Table 1. Epidemiological situation, week 1 - 52

98% of suspect cases reported in the MenAfriNet database had a lumbar puncture, 45% of whom were classified as probable bacterial meningitis. 13% of cases with a specimen collected tested positive for meningococcal meningitis. Vaccination status was complete (yes or no) for 73% 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)	16 (100)	1 (25)	2 (100)	101 (99)
Weekly suspect cases	2685	185	1253	0	225	4,348
MenAfriNet suspected cases	2447	186	903	47	299	3,847
Deaths	211 (9)	6 (3)	36 (5)	0 (0)	11 (4)	264 (7)
Age (years)						
<1	427 (18)	60 (34)	74 (8)	1 (25)	35 (12)	597 (16)
1-4	787 (32)	43 (25)	213 (24)	1 (25)	52 (17)	1,096 (29)
5-9	447 (18)	16 (9)	188 (21)	0 (0)	38 (13)	689 (18)
10-14	317 (13)	21 (12)	161 (18)	1 (25)	37 (12)	537 (14)
15-29	251 (10)	21 (12)	167 (19)	1 (25)	48 (16)	488 (13)
≥30	207 (9)	14 (8)	84 (9)	0 (0)	89 (30)	394 (10)
Sex						
Male	1,328 (55)	109 (59)	517 (58)	2 (40)	159 (53)	2,115 (55)
Vaccination status known	1,818 (74)	45 (24)	690 (76)	12 (100)	247 (83)	2,812 (73)
MenAfriVac§	145 (8)	1 (2)	6 (1)	1 (8)	43 (17)	196 (7)
Laboratory††						
	2,376 (97)	186 (100)	898 (99)	12 (100)	299 (100)	3,771 (98)
CSF collected						
	2,242 (94)	161 (87)	566 (63)	8 (67)	299 (100)	3,276 (87)
Appearance						
Probable bacterial meningitis	1,242 (52)	53 (28)	271 (30)	6 (50)	140 (47)	1,712 (45)
Probable meningococcal meningitis	168 (7)	16 (9)	9 (1)	1 (8)	59 (20)	253 (7)
Confirmed bacterial meningitis	691 (36)	54 (30)	157 (25)	6 (50)	96 (34)	1,004 (33)
Confirmed meningococcal meningitis	182 (9)	18 (10)	123 (20)	0 (0)	85 (30)	408 (13)

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—number of districts: Burkina Faso: 70; Mali: 10; Niger: 16; Tchad: 4; Togo: 2; †Supported MenAfriNet districts submitting case-based data (denominator = Total number of supported MenAfriNet districts)

§Denominator = number of cases with known (yes or no) vaccination 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 - 52

96% of specimens collected in MenAfriNet countries were tested by culture, PCR, Latex or a rapid diagnostic test. S. pneumoniae was the predominant pathogen (10%).

The predominant pathogen by country: Burkina—*S. pneumoniae* (24%); Mali—*S. pneumoniae* (24%); Niger— *N. meningitidis* sérogroupe C (17%); Tchad—*S. pneumoniae* (33%); Togo— *N. meningitidis* sérogroupe W (21%).

| Results	Burkina Faso	Mali	Niger	Tchad	Togo	MenAfriNet
	N (%)					
CSF collected	2,376 (97)	186 (100)	898 (99)	12 (100)	299 (100)	3,771 (98)
Gram Stain	1,810 (76)	186 (100)	78 (9)	10 (83)	281 (94)	2,365 (63)
CSF received at the NRL	1,995 (84)	186 (100)	700 (78)	12 (100)	283 (95)	3,176 (84)
CSF analyzed by a confirmatory test	2,141 (90)	186 (100)	757 (84)	12 (100)	283 (95)	3,379 (90)
Culture	288 (13)	179 (96)	69 (9)	10 (83)	282 (100)	828 (25)
PCR[†]	1,907 (97)	179 (96)	548 (78)	12 (100)	252 (89)	2,898 (92)
Real-time PCR	1,905 (100)	178 (99)	547 (100)	12 (100)	0 (0)	2,642 (91)
Conventional	0 (0)	1 (1)	1 (0)	0 (0)	252 (100)	254 (9)
Latex	313 (15)	117 (63)	56 (7)	0 (0)	280 (99)	766 (23)
RDT	992 (46)	184 (99)	511 (68)	0 (0)	511 (75)	1,687 (50)
Final Result						
N. meningitidis						
NmA	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
NmC	12 (1)	10 (6)	105 (17)	0 (0)	0 (0)	127 (4)
NmW	137 (7)	2 (1)	3 (0)	0 (0)	59 (21)	201 (7)
NmX	30 (2)	5 (3)	13 (2)	0 (0)	2 (1)	50 (2)
Nm ind	3 (0)	1 (1)	2 (0)	0 (0)	24 (8)	30 (1)
S. pneumoniae	464 (24)	27 (15)	28 (5)	4 (33)	8 (3)	531 (18)
H. influenzae						
b	29 (2)	5 (3)	1 (0)	1 (8)	1 (0)	37 (1)
Non-b	16 (1)	3 (2)	5 (1)	0 (0)	0 (0)	24 (1)
Other germs	0 (0)	1 (1)	0 (0)	1 (8)	2 (1)	4 (0)
Negative§	1,237 (64)	123 (69)	417 (67)	6 (50)	187 (66)	1,970 (65)

Abbreviation: b, *H. influenzae* serotype b; CSF, cerebrospinal fluid; Hi, *H. influenzae*, NmA, *N. meningitidis* serogroup A; NmC, *N. meningitidis* serogroup C; NmW, *N. meningitidis* serogroup W; NmX, *N. meningitidis* serogroup X; non-B, *H. influenzae* serotype non-b; NRL, national reference laboratory; Nm Ind, *N. meningitidis* indeterminate; Sp, *S. pneumoniae*; RDT, rapid diagnostic test;

§ Tested negative for all pathogens and serogroups

Figure 1. Epedemic curve, week 1 - 52

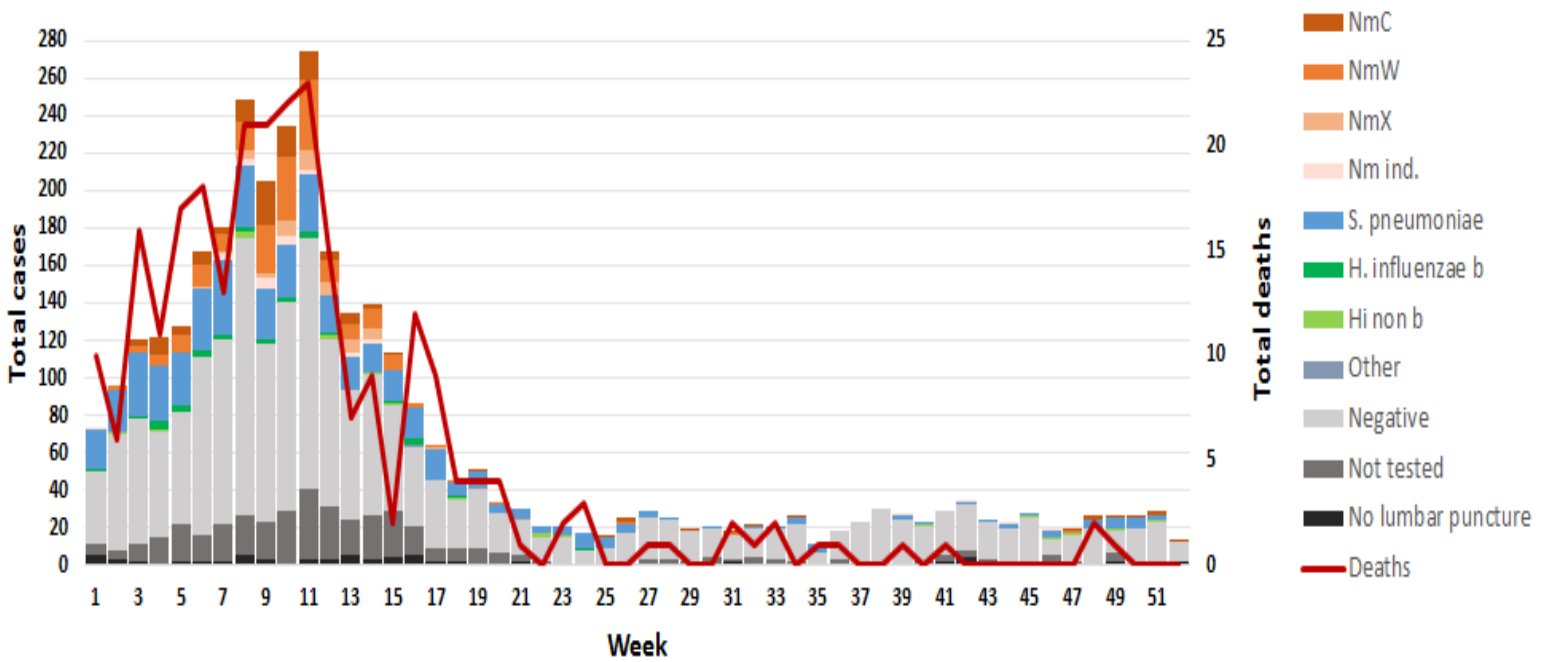### Burkina Faso

Mali

Niger
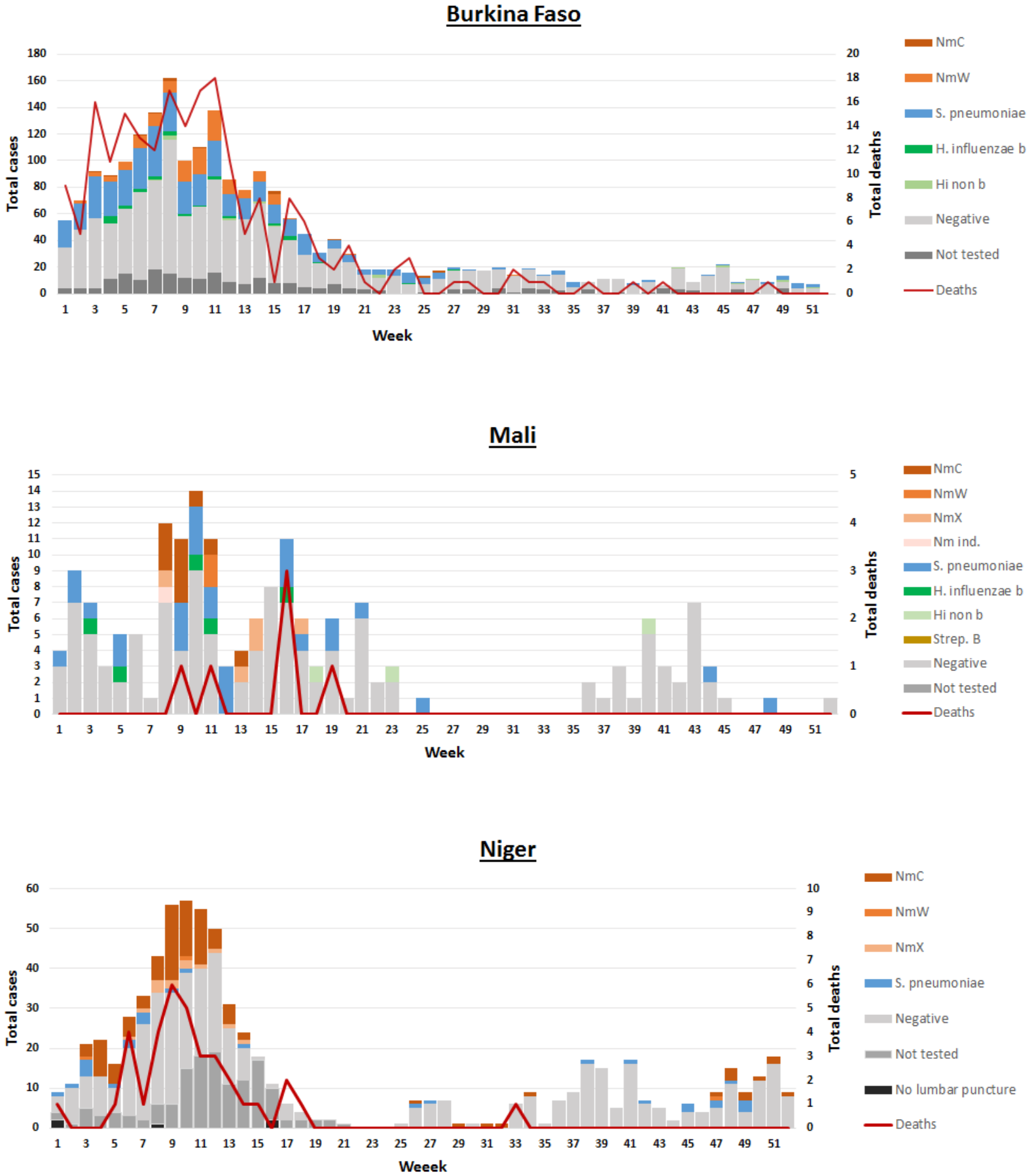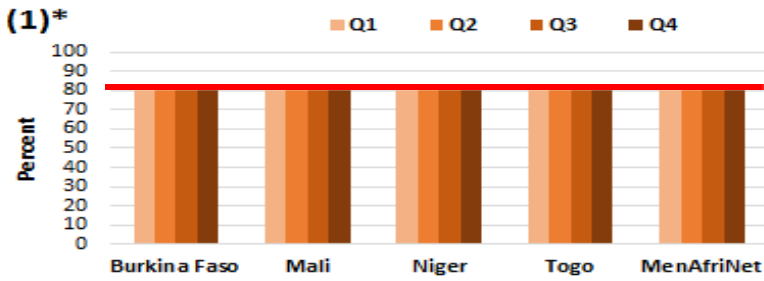
Togo
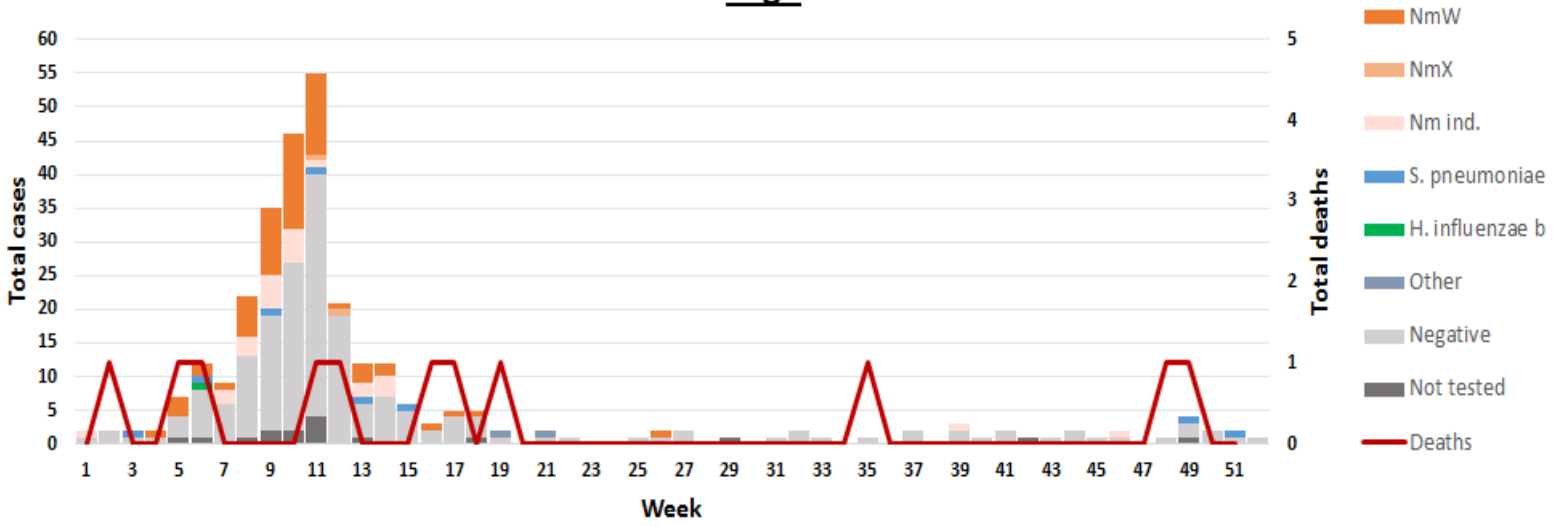
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Figure 2. Annual and Quarterly Trends of Surveillance and Laboratory Performance Indicators, 2015, 2016 and Quarter 1, 2, 3 and 4 of 2016


(1)* — Percentage of months that data were submitted on time to WHO-IST/WA by the 7th day of each month
Threshold: > 80%
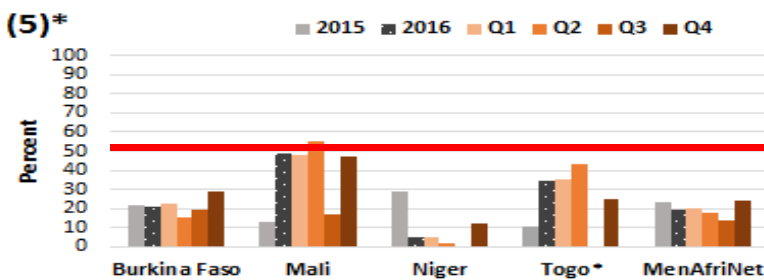*Indicator was modified in 2016 to allow the project to evaluate the timely submission of data at the regional level
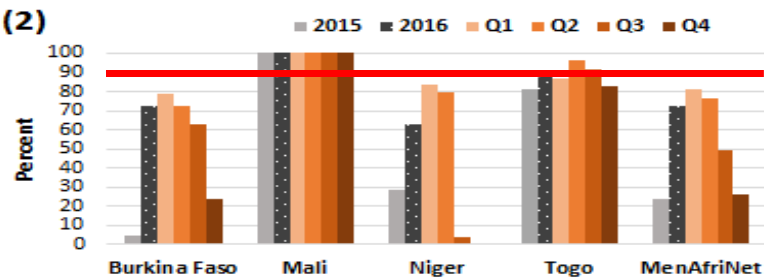
(2) — Percentage of cases with outcome known

Threshold: > 90%
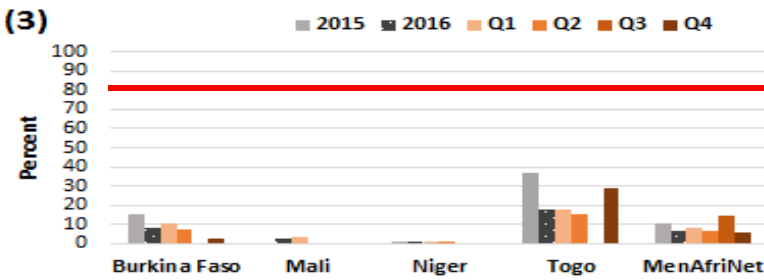
(3) — Percentage of cases vaccinated with MenAfriVac among those with known (yes or no) vaccine status

Threshold: > 80%
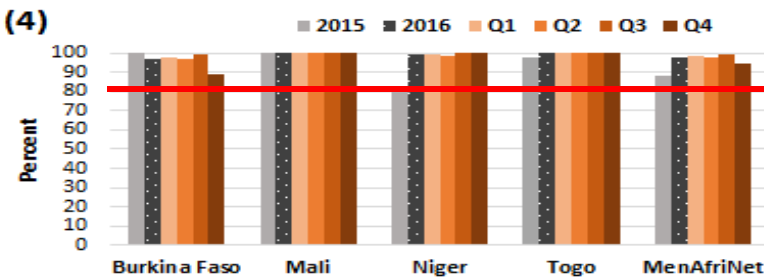
(4) — Percentage of cases with CSF collected

Threshold: > 80%

(5)* — Percentage of CSF specimen received at any lab in trans-isolate (T-I)

