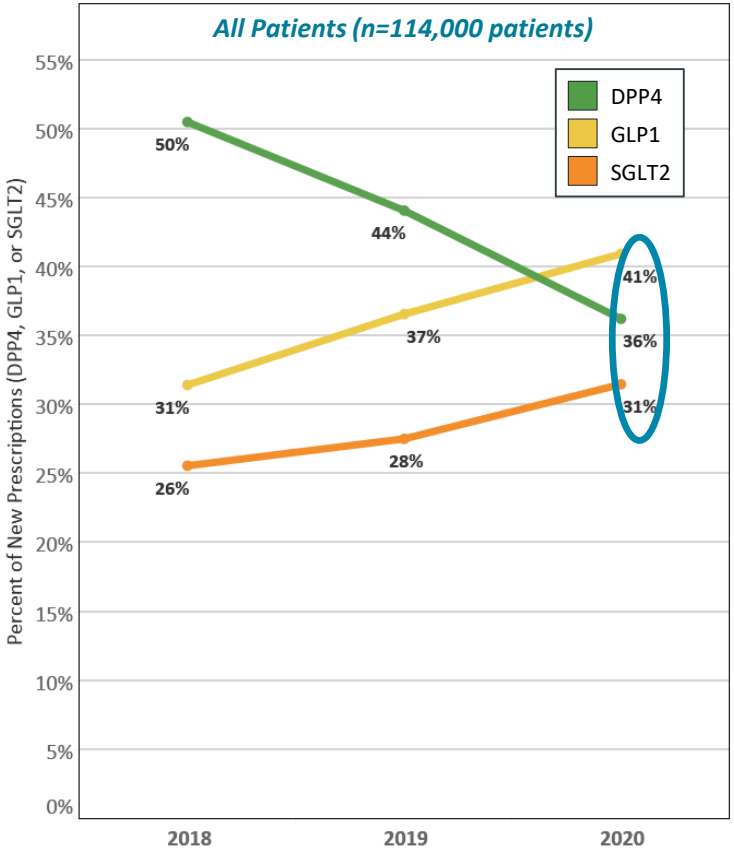
Trends for New Prescriptions: 2018–2020

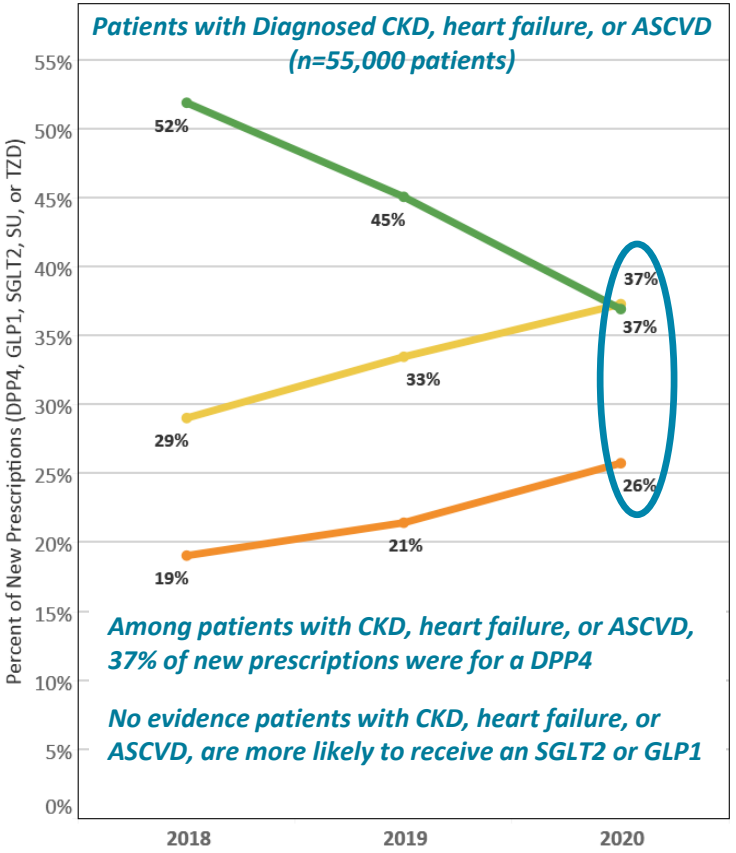


- GLP1 and SGLT2 prescribing increasing over time
- DPP4 prescribing decreasing over time
- Sulfonylurea prescribing decreasing over time
- **Average Annual Out of Pocket Costs***
  - "traditional" treatments (TZD and sulfonylureas)
    - **$250 to $355**
  - "novel" treatments (SGLT2, GLP-1, DPP4s)
    - **$1,231 to $1,981**

