

INNOVATION

COLLABORATION

VALUE



Financial Impact of GLP1/SGLT2 Therapy at a Population Level

UIM 2023: Advances Changing Practice

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Conflict of Interest Declaration

I do not accept money from Industry

No entries in CMS Open Payments

I work for UPMC Health Plan, Insurance Services

Chair P&T Committee for Insurance Services Division

Direct Center for Value-Based Pharmacy Initiatives

Previously worked for Department of Veterans Affairs

Chair, Pharmacy Benefits Management

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Abbreviations

SGLT2 Inhibitors

Sodium-Glucose Cotransporter-2 Inhibitor

For slides, simply refer as SGLT2

GLP1 Agonists

Glucagon-like Peptide-1 Agonists

For slides, simply refer as GLP1

Objectives

- Review recent trends in diabetes and obesity prevalence among US adults
- Briefly consider benefits of GLP1's and SGLT2's for
 - Diabetes
 - Weight loss indication
- Review prices of GLP1's and SGLT's, and patient out of pocket expenses
- Consider cost-effectiveness of GLP1's and SGLT2's for diabetes and weight loss indication
- Review current coverage for GLP1's and SGLT2's by lines of business (Medicare, Medicaid, Commercial)
- Discuss cost impact of these agents and population strategies for using these drugs

Population Basis for Using SGLT2 and GLP1 in Diabetes

- Exciting times for diabetes therapy!
- Clinical benefits beyond other second-line (after metformin) agents
 - Weight loss associated with both classes of drugs
 - Both classes improve glycemic control, reaching A1c goals
 - CV benefits, mortality benefits (both), renal and heart failure benefits (SGLT2)
- Low risk of hypoglycemia
- Clinical benefits: Relatively rapid onset
- What's not to like??
 - \$\$\$\$\$
 - High costs for payers (public and private)
 - High patient out of pocket expenses

Diabetes Medications US Market 2022

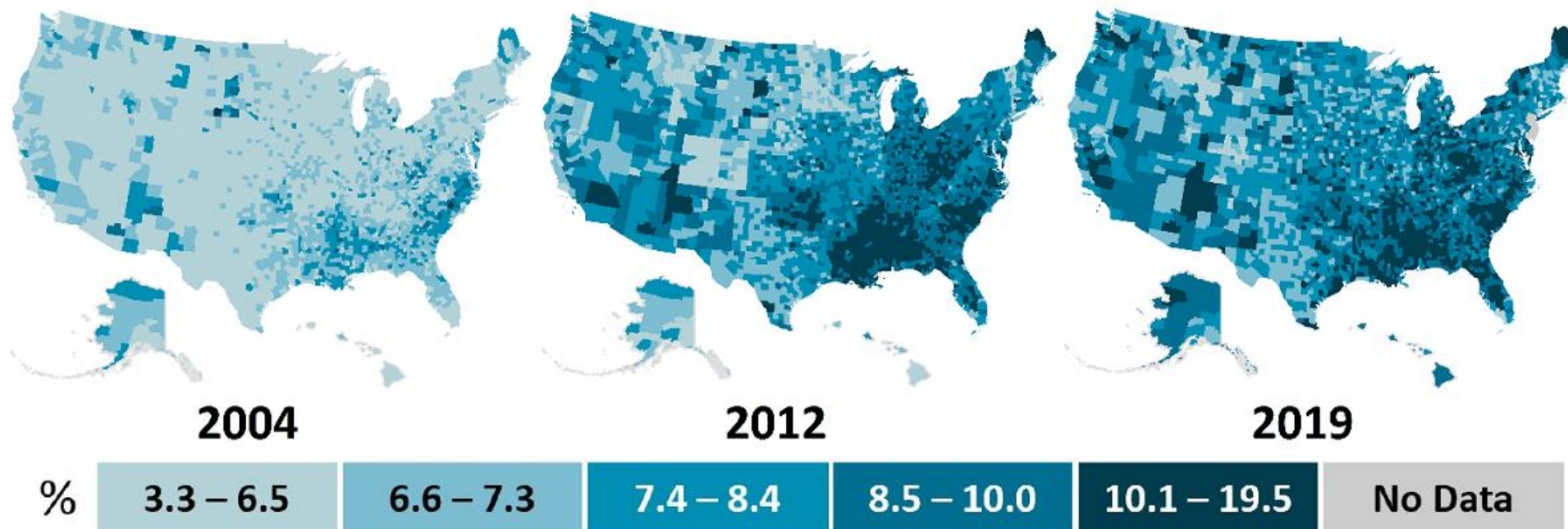
Drug	Rank	2022 Expenditures	Percent Change from 2021
Semaglutide (Ozempic)	2	\$19.3B	79.1
Dulaglutide (Trulicity)	4	\$15.5B	26.6
Empagliflozin (Jardiance)	7	\$11.8B	47.2
Insulin glargine	9	\$9.3B	- 7.4
Sitagliptin (Januvia)	13	\$6.3B	- 2.0
Insulin aspart	14	\$6.0B	- 1.1
Dapagliflozin (Farxiga)	16	\$5.8B	51.5

Adapted from:

Tichy et al: Am J Health-Syst Pharm 2023;80:899-913

Age Adjusted Prevalence (County) of DM (> 20 yrs age)

CDC Data



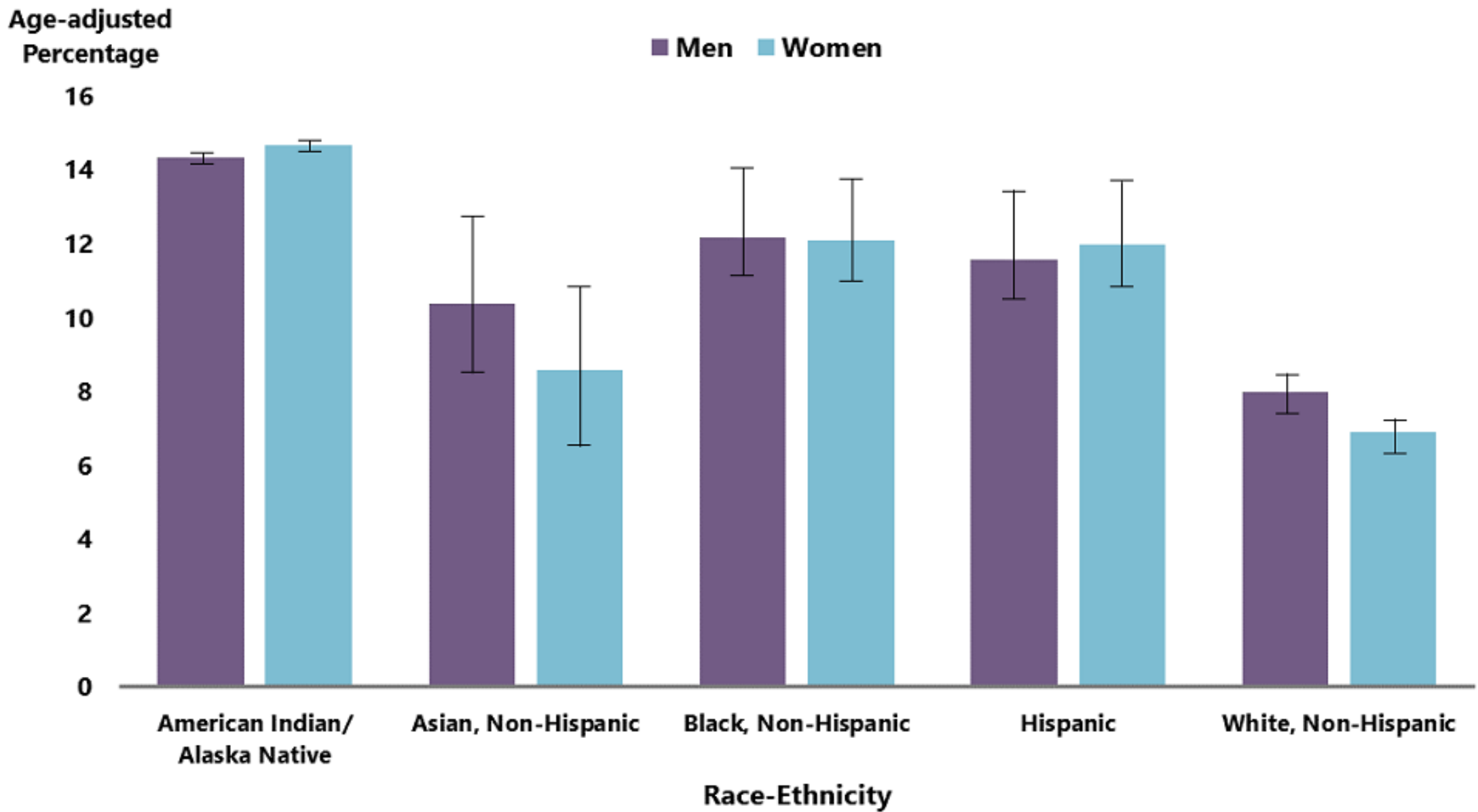
2021: 14.6% Adults with DM

