



RESPONSE TO COMMENT ON RIDDLE ET AL.

Diabetes Care Editors' Expert Forum 2018: Managing Big Data for Diabetes Research and Care. Diabetes Care 2019;42:1136–1146

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Hall et al. (1) write concerning our summary of the future potential and current limitations of analyses based on big data in populations of people with diabetes, published as the proceedings of an Expert Forum (2). They commented specifically on three aspects of this question.

They call attention to collection of data from reimbursement claims and newer sources such as physiologic measurements obtained by personal devices used or worn by individual patients. We briefly referred to these sources of information in our article, but we agree they will be increasingly useful in the future.

Second, they comment on the role of analytic approaches to improve the geographic mapping of services and outcomes as a way to assist policy decisions and allocation of resources to specific areas of greatest need. We agree that these efforts are important, and in our article we expressed concern about the incompleteness of data to evaluate regional and local trends. This limitation is certainly evident in the U.S., where population-based data are not routinely available at the level of counties or other local units. Collection and quality of such data can be influenced by

uneven distribution of insurance coverage and access to providers, and there may be variations in accuracy of estimates of numbers of individuals in various subpopulations.

Finally, they emphasize the value of having targeted data to support advocacy for underserved groups and individuals. We agree that this can be an important use of large, population-based data sets collected over time.

We strongly support these aspirations as selected examples of how more effective management of big data may assist both research and care of diabetes. However, we would also emphasize that, as in most ventures, the devil lives in the details. We believe most data management systems have considerable room to improve, and our focus was to identify ways by which this goal may be pursued. Ideally, data should be population based and thus generalizable, consistently and accurately collected over extended periods of time, and uniformly formatted using widely accepted definitions and units (2). At present, most big databases lack one or more of these attributes. As data management evolves, systematic validation of its quality will be essential.

Our Expert Forum article was meant to pose a challenge to improve our systems to help investigators, managers, and clinicians in all their activities, including efforts to optimize services for all people with diabetes equally.

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References

1. Hall LL, Puckrein GA, Davidson JA. Comment on Riddle et al. *Diabetes Care* Editors' Expert Forum 2018: managing big data for diabetes research and care. *Diabetes Care* 2019;42:1136–1146 (Letter). *Diabetes Care* 2019;42:e183. DOI: 10.2337/dci19-1262
2. Riddle MC, Blonde L, Gerstein HC, et al. *Diabetes Care* Editors' Expert Forum 2018: managing big data for diabetes research and care. *Diabetes Care* 2019;42:1136–1146

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