

Supplement Table 1. Incidence Risk Ratio (IRR) for malaria overall, *Plasmodium falciparum*, and *Plasmodium vivax* in females

	IRR in males	IRR in females	95% CI	p-value
Malaria overall		0.44	0.40 to 0.49	<0.001
<i>Plasmodium falciparum</i>	Reference	0.37	0.34 to 0.41	<0.001
<i>Plasmodium vivax</i>		0.54	0.50 to 0.59	<0.001

Poisson regression was used to test for differences in trends over time, by age group and gender. Data were stratified by gender with an interaction term between year and age group.

Supplement Table 2. Incidence Risk Ratio (IRR) for *Plasmodium vivax* infection by age and time stratified by gender from 1995 to 2016 in refugee clinics and 1998 to 2016 in migrant clinics

Age group	Year	IRR refugee male	95% confidence interval	p-value	IRR refugee female	95% confidence interval	p-value	IRR migrant male	95% confidence interval	p-value	IRR migrant female	95% confidence interval	p-value
0-4 years	1995-1997	Reference			Reference			Reference			Reference		
	1998-2000	1.19	0.83 to 1.70	0.35	1.08	0.78 to 1.49	0.64						
	2001-2003	1.14	0.68 to 1.92	0.62	1.04	0.73 to 1.49	0.82	1.02	0.39 to 2.67	0.97	0.99	0.38 to 2.61	0.99
	2004-2006	0.94	0.59 to 1.50	0.79	0.91	0.64 to 1.31	0.62	3.16	1.21 to 8.20	0.02	3.15	1.23 to 8.05	0.02
	2007-2009	1.08	0.78 to 1.49	0.66	0.96	0.65 to 1.41	0.82	4.16	1.87 to 9.24	<0.01	4.40	1.97 to 9.86	<0.01
	2010-2012	0.57	0.37 to 0.88	0.01	0.57	0.39 to 0.82	<0.01	1.31	0.52 to 3.34	0.57	1.45	0.59 to 3.56	0.42
	2013-2016	0.08	0.04 to 0.19	<0.01	0.09	0.03 to 0.25	<0.01	0.37	0.15 to 0.91	0.03	0.47	0.17 to 1.28	0.14
5-9 years	1995-1997	1.11	0.74 to 1.67	0.61	1.12	0.77 to 1.64	0.55						
	1998-2000	1.24	0.81 to 1.88	0.33	1.13	0.87 to 1.45	0.36	1.00	0.32 to 3.11	1.00	0.93	0.29 to 2.94	0.90
	2001-2003	1.61	1.09 to 2.38	0.02	1.14	0.84 to 1.54	0.40	0.89	0.32 to 2.48	0.83	0.90	0.32 to 2.55	0.84
	2004-2006	1.70	1.12 to 2.58	0.01	1.08	0.76 to 1.54	0.66	1.58	0.60 to 4.13	0.36	1.69	0.66 to 4.34	0.28
	2007-2009	1.67	1.14 to 2.44	0.01	1.17	0.79 to 1.73	0.43	2.82	1.27 to 6.28	0.01	2.87	1.28 to 6.44	0.01
	2010-2012	0.93	0.61 to 1.40	0.71	0.78	0.58 to 1.06	0.11	1.65	0.67 to 4.11	0.28	1.54	0.61 to 3.93	0.36
	2013-2016	0.13	0.06 to 0.28	<0.01	0.11	0.05 to 0.27	<0.01	0.52	0.20 to 1.36	0.18	0.46	0.17 to 1.22	0.12
10-14 years	1995-1997	1.05	0.66 to 1.67	0.83	0.96	0.70 to 1.32	0.81						
	1998-2000	1.40	0.89 to 2.22	0.15	0.89	0.56 to 1.42	0.64	0.70	0.23 to 2.15	0.53	0.80	0.25 to 2.59	0.71
