based combination therapies (ACTs), may select for the development of anti-malarial drug resistance, potentially impeding this progress. Community surveillance and monitoring for drug-resistant parasites in human blood and mosquitoes is important to decide when a change in antimalarial regimens is necessary. The present studies in 2012 and 2017 extend our previous analysis in 1996, 2001, 2007 for tracking markers of resistance to sulfadoxine-pyrimethamine (SP), chloroquine (CQ) and ACT in Asembo Bay. Parasites from 225 and 110 blood samples (2012 and 2017, respectively) were sequenced. Additionally, 66 oocyst-positive mosquito midguts from the same area in 2012 were genotyped for the same markers. Results indicate that SP resistance mutations remained high, with the frequency of N51I, C59R, S108N of *Pfdhfr* and A437G, K540E of *Pfdhps* approaching fixation (96-100%), while the prevalence of *Pfdhps* S436H mutations increased significantly from 0% in previous 3 surveys to 9.8% in 2012, and 33.6% in 2017. The CQ resistance marker *Pfcrt* K76T declined over time, from 81.6% in 1996, 81.8% in 2001, 94.6% in 2007 to 17.3% in 2012 and 0.9% in 2017. The multi-drug resistant marker, *Pfmdr1* N86Y dropped from 74.8% in 1996, 73.1% in 2001, 71.0% in 2007 to 9.6% in 2012 and 0% in 2017, but *Pfmdr1* Y184F prevalence increased from 17.9% in 2007 to 53.4% in 2012 and 55.9% in 2017. Importantly, no mutations in the *K13* propeller domain associated with artemisinin resistance were found. Parasites from human blood and mosquito oocysts showed similar prevalence for all markers. The increased prevalence of *Pfdhps* S436H may confer increased resistance to SP. The present study finds no evidence of artemisinin resistance in western Kenya. However, the increase in Y184F prevalence may be due to the selection by the partner drug in ACT, lumefantrine. Therefore, regular surveillance and further evaluation of resistance markers is pivotal for effective treatment of malaria.

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EXTENSIVE CUTANEOUS ULCERATIONS IN A PATIENT FROM MYANMAR: AN OLD ENEMY WHICH SHOULD NOT BE FORGOTTEN

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A 23 year old female presented with multiple painful erythematous skin papules and nodules over the hands, forearms, lower extremities, trunk and face of eight months duration. Lesions ulcerated for 1 month before admission. High grade fever, joint pain, loss of appetite and weight loss were associated with onset of skin lesions. All biochemical parameters were within normal limits with the exception of low albumin and proteinuria. Screening tests for connective tissue diseases and infective serology tests were negative. Wound swab culture revealed growth of *Klebsiella pneumoniae*. Slit skin smear for AFB showed multiple bacilli. Skin biopsy was not done. Patient was admitted and treated as severe erythema nodosum leprosum (ENL) (type 2 lepra reaction), as her presenting symptom complex for Hansen's disease.

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SEASONAL MALARIA CHIMIO PREVENTION 2017 IN THE HEALTH DISTRICT OF GOUDOMP SENEGAL COST-EFFECTIVENESS ANALYSIS OF TWO TREATMENT STRATEGIES FOR CHILDREN AGED 3-120 MONTHS

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Despite a good coverage rate for the 2017 Seasonal Malaria Chemo-Prevention (SMC) campaign, more than 95% treatment for children aged 3 to 120 months, a major challenge persists regarding the complete treatment in three days of these children. . The pilot study conducted in the Goudomp district serves as a basis for analyzing the cost-effectiveness ratio of these two approaches. The overall objective of the study is to conduct cost-effectiveness analysis of seasonal malaria prevention strategies for children aged 3-120 months in the Goudomp health district. It was a mixed estimate: an economic evaluation of the three-day and one-day directly observed treatment (DOT) strategies at the 2017 SMC and a qualitative study for the community actors, nurses and the executive team. The quantitative study included 12-health post: six who completed the full treatment strategy under DOT and six who completed the one-day DOT strategy. The choice of posts that had led the strategy was based in a reasoned manner taking into account certain criteria: the location of health posts, the size of the population, the accessibility of structures, the motivation of providers. For the qualitative study, 240 community actors All the head nurses from the 12 health posts and 4 members of the executive team were also interviewed. The average cost in the three-day DOT treatment strategy compared to that of the one-day DOT was respectively passing from the first to the third passage of 1.69$, 1.38$ and 1.39$ against 1.41$, 1.11$ and 1.25$. Note a variation if we compare the two strategies respectively of +0.28, +0.28 and 0.14. The ratio cost effectiveness is 1052.97$ per case avoided for the full treatment strategy compared to 2223.72$ per case avoided for the one-day DOT strategy. Conferring on the most cost-effective three-day TDO strategy. The qualitative study showed a deficiency in the delivery of three doses to children and strong adherence of providers and community relays in the comprehensive treatment strategy to increase the effectiveness of drugs. Comprehensive TDO strategy strengthens child protection, reduces risk of antimalarial drug resistance

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NEW INSIGHTS INTO THE MODE OF ACTION OF THE ANTIMALARIAL DRUG PROGUANIL

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Malarone® is a combination of atovaquone and proguanil that is used for malaria prophylaxis and treatment. Atovaquone has potent anti-plasmodium activity as a cytochrome bc1-inhibitor while dogma is that proguanil does not have potent intrinsic activity. Proguanil can, however, potentiate atovaquone activity and its cyclization-metabolite (cycloguanil) is a dihydrofolate reductase inhibitor with potent activity. We have recently found that proguanil, and an analogue that cannot convert to cycloguanil (tBuPG), have potent slow-acting activity *in vitro* against asexual *P. falciparum* parasites. This activity is folate-metabolism and isoprenoid biosynthesis-independent. In yeast DHODH-expressing parasites, proguanil and tBuPG slow action activity remains, however bc1-inhibitor activity switches from fast to slow-acting. Proguanil and tBuPG both act synergistically with bc1-inhibitors, while cycloguanil antagonizes activity. Overall, our data suggest that proguanil has potent slow-acting activity against asexual-stage *P. falciparum*, that bc1 is essential to parasite survival independent of DHODH-activity and that Malarone® may act as a triple-drug combination (including antagonistic partners). These findings raise the possibility that a cyclization-blocked proguanil may be a better *in vivo* combination partner for antimalarial bc1-inhibitors.