Supplemental Digital Content (SDC)

SDC, Table 1. Checklist of recommendations for reporting of observational studies using the REporting of studies Conducted using Observational Routinely-collected health Data (RECORD) Statement

	Item No	STROBE items	RECORD items	Reported
Title and abstract	1	(a) Indicate the study's design with a commonly used term in the title or the abstract. (b) Provide in the abstract an informative and balanced summary of what was done and what was found.	(1.1) The type of data used should be specified in the title or abstract. When possible, the name of the databases used should be included. (1.2) If applicable, the geographic region and time frame within which the study took place should be reported in the title or abstract. (1.3) If linkage between databases was conducted for the study, this should be clearly stated in the title or abstract.	Abstract
Introduction				
Background/ rationale	2	Explain the scientific background and rationale for the investigation being reported.		Introduction
Objectives	3	State specific objectives, including any prespecified hypotheses.		Introduction
Methods				
Study design	4	Present key elements of study design early in the paper.		Materials and Methods: Design and Setting
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection.		Materials and Methods: Cohort & Statistical Analysis
Participants	6	(a) Give the eligibility criteria, and the sources and methods of selection of participants. Describe methods of follow-up. (b) For matched studies, give matching criteria and number of exposed and unexposed.	(6.1) The methods of study population selection (such as codes or algorithms used to identify subjects) should be listed in detail. If this is not possible, an explanation should be provided. (6.2) Any validation studies of the codes or algorithms used to select the population should be referenced. If validation was conducted for this study and not published elsewhere, detailed methods and results should be provided. (6.3) If the study involved linkage of databases, consider use of a flow diagram or other graphical display to demonstrate the data linkage process, including the number of individuals with linked data at each stage.	Materials and Methods: Data Sources, Cohort, Figure 1& Table S2
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable.	(7.1) A complete list of codes and algorithms used to classify exposures, outcomes, confounders, and effect modifiers should be provided. If these cannot be reported,	Materials and Methods: Early Hospital Readmission, Statistical Analysis & Table

			an explanation should be provided.	S2
Data sources/ measurement	8	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group.		Materials and Methods: Data Sources, Statistical Analysis & Table S2
Bias	9	Describe any efforts to address potential sources of bias.		Materials and Methods: Cohort & Statistical Analysis
Study size	10	Explain how the study size was arrived at.		Figure 1
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why.		Materials and Methods: Statistical Analysis
Statistical methods	12	(a) Describe all statistical methods, including those used to control for confounding. (b) Describe any methods used to examine subgroups and interactions. (c) Explain how missing data were addressed. (d) If applicable, explain how loss to follow-up was addressed. (e) Describe any sensitivity analyses.		Materials and Methods: Statistical Analysis
Data access and cleaning methods		N/A	(12.1) Authors should describe the extent to which the investigators had access to the database population used to create the study population. (12.2) Authors should provide information on the data cleaning methods used in the study.	Figure 1
Linkage		N/A	(12.3) State whether the study included person-level, institutional-level, or other data linkage across two or more databases. The methods of linkage and methods of linkage quality evaluation should be provided.	N/A
Results				
Participants	13	(a) Report numbers of individuals at each stage of study--e.g. numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analyzed. (b) Give reasons for non-participation at each stage. (c) Consider use of a flow diagram.	(13.1) Describe in detail the selection of the persons included in the study (i.e., study population selection), including filtering based on data quality, data availability, and linkage. The selection of included persons can be described in the text and/or by means of the study flow diagram.	Figure 1
Descriptive data	14	(a) Give characteristics of study participants (e.g. demographic, clinical, social) and information on exposures and potential confounders. (b) Indicate number of participants with missing data for each variable of interest. (c) Summarize follow-up time (e.g. average and total amount).		Results: Statistical Analysis, Baseline Characteristics & Table 1

Outcome data	15	Report numbers of outcome events or summary measures over time.		Results: Early Hospital Readmission, Table 3 & Figure 2
Main results	16	(a) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (e.g. 95% confidence interval). Make clear which confounders were adjusted for and why they were included. (b) Report category boundaries when continuous variables were categorized. (c) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period.		Results: Secular Trends in EHR & table 2
Other analyses	17	Report other analyses done (e.g. analyses of subgroups and interactions, and sensitivity analyses).		Results: Subgroup Analyses, Most Common Diagnoses for Early Hospital Readmission, Table 3& Figures 3a-d
Key results	18	Summarize key results with reference to study objectives.		Discussion
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias.	(19.1) Discuss the implications of using data that were not created or collected to answer the specific research question(s). Include discussion of misclassification bias, unmeasured confounding, missing data, and changing eligibility over time, as they pertain to the study being reported.	Discussion
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence.		Discussion
Generalizability	21	Discuss the generalizability (external validity) of the study results.		Discussion
Other information				
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based.		Acknowledgements
Accessibility of protocol, raw data, and programming code		N/A	(22.1) Authors should provide information on how to access any supplemental information such as the study protocol, raw data, or programming code.	N/A

Benchimol EI, Smeeth L, Guttmann A, Harron K, Moher D, Petersen I, et al. The REporting of studies Conducted using Observational Routinely-collected health Data (RECORD) statement. PLoS medicine. 2015;12(10):e1001885.

