



CARDI·OH

Ohio Cardiovascular and Diabetes Health Collaborative



In partnership with:



Cardi-OH ECHO

Health Equity and Cardiovascular Risk

November 16, 2023

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Disclosure Statements



- The following speakers and subject matter experts have a relevant financial interest or affiliation with one or more organizations that could be perceived as a real or apparent conflict of interest in the context of the subject of their presentation*:
 - Danette Conklin, PhD; Kathleen Dungan, MD, MPH; Adam T. Perzynski, PhD; Christopher A. Taylor, PhD, RDN, LD, FAND; Jackson Wright, MD, PhD
- The remaining speakers and subject matter experts have no financial relationships with any commercial interest related to the content of this activity:
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 - Shari Bolen, MD; Anderson Christopher; Richard Cornachione; Carolyn Henceroth; Gillian Irwin; Michael Konstan, MD; Elizabeth Littman; Devin O'Neill; Steven Ostrolencki; Ann Nevar; Claire Rollins; Catherine Sullivan

* These financial relationships are outside the presented work.

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Promoting Diabetes Control

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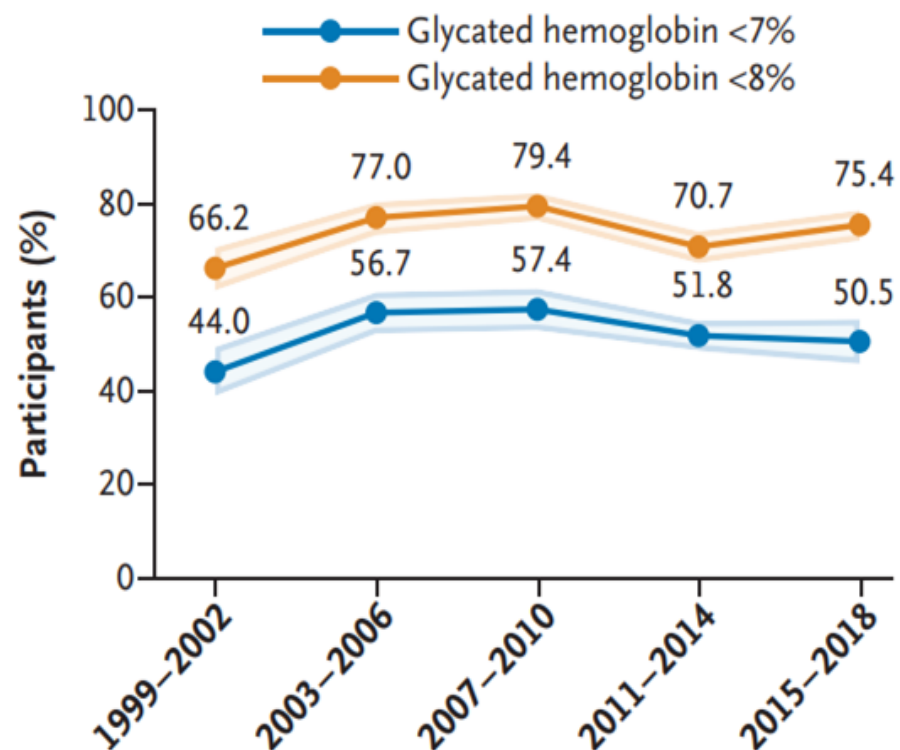
Learning Objectives



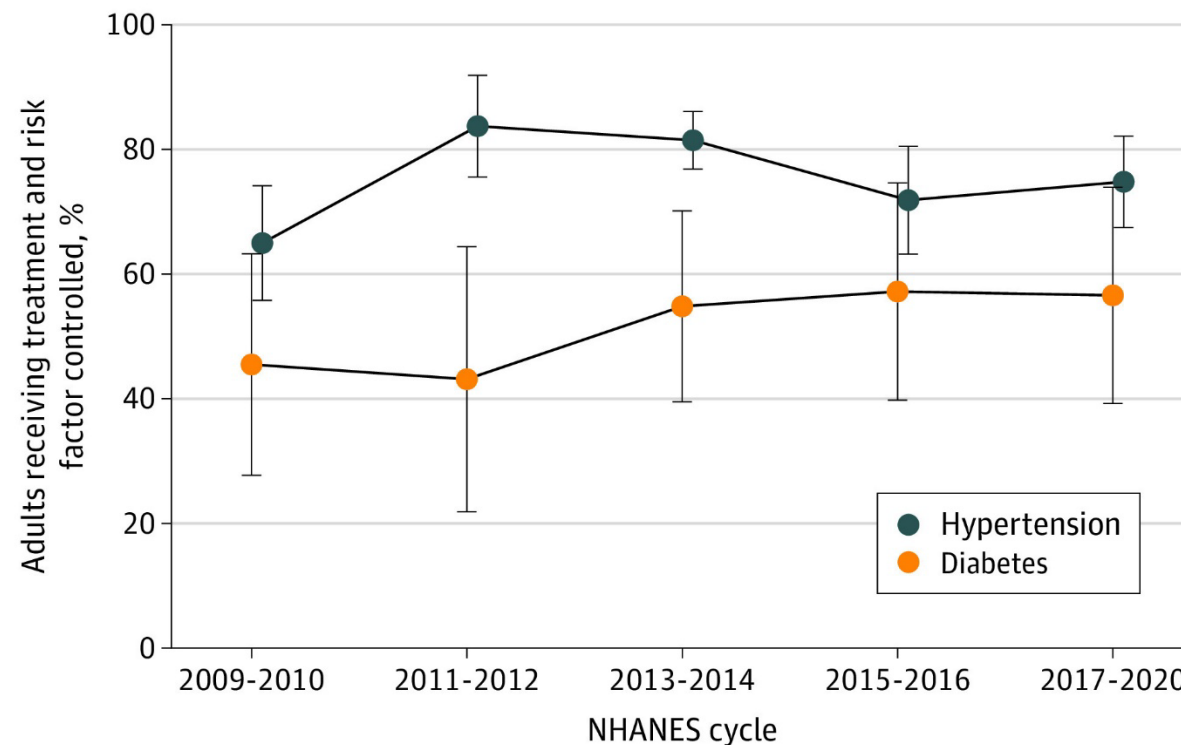
1. List and describe a minimum of three barriers specific subpopulations face in achieving control of diabetes
2. Describe alternatives to newer medications for control of diabetes for patients with limited financial means
3. Describe the use of continuous glucose monitoring for patients with diabetes and effective strategies to promote uptake among minority patients