Threshold: > 50%

*Togo: the protocol does not require the use of TI for 3 of the 4 hospitals because of their proximity to the lab.
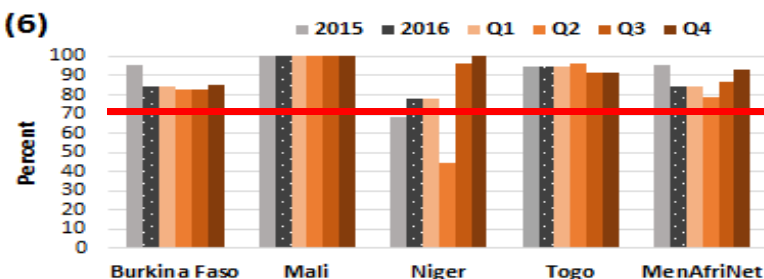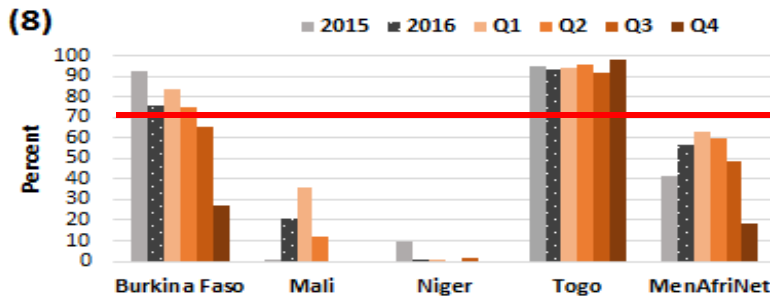
(6) — Percentage of CSF specimens received at the NRL
Threshold: > 70%
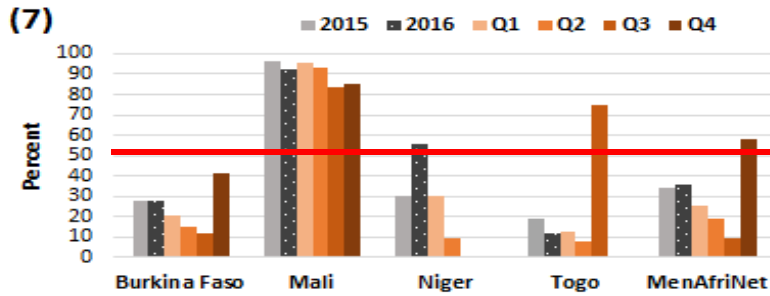
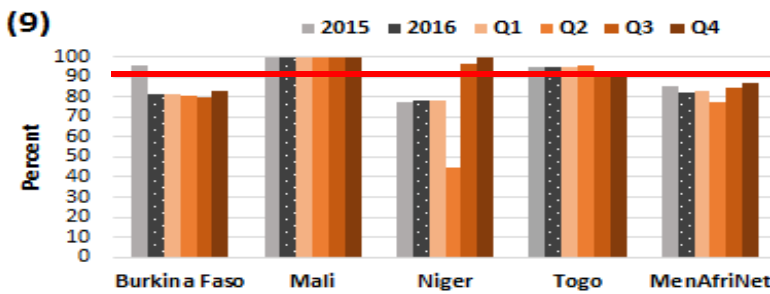**(7)** — Percentage of cases with a delay of <7 days between CSF collection date and date CSF received at NRL
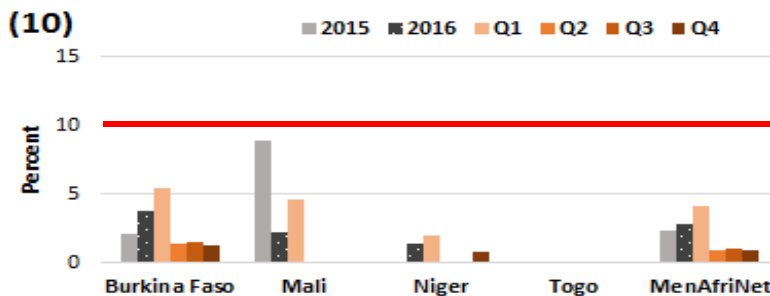
Threshold: > 50%

(8) — Percentage of CSF specimen tested at labs other than the NRL by a Gram stain test
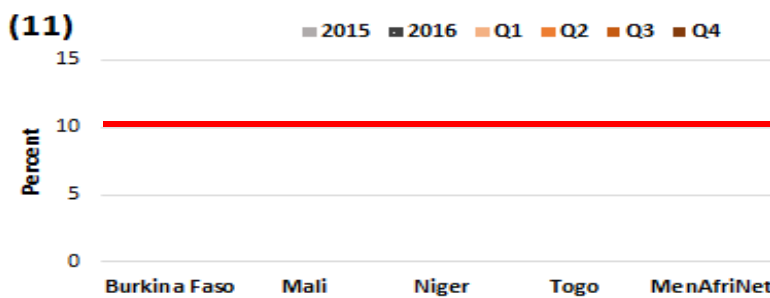
Threshold: > 70%

(9) — Percentage of CSF specimen received at the NRL and analyzed by a confirmatory test (culture, PCR, latex or rapid diagnostic test)
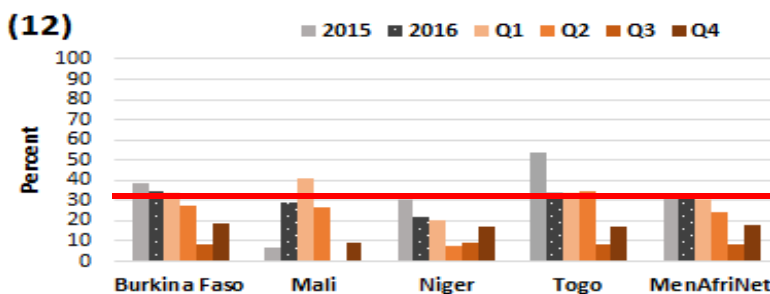
Threshold: > 90%

