COORDINATE Diabetes: Rationale and Design

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Duke Clinical Research Institute

Disclosures

- Research support from Amgen, Boehringer Ingelheim, Eggland's Best, Eli Lilly, Novartis, Novo Nordisk, Verily Life Sciences
- Consultation/Advisory Panels for Bayer, Boehringer Ingelheim, CRISPR Therapeutics, Eli Lilly, Esperion, AstraZeneca, Merck, Novartis, and Novo Nordisk.
- Executive Committee member for trials sponsored by Novo Nordisk and by Amgen.
- Medical advisory board for Miga Health

Interdisciplinary consensus

ADA

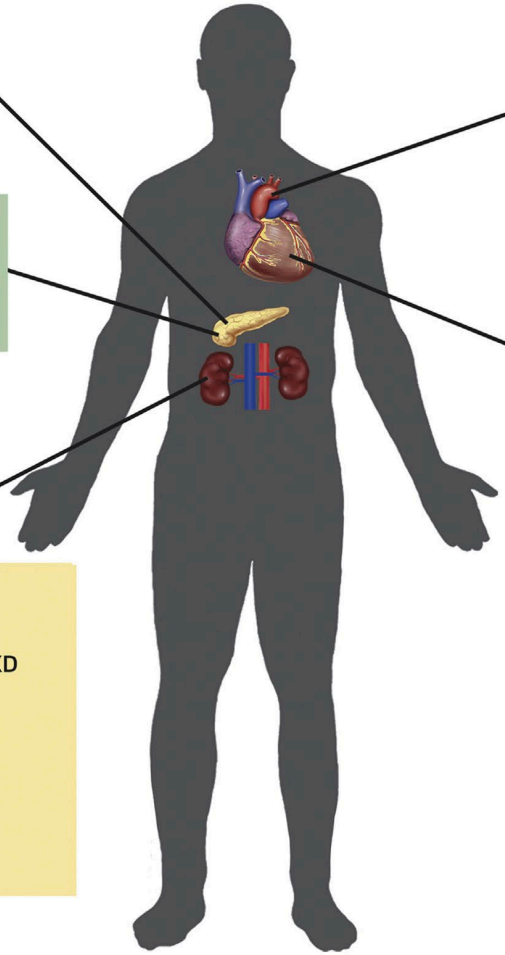
2022 Standards of medical care in diabetes

AACE/ACE

2020 Consensus statement on comprehensive T2DM management algorithm

KDIGO

- 2013 Clinical practice guideline for lipid management in CKD
- 2020 Clinical practice guideline for diabetes management in CKD
- 2021 Clinical practice guideline for management of blood pressure in CKD



ESC/EASD

2019 Guidelines on diabetes, pre-diabetes, and CVD

ACC/AHA

- 2018 Guideline on the management of blood cholesterol
- 2019 Guideline on the primary prevention of CVD
- 2020 Expert consensus decision pathway on novel therapies for CV risk reduction in patients with T2DM

USPSTF

- 2016 Aspirin use to prevent CVD and colorectal cancer
- 2016 Statin use for the primary prevention of CVD in adults
- 2021 Screening for abnormal blood glucose and T2DM

Kelsey, Nelson et al., J Am Coll Cardiol 2022

Multifactorial Risk Reduction

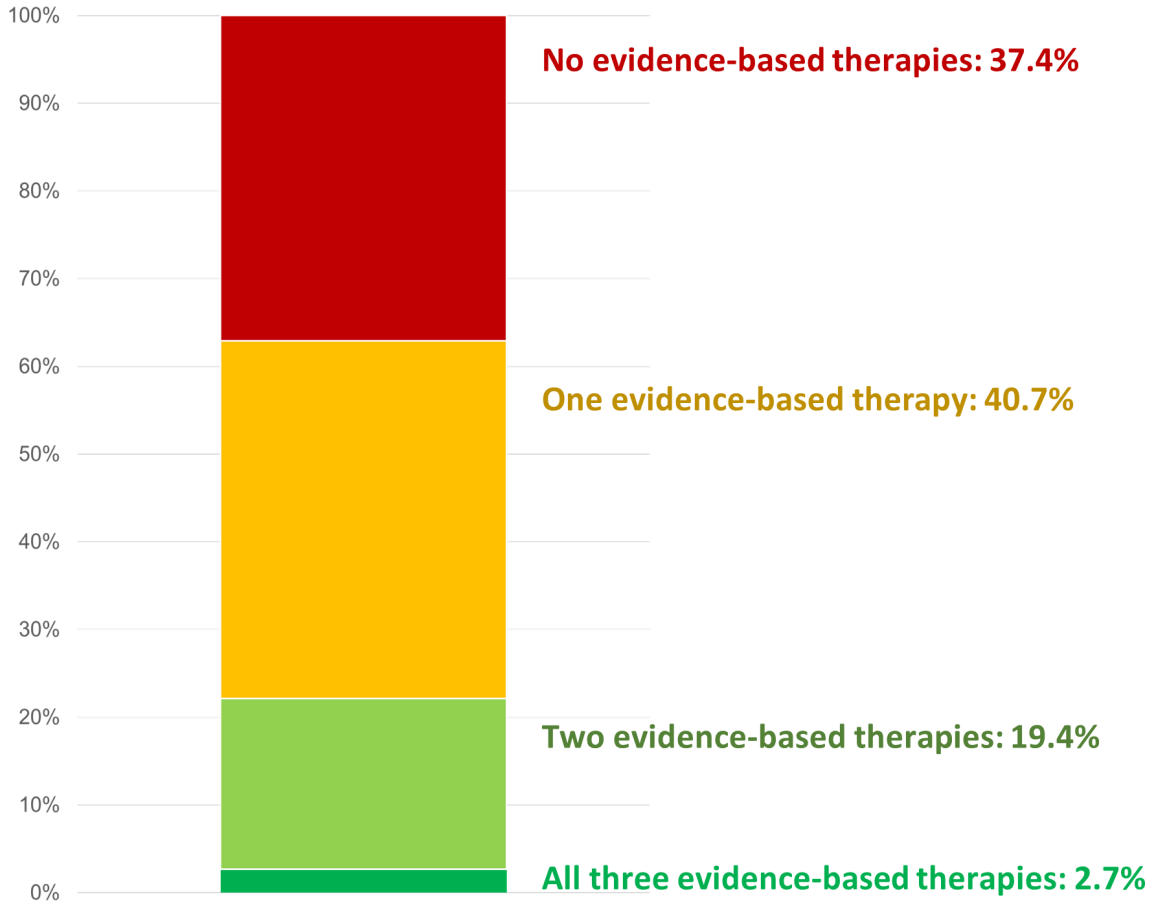
Several therapies are proven to reduce ASCVD risk among patients with T2DM, however these are substantially under-used in clinical practice

- Among 155,958 commercially-insured patients with T2DM and ASCVD:
  - 24.7% on high-intensity statin
  - 53.1% on ACEi/ARB
  - 9.9% on SGLT2i or GLP1RA

Overall

- **2.7% on all 3 groups of therapies**
- **37.4% on NONE of these groups of therapies**

Nelson et al. JAHA 2021; 10:e016835



COORDINATE-Diabetes

Objective

To test the impact of a clinic-level, multifaceted intervention on the prescription of 3 key groups of evidence-based therapies.

Coordinate-Diabetes Study Organization

COORDINATING CENTER:

Duke Clinical Research Institute

STUDY TEAM:

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Neha Pagidipati, MD, MPH
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Lauren Wilverding, BS

