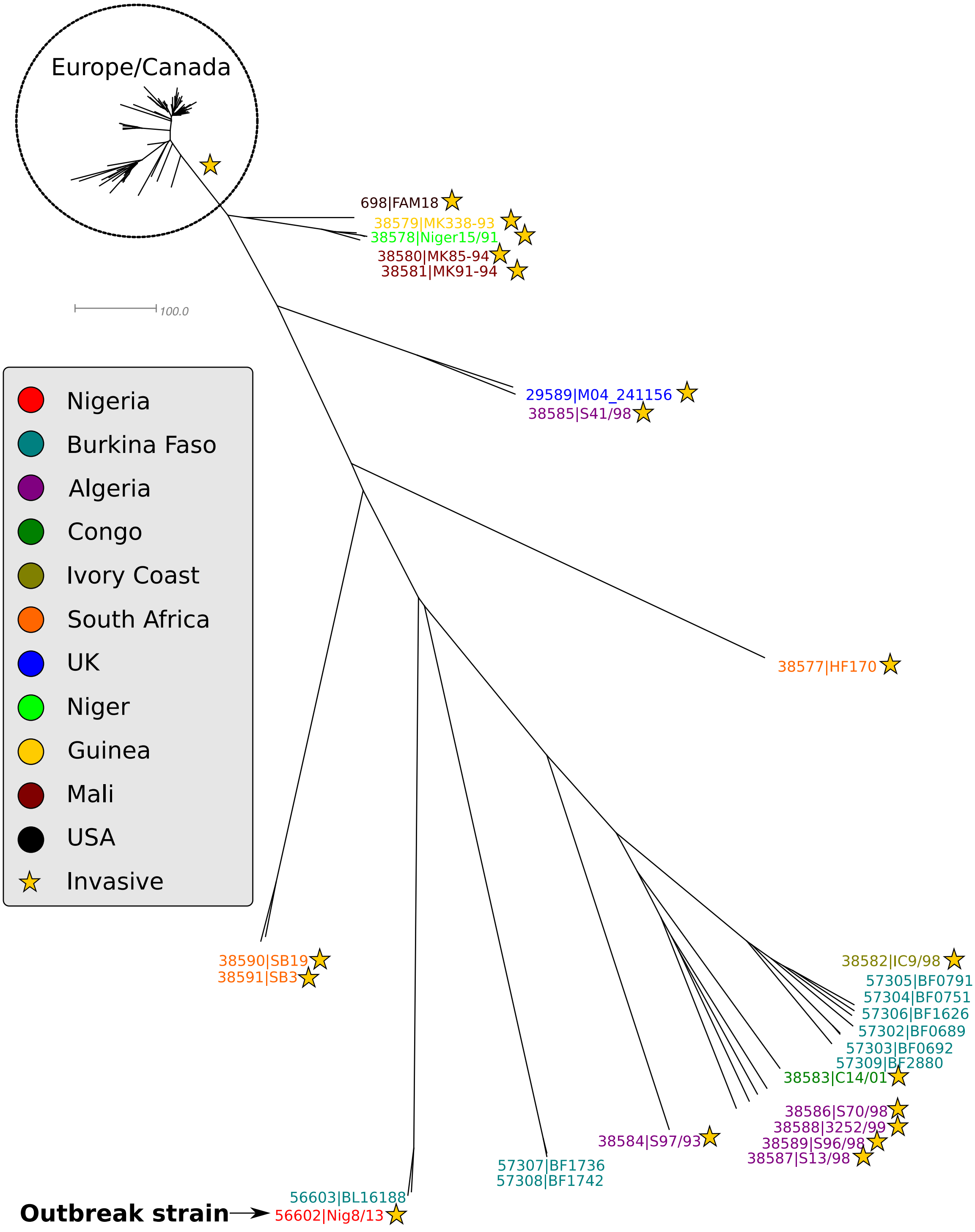
Isolate name	Year	Country	District	Host status	Serogroup	PorA type	ST	No. of contigs	Median coverage	ENA accession no.	BIGS id.
