

ISLE-ReSt checklist

#	Section	Recommendation	Status	Where in manuscript
1	Title	Title states study design, primary exposure, and primary outcome	Done	Title page
2	Abstract	Design, setting, exposure sources, outcomes, key results with precision, conclusions	Done	Abstract
3	Introduction	Background and conceptual framework linking environment and health	Done	Introduction
4	Introduction	Specific objectives and any prespecified hypotheses	Done	Introduction, final paragraph
5	Methods	Study design and setting, locations, calendar period, spatial scale of exposure measurement	Done	Methods: Study area; PfPR decade mean
6	Methods	Participants, eligibility, selection, recruitment, retention	N/A	—
7	Methods	Sample size rationale or calculation, attrition handling	N/A	—
8	Methods	Data linkage and geocoding method, reference data, CRS, software, percent geocoded	Done	Methods: Study area; Analysis and Software
9	Methods	Variables defined and measured for outcomes, exposures, predictors, confounders, effect modifiers	Done	Methods: Variable definitions; Co-risk surface

10	Methods	Bias considered and addressed, including selection, information, spatial biases	Done	Discussion: Limitations
11	Methods	Quantitative variables, handling, transformations, groupings	Done	Methods: Variable definitions; PfPR mean; Endemicity classes
12	Methods	Spatial data sources, collection time, spatial and temporal resolution, preprocessing	Done	Methods: Data sources and preprocessing
13	Methods	Remote sensing sensor or product details	N/A	—
14	Methods	GPS and accelerometry device info	N/A	—
15	Methods	Smartphone apps or other sensors	N/A	—
16	Methods	Spatial exposure construction, buffers, kernels, network vs Euclidean distance, software	Done	Methods: Co-risk; Greedy selection; Service radius
17	Methods	Matching spatial and health data, time windows, exposure lags, activity space, aggregation	Done	Methods: Collocating proposed sites; District-level equity
18	Methods	Statistical methods, confounding control, clustering, spatial autocorrelation, residuals, sensitivity, missing data	Done	Methods: EBK diagnostics; Sensitivity analyses
19	Results	Participant flow and numbers at each stage, geocoding success	N/A	—

20	Results	Descriptive data, exposure distributions, follow up time	Done	Results: HbS surface; PfPR decade mean; Co-risk surface
21	Results	Main results with estimates and precision, adjusted confounders, spatial diagnostics	Done	Results: Coverage curve; Equity; Sensitivity
22	Discussion	Key results in relation to objectives and existing evidence	Done	Discussion: Principal findings; Interpretation in context
23	Discussion	Limitations including temporal mismatch, misclassification, UGCoP, nonstationarity, mobility, migration	Done	Discussion: Strengths and limitations
24	Discussion	Generalizability across places and times	Done	Discussion: Generalizability
25	Other	Funding sources and roles	Done	Declarations: Funding
26	Other	Data and code sharing, conflicts of interest, access terms, where processing code is found	Done	Declarations: Availability; Competing interests