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Million Hearts Cardiovascular Disease Risk Reduction Model

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Cardiovascular disease (CVD) is the leading cause of death in the US[1,2] and is responsible for extensive costs to the health care system.[2] Although CVD mortality rates declined over the past several decades in the US, this decline has recently stagnated.[1,3] Additionally, population-level increases in CVD risk factors and aging of the population threaten to further undermine progress.[1,2] Key clinical guideline recommendation changes to chronic CVD treatment have been implemented over the past 10 years aiming to lower atherosclerotic CVD (ASCVD) risk in the US.[4,5] In 2013, the American College of Cardiology/American Heart Association recommended statin use for primary prevention of CVD among adults with a 10-year predicted ASCVD risk greater than or equal to 7.5% calculated using the pooled cohort equations.[4,6] In 2017, the American College of Cardiology/American Heart Association recommended reducing the blood pressure threshold for hypertension diagnoses and treatment from 140/90 mm Hg to 130/80 mm Hg.[5] However, guideline-recommended treatment goals at the population level have not been reached, and reductions in CVD rates are lagging.

Given the need for innovative strategies to reduce population-wide CVD risk, the Centers for Medicare & Medicaid Services (CMS) has increasingly focused on using payment models as tools to drive quality improvement. In this issue of *JAMA*, Blue and colleagues report findings from one such model, the Million Hearts CVD Risk Reduction Model (Million Hearts Model) assessed in a pragmatic, cluster-randomized health services trial among 345 US health care organizations.[7] An initiative within the CMS and Centers for Disease Control and Prevention Million Hearts program, the Million Hearts Model was designed to reduce incident myocardial infarctions and strokes by incentivizing health care organizations to assess and lower 10-year ASCVD risk among Medicare beneficiaries. In addition to clinical targets, differences in Medicare spending on CVD events were assessed between intervention and control organizations.

The Million Hearts Model study was conducted from 2017 to 2021 with beneficiaries entering the model from 2017 to 2018. Organizations participated voluntarily and were

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randomized to either an intervention or control group. Those randomized to the intervention group agreed to use the pooled cohort equations to calculate 10-year ASCVD risk among eligible Medicare beneficiaries (aged 40–79 y without established CVD, kidney failure, or hospice use). Direct compensation was provided for risk assessments, along with a risk reduction payment per beneficiary per month. In later study years, organizations received additional compensation depending on mean risk score change achieved among high-risk beneficiaries. For organizations randomized to the standard care control group, CMS provided payments for submission of clinical data to the Million Hearts Data Registry required to calculate ASCVD risk scores. The main study finding was a 3.3% reduction in a composite outcome of incident coronary heart disease (CHD) and stroke among 130 578 medium- or high-risk Medicare beneficiaries, which was significant at the prespecified level of $P < .10$ according to CMS study criteria. A secondary composite outcome (incident CHD and stroke, CVD deaths) was reduced by 4.2%, with a 4.5% reduction in all-cause mortality and an 11.9% reduction in CHD-related mortality. The program was cost-neutral, with program payments offset by modest savings from reductions in health care use.

Potential explanatory mechanisms by which the Million Hearts Model reduced CVD events require prudent consideration. As reported previously, the Million Hearts Model was associated with greater risk assessment tool use, with 69% of clinicians in the intervention group reporting completion of CVD risk assessments in more than 50% of their beneficiaries compared with 41% of clinicians in the control group.[8] Risk assessments may have led to lower clinical inertia as evidenced by clinicians in the intervention group initiating or intensifying antihypertensive or statin medications 10% more frequently compared with the control group in the first year of the program.

More broadly, the Million Hearts Model presents a paradigm shift in how CVD risk reduction is measured and incentivized. In typical quality improvement metrics, clinical practices are rewarded for the proportion of their patients who are “at goal” for clinical measures (eg, systolic blood pressure, low-density lipoprotein cholesterol). However, the Million Hearts Model shifts the incentive focus to mean risk reduction as it concentrates on treatment of medium- to high-risk patients (ASCVD risk ≥15%) or those farthest from the goal who may need care the most. Future studies should judiciously examine the impact of this incentive structure on a wider scale and whether guideline-recommended care is delivered for all patients across the risk spectrum.