BL16188	2012	Burkina Faso	Bogodogo	carrier	NG	21-15,16	9367	1	156.8	ERS2071237	56603
Niga8_13	2013	Nigeria	Tambuwal	diseased	C	21-15,16	10217	1	175.4	ERS2071247	56602
Niga9_13	2013	Nigeria	Tambuwal	diseased	C	21-15,16	10217	106	146.5	ERS2071248	54787
Niga13_13	2013	Nigeria	Tambuwal	diseased	C	21-15,16	10217	110	131.7	ERS2071242	54788
Niga17_13	2013	Nigeria	Tambuwal	diseased	C	21-15,16	10217	105	133.0	ERS2071243	54789
Niga19_13	2013	Nigeria	Tambuwal	diseased	C	21-15,16	10217	104	104.9	ERS2071244	54790
Niga20_13	2013	Nigeria	Tambuwal	diseased	C	21-15,16	10217	104	123.3	ERS2071245	54791
Niga21_13	2013	Nigeria	Tambuwal	diseased	C	21-15,16	10217	112	148.7	ERS2071246	54792
Niga1_14	2014	Nigeria	Aliero	diseased	C	21-15,16	10217	107	128.1	ERS2071249	54713
Niga2_14	2014	Nigeria	Aliero	diseased	C	21-15,16	10217	108	112.3	ERS2071259	54739
Niga3_14	2014	Nigeria	Aliero	diseased	C	21-15,16	10217	106	131.1	ERS2071273	54740
Niga10_14	2014	Nigeria	Shagari	diseased	C	21-15,16	10217	93	97.1	ERS2071251	54802
Niga17_14	2014	Nigeria	Bodinga	diseased	C	21-15,16	10217	93	65.3	ERS2071257	54804
19_15	2015	Niger	Dosso	diseased	C	21-15,16	10217	191	126.9	ERS2071190	38281
126_15	2015	Niger	Dosso	diseased	C	21-15,16	10217	264	80.0	ERS2071175	38285
587_15	2015	Niger	Niamey	diseased	C	21-15,16	10217	220	90.2	ERS2071232	38289
606_15	2015	Niger	Niamey	diseased	C	21-15,16	10217	247	70.6	ERS2071233	38290
645_15	2015	Niger	Dosso	diseased	C	21-15,16	10217	222	96.1	ERS2071234	38291
685_15	2015	Niger	Tahoua	diseased	C	21-15,16	10217	207	79.6	ERS2071235	38293
982_15	2015	Niger	Unknown	diseased	C	21-15,16	10217	222	75.6	ERS2071236	38294
1024_15	2015	Niger	Tillabery	diseased	C	21-15,16	10217	322	56.5	ERS2071163	38296
1025_15	2015	Niger	Tillabery	diseased	C	21-15,16	10217	208	118.9	ERS2071164	38297
1063_15	2015	Niger	Tillabery	diseased	C	21-15,16	10217	221	134.5	ERS2071165	38298
1077_15	2015	Niger	Dosso	diseased	C	21-15,16	10217	234	129.1	ERS2071166	38300
1078_15	2015	Niger	Dosso	diseased	C	21-15,16	10217	242	129.2	ERS2071167	38301
1098_15	2015	Niger	Dosso	diseased	C	21-15,16	10217	159	19.1	ERS2071168	38420
1099_15	2015	Niger	Dosso	diseased	C	21-15,16	10217	172	15.0	ERS2071169	38421
1103_15	2015	Niger	Dosso	diseased	C	21-15,16	10217	112	26.2	ERS2071170	38422
1168_15	2015	Niger	Tillabery	diseased	C	21-15,16	10217	131	21.0	ERS2071171	38423
1169_15	2015	Niger	Tillabery	diseased	C	21-15,16	10217	115	23.3	ERS2071172	38424
Niga2_15	2015	Nigeria	Aliero	diseased	C	21-15,16	10217	136	17.8	ERS2071260	38462
Niga5_15	2015	Nigeria	Aliero	diseased	C	21-15,16	10217	198	14.3	ERS2071281	38475
Niga12_15	2015	Nigeria	Shagari	diseased	C	21-15,16	10217	141	23.7	ERS2071253	38479
Niga13_15	2015	Nigeria	Shagari	diseased	C	21-15,16	10217	120	21.7	ERS2071254	38481
Niga16_15	2015	Nigeria	Shagari	diseased	C	21-15,16	10217	185	40.7	ERS2071256	38482
Niga17_15	2015	Nigeria	Danko-Wasagu	diseased	C	21-15,16	10217	106	43.5	ERS2071258	38483
Niga21_15	2015	Nigeria	Shagari	diseased	C	21-15,16	10217	139	27.4	ERS2071263	38484
Niga25_15	2015	Nigeria	Shagari	diseased	C	21-15,16	10217	105	31.8	ERS2071265	38485
Niga26_15	2015	Nigeria	Shagari	diseased	C	21-15,16	10217	132	25.2	ERS2071267	38486
Niga29_15	2015	Nigeria	Jega	diseased	C	21-15,16	10217	107	33.7	ERS2071271	38487
1172_15	2015	Niger	Tillabery	diseased	C	21-15,16	10217	105	145.3	ERS2071173	38496
1174_15	2015	Niger	Tillabery	diseased	C	21-15,16	10217	103	271.8	ERS2071174	38497
1376_15	2015	Niger	Niamey	diseased	C	21-15,16	10217	101	212.0	ERS2071176	38498
1385_15	2015	Niger	Niamey	diseased	C	21-15,16	10217	107	205.1	ERS2071177	38499
1395_15	2015	Niger	Unknown	diseased	C	21-15,16	10217	105	147.7	ERS2071178	38500
1396_15	2015	Niger	Niamey	diseased	C	21-15,16	10217	101	255.1	ERS2071179	38501

1434_15	2015	Niger	Niamey	diseased	C	21-15,16	10217	127	187.3	ERS2071180	38502
1437_15	2015	Niger	Niamey	diseased	C	21-15,16	10217	104	150.3	ERS2071181	38503
1640_15	2015	Niger	Tillabery	diseased	C	21-15,16	10217	100	213.2	ERS2071182	38504
1641_15	2015	Niger	Tillabery	diseased	C	21-15,16	10217	99	220.4	ERS2071183	38505
1659_15	2015	Niger	Niamey	diseased	C	21-15,16	10217	95	177.7	ERS2071184	38507
1660_15	2015	Niger	Niamey	diseased	C	21-15,16	10217	110	115.9	ERS2071185	38508
1661_15	2015	Niger	Niamey	diseased	C	21-15,16	10217	107	120.8	ERS2071186	38509
1662_15	2015	Niger	Niamey	diseased	C	21-15,16	10217	104	58.7	ERS2071187	38510
1663_15	2015	Niger	Niamey	diseased	C	21-15,16	10217	101	221.7	ERS2071188	38511
1898_15	2015	Niger	Kollo	diseased	C	21-15,16	10217	106	108.8	ERS2071189	38513
1945_15	2015	Niger	Niamey	diseased	C	21-15,16	10217	99	138.1	ERS2071191	38514
1946_15	2015	Niger	Niamey	diseased	C	21-15,16	10217	97	221.9	ERS2071192	38515
1947_15	2015	Niger	Niamey	diseased	C	21-15,16	10217	95	142.1	ERS2071193	38516
1956_15	2015	Niger	Niamey	diseased	C	21-15,16	10217	101	136.4	ERS2071194	38517
2007_15	2015	Niger	Dogondoutchi	diseased	C	21-15,16	10217	107	121.0	ERS2071195	38518
2014_15	2015	Niger	Dogondoutchi	diseased	C	21-15,16	10217	108	61.6	ERS2071196	38519
2015_15	2015	Niger	Dogondoutchi	diseased	C	21-15,16	10217	172	95.7	ERS2071197	39202
2023_15	2015	Niger	Dogondoutchi	diseased	C	21-15,16	10217	165	100.7	ERS2071198	39203
2043_15	2015	Niger	Dogondoutchi	diseased	C	21-15,16	10217	175	66.0	ERS2071199	39205
2081_15	2015	Niger	Filingue	diseased	C	21-15,16	10217	169	41.0	ERS2071200	39206
2085_15	2015	Niger	Filingue	diseased	C	21-15,16	10217	174	46.2	ERS2071201	39207
2137_15	2015	Niger	Dogondoutchi	diseased	C	21-15,16	10217	99	270.5	ERS2071202	39209
2380_15	2015	Niger	Niamey	diseased	C	21-15,16	10217	102	119.1	ERS2071203	39211
2385_15	2015	Niger	Tera	diseased	C	21-15,16	10217	105	224.2	ERS2071204	39212
2398_15	2015	Niger	Tera	diseased	C	21-15,16	10217	101	190.6	ERS2071205	39213
2399_15	2015	Niger	Tera	diseased	C	21-15,16	10217	104	210.2	ERS2071206	39214
2400_15	2015	Niger	Tera	diseased	C	21-15,16	10217	102	140.3	ERS2071207	39215
2405_15	2015	Niger	Tera	diseased	C	21-15,16	10217	98	275.0	ERS2071208	39216
2441_15	2015	Niger	Niamey	diseased	C	21-15,16	10217	93	231.2	ERS2071209	39217
2464_15	2015	Niger	Niamey	diseased	C	21-15,16	10217	102	206.5	ERS2071210	39218
2491_15	2015	Niger	Niamey	diseased	C	21-15,16	10217	107	217.5	ERS2071211	39219
2548_15	2015	Niger	Niamey	diseased	C	21-15,16	10217	102	166.9	ERS2071212	39220
2586_15	2015	Niger	Kollo	diseased	C	21-15,16	10217	99	243.4	ERS2071213	39221
3180_15	2015	Niger	Niamey	diseased	C	21-15,16	10217	106	138.6	ERS2071214	39223
3271_15	2015	Niger	Unknown	diseased	C	21-15,16	10217	101	163.0	ERS2071215	39224
3411_15	2015	Niger	Niamey	diseased	C	21-15,16	10217	105	212.5	ERS2071216	39225
3412_15	2015	Niger	Niamey	diseased	C	21-15,16	10217	102	239.9	ERS2071217	39226
3422_15	2015	Niger	Niamey	diseased	C	21-15,16	10217	101	189.8	ERS2071218	39227
3641_15	2015	Niger	Niamey	diseased	C	21-15,16	10217	100	107.9	ERS2071219	39228
3642_15	2015	Niger	Niamey	diseased	C	21-15,16	10217	103	72.4	ERS2071220	39229
3643_15	2015	Niger	Niamey	diseased	C	21-15,16	10217	91	114.9	ERS2071221	39230
3644_15	2015	Niger	Niamey	diseased	C	21-15,16	10217	105	79.9	ERS2071222	39231
3645_15	2015	Niger	Niamey	diseased	C	21-15,16	10217	109	64.4	ERS2071223	39232
3769_15	2015	Niger	Tillabery	diseased	C	21-15,16	10217	99	90.5	ERS2071224	39233
3772_15	2015	Niger	Tillabery	diseased	C	21-15,16	10217	120	60.0	ERS2071225	39234
3828_15	2015	Niger	Dosso	diseased	C	21-15,16	10217	103	80.3	ERS2071226	39235
3882_15	2015	Niger	Niamey	diseased	C	21-15,16	10217	95	109.9	ERS2071227	39237
3884_15	2015	Niger	Niamey	diseased	C	21-15,16	10217	106	122.7	ERS2071228	39238
3949_15	2015	Niger	Niamey	diseased	C	21-15,16	10217	103	82.3	ERS2071229	39239

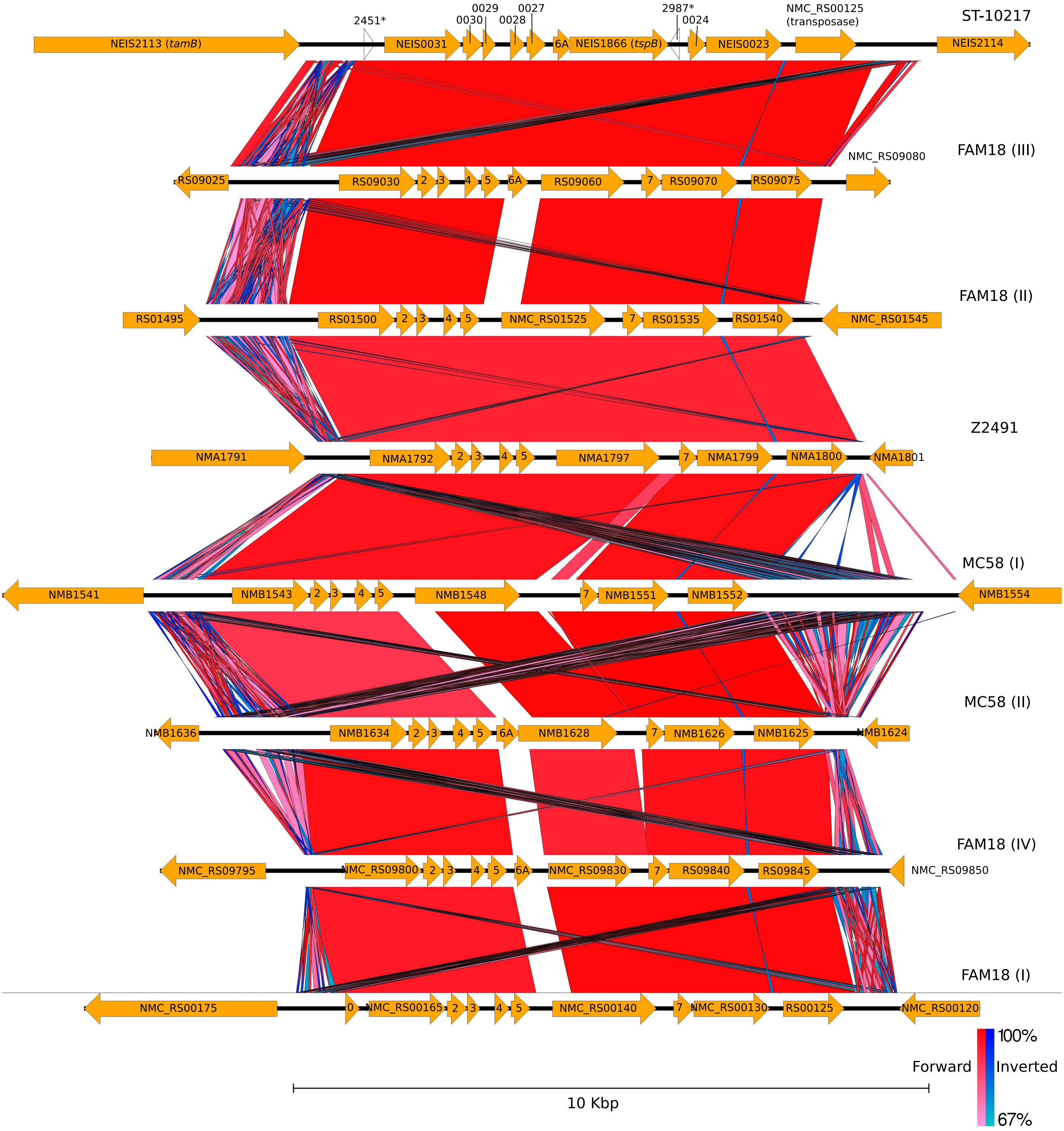
3962_15	2015	Niger	Niamey	diseased	C	21-15,16	10217	101	87.7	ERS2071230	39240
4019_15	2015	Niger	Niamey	diseased	C	21-15,16	10217	106	74.2	ERS2071231	39241
Niga6_15	2015	Nigeria	Aliero	diseased	C	21-15,16	10217	113	18.9	ERS2071282	39507
Niga8_15	2015	Nigeria	Aliero	diseased	C	21-15,16	10217	97	15.0	ERS2071284	39508
Niga9_15	2015	Nigeria	Aliero	diseased	C	21-15,16	10217	108	20.6	ERS2071285	39509
Niga3_16	2016	Nigeria	Sokoto	diseased	C	21-15,16	10217	108	89.1	ERS2071274	43982
Niga2_16	2016	Nigeria	Sokoto	diseased	C	21-15,16	10217	100	98.9	ERS2071261	44049
Niga1_16	2016	Nigeria	Sokoto	diseased	C	21-15,16	10217	102	142.2	ERS2071250	44050
Niga4_16	2016	Nigeria	Sokoto	diseased	C	21-15,16	10217	102	83.4	ERS2071279	44051
Niga24_16	2016	Nigeria	Sokoto	diseased	C	21-15,16	10217	125	95.4	ERS2071264	50501
Niga25_16	2016	Nigeria	Sokoto	diseased	C	21-15,16	10217	108	97.6	ERS2071266	50502
Niga26_16	2016	Nigeria	Sokoto	diseased	C	21-15,16	10217	124	88.7	ERS2071268	50503
Niga27_16	2016	Nigeria	Sokoto	diseased	C	21-15,16	10217	111	97.7	ERS2071269	50504
Niga28_16	2016	Nigeria	Sokoto	diseased	C	21-15,16	10217	131	74.9	ERS2071270	50505
Niga29_16	2016	Nigeria	Sokoto	diseased	C	21-15,16	10217	128	83.2	ERS2071272	50506
Niga30_16	2016	Nigeria	Sokoto	diseased	C	21-15,16	10217	174	119.9	ERS2071275	50507
Niga31_16	2016	Nigeria	Sokoto	diseased	C	21-15,16	10217	118	106.2	ERS2071276	50508
Niga32_16	2016	Nigeria	Sokoto	diseased	NG	21-15,16	10217	98	121.6	ERS2071277	50509
Niga33_16	2016	Nigeria	Sokoto	diseased	C	21-15,16	10217	95	111.3	ERS2071278	50510
Niga4_17	2017	Nigeria	Zamfara	diseased	C	21-15,16	10217	107	189.2	ERS2071280	54464
Niga6_17	2017	Nigeria	Zamfara	diseased	C	21-15,16	10217	111	176.0	ERS2071283	54465
Niga9_17	2017	Nigeria	Sokoto	diseased	C	21-15,16	10217	121	165.5	ERS2071286	54466
Niga11_17	2017	Nigeria	Zamfara	diseased	C	21-15,16	10217	100	170.5	ERS2071252	54467
Niga20_17	2017	Nigeria	Katsina	diseased	C	21-15,16	10217	97	171.7	ERS2071262	54468
