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Maximizing Use of Available Population-Based Data on Cardiometabolic Diseases

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The absolute worldwide burden of adult cardiometabolic diseases such as hypertension, diabetes, obesity, and dyslipidemia continues its relentless ascent. Scaling up ~~the~~ prevention, management, and control of cardiometabolic diseases is cost-effective but requires strong health systems.[1,4] Building these~~strong health systems~~ requires data that are accurate, timely, and transparent, as we have previously argued in this journal.[2] In particular, data from high-quality population-based surveys are critical, as they reflect the spectrum of community-dwelling adults ~~in a particular geography~~, including those who are not reached by the health system.

There~~Of late, there~~ has been tremendous progress in making population-based survey data available for cardiometabolic diseases. Emblematic of this has been the release in 2018 of the World Health Organization (WHO) Noncommunicable Disease (NCD) Microdata Repository.[3] This hosts over 130 surveys conducted using the STEPwise approach to NCD surveillance (STEPS) methodology that are now available after~~to users who submit~~ a brief application. Most STEPS surveys are conducted in low- and middle-income countries (LMICs) where a majority of the cardiometabolic disease burden occurs. Thus, this resource fills a critical gap in openly accessible population-based survey data on cardiometabolic risk factors and health care access in these settings.

Yet, there is more work to be done. The availability of population-based data, while necessary, is insufficient ~~by itself~~ to ensure their effective use to shape programs, strategies, and policies addressing cardiometabolic diseases. In this Comment, we highlight three other crucial actions ~~needed~~ to maximize the use of population data: harmonization, alignment with monitoring indicators to benchmark health system performance, and capacity-building initiatives to democratize data use (figure).

Our perspective is informed by our experience in the Global Health and Population Project on Access to Care for Cardiometabolic diseases (HPACC), an international research consortium with collaborators in more than 30 countries. HPACC has created a dynamic repository of harmonized, nationally representative survey data currently representing 1.3 million individuals in more than 75 LMICs (including more than 50 STEPS surveys) to address questions of relevance to health system planning and evaluation for cardiometabolic diseases.

First, while population-based data can and should be used at the national level, these data also should be harmonized to maximize its use by international advocacy organizations, policymakers, and researchers. Harmonization refers to the process of bringing together distinct data sources into a single comparable format. Harmonized survey data are available in the area of maternal and child health,[4] but no such resource exists for cardiometabolic diseases. Such harmonized data allows for assessing health system effectiveness and responsiveness, as our study of the state of hypertension care in 44 LMICs illustrates.[55] Harmonization also provides larger and more diverse samples, giving added power to study variations in cardiometabolic risk factors, including biological measures such as blood glucose and behavioral risk factors such as physical activity and diet. Understanding these variations is important, as it cannot be assumed that epidemiologic patterns of clinical relevance observed in well-studied high-income countries will be conserved in LMICs. Indeed, we have found that the association between diabetes and body mass index (BMI) is highly variable across world regions, implying that BMI thresholds generated using European or North American data cannot simply be applied elsewhere in other world regions.[6] Harmonization also allows for the construction of sophisticated clinical and policy models for the prevention, treatment, and control of cardiometabolic diseases to predict effects of change.[1,76] Importantly, to ensure that data are useful for cross-country comparisons, prior to data collection, time should be spent ensuring survey instruments and data collection are standardized and aligned with the highest priority global health metrics.

Second, population data on cardiometabolic diseases should be harnessed to benchmark and monitor health system performance. At present, these data are underutilized for this purpose. Harmonized data from STEPS and similar~~non-STEPS~~ surveys can reveal progress on monitoring indicators in the NCD Global Monitoring Framework[7] and inform new targets such as those proposed by the WHO Global Diabetes Compact, a recently established initiative to improve global diabetes care.[8] To show global variation in health system performance, harmonized data ideally should include not only LMICs but also high-income countries, though unfortunately data from high-income countries are currently less available.

Third, given limited research capacity in many LMICs, there is a need to build capacity to ensure the wide usability of population data on cardiometabolic diseases, ~~most especially~~ by those who have collected it. Local researchers—especially those in LMICs—who design and conduct surveys should be empowered to use harmonized data to answer their policy-relevant questions, conduct independent analyses, and publish in lead-author roles.[9] In addition to this being a step towards decolonialization of global health, these collaborators add critical contextual interpretation that may not be fully perceived or appreciated by those outside their settings.
maximizing use of available population data on cardiometabolic diseases, it is important to continue data-sharing efforts. Many STEPS and comparable ~~non-STEPS~~ household surveys remain unavailable, as are more than two dozen nationally representative health facility surveys conducted using the WHO Service Availability Readiness Assessment (SARA) methodology.[10] Additionally, many other data sources, for example, from subnational research studies, remain inaccessible. Finally, cardiometabolic disease epidemiology is rapidly evolving, but data are often historical. As ~~is done~~ for HIV, data collection for cardiometabolic diseases needs to be ongoing to assess temporal trends in disease prevalence and health system performance.

While we focus on maximizing use of available population data on cardiometabolic diseases, it is important to continue data-sharing efforts. Many STEPS and comparable ~~non-STEPS~~ household surveys remain unavailable, as are more than two dozen nationally representative health facility surveys conducted using the WHO Service Availability Readiness Assessment (SARA) methodology.[10] Additionally, many other data sources, for example, from subnational research studies, remain inaccessible. Finally, cardiometabolic disease epidemiology is rapidly evolving, but data are often historical. As ~~is done~~ for HIV, data collection for cardiometabolic diseases needs to be ongoing to assess temporal trends in disease prevalence and health system performance.

The staggering burden of cardiometabolic diseases brings ~~with it~~ an imperative to maximize the use of these data. Many countries and individuals~~LMICs already~~ have invested substantial resources in producing these data~~,~~ which are a global public good. However, while they are increasingly available, in practice they~~these data~~ are still too sparse and underutilized given the toll these diseases are taking on people worldwide. We call on funders and international health organizations to invest in efforts to collect, harmonize and make available these data with an urgency befitting the magnitude of the global burden of cardiometabolic diseases.

Declaration of interests

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