

## Peer-reviewed Publications

167. Queen Tollett, Salman Safdar and Abba B. Gumel. Dynamics of a two-group model for assessing the impacts of pre-exposure prophylaxis, testing and risk behaviour change on the spread and control of HIV/AIDS in an MSM population. Submitted to Infectious Disease Modelling. 9(2024) 103e127.
166. Jemal Mohammed-Awel and Abba B. Gumel. Can insecticide resistance increase malaria transmission? A genetics-epidemiology mathematical modeling approach. Journal of Mathematical Biology. **87**(2), 28(2023). <https://doi.org/10.1007/s00285-023-01949-x>
165. Salman Safdar, Calistus N. Ngonghala and Abba B. Gumel. Mathematical assessment of the role of waning and boosting immunity against the BA.1 Omicron variant in the United States. Mathematical Biosciences and Engineering. 20(1)(2023): 179-212.
164. Calistus N. Ngonghala, Hemaho B. Taboe, Salman Safdar and Abba B. Gumel. Unraveling the dynamics of Omicron and Delta variants of the 2019 coronavirus in the presence of vaccination, mask usage and antiviral treatment. Applied Mathematical Modeling. 114 (2023): 447-465.
163. SJ Brozak, J Mohammed-Awel and AB Gumel. Mathematics of a single-locus model for assessing the impacts of pyrethroid resistance and temperature on population abundance of malaria mosquitoes. Infectious Disease Modeling, 7(3)(2022): 277-316.
162. Elamin H. Elbasha and Abba B. Gumel. Vaccination and herd immunity thresholds in heterogeneous populations. Journal of Mathematical Biology. 83, 73 (2021). <https://doi.org/10.1007/s00285-021-01686-z>
161. Samantha J. Brozak, Binod Pant, Salman Safdar and Abba B. Gumel. Dynamics of COVID-19 pandemic in India and Pakistan: A metapopulation modelling approach. Infectious Disease Modeling. 6(2021): 1173e1201
160. Marina Mancuso, Steffen Eikenberry and Abba B. Gumel. Will Vaccine-derived Protective Immunity Curtail COVID-19 Variants in the US? Infectious Disease Modelling. 6(2021): 1110-1134.
159. Calistus N. Ngonghala, James R. Knitter, Lucas Marinacci, Matthew H. Bonds and Abba B. Gumel. Assessing the impact of widespread respirator use in curtailing COVID-19 transmission in the United States. Royal Society Open Science. 8(2021): 210699. <https://doi.org/10.1098/rsos.210699>
158. Abba B. Gumel, Enahoro A. Iboi, Calistus N. Ngonghala and Elamin H. Elbasha. A primer on using mathematics to understand COVID-19 dynamics: Modeling, analysis and simulations. Infectious Disease Modeling. 6(2021): 1-21.
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156. Abba B. Gumel, Enahoro Iboi, Calistus Ngonghala and Gideon Ngwa. Towards achieving a vaccine-derived herd immunity threshold for COVID-19 in the U.S. Frontiers in Public Health. 9:709369. doi: 10.3389/fpubh.2021.709369.

155. Enahoro A. Iboi, Oluwaseun Sharomi, Calistus N. Ngonghala and Abba B. Gumel. Mathematical modeling and analysis of COVID-19 pandemic in Nigeria. *Mathematical Biosciences and Engineering*. 17(6)(2020): 7192-7220.
154. Calistus N. Ngonghala, Enahoro Iboi and Abba B. Gumel. Could masks curtail the post-lockdown resurgence of COVID-19 in the US? *Mathematical Biosciences*. 329(2020), 108452. **This paper is listed among the most-downloaded for the journal.**
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150. Jemal Mohammed-Awel, Iboi Enahoro and Abba Gumel. Insecticide resistance and malaria control: A genetics-epidemiology modeling approach. *Mathematical Biosciences*. 325(2020): 108368.
149. Iboi Enahoro, Abba Gumel and Jesse E. Taylor. Mathematical modeling of the impact of periodic release of sterile male mosquitoes and seasonality on the population abundance of malaria mosquitoes. *Journal of Biological Systems*. 28(2) (2020): 277-310.
148. Calistus Ngonghala, Enahoro Iboi, Steffen Eikenberry, Matthew Scotch, Chandini Raina MacIntyre, Matthew H. Bonds and Abba B. Gumel. Mathematical assessment of the impact of non-pharmaceutical interventions on curtailing the 2019 novel Coronavirus. *Mathematical Biosciences*. 325(2020): 108364. **This paper is listed among the most-downloaded for the journal.**
147. Steffen E. Eikenberry, Marina Mancuso, Enahoro Iboi, Tin Phan, Keenan Eikenberry, Yang Kuang, Eric Kostelich and Abba B. Gumel. To mask or not to mask: Modeling the potential for face mask use by the general public to curtail the COVID-19 pandemic. *Infectious Disease Modeling*. 5(2020) 293-308. **This paper won the best paper award for the journal.**
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