	2001-2003	2.13	1.53 to 2.96	<0.01	1.15	0.87 to 1.51	0.34	0.54	0.17 to 1.73	0.30	0.66	0.22 to 1.99	0.46
	2004-2006	2.48	1.54 to 4.01	<0.01	1.27	0.82 to 1.98	0.28	1.48	0.59 to 3.70	0.40	1.31	0.52 to 3.31	0.57
	2007-2009	3.13	2.01 to 4.86	<0.01	1.58	1.10 to 2.26	0.01	2.32	1.03 to 5.18	0.04	2.01	0.89 to 4.52	0.09
	2010-2012	1.59	1.07 to 2.38	0.02	0.83	0.56 to 1.22	0.34	1.92	0.83 to 4.43	0.13	1.30	0.53 to 3.18	0.56
	2013-2016	0.29	0.13 to 0.67	<0.01	0.12	0.05 to 0.31	<0.01	0.69	0.27 to 1.73	0.43	0.52	0.21 to 1.31	0.17
15-19 years	1995-1997	1.85	1.06 to 3.25	0.03	0.77	0.53 to 1.12	0.17						
	1998-2000	2.53	1.66 to 3.86	<0.01	0.86	0.56 to 1.33	0.50	1.16	0.37 to 3.69	0.80	0.56	0.18 to 1.74	0.32
	2001-2003	2.76	1.85 to 4.12	<0.01	1.06	0.73 to 1.53	0.77	0.95	0.26 to 3.42	0.93	0.45	0.16 to 1.26	0.13
	2004-2006	2.62	1.74 to 3.97	<0.01	0.75	0.51 to 1.10	0.15	2.07	0.77 to 5.54	0.15	0.91	0.36 to 2.31	0.85
	2007-2009	3.77	2.59 to 5.49	<0.01	1.06	0.71 to 1.59	0.76	3.35	1.50 to 7.51	<0.01	1.69	0.75 to 3.79	0.21
	2010-2012	2.30	1.57 to 3.36	<0.01	0.70	0.49 to 1.00	0.05	2.36	0.98 to 5.70	0.06	1.04	0.41 to 2.62	0.93
	2013-2016	0.39	0.18 to 0.86	0.02	0.11	0.04 to 0.32	<0.01	0.77	0.29 to 2.08	0.61	0.35	0.13 to 0.98	0.05
20-24 years	1995-1997	1.46	0.84 to 2.54	0.18	0.53	0.33 to 0.84	0.01						
	1998-2000	1.72	1.09 to 2.71	0.02	0.48	0.32 to 0.73	<0.01	1.21	0.37 to 3.90	0.75	0.46	0.15 to 1.41	0.17
	2001-2003	2.08	1.38 to 3.14	<0.01	0.61	0.43 to 0.87	0.01	0.86	0.24 to 3.05	0.81	0.39	0.11 to 1.31	0.13
	2004-2006	1.68	1.05 to 2.70	0.03	0.40	0.29 to 0.56	<0.01	2.08	0.78 to 5.58	0.14	0.69	0.27 to 1.76	0.44
	2007-2009	2.31	1.63 to 3.29	<0.01	0.47	0.33 to 0.67	<0.01	3.37	1.51 to 7.53	<0.01	1.19	0.51 to 2.74	0.69
	2010-2012	1.29	0.87 to 1.92	0.21	0.32	0.23 to 0.44	<0.01	2.19	0.87 to 5.52	0.10	0.72	0.26 to 2.02	0.53
	2013-2016	0.20	0.09 to 0.45	<0.01	0.05	0.02 to 0.12	<0.01	0.50	0.19 to 1.29	0.15	0.18	0.07 to 0.48	<0.01
25-29 years	1995-1997	0.77	0.44 to 1.35	0.36	0.40	0.25 to 0.63	<0.01						
	1998-2000	1.03	0.68 to 1.56	0.90	0.33	0.24 to 0.46	<0.01	0.71	0.22 to 2.27	0.57	0.40	0.13 to 1.27	0.12
	2001-2003	1.45	0.98 to 2.14	0.06	0.40	0.30 to 0.53	<0.01	0.53	0.14 to 2.03	0.35	0.35	0.11 to 1.08	0.07
	2004-2006	1.13	0.70 to 1.82	0.62	0.32	0.24 to 0.42	<0.01	1.31	0.47 to 3.65	0.61	0.53	0.21 to 1.32	0.17
	2007-2009	1.45	1.04 to 2.03	0.03	0.34	0.25 to 0.45	<0.01	2.29	1.02 to 5.16	0.05	0.89	0.39 to 2.03	0.78
	2010-2012	0.86	0.57 to 1.31	0.48	0.21	0.14 to 0.30	<0.01	1.51	0.60 to 3.79	0.38	0.63	0.23 to 1.68	0.35
