

Incidence of Malaria, with or without Seasonal Malaria Chemoprevention (SMC) in Moïssala, Chad 2014-2021

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Context

SMC has been implemented in Moïssala District southern Chad since 2013 by MSF in collaboration with the national and local health authorities to prevent malaria in young children. The south of Chad however is considered ineligible for SMC according to National guidelines, for this reason the National Malaria Control Programme (NMCP) did not authorise SMC in 2019. In 2020, following MSF negotiations, the NMCP temporarily authorized reimplementaion of SMC in Moïssala District, conditional on the obtainment of further evidence of its efficacy. For rollout, different distribution strategies were used (number of days, door-to-door, fixed sites) and in 2021, delivery rounds increased from 4 to 5.

The objective of this analysis is to describe evolution of malaria cases over time and compare against predictions of cases for the years with or without SMC (2019-2021).

Methods

We looked at trends in malaria incidence over the period 2014-2021 using data from MSF programmes and the NMCP. Malaria cases were defined as children under 5 years who received an antimalarial treatment at health centres. We modelled the trends using generalized additive models over 5-year time spans and predicted the incidence for the subsequent year. The effect of SMC was measured as the percentage difference between observed and predicted values during the years with and without SMC.

Results

During first years of SMC distribution, malaria has a clear and stable seasonal pattern, however incidence, still rose at the beginning and end of each malaria season irrespective of distribution strategies.

In 2019 following non SMC distribution, there was an increase in incidence by 109% compared to the predicted incidence modelled from years with SMC distribution (2014-2018).

Following SMC re-introduction (2020-2021), the incidence was clearly lower than in 2019, however not as low as during 2014-2018.

Hospitalizations to the malaria unit followed a similar incidence pattern.

Conclusion

SMC has allowed reduction of malaria cases and hospitalizations, but questions remain what the best strategy is for maximising the effect of SMC during the malaria transmission period.

Incidence of malaria with or without SMC in Chad has showed important difference but SMC distribution strategies could be adjusted to reduce the impact of yearly peak.