Niga14_17	2017	Nigeria	Zamfara	diseased	C	21-15,16	10217	99	178.7	ERS2071255	54469
SK163	2017	Nigeria	Sokoto	diseased	C	21-15,16	10217	92	132.1	ERS2071296	56534
SK193	2017	Nigeria	Sokoto	diseased	C	21-15,16	10217	94	150.1	ERS2071302	56535
SK225	2017	Nigeria	Sokoto	diseased	C	21-15,16	10217	92	151.0	ERS2071306	56536
SK246	2017	Nigeria	Sokoto	diseased	C	21-15,16	10217	93	121.6	ERS2071308	56537
MM_B_1631	2017	Nigeria	Sokoto	diseased	C	21-15,16	10217	84	96.7	ERS2071238	56541
MM_B_4593	2017	Nigeria	Sokoto	diseased	C	21-15,16	10217	94	98.0	ERS2071239	56544
MM_B_4691	2017	Nigeria	Sokoto	diseased	C	21-15,16	10217	94	86.2	ERS2071240	56545
MM_C_4691	2017	Nigeria	Sokoto	diseased	C	21-15,16	10217	90	112.3	ERS2071241	56546
SK069	2017	Nigeria	Sokoto	diseased	C	21-15,16	10217	96	94.4	ERS2071287	56554
SK075	2017	Nigeria	Sokoto	diseased	C	21-15,16	10217	91	116.9	ERS2071288	56555
SK96	2017	Nigeria	Sokoto	diseased	C	21-15,16	10217	104	135.8	ERS2071321	56556
SK99	2017	Nigeria	Sokoto	diseased	C	21-15,16	11561	95	92.6	ERS2071322	56557
SK101	2017	Nigeria	Sokoto	diseased	C	21-15,16	10217	103	78.5	ERS2071290	56558
SK153	2017	Nigeria	Sokoto	diseased	C	21-15,16	10217	92	101.1	ERS2071295	56559
SK186	2017	Nigeria	Sokoto	diseased	C	21-15,16	10217	92	87.1	ERS2071298	56560
SK187	2017	Nigeria	Sokoto	diseased	C	21-15,16	10217	95	106.1	ERS2071299	56561
SK192	2017	Nigeria	Sokoto	diseased	C	21-15,16	10217	91	86.9	ERS2071301	56562
SK203	2017	Nigeria	Sokoto	diseased	C	21-15,16	10217	98	102.9	ERS2071304	56563
SK233	2017	Nigeria	Sokoto	diseased	C	21-15,16	10217	106	127.7	ERS2071307	56564
SK250	2017	Nigeria	Sokoto	diseased	C	21-15,16	10217	99	98.4	ERS2071309	56565
SK292	2017	Nigeria	Sokoto	diseased	C	21-15,16	10217	102	93.5	ERS2071310	56566
SK304	2017	Nigeria	Sokoto	diseased	C	21-15,16	10217	1245	57.3	ERS2071312	56567
SK307	2017	Nigeria	Sokoto	diseased	C	21-15,16	10217	125	129.3	ERS2071313	56568
SK319	2017	Nigeria	Sokoto	diseased	C	21-15,16	10217	97	88.7	ERS2071314	56569

SK325	2017	Nigeria	Sokoto	diseased	C	21-15,16	10217	102	129.9	ERS2071315	56570
SK326	2017	Nigeria	Sokoto	diseased	C	21-15,16	10217	99	117.5	ERS2071316	56571
SK327	2017	Nigeria	Sokoto	diseased	C	21-15,16	10217	96	105.6	ERS2071317	56572
SK336	2017	Nigeria	Sokoto	diseased	C	21-15,16	10217	96	93.0	ERS2071318	56573
SK352	2017	Nigeria	Sokoto	diseased	C	21-15,16	10217	87	141.1	ERS2071319	56574
SK356	2017	Nigeria	Sokoto	diseased	C	21-15,16	10217	86	97.3	ERS2071320	56575
SK150	2017	Nigeria	Sokoto	diseased	C	21-15,16	10217	104	134.4	ERS2071294	56577

Supplementary Table ST1 – Isolates used in this study.



Supplementary Figure SF1: cgMLST-based tree of the outbreak and carrier strains, as well as other African NmC and isolates found to have relatively similar capsule through allele-based comparison. Colors are according to country of isolation, and a star is used to indicate invasiveness. (For the Europe/Canada cluster, every strain is invasive and individual country information has not been added.) Nig8/13 represents the entire outbreak (ST-10217) in this figure. BL16188 and the outbreak strain are very closely related compared to all other hitherto publicly available sequences.