	2013-2016	0.15	0.06 to 0.38	<0.01	0.04	0.01 to 0.09	<0.01	0.34	0.12 to 1.02	0.05	0.15	0.06 to 0.38	<0.01
30-34 years	1995-1997	0.41	0.21 to 0.79	0.01	0.28	0.20 to 0.38	<0.01						
	1998-2000	0.57	0.32 to 1.04	0.07	0.29	0.19 to 0.45	<0.01	0.44	0.14 to 1.42	0.17	0.38	0.12 to 1.14	0.09
	2001-2003	0.88	0.58 to 1.32	0.53	0.30	0.23 to 0.39	<0.01	0.41	0.12 to 1.42	0.16	0.33	0.11 to 1.01	0.05
	2004-2006	0.82	0.56 to 1.20	0.30	0.30	0.24 to 0.39	<0.01	0.82	0.31 to 2.19	0.70	0.58	0.24 to 1.40	0.23
	2007-2009	0.85	0.57 to 1.28	0.44	0.31	0.20 to 0.47	<0.01	1.55	0.69 to 3.52	0.29	0.77	0.33 to 1.76	0.53
	2010-2012	0.56	0.38 to 0.82	<0.01	0.17	0.12 to 0.22	<0.01	1.11	0.45 to 2.73	0.83	0.54	0.21 to 1.41	0.21
	2013-2016	0.10	0.05 to 0.23	<0.01	0.04	0.01 to 0.09	<0.01	0.25	0.09 to 0.67	0.01	0.12	0.04 to 0.35	<0.01
35-39 years	1995-1997	0.21	0.13 to 0.36	<0.01	0.25	0.17 to 0.35	<0.01						
	1998-2000	0.35	0.18 to 0.67	<0.01	0.24	0.15 to 0.37	<0.01	0.32	0.10 to 1.02	0.05	0.24	0.07 to 0.76	0.02
	2001-2003	0.42	0.30 to 0.60	<0.01	0.28	0.18 to 0.44	<0.01	0.33	0.09 to 1.25	0.10	0.23	0.07 to 0.71	0.01
	2004-2006	0.50	0.26 to 0.96	0.04	0.29	0.18 to 0.45	<0.01	0.61	0.21 to 1.80	0.38	0.41	0.16 to 1.06	0.07
	2007-2009	0.63	0.43 to 0.94	0.02	0.27	0.16 to 0.46	<0.01	1.19	0.53 to 2.66	0.67	0.62	0.27 to 1.42	0.26
	2010-2012	0.38	0.28 to 0.52	<0.01	0.15	0.10 to 0.23	<0.01	0.83	0.33 to 2.12	0.70	0.52	0.21 to 1.28	0.15
	2013-2016	0.07	0.03 to 0.18	<0.01	0.04	0.01 to 0.11	<0.01	0.23	0.09 to 0.61	<0.01	0.12	0.04 to 0.34	<0.01
≥ 40 years	1995-1997	0.31	0.17 to 0.55	<0.01	0.51	0.33 to 0.81	<0.01						
	1998-2000	0.49	0.30 to 0.78	<0.01	0.54	0.37 to 0.79	<0.01	0.46	0.15 to 1.41	0.17	0.50	0.15 to 1.61	0.25
	2001-2003	0.71	0.51 to 0.98	0.04	0.64	0.48 to 0.87	<0.01	0.43	0.12 to 1.55	0.20	0.49	0.14 to 1.66	0.25
	2004-2006	0.83	0.55 to 1.24	0.37	0.63	0.44 to 0.90	0.01	0.96	0.37 to 2.48	0.93	0.94	0.37 to 2.38	0.90
	2007-2009	1.04	0.70 to 1.54	0.86	0.89	0.60 to 1.31	0.54	1.74	0.76 to 3.95	0.19	1.77	0.76 to 4.13	0.19
	2010-2012	0.70	0.47 to 1.02	0.07	0.60	0.43 to 0.84	<0.01	1.51	0.62 to 3.68	0.36	1.25	0.51 to 3.07	0.63
	2013-2016	0.13	0.06 to 0.30	<0.01	0.10	0.04 to 0.27	<0.01	0.44	0.17 to 1.17	0.10	0.38	0.14 to 0.99	0.05

Poisson regression was used to test for differences in trends over time, by age group, gender, and migratory status. Data were stratified by gender with an interaction term between year and age group.

Supplement Table 3. Incidence Risk Ratio (IRR) for *Plasmodium falciparum* infection by age and time stratified by gender from 1995 to 2016 in refugee clinics and 1998 to 2016 in migrant clinics

Age group	Year	IRR refugee male	95% confidence interval	p-value	IRR refugee female	95% confidence interval	p-value	IRR migrant male	95% confidence interval	p-value	IRR migrant female	95% confidence interval	p-value
0-4 years	1995-1997	Reference			Reference			Reference			Reference		
	1998-2000	1.45	1.10 to 1.89	0.01	1.53	1.03 to 2.28	0.03						
	2001-2003	1.23	0.96 to 1.59	0.11	1.37	0.95 to 1.98	0.09	1.24	0.57 to 2.70	0.58	1.43	0.63 to 3.23	0.39
	2004-2006	1.17	0.91 to 1.51	0.23	1.19	0.83 to 1.72	0.35	2.47	1.06 to 5.75	0.04	2.28	0.95 to 5.48	0.07
	2007-2009	0.74	0.56 to 0.98	0.03	0.65	0.43 to 0.97	0.04	1.96	0.92 to 4.17	0.08	2.05	0.93 to 4.53	0.08
	2010-2012	0.42	0.27 to 0.64	<0.01	0.30	0.16 to 0.56	<0.01	0.69	0.33 to 1.43	0.32	0.64	0.29 to 1.40	0.27
	2013-2016	0.03	0.01 to 0.07	<0.01	0.02	0.00 to 0.06	<0.01	0.07	0.01 to 0.34	<0.01	0.10	0.02 to 0.41	<0.01
5-9 years	1995-1997	0.97	0.77 to 1.21	0.78	1.02	0.71 to 1.46	0.91						
	1998-2000	1.63	1.14 to 2.33	0.01	1.66	1.05 to 2.63	0.03	1.35	0.48 to 3.80	0.57	1.15	0.39 to 3.43	0.80
	2001-2003	1.50	1.12 to 2.02	0.01	1.34	0.91 to 1.97	0.14	2.06	0.93 to 4.60	0.08	1.65	0.73 to 3.72	0.23
	2004-2006	1.73	1.31 to 2.28	<0.01	1.43	1.00 to 2.05	0.05	3.39	1.41 to 8.14	0.01	3.15	1.32 to 7.55	0.01
	2007-2009	1.08	0.76 to 1.53	0.68	0.76	0.52 to 1.10	0.14	3.62	1.70 to 7.70	<0.01	3.01	1.36 to 6.65	0.01
	2010-2012	0.66	0.42 to 1.02	0.06	0.52	0.28 to 0.95	0.04	1.16	0.55 to 2.47	0.69	1.02	0.45 to 2.31	0.97
	2013-2016	0.04	0.01 to 0.13	<0.01	0.03	0.01 to 0.09	<0.01	0.15	0.03 to 0.73	0.02	0.15	0.03 to 0.70	0.02
10-14 years	1995-1997	1.40	1.00 to 1.96	0.05	1.00	0.67 to 1.49	1.00						
	1998-2000	2.18	1.54 to 3.08	<0.01	1.49	0.89 to 2.49	0.13	1.27	0.43 to 3.77	0.66	1.24	0.42 to 3.69	0.70
	2001-2003	2.26	1.78 to 2.87	<0.01	1.37	0.95 to 1.97	0.10	1.86	0.81 to 4.28	0.14	1.65	0.70 to 3.89	0.26
	2004-2006	3.00	2.15 to 4.19	<0.01	1.43	0.96 to 2.15	0.08	4.54	1.90 to 10.8	<0.01	3.73	1.54 to 9.05	<0.01
	2007-2009	2.01	1.51 to 2.68	<0.01	1.01	0.71 to 1.44	0.95	4.78	2.24 to 10.2	<0.01	3.62	1.58 to 8.27	<0.01