Stagnation of HbA1c—NHANES data

All Adults



Age 20-44



Barriers to Glycemic Control



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Patients

- Cost/access to medication
- SDOH
- Limited understanding of progressive nature of DM
- Access to DSMES, MNT
- Fear of side effects
- Complexity
- Communication/trust
- Lack of support

SDOH=social determinants of health

DSMES=diabetes self-management education and support

MNT=medical nutrition therapy

Addressing Therapeutic Inertia in 2020 and Beyond: A 3-Year Initiative of the American Diabetes Association, Clin

Diabetes. 2020 ;38(4):371-381. doi: 10.2337/cd20-0053.

Blonde et al. Adv Ther 2018;35:1735-45

Providers

- Time constraints/competing priorities
- Lack of goals for therapy
- Concern about side effects
- Concern about patient ability/needs

Systems/Payers

- Lack of population health initiatives
- Lack of team-based approach
- Lack of transparency in formulary

Social Determinants/Populations



Determinant	Context
Race/ethnicity	Implicit bias, discrimination, trust with providers, culture/values, stress
Gender	Caregiver role, stereotypes, body image
Geographic region	Access to care, health policy, built environment
Food insecurity	Obesity, hypoglycemia
Built environment	Transportation, access to healthcare, internet/cellular access, food deserts, safe space to exercise
Housing instability	Ability to cook at home, establish a routine
Social support	Complex regimens, manage stress, transportation
Education/literacy	Stigma, complex regimens/technology
Occupation	Complex regimens/self-care, income
Disability	Limitations of built environment, stereotypes

Best Practice Actions to Overcome Therapeutic Inertia



Clinician-Related

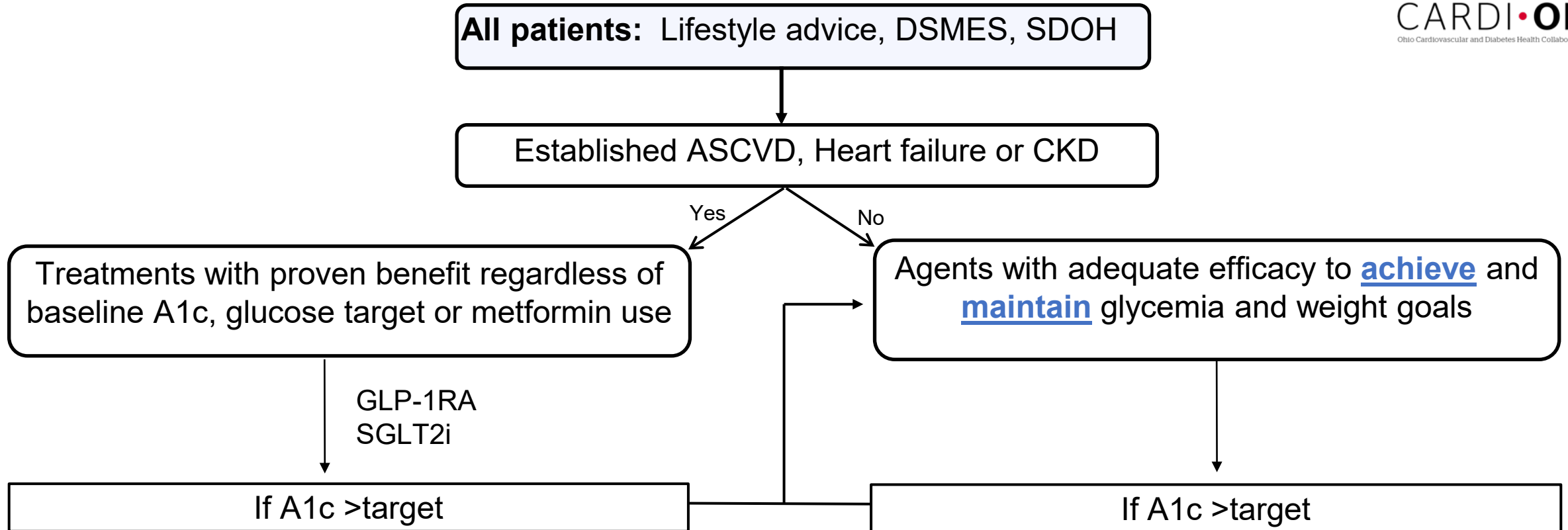
- Set clear glycemic goals and timelines with patients
- Empower team members to independently manage medications (algorithms or protocols)
- Use technologies/CGM to adjust therapy between A1C tests
- Develop and refer to a team of clinicians and community resources



