

2016
Quarter 1
Week
1 – 13
3 January 2016
—
27 March 2016

MenAfriNet Surveillance Annual Feedback Bulletin

Annual feedback bulletin on bacterial meningitis in MenAfriNet countries

Table 1: Epidemiological situation, Week: 1-13

40% of the population among MenAfriNet countries reside in MenAfriNet supported districts. 98% of suspect cases reported in the MenAfriNet database received a lumbar puncture, and 42% of whom were classified as having probable bacterial meningitis. 11% of cases tested positive for meningococcal meningitis. Vaccination status was complete (yes or no) for 47% of all suspect cases in MenAfriNet countries.

Characteristics	Burkina Faso	Mali	Niger	Tchad*	Togo	MenAfriNet
	N (%)					
Demographics						
Population**	19,034,397 (100)	3,823,714 (21)	6,854,881 (36)	677,783 (5)	415,487 (6)	30,806,262 (40)
MenAfriNet District†	70 (100)	10 (100)	12 (75)	1 (25)	2 (100)	95 (93)
Weekly suspect cases	1511	238	667	107	200	2,723
MenAfriNet suspected cases	1296	225	496	47	204	2,268
Deaths	101 (8)	4 (2)	28 (6)	0 (0)	5 (2)	138 (6)
Age (years)‡						
<1	200 (16)	62 (28)	20 (4)	17 (46)	19 (9)	318 (14)
1-4	367 (28)	59 (27)	121 (25)	2 (5)	38 (19)	587 (26)
5-9	269 (21)	24 (11)	105 (21)	3 (8)	28 (14)	429 (19)
10-14	186 (14)	29 (13)	90 (18)	3 (8)	24 (12)	332 (15)
15-29	149 (12)	34 (15)	110 (22)	5 (14)	34 (17)	332 (15)
≥30	119 (9)	13 (6)	46 (9)	7 (19)	61 (30)	246 (11)
Sex‡						
Male	708 (55)	119 (53)	278 (57)	19 (49)	113 (55)	1,237 (55)
Vaccination status known						
MenAfriVac§	14 (2)	1 (2)	3 (1)	3 (11)	69 (100)	90 (9)
Laboratory††						
CSF collected	1,293 (100)	225 (100)	454 (92)	47 (100)	204 (100)	2,223 (98)
Appearance	909 (70)	217 (96)	319 (70)	42 (89)	204 (100)	1,691 (76)
Probable bacterial meningitis	544 (42)	92 (41)	182 (40)	21 (45)	101 (50)	940 (42)
Probable meningococcal meningitis	53 (4)	24 (11)	3 (1)	1 (2)	46 (23)	127 (6)
Confirmed bacterial meningitis	455 (35)	90 (40)	49 (11)	14 (30)	66 (32)	674 (30)
Confirmed meningococcal meningitis	127 (10)	32 (14)	38 (8)	0 (0)	53 (26)	250 (11)

Abbreviation: CSF, cerebrospinal fluid;

* Chad data will be presented in Table 1 and 2. Performance indicators will not be presented as the country has not started implementing activities.

**Population of MenAfriNet supported districts—All 70 districts in Burkina Faso were selected by the country.

†Selected MenAfriNet districts submitting case-based surveillance data (denominator = total number of selected MenAfriNet districts).

‡Missing value for age: Burkina Faso—6 (<1%); Mali—4 (2%); Tchad—10 (21%); MenAfriNet—20 (1%)

‡Missing value for sex: Burkina Faso—6 (<1%); Mali—1 (<1%); Tchad—9 (19%); MenAfriNet—17 (<1%)

§Denominator = number of cases with known (yes or no) vaccine status

††Identification by culture, PCR, latex ou test de diagnostic rapide

Laboratory classification definitions (denominator = CSF collected):

1. Probable bacterial meningitis: cloudy appearance, or white blood cell count > 10 cells/mm³ or any positive Gram stain test result
2. Probable meningococcal meningitis: gram negative diplococci only
3. Confirmed bacterial meningitis]: cases confirmed, regardless of the germ
4. Confirmed meningococcal meningitis: laboratory confirmation of *N. meningitidis* serogroup A, C, W, Y or X

Table 2. Laboratory results, Week: 1-13

77% of specimens collected in MenAfriNet countries were tested by culture, PCR, Latex or a rapid diagnostic test. *S. pneumoniae* was the predominant pathogen (22%). In Togo, *N. meningitidis* serogroup W was the predominant germ (26%), during the context of an epidemic. 1 case of NmA was confirmed in Mali; the patient was a 15 year old who was not vaccinated with MenAfriVac in 2011.

Results	Burkina Faso	Mali	Niger	Tchad	Togo	MenAfriNet
	N (%)					
CSF collected	1,293 (100)	225 (100)	454 (92)	47 (100)	204 (100)	2,223 (98)
Gram Stain	819 (63)	225 (100)	20 (4)	45 (96)	51 (25)	1,160 (52)
CSF received at the NRL	1,036 (80)	224 (100)	80 (18)	47 (100)	124 (61)	1,511 (68)
CSF analyzed by a confirmatory test*	1,074 (83)	223 (99)	173 (38)	47 (100)	196 (96)	1,714 (77)
Culture	184 (17)	211 (94)	14 (8)	39 (83)	115 (59)	563 (33)
PCR†	1,012 (98)	219 (98)	79 (99)	34 (72)	41 (33)	1,385 (92)
Real-time PCR	977 (99)	218 (100)	79 (100)	34 (100)	0 (0)	1,308 (96)
Conventional	7 (1)	1 (0)	0 (0)	0 (0)	41 (100)	49 (4)
Latex	113 (11)	111 (50)	42 (24)	22 (47)	46 (23)	334 (19)
RDT	0 (0)	2 (1)	6 (3)	0 (0)	0 (0)	8 (0)
<i>N. meningitidis</i>						
NmA‡	0 (0)	1 (0)	0 (0)	0 (0)	0 (0)	1 (0)
NmC	7 (1)	17 (8)	36 (23)	0 (0)	0 (0)	60 (4)
NmW	94 (9)	3 (1)	1 (1)	0 (0)	53 (26)	151 (9)
NmX	19 (2)	10 (4)	1 (1)	0 (0)	0 (0)	30 (2)
Nm ind	7 (1)	1 (0)	0 (0)	0 (0)	0 (0)	8 (0)
<i>S. pneumoniae</i>	305 (29)	42 (19)	8 (5)	10 (21)	4 (2)	369 (22)
<i>H. influenzae</i>						
<i>b</i>	18 (2)	11 (5)	0 (0)	3 (6)	1 (0)	33 (2)
Non- <i>b</i>	5 (0)	3 (2)	3 (2)	0 (0)	0 (0)	11 (1)
Other germs	0 (0)	2 (1)	0 (0)	1 (2)	8 (17)	11 (1)
Negative§	594 (56)	133 (59)	107 (69)	27 (57)	130 (54)	991 (58)

Abbreviation: CSF, cerebrospinal fluid; NRL, national reference laboratory; NP, Test not performed; *Nm Ind.*, *Nm indeterminate*; RDT, rapid diagnostic test;

*Final result was missing for CSFs analyzed by a confirmatory test: Burkina Faso—25 (3%); Niger—17 (10%); MenAfriNet—46 (3%)

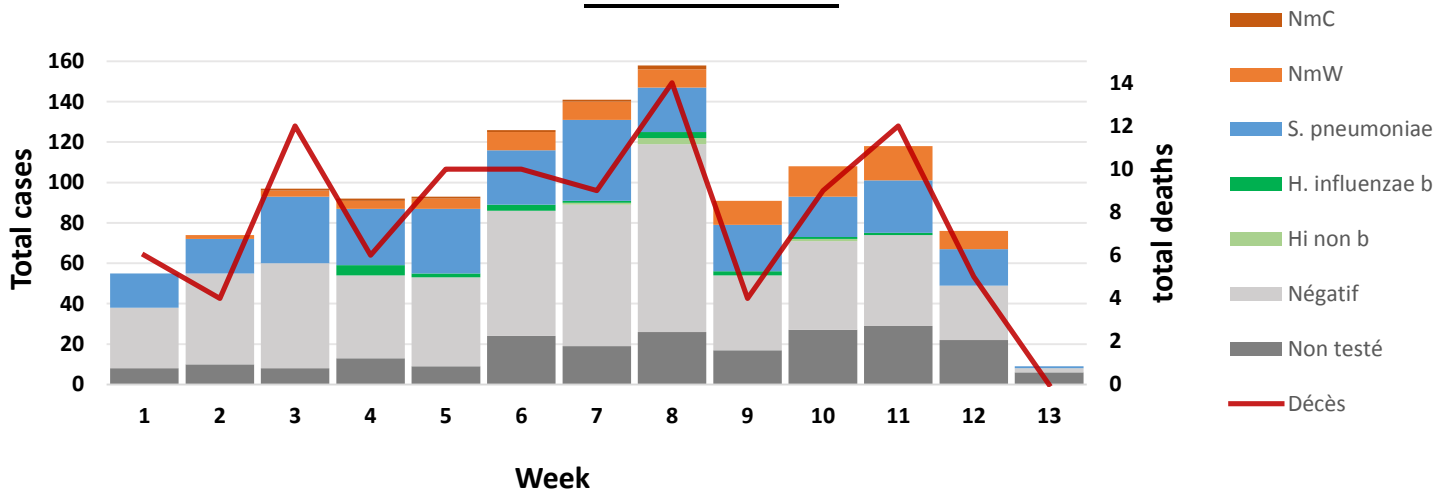
§ Tested negative for all pathogens and serogroups

‡Result from NmA case investigation:

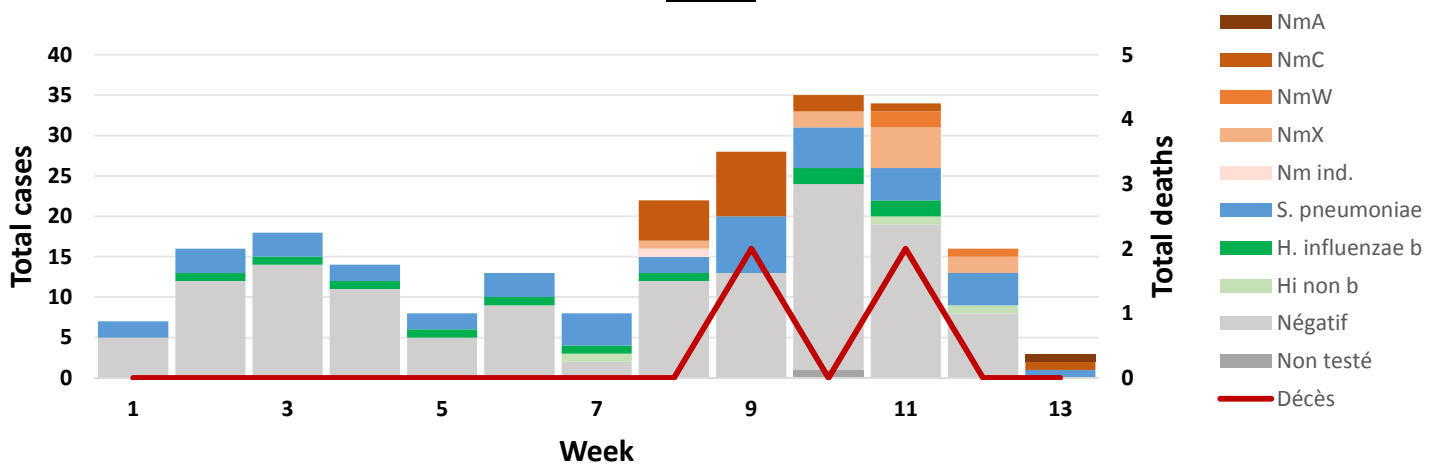
Case	Country	Region / District	Age	Vaccination status MenAfriVac	Week	Confirmation test
#1	Mali	Kayes / Kéniéba	15 years	No	13	Real time PCR

Figure 1: Epidemic curve, Week: 1-13

Burkina Faso



Mali



Niger

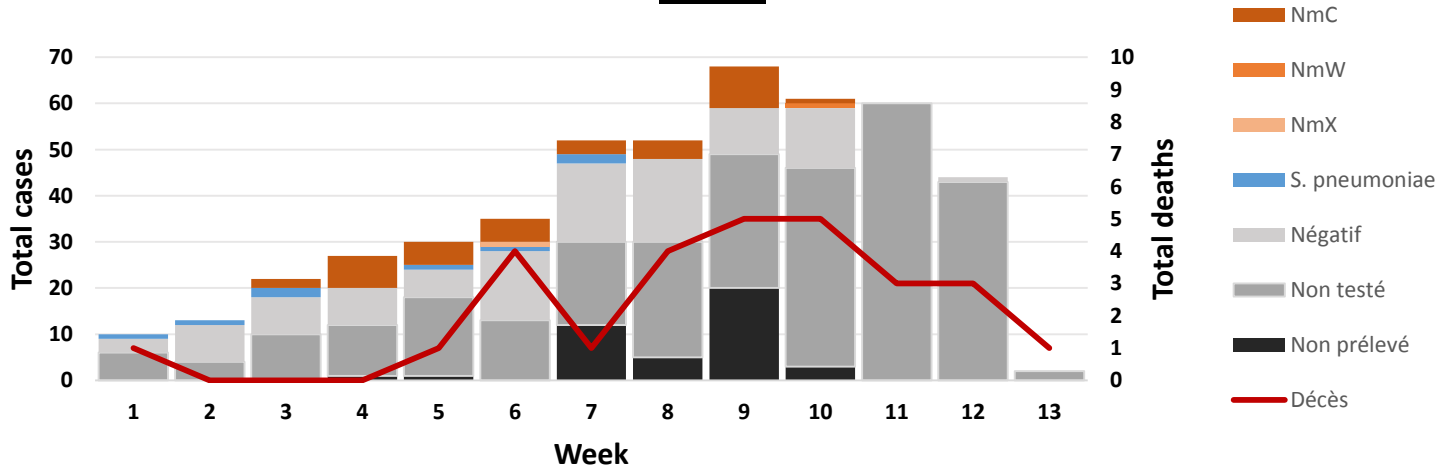
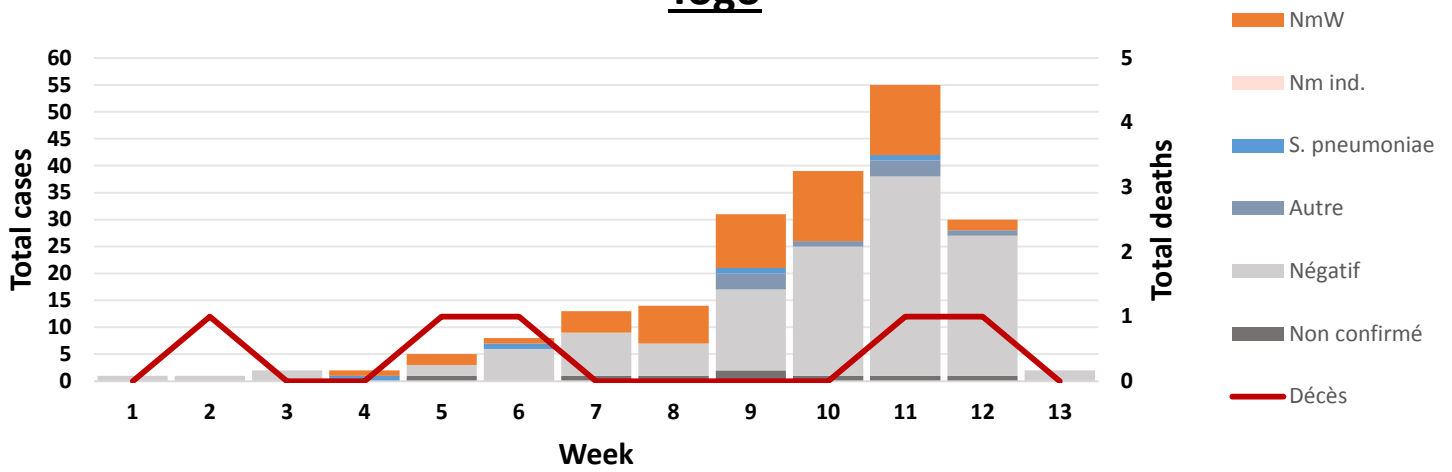