	2010-2012	1.07	0.74 to 1.57	0.71	0.58	0.30 to 1.09	0.09	1.73	0.82 to 3.65	0.15	0.97	0.43 to 2.22	0.95
	2013-2016	0.11	0.03 to 0.43	<0.01	0.04	0.01 to 0.14	<0.01	0.21	0.05 to 0.92	0.04	0.13	0.03 to 0.59	0.01
15-19 years	1995-1997	3.62	2.14 to 6.13	<0.01	1.10	0.75 to 1.61	0.62						
	1998-2000	4.89	3.22 to 7.43	<0.01	1.66	0.98 to 2.81	0.06	2.90	1.01 to 8.38	0.05	1.06	0.37 to 3.06	0.91
	2001-2003	4.25	2.73 to 6.61	<0.01	1.42	0.89 to 2.27	0.15	3.86	1.70 to 8.79	<0.01	1.22	0.51 to 2.93	0.66
	2004-2006	4.14	3.00 to 5.70	<0.01	1.30	0.92 to 1.84	0.14	8.11	3.33 to 19.8	<0.01	3.01	1.20 to 7.53	0.02
	2007-2009	2.70	1.92 to 3.78	<0.01	0.83	0.54 to 1.27	0.39	8.24	3.63 to 18.7	<0.01	3.21	1.40 to 7.32	0.01
	2010-2012	1.73	1.12 to 2.67	0.01	0.45	0.33 to 0.62	<0.01	2.87	1.31 to 6.26	0.01	1.00	0.45 to 2.21	0.99
	2013-2016	0.12	0.03 to 0.47	<0.01	0.03	0.01 to 0.14	<0.01	0.28	0.06 to 1.24	0.09	0.11	0.02 to 0.49	<0.01
20-24 years	1995-1997	3.50	2.11 to 5.80	<0.01	0.93	0.60 to 1.42	0.72						
	1998-2000	4.55	2.93 to 7.06	<0.01	0.97	0.61 to 1.54	0.88	3.22	1.10 to 9.41	0.03	0.90	0.31 to 2.60	0.84
	2001-2003	4.49	3.01 to 6.69	<0.01	1.06	0.70 to 1.61	0.78	4.24	1.88 to 9.59	<0.01	0.98	0.40 to 2.41	0.97
	2004-2006	3.78	2.76 to 5.18	<0.01	0.86	0.60 to 1.24	0.42	9.01	3.53 to 23.0	<0.01	2.26	0.94 to 5.39	0.07
	2007-2009	2.32	1.77 to 3.05	<0.01	0.43	0.31 to 0.61	<0.01	9.28	4.12 to 20.9	<0.01	1.95	0.82 to 4.63	0.13
	2010-2012	1.44	0.94 to 2.20	0.10	0.31	0.20 to 0.45	<0.01	2.94	1.30 to 6.67	0.01	0.63	0.27 to 1.46	0.28
	2013-2016	0.09	0.03 to 0.26	<0.01	0.02	0.00 to 0.07	<0.01	0.24	0.05 to 1.04	0.06	0.06	0.02 to 0.23	<0.01
25-29 years	1995-1997	2.42	1.47 to 3.97	<0.01	0.63	0.39 to 1.03	0.07						
	1998-2000	3.46	2.13 to 5.61	<0.01	0.77	0.45 to 1.33	0.35	2.42	0.81 to 7.25	0.11	0.75	0.26 to 2.17	0.60
	2001-2003	3.64	2.42 to 5.47	<0.01	0.79	0.57 to 1.10	0.17	2.93	1.29 to 6.66	0.01	0.80	0.34 to 1.90	0.62
	2004-2006	3.09	2.25 to 4.24	<0.01	0.67	0.48 to 0.92	0.01	6.84	2.77 to 16.9	<0.01	1.83	0.75 to 4.48	0.19
	2007-2009	1.88	1.37 to 2.58	<0.01	0.31	0.19 to 0.51	<0.01	7.64	3.44 to 17.0	<0.01	1.67	0.74 to 3.76	0.22
	2010-2012	1.14	0.75 to 1.72	0.55	0.18	0.13 to 0.26	<0.01	2.51	1.10 to 5.71	0.03	0.43	0.17 to 1.06	0.07
	2013-2016	0.07	0.02 to 0.29	<0.01	0.01	0.00 to 0.06	<0.01	0.19	0.04 to 0.89	0.04	0.06	0.01 to 0.24	<0.01