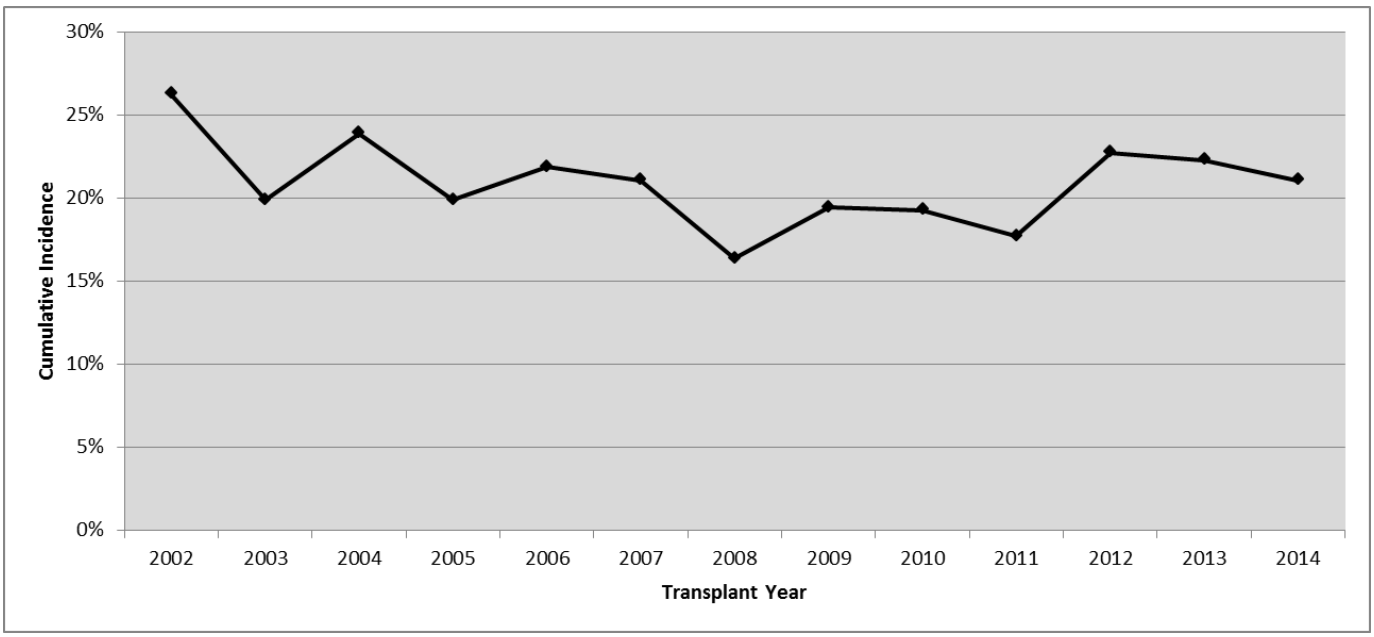
SDC, Table 2. Databases and coding definitions for inclusion and exclusion criteria, outcomes and baseline characteristics.

Characteristic/Condition	Database	Codes
Inclusion Criteria		
Kidney-only Transplant	CORR	Treatment_Code: 171 Treatment_Date Transplanted_Organ_Type_Code: 10, 11, 12, 18, 19
Exclusion Criteria		
Graft failure prior to discharge for kidney transplant	CORR	Treatment_Code: 171 Treatment_Date Transplanted_Organ_Type_Code: 10, 11, 12, 18, 19
Simultaneous multi-organ transplant	CORR	Transplanted_Organ_Type_Code: 20, 21, 22, 23, 29, 30, 40, 41, 42, 43, 48, 49, 50, 51, 52, 53, 54, 55, 60, 90, 99 Treatment_Date
Missing Donor Type	CORR	Donor_Type_Code: Unknown: 98
Baseline Characteristics		
Age, Sex, Income, Rural	RPDB	
Race	CORR	Racial_Origin_Code: White: 01 Asian: 02 Black: 03 Other: 05, 08, 09, 10, 11, 99 Unknown: 98
Cause of End-Stage Renal Disease	CORR	Primary_Diagnosis_Kidney: Glomerulonephritis: 05, 06, 07, 08, 09, 10, 12, 13, 14, 15, 16, 19, 73, 74, 84, 85, 86, 88 Cystic Kidney Disease: 40, 41, 42, 43, 49 Diabetes: 80, 81 Renal Vascular Disease: 70, 71, 72, 79 Other: 20, 21, 22, 23, 24, 25, 29, 30, 31, 32, 33, 39, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 66, 78, 82, 83, 87, 89, 90, 91, 92, 93, 94, 95, 96, 97, 99 Unknown: 00, 98
Dialysis Modality	CORR	Treatment_Code: Hemodialysis: 111, 112, 113, 121, 122, 123, 131, 132, 133, 211, 221, 231, 311, 312, 313, 321, 322, 323, 331, 332, 333, 413, 423, 433, 060 Peritoneal dialysis: 141, 151, 152, 241, 242, 251, 252, 443, 453 Pre-emptive: No evidence of the above dialysis codes prior to the date of kidney transplant.
Dialysis Vintage	CORR	Treatment_Code: Transplant: 171 Dialysis: 111, 112, 113, 121, 122, 123, 131, 132, 133, 211, 221, 231, 311, 312, 313, 321, 322, 323, 331, 332, 333, 413, 423, 433, 141, 151, 152, 241, 242, 251, 252, 443, 453, 060 Treatment_Date
Delayed Graft Function	CIHI-DAD	**CCP:** 5195, 6698 **CCI:** 1PZ21
	OHIP	**OHIP:** R849, G323, G325, G326, G860, G862, G865, G863, G866, G330, G331, G332, G333, G861, G082, G083, G085, G090, G091, G092, G093, G094, G095, G096, G294, G295,