System-Related

- Identify patients with diabetes who are newly diagnosed or not meeting goals with an A1C >9%
- Support, empower, and use a team approach
- Provide access to DSMES services
- Address SDOH in community
- Use technologies in office practices

Pharmacologic Management, ADA/EASD Consensus 2022



DSMES=diabetes self-management education and support, SDOH=social determinants of health, ASCVD=atherosclerotic cardiovascular disease, CKD=chronic kidney disease, GLP-1 glucagon-like peptide-1, SGLT2i=sodium-glucose cotransporter-2 inhibitor

Cost as a barrier

- 1/2 of adults with diabetes reported financial stress¹
- Up to 25% of patients who are prescribed insulin report cost-related insulin underuse²
- 2/3 of people with chronic illness and cost-related non-adherence never shared this with their HCP.³

Pros/Cons of Low Cost DM Medications¹



Class	Examples	Pros	Cons
Sulfonylurea	Glimepiride Glipizide	Preferred for some types of monogenic DM	Hypoglycemia ^a Weight gain Shorter durability
Glinides	Repaglinide Nateglinide	Flexible	Hypoglycemia Weight gain Complexity (QAC)
Thiazolidinedione	Pioglitazone	Longest durability ^b CV benefit NASH/NAFLD benefit	Weight gain Heart failure/edema ^c Fracture risk
Alpha-glucosidase inhibitors	Acarbose	No hypoglycemia or weight gain	Gastrointestinal side effects Complexity (QAC)

- a) Avoid glyburide and older generation SFU due to higher hypoglycemia risk
- b) vs. SFU or Metformin^{2,3}
- c) 15/30 mg conferred similar CV benefit and DM prevention with lower risk of HF and weight gain⁴

1. ElSayad et al. Diabetes Care. 2023 Jan 1;46(Suppl 1):S140-S157. doi: 10.2337/dc23-S009
2. Dormandy et al. Lancet 2005;366:1279-89
3. Kahn et al. N Engl J Med. 2006;355(23):2427-43. doi: 10.1056/NEJMoa066224.
4. Spence et al; Diabetes Obes Metab. 2022;24(6):1150-1158. doi: 10.1111/dom.14687

UKPDS: Low-Cost Drugs and Complications

Cardiovascular and mortality benefit emerges after median 8.5 years post-trial



	1997		2007	
	RRR (%)	P-value	RRR (%)	P-value
Any diabetes related endpoint	12	0.029	9	0.040
Microvascular complication	25	0.0099	24	0.001
Myocardial infarction	16	0.052	15	0.014
All cause mortality	6	0.44	13	0.007

HbA1c at end of Intervention phase

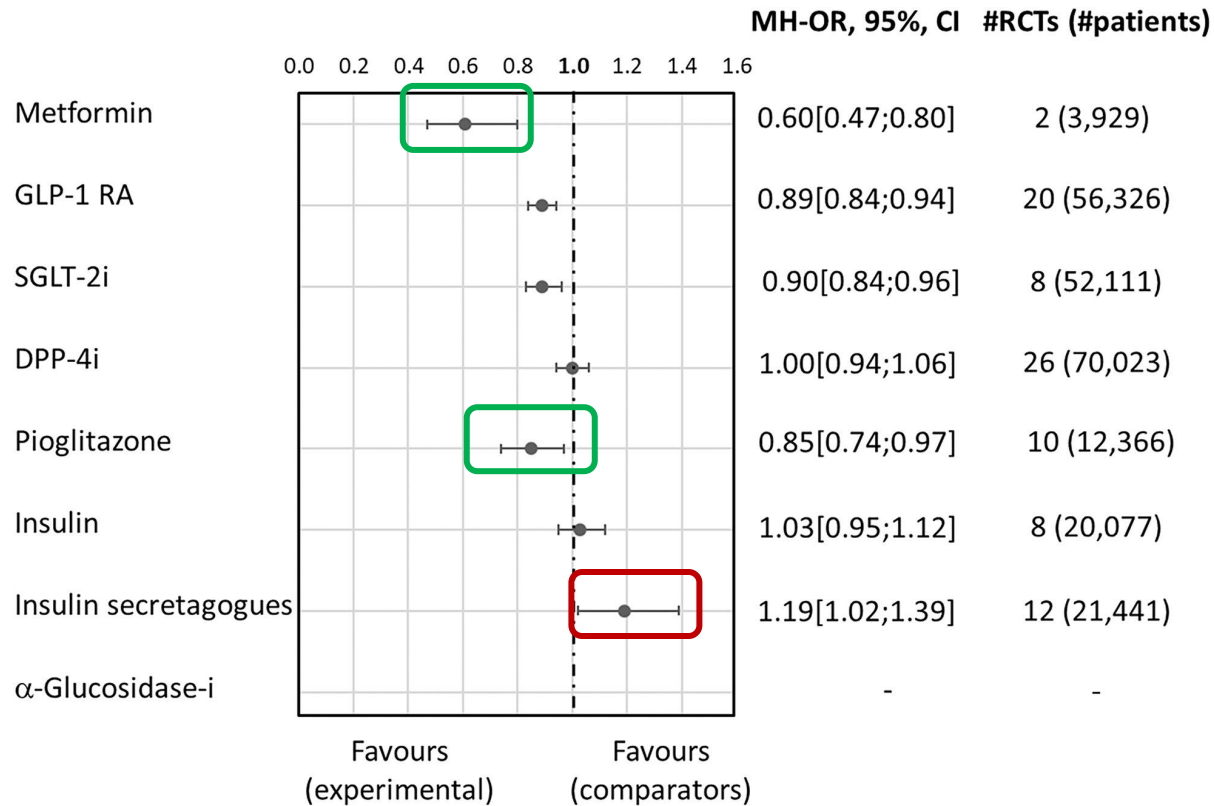
- SFU or insulin vs. conventional therapy: 8.5 vs. 7.9%
- Metformin vs. conventional therapy: 8.9 vs 8.4%

