Reviewer's report

Title: An Overview of the Alberta Kidney Disease Network

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Reviewer: Wendy St. Peter

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This article is important in that it will inform nephrology researchers of a fairly new available data resource containing data that could be very useful to answer questions re: the epidemiology of kidney disease and effect of care and therapy. The authors have clearly stated some of the research that has been accomplished, their goals for future research and what research could be accomplished using this database. With minor exceptions, I thought that the authors did a nice job of explaining the strengths and limitations of their data.

Major Compulsory Revisions

The authors do not address if other researchers (outside of the AKDN) can access this database. If not, then this article will not be nearly as interesting to other researchers in the nephrology community. If other researchers can access the data, what is the process to do so? Is there any documentation or a user guide that researchers can use? Is the database free to academic users? Are there any restrictions on use of this database?

Minor Essential Revisions

Authors do a good job in text of explaining where pieces of data are coming from in text, however Figure 1 is not as clear as what is explained in the text. I would see the AKDN database as the central focus with arrows coming into that database from laboratory data, population registry, Alberta Blue Cross, etc… It would be useful to the reader to have each box labeled at top with the database name from which specific pieces of data are coming from, with the specific pieces of data listed below the database name.

Authors need to explain more clearly the serum creatinine assays which are used across Alberta, prior to the creatinine standardization program. Authors note that a linear relationship between new and old methods for estimating GFR was established, however the underlying lab value in the GFR estimating equations is Scr. Before creatinine standardization was accomplished, Scr creatinine measurements were based on the results from assays that were not calibrated. Unless all the laboratories across Alberta used the same creatinine assay, then a simple regression between old and new methods of GFR estimation doesn’t seem to capture the inherent variability that may exist with GFR estimation before standardization.

Is the index calculated eGFR available along with each individual eGFR
calculation within the index 6 month period. i.e. are the original values available to researchers who may not agree with the mean over 6 month methodology? For instance, the index eGFR calculation that is done would not allow assessment of a patient that had rapidly declining kidney function over a 6 month period.

In general, I found it difficult to determine if original data variables were contained in the AKDN database, i.e. all the ICD-9 codes for outpatient encounters for each patient vs only derived variables (e.g. comorbidities defined using algorithms).

It also wasn’t clear if there were data quality control checks conducted before the data from the multiple sources were placed in the AKDN database. For example, quality control of the laboratory data was not addressed. Again, unless the same central laboratory was utilized, or all laboratories use the same assays for each of the laboratory measures, then there will be inherent interlaboratory variability that should be addressed in the text of the article as a data limitation.

Unclear how individual pieces of data are input or entered into the system or how data is retrieved from the system. Is some information entered manually, or is everything downloaded electronically? Also not stated is how researchers access or move around within system. Is there mapping between data coming from different datasets? And if similar pieces of data are coming from multiple sources, what constitutes the primary source?

Page 1, 2nd para: following statement needs referencing; "As the initiative grows the AKDN research findings and activities are beginning to appear more frequently in peer-reviewed literature and health policy circles."

Figure 1: would define abbreviations within Figure (e.g. SES)

Font sizes need to be consistent throughout text

Discretionary Revisions

A title that more accurately reflects main emphasis of the article might be “Overview of the Alberta Kidney Disease Network Database”

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests