## Supplemental Digital Content 1. Flow of participants

Enrolled and vaccinated (N= 2095)			
ACWY-TT_3 group Primary total vaccinated cohort N= 528	ACWY-TT_2 group Primary total vaccinated cohort N= 524	MenC-CRM <sub>197</sub> group Primary total vaccinated cohort N= 516	MenC-TT group Primary total vaccinated cohort N= 527
63 excluded: administration of vaccine forbidden in the protocol (1); vaccine temperature deviation (3); ineligible as per age window and eligibility criteria (4); randomised before the ICF is signed (1); administration of medication forbidden in the protocol (2); non compliance with vaccination schedule (10); non compliance with blood sampling schedule (5); essential serological data missing (37)  Primary ATP immunogenicity cohort (N=465)	66 excluded: randomisation failure (2); vaccine not administered according to protocol (2); vaccine temperature deviation (3); ineligible as per age window and eligibility criteria (2); RDE data not signed by the investigator (1); administration of medication forbidden in the protocol (6); non compliance with vaccination schedule (11), non compliance with vaccination schedule (10); essential serological data missing (33)  Primary ATP immunogenicity cohort (N=458)	57 excluded: randomisation failure (1); vaccine not administered according to protocol (1); vaccine temperature deviation (3); ineligible as per age window and eligibility criteria (4); randomized before the ICF is signed (1); administration of medication forbidden in the protocol (1); non compliance with vaccination schedule (10); con compliance with	68 excluded: vaccine not administered according to protocol (1); vaccine temperature deviation (3); ineligible as per age window and eligibility criteria (6); RDE data not signed by the investigator (1); randomized before the ICF is signed (1); administration of medication forbidder in the protocol (2); non compliance with vaccination schedule (8); non compliance with blood sampling schedule (6); essential serological data missing (40)  Primary ATP immunogenicity cohort (N=459)
20 withdrew: SAE (2); non-serious AE (1); protocol violation (2); consent withdrawal (9); moved from study area (4); lost to follow-up (2)  Primary study completion N= 508	7 withdrew: consent withdrawal (5); moved from study area (1); others (1)  Primary study completion N= 517	8 withdrew: SAE (1); protocol violation (1); consent withdrawal (3); moved from study area (2); lost to follow-up (1) Primary study completion N= 508	18 withdrew: non-serious AE (1); consent withdrawal (10); moved from study area (3); lostto follow-up (2); others (2)  Primary study completion N= 509
Booster total vaccinated cohort N= 497	Booster total vaccinated cohort N= 511	Booster total vaccinated cohort N= 503	Booster total vaccinated cohort N= 506
54 excluded: administration of vaccine forbidden in the protocol (4); vaccine not administered according to protocol (2); vaccine lemperature deviation (1); expired vaccine administered (2); excluded in the primary phase (9); administration of medication forbidden in the protocol (1); non compliance with vaccination schedule (6); non compliance with blood sampling schedule (17); essential serological data missing (12).  Booster ATP immunogenicity cohort (N=443)	46 excluded: administration of vaccine forbidden in the protocol (1), vaccine not administered according to protocol (1), vaccine temperature deviation (1); expired vaccine administered (1); excluded in the primary phase (12), non compliance with vaccination schedule (6), non compliance with blood sampling schedule (16), essential serological data missing (8).  Booster ATP immunogenicity cohort (N=465)	57 excluded: administration of vaccine forbidden in the protocol (2); vaccine not administered according to protocol (3); vaccine temperature deviation (2); expired vaccine administered (10); excluded in the primary phase (11); non compliance with vaccination schedule (7); non compliance with blood sampling schedule (12); essential serological data missing (10)  Booster ATP immunogenicity cohort (N=446)	45 excluded: administration of vaccine forbidde in the protocol (2), vaccine temperature deviatio (1); excluded in the primary phase (13); non compilance with vaccination schedule (4); non compilance with blood sampling schedule (14); essential serological data missing (11)  Booster ATP immunogenicity cohort (N=461)
3 withdrew: moved from study area (1); lostto follow-up (2) Booster study completion N= 494	2 withdrew: moved from study area (1); lostto follow-up (1) Booster study completion N= 509	5 withdrew: consent withdrawal (1); moved from study area (1); lost to follow-up (3)  Booster study completion N= 498	1 withdrew: consent withdrawal (1) Booster study completion N= 505
2 withdrew: lost to follow-up (2)  Extended Safety Follow-Up completion N= 492	7 withdrew: moved from study area (2); lostto follow-up (5) Extended Safety Follow-Up completion N= 502	2 withdrew: lost to follow-up (2)  Extended Safety Follow-Up completion N= 496	Extended Safety Follow-Up completion N= 50: