Appendices

Annex 1: Environmental covariates assembled [Bhatt et al., 2015]

Covariates	Variable(s)	Source	Type
Temperature	Land Surface Temperature (daytime, night-time, and diurnal-flux)	MODIS Product	Dynamic Monthly
Temperature Suitability	Temperature Suitability for *Plasmodium falciparum*	Modelled Product	Dynamic Monthly
Precipitation	Mean Annual Precipitation	WorldClim	Synoptic
Vegetation Vigour	Enhanced Vegetation Index	MODIS Derivative	Dynamic Monthly
Surface Wetness	Tasselled Cap Wetness	MODIS Derivative	Dynamic Monthly
Surface Brightness	Tasselled Cap Brightness	MODIS Derivative	Dynamic Monthly
IGBP Landcover	Fractional Landcover	MODIS Derivative	Dynamic Annual
IGBP Landcover Pattern	Landcover Patterns	MODIS Derivative	Dynamic Annual
Terrain Steepness	Slope Angle & Slope Angle Thresholds	SRTM Derivatives	Static
Topographically Redistributed Water	Flow Accumulation & Topographic Wetness Index	SRTM Derivatives	Static
Infrastructural Development	Accessibility[Nelson, 2008] to Urban Centres and Night-time Lights	Modelled Product and VIIRS	Static
Moisture Metrics	Aridity and Potential Evapotranspiration	Modelled Products	Synoptic
Elevation	Digital Elevation Model	SRTM	Static
Human Population	AfriPop	Modelled Products	Dynamic Annual

Annex 2: Overview of ACD data used to calibrate the MAP model [Cameron et al., 2015] https://www.nature.com/articles/ncomms9170/tables/1

Site, Country	Year	Frequency of ACD
Farafenni, The Gambia	1981-1982	Monthly
Linzolo, Republic of Congo	1983-1984	Daily
Pahou, Benin	1989	Monthly
Dielmo, Senegal	1990	Daily
Asembo Bay, Kenya	1992	Fortnightly
Matola, Mozambique	1992-1995	Daily
Ndiop, Senegal	1993	Daily
Dakar, Senegal	1994	Weekly
Barkedji, Senegal	1994-1995	Every 10 days
Dakar, Senegal	1996-1997	Weekly
Manhiça, Mozambique	1996-1999	Weekly
Koundou, Cameroon	1997-1998	Daily
Ebolakouno, Cameroon	1997-1998	Daily
Katiola, Côte d'Ivoire	1997-1998	Daily
Korhogo, Côte d'Ivoire	1997-1998	Daily
Korhogo, Côte d'Ivoire	1997-1998	Daily
Bandiagara, Mali	1999	Weekly
Donéguébougou, Mali	1999-2000	Weekly
Sotuba, Mali	1999-2000	Weekly
Ngerenya, Kenya	1999-2001	Weekly
Chonyi, Kenya	1999-2001	Weekly
Ifakara, Tanzania	2000-2001	Weekly
Mgome, Tanzania	2001	Monthly
Ubiri, Tanzania	2001	Monthly
Magamba, Tanzania	2001	Monthly
Niakhar, Senegal	2003	Weekly
Balonghin, Burkina Faso	2003	Daily
Manhiça, Mozambique	2003-2005	*
Kintampo, Ghana	2004	Twice weekly
Saponé, Burkina Faso	2007	Thrice weekly
Dielmo, Senegal	2007-2008	Twice weekly
Chano Mille, Ethiopia	2009-2011	Daily

Footnote: *Symbol denotes the one study that did not conduct ACD, but was included for consistency with the previous analysis of Griffin et al. ACD – Active Case Detection

Annex 3: 94 site-years data used by MAP in the malaria case fatality analysis [Gething et al., 2016]
https://www.nejm.org/doi/suppl/10.1056/NEJMoa1606701/suppl_file/nejmoa1606701_appendix.pdf

Site, Country	Year	Site, Country	Year
Farafenni North Bank, The Gambia	1982	Morogoro, Tanzania	1995
Farafenni, The Gambia	1982	Niakhar Fatick, Senegal	1996
Kongodjan, Burkina Faso	1984	Kericho, Kenya	1997
Niakhar Fatick, Senegal	1984	Nouna, Burkina Faso	1998
Katana, Democratic Republic of the Congo	1986	Mandiana, Guinea	1998
Murang'a, Kenya	1986	Dar es Salaam, Tanzania	1998
Bandafassi, Senegal	1986	Hai, Tanzania	1998
Bagamoyo District, Tanzania	1986	Morogoro, Tanzania	1998
Farafenni North Bank, The Gambia	1986	Niakhar Fatick, Senegal	1999
Mangochi, Malawi	1988	Nouna, Burkina Faso	2000
South Bank east of Soma, The Gambia	1988	Butajira, Ethiopia	2000
South Bank east of Soma, The Gambia	1989	Navrongo, Ghana	2000
Upper River Division eastern, The Gambia	1989	Rufiji, Tanzania	2000
Nyanza-Lac District, Burundi	1990	Kilite Awlaelo Surveillance Site, Ethiopia	2001
Bwamanda, Democratic Republic of the Congo	1990	Manhica District, Mozambique	2001
Dwamanda, Democratic Republic of the Congo	1990	Dar es Salaam, Tanzania	2001
Kassena-Nankana District, Ghana	1990	Hai, Tanzania	2001
Niakhar Fatick, Senegal	1990	Ifakara, Tanzania	2001
North of Bo, Sierra Leone	1990	Muleba, Tanzania	2001
Upper River Division eastern, The Gambia	1990	Morogoro, Tanzania	2001
Nko Cross River State, Nigeria	1991	Kourweogo, Burkina Faso	2002
Upper River Division eastern, The Gambia	1991	Nouna, Burkina Faso	2002
Bandafassi, Senegal	1992	Oubritenga, Burkina Faso	2002
Muheza District, Tanzania	1992	Ifakara, Tanzania	2002
Primary Health Care Program, The Gambia	1992	Manhica District, Mozambique	2002
Upper River Division eastern, The Gambia	1992	Siaya (Asembo and Gem), Kenya	2003
Niakhar Fatick, Senegal	1993	Ifakara, Tanzania	2003
Bagamoyo District, Tanzania	1993	Kassena-Nankana District, Ghana	2003
Upper River Division eastern, The Gambia	1993	Ourgaye and Diapaga Districts, Burkina Faso	2004
Kassena-Nankana District, Ghana	1994	Gilgel Gibe, Ethiopia	2004
Bandim I, Bandim II, Belem, and Mindara, Guinea-Bissau	1995	Brong Ahafo Region, Ghana	2004
Dar es Salaam, Tanzania	1995	Siaya (Asembo and Gem), Kenya	2004
Hai, Tanzania	1995	Karonga District, Malawi	2004

