

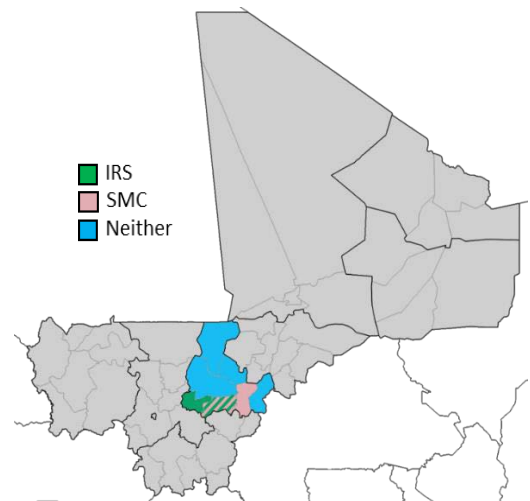
Evidence Snapshot: Combining 3rd generation IRS (3GIRS) and seasonal malaria chemoprevention (SMC) in Ségou Region, Mali

Background:

Increasingly evidence is showing that 3GIRS, indoor residual spraying (IRS) using 3rd generation insecticides, can have a substantial impact on reducing malaria incidence in many areas where mosquitoes are resistant to traditional vector control insecticides¹. There is also mounting evidence that mass antimalarial drug administration strategies, like SMC in children, can successfully reduce malaria infections in targeted communities².

One exciting question to ask is how well these proven public health interventions, which target different stages of the malaria transmission cycle, might complement each other when used in combination.

- By 2014, Mali shifted indoor residual spraying products to Actellic® 300CS, a 3GIRS product.
- Also in 2014, Ségou began expansion of a pilot program to provide SMC to children aged 3 to 59 months in select districts.
- The timing of these activities presented a unique opportunity to analyze the impact of both interventions, deployed individually and in combination, through analysis of quality-assured passive surveillance data.



■ San District received only SMC in 2014 ■ Barouéli District received only 3GIRS ■ Bla District received both

The epidemiological impact of 3GIRS and SMC in Mali, 2014:

Comparing malaria incidence rates from each intervention district to similar districts in Ségou region that did not receive either SMC or IRS demonstrated substantial impact:

- Health Centers in San (SMC only) reported 35% fewer cases.
- Health Centers in Barouéli (IRS only) reported 40% fewer cases.
- **Health Centers in Bla, which received both interventions, reported the biggest drop in malaria, 44% fewer cases.**

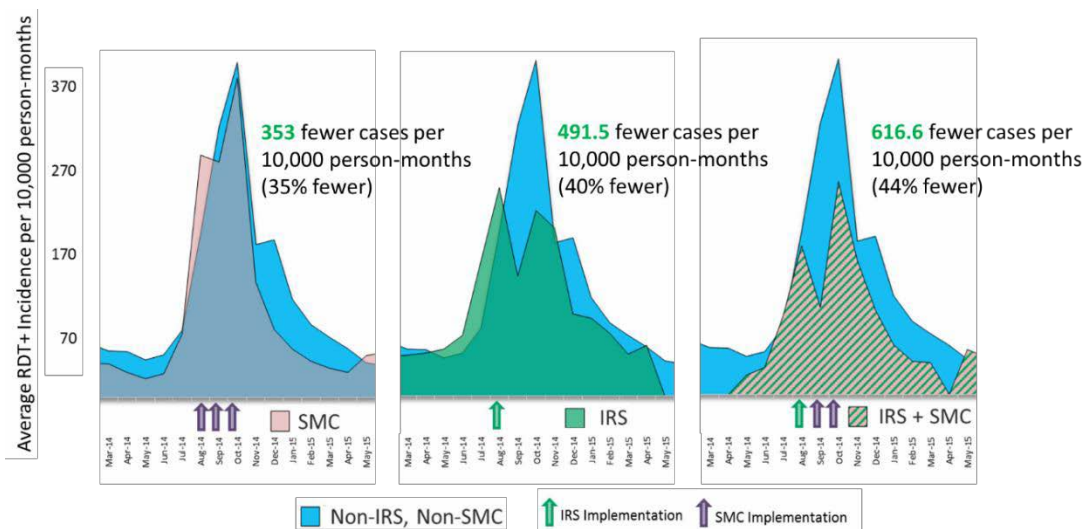


Figure 1. After SMC and 3GIRS with Actellic® 300CS in 2014, the incidence of malaria cases reported from public health clinics reduced substantially. The biggest reduction in cases (44%) was observed in the district that utilized both interventions.