RRR = Relative Risk Reduction, P = Log Rank

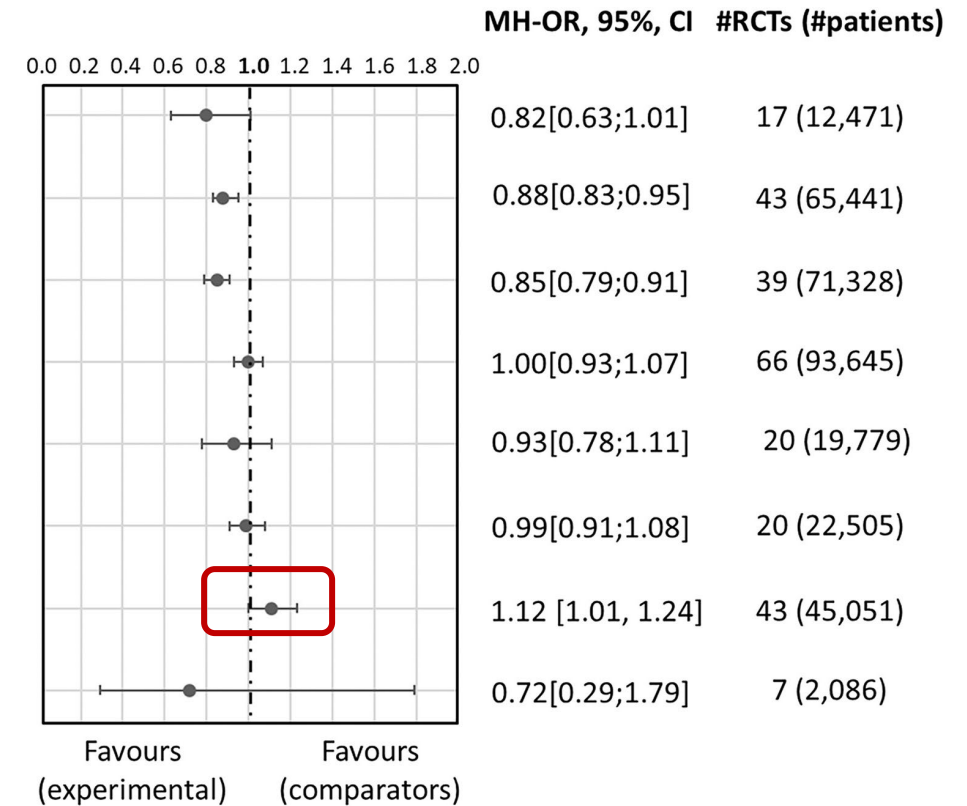
Potential CV Effects of Low-Cost Drugs



3-point MACE



All Cause Mortality



Insulin Costs



Non-Medicare

Lilly insulins for \$35/month¹

Walmart:

syringes box of 100- \$12

	1 Vial	¢/unit	5 Pen	¢/unit
Aspart Premix	\$72	7.3	\$86	5.7
Novolin 70/30	\$25	2.5	\$43	2.9

	Monitor	Strips (#50)	Lancet (#100)
Relion	\$20	\$9	\$2
TrueMetrix	\$35	\$15	\$9

Medicare – Inflation Reduction Act^{2,3}

- Starting July 1, 2023, \$35/month cap on insulin (Part B)
- Caps cost of prescription drugs at \$2,000/year (Part D)
- Allows Medicare to negotiate price of drugs with manufacturers