Figure 1: Courbe épidémique, Semaine : 1-13

Togo



MenAfriNet

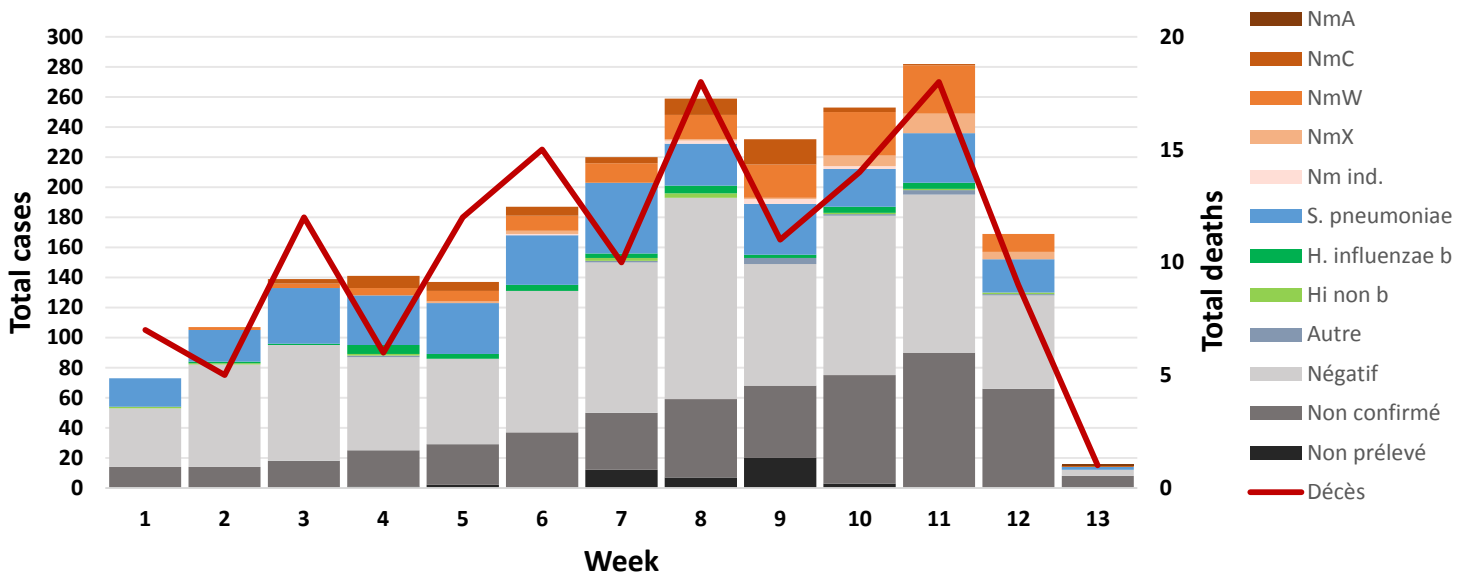
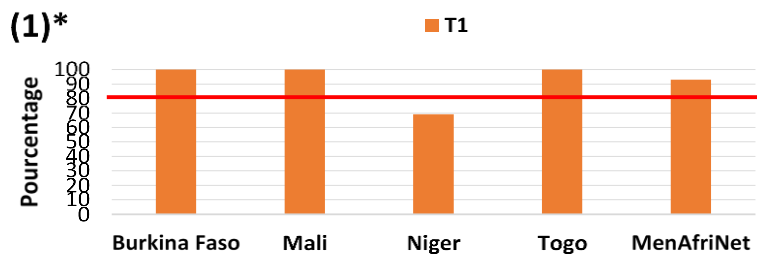


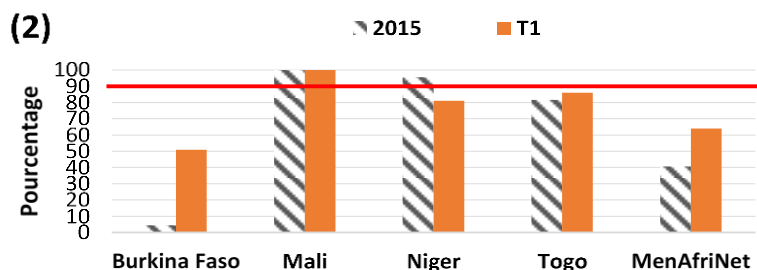
Figure 2. Annual and quarterly trends of surveillance and laboratory performance indicators, 2015 and 2016, quarter 1 (week: 1-13)



(1)* — Percentage of months that data were submitted on time to WHO-IST/WA by the 7th day of each month

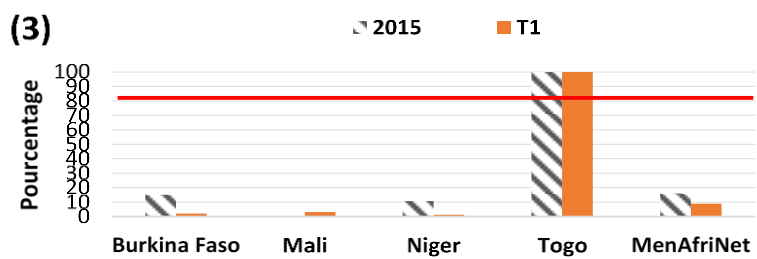
Threshold: > 80%

*Indicator was modified to allow the project to evaluate the timely submission of data at the regional level



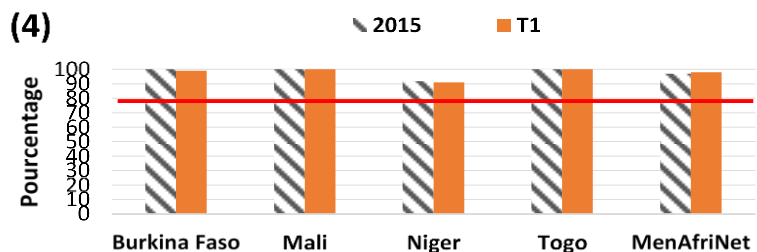
(2) — Percentage of cases with outcome known

Threshold: > 90%



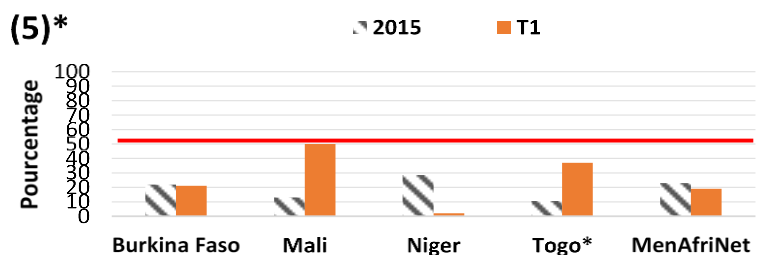
(3) — Percentage of cases vaccinated with MenAfriVac among those with known (yes or no) vaccine status

Threshold: > 80%



(4) — Percentage of cases with CSF collected

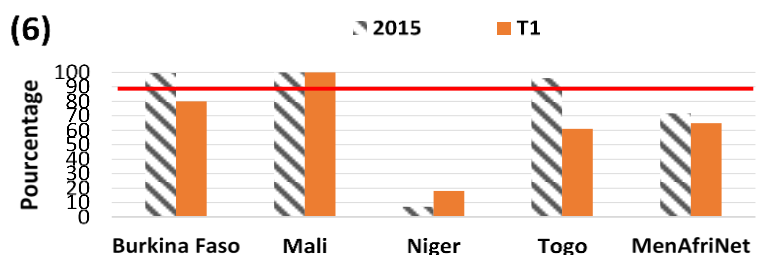
Threshold: > 80%



(5)* — Percentage of CSF specimen received at any lab in T1 tube

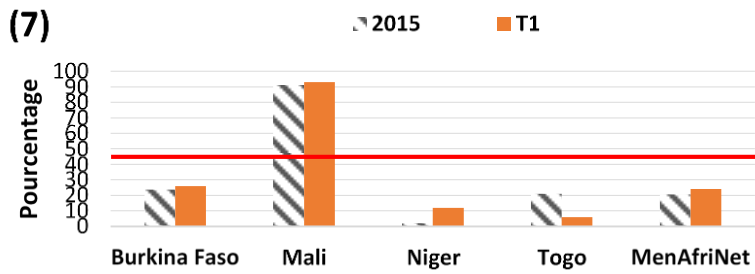
Threshold: > 50%

*Togo: the protocol does not require the use of T1 for 3 of the 4 hospitals because of their proximity to the lab.