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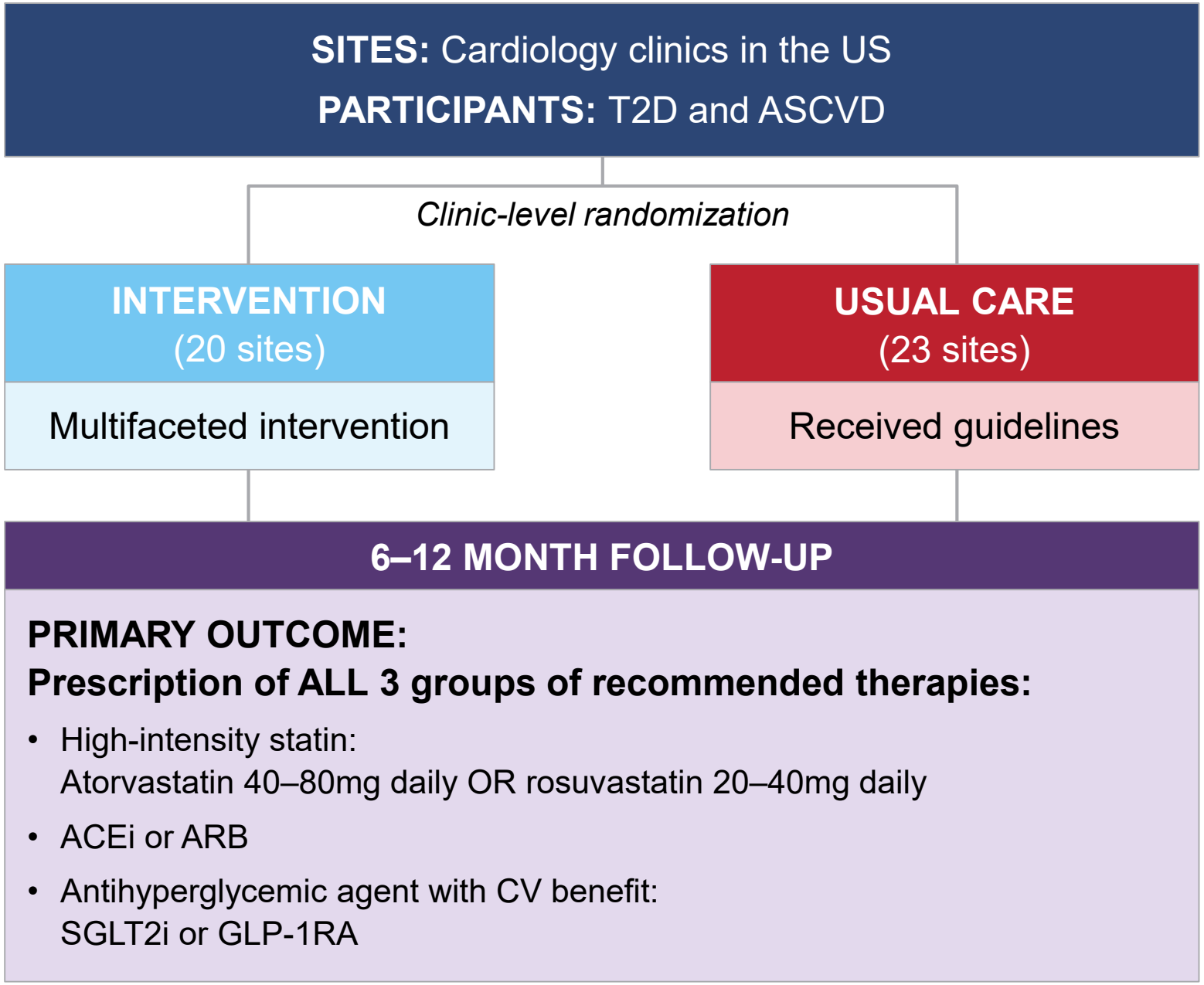
SPONSORS:

Boehringer Ingelheim Pharmaceuticals
Eli Lilly and Company

COORDINATE-Diabetes

Study Design



Nelson et al. Am Heart J 2023; 256: 2-12

Participating Sites

INCLUSION CRITERIA
• Cardiology clinic with **at least three cardiology providers (MD, DO, or APPs)** • Able to identify at least 1 local diabetes care specialist to collaborate with

Participant Population

INCLUSION CRITERIA	EXCLUSION CRITERIA
• Diagnosis of type 2 diabetes • History of at least one: – Coronary artery disease – Peripheral arterial disease – Cerebrovascular disease	• Already prescribed at baseline: – All 3 evidence-based therapies – SGLT2i or GLP-1RA • Absolute contraindication to any of the 3 evidence-based therapies

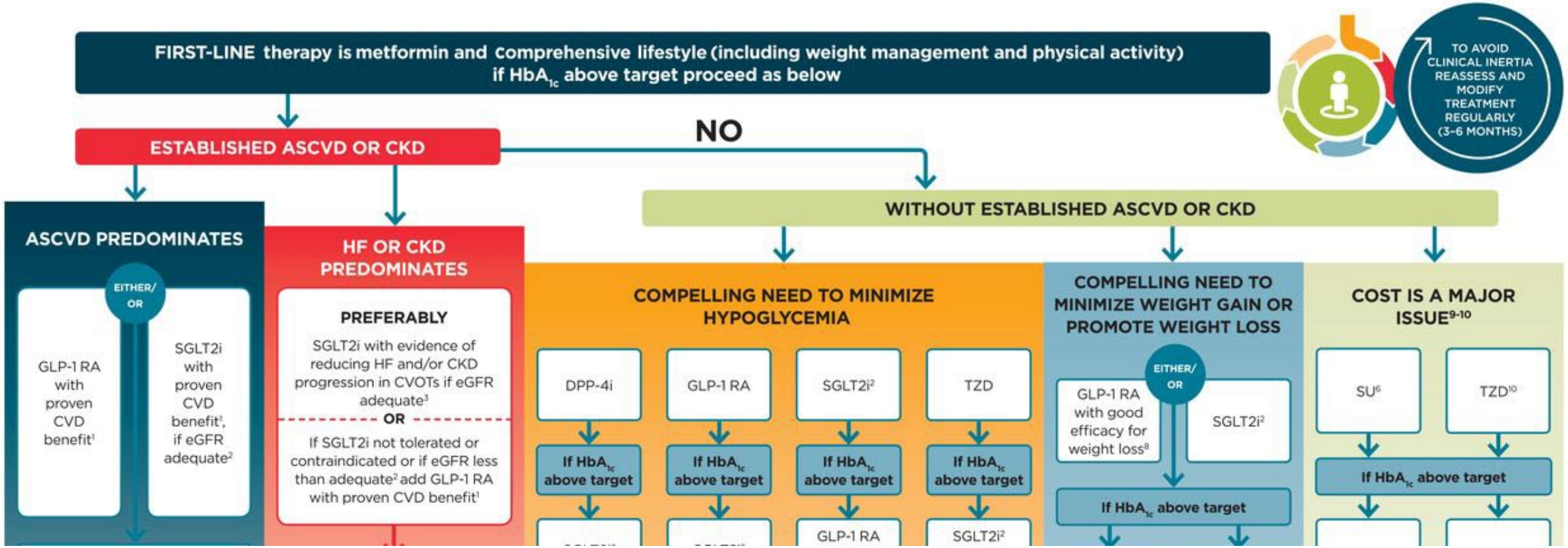
Primary Outcome

Proportion of individuals achieving society- and guideline-recommended management for T2DM and CVD at last follow-up visit for all of the following (composite score of 3):

- An anti-hyperglycemic agent with evidence for CV benefit (i.e. SGLT-2i or GLP-1RA)
  - Acceptable alternative: metformin monotherapy with HbA1c<7%
- ACEi/ARB/ARNI
- High-intensity statin: atorvastatin 40-80mg daily OR rosuvastatin 20-40mg daily

Antihyperglycemic Agents with CV Benefit

2019 ADA Standards of Care



Secondary Outcomes

- Proportion of individuals receiving each group of therapies
- Proportion of individuals achieving a composite score of ≥ 2
- Intermediate Outcomes:
  - Change from baseline: sBP, dBP, HbA1c, LDL-C
  - Proportion of individuals with: sBP<130 mmHg, HbA1c<7%, LDL-C<70 mg/dL
- Clinical time-to-event outcomes
  - Composite of all-cause death; hospitalization for: MI, stroke, decompensated heart failure, or urgent revascularization (coronary, peripheral, carotid)

Statistical Analysis

Initially powered at 90%
to detect 10% difference in primary outcome between arms (46 clinics, 30 patients/clinic)

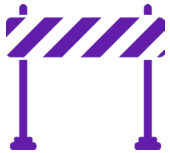
Modified to have 85% power
(42 clinics, 25 patients/clinic) due to difficulties with recruitment during the COVID-19 pandemic

Primary and secondary outcomes
analyzed using a mixed model for repeated measures model, accounting for clustering effect, and with adjustment for baseline factors as potential confounders

Clinical event outcomes
analyzed using a multivariable Cox proportional hazards model

Multifaceted Intervention

1. Assessment of local practices and barriers



Clinic-specific assessment of barriers to prescribing the recommended therapies

2. Development of strategies to overcome those barriers

Development of care pathways to address barriers

Coordination of care between clinicians

Clinician education

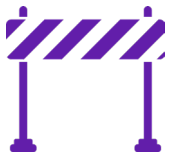
Participant educational materials

3. Audit and feedback

Audit and feedback of quality metrics

Multifaceted Intervention

1.
Assessment of local practices and barriers



Clinic-specific assessment of barriers to prescribing the recommended therapies

Assessment of Local Barriers

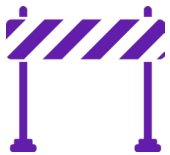
COORDINATE-Diabetes

Barriers to evidence-based care	SITE #	Organizational approach	
Strategic Objective	Current Standing	Opportunity for DM/CVD Patient Care	Action Plan
1.1 Are there any current efforts to improve quality of patient care overall in the clinic?			
1.2 Does the clinic have a quality improvement team focused on patient management and improving outcomes in general, or for specific patient populations?			
1.3 Is there a process by which cardiology providers can communicate with other providers of patients with diabetes and cardiovascular disease?			
1.4 Do opportunities for education about current ACC/AHA guidelines exist for providers in the clinic?			
1.5 Do opportunities for education about new evidence or therapies (not yet in guidelines) exist?			