		G864, H540, H740
Previous Kidney Transplant	CORR	Treatment_Code: 171 Graft_Num ≥2
Coronary Artery Disease (w/out Angina)	CIHI-DAD NACRS	**ICD9:** 410, 411, 412 **ICD10:** I21, I22, Z955, T822 **CCI:** 1IJ50, 1IJ76 **CCP:** 4801, 4802, 4803, 4804, 4805, 481, 482, 483
	OHIP	**OHIP:** R741, R742, R743, G298, E646, E651, E652, E654, E655, Z434, Z448, 410, 412
Myocardial Infarction	CIHI-DAD NACRS	**ICD9:** 410 **ICD10:** I21, I22
Heart Failure	CIHI-DAD NACRS	**ICD9:** 425, 5184, 514, 428 **ICD10:** I500, I501, I509, I255, J81 **CCP:** 4961, 4962, 4963, 4964 **CCI:** 1HP53, 1HP55, 1HZ53GRFR, 1HZ53LAFR, 1HZ53SYFR
	OHIP	**OHIP:** R701, R702, Z429, 428
Hypertension	CIHI-DAD	**ICD9:** 401, 402, 403, 404, 405 **ICD10:** I10, I11, I12, I13, I15
	OHIP	**OHIP:** 401, 402, 403
Diabetes	CIHI-DAD	**ICD9:** 250 **ICD10:** E10, E11, E13, E14
	OHIP	**OHIP:** 250, Q040, K029, K030
Stroke/Transient Ischemic Attack	CIHI-DAD NACRS	**ICD9:** 430, 431, 432, 434, 435, 436, 3623 **ICD10:** I62, I630, I631, I632, I633, I634, I635, I638, I639, I64, H341, I600, I601, I602, I603, I604, I605, I606, I607, I609, I61, G450, G451, G452, G453, G458, G459, H340
Chronic Liver Disease	CIHI-DAD NACRS	**ICD 9:** 4561, 4562, 070, 5722, 5723, 5724, 5728, 573, 7824, V026, 2750, 2751, 7891, 7895, 571 **ICD 10:** B16, B17, B18, B19, I85, R17, R18, R160, R162, B942, Z225, E831, E830, K70, K713, K714, K715, K717, K721, K729, K73, K74, K753, K754, K758, K759, K76, K77
	OHIP	**OHIP:** 571, 573, 070, Z551, Z554
Peripheral Vascular Disease	CIHI-DAD NACRS	**ICD 9:** 4402, 4408, 4409, 5571, 4439, 444 **ICD 10:** I700, I702, I708, I709, I731, I738, I739, K551 **CCP:** 5125, 5129, 5014, 5016, 5018, 5028, 5038, 5126, 5159 **CCI:** 1KA76, 1KA50, 1KE76, 1KG50, 1KG57, 1KG76MI, 1KG87, 1IA87LA, 1IB87LA, 1IC87LA, 1ID87, 1KA87LA, 1KE57
	OHIP	**OHIP:** R787, R780, R797, R804, R809, R875, R815, R936, R783, R784, R785, E626, R814, R786, R937, R860, R861, R855, R856, R933, R934, R791, E672, R794, R813, R867, E649
Chronic Obstructive Pulmonary Disease	CIHI-DAD	**ICD9:** 491, 492, 496 **ICD10:** J41, J43, J44
Donor Type	CORR	Donor_Type_Code: Living: 02, 03, 04, 05, 06, 07, 10, 12, 15 Deceased: 01 Unknown: 98

Donor Age	CORR	Age_Units
Length of initial hospitalization	CIHI-DAD	admdate ddate
ICU Visit	OHIP	Servdate OHIP: G557, G558, G559, G405, G406, G407
Outcomes		
Early Hospital Readmission	CIHI-DAD	Admcat ≠ L

Abbreviations: CCI, Canadian Classification of Interventions; CCP, Canadian Classification of Diagnostic, Therapeutic and Surgical Procedures; CIHI-DAD, Canadian Institute for Health Information Discharge Abstract Database; CORR, Canadian Organ Replacement Registry; ICD, International Classification of Disease; NACRS, National Ambulatory Care Reporting System; OHIP, Ontario Health Insurance Plan; RPDB, Registered Persons Database



SDC, Figure 1. Cumulative incidence of early hospital readmission by year of transplant (P for trend=0.946).