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The Chronic Kidney Disease Prognosis Consortium (CKD-PC): A Global, Collaborative, Individual Participant Data Meta-Analysis (for CKD-PC Collaborators)

Josef Coresh[1], Kunihiro Matsushita[1], Shoshana Ballew[1], Brad C. Astor[2], Mark Woodward[1], Brenda Hemmelgarn[3], Adeera Levin[4], Chi Pang Wen[5], Paul E. de Jong[6], Ron T. Gansevoort[6], Andrew S. Levey[7]

[1]Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, [2]University of Wisconsin, Madison, WI, USA, [3]University of Calgary, Calgary, AB, Canada, [4]University of British Columbia, Vancouver, BC, [5]National Health Research Institutes, Taiwan, [6]University Medical Center Groningen, Groningen, Netherlands, [7]Tufts Medical Center, Boston, MA, USA

BACKGROUND: The Chronic Kidney Disease Prognosis Consortium (CKD-PC) was established in 2009 and currently consists of 46 cohorts from 17 countries of North America, Europe, Asia, and Oceania. The consortium conducts complex individual participant data meta-analyses with the goal of providing comprehensive evidence regarding CKD prognosis.

METHODS: The consortium governance includes a steering committee, operations committee, and data coordinating center (DCC). Cohorts can join the consortium at any time following operating principles posted at www.jhsph.edu/ckdpc. Each cohort opts in or out for each proposed manuscript. Statistical code for each manuscript is written by the DCC, distributed to participating cohorts, and shared publicly on the website for each manuscript. Piece-wise linear spline models allow a detailed examination of the dose-response association between eGFR and albuminuria with outcomes (mortality, cardiovascular disease, ESRD, AKI, and progression of CKD) and can be pooled across cohorts using the variance-covariance matrix of the regression coefficients.

RESULTS: The consortium includes cohorts representing general (24 cohorts), high risk (10 cohorts), and CKD (12 cohorts) populations including over 1.5 million participants. CKD-PC published four meta-analysis manuscripts in 2010 (phase 1), with seven metaanalyses to be completed in 2011 (phase 2) and meta-analyses of individual risk and definitions of CKD-progression in 2012 (phase 3). Forty-three cohorts from phase 1 opted in for phase 2 analyses and three new cohorts joined. Authorship includes ?15 authors and ?100-200 collaborators per paper.

CONCLUSIONS: CKD-PC has established a productive model allowing flexible collaborative meta-analyses. Distribution of statistical code allows inclusion of cohorts which cannot share the raw data due to legal/administrative constraints.