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A combined effect for IRS and SMC:

Looking at the protective effect of each intervention by month describes the magnitude and timing of the malaria prevention impact:

- The SMC only intervention had a more moderate effect initially (24% fewer cases in the first month) that lasted for a longer duration (at least 6 months).
- The IRS only intervention had a rapid, comparatively large impact (55% fewer cases in the first month) of shorter duration (4 months).
- **The impact of the combined intervention was both rapid (68% fewer cases in the first month) and of longer duration (at least 6 months).**

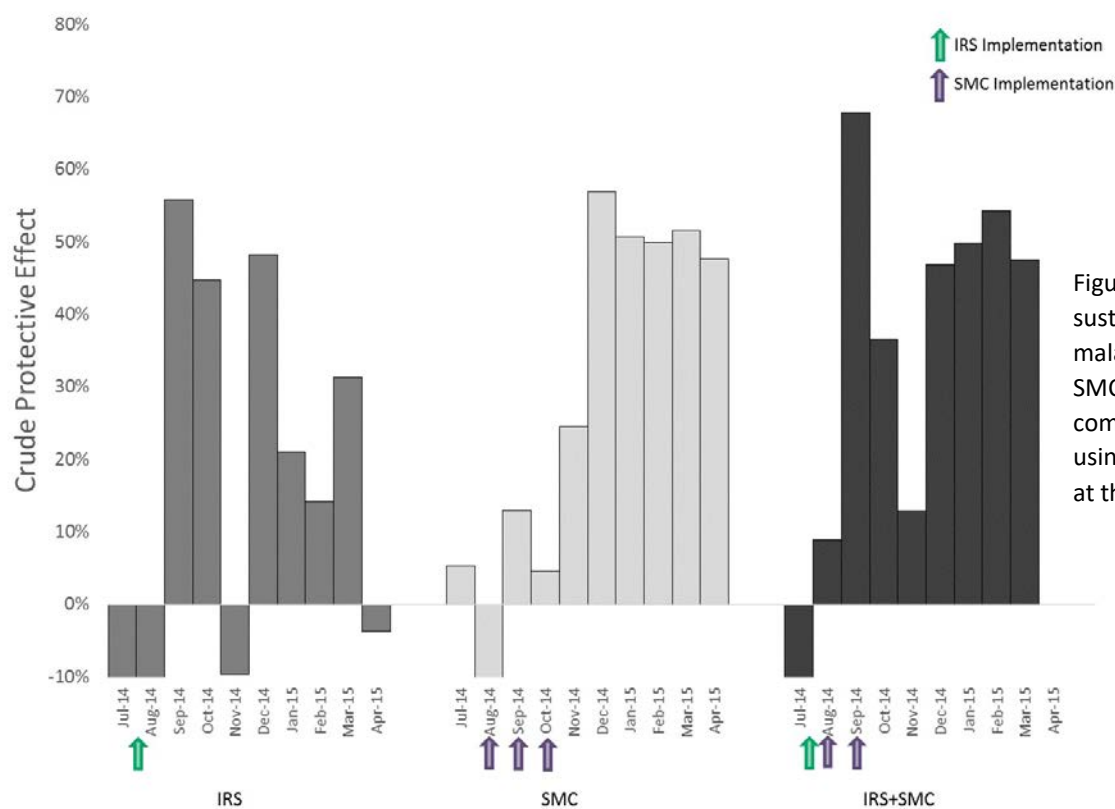


Figure 2. The rapid and sustained reduction in malaria cases in the IRS + SMC district suggests a combined effect when using both interventions at the same time.

In 2014, 3GIRS with Actellic® 300CS and SMC were good public health investments in Mali. Malaria rates declined after each intervention was implemented. **The fact that the largest reduction was seen in Bla District, where both interventions were rolled out simultaneously, suggests a possible combined effect for these complementary strategies.**

¹Wagman, et al. 2018. *Mal J.* 17:19

²Diawara, et al. 2017. *Mal J.* 16:325