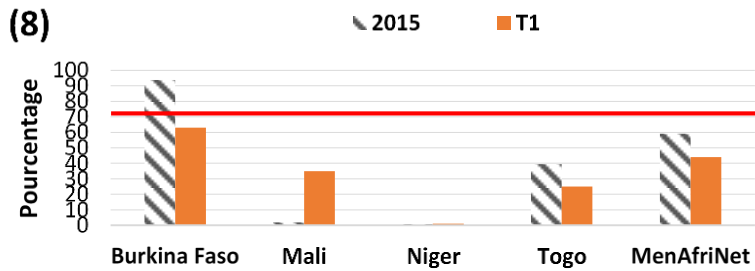
(6) — Percentage of CSF specimens received at the NRL

Threshold: > 70%



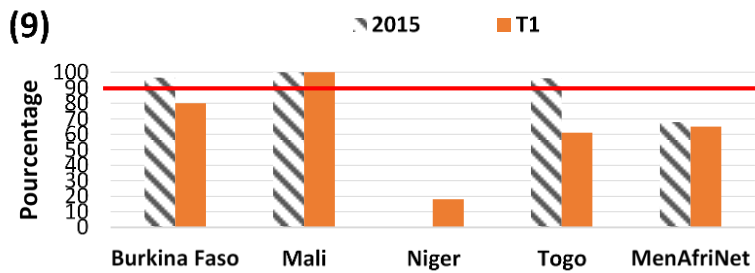
(7) — Percentage of cases with a delay of <7 days between CSF collection date and date CSF received at NRL

Threshold: > 50%



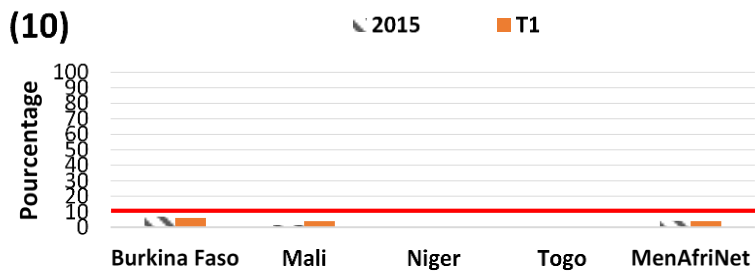
(8) — Percentage of CSF specimen tested at labs other than the NRL by a Gram stain test

Threshold: > 70%



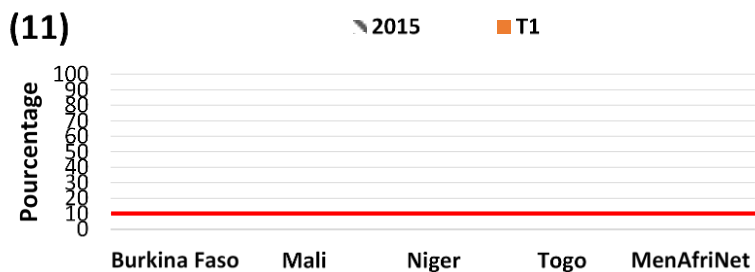
(9) — Percentage of CSF specimen received at the NRL and analyzed by a confirmatory test (culture, PCR, latex or rapid diagnostic test)

Threshold: > 90%



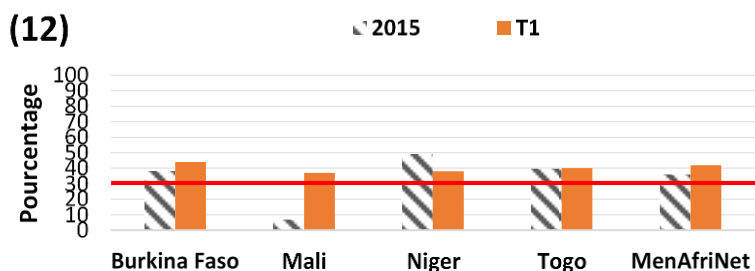
(10) — Percentage of CSF specimen contaminated for culture procedure at the NRL

