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**Zhilan Feng, Andrew N Hill, Aaron T Curns and John W Glasser\*** (jglasser@cdc.gov), National Center for Immunization and, Respiratory Diseases, Centers for Disease Control and Prevention, Atlanta, GA 30333. *Realistic mixing functions for meta-population modeling to support public health policymaking.*

When model populations are stratified, contacts among their respective sub-populations must be described. Using a simple meta-population model, we showed that mixing among sub-populations, as well as heterogeneity in characteristics affecting their reproduction numbers, must be considered when evaluating interventions to prevent or control infectious disease outbreaks. We employed the convex combination of preferential within- and proportional among-group contacts first described by Nold and subsequently generalized by Jacquez and colleagues. As the utility of meta-population modeling in support of public policymaking depends on more realistic mixing functions, we included preferential contacts between parents and children and among co-workers as well as contemporaries. Here we add preferential contacts between grandparents and grandchildren, but omit workplace contacts. We also describe a general multi-level mixing scheme and provide several two-level examples. We describe age- and gender-specific patterns in face-to-face conversations, proxies for contacts by which respiratory pathogens might be transmitted. And we discuss how meta-population models with multi-generational mixing could be employed to reevaluate prolonged school-closures, a proposed pandemic mitigation measure. (Received September 14, 2016)