30-34 years	1995-1997	1.38	0.83 to 2.29	0.22	0.46	0.31 to 0.67	<0.01						
	1998-2000	2.50	1.60 to 3.90	<0.01	0.68	0.40 to 1.15	0.15	1.60	0.55 to 4.63	0.38	0.65	0.23 to 1.85	0.42
	2001-2003	2.83	1.91 to 4.20	<0.01	0.66	0.46 to 0.94	0.02	2.47	1.06 to 5.74	0.04	0.78	0.33 to 1.85	0.57
	2004-2006	2.44	1.75 to 3.38	<0.01	0.66	0.48 to 0.89	0.01	4.96	2.03 to 12.1	<0.01	1.73	0.73 to 4.13	0.22
	2007-2009	1.32	0.91 to 1.91	0.14	0.39	0.21 to 0.73	<0.01	5.63	2.57 to 12.3	<0.01	1.42	0.63 to 3.21	0.40
	2010-2012	0.81	0.52 to 1.24	0.33	0.19	0.13 to 0.29	<0.01	1.85	0.85 to 4.04	0.12	0.46	0.20 to 1.05	0.07
	2013-2016	0.08	0.03 to 0.26	<0.01	0.01	0.00 to 0.06	<0.01	0.16	0.03 to 0.94	0.04	0.05	0.01 to 0.24	<0.01
35-39 years	1995-1997	0.92	0.55 to 1.53	0.75	0.36	0.23 to 0.55	<0.01						
	1998-2000	1.65	1.05 to 2.61	0.03	0.43	0.28 to 0.66	<0.01	1.03	0.34 to 3.14	0.95	0.46	0.15 to 1.37	0.16
	2001-2003	1.81	1.28 to 2.56	<0.01	0.60	0.42 to 0.84	<0.01	1.61	0.72 to 3.59	0.25	0.74	0.32 to 1.70	0.48
	2004-2006	1.85	1.23 to 2.77	<0.01	0.62	0.42 to 0.90	0.01	4.28	1.71 to 10.7	<0.01	1.45	0.59 to 3.57	0.42
	2007-2009	1.03	0.76 to 1.40	0.84	0.35	0.25 to 0.48	<0.01	4.17	1.92 to 9.05	<0.01	1.52	0.67 to 3.46	0.31
	2010-2012	0.63	0.37 to 1.06	0.08	0.18	0.11 to 0.29	<0.01	1.73	0.79 to 3.75	0.17	0.44	0.19 to 0.98	0.05
	2013-2016	0.04	0.01 to 0.14	<0.01	0.02	0.00 to 0.10	<0.01	0.16	0.03 to 0.80	0.03	0.06	0.01 to 0.25	<0.01
≥ 40 years	1995-1997	1.30	0.78 to 2.18	0.31	0.89	0.51 to 1.52	0.66						
	1998-2000	2.58	1.63 to 4.08	<0.01	1.50	0.91 to 2.46	0.11	1.73	0.59 to 5.01	0.32	1.21	0.42 to 3.43	0.73
	2001-2003	2.94	2.09 to 4.12	<0.01	1.62	1.04 to 2.53	0.03	2.60	1.18 to 5.73	0.02	1.68	0.71 to 3.98	0.24
	2004-2006	3.59	2.40 to 5.38	<0.01	1.81	1.28 to 2.58	<0.01	7.00	2.82 to 17.4	<0.01	4.09	1.68 to 9.92	<0.01
	2007-2009	2.23	1.59 to 3.13	<0.01	1.15	0.79 to 1.68	0.46	7.22	3.32 to 15.7	<0.01	3.85	1.73 to 8.55	<0.01
	2010-2012	1.48	1.00 to 2.18	0.05	0.78	0.50 to 1.22	0.28	2.99	1.38 to 6.46	0.01	1.41	0.64 to 3.13	0.40
	2013-2016	0.10	0.02 to 0.41	<0.01	0.04	0.01 to 0.17	<0.01	0.40	0.09 to 1.85	0.24	0.17	0.03 to 0.86	0.03

Poisson regression was used to test for differences in trends over time, by age group, gender, and migratory status. Data were stratified by gender with an interaction term between year and age group.