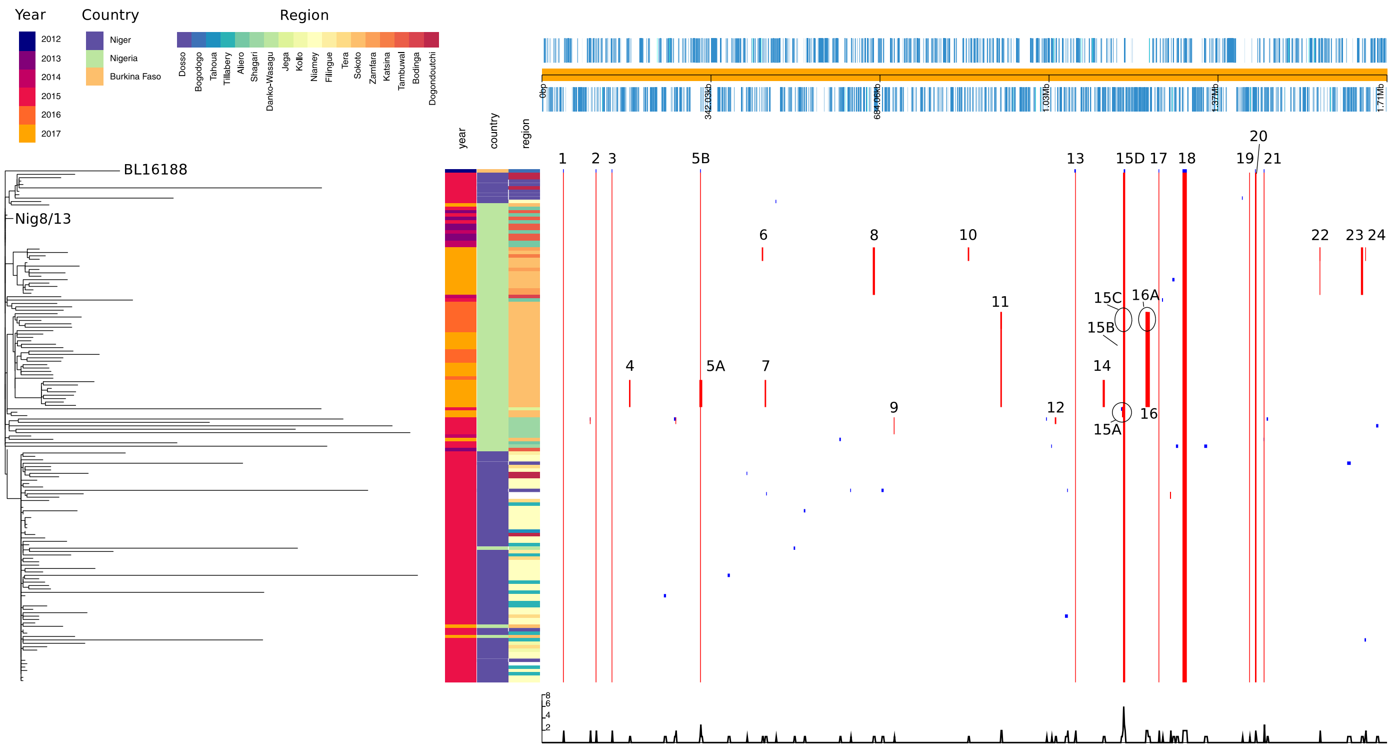


Supplementary Figure SF2: Comparison of the MDAΦ prophage in Nig8/13 (representing ST-10217) to those found in Z2491, MC58 and FAM18, using the Bille *et al*. (2005) terminology. For Nig8/13, the annotations have been made using NEIS numbers from pubmlst. Genes that were called by pubmlst but not by an independent gene caller (Prokka) have been left transparent. (NEIS2451 corresponds to ORF10 of MDAΦ and is likely a transcribed gene. NEIS2987 has not been previously described and is in the opposite direction and might be an incidental finding. NMC_RS00125 does not have a corresponding NEIS number and was only called by Prokka. However, this gene clearly corresponds to the previously described ORF9.) For Z2491, MC58 and FAM18, short ORFs have only been annotated with a single number, corresponding to the ORF number in MDAΦ's nomenclature. Red color corresponds to sequence homology in the forward direction, and blue to sequence homology in the reverse direction.

Isolate	Type	Upstream	ORF10	ORF1	ORF2	ORF3	ORF4	ORF5	ORF6A	ORF6	ORF7	ORF8	ORF9	Downstream
Nig8/13	I	NEIS2113	NEIS2451**	NEIS0031	NEIS0030	NEIS0029	NEIS0028	NEIS0027	NMC_RS09055*	NEIS1866	NEIS0024	NEIS0023	NMC_RS00125*	NEIS2114
Z2491	I	NMA1791		NMA1792	NMA1793	NMA1794	NMA1795	NMA1796		NMA1797	NMA1798	NMA1799	NMA1800	NMA1801
MC58	I	NMB1541		NMB1543	NMB1544	NMB1545	NMB1546	NMB1547		NMB1548	NMB1550	NMB1551	NMB1552	NMB1554
MC58	II	NMB1636		NMB1634	NMB1633	NMB1632	NMB1631	NMB1630	NMB1629	NMB1628	NMB1627	NMB1626	NMB1625	NMB1624
FAM18	I	RS00175	RS00170	RS00165	RS00160	RS00155	RS00150	RS00145		RS00140	RS00135	RS00130	RS00125	RS00120
FAM18	II	RS01495		RS01500	RS01505	RS01510	RS01515	RS01520		RS01525	RS01530	RS01535	RS01540	RS01545
FAM18	III	RS09025		RS09030	RS09035	RS09040	RS09045	RS09050	RS09055	RS09060	RS09065	RS09070	RS09075	RS09080
FAM18	IV	RS09795		RS09800	RS09805	RS09810	RS09815	RS09820	RS09825	RS09830	RS09835	RS09840	RS09845	RS09850

*=Predicted, not called by pubmlst
**=Not predicted but called by pubmlst

Supplementary Table ST2 – Comparison of open reading frames in the MDAΦ phage with those in the corresponding regions of Z2491, MC58 and FAM18. The type is annotated as in Bille *et al.*, 2005. For FAM18, the prefix “NMC_” has been removed from all annotations.