SITE VISIT SUMMARY REPORT		COORDINATE-Diabetes	
Site #		**Facility Name**	
Date		**Duke Team**	
Time		**Site Team**	
Initial Assessment	*Insert information regarding the clinic etc.*		
Best Practices	*What are they doing well*		
Strengths	*e.g. Leadership, research team, resources*		
Potential Gaps	*Gap analysis information and additional information gleaned from the visit*		
Challenges	*Perceived and site identified*		
Attendees	*List of attendees from sign-in sheet*		

Multifaceted Intervention

1.
Assessment of local practices and barriers



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Clinician Education

Provider Education: Train care providers on best practices.

Download the following resources:

- SGLT2/GLP1RA management and cost assistance reference
- Injectable diabetes meds reference
- Oral diabetes meds reference
- Non-Vitamin K anticoagulants reference

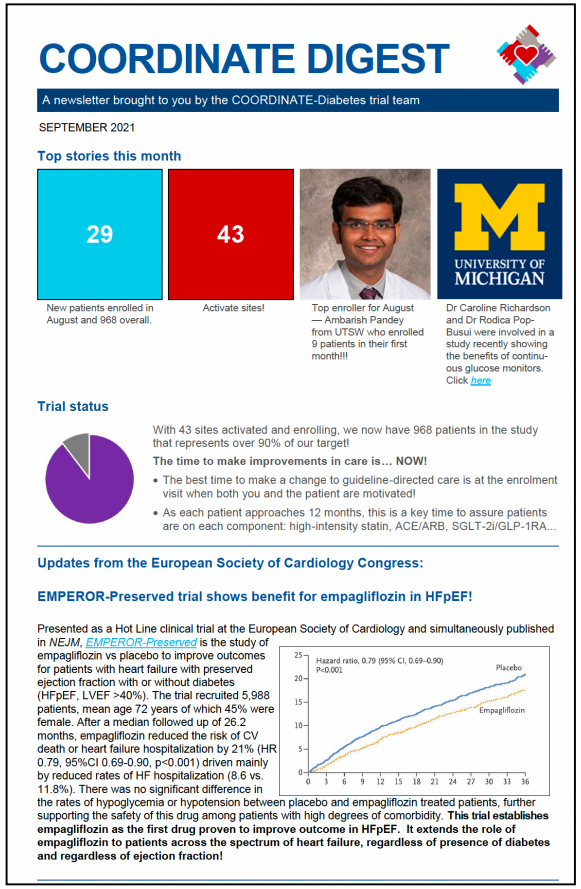
Module 1: Aims of COORDINATE

Module 2: COORDINATE Background

Module 3: SGLT-2i / GLP-1RA

Module 4: High intensity statins

Module 5: ACE Inhibitors / ARBs



COORDINATE DIGEST

A newsletter brought to you by the COORDINATE-Diabetes trial team

SEPTEMBER 2021

Top stories this month

29

New patients enrolled in August and 968 overall.

43

Activate sites!

Top enroller for August — Ambarish Pandey from UTSW who enrolled 9 patients in their first month!!!

Dr Caroline Richardson and Dr Rodica Pop-Busui were involved in a study recently showing the benefits of continuous glucose monitors. Click here

Trial status

With 43 sites activated and enrolling, we now have 968 patients in the study that represents over 90% of our target!

The time to make improvements in care is… NOW!

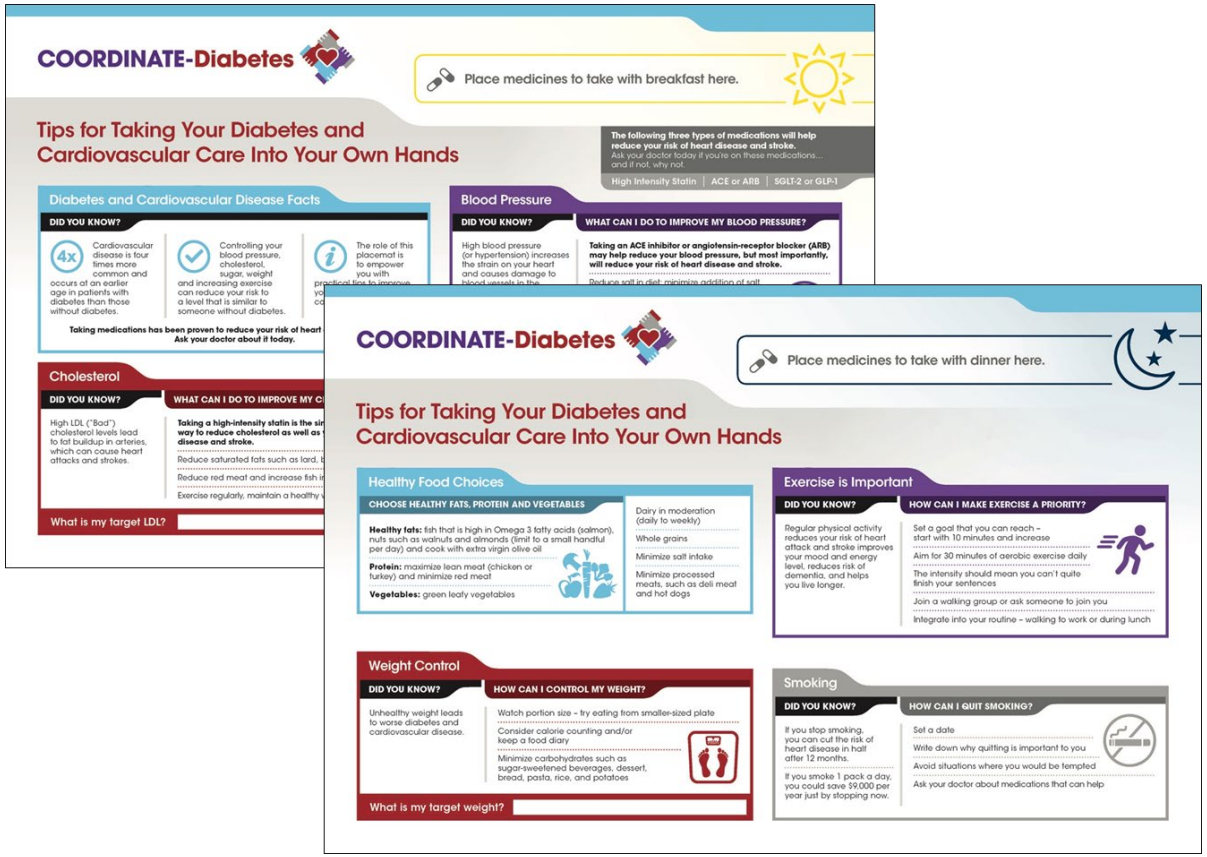
- The best time to make a change to guideline-directed care is at the enrolment visit when both you and the patient are motivated!
- As each patient approaches 12 months, this is a key time to assure patients are on each component: high-intensity statin, ACE/ARB, SGLT-2i/GLP-1RA...