Annex 3 continued…

Site, Country	Year
Ifakara, Tanzania	2004
Pemba, Tanzania	2004
Rufiji, Tanzania	2004
Siaya (Asembo and Gem), Kenya	2005
Karonga District, Malawi	2005
Ifakara, Tanzania	2005
Rufiji, Tanzania	2005
Addis Ababa, Ethiopia	2006
Alamata, Ethiopia	2006
Rata Azebo, Ethiopia	2006
Siaya (Asembo and Gem), Kenya	2006
Karonga District, Malawi	2006
Ifakara, Tanzania	2006
Banfora Health District, Burkina Faso	2007
Addis Ababa, Ethiopia	2007
Barekese Sub-District, Ghana	2007
Siaya (Asembo and Gem), Kenya	2007
Karonga District, Malawi	2007
Ifakara, Tanzania	2007
Addis Ababa, Ethiopia	2008
Siaya (Asembo and Gem), Kenya	2008
Chiradzulu District, Malawi	2008
Karonga District, Malawi	2008
Kafue District, Zambia	2008
Kossi Province, Burkina Faso	2009
North Central Region, Burkina Faso	2009
Addis Ababa, Ethiopia	2009
Iganga and Mayuge Districts, Uganda	2009

Annex 4: Assessment of the quality of all studies included in the review based on Joanna Briggs Institute Prevalence Critical Appraisal Tool: Quality assessment tool for prevalence studies [Munn et al., 2014]

1st Author, year	Was the sample representative of the target population?	Were study participants recruited in an appropriate way?	Was the sample size adequate?	Were the study subjects and setting described in detail?	Is the data analysis conducted with sufficient coverage of the identified sample?	Were objective, standard criteria used for measurement of the condition?	Was the condition measured reliably?	Was there appropriate statistical analysis?	Are all important confounding factors/ subgroups/differences identified and accounted for?	Were subpopulations identified using objective criteria?	Quality score
Alemu et al., 2011	U	U	U	Y	Y	Y	Y	Y	N	N	50%
Alemu et al,. 2012	Y	Y	Y	Y	U	Y	U	Y	N	N	60%
Aregawi et al., 2014	Y	Y	Y	Y	N	Y	U	Y	N	N	60%
Aregawi et al., 2017	U	U	Y	Y	Y	Y	N	Y	N	N	50%
Aregawi et al., 2011	Y	Y	Y	Y	U	Y	N	Y	N	N	60%
Assele et al., 2015	Y	Y	Y	Y	U	Y	U	Y	N	N	60%
Bhattarai et al., 2007	U	U	Y	Y	Y	U	N	Y	N	N	40%
Bouyou-Akotet et al., 2009	Y	Y	Y	Y	U	Y	Y	Y	N	N	70%
Brasseur et al., 2015	Y	Y	Y	N	Y	Y	U	Y	N	N	60%
Brasseur et al., 2011	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%
Ceesay et al., 2008	Y	Y	Y	Y	U	Y	Y	Y	N	N	70%
Ceesay et al., 2010	Y	Y	Y	Y	Y	Y	N	Y	N	N	70%
Chanda et al., 2009	Y	Y	U	Y	U	Y	Y	Y	N	N	60%
Chaves et al., 2012	U	U	Y	N	U	U	U	Y	U	U	20%
Comfort et al., 2014	Y	Y	Y	Y	U	Y	U	Y	N	N	60%

