

IRS and SMC in Ségou region, Mali

Evidence of a combined effect in 2014

ASTMH 2018: 31 October

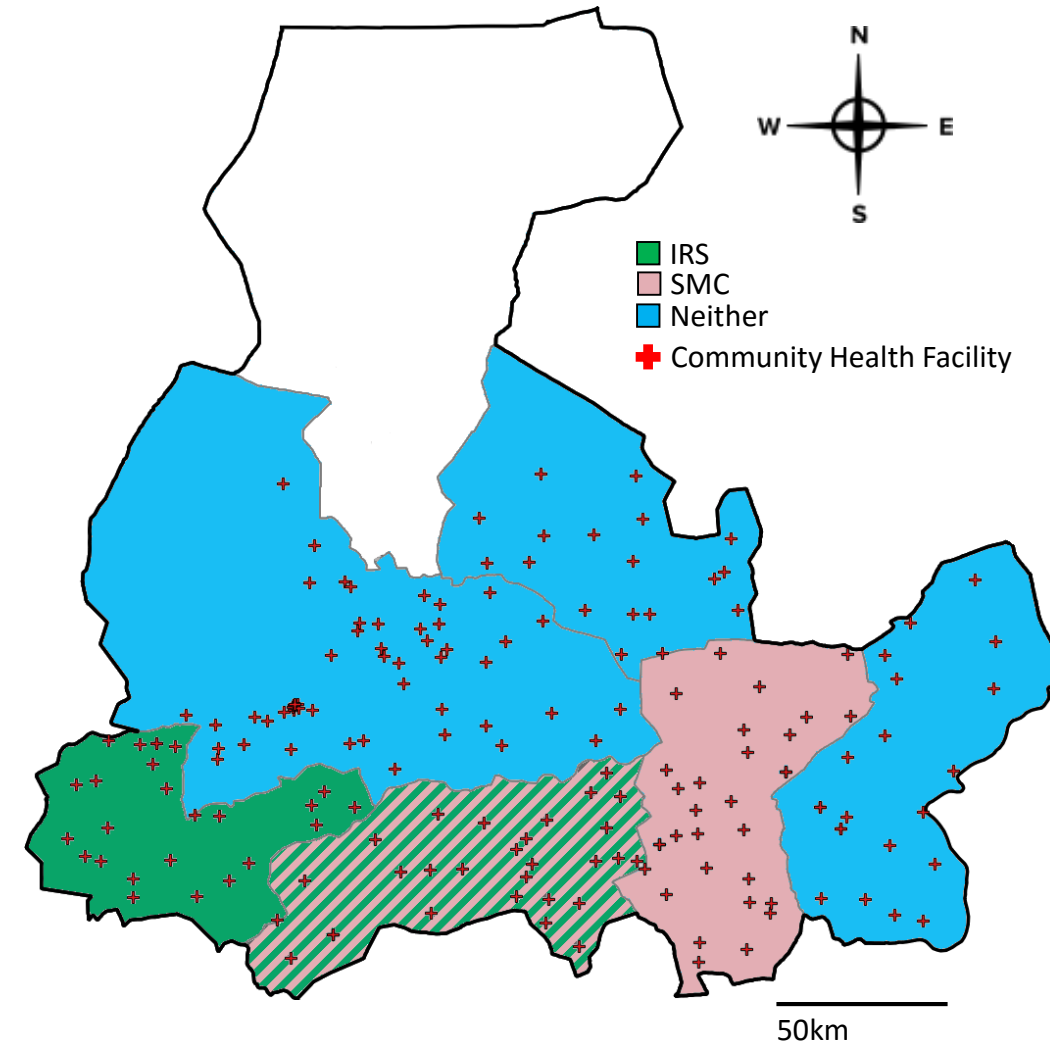
Dr. Seydou Fomba; PNLP, Mali

Presented by Dr. Diadier Diallo, MEASURE Evaluation, Mali



Ségou region, 2014

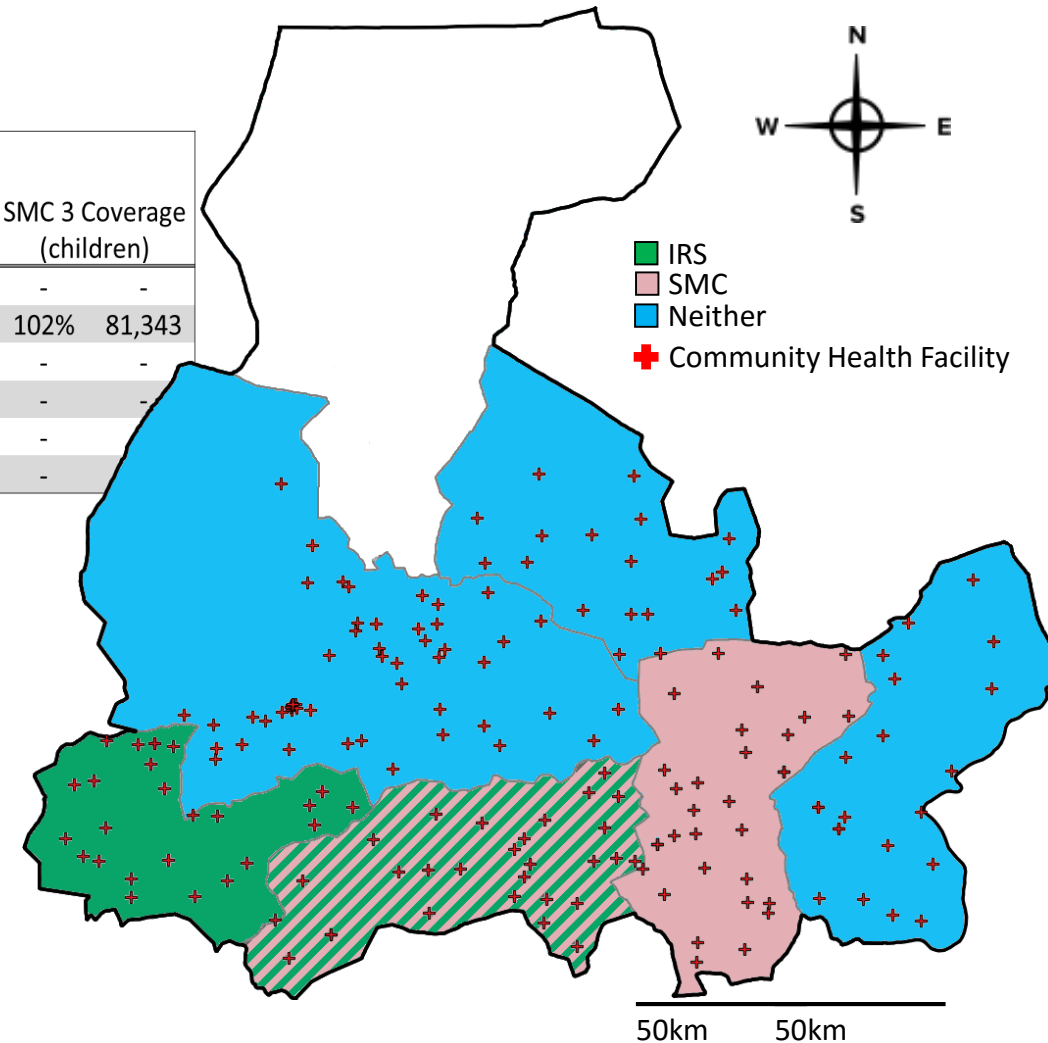
- The PMI/AIRS campaign covered 2 districts (Barouéli and Bla) with a new 3rd generation IRS product
 - Actellic® 300CS (pirimiphos methyl)
 - Implemented 15 July through 25 August
- An expanding SMC pilot also covered 2 districts (Bla and San)
 - All children aged 3 to 59 months
 - 2 to 3 monthly doses beginning in August
 - sulphadoxine-pyrimethamine (SP) + amodiaquine (AQ)
 - Implemented monthly (starting from August)



Combining IRS + SMC in Mali, 2014

Intervention	District	IRS Implementer	IRS Coverage (Structures)	IRS Coverage (Pop)	SMC Implementer	SMC 1 Coverage ^a (children)	SMC 2 Coverage ^a (children)	SMC 3 Coverage (children)
IRS	Barouéli	PMI	97%	61,234	-	-	-	-
SMC	San	-	-	-	UNICEF	99%	79,124	102%
IRS + SMC	Bla	PMI	98%	96,229	NMCP	102%	69,132	105%
neither	Macina	-	-	-	-	-	-	-
neither	Niono	-	-	-	-	-	-	-
neither	Ségou	-	-	-	-	-	-	-

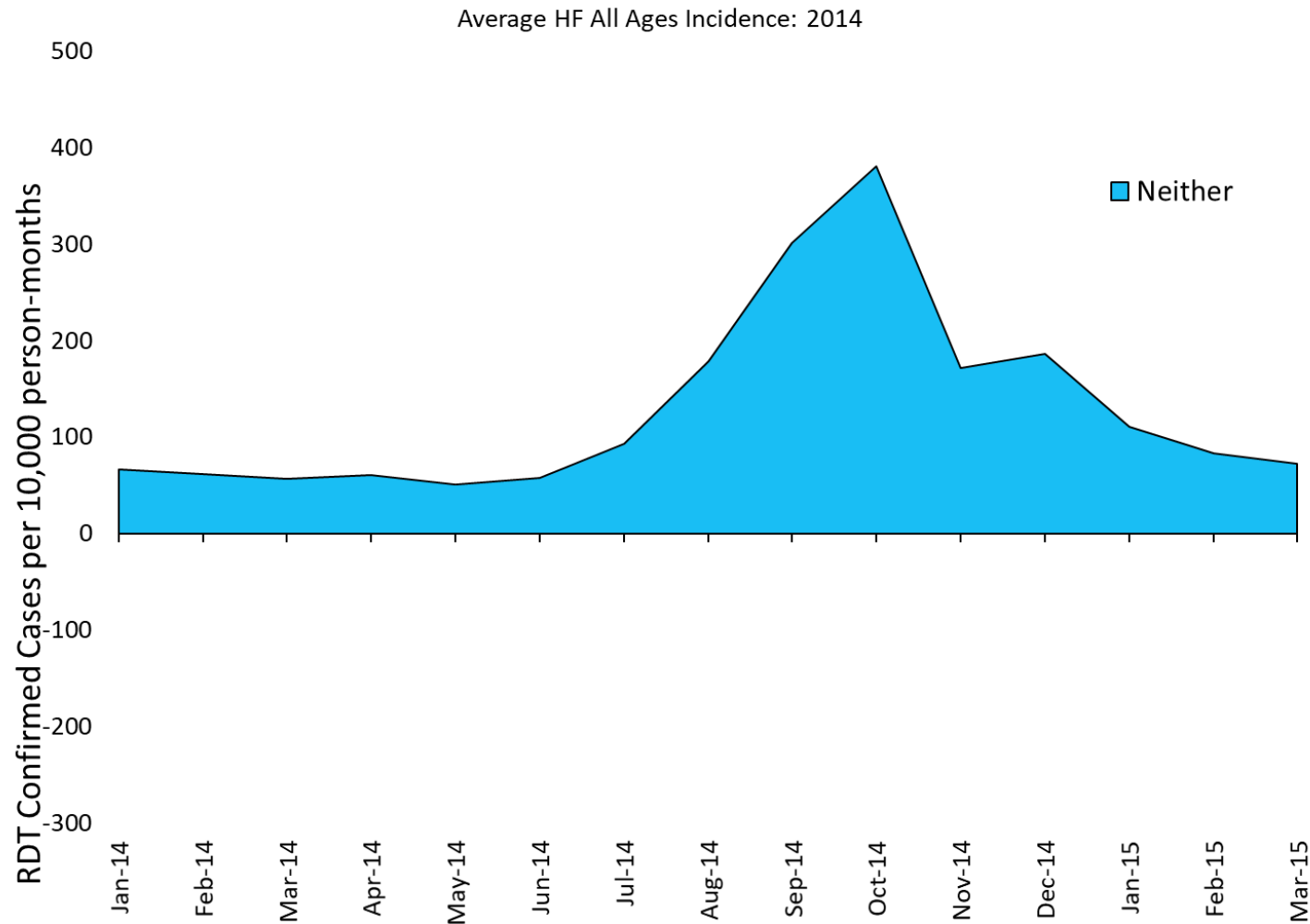
^a SMC 1 = Round 1: August; SMC 2 = Round 2: September; SMC 3 = Round 3: October



Passive Surveillance at the Health Facility Level

- All ages (general population)
- 472,046 RDT-confirmed cases of malaria reported by the routine health system (Système Numérique d'Information Sanitaire Intégré/SNISI) from Jan 2014 to Mar 2015
 - 2,712 monthly reports from 164 community health centers in the six districts
 - Community health center catchment area population estimates obtained from the Ministry of Health
 - Health center incidence rates were stratified by intervention status for comparative analyses
 - Analysis performed on the cumulative incidence reported in the 6 months following the IRS campaigns
 - September 2014 – February 2015
 - highest transmission period
 - expected residual efficacy of 3GIRS (6 months)

All-ages malaria incidence



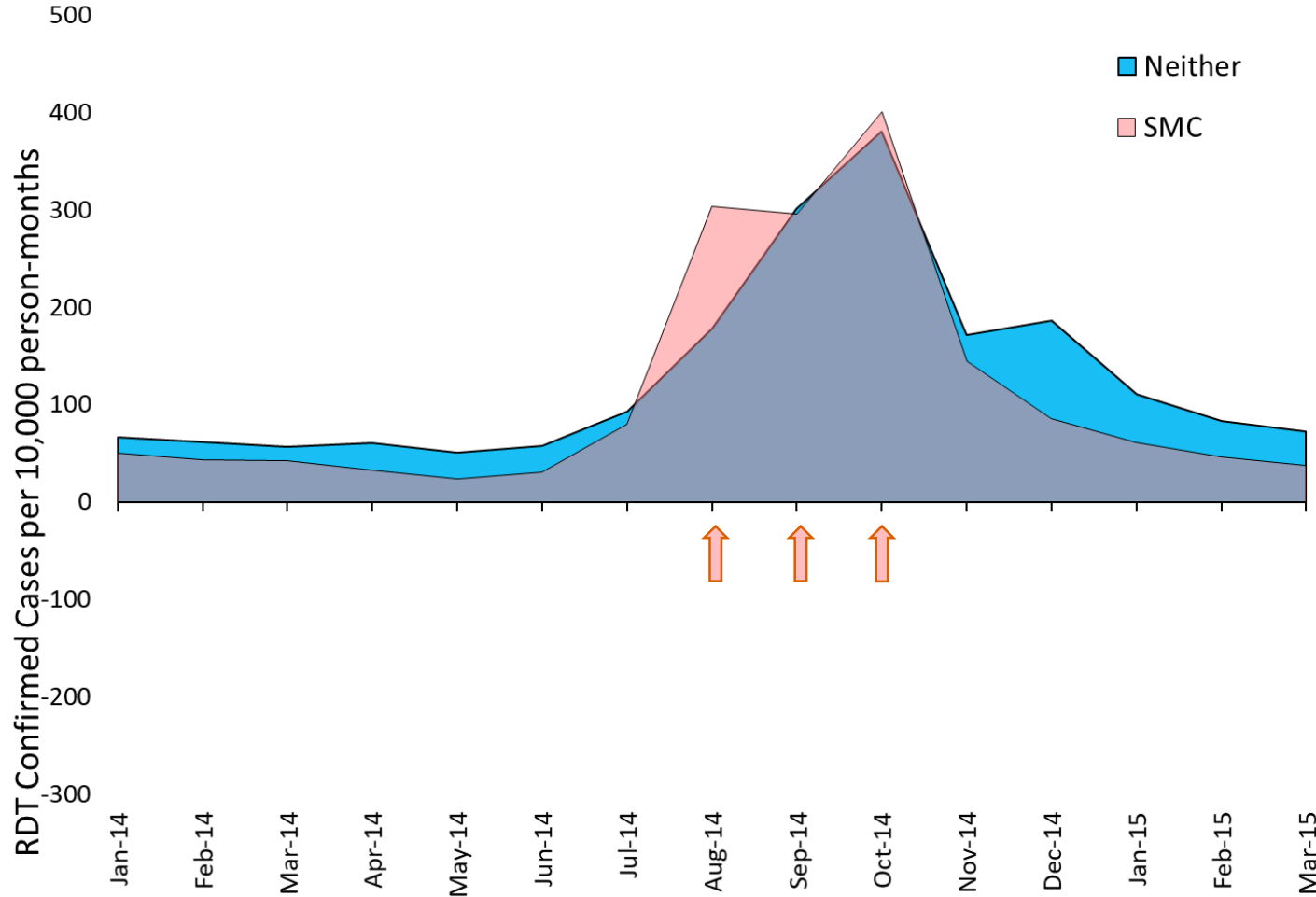
In the control districts (no IRS or SMC) the cumulative incidence of RDT+ results was

1,226 cases per 10,000 person-months at risk

From September to February

All-ages malaria incidence

Average HF All Ages Incidence: 2014



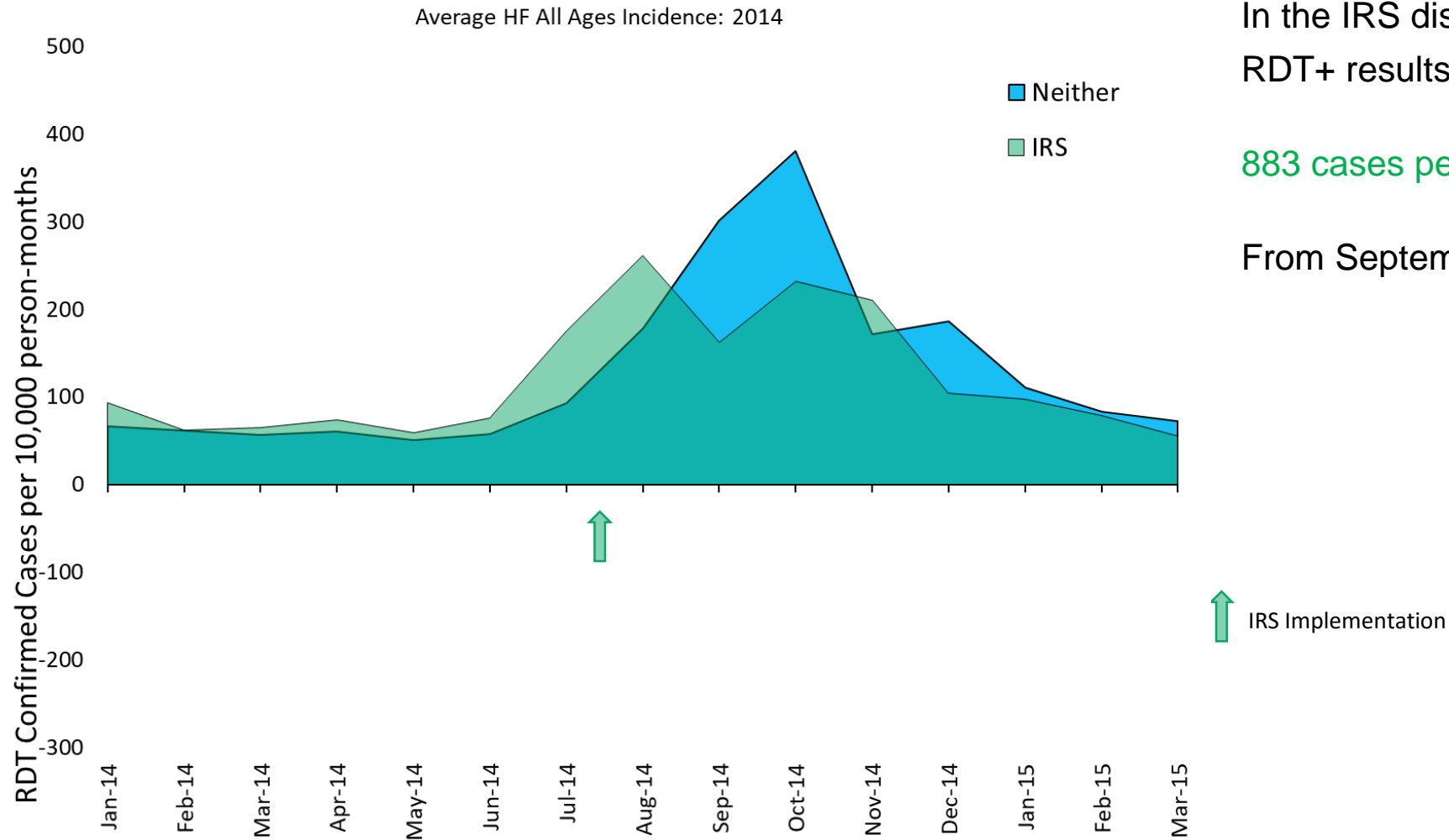
In the SMC district the cumulative incidence of RDT+ results was

1,030 cases per 10,000 person-months at risk

From September to February

↑ SMC Implementation

All-ages malaria incidence



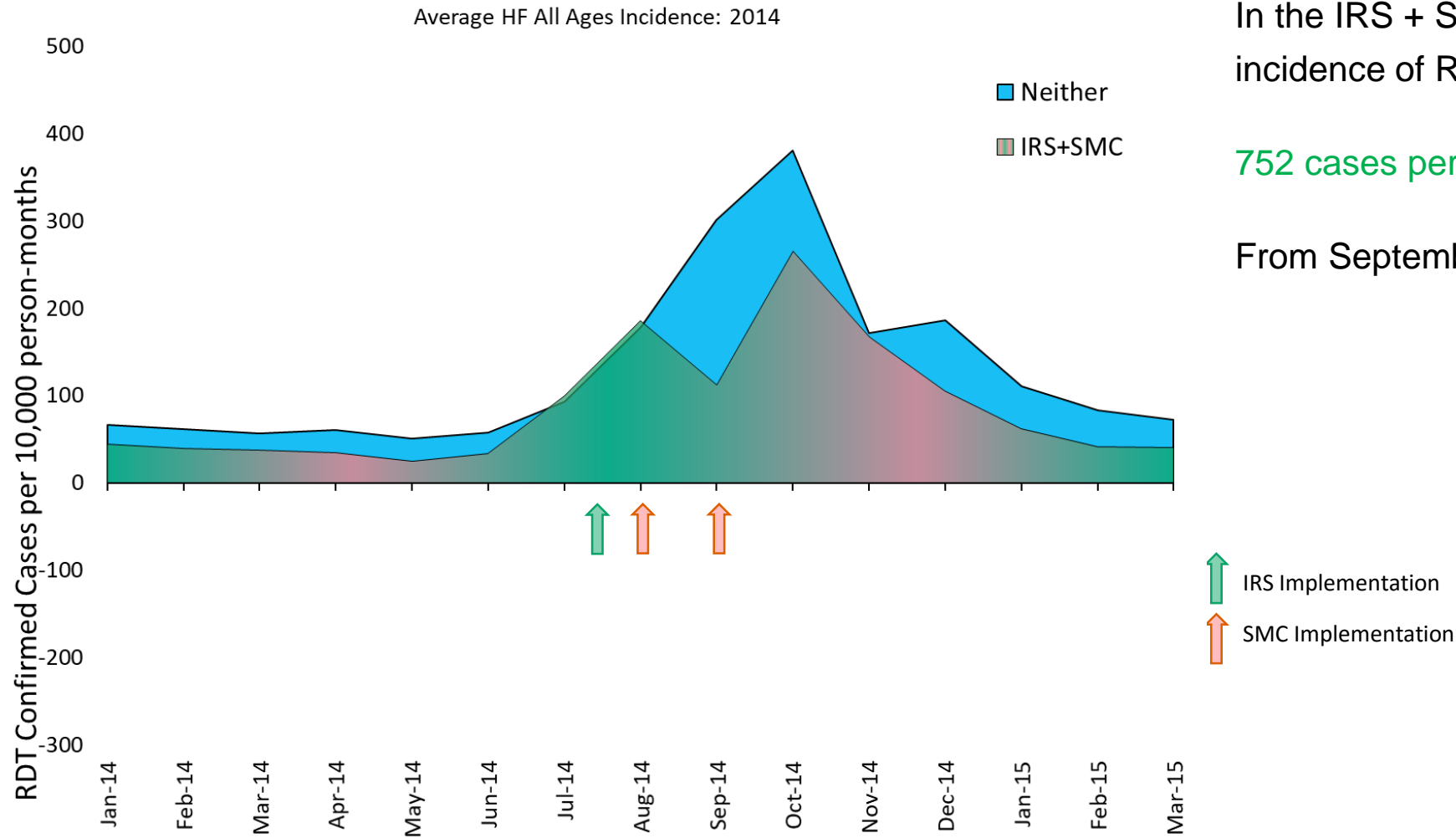
In the IRS district the cumulative incidence of RDT+ results was

