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*An analysis of a Multigroup mpox epidemic model incorporating public health measures*

Epidemiological models help researchers and public health officials understand the dynamics of infectious diseases, predict their spread, and plan effective intervention strategies. For this matter, an analysis of a mpox epidemic model with heterogeneous mixing is conducted by incorporating several functions and parameters that model public health measures. Our analysis focuses on investigating how various public health measures, such as vaccination campaigns, and quarantine protocols, influence the spread of mpox within and between these population groups. Consequently, we investigate the proposed dynamical systems through both analytical and numerical methods in order to shed light on the effectiveness of these measures in mitigating the mpox epidemic across diverse demographic segments.