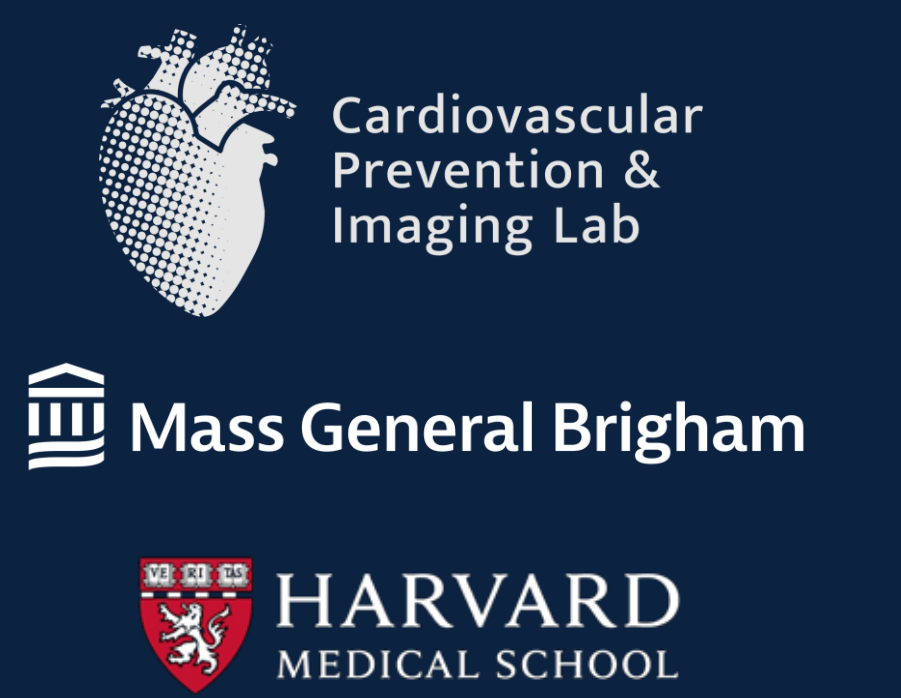


AI Detection of Incidental Coronary Artery Calcium to Enhance Cardiovascular Disease Prevention: The AI INFORM Trial

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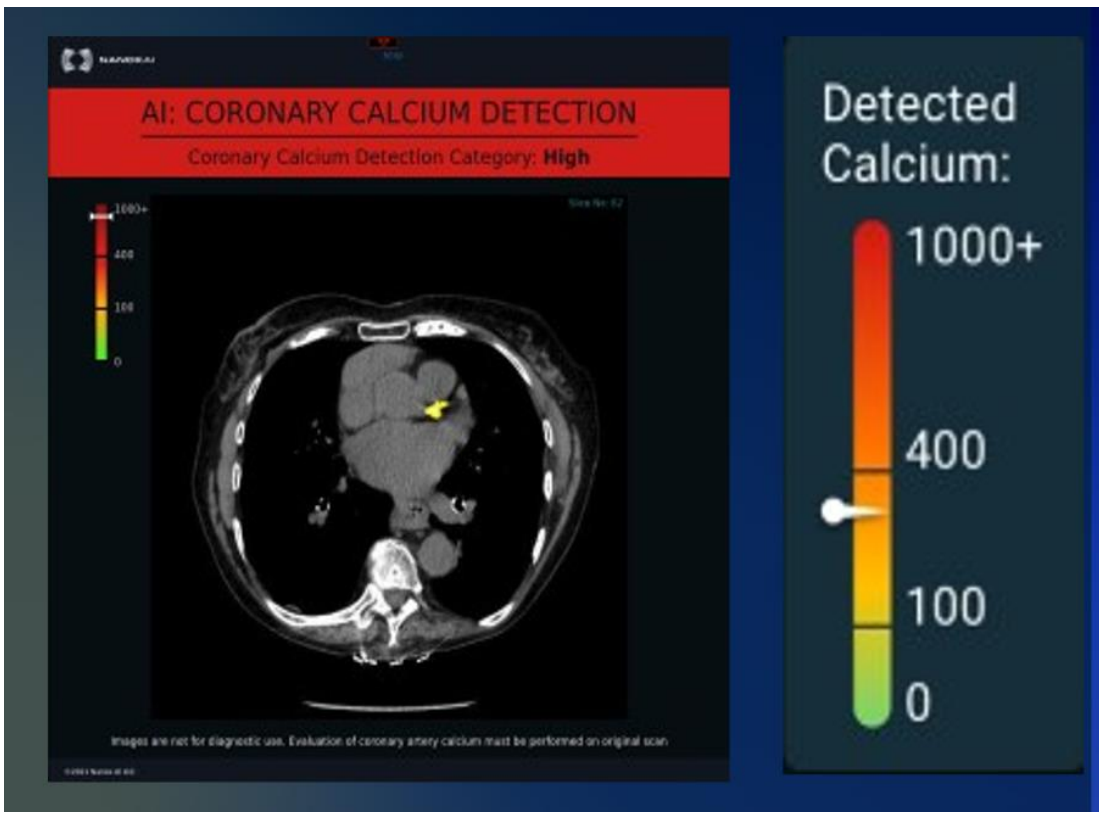
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Background