Threshold: < 10 %



(11) — Percentage of CSF specimen contaminated for PCR procedure at the NRL

Threshold: < 10 %

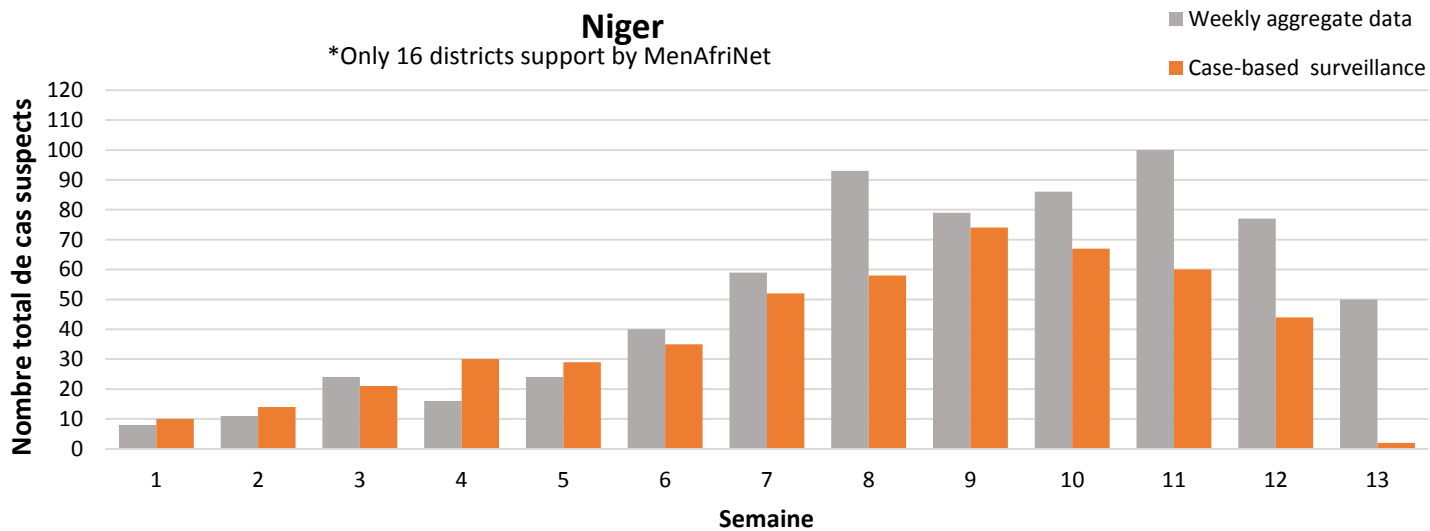
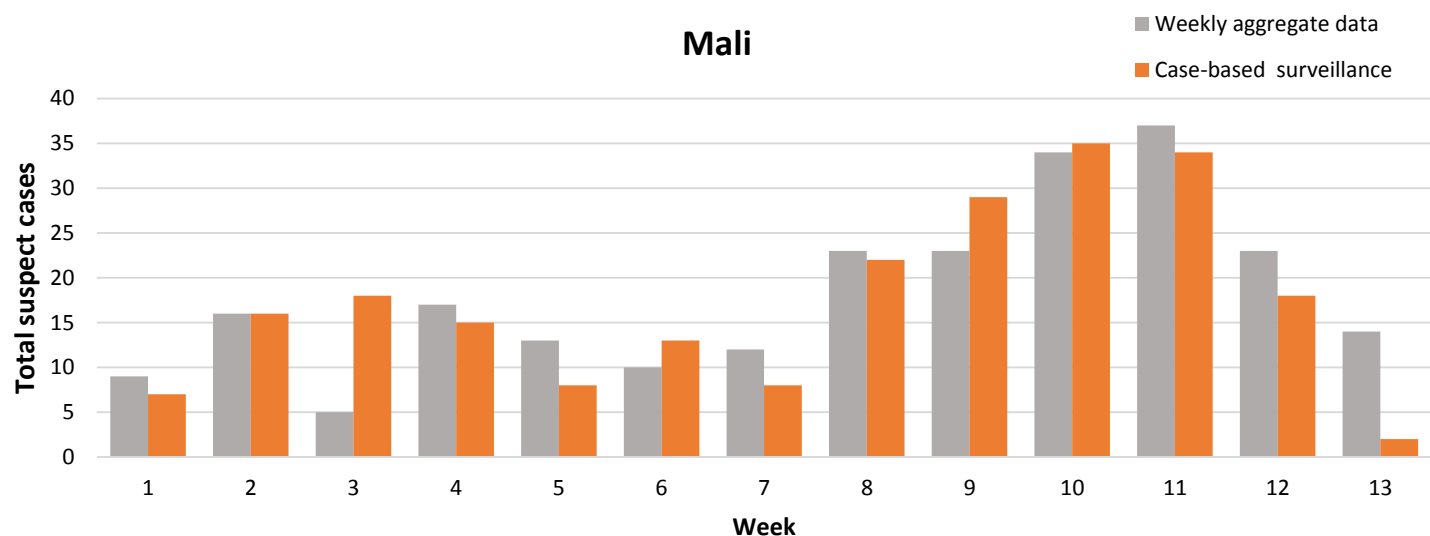
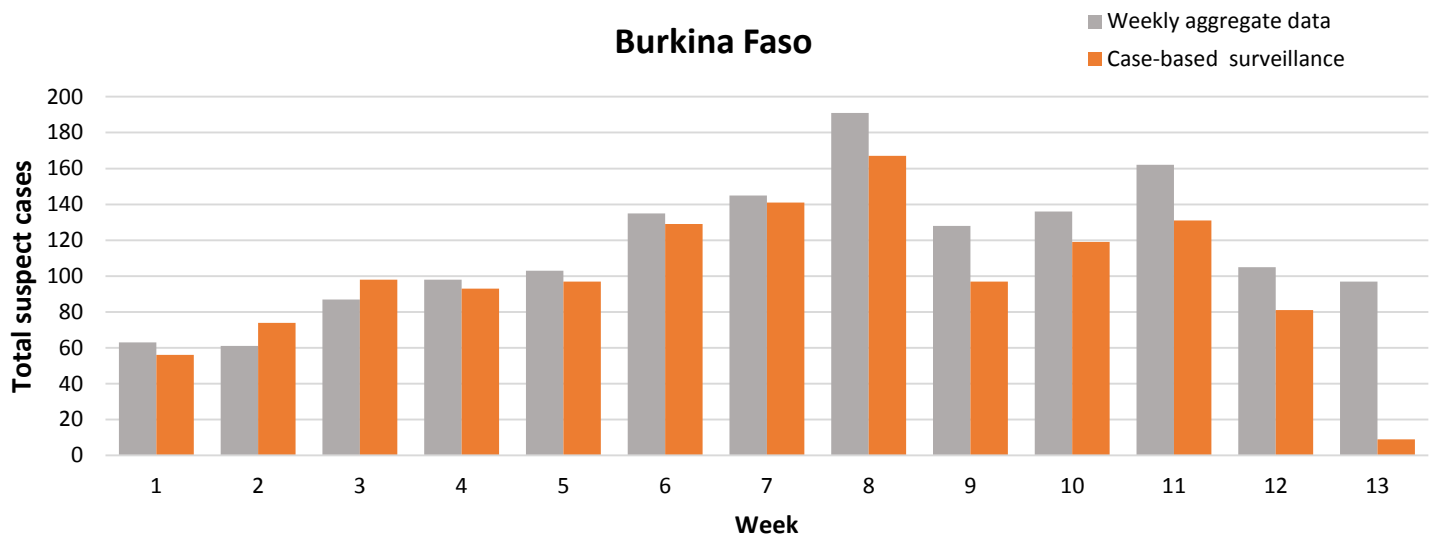