Annex 4 continued…

1st Author, year	Was the sample representative of the target population?	Were study participants recruited in an appropriate way?	Was the sample size adequate?	Were the study subjects and setting described in detail?	Is the data analysis conducted with sufficient coverage of the identified sample?	Were objective, standard criteria used for measurement of the condition?	Was the condition measured reliably?	Was there appropriate statistical analysis?	Are all important confounding factors/ subgroups/differences identified and accounted for?	Were subpopulations identified using objective criteria?	Quality score
Coulibaly et al., 2014	Y	Y	Y	Y	Y	Y	Y	Y	N	N	80%
Donovan et al., 2012	Y	Y	Y	Y	N	N	N	Y	N	N	50%
Efe et al., 2013	U	U	U	Y	U	N	N	Y	N	N	20%
Eissa et al., 2017	U	U	U	Y	U	N	N	Y	N	N	20%
Ergete et al., 2018	Y	Y	Y	Y	Y	Y	U	Y	N	N	70%
Ferrao et al., 2016	Y	Y	Y	Y	Y	N	N	Y	N	N	60%
Galatas et al., 2016	Y	Y	Y	Y	Y	Y	Y	Y	N	N	80%
Gebretsadik et al., 2018	Y	Y	Y	Y	Y	Y	Y	Y	N	N	80%
Gunda et al., 2017	U	U	N	Y	Y	Y	N	Y	N	N	40%
Kamuliwo et al., 2013	U	U	U	Y	U	N	N	Y	N	N	20%
Kapesa et al., 2017	U	U	Y	U	U	N	N	Y	N	N	20%
Khagayi et al., 2017	Y	Y	U	Y	U	Y	Y	Y	N	N	60%
Kigozi et al., 2012	Y	Y	Y	Y	Y	Y	U	Y	N	N	70%
Landoh et al., 2012	U	U	Y	Y	Y	N	N	Y	N	N	40%
M'Bra et al., 2018	N	N	Y	N	Y	N	N	Y	Y	Y	50%
Masaninga et al., 2012	U	U	Y	Y	U	N	N	Y	N	N	30%
Mba et al., 2006	U	U	U	Y	U	N	N	Y	N	N	20%

Annex 4 continued…

1st Author, year	Was the sample representative of the target population?	Were study participants recruited in an appropriate way?	Was the sample size adequate?	Were the study subjects and setting described in detail?	Is the data analysis conducted with sufficient coverage of the identified sample?	Were objective, standard criteria used for measurement of the condition?	Was the condition measured reliably?	Was there appropriate statistical analysis?	Are all important confounding factors/ subgroups/differences identified and accounted for?	Were subpopulations identified using objective criteria?	Quality score
Mharakurwa et al., 2013	U	U	Y	Y	N	N	N	Y	N	N	30%
Mogeni et al., 2016	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%
Muchena et al., 2018	U	U	N	N	U	N	N	U	N	N	0%
Mukonka et al., 2014	U	U	Y	N	U	N	N	Y	N	N	20%
Mukonka et al., 2015	U	U	Y	N	U	N	N	Y	N	N	20%
Munier et al., 2009	Y	Y	U	Y	U	N	N	Y	N	N	40%
Mutsigiri et al., 2017	U	U	Y	N	Y	Y	U	Y	N	N	40%
Ndong et al., 2014	N	N	N	Y	N	Y	N	Y	N	N	30%
Nyarango et al., 2006	U	U	U	Y	U	Y	N	Y	N	N	30%
Ogwang et al., 2018	Y	Y	Y	Y	Y	Y	U	Y	N	N	70%
Okech et al., 2008	Y	Y	Y	Y	U	Y	N	Y	N	N	60%
Okiro et al., 2009	Y	Y	U	Y	Y	N	N	Y	N	N	50%
Okiro et al., 2010a	Y	Y	U	Y	Y	N	N	Y	N	N	50%
Okiro et al., 2011	Y	Y	Y	Y	Y	N	N	Y	N	N	60%
Okiro et al., 2013	Y	Y	Y	Y	U	N	N	Y	N	N	50%
Ollivier et al., 2011	Y	Y	Y	Y	Y	Y	U	Y	U	U	70%
Orimadegun et al., 2007	Y	Y	Y	Y	Y	Y	N	Y	N	N	70%

Annex 4 continued…

1st Author, year	Was the sample representative of the target population?	Were study participants recruited in an appropriate way?	Was the sample size adequate?	Were the study subjects and setting described in detail?	Is the data analysis conducted with sufficient coverage of the identified sample?	Were objective, standard criteria used for measurement of the condition?	Was the condition measured reliably?	Was there appropriate statistical analysis?	Are all important confounding factors/ subgroups/differences identified and accounted for?	Were subpopulations identified using objective criteria?	Quality score
Otten et al., 2009	Y	Y	Y	Y	Y	N	N	Y	N	N	60%
Raouf et al., 2017	Y	Y	Y	Y	Y	Y	U	Y	N	U	70%
Roca-Feltrer et al., 2012	Y	Y	Y	Y	Y	Y	Y	Y	N	N	80%
Rose-Wood et al., 2010	Y	Y	U	Y	Y	N	N	Y	N	N	50%
Salvador et al., 2015	Y	Y	Y	Y	Y	Y	N	Y	N	N	70%
Sande et al., 2016	U	U	U	Y	U	U	U	U	N	U	10%
Sande et al., 2017	U	U	U	Y	U	Y	U	Y	N	U	30%
Sena et al., 2014	Y	Y	Y	Y	N	Y	U	Y	N	N	60%
Simple et al., 2018	U	U	Y	Y	U	N	N	Y	N	NA	30%
Smith et al., 2014	U	U	U	Y	N	N	N	U	N	N	10%
Stern et al., 2011	U	U	Y	N	U	U	U	Y	U	U	20%
Tesfa et al., 2018	Y	Y	Y	Y	Y	Y	U	Y	N	N	70%
Trape et al., 2014	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%
Tukei et al., 2017	U	U	Y	N	N	Y	U	Y	N	N	30%
Ursing et al., 2014	Y	Y	U	Y	Y	Y	Y	Y	N	N	70%
Wragge et al., 2015	Y	Y	Y	Y	N	Y	N	Y	U	U	60%
Yimer et al., 2015	Y	Y	Y	Y	Y	Y	Y	Y	N	N	80%
Yimer et al., 2017	Y	Y	Y	Y	Y	Y	Y	Y	N	N	80%

Annex 5: Record form to capture routinely gathered data in predicting variation in malaria transmission in the health facilities

Name of the health facility:		**Interviewer's name:**
Name of the patient:		**Participant ID:**
Date of screening: Day/Month/Year | | | | | | | | |		**Time of screening:**
101	Name of Location:	103. Name of Village**:**
102.	Name of Sub-location:	104: Name of the nearest bus stage/school:
105	Name of the head of the household:	106: Name of father/mother/guardian:
107	Household ID (DSS code to be added later):	108: Person ID (DSS code to be added later):
109	Date of Birth: Day/Month/Year | | | | | | | | |	110 Sex of the participant: Male **(1)** Female **(2)**
111	History of fever (reported fever in the last 24 hours)	No **(0)** Yes **(1)**
112	Is the patient pregnant? *Ask if it is a female aged 15-49 years*	No **(0)** Yes **(1)**
113	Did the patient sleep under a bednet in the last one week?	No **(0)** Yes **(1)**
114	Did the patient sleep under a bednet last night?	No **(0)** Yes **(1)**
115	Has the patient travelled away in the last one week (outside their residential area)?	No **(0)** Yes **(1)**
116	If they did, where did they travel?	
117	Reason for travel	
118	Patient's temperature?	
119	Does the patient have fever? *This could be reported fever or temperature > 37.5°C*	No **(0)** Yes **(1)**
120	What was the RDT test result?	Negative **(0)** Positive **(1)** Not done **(2)**

Annex 6: Record form to capture routinely gathered data in predicting variation in malaria transmission in the community-based prevalence survey

House ID:		
Name of the village:		**Interviewer's name:**
Name of the participant:		**Participant ID:**
Date of screening: Day/Month/Year		**Time of screening:**
101	Person ID (DSS code to be added later):	
102	Date of Birth: Day/Month/Year	103 Sex of the participant: Male **(1)** Female **(2)**
104	History of fever (reported fever in the last 24 hours)	No **(0)** Yes **(1)**
105	Is participant pregnant? *Ask if it is a female aged 15-49 years*	No **(0)** Yes **(1)**
106	Did the participant sleep under a bednet in the last one week?	No **(0)** Yes **(1)**
107	Did the participant sleep under a bednet last night?	No **(0)** Yes **(1)**
108	Has the participant travelled away in the last one week (outside their residential area)?	No **(0)** Yes **(1)**
109	If they did, where did they travel?	
110	Reason for travel	
111	Participants' temperature?	
112	Does the participant have fever? *This could be reported fever or temperature > 37.5°C*	No **(0)** Yes **(1)**
113	What was the RDT test result?	Negative **(0)** Positive **(1)** Not done **(2)**

Annex 7: Distribution of reported fever, measured fever, and parasite prevalence stratified by age categories and sex in the community survey

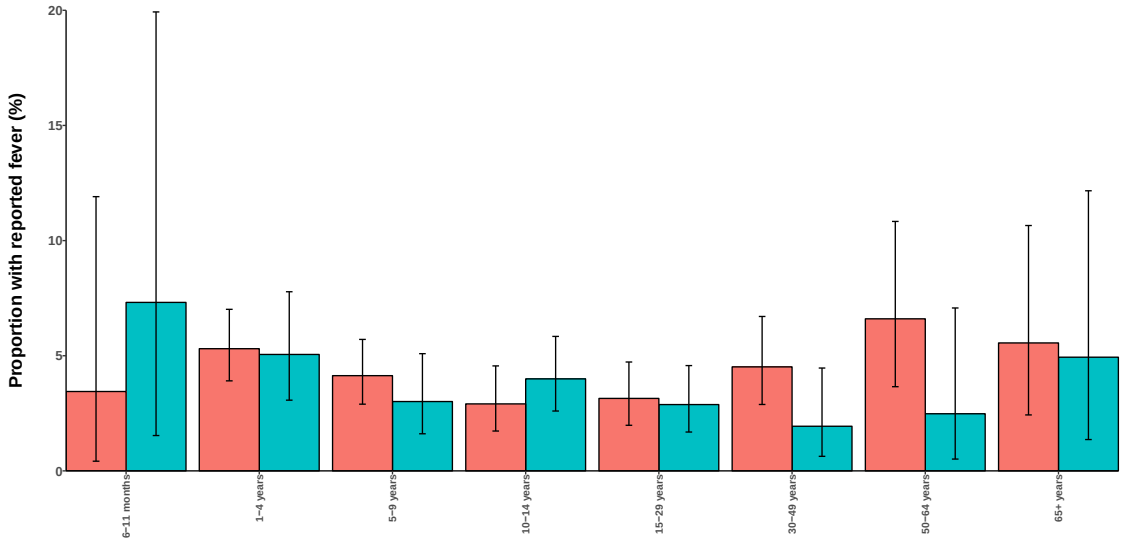
Female

	6-11 months	1-4 years	5-9 years	10-14 years	15-29 years	30-49 years	50-64 years	65+ years
Reported fever, (95% CI); n/N	3.4% (0.4, 11.9) 2/58	5.3% (3.9, 7.0) 46/867	4.1% (2.9, 5.7) 35/846	2.9% (1.7, 4.6) 18/619	3.1% (2.0, 4.7) 22/699	4.5% (2.9, 6.7) 23/509	6.6% (3.7, 10.8) 14/212	5.6% (2.4, 10.7) 8/144
Number of participants with temperature >= 37.5 ºC (95% CI); n/N	1.7% (0.04, 9.2) 1/58	2.0% (1.2, 3.1) 17/865	1.1% (0.5, 2.0) 9/846	1.8% (0.9, 3.2) 11/619	1.3% (0.6, 2.4) 9/699	0.6% (0.1, 1.7) 3/508	0.5% (0.01, 2.6) 1/212	0% (0, 2.5) 0/144
Had either reported or measured fever(95% CI); n/N	6.9% (1.9, 16.7) 4/58	7.4% (5.7, 9.3) 64/867	5.0% (3.6, 6.7) 42/846	4.7% (3.2, 6.7) 29/619	4.6% (3.2, 6.4) 32/699	5.7% (3.8, 8.1) 29/509	7.5% (4.4, 12.0) 16/212	5.6% (2.4, 10.7) 8/144
Parasite prevalence % (95% CI); n/N	10.3% (3.9, 21.2) 6/58	10.3% (8.3, 12.5) 89/867	13.2% (11.0, 15.7) 112/846	14.5% (11.9, 17.6) 90/619	8.4% (6.5, 10.8) 59/699	4.1% (2.6, 6.2) 21/509	5.2% (2.6, 9.1) 11/212	4.9% (2.0, 9.8) 7/144

Males

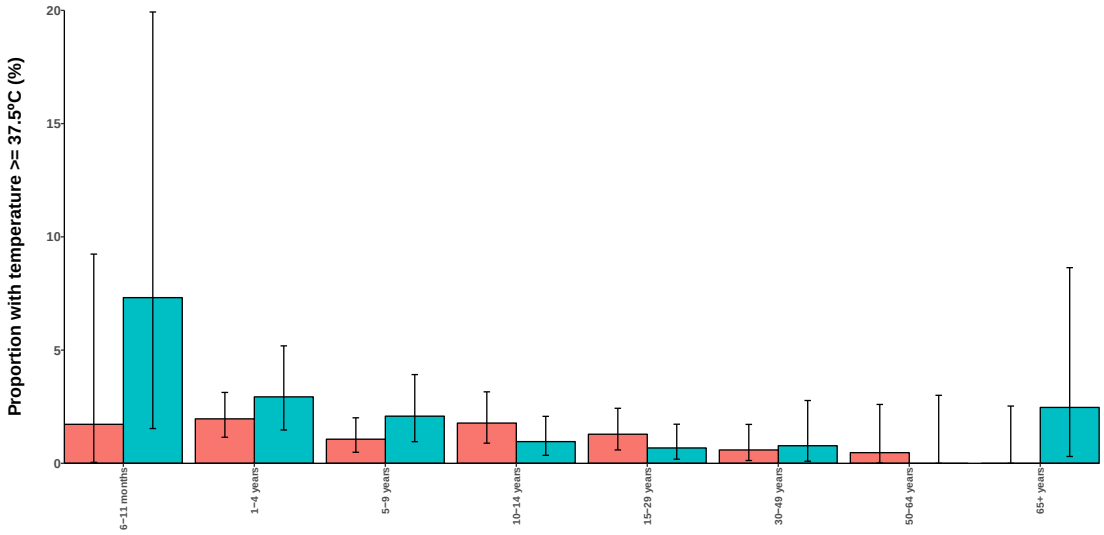
	6-11 months	1-4 years	5-9 years	10-14 years	15-29 years	30-49 years	50-64 years	65+ years
Reported fever, (95% CI); n/N	7.3% (1.5, 19.9) 3/41	5.1% (3.1, 7.8) 19/376	3.0% (1.6, 5.1) 13/432	4.0% (2.6, 5.8) 25/626	2.9% (1.7, 4.6) 17/590	1.9% (0.6, 4.5) 5/258	2.5% (0.05, 7.1) 3/121	4.9% (1.4, 12.2) 4/81
Number of participants with temperature >= 37.5 ºC (95% CI); n/N	7.3% (1.5, 19.9) 3/41	2.9% (1.5, 5.2) 11/375	2.1% (1.0, 3.9) 9/432	1.0% (0.4, 2.1) 6/626	0.7% (0.2, 1.7) 4/590	0.8% (0.09, 2.8) 2/258	0% (0,3.0) 0/121	2.5% (0.3, 8.6) 2/81
Had either reported or measured fever(95% CI); n/N	12.2% (4.1, 26.2) 5/41	7.2% (4.8, 10.3) 27/376	4.9% (3.0, 7.3) 21/432	5.0% (3.4, 7.0) 31/626	3.7% (2.4, 5.6) 22/590	2.7% (1.1, 5.5) 7/258	4.1% (1.4, 9.4) 5/121	7.4% (2.8, 15.4) 6/81
Parasite prevalence % (95% CI)	4.9% (0.6, 16.5) 2/41	10.4% (7.4, 13.9) 39/376	13.0% (9.9, 16.5) 56/432	12.6% (10.1, 15.5) 79/626	9.3% (7.1, 12.0) 55/590	4.3% (2.1, 7.5) 11/258	4.1% (1.4, 9.4) 5/121	1.2% (0.03, 6.7) 1/81

Annex 8: Proportion of participants with reported fever in the community-based survey stratified by age group and sex



