



RESPONSE TO COMMENT ON CHENG ET AL.

# Trends and Disparities in Cardiovascular Mortality Among U.S. Adults With and Without Self-Reported Diabetes, 1988–2015. *Diabetes Care* 2018;41:2306–2315

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We thank Manicardi et al. (1) for their insightful discussion of potential factors affecting our study of cardiovascular disease (CVD) mortality trends in the population with diabetes (2). Changes in diagnostic criteria and early detection of diabetes could indeed have affected the risk level and changes in rates of CVD differentially over time. We further agree that the population today is likely much different from that in the 1980s, perhaps due to the significant increases in obesity among the population with diabetes, which could influence risk as well. However, we caution that there is limited direct evidence that significant increases in detection have led to a healthier population or that the risk level at diagnosis has changed at a rate higher than the risk level of the underlying population (3). The impact of the 1997 change in diabetes definition and early detection

of diabetes is also unknown but unlikely to explain the steady 12-year increase in incidence that occurred after that. Although we lack the appropriate data to quantify the impact of changing underlying risk directly, our indirect sensitivity analyses of these effects in the current report suggest that the impact of any lead-time bias on these trends was modest in comparison with the reductions that occurred (2). That said, the points raised by Manicardi et al. are important and underscore the need for more comprehensive epidemiologic data to understand the transitions underway in diabetes complications.

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