883 cases per 10,000 person-months at risk

From September to February

↑ IRS Implementation

All-ages malaria incidence

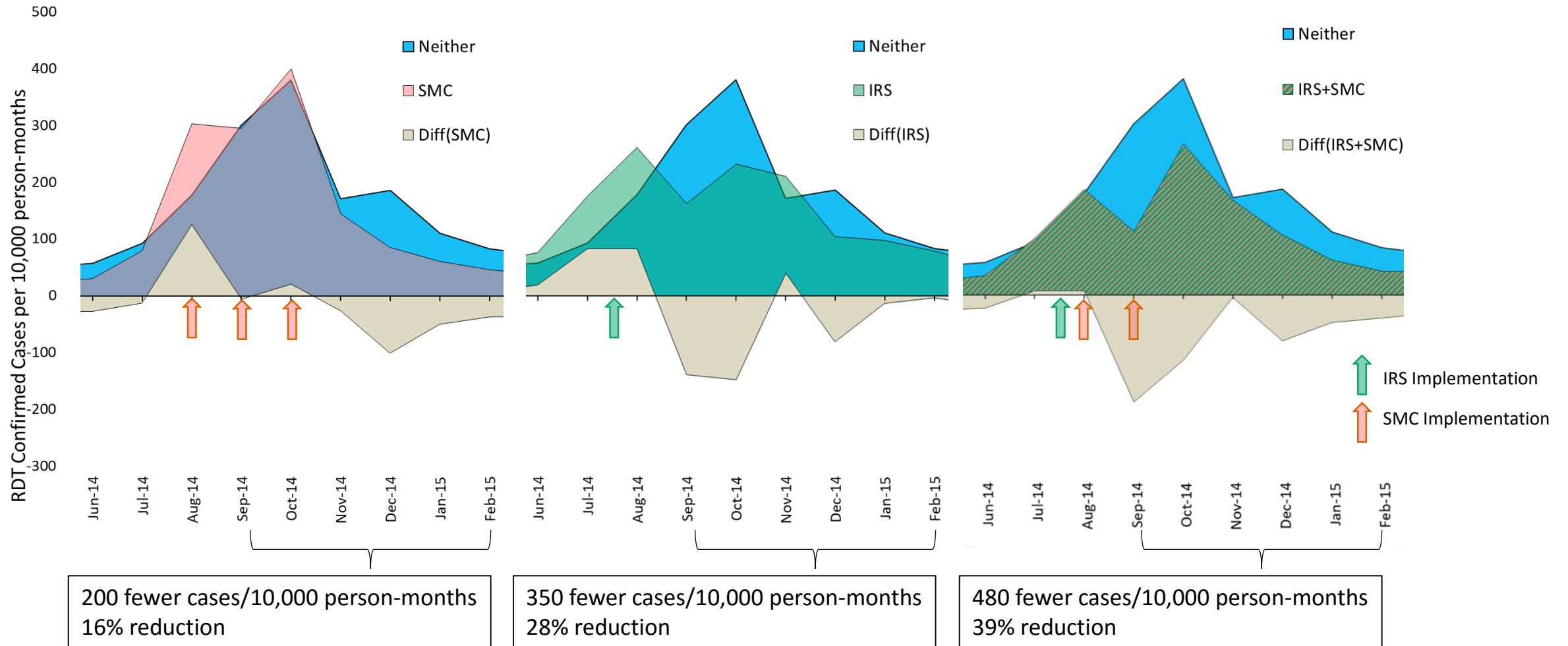


In the IRS + SMC district the cumulative incidence of RDT+ results was

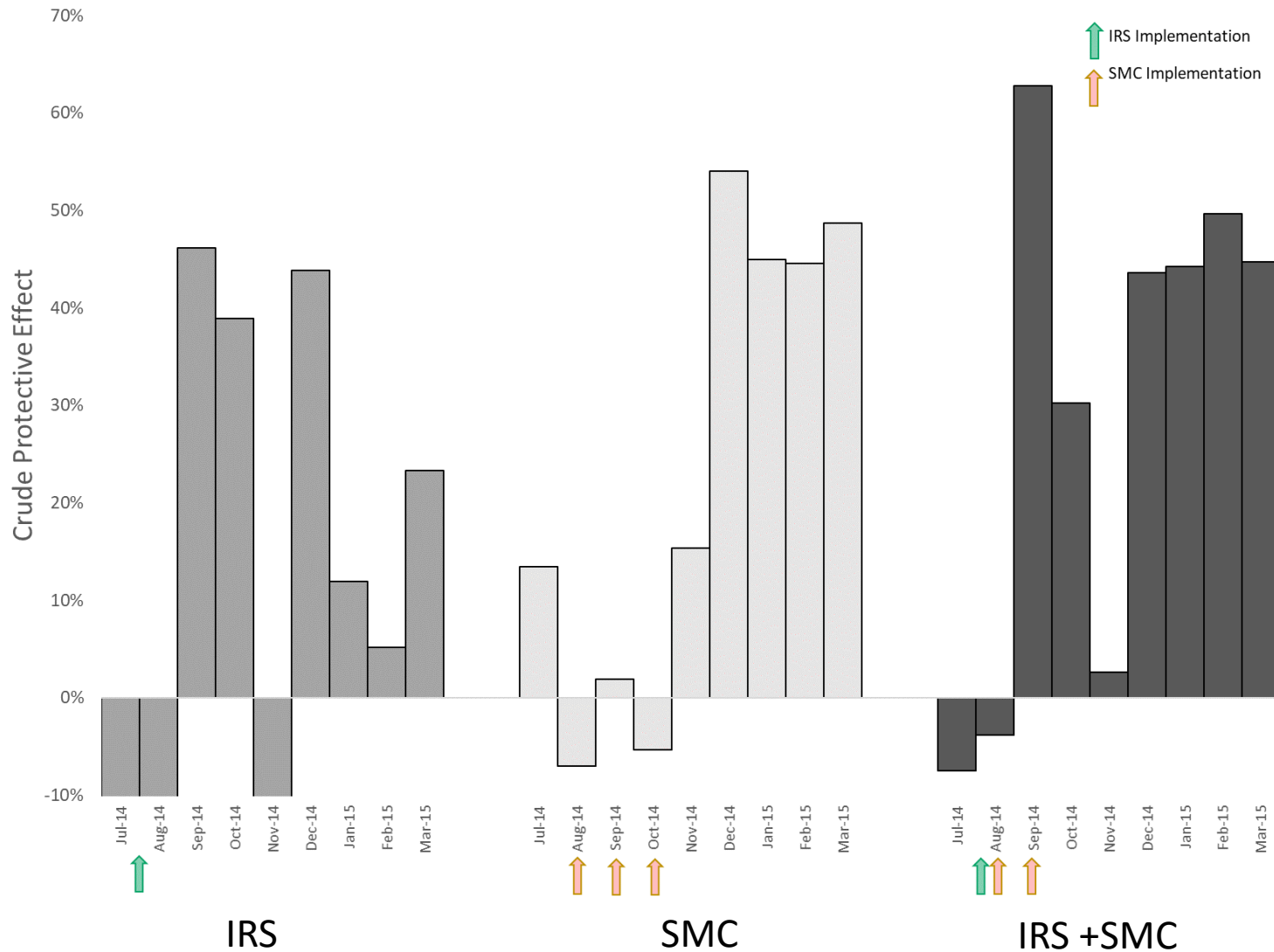
752 cases per 10,000 person-months at risk

From September to February

All-ages malaria incidence



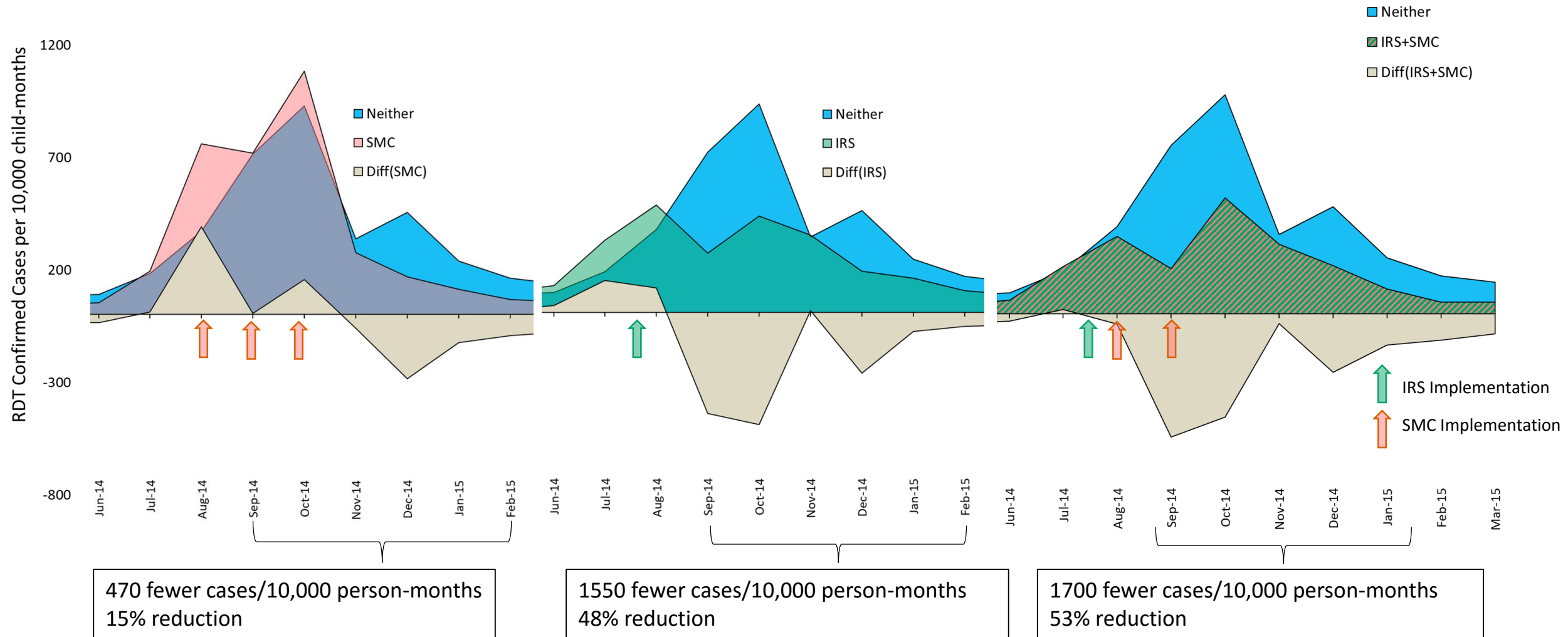
Crude protective effects: all-ages population



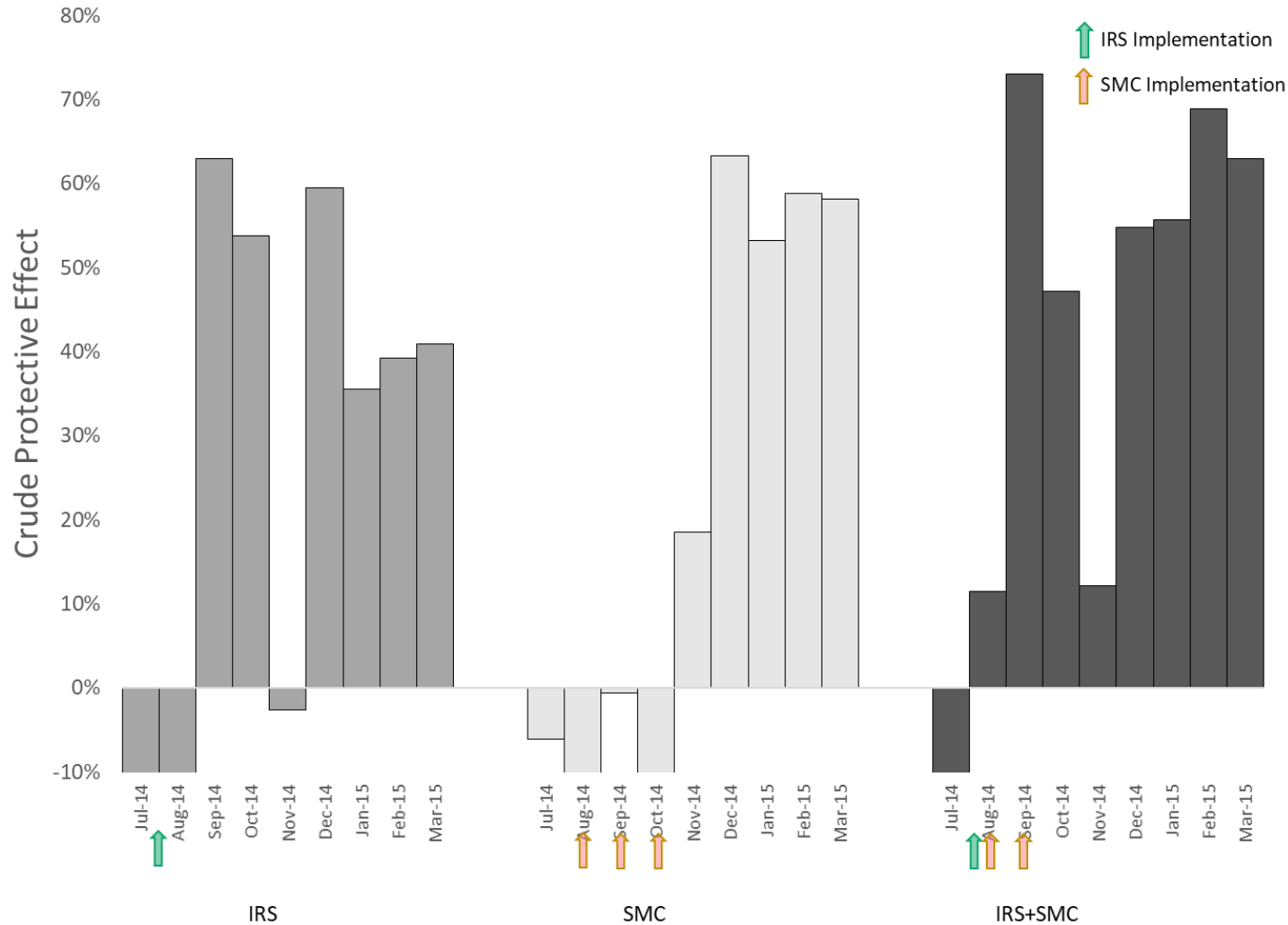
The crude protective effect of each intervention by month (percent reduction in incidence compared to the control)

- IRS had a large impact initially that diminished over time
- SMC had a moderate effect initially, but increased over time
- The combined effect was both rapid and of longer duration

Under 5-year old malaria incidence



Crude protective effects: u5 population



The crude protective effect of each intervention by month (percent reduction in incidence compared to the control)

- IRS had a large impact initially that diminished over time
- SMC had a moderate effect initially, but increased over time
- The combined effect was both rapid and of longer duration

Discussion

- These observational results suggest a possible combined effect for the co-implementation of IRS and SMC in central Mali
- Compared to neighboring districts that received neither intervention, routinely reported malaria incidence rates in the u5 population were reduced
 - 53% in Bla, where both IRS and SMC were implemented
 - 48% in Barouéli, where only IRS was implemented
 - 15% in San, where only SMC was implemented

Thank you! Merci beaucoup!



PNLP

Seydou Fomba
Diakalkia Kone

PMI

Jules Mihigo
Lia Florey
Erin Eckert

Abt Associates

Elie Bankineza
Mamadou Bah
Andrew Saibu

MEASURE Evaluation

Diadier Diallo

IVCC

Jason Richardson
David McGuire
Hamish Stewart
Marlize Coleman
Tom McClean
Karen Johnson

PATH

Molly Robertson
Laurence Slutsker
Joe Wagman
Christelle Gogue
Kenzie Tynuv

