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Reply to Letter to the Editor RE: "Incidental Coronary Artery Calcium: Opportunistic Screening of Prior Non-gated Chest CTs to Improve Statin Rates (NOTIFY-1 Project)"

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We thank Dr. Cainzos-Achirica for his thoughtful comments regarding our NOTIFY-1 study.[1] We wholeheartedly agree regarding the immense potential impact of opportunistic screening for incidental coronary artery calcium (CAC) for both clinical care and trial recruitment. Despite these tremendous potential benefits of opportunistic screening, randomized clinical trials are necessary to quantify the benefits, optimize the intervention, and measure downstream consequences of widescale implementation.

While CAC is definitively associated with cardiovascular risk, the absolute clinical benefit of opportunistic CAC screening is dependent on more than the prognostic value of CAC. First, the patients with a prior non-gated chest CT are not the same as patients in prior primary prevention trials. Having received a non-gated chest CT may be a marker of higher competing non-cardiovascular risk. A higher risk of dying from cancer would lower the absolute benefit of cardiovascular disease prevention. Second, while NOTIFY-1 illustrated the substantial potential impact of statin initiation, there remains uncertainty regarding the generalizability across other health systems and statin persistence after initial prescription.

Leveraging randomization was critical for the NOTIFY-1 study.[2] While pre/post designs may suggest causality, they cannot isolate the effect of an intervention versus differences due to temporal trends. While the large observed effect of CAC notification on statin prescription would have been evident without randomization, the magnitude of the impact of notification would be unclear. Furthermore, the increased frequency of cardiovascular testing may have

DISCLOSURES

None

been difficult to identify without a randomized control arm. Learning health systems need to incorporate randomization into quality improvement to reliably ascertain the effects of interventions to know what to scale, what to de-implement, and what to modify.

A final consideration regarding the value of a clinical trial testing the effect of CAC notification is the downstream impact on implementation. CAC testing is not recommended by the US Preventive Services Task Force nor routinely reimbursed by insurance programs given the lack of randomized clinical trial data regarding clinical benefit. The health system investment in scaling opportunistic CAC screening would also likely be limited if there were insufficient data regarding the clinical benefits of such a program. Demonstrating that opportunistic CAC screening improves patient outcomes would be a mandate for implementing opportunistic screening programs widely and would justify the expected costs. However, implementation and robust evaluation are not mutually exclusive. While we completely agree with Dr. Cainzos-Achirica's comment that the me to implement opportunistic CAC screening is now, there is no substitute for randomization to evaluate and optimize such screening programs.

REFERENCES

1. Sandhu AT, Rodriguez F, Ngo S, Patel BN, Mastrodicasa D, Eng D, Khandwala N, Balla S, Sousa D, Maron DJ. Incidental Coronary Artery Calcium: Opportunistic Screening of Previous Nongated Chest Computed Tomography Scans to Improve Statin Rates (NOTIFY-1 Project). Circula on. 2023 Feb 28;147(9):703–714.
2. Cainzos-Achirica M Letter to the Editorial RE: Incidental Coronary Artery Calcium: Opportunistic Screening of Prior Non-gated Chest CTs to Improve Statin Rates (NOTIFY-1 Project).