1. <https://www.insulinaffordability.com/>

2. <https://www.hhs.gov/about/news/2023/01/24/new-hhs-report-finds-major-savings-americans-who-use-insulin-thanks-president-bidens-inflation-reduction-act.html#:~:text=The%20insulin%20provisions%20of%20this,a%20month's%20supply%20of%20insulin.>

3. <https://diabetes.org/sites/default/files/2022-08/What-People-with-Diabetes-Need-to-Know-about-the-Inflation-Reduction-Act.pdf>

Tips for Using Human Insulins

Regular:

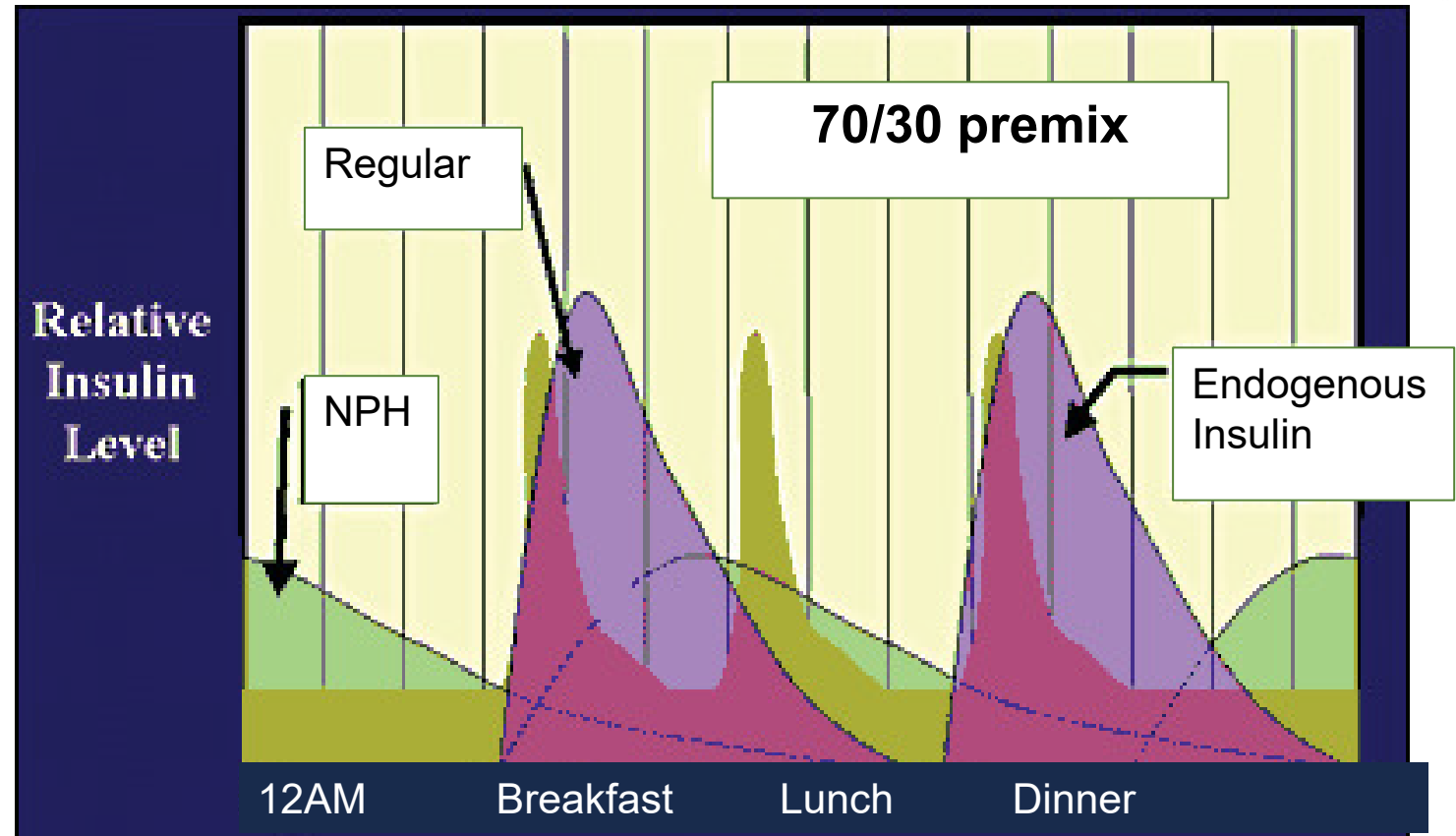
- 30 minutes before meals

NPH:

- Do not skip meals
- HS snack may be needed
- Time exercise as NPH wears off

70/30 premix

- Daily dose is split 2/3 before BK, 1/3 before supper



Disparities in CGM Use – T1D

- T1D Exchange Quality Improvement Collaborative (N=11,469)
- 48% used CGM
- CGM use associated with