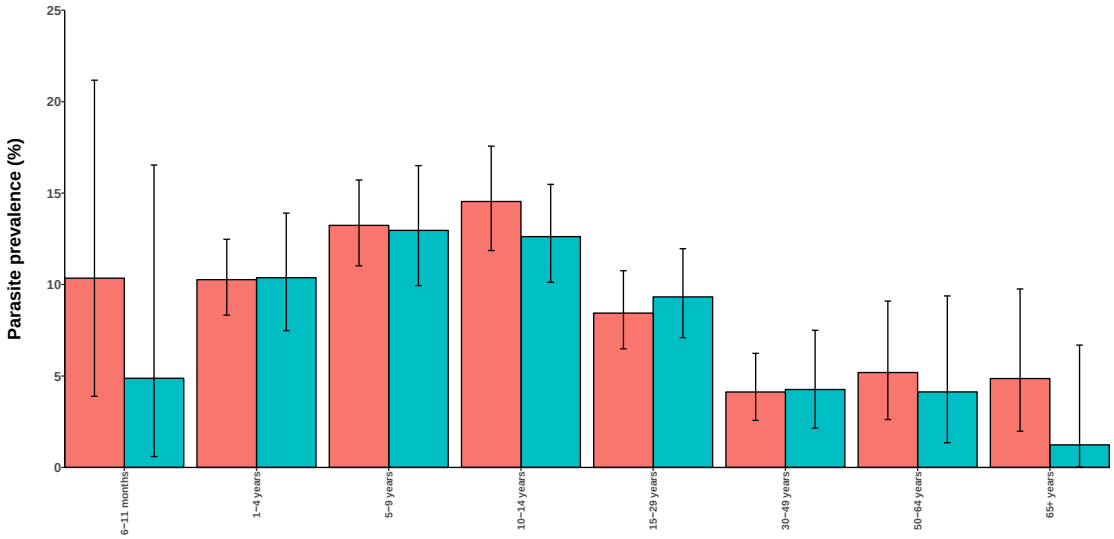
Legend: Red bars indicates the proportion among females and the green bars indicate proportion among males.

Annex 9: Proportion of participants with measured temperature ≥ 37.5 ºC in the community-based survey stratified by age group and sex



Legend: Red bars indicates the proportion among females and the green bars indicate proportion among males.

Annex 10: Parasite prevalence measured using RDTs in the community-based survey stratified by age group and sex.



Legend: Red bars indicates the proportion among females and the green bars indicate proportion among males.

Annex 11: Distribution of reported fever, measured fever and period prevalence stratified by age and sex in the health facilities survey

Female

	6-11 months	1-4 years	5-9 years	10-14 years	15-29 years	30-49 years	50-64 years	65+ years
Reported fever, % (95% CI); n/N	96.2% (93.4, 98.0) 301/313	97.4% (96.6, 98.0) 2285/2347	98.0% (97.4, 98.6) 2220/2265	97.7% (97.0, 98.2) 2787/2854	96.8% (96.1, 97.4) 2983/3083	96.3% (95.5, 97.0) 2383/2475	97.3% (96.2, 98.2) 1133/1164	96.9% (95.1, 98.1) 555/573
Number of participants with temperature >= 37.5 ºC, % (95% CI); n/N	44.1% (38.5, 49.8) 138/313	50.9% (48.9, 53.0) 1195/2346	50.2% (48.1, 52.3) 1137/2265	48.7% (46.9, 50.6) 1389/2850	36.5% (34.8, 38.3) 1126/3082	28.0% (26.3, 29.8) 693/2474	27.8% (25.3, 30.5) 324/1164	24.4% (21.0, 28.2) 140/573
Test positivity rate, %(95% CI); n/N	20.8% (16.4, 25.7) 65/313	39.3% (37.3, 41.3) 922/2347	56.2% (54.1, 58.3) 1273/2265	58.3% (56.5, 60.2) 1665/2854	37.1% (35.4, 38.8) 1143/3083	23.2% (21.6, 25.0) 575/2475	19.6% (17.3, 22.0) 228/1164	17.5% (14.4, 20.8) 100/573
RDT +ve period prevalence per 1,000, % (95% CI); n/N	107.8‰ (83.2, 137.4) 65/603	206.5‰ (193.4, 220.3) 922/4464	215.8‰ (204.1, 228.0) 1273/5899	295.2‰ (281.2, 309.7) 1665/5641	124.1‰ (117.0, 131.5) 1143/9213	82.2‰ (75.6, 89.2) 575/6995	69.1‰ (60.4, 78.6) 228/3301	55.8‰ (45.4, 67.8) 100/1793