Incidental coronary calcifications on non-cardiac chest CT can be determined automatically using **artificial intelligence (AI) approaches**

- Predicts **cardiovascular (CV) events**
- Identifies candidates for **lipid lowering therapy**



STUDY AIM
To determine whether providing clinicians information about AI-detected coronary plaque increases **initiation or intensification of lipid-lowering therapy**

Methods



AI INFORM TRIAL · MASS GENERAL BRIGHAM SINGLE-CENTER RESULTS

AI CAC Determination

- Cloud-based AI-powered platform (**Nanox.AI HealthCCSng**; FDA-cleared)

PATIENTS · PLAQUE ON CT

660

Age 40–75
Plaque present (CAC > 0)

Median AI calcium score **46 (13–178)**

Plaque Amount: **Low 64%** **Medium 24%** **High 12%**

INCLUSION CRITERIA

- Adults age 40–75 not on lipid lowering therapy, or if on therapy with LDL-C > 100 mg/dL.
- Prior Non-contrast chest CT <3 years

EXCLUSION CRITERIA

- Prior known CAD
- Prior coronary imaging;
- Life-limiting condition

1:1 BLOCK RANDOMIZATION BY CAC AMOUNT CATEGORY

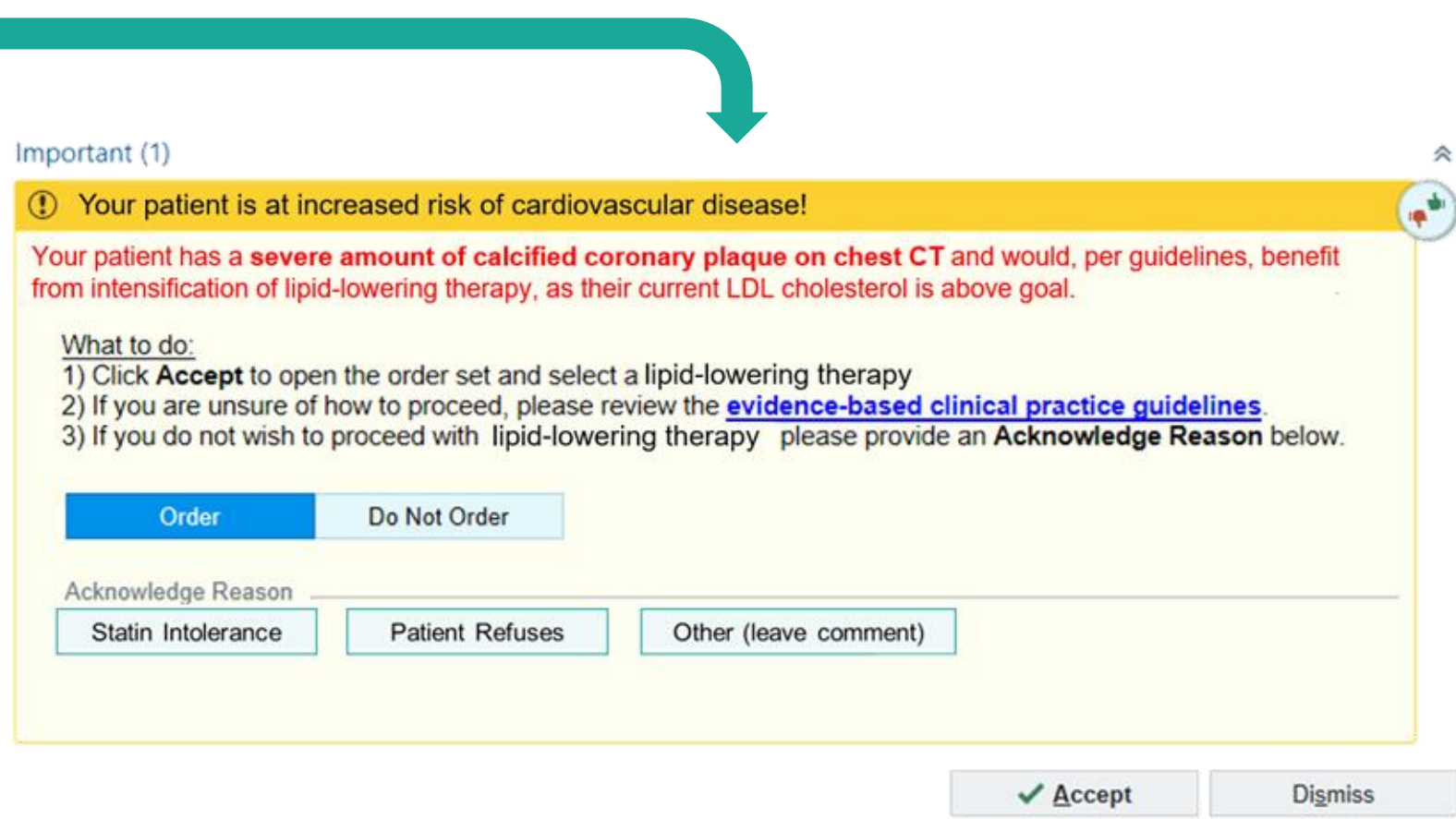
Notification Arm (n=325)