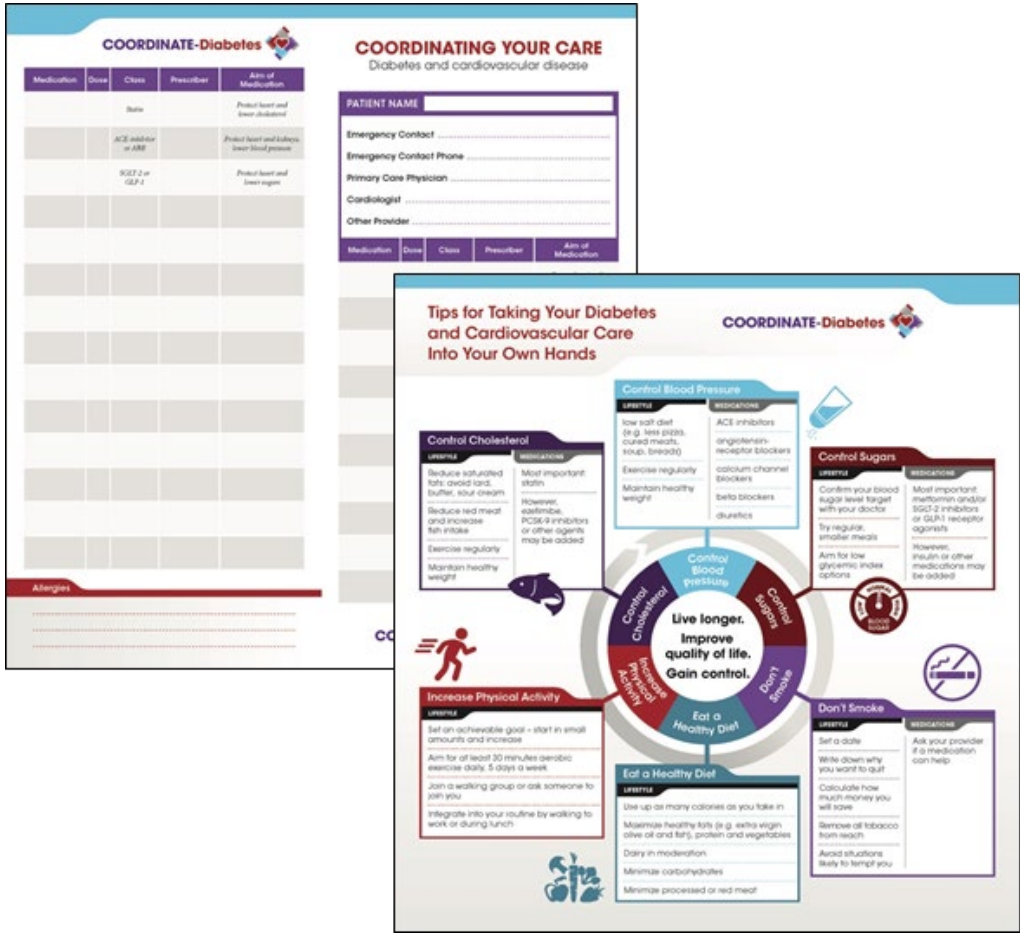
Updates from the European Society of Cardiology Congress:

EMPEROR-Preserved trial shows benefit for empagliflozin in HFpEF!

Presented as a Hot Line clinical trial at the European Society of Cardiology and simultaneously published in *NEJM*, EMPEROR-Preserved is the study of empagliflozin vs placebo to improve outcomes for patients with heart failure with preserved ejection fraction with or without diabetes (HFpEF, LVEF >40%). The trial recruited 5,988 patients, mean age 72 years of which 45% were female. After a median followed up of 26.2 months, empagliflozin reduced the risk of CV death or heart failure hospitalization by 21% (HR 0.79, 95%CI 0.69-0.90, p<0.001) driven mainly by reduced rates of HF hospitalization (8.6 vs. 11.8%). There was no significant difference in the rates of hypoglycemia or hypotension between placebo and empagliflozin treated patients, further supporting the safety of this drug among patients with high degrees of comorbidity. **This trial establishes empagliflozin as the first drug proven to improve outcome in HFpEF. It extends the role of empagliflozin to patients across the spectrum of heart failure, regardless of presence of diabetes and regardless of ejection fraction!**

Participant-facing Materials





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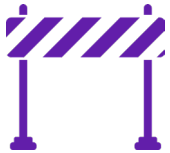

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Audit and Feedback

Table 1: Medication prescriptions, by patient																		
		Baseline Pre-Visit		Baseline Post-Visit			3 months			6 months			9 months			12 months		
Patient ID	Enrolled Date	ACEI/ ARB	Statin	ACEI/ ARB	Statin	SGLT2/ GLP1RA	ACEI/ ARB	Statin	SGLT2/ GLP1RA	ACEI/ ARB	Statin	SGLT2/ GLP1RA	ACEI/ ARB	Statin	SGLT2/ GLP1RA	ACEI/ ARB	Statin	SGLT2/ GLP1RA
001	Oct-15-2019	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
002	Oct-17-2019	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	Yes
003	Oct-18-2019	Yes	No	Yes	No	No	Yes	No	No	Yes	No	No	Yes	No	No	Yes	Yes	No
004	Oct-18-2019	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	No	Yes	No	Yes	Yes	No
005	Oct-22-2019	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
006	Oct-25-2019	Yes	No	Yes	No	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No
007	Oct-28-2019	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No
008	Oct-29-2019	Yes	Yes	Yes	No	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No
009	Oct-29-2019	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	No	No	Yes	No	No	Yes	Yes	No
010	Oct-29-2019	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No
011	Nov-01-2019	Yes	No	Yes	No	No	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
012	Nov-05-2019	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No
013	Nov-20-2019	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No
014	Nov-21-2019	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No
015	Nov-22-2019	Yes	No	Yes	No	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No
016	Nov-26-2019	No	No	Yes	No	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No
017	Nov-26-2019	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
018	Nov-27-2019	Yes	No	Yes	No	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No
019	Dec-06-2019	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
020	Dec-09-2019	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No
021	Dec-17-2019	Yes	No	Yes	No	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No
022	Dec-19-2019	Yes	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No
023	Jan-08-2020	Yes	No	Yes	No	No	Yes	No	No	Yes	No	No	Yes	No	No	Yes	No	No
024	Jan-09-2020	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No
025	Jan-14-2020	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No
026	Jan-16-2020	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	Yes
027	Feb-05-2020	No	Yes	No	Yes	No	No	Yes	No	No	Yes	No	No	Yes	No	Yes	Yes	Yes
028	Feb-18-2020	Yes	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	Yes	No
029	Feb-25-2020	No	Yes	No	Yes	No	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
030	Feb-28-2020	No	No	No	No	No	No	Yes	No	Yes	Yes	No	Yes	Yes	No	No	Yes	No
031	Mar-13-2020	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
032	Mar-24-2020	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No
033	Apr-06-2020	No	No	No	Yes	No	No	Yes	No	No	No	No	No	No	No	No	Yes	No
034	Apr-10-2020	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Audit and Feedback

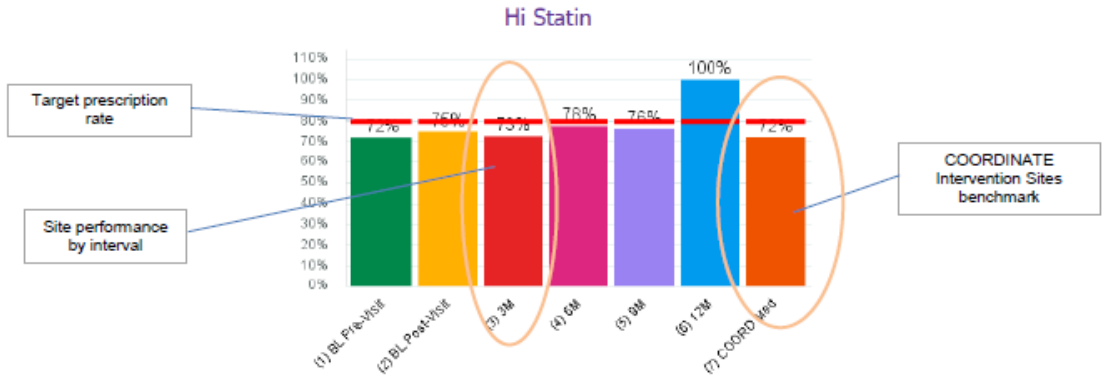
COORDINATE-Diabetes
Report Interpretation Guide