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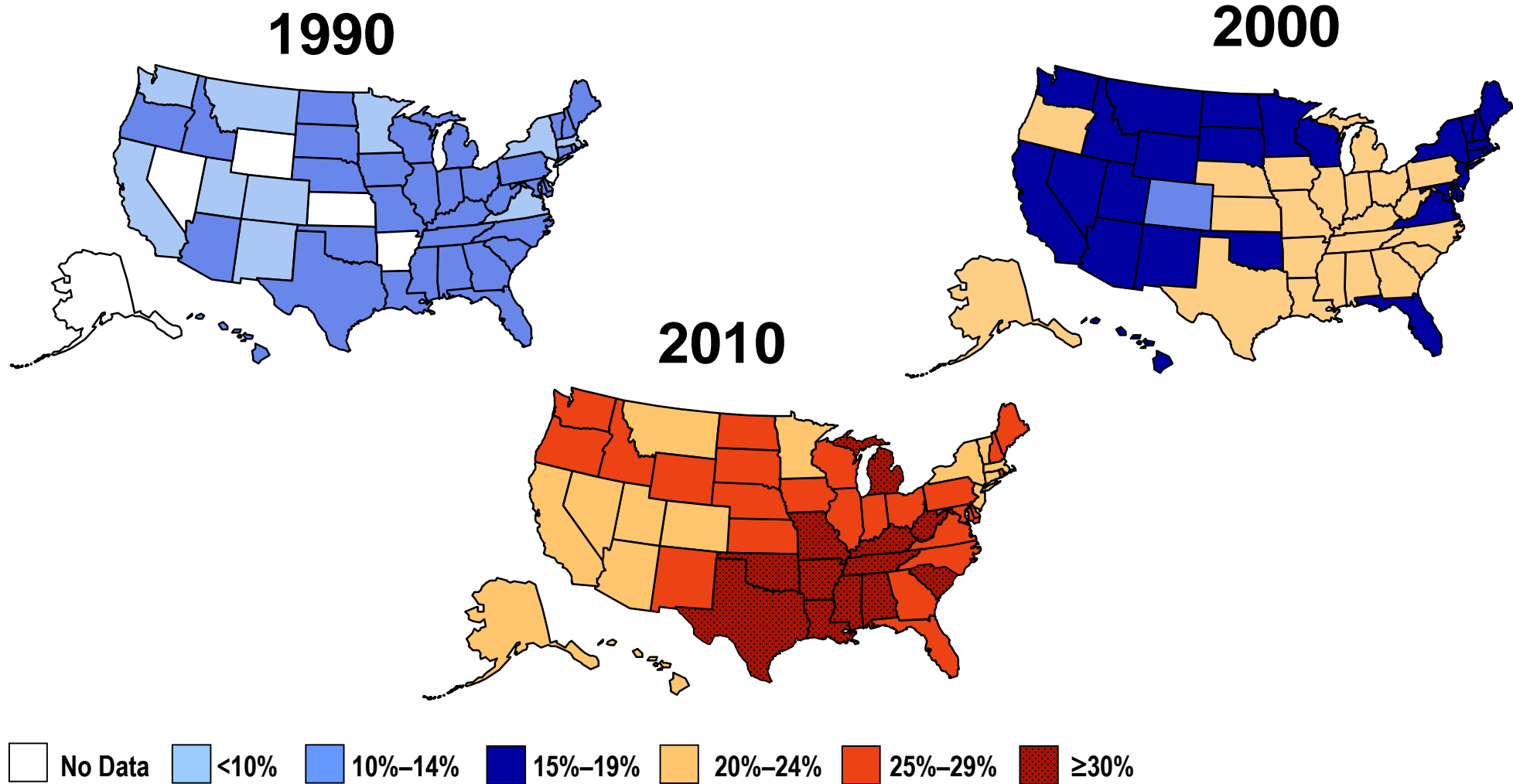
Age Adjusted US Prevalence of Diabetes (> 18 years) by Race (2019)

Data CDC



Obesity Prevalence in US Adults, 1990-2010

Data CDC

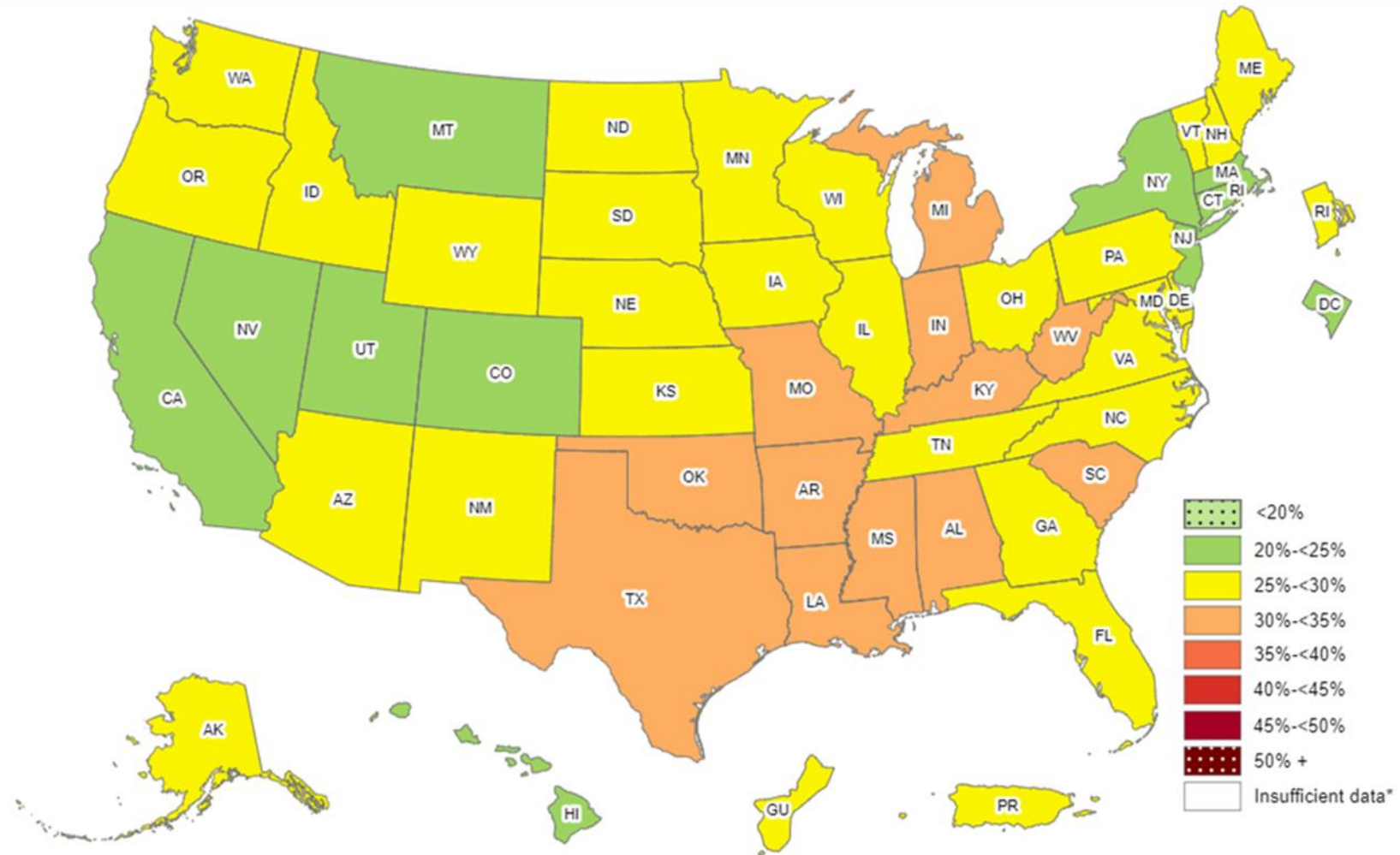


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Obesity Prevalence in US Adults, 2011

Data CDC



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Obesity Prevalence in US Adults, 2021

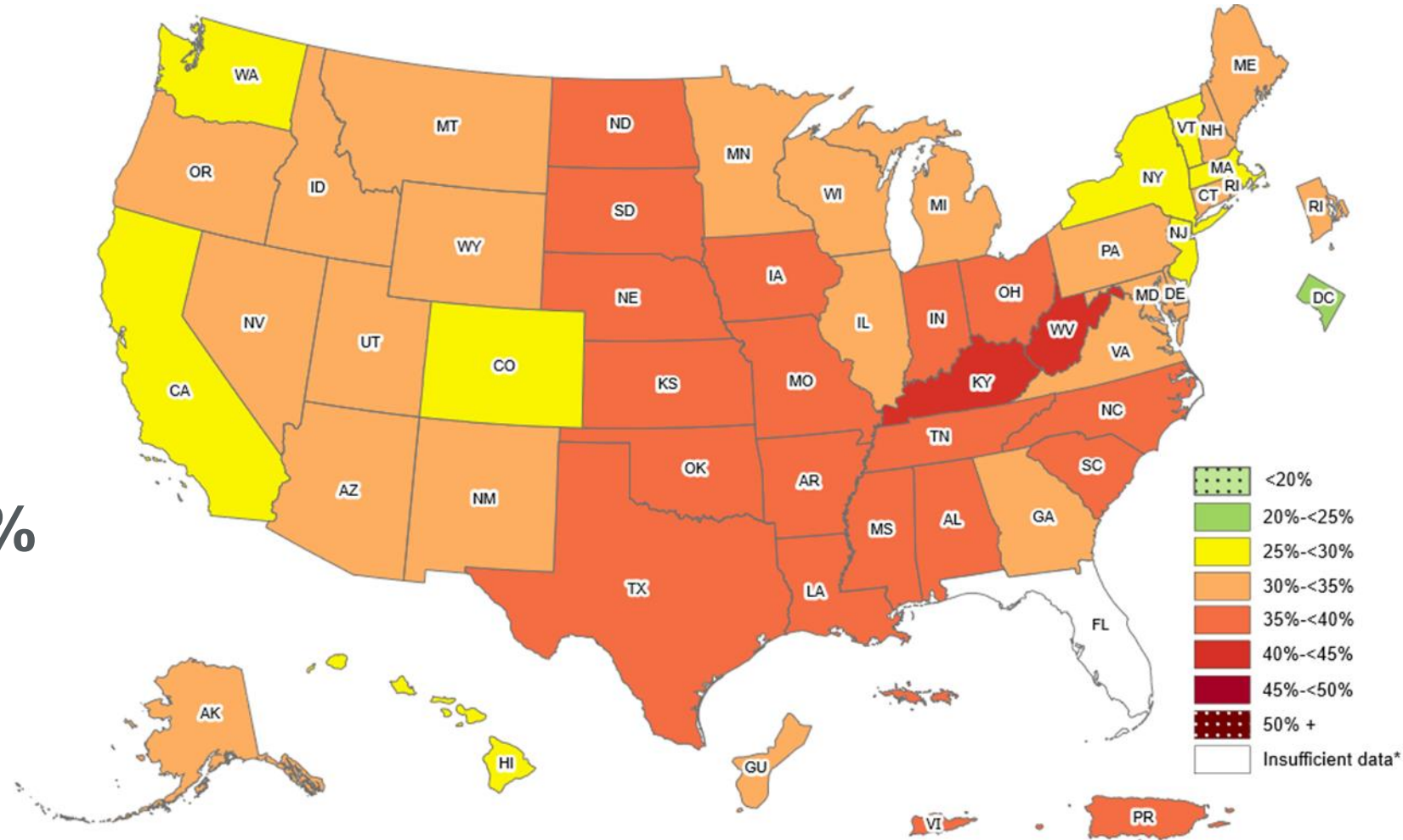
Data CDC

PA 33.3%

Range:

CO, HI 25%

KY, WV >40%

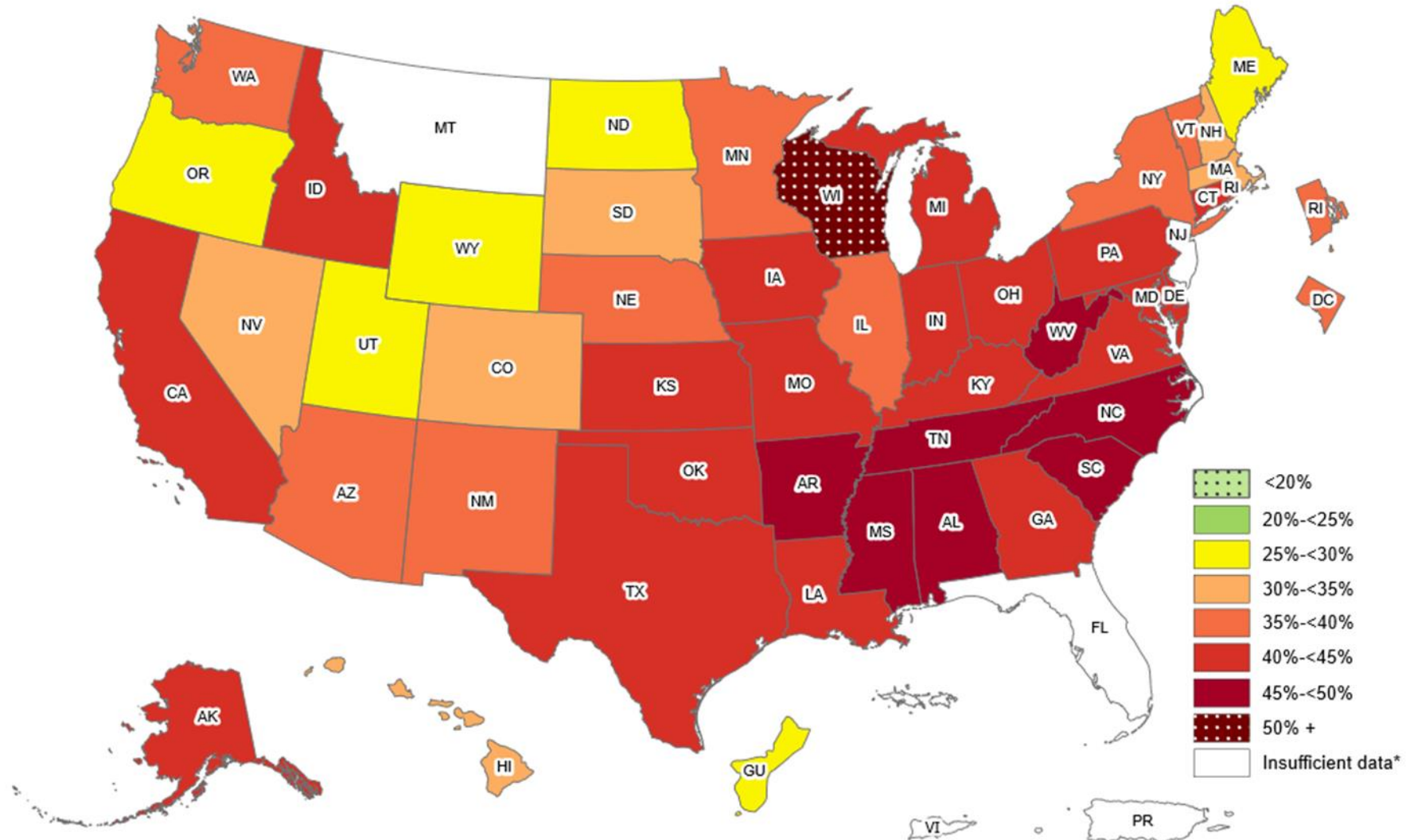


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Obesity Prevalence in Non-Hispanic Black Adults, 2021

Data CDC



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CV Outcomes*

MACE	OR 0.90
CHF Admit/ED	OR 0.67
CV Death	OR 0.87
All Cause Death	OR 0.87

Risk Factors

HbA1c ~ 0.5-1% lower
Weight ~ 2 kg (BMI -0.7) lower**
Blood Pressure ~ -3.6/1.7 lower***

SGLT2

Adverse Events

Genital Infections/ UTI
Ketoacidosis
Dehydration

Diabetic Patient Profile

ASCVD/ CHF
CKD
Overweight/ Obese

*Adapted from:

Bhattari et al: JAMA Network Open 2022; 5(1):32142078

** Cheong et al: Obesity 2022; 30:117-128

*** Panagiotis et al: Diabetes Care 2019;42:693-700

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GLP1

CV Outcomes

MACE HR	HR 0.90
MI	HR 0.90
CV Death	HR 0.87

Risk Factors

HbA1c ~ 1.5% lower*
Weight ~ 4- 6% lower*
Blood Pressure ~ 3mmHg lower

Adverse Events**

GI Side Effects/ UTI
Local Inj Reactions
Caution in h/o pancreatitis, gastroparesis

Diabetic Patient Profile

Overweight/ Obese
ASCVD/ Stroke Risk
? NAFLD

*Tirzepatide HbA1C ~1.5-2.0%; Wt ~ 7-11%

** Semaglutide ? Inc retinopathy outcomes

Adapted from:
Marx et al: Circ 2022; 146: 1882-1894

Average Discount for Selected Drug Manufacturers, 2022

	Average Change (net) 2021-2022	Average Discount (net)*
Eli Lilly	- 3.3%	65.0%
Janssen	- 3.5%	58.0%
Merck	+ 4.3%	39.7%
Novo Nordisk	- 10.5%	75.0%
Sanofi	- 0.4%	45.0%
Takeda	+ 2.7%	43.0%
UCB	- 3.3%	48.9%

* Adapted from Drug Channels (www.DrugChannels.net) June 13, 2023- analysis of company reports

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Prices for Newer Diabetes Medications (Estimates in Literature)

	WAC	Good Rx	Net Price	% Discount Net*
Ozempic	\$930	\$906	\$290*; \$355**	69%*; 58%**
Wegovy	\$1349	\$1303	\$701*	48%
Trulicity	\$930	\$805		
Jardiance	\$593 (10 mg, 25 mg)	\$578	\$107.51**	80.4%

* “Estimating the cost of new treatments for diabetes and obesity.” American Enterprise Institute, Sept 2023

** ICER : “Tirzepatide for Type 2 Diabetes” November 2021

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Out of Pocket Expenses- Diabetes Medications (Estimates in Literature)

	OOP (Medicare Advantage)*	Good Rx	Mfr Coupon (Insurance only)	Patient copay after coupon
Ozempic	\$69	\$906	Monthly cap of \$150/ month copay**	\$25
Wegovy	Not covered	\$1303	\$225 (Ins) \$500 (Self Pay)	
Trulicity	\$69	\$805	Monthly cap of \$150/month; \$1800/year***	\$25
Jardiance	\$54	\$578		\$10

*Luo et al: JAMA Network Open 2023; 6:e2317896

**Max 24 months

***Max 12 months

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Cost Effectiveness of Newer Agents for Diabetes?

- SGLT2
 - Unselected patient population
 - Established CVD
 - Established renal disease
 - Heart Failure
- GLP1
 - Unselected patient population
 - Established CV disease
 - Obesity

Diabetes: SGLT Outcomes by Risk Category- NNT over 5 years (vs placebo)

Risk Category	All Cause Mortality NNT	CV Mortality NNT	Non-fatal MI NNT	ESRD NNT	HF Admission NNT
Very Low < 3 CV Risk Factors	333	500	250	1000	500
Moderate CVD	56	83	77	167	43
Very High CVD and CKD	25	42	48	26	17

Adapted from:
Palmer et al: BMJ 2021; 372m4573

Diabetes: GLP1 Outcomes by Risk Category- NNT over 5 years (vs placebo)

Risk Category	All Cause Mortality NNT	CV Mortality NNT	Non-fatal MI NNT	ESRD NNT	HF Admission NNT
Very Low < 3 CV Risk Factors	500	500	500	-	-
Moderate CVD	370	111	125	250	250
Very High CVD and CKD	42	56	77	34	91

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Population Level Considerations

- Diabetes- GLP1's and SGLT2's
 - Generally available in Medicare, Medicaid, and Commercial plans
 - Second line after metformin and lifestyle
 - Greatest benefit seen in those with indicated comorbidities
 - ASCVD
 - CHF
 - Renal disease
 - ICER- Cost/QALY less than \$100K/QALY for all agents
- Weight loss indication (GLP1 drugs, no diabetes)
 - Not covered in Medicare
 - Commercial plans- Some coverage
 - Medicaid- only a few states (including PA)
 - Some momentum to increase commercial coverage, and to expand to Medicare

Cost Effectiveness in for Weight Loss (GLP1)

- ICER
 - BMI > 30 or BMI >27 and one or more comorbidities (HTN, dyslipidemia, etc)
 - Non-diabetic
 - Semaglutide cost/QALY \$237,000
 - Liraglutide cost/QALY \$483,000
 - Semaglutide at \$7500/ year would be cost-effective at \$100,000 threshold
 - \$9700 at \$150,000 threshold
- Hu, et al (Ann Transl Med 2022)
 - Semaglutide cost/QALY \$135,467

Coverage of GLP1 for Weight Loss Indication (without Diabetes)