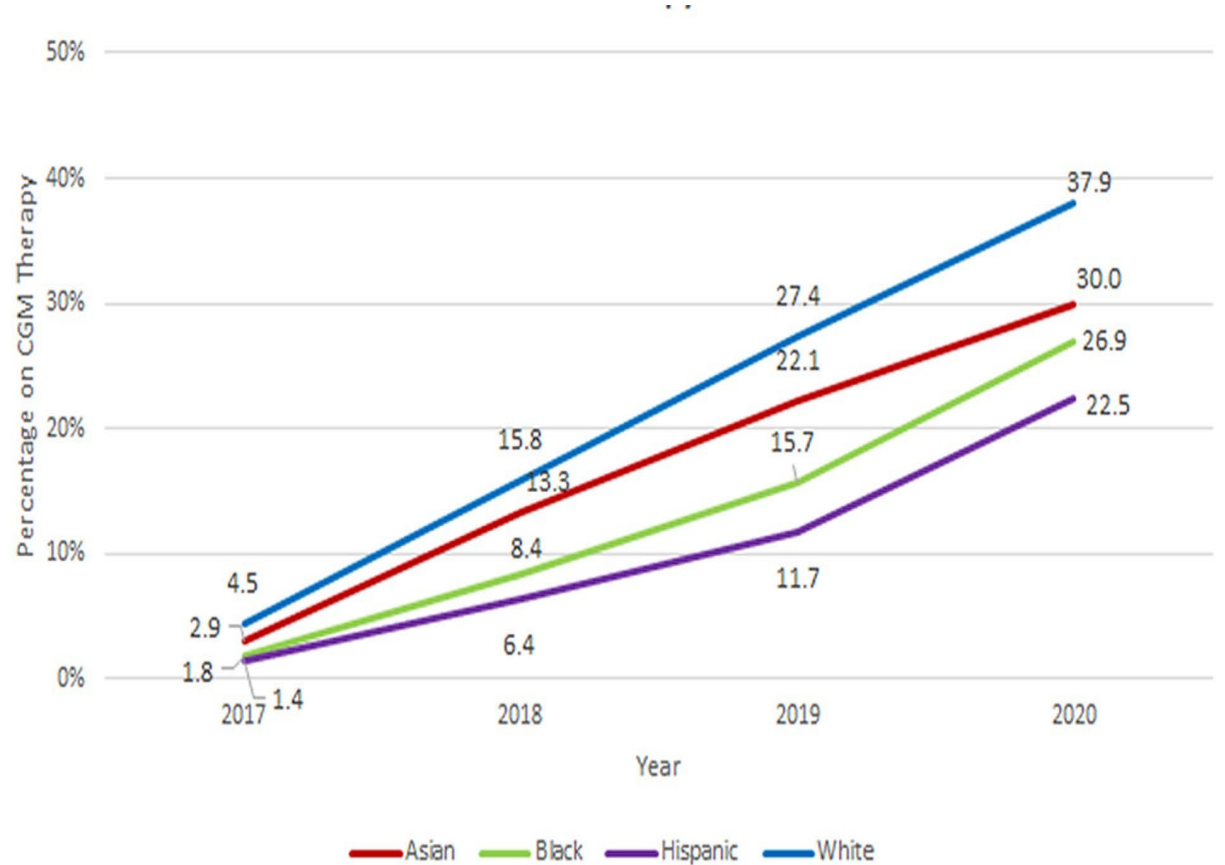
↓ **HbA1c**
8.5 vs. 7.7%

↓ **DKA**
230 vs. 80 per 1000
p<0.001

↓ **Severe hypoglycemia**
256 vs. 16 per 1000
p<0.001

- NHW (50%) vs. NHB (18%) or Hispanic (38%)
 - inequities persisted after adjustment for insurance

Disparities in Device Use Among Medicare Beneficiaries—T1D

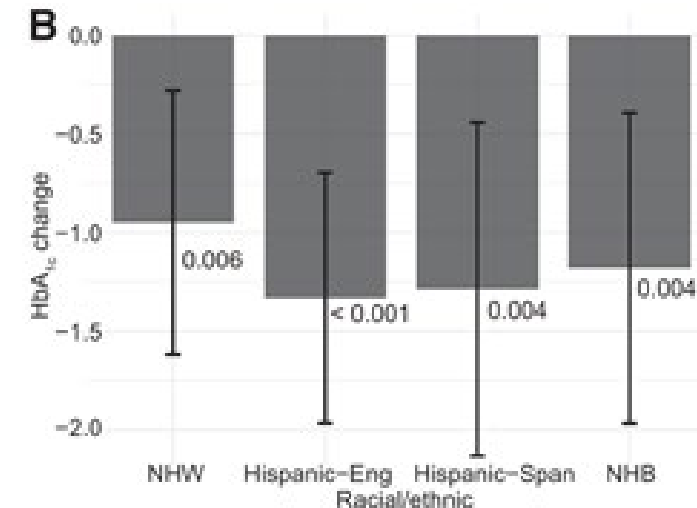
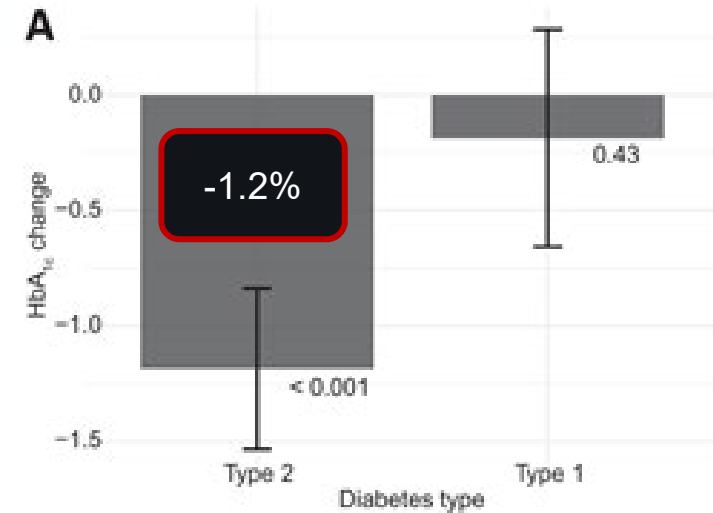