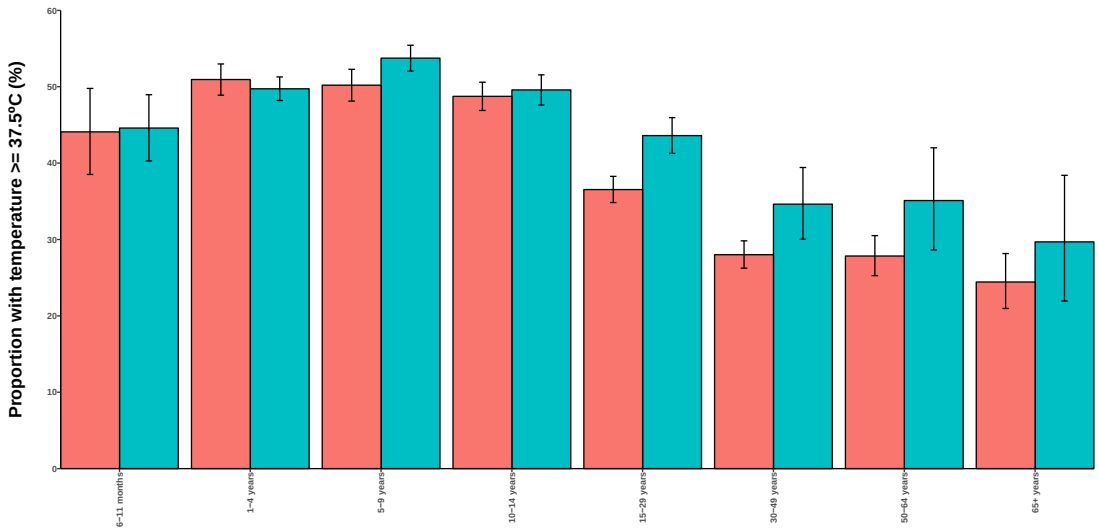
Male

	6-11 months	1-4 years	5-9 years	10-14 years	15-29 years	30-49 years	50-64 years	65+ years
Reported fever, % (95% CI); n/N	98.1% (96.5, 99.1) 517/527	98.0% (97.5, 98.4) 4019/4101	97.6% (97.0, 98.1) 3314/3395	97.1% (96.4, 97.7) 2440/2513	97.2% (96.4, 98.0) 1726/1775	97.8% (95.9, 99.0) 404/413	94.7% (90.7, 97.3) 197/208	95.3% (90.1, 98.3) 122/128
Number of participants with temperature >= 37.5 ºC, % (95% CI); n/N	44.6% (40.3, 49.0) 235/527	49.7% (48.2, 51.3) 2039/4100	53.7% (52.1, 55.4) 1824/3394	49.6% (47.6, 51.6) 1244/2509	43.6% (41.3, 46.0) 774/1775	34.6% (30.0, 39.4) 143/413	35.1% (28.6, 42.0) 73/208	29.7% (21.9, 38.4) 38/128
Test positivity rate, %(95% CI); n/N	21.4% (18.0, 25.2) 113/527	37.3% (35.8, 38.8) 1528/4101	56.3% (54.6, 58.0) 1911/3395	61.2% (59.3, 63.2) 1539/2513	49.7% (47.3, 52.0) 882/1775	32.2% (27.7, 37.0) 133/413	21.2% (15.8, 27.3) 44/208	17.2% (11.1, 24.9) 22/128
RDT +ve period prevalence per 1,000, % (95% CI); n/N	181.1‰ (149.2, 217.7) 113/624	320.7‰ (304.8, 337.2) 1528/4765	312.7‰ (298.8, 327.1) 1911/6111	260.0‰ (247.1, 273.3) 1539/5920	102.5‰ (95.8, 109.5) 882/8607	29.7‰ (24.8, 35.2) 133/4482	22.2‰ (16.1, 29.8) 44/1980	18.9‰ (11.8, 28.6) 22/1164

Annex 12: Frequency of re-attendance of patients in the six health facilities

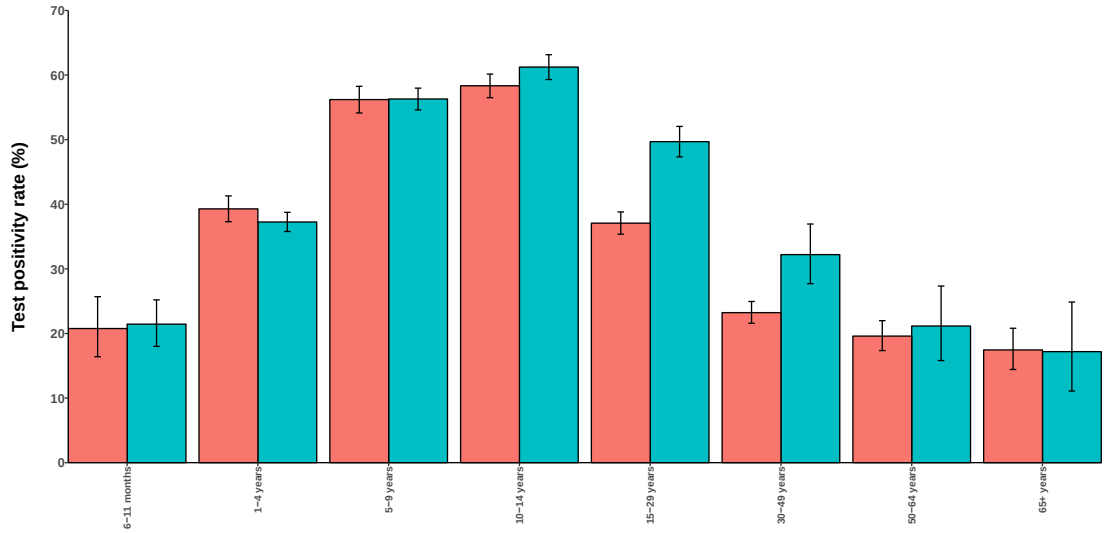
Number of visits	Number of patients	Proportion (%)
1	16,919	60.14
2	6,403	22.76
3	2,648	9.41
4	1,119	3.98
5	507	1.8
6	262	0.93
7	135	0.48
8	60	0.21
9	36	0.13
10	22	0.08
11	12	0.04
12	7	0.02
13	4	0.01

Annex 13: Proportion of patients with measured temperature ≥ 37.5 ºC in the health facility-based survey stratified by age group and sex