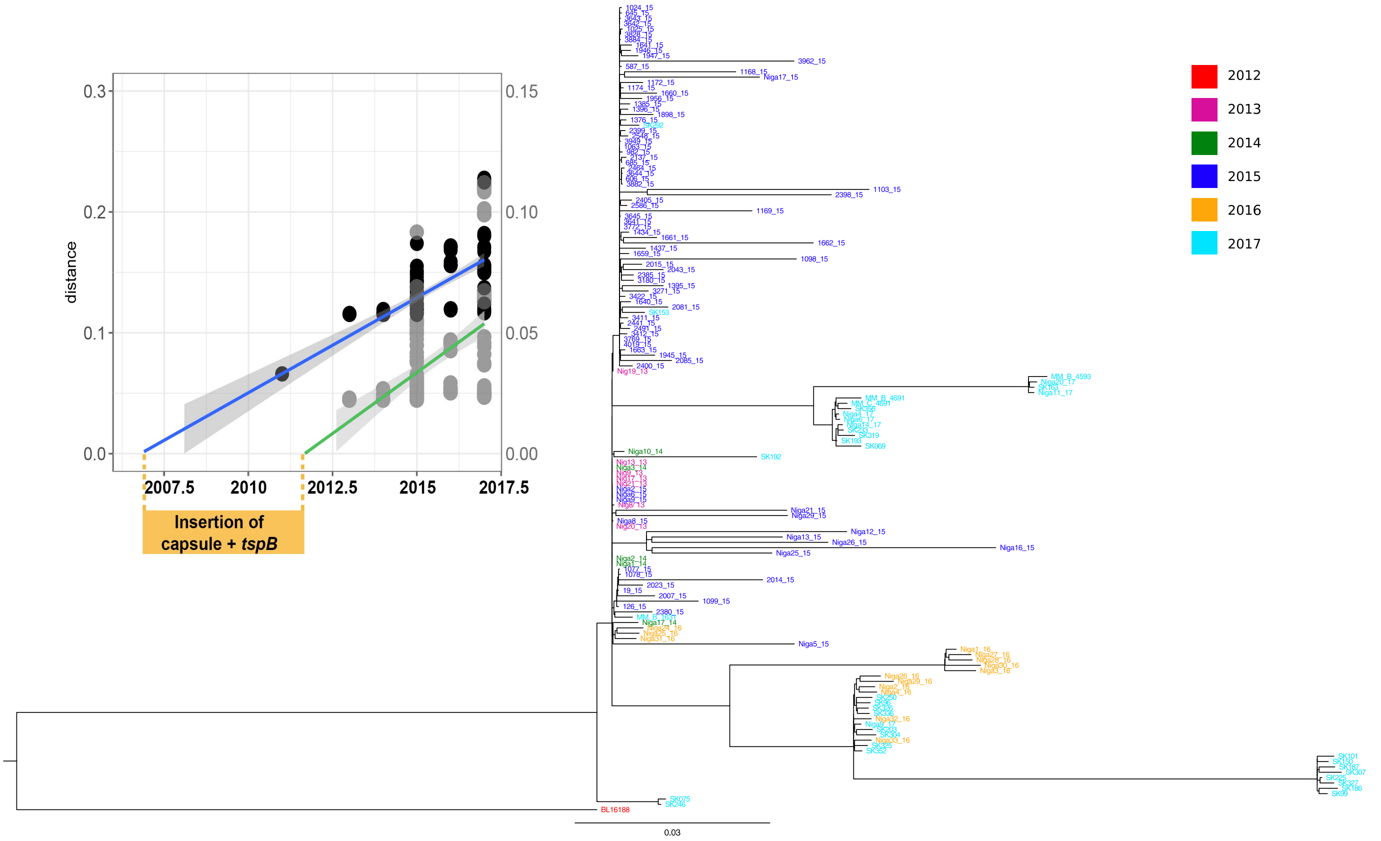
Supplementary Figure SF3: Phandango plot showing recombination events within ST-10217 and between BL16188 and ST-10217. The numbering of recombination events corresponds to Supplementary Table ST3, where all affected genes are described. The tall red blocks (1, 2, 3, 5B, 13, 15D, 17, 18, 19, 20, 21) are recombination events that have happened on the branch between the carrier (BL16188) and the outbreak. The horizontal axis corresponds to an alignment of the core *N. meningitidis* genome. The tree used in this figure is the recombination-filtered tree from Gubbins.