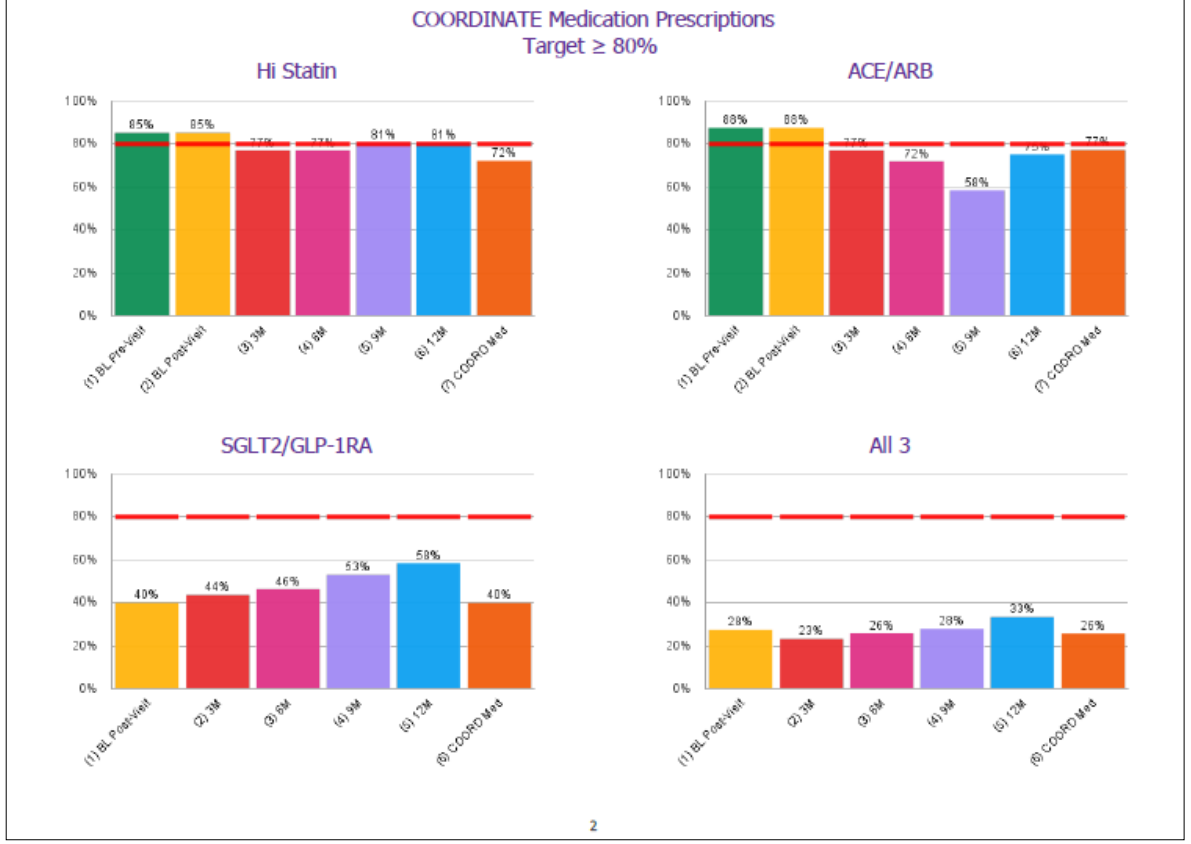
The COORDINATE-Diabetes Intervention Report describes your site's quarterly performance on prescribing key medication classes to patients with diabetes and cardiovascular disease who have been enrolled in the study. These metrics are based on the American Diabetes Association Standard of Medical Care in Diabetes (2020). The metrics of interest are a prescription for ACE inhibitor, ARB, or ARNI; high-intensity statin; and SGLT2 inhibitor or GLP1RA.

Using data submitted and saved as Complete, these medications are reported as separate measures and as a Composite Score ("All 3") that presents a global view of your site's performance. The Composite score is comprised of the three individual medication guideline metrics.

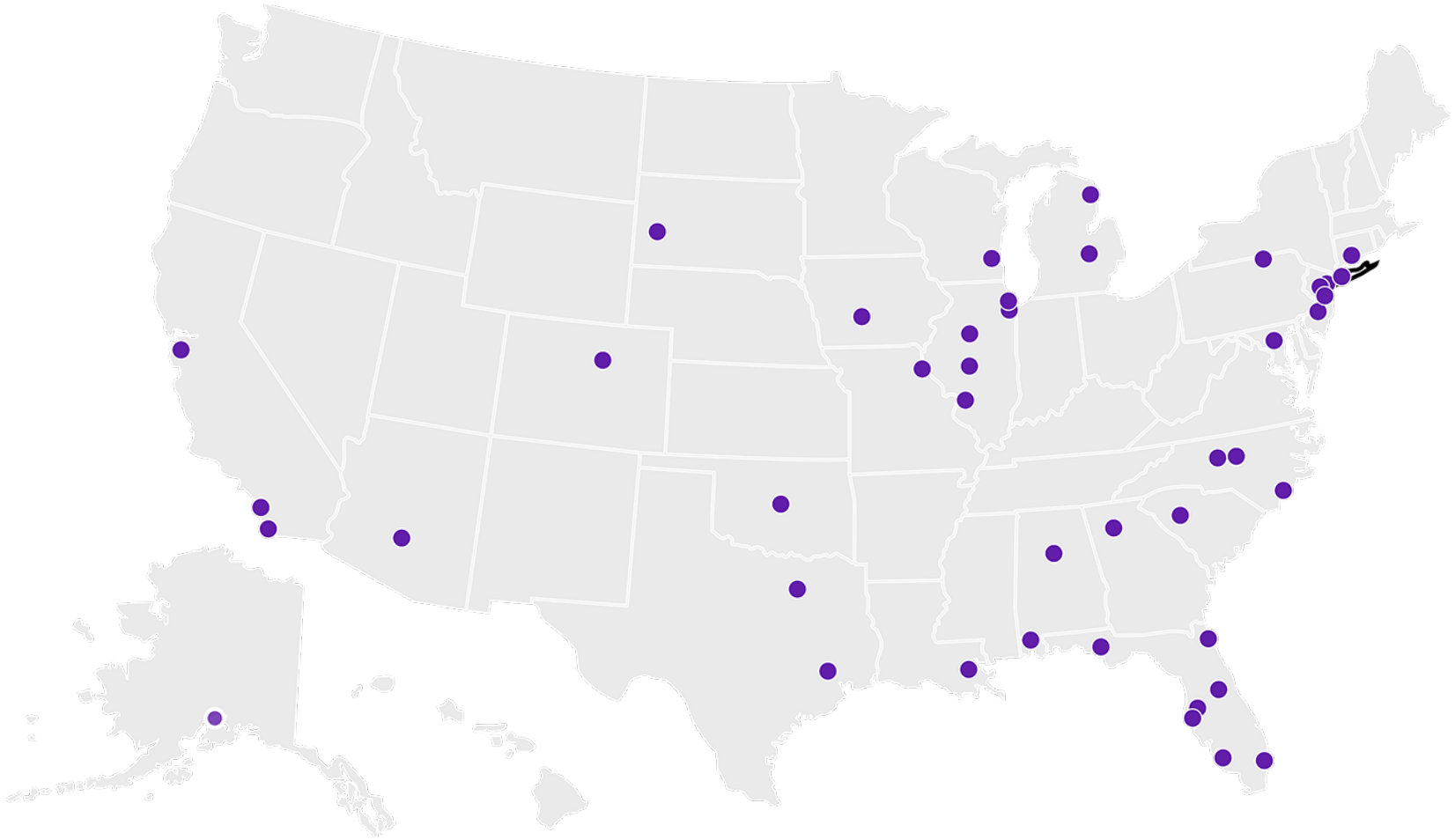
In order to help you to evaluate your site's treatment of patients with cardiovascular disease and diabetes, the COORDINATE-Diabetes reports provide three benchmarks. The first and most important benchmark is your site's performance over time. Assuming your system of data collection remains constant, this benchmark enables you to best judge the success of your quality improvement initiatives. Additionally, we encourage you to compare your site results against the benchmark of all Intervention sites participating in COORDINATE-Diabetes, noted by a bar depicting the intervention site median for the specified therapy; and the target rate for all medication prescriptions, noted by a bar at the 80% rate.

In general, missing data is assumed to be "No" in the report calculations. It is important to note that patients with missing data for medications are **included** in the denominators; thus missing variables may have an adverse impact on metric performance.





Enrolling Sites



43
enrolling sites

24 (14,36)
participants enrolled

Baseline composite medication score (median):

1.6
intervention

1.4
usual care

Participant Baseline Characteristics

	Intervention (N=459)	Usual care (N=590)
Age, median (25th, 75th)	69 (63, 76)	71 (64, 77)
Female	31.4%	32.9%
Race: White Black Asian/other	70.6% 17.2% 8.9%	81.4% 15.9% 3.2%
Insurance: - Medicare - Private - Medicaid	97.6% 62.9% 33.7% 11.8%	98.0% 70.9% 34.6% 9.3%
Prior coronary artery disease	76.0%	84.7%
Prior stroke/carotid artery disease	27.5%	25.1%
Prior peripheral arterial disease	17.4%	10.2%
Hypertension	93.0%	94.1%
Dyslipidemia	90.2%	91.7%

Participant Baseline Characteristics

	Intervention (N=459)	Usual care (N=590)
Atrial fibrillation	16.3%	24.6%
Heart failure	29.6%	24.6%
Charlson comorbidity ≥5	56.6%	62.4%
Diabetes complications:		
- DKA	0.4%	1.2%
- Retinopathy	6.8%	4.7%
- Neuropathy	24.0%	27.1%
- Gastroparesis	3.3%	1.4%
Clinical/laboratory		
Systolic blood pressure, mmHg	131	130
Body mass index, kg/m^2	32.2	32.4
LDL-C, mg/dL	72.8	73.2
eGFR, $mL/min/1.73m^2$	68	65
HbA1c, %	7.7	7.5

