Reviewer's report

Title: Performing Clinical Research in Pediatric Nephrology Using Canadian Registry and Administrative Health Datasets

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Reviewer: Philip Clayton

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In this paper the authors describe the creation of the "Canadian Pediatric End-Stage Renal Disease Database", created by linking the Canadian Organ Replacement Register (CORR) and Canadian Institute for Health Information Discharge Abstract Database (CIHI DAD) databases. Although linking 2 databases in this manner is not novel, the resultant database provides vast amounts of information for the study of pediatric RRT outcomes and it is hence likely that this new database will be the source of much research.

No results are presented; rather, this is a methodology paper simply describing the creation of the database. Presumably the idea is that future studies arising from this database can refer to the current paper for details of the database. Therefore this publication is important; however more details are required.

Major compulsory revisions:

1. Insufficient information is given on the linkage process. The authors describe the use of deterministic linkage using personal health information numbers, but do not define deterministic linkage and do not give any information about these numbers, eg is there a check digit? Furthermore, no details are given regarding the success of linkage - what % of patients could be matched? What kind of double checks were performed to ensure that the linkage was accurate (ie in case the personal health information number was entered incorrectly in the CORR database)?

2. No numbers are given. To understand the relevance of this new database we need to know numbers such as the total population, the # of patients included in the registry, the # of patients who were able to be matched and so on. It would also be helpful to know, for example, the total number of hospitalisations included in the database, to get a feel for the scope of the new database.

3. The socioeconomic and geographic data is based on postal code, but the authors don't describe how the postal code is recorded in CORR. Is it only recorded on entry, or is it updated when patients move? If the latter, does the new database include socioeconomic and geographic data at each time point? Similarly, does the postal code conversion file (PCCF) document changes in socioeconomic variables over time, and have these been taken into account?

Minor essential revisions:
4. The new database appears to have been named the "Canadian Pediatric End-Stage Renal Disease Database", yet this name doesn't appear in the title or abstract. If this is indeed the name of the database, it should definitely be in the abstract and ideally would also be in the title.

5. The authors should explain why they only included pediatric patients in this database; from what is presented, there doesn't seem to be any reason to exclude adults other than logistics.

6. The figure does not include the PCCF which is effectively a 3rd data source.

7. Introduction, second paragraph - ANZDATA is the "Australia and New Zealand Dialysis and Transplant Registry" (nb 2 "and"s).

8. In the final sentence of the 6th paragraph of the discussion, "... organ failure registry data - limitation..." should be changed to "... organ failure registry data - a limitation..."

Discretionary revisions:

9. Presumably if patients are hospitalised in other countries (eg the United States) these hospitalisations will not be captured in the new database. This should be mentioned as a limitation of the new database, and ideally the manuscript would include a measure of the likelihood of this occurring.

10. Such a linkage study provides an opportunity to audit the data in CORR. Did the authors take this opportunity and if so what did they find?

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 am employed by the Australia and New Zealand Dialysis and Transplant Registry, which undertakes similar work and may seek to collaborate with the authors in the future