Provider Notification:

- EHR best practice advisory (BPA)
- Email

Usual Care Arm (n=335)

No provider notification



Primary Outcome

- Initiation or intensification of lipid-lowering therapy at **6 and 12 months**, including statin, ezetimibe, PCSK9 inhibitor, bempedoic acid, omega-3 fatty acid, fibrate.
- Outcomes reflect either initiation of lipid-lowering therapy or, among patients already receiving therapy at baseline, intensification (additional medication or dose increase).

Secondary Outcomes: Change in LDL-C · Downstream testing frequency · MACE · Other Preventive Therapies

BASELINE CHARACTERISTICS · NO SIGNIFICANT DIFFERENCES BETWEEN GROUPS

Mean age **65** · **60%** female · **23%** current smokers · **48%** hypertension · **10%** diabetes · mean LDL **117 mg/dL** · **7.0%** on lipid lowering therapy

Conclusions & Discussion

Our single center results demonstrate that informing providers about the presence and amount of AI-detected coronary artery calcifications on non-cardiac non-contrast chest CT **substantially increased utilization of guideline-recommended lipid lowering therapy.**

- Resulted in significant reduction in LDL cholesterol
- No increase in downstream invasive or noninvasive CV testing

Results

OUTCOME	Notification Arm n=325 · 49.2%	Usual Care Arm n=335 · 50.8%	P
6-Month Outcomes			
LLT initiation/intensification	138 (42.5%)	34 (10.1%)	<0.001
Statin initiation or intensification	134 (41.2%)	32 (9.6%)	<0.001
Non-statin initiation or intensification	4 (1.2%)	2 (0.6%)	0.39
12-Month Outcomes (cumulative)			
LLT initiation/intensification	204 (62.7%)	64 (19.1%)	<0.001
Statin initiation or intensification	191 (58.8%)	56 (16.7%)	<0.001
Non-statin initiation or intensification	13 (4.0%)	7 (2.1%)	0.15
Non-invasive imaging obtained	53 (16.6%)	56 (16.9%)	0.92
Invasive Coronary Angiogram	3 (0.9%)	1 (0.3%)	0.36
All-cause death	9 (2.8%)	2 (0.6%)	0.035
Myocardial infarction (MI)	--	--	--
Stroke	2 (0.6%)	1 (0.3%)	0.62
Revascularization	--	--	--
Cardiovascular Death	4 (1.2%)	1 (0.3%)	0.21
Aspirin initiation	38 (11.9%)	36 (10.8%)	0.68
Blood-pressure med initiation	149 (46.6%)	146 (44.0%)	0.51
Anticoagulation therapy initiation	17 (5.3%)	18 (5.4%)	0.95
Antiplatelet therapy initiation	1 (0.3%)	2 (0.6%)	0.99
SGLT2 inhibitor initiation	5 (1.6%)	10 (3.0%)	0.30
GLP-1 receptor agonist initiation	47 (14.7%)	35 (10.5%)	0.13