Participant Baseline Characteristics

		Intervention (N=459)	Usual care (N=590)
Composite medication score:	0	5.9%	9.7%
	1	34.2%	38.3%
	2	59.9%	52.0%
High-intensity statin use		66.7%	58.3%
ACEi/ARB use		75.2%	69.7%

COORDINATE Diabetes: Results

Christopher Granger, MD

Donald F. Fortin, MD, Distinguished Professor or Medicine

Duke Clinical Research Institute

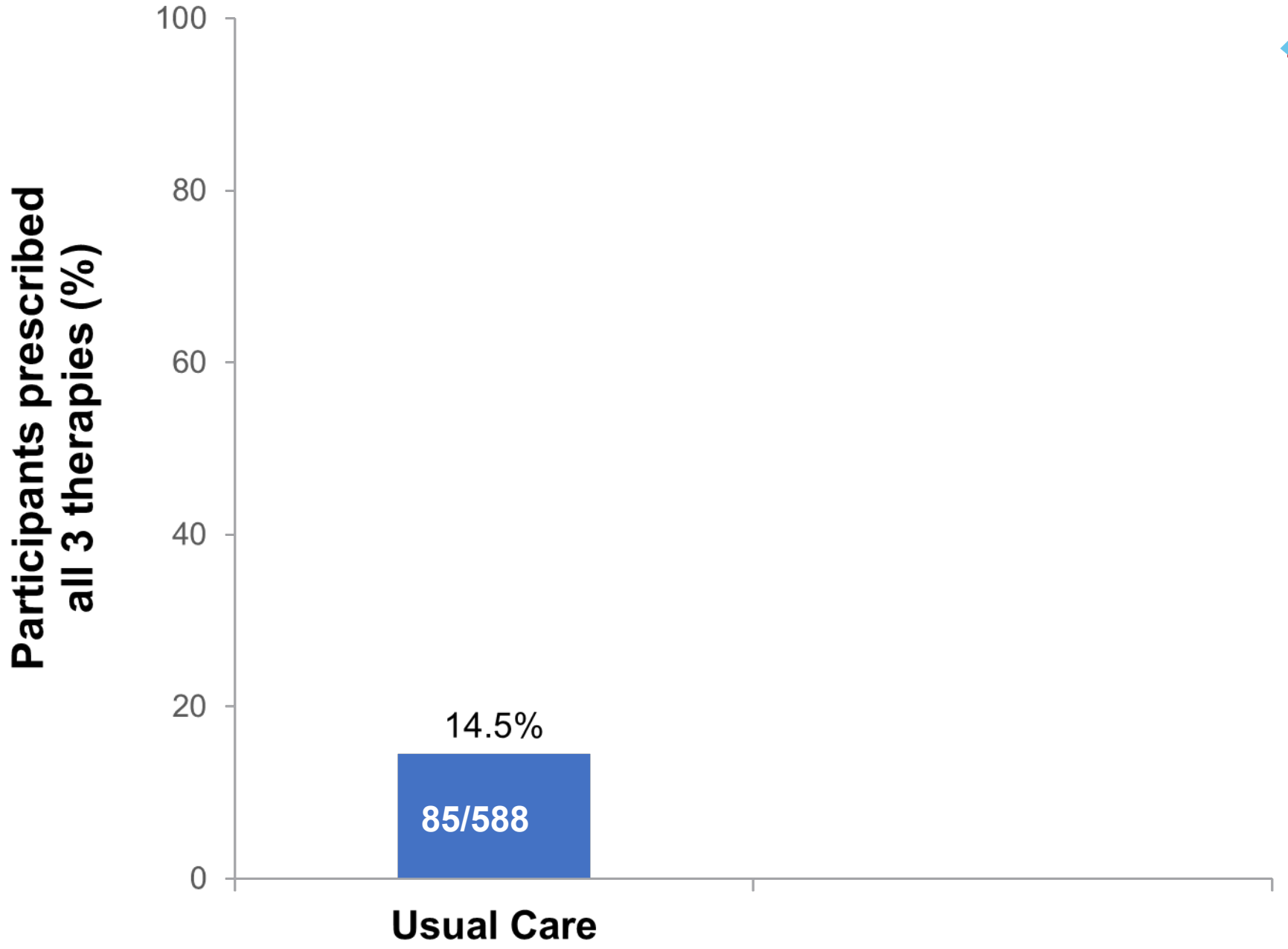
Disclosures

- Research contracts: Anthos, Apple, Alnylam, AstraZeneca, Bayer, BMS, Boehringer Ingelheim, Daiichi Sankyo, Janssen, Novartis, GSK, Medtronic Foundation, Philips, Pfizer, The Medicines Company, FDA, NIH
- Consulting/Honoraria: Abiomed, AstraZeneca, Bayer, BMS, Boston Scientific, GSK, Janssen, Pfizer, Lilly, Daiichi Sankyo, Novartis, Novo Nordisk, Boehringer Ingelheim, Medtronic, Medtronic Foundation
- Equity: tenac.io
- For full listing see w*ww.dcri.duke.edu/research/coi.jsp*

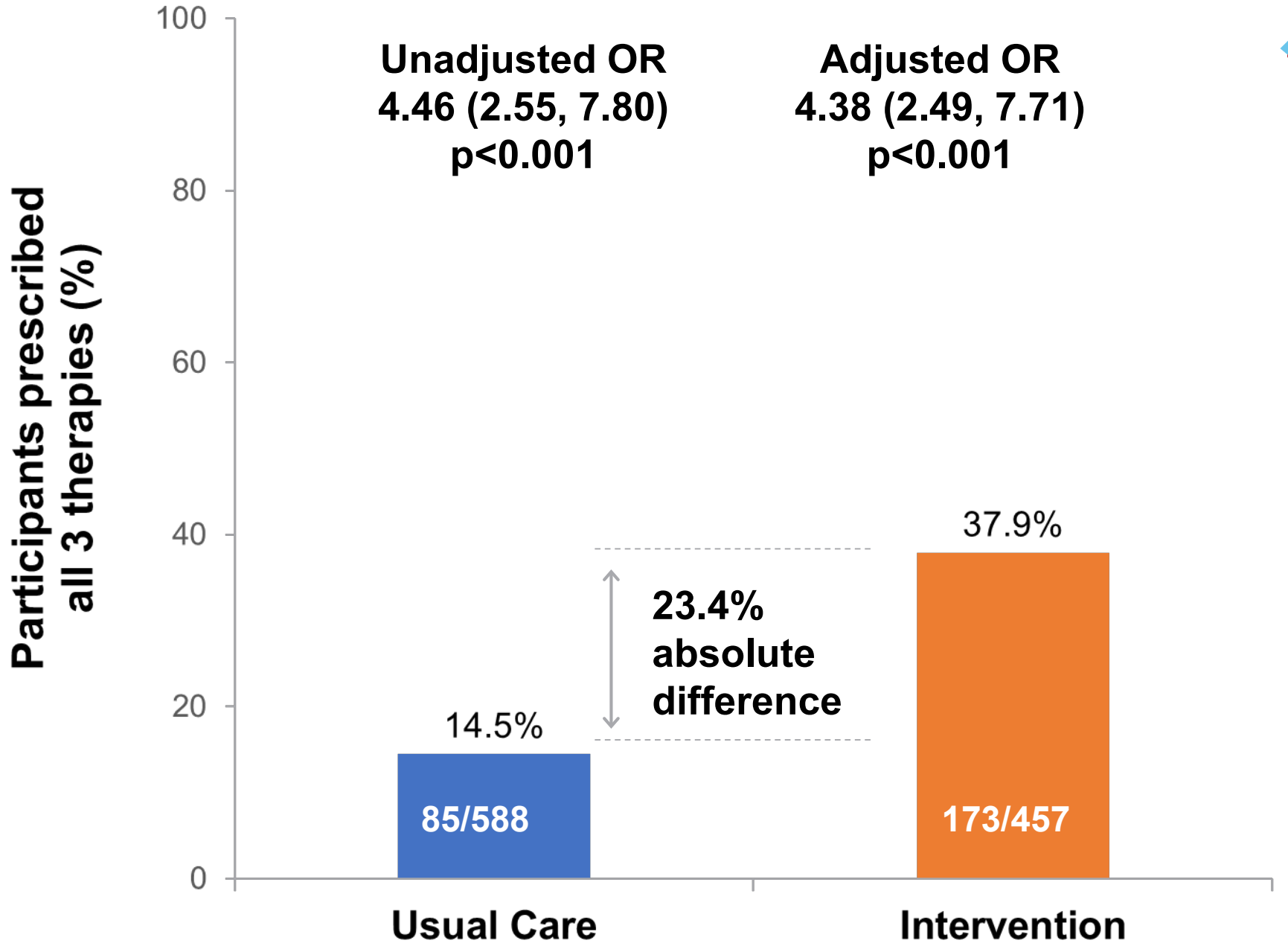
Primary Outcome

COORDINATE-Diabetes

Primary Outcome



Primary Outcome



Secondary Outcomes

Outcome	Usual care No. (%) (N=588)	Intervention No. (%) (N=457)	Adjusted Odds ratio (95% CI)	P value
Prescribed at last follow up:				
High-intensity statin	334/588 (57)	323/457 (71)	1.73 (1.06 to 2.83)	0.029
ACEi/ARB	402/588 (68)	372/457 (81)	1.82 (1.14 to 2.91)	0.013
SGLT2i or GLP-1RA*	209/588 (36)	276/457 (60)	3.11 (2.08 to 4.64)	<0.001