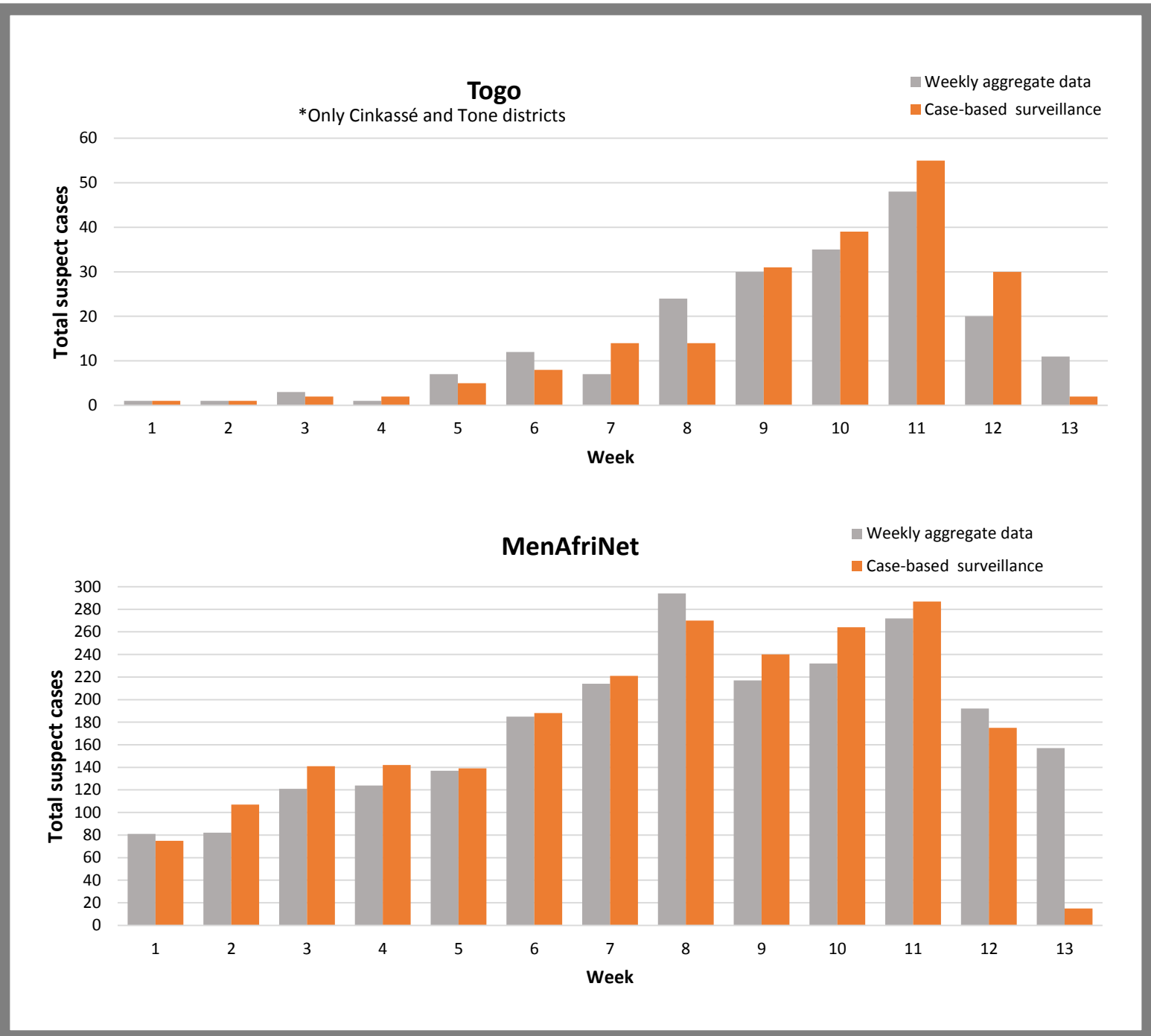
(12) — Percentage of CSF confirmed at the NRL for Hi, Sp and Nm and other pathogens

Threshold: > 30%

Table 3. Comparison of cumulative weekly suspect cases with total suspect cases of the case-based surveillance data (MenAfriNet)

Week: 1-13





MenAfrinet is a partnership between the CDC, WHO, Agence de Médecine Préventive and other international partners in collaboration with the Ministries of Health of Burkina Faso, Chad, Mali, Niger and Togo to strengthen case-based meningitis surveillance and laboratory capacity confirm cases of meningitis. 2016 is MenAfrinet's first year of implementation.

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