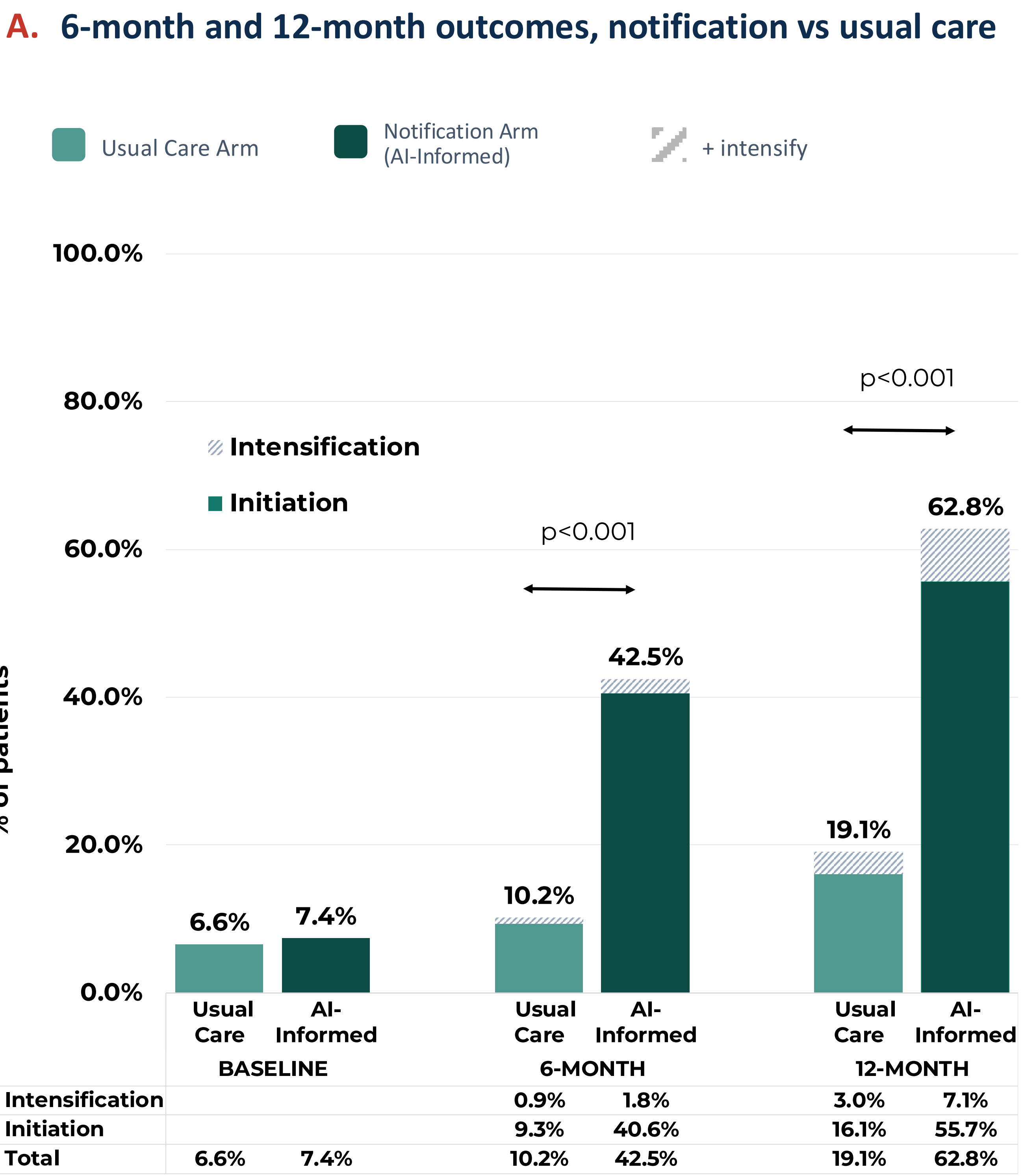
B. Change in LDL cholesterol from baseline to 12 months

GROUP	BASELINE	12-MONTHS	P
Notification Arm	121 (99–142)	104 (76–127)	<0.001
Usual Care Arm	117 (101–134)	113 (91–135)	0.070

Median mg/dL (IQR). Significant LDL-C reduction only in the notification arm.

MEAN Δ LDL-C AT 12 MONTHS
–17 in the notification arm
–4 mg/dL in the usual care arm

Association of provider notification with outcomes over **6-month / 12-month** follow-up



% of patients with LLT initiation (solid) or intensification (hatched). All between-group differences **p < 0.001**.

INITIATION OR INTENSIFICATION OF LIPID-LOWERING THERAPY · 6 MONTHS
43% in the notification arm
10% in the usual care arm

INITIATION OR INTENSIFICATION OF LIPID-LOWERING THERAPY · 12 MONTHS
63% in the notification arm
19% in the usual care arm

DOWNSTREAM TESTING & CV OUTCOMES

No differences in downstream noninvasive or invasive CV testing or CV outcomes were observed.

Discussion: Detection and reporting of incidental CAC is now supported by the 2026 Dyslipidemia Guideline.

Our findings provide evidence that providing this information to clinicians can have a favorable impact on patient management

FOR MORE INFORMATION
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