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Statistical Methods for Cohort Studies of CKD: Prediction Modeling

Jason Roy[*,†], Haochang Shou[*,†], Dawei Xie[*,†], Jesse Y. Hsu[*,†], Wei Yang[*,†], Amanda H. Anderson[*,†], J. Richard Landis[*,†], Christopher Jepson[*,†], Jiang He[‡], Kathleen D. Liu[§], Chi-yuan Hsu[§,‖], Harold I. Feldman[*,†] on behalf of the Chronic Renal Insufficiency Cohort (CRIC) Study Investigators

Author Affiliations

Correspondence:
Dr. Jason Roy, Department of Biostatistics and Epidemiology, Perelman School of Medicine, University of Pennsylvania, 632 Blockley Hall, 423 Guardian Drive, Philadelphia, PA 19104. Email: jaroy@upenn.edu

Abstract

Prediction models are often developed in and applied to CKD populations. These models can be used to inform patients and clinicians about the potential risks of disease development or progression. With increasing availability of large datasets from CKD cohorts, there is opportunity to develop better prediction models that will lead to more informed treatment decisions. It is important that prediction modeling be done using appropriate statistical methods to achieve the highest accuracy, while avoiding overfitting and poor calibration. In this paper, we review prediction modeling methods in general from model building to assessing model performance as well as the application to new patient populations. Throughout, the methods are illustrated using data from the Chronic Renal Insufficiency Cohort Study.

Calibration | C-statistic | ROC curve | Sensitivity | Specificity | Cohort Studies | Disease Progression | Humans | Risk | Renal Insufficiency, Chronic

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