*“Previous studies have documented numerous potential reasons ..., including language barriers, access to quality health care, and implicit bias (3, 9)... Among Black and Hispanic young adults with T1D who had heard of diabetes technology, **most had not been offered it by their providers (16).**”*

Effect of Fully Subsidized CGM in Colorado Medicaid

Predictors of Use:

- CGM prescriptions + Dispenses
 - Endocrinologist prescriber
 - Insulin use
 - T1D
 - High HbA1c
- Repeat fill
 - MDI/pump
- Fill adherence (MPR)
 - High HbA1c
- ❖ Race/ethnicity was not a factor



ICC Framework

A Framework for Optimizing Technology-Enabled Diabetes and Cardiometabolic Care and Education

COLLABORATE

- Data driven conversations
- Shared decision making
- Care team integration



IDENTIFY

- Right technology
- Right person
- Right time



CONFIGURE

- User preferences
- Treatment plan
- Ongoing support



Device choice

- Location
- Duration of wear
- Compatibility

Configuration

- Alerts
- Sharing data
- Reminders

Education

- Expectations
- Goal setting
- Trouble shooting
- When to do a BG

Feedback

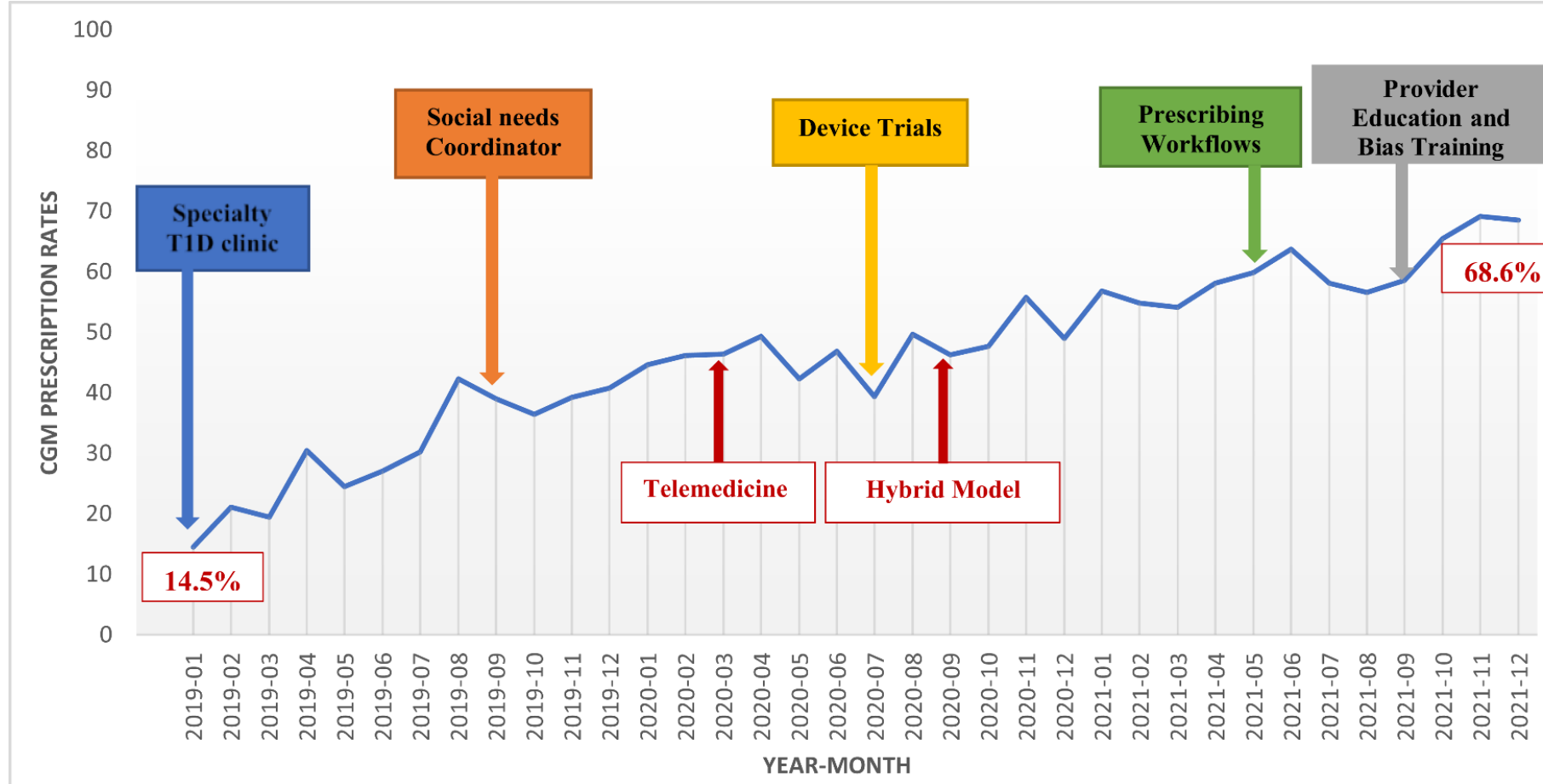


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Practice Transformation at a Safety Net Hospital



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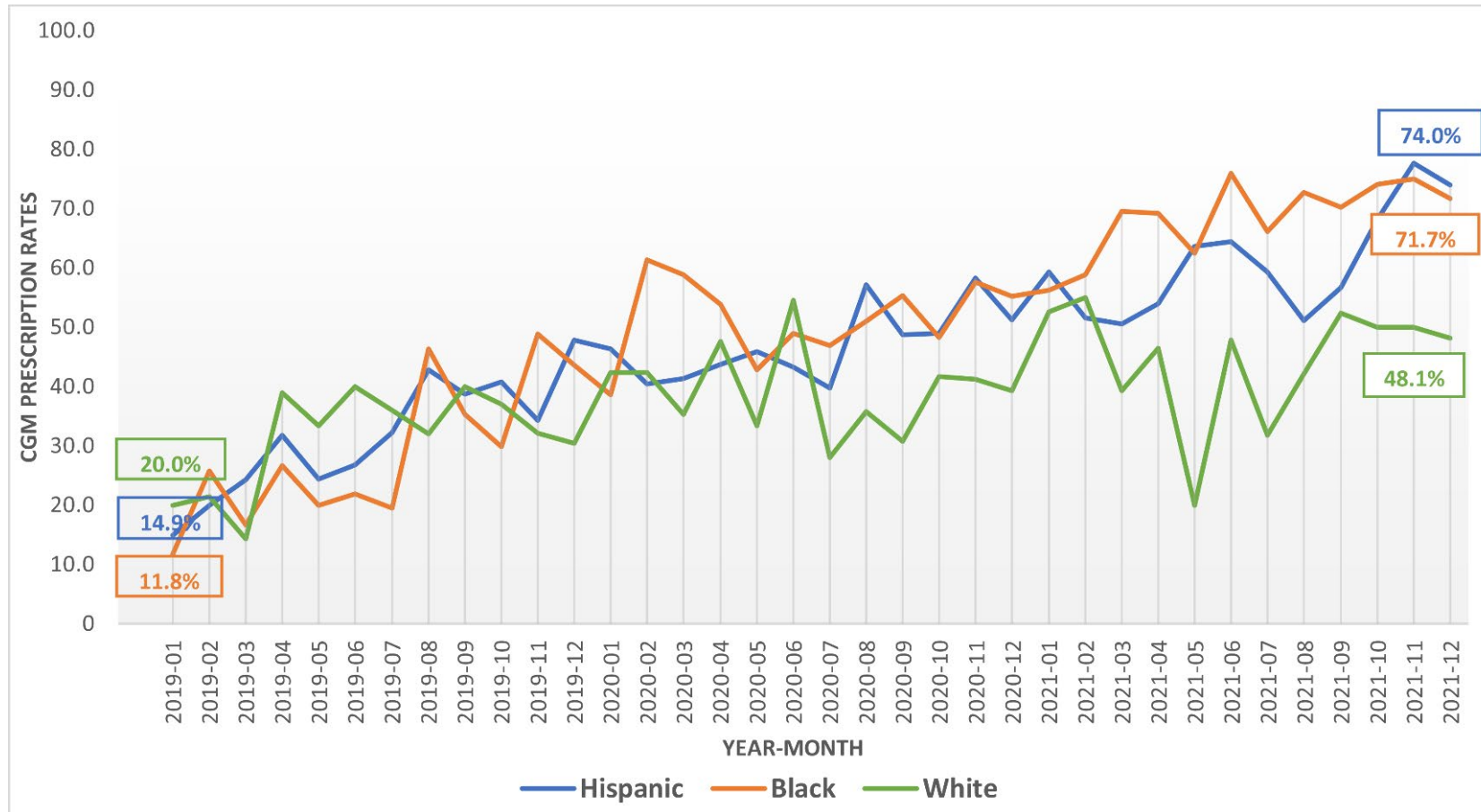


Monthly meetings to unify practices and identify gaps

Manufacturers trained LPN/MAs to implement CGM at point of care, download reports and link patients to clinic accounts

Relationships with DMEs, manufacturers, weekly summaries

Results of Practice Transformation



Specific recommendations to promote CGM uptake



- Population-based approaches to identify and offer CGM
- Tailored education & support programs
- Develop virtual care models that involve key stakeholders
- Incorporate CGM into diabetes virtual care



Thank you!

Questions/Discussion