

# STROBE Statement—Checklist of items that should be included in reports of observational studies

## Manuscript: *Secondary Healthcare Utilisation in Children and Young People Following Kidney Transplant: A 10-year Retrospective Analysis*

Section/ Topic	Item No.	Recommendation	Page No.*	Relevant text from manuscript
Title and abstract	1a	Indicate the study's design with a commonly used term in the title or the abstract	1	"Methods: We conducted a retrospective cohort study using UK Renal Registry data linked to hospital episode statistics..."
	1b	Provide in the abstract an informative and balanced summary of what was done and what was found	1	Structured abstract including Background, Methods, Results and Conclusions.
Introduction	2	Explain the scientific background and rationale for the investigation being reported	2-3	"Hospital admissions during this period may reflect the complexity of post-operative care..." and discussion of previous literature regarding infection, age, socioeconomic status and ethnicity.
	3	State specific objectives, including any prespecified hypotheses	3	"This study explored patterns of secondary healthcare utilisation..." and "Our hypothesis was that, in the National Health Service (NHS)... we would observe no differences in rates of elective or emergency hospitalisation by age, sex, ethnicity, or area-level socioeconomic status."

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Methods	4	Present key elements of study design early in the paper	3	"This retrospective observational cohort study utilised data from the UK Renal Registry (UKRR)."
	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	3	"The cohort included all children and young people aged $\leq 25$ years who received their first kidney transplant between 1 January 2012 and 31 December 2022..."
	6a	Give the eligibility criteria, and the sources and methods of selection of participants. Describe methods of follow-up	3	"The cohort included all children and young people aged $\leq 25$ years who received their first kidney transplant..." and "Hospital utilisation was defined as inpatient admissions exceeding 24 hours in duration... occurring within the first year following transplantation."
	6b	For matched studies, give matching criteria and number of exposed and unexposed	N/A	Not a matched study.
	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	3-4	Definitions provided for demographic variables, donor type, transplant status, IMD, hospital utilisation, elective/emergency admissions and LOS.
	8	For each variable of interest, give sources of data and details of methods of assessment (measurement)	3-4	"Demographic variables... were extracted from UKRR data." "The IMD is an area-level composite measure..."

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	9	Describe any efforts to address potential sources of bias	4, 14-15	Multivariable adjustment described in Statistical Analysis; limitations relating to residual confounding and coding acknowledged in Discussion.
	10	Explain how the study size was arrived at	3	"The cohort included all children and young people aged $\leq 25$ years who received their first kidney transplant between 1 January 2012 and 31 December 2022..."
	11	Explain how quantitative variables were handled in the analyses	4	"Continuous variables were reported as medians and interquartile ranges (IQR)..." and "age at transplantation" analysed continuously in regression.
	12a	Describe all statistical methods, including those used to control for confounding	4	"Comparisons across groups were performed using the Kruskal-Wallis test..." and "Multivariable logistic regression was used..."
	12b	Describe any methods used to examine subgroups and interactions	4	Analyses stratified by demographic and clinical characteristics (Tables 2-4). No interaction analyses performed.
	12c	Explain how missing data were addressed	5-11	Missing data categories reported in Table 1 and included in regression models where applicable.
	12d	Explain how loss to follow-up was addressed	N/A	Follow-up based on linked national datasets over a fixed one-year period; loss to follow-up not specifically applicable/reported.
	12e	Describe any sensitivity analyses	N/A	No sensitivity analyses reported.
Results	13a	Report numbers of individuals at each stage of study	5	"In total, 2,004 children and young people who received a kidney transplant..."

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	13b	Give reasons for non-participation at each stage	N/A	Registry-based cohort including all eligible first transplant recipients.
	13c	Consider use of a flow diagram	N/A	No flow diagram included.
	14a	Give characteristics of study participants and information on exposures and potential confounders	5–6; Table 1	Table 1 presents age, sex, ethnicity, deprivation, primary diagnosis, donor type and transplant modality.
	14b	Indicate number of participants with missing data for each variable of interest	Table 1	Missing categories reported for sex, ethnicity, deprivation and primary kidney diagnosis.
	14c	Summarise follow-up time	3	Outcomes assessed “within the first year following transplantation.”
	15	Report numbers of outcome events or summary measures over time	5–11	“There were 1,282 people who had at least one emergency admission...” plus Tables 2–6 and Supplementary Tables.
	16a	Give unadjusted and adjusted estimates and their precision	7–8; Table 6	Univariable and multivariable logistic regression analyses with ORs and 95% CIs reported.
	16b	Report category boundaries when continuous variables were categorized	Tables 1–4	Age categories defined as under 5 years, 5–10 years, 11–15 years, and 16–25 years; IMD quintiles reported.
	16c	Consider translating estimates of relative risk into absolute risk	N/A	Odds ratios reported; no translation into absolute risk performed.
	17	Report other analyses done	6–8; Supplementary Tables 1–2	Analyses of causes of admission and infection-related admissions presented.
Discussion	18	Summarise key results with reference to study objectives	12	“Hospital admission during this period was common...” with summary of key associations.

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	19	Discuss limitations of the study	14-15	"As a retrospective registry-based analysis, this study was limited by the scope of routinely collected UK Renal Registry variables..."
	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, and other evidence	12-15	Discussion compares findings with international literature and considers healthcare system factors and study limitations.
	21	Discuss the generalisability (external validity) of the study results	14-15	"The study includes children and young people from across England and Wales..." and discussion of NHS universal healthcare system.
Other information	22	Give the source of funding and the role of the funders	2	"This study used data provided by the UK Renal Registry. No specific funding was received for this work."