- State Medicaid coverage
 - 7 states (including Pennsylvania) cover GLP1 for weight loss
- Medicare- Currently prohibited by law for covering weight loss drugs
 - H.R. 4818- July 20, 2023: “Treat and Reduce Obesity Act of 2023”
 - Cover weight loss medications for obesity (BMI > 30) or weight management for overweight and at least one co-morbidity
 - Bill has not been enacted yet

Coverage of GLP1 for Weight Loss Indication (without Diabetes)

- Recent NEJM Analysis for Medicare coverage of weight loss drugs*
 - Annual cost to Medicare estimated \$13B to \$25B/ year (range of use of GLP1 5-10%)
 - Annual cost would increase Medicare Part D spending by 25%

Cost to Medicare, 41.5% Obesity Rate US > 60 Years Old

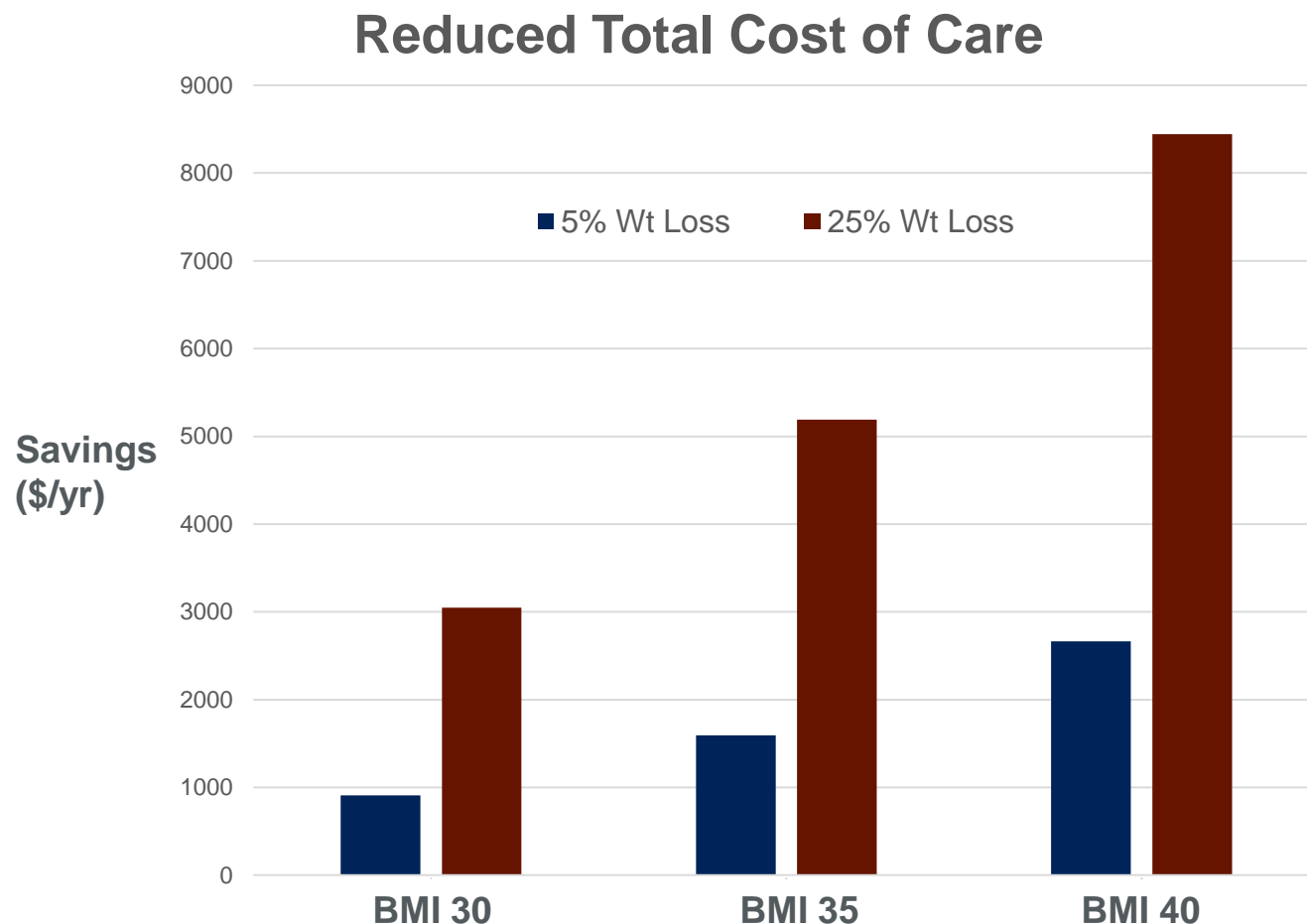
% Use Semaglutide (wt loss)	Cost to Medicare	% of Medicare D Spending
1	\$2.68 B	1.8%
5	\$13.4 B	9.2%
10	\$26.8 B	18.5%

* Baig et al: NEJM 2023; 388:961-963- table adapted from data presented

Cost Effectiveness in Diabetes- Impact of Weight Loss

- Using MEPS data, Thorpe et al predicted savings in medical expenditures
 - Greater BMI associated with greater savings
 - Greater weight loss associated with greater savings