(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
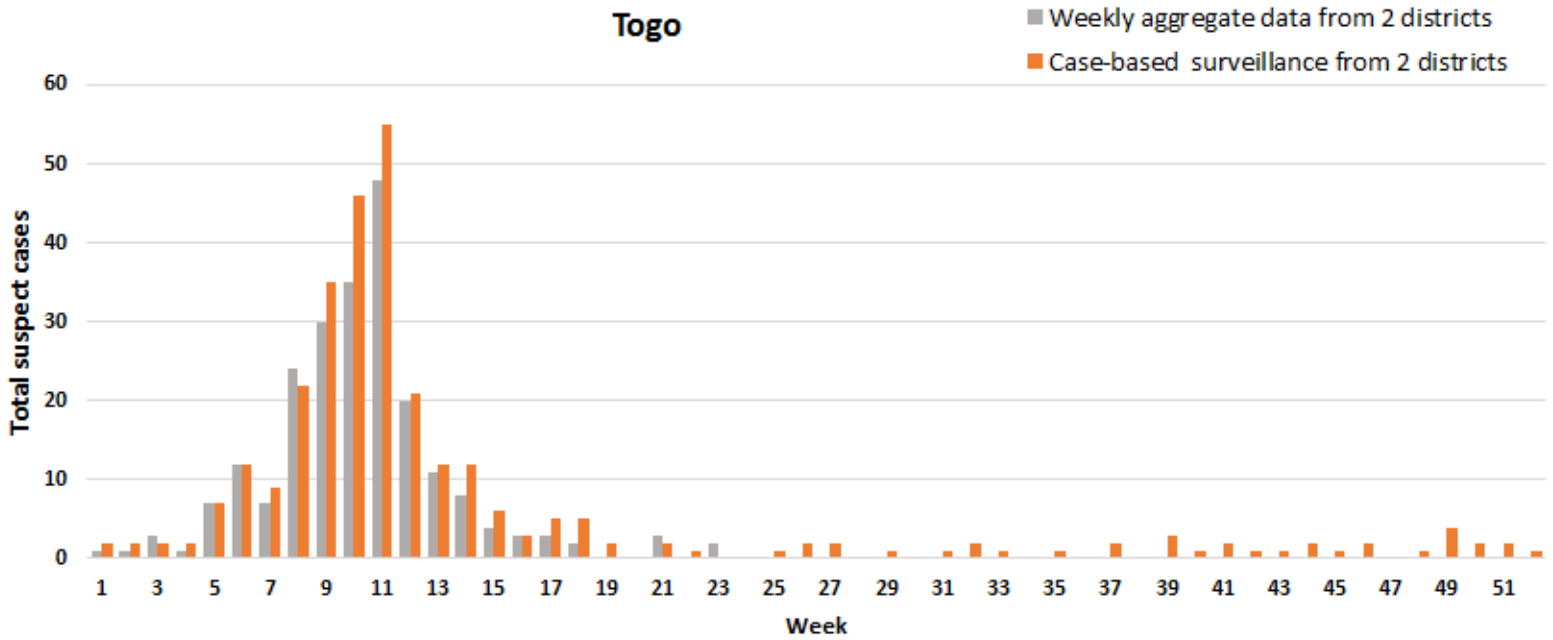
Threshold: < 10%