* DeJong C, Masuda C, Chen R, Kazi DS, Dudley RA, Tseng C. Out-of-Pocket Costs for Novel Guideline-Directed Diabetes Therapies Under Medicare Part D. *JAMA Intern Med.* Published online September 14, 2020. doi:10.1001/jamainternmed.2020.2922

Trends for New Prescriptions: 2018–2020





Among patients with CKD, heart failure, or ASCVD, 37% of new prescriptions were for a DPP4

No evidence patients with CKD, heart failure, or ASCVD, are more likely to receive an SGLT2 or GLP1

Opportunities for Improvement in T2DM

- Kidney Health Evaluation Measure (HEDIS): annual testing of urine albumin-to-creatinine ratio (uACR)
  - For people with type 2 diabetes, the ADA recommends testing eGFR and uACR at least annually
  - Performance measures are shifting from the traditional medical attention for nephropathy, to the kidney health evaluation measure, which requires annual eGFR and uACR testing
  - While eGFR testing rates are high among people with type 2 diabetes, uACR testing rates are moderate and more variable both across and within organizations
  - Improving uACR testing should consistently increase CKD identification
- Prescribing GLP-1s or SGLT2s for patients with ASCVD, CKD, or heart failure
  - GLP-1s or SGLT2s can reduce risk of CKD progression, cardiovascular events, or both
  - GLP-1s or SGLT2s are preferentially recommended for patients with or at high risk of CKD, heart failure, or ASCVD regardless of glycemic control
  - 37% of patients with ASCVD, CKD, or heart failure received a DPP4, and probably should have received an SGLT2 or GLP-1
    - A population where cost may not be a major issue

Questions?

AMGA
- Caitlin Shaw
- Cori Rattelman
- Elizabeth Ciemins
- John Cuddeback
- John Kennedy

National Kidney Foundation (NKF)

Icahn School of Medicine at Mount Sinai
- Joseph Vassalotti

Geisinger Medical Center
- Alex R Chang

National Committee for Quality Assurance (NCQA)
- Amy Storfer-Isser

Johns Hopkins Bloomberg School of Public Health

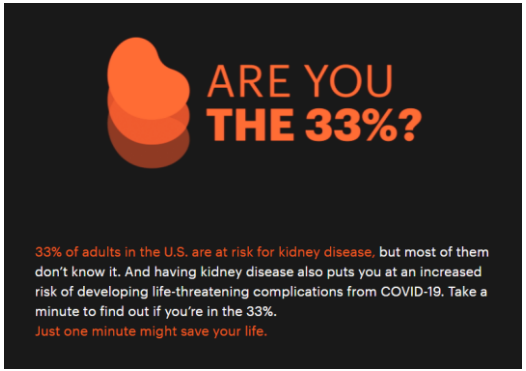
CKD Prognosis Consortium
- Josef Coresh
- Kunihiro Matsushita
- Yingying Sang
- Shoshana Ballew
- Jung-Im Shin
- Morgan Grams

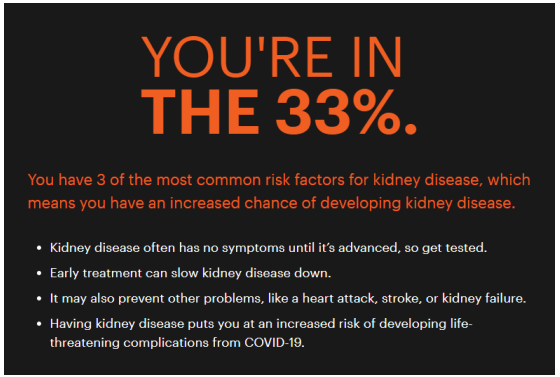
Tufts Medical Center
- Andrew S Levey

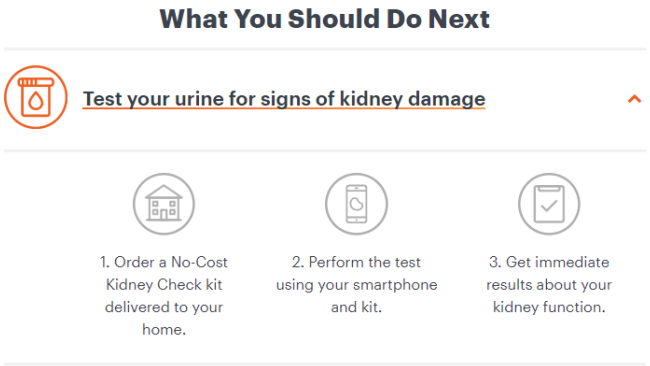
Janssen Scientific Affairs
- Robert Bailey
- Jesse Fishman

Additional Resources: *Are you the 33%?*

- "Are you the 33%?" quiz: NKF resource to help raise CKD awareness
  - www.MinuteForYourKidneys.org







Happy Holidays

- No December webinar!
- Stay tuned for our upcoming Together 2 Goal® 2021 webinar calendar

Questions