Another important consideration for the Million Hearts Model is its health equity implications, which were not directly assessed in the current study. It is well-known that CVD mortality rates remain higher among Black adults compared with White adults in the US.[3,9] While a rising tide may lift all boats, this has not always been the case when it comes to the health and well-being of people from racial and ethnic minority groups. Programs similar to the Million Hearts Model must reach and meet the needs of diverse patient populations to combat health disparities. Historically, CMS has not achieved great strides in recruitment and retention of practices primarily serving beneficiaries from racial and ethnic minority groups into their alternative payment models. Studies report that beneficiaries from racial and ethnic minority groups have less access to primary care clinicians and a usual source of health care compared with White beneficiaries,[10] which signifies the

necessity of effective programs to over-come barriers to care. These could involve multilevel initiatives with expanded use and access to telemedicine[11] to diversification of the primary care workforce.[12] For CVD risk reduction programs to reach their maximal impact on equity, it is imperative that they specifically measure, report, and incentivize meaningful improvements in health equity metrics with a goal to achieve the quintuple aim of health care improvement.[13]

In the current study, clinical practices were encouraged to develop implementation strategies for outreach and risk factor management. However, no specific guidance was provided for authentic patient stakeholder and community engagement to shape and inform sustainable CVD risk reduction programs. There is growing evidence of the potential of community-based interventions to foster sustained partnerships for cardiovascular health promotion. However, support for these partnerships has been absent from most federal payment models and cross-sector partnerships with health care organizations are lacking.[14] Future iterations of population health-based payment models should intentionally integrate referral programs to community-based resources and social needs services supplemented with incentive payments to facilitate synergistic risk reduction efforts with community organizations. This could be accomplished through equitable distribution of resources to address pervasive structural inequities and adverse social determinants of CVD, particularly for patients experiencing socioeconomic disadvantage and receiving care in underresourced clinical settings.[15] Further, community engagement affords the opportunity to explore and identify unobserved processes potentially contributing to underuse of preventive therapies beyond structural factors (ie, mistrust among systematically marginalized groups and clinician bias) while better understanding patient-lived experiences of interactions within health care systems.[16]

Blue et al present a well-designed trial with promising findings in favor of incentivized CVD risk prediction, but additional robust investigation is needed in this arena to support its widespread adoption. In the current study, approximately one-third of organizations randomized to the intervention group did not report 10-year CVD risk assessments for their beneficiaries, suggesting a need for greater clinician support and engagement. Implementation science studies on how to effectively deploy this intervention in health care organizations to boost clinician participation without increasing clinician burden are warranted. Integration of community health workers as an extension of the health care team could bolster CVD risk screening without hindering clinical workflows. Further, although medication initiation and intensification increased in the intervention group, medication adherence was not assessed. One of the largest drivers of medication nonadherence in the US is lack of affordability, which reflects income inequalities and underinsured status.[15] Only 68% of beneficiaries in the current study were enrolled in Medicare Part D prescription coverage. Future studies should examine CVD outcomes among these individuals to further disentangle socioeconomic factors to inform health care policies for affordable health insurance and medication prescription programs. Similarly, estimating cost-effectiveness of the Million Hearts Model if medications were provided at no cost or substantially subsidized to alleviate financial strain from prescriptions could shed light on future, equity-first interventions. Altogether, these efforts may make way for high-quality preventive health care screening and management of CVD risk factors including hypertension and hyperlipidemia.

Conclusions

There remains a strong need for novel strategies to incentivize the provision of guideline-concordant CVD preventive care to improve CVD outcomes in the US population. The encouraging findings from the Million Hearts Model suggest that modernized payment models may be an affirmative strategy to do so, though further work is needed to ensure that these models are patient-centric, optimally deployed, and equity-enhancing.

Conflict of Interest Disclosures:

Dr Tajeu reported grants from National Heart, Lung, and Blood Institute during the conduct of the study; personal fees from National Institutes of Health outside the submitted work. Dr Joynt Maddox reported grants from NIH, personal fees from Centene Health Policy Advisory Council, and other from Humana Research Funding outside the submitted work. Dr Brewer reported receiving grants from the Centers for Disease Control and Prevention, the American Heart Association, and Bristol-Myers Squibb Foundation outside the submitted work.

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