Thorpe et al: JOEM Volume 63, Number 10, October 2021



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Prime Therapeutics Study- Impact of GLP1's for Weight Loss

- RWE- patients taking GLP1 for wt loss (no diabetes)
 - Propensity matched TCOC for all patients initiating GLP1 for wt loss: \$7,727 PMPY higher
 - 68% who started GLP1 were no longer taking at 1 year
 - Adherence was poor- just 27% were adherent through the first year
 - Matched TCOC in adherent was \$13,218 higher PMPY
 - Pre and post PMPY increased from \$13,048 to \$25,850
 - » Matched cohort pre and post PMPY went from \$11,955 to \$11,539
 - Estimated that a 1% used in patient population would increase PMPM by \$14.50, and increase the entire drug spend budget by 5%

<https://www.primetherapeutics.com/news/real-world-analysis-of-glp-1-a-drugs-for-weight-loss-finds-low-adherence-and-increased-cost-in-first-year/>

Large Number of Anti-Obesity Drugs under Development *

70 drugs under development- Will this drive competition?

Mechanism of Action	# Drugs in Development	# Drugs Already Approved	Example
GLP-1r Agonist	13	2	Semaglutide (Wegovy)
GLP-1r/GIP-r Dual Agonist	7	0	Tirzepatide (not yet approved)
GLP-1r/GCG-r Dual Agonist	5	0	
GLP-1r/CIP-r/GCG-r Triple Agonist	2	0	Retatrutide

GLP= Glucagon-like peptide
GIP= Glucose-dependent insulinotropic polypeptide
GCG= Glucagon receptor

- Adapted from: Stat Obesity Drug Tracker
<https://www.statnews.com/2023/09/12/new-weight-loss-drug-tracker>

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UPMC Health Plan Today

Unique Ecosystem and Assets — Payer, Provider, Academic Medical Center

\$24B

Annual Operating Revenue

6.1M

Outpatient Visits

40

Owned Hospitals

24M

Prescriptions Processed

4.1M

Health Plan Members

15,000

Employer Groups

94K

Employees —
Largest Private Employer
in Pennsylvania

~\$4B

Annual Gross
Prescription Spend

\$2.2B

Annual Gross Specialty
Prescription Spend

As of 7/27/2022

UPMC Health Plan- Formulary Status of SGLT2 Drugs

		Commercial /ACA			Medicare Advantage			Medicaid	
Drug	Brand	Formulary?	PA?	Tier	Formulary?	PA?	Tier	Formulary?	PA?
Bexagliflozin	Brenzavvy	No	-	-	No	-	-	No	-
Canagliflozin	Invokana	No	-	-	No	-	-	Yes	No
Dapagliflozin	Farxiga	Yes	No	Tier 2	Yes	No	Tier 2	Yes	No
Empagliflozin	Jardiance	Yes	No	Tier 2	Yes	No	Tier 2	Yes	No
Ertugliflozin	Steglatro	No	-	-	No	-	-	No	-

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UPMC Health Plan- Formulary Status of GLP1, GLP1/GIP Drugs

Drug	Brand	Commercial /ACA			Medicare Advantage			Medicaid	
		Formulary?	PA?	Tier	Formulary?	PA?	Tier	Formulary?	PA?
Semaglutide	Wegovy	No	-	-	No	-	-	Yes	-
Dulaglutide	Trulicity	Yes	Yes	Tier 2	Yes	Yes	Tier 2	Yes	Yes
Exenatide	Bydureon Byetta	No	-	-	No	-	-	No	-
Semaglutide Inj	Ozempic	Yes	Yes	Tier 2	Yes	Yes	Tier 2	No	-
Semaglutide Oral	Rybelsus	Yes	Yes	Tier 2	Yes	Yes	Tier 2	No	-
Liraglutide	Victoza	Yes	Yes	Tier 2	Yes	Yes	Tier 2	Yes	Yes
Tirzepatide	Mounjaro	Yes	Yes	Tier 2	Yes	Yes	Tier 2	No	-

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Population Strategies for Using SGLT2 and GLP1 Drugs

- Diabetes

- Although both SGLT2's and GLP1's are cost-effective, budget impact in short term is significant
- Population strategies include:
 - Identify those patients most likely to benefit (selected comorbidities) to target
 - Federal measures to lower cost of agents (IRA, etc)
 - Both dapagliflozin and empagliflozin in 1st 10 drugs for negotiation
 - Standard formulary strategies (preferred agents, etc); value-based contracting
 - Attention to SDOH and racial variation

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Population Strategies for Using SGLT2 and GLP1 Drugs

- Weight Loss without diabetes (GLP1's)
 - For an unselected obese patient population, not cost-effective
 - Given the enormity of the problem of obesity, even if cost of GLP1's is lowered, the budget impact make broad coverage challenging
 - More research needed to identify:
 - Patients most likely to benefit from weight loss (BMI, comorbidities, etc).
 - Consider innovative contracting options
 - Hope that competition with agents being approved will significantly lower costs
 - Attention to SDOH and racial variation

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QUESTIONS?

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