Adjusted for clustering effect, site type (urban vs. non-urban), age, sex, race, baseline composite score, Charlson comorbidity index, baseline systolic BP, baseline diastolic BP, time, and time-by-treatment interaction

*Or HbA1c<7% on metformin alone

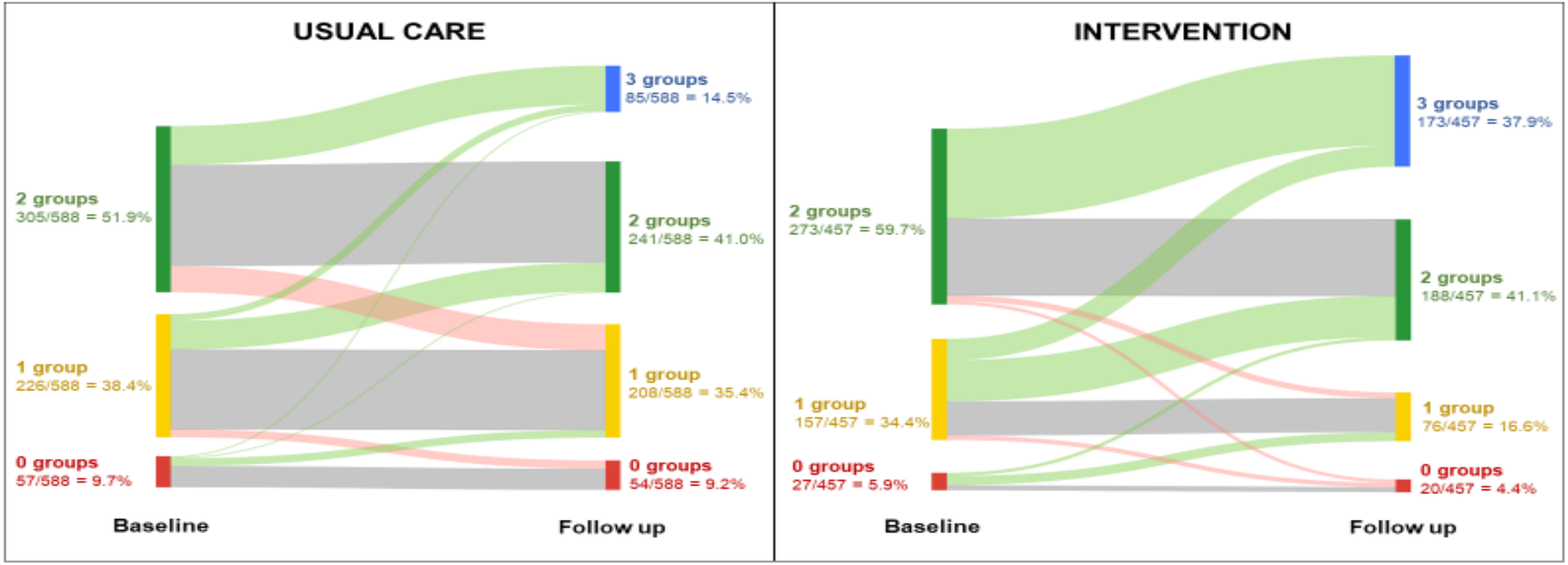
Absolute greater use of medications, intervention vs control

High intensity statins	14%
ACEi/ARB	13%
SGLT2i/ GLP-1RA	25%

Diabetes medication use at end of trial

	Usual care	Intervention
SGLT2i	10.9%	34.8%
GLP-1RA	4.9%	11.2%
Both	0.7%	0.9%

Changes in composite medication scores
Fighting Clinical Inertia



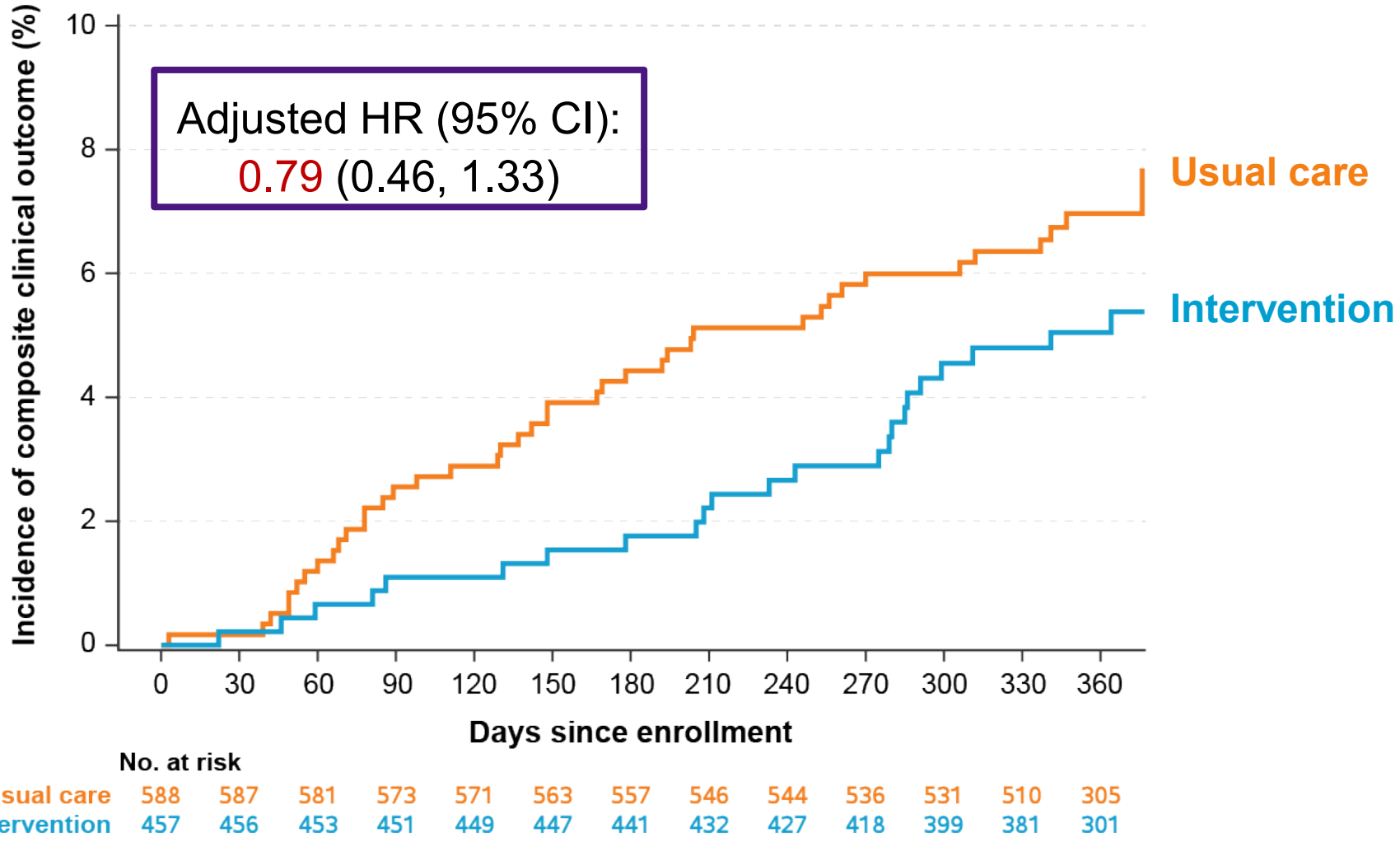
Secondary Outcomes: Risk Factor Control

	% Available	Intervention (n=459)	Usual care (N=590)	Adjusted difference in differences†	
		Difference	Difference	Estimate (95% CI)	P value
sBP	82.9%	-2.31	0.91	-1.99 (-4.34, 0.36)	0.0961
HbA1c	48.0%	-0.17	-0.00	-0.05 (-0.34, 0.25)	0.7495
LDL-C	43.6%	-4.14	-5.30	0.61 (-5.24, 6.46)	0.8379

† Adjusted for site type (urban vs. non-urban), patient age, sex, race, baseline composite score, Charlson comorbidity index, baseline systolic BP