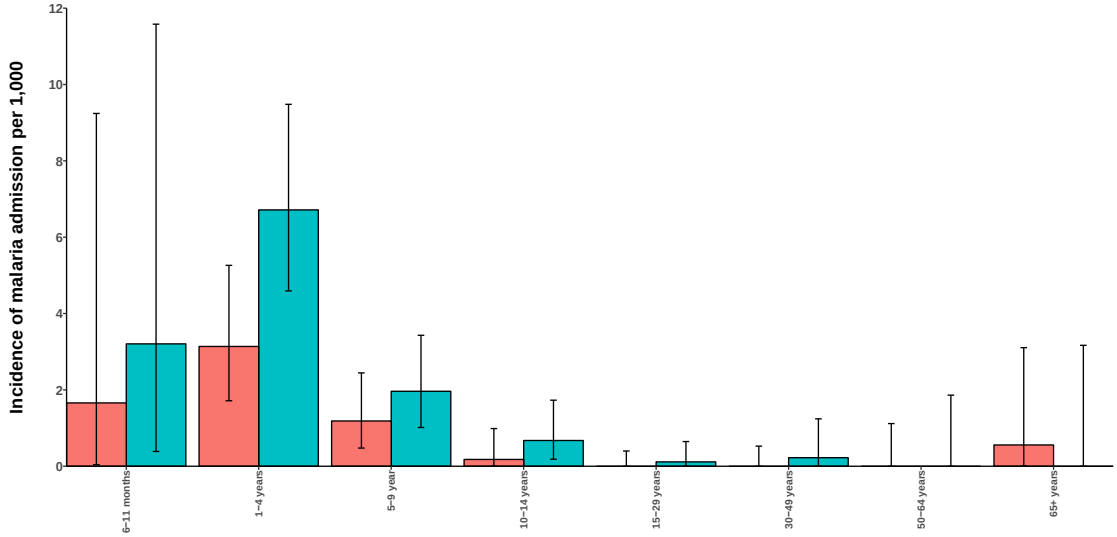
Legend: Red bars indicates the proportion among females and the green bars indicate proportion among males.

Annex 14: Test positivity rate measured using RDTs in the health-facility-based survey stratified by age group and sex



Legend: Red bars indicates the proportion among females and the green bars indicate proportion among males.

Annex 15*:* Incidence of malaria admission at Kilifi county hospital stratified by age group and sex

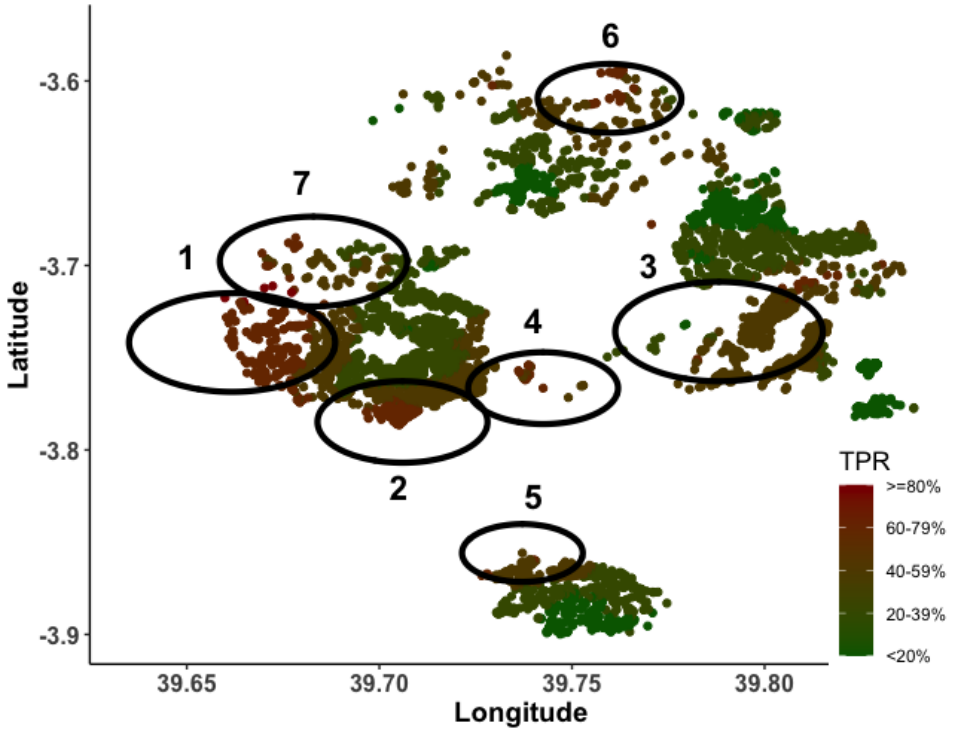


Legend: Red bars indicates the proportion among females and the green bars indicate proportion among males.

Annex 16: Smoothed estimates of 5,323 geocoded homesteads with varying radius

Summary measures	Yearly smoothed estimates
Average number of attendees at 0.2 km, (SD)	65 (64.7)
Average number of cases at 0.2 km, (SD)	27 (32.8)
Mean smoothed TRP at 0.2 km, (SD)	38.7% (20.9)
Range of smoothed TPR at 0.2 km (min, max)	0%, 100%
Average number of attendees at 0.5 km, (SD)	236 (208.7)
Average number of cases at 0.5 km, (SD)	101 (107.5)
Mean smoothed TRP at 0.5 km, (IQR)	38.7% (17.6)
Range of smoothed TPR at 0.5 km (min, max)	0%, 100%
Average number of attendees at 1 km, (SD)	680 (517.7)
Average number of cases at 1 km, (SD)	289 (270.5
Mean smoothed TRP at 1 km, (IQR)	38.8% (15.7)
Range of smoothed TPR at 1 km (min, max)	0%, 89.3%

Annex 17: Spatial distribution of smoothed mean TPR across all ages using records of first cases only of RDT positive patients at homesteads level aggregated at 1 km radius and the spatial hotspots of fever test positive cases.



Legend: Each plotted point represents an individual homestead, where red shading indicating high TPR and green shading indicating lower TPR. The large black circles indicate the significant hotspots (analysed without smoothing) where 1 indicates the primary cluster located in Chasimba health centre and clusters 2 - 9 are the secondary hotspots located in Ziani, Kadzinuni, Bomani and Jaribuni dispensaries.