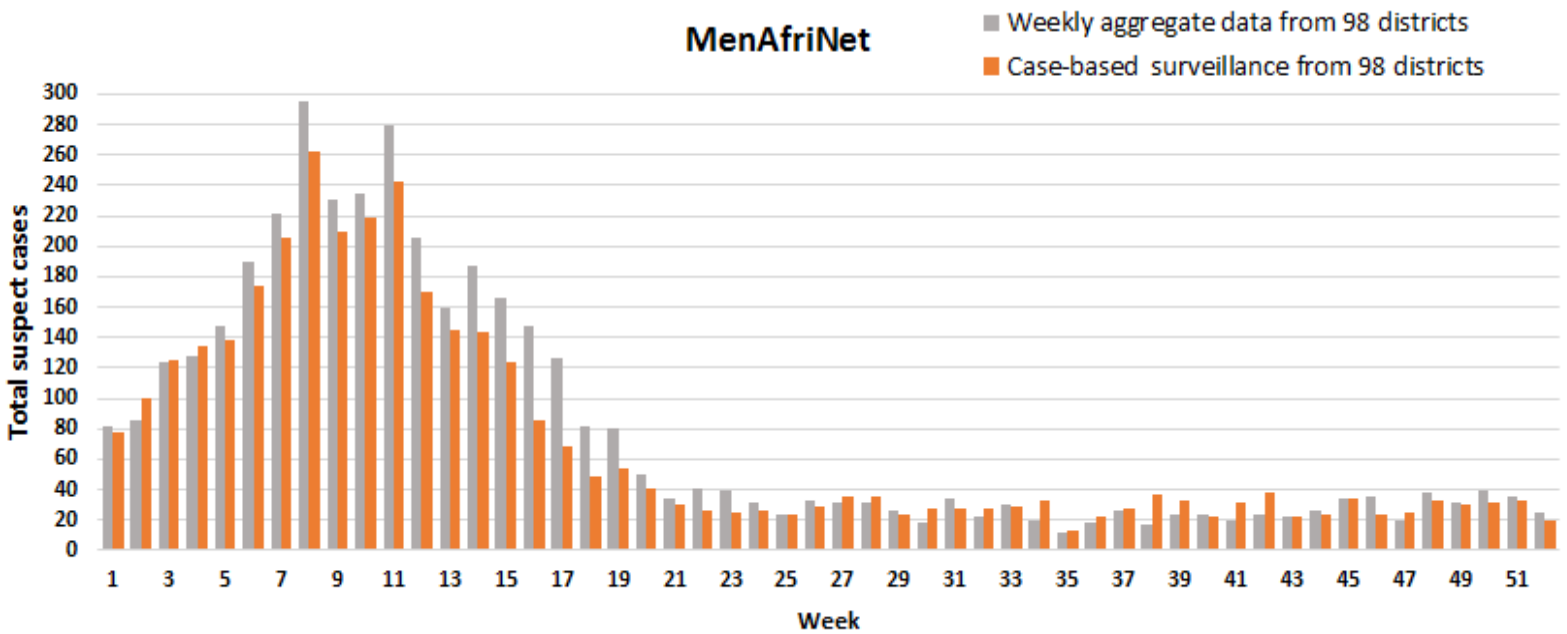**(12)** — Percentage of CSF confirmed at the NRL for Hi, Sp and Nm and other pathogens

Threshold: > 30%

Figure 3. Comparison between aggregate reporting and case-based surveillance data from MenAfriNet supported districts
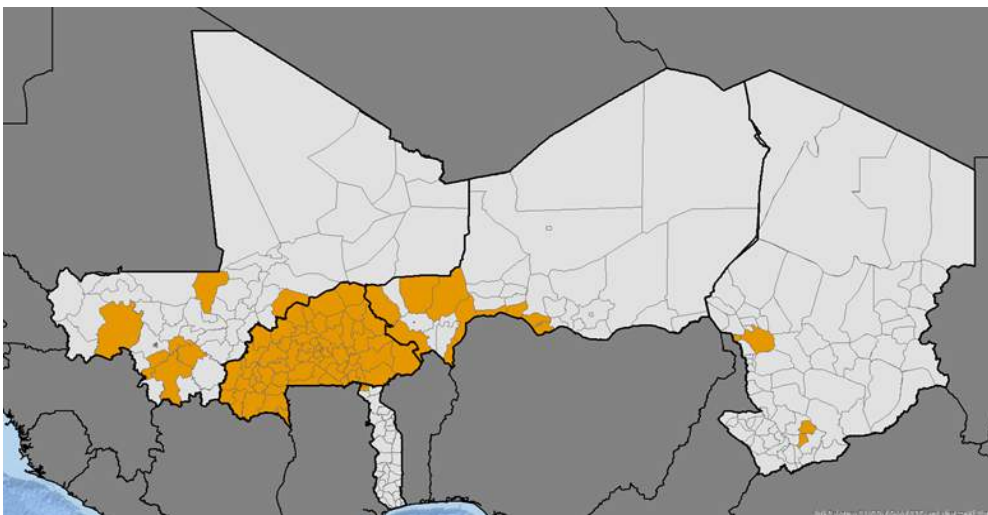
Togo

Legend:
- Weekly aggregate data from 2 districts
- Case-based surveillance from 2 districts

MenAfriNet

Legend:
- Weekly aggregate data from 98 districts
- Case-based surveillance from 98 districts

MenAfriNet Supported Districts 2016

MenAfriNet is a partnership between the CDC, WHO, Agence de Médicine 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. 2015 is MenAfriNet's first year of implementation.

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