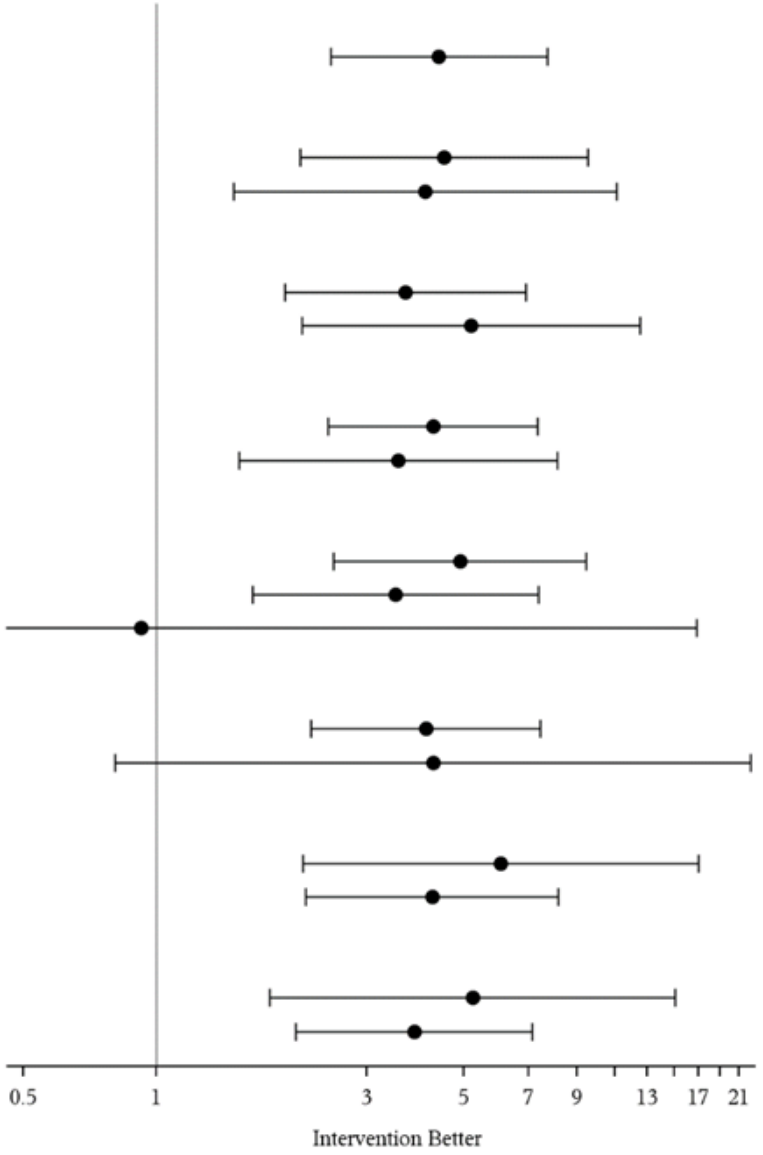
Secondary Outcomes: Clinical Events

Composite outcome:
All-cause mortality or hospitalization for MI, stroke, decompensated HF, or urgent revascularization (coronary, carotid, peripheral)



Consistency across clinic and patient subgroups

Subject Group	Intervention n/d (%)	Usual Care n/d (%)	Adjusted Odds Ratio (95% CI)	Interaction p-value
Overall	173/457 (37.9)	85/588 (14.5)	4.38 (2.49, 7.71)	
Site Location				0.811
Urban	90/216 (41.7)	52/339 (15.3)	4.50 (2.13, 9.52)	
Non-urban	83/241 (34.4)	33/249 (13.3)	4.08 (1.50, 11.11)	
Age Group				0.144
>= 65 years	104/318 (32.7)	56/431 (13.0)	3.67 (1.96, 6.89)	
< 65 years	69/139 (49.6)	29/157 (18.5)	5.18 (2.14, 12.54)	
Sex				0.404
Male	121/313 (38.7)	56/394 (14.2)	4.25 (2.45, 7.34)	
Female	52/144 (36.1)	29/194 (14.9)	3.54 (1.55, 8.13)	
Race				0.036
White	119/323 (36.8)	61/475 (12.8)	4.89 (2.53, 9.45)	
Black	32/78 (41.0)	17/93 (18.3)	3.49 (1.65, 7.38)	
Asian/Other*	15/41 (36.6)	7/19 (36.8)	0.93 (0.05, 16.82)	
LVEF				0.898
>=40	159/427 (37.2)	75/543 (13.8)	4.09 (2.25, 7.45)	
<40	14/29 (48.3)	10/45 (22.2)	4.25 (0.81, 22.35)	
HF				0.944
HF	52/135 (38.5)	24/159 (15.1)	6.06 (2.16, 17.02)	
no HF	121/322 (37.6)	61/429 (14.2)	4.23 (2.19, 8.19)	
Afib				0.675
Afib or flutter	24/75 (32.0)	16/144 (11.1)	5.22 (1.81, 15.05)	
Neither	149/382 (39.0)	69/444 (15.5)	3.85 (2.07, 7.14)	



Most patients who had a prescription reported taking the medication

Patient reported “yes” to taking this therapy at last follow-up	EHR indicated a prescription for this therapy
High-intensity statin	96.3%
ACEi/ARB	98.0%
Antihyperglycemic agents with CV benefit	95.6%

Limitations

- Selected sites and patients may not be representative of broader US or international population
- We focused on a cohort, rather than on the entire clinic population
- Because of the COVID pandemic, the intervention was delivered remotely and was thus less intensive than originally designed

Conclusions

A coordinated, multifaceted intervention **increased prescription** of 3 groups of evidence-based therapies in adults with T2D and ASCVD

Questions

- Were we able to get cardiologists to write the prescriptions for SGLT2i and GLP-1RA?

  Yes

- Was the effect consistent across different clinics?

  There was heterogeneity, but when we looked at tertiles of final performance, ALL of those in bottom tertile were usual care sites

- Was the intervention resource-intensive?

  No, the intervention was simple but depended on a champion to promote the efforts

Clinical Implications

- Evidence-based therapies are under-used in clinical practice, and there is little high-quality data on how to improve this.
- This multifaceted intervention is effective in increasing the prescription of evidence-based therapies in adults with T2D and ASCVD.
- The next step is to scale this intervention across cardiology practices in order to improve the quality of care being delivered broadly.

"Humanity's greatest advances are not in its discoveries – but in how those discoveries are applied ..."

Bill Gates, June 7, 2007
Harvard Commencement Address

Selected randomized trials showing successful implementation: Average of 50 centers, 1000 patients, with a 6 to 50% improvement in guideline-directed medication use

Virtual Care Team Guided Management of Patients With Heart Failure During Hospitalization

JACC 2023

Ankeet S. Bhatt, MD, MBA, ScM,[a,b,*] Anubodh S. Varshney, MD,[c,*] Alea Moscone, MPH,[d] Brian L. Claggett, PhD,[a]

Safety, tolerability and efficacy of up-titration of guideline-directed medical therapies for acute heart failure (STRONG-HF): a multinational, open-label, randomised, trial

Lancet 2022

Alexandre Mebazaa, Beth Davison, Ovidiu Chioncel, Alain Cohen-Solal, Rafael Diaz, Gerasimos Filippatos, Marco Metra, Piotr Ponikowski,

Electronic Alerts to Improve Heart Failure Therapy in Outpatient Practice

A Cluster Randomized Trial

JACC 2022

Lama Ghazi, MD, PhD,[a] Yu Yamamoto, MS,[a] Ralph J. Riello, PharmD,[a] Claudia Coronel-Moreno, MPH,[a]

A multifaceted intervention to improve treatment with oral anticoagulants in atrial fibrillation (IMPACT-AF): an international, cluster-randomised trial

Lancet 2017

Dragos Vinereanu, Renato D Lopes, M Cecilia Bahit, Denis Xavier, Jie Jiang, Hussein R Al-Khalidi, Wensheng He, Ying Xian, Andrea O Ciobanu,

Cluster-Randomized Trial Comparing Ambulatory Decision Support Tools to Improve Heart Failure Care

JACC 2023

Amrita Mukhopadhyay, MD,[a] Harmony R. Reynolds, MD,[a] Lawrence M. Phillips, MD,[a] Arielle R. Nagler, MD,[b]

Coordinated Care to Optimize Cardiovascular Preventive Therapies in Type 2 Diabetes

A Randomized Clinical Trial

JAMA 2023

Neha J. Pagidipati, MD, MPH; Adam J. Nelson, MBBS, MPH, MBA, PhD; Lisa A. Kaltenbach, MS; Monica Leyva, RCIS, MHA; Darren K. McGuire,