Evidenced based medicine relies on algorithms for optimizing diagnostic procedures and medical decisions. We expect these algorithms to discriminate fairly, such that they objectively prioritize the people who most benefit from treatment. But we also want these algorithms to avoid discriminating unfairly, for example, stereotyping racial or ethnic minorities in ways that might disadvantage individuals from those groups. The job of clinical epidemiology is to provide the evidence to evidenced based medicine, but what constitutes evidence that an algorithmic practice as fair or unfair? How do we account for differences between groups in measured or unmeasured characteristics? I review criteria for algorithmic fairness, discuss challenges and limitations in study designs, and illustrate with an example from kidney disease epidemiology.

OBJECTIVES

1. Consider formal definitions for discrimination in medical treatment that account for covariates;
2. Discuss various study designs for detecting discrimination in relation to conscious and unconscious bias, and considering the sources of this bias;
3. Evaluate an example one common medical algorithm in kidney disease epidemiology to consider whether it is rational or ethical.

BIO

Jay S. Kaufman holds a PhD in epidemiologic science from University of Michigan (1995). He was previously on the faculty of the UNC School of Public Health in Chapel Hill (1999-2008) and is currently Professor in the Department of Epidemiology, Biostatistics and Occupational Health at McGill University (2009-present). His work focuses on social epidemiology, analytic methodology, causal inference for various health outcomes. He is an editor at “Epidemiology” and with J. Michael Oakes he is the co-editor of the textbook “Methods in Social Epidemiology” (2nd Edition, 2017).