Block	**All ST-10217**	**Coord start**	**Coord stop**	**NEIS no.**	**Pubmlst annotation**
1	X	43 948	44 504	NEIS0372	hypothetical protein
2	X	109 960	110 518	NEIS0433	ATP-dependent DNA helicase *RecG*
3	X	141 525	143 376	NEIS0484	hypothetical protein
				NEIS0486	alcohol dehydrogenase (*adhA*)
4		176 337	179 224	NEIS0521	ABC transporter ATP-binding protein
				NEIS0523	electron transfer flavoprotein-ubiquinone oxidoreductase
5A		319 497	324 686	NEIS0694	putative DNA repair protein
				NEIS0695	hypothetical protein
				NEIS0696	hypothetical protein
				NEIS0697	ubiquinone/menaquinone biosynthesis methyltransferase
				NEIS0698	hypothetical protein
5B	X	320 135	321 968	NEIS0694	putative DNA repair protein
				NEIS0695	hypothetical protein
6		444 926	448 680	NEIS0897	*icd* - isocitrate dehydrogenase (NADP+)
				NEIS0899	*lst* (alpha-2,3-sialyltransferase)
				NEIS0900	putative C-type cytochrome
				NEIS0901	putative oxidoreductase
7		451 181	453 942	NEIS0907	dihydrodipicolinate synthase
				NEIS0908	transmembrane transport protein
				NEIS0909	RNA methylase
8		670 548	673 840	NEIS1166	hypothetical protein
				NEIS1168	ferredoxin--NADP reductase
				NEIS1170	putative P-type cation-transporting ATPase
9		712548	714621	NEIS1210	site-specific recombinase
				NEIS1212	murein hydrolase
10		862 315	865 354	NEIS1365	transcription elongation factor *GreA*
				NEIS1366	3-phosphoshikimate 1-carboxyvinyltransferase
				NEIS1367	putative lipoprotein
				NEIS1368	phopholipase D-family protein
11		928 127	932 002	NEIS1429	aspartate kinase
				NEIS1430	ribonuclease PH
				NEIS1431	hypothetical protein
				NEIS1432	hypothetical protein
				NEIS1433	hypothetical protein
				NEIS1435	nicotinate phosphoribosyltransferase
12		1 038 062	1 041 948	NEIS2458	Tellurite resistance protein *TehB*
				NEIS1544	ribonuclease H
				NEIS1545	hypothetical protein

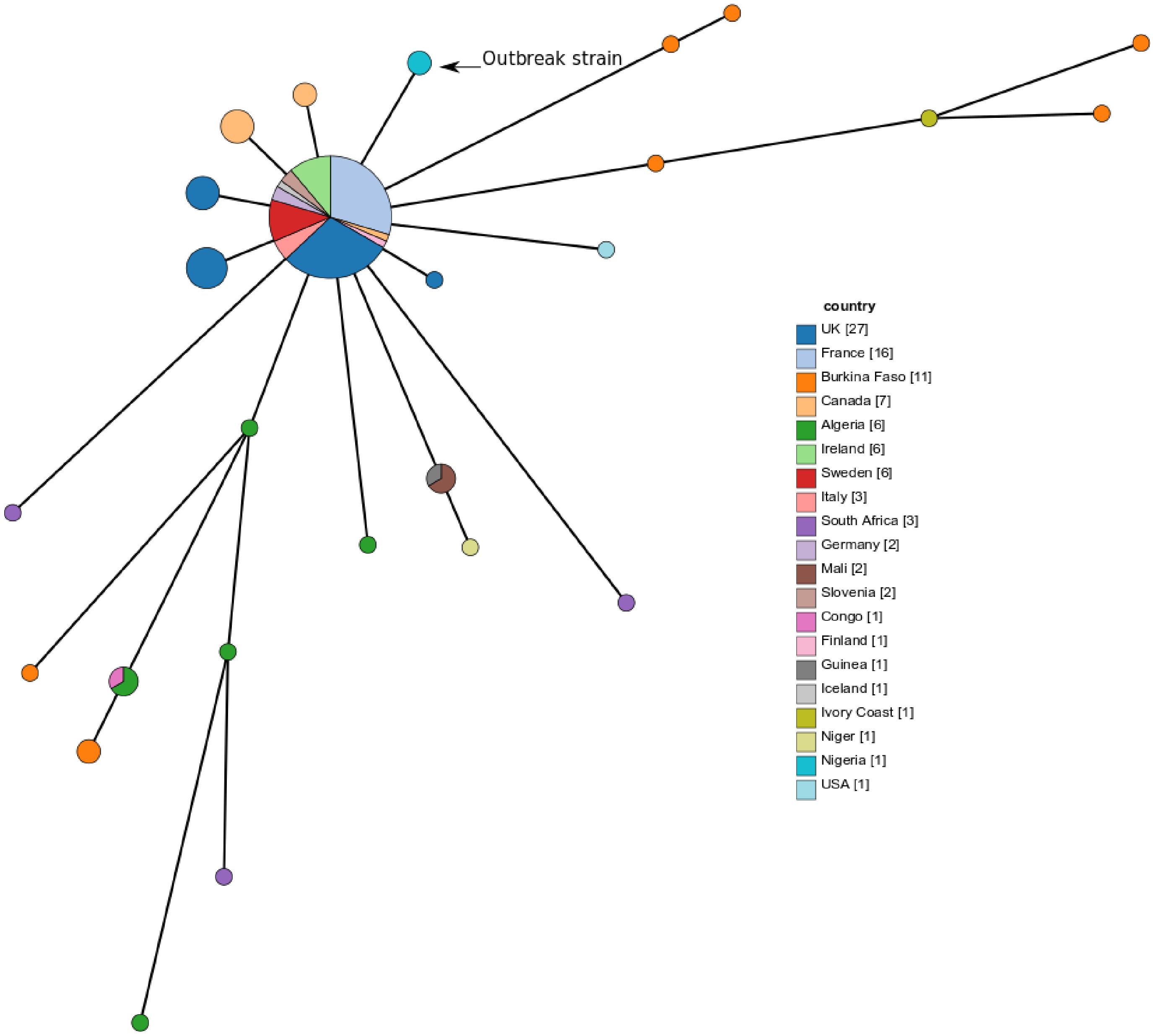
				NEIS1546	hypothetical protein
13	X	1 078 946	1 081 671	*hmbR*	haemoglobin receptor protein
				NEIS1587	haem utilisation protein (*hemO*)
				NEIS1588	putative paraquat-inducible protein A
14		1 135 732	1 139 568	NEIS1638	exodeoxyribonuclease V
				NEIS1639	putative integral membrane protein
				NEIS1640	cytochrome c oxidase subunit III
15A		1 175 591	1 178 486	NEIS1691	transferrin-binding protein 1 (*tbpB*)
				NEIS1692	glutamate racemase
15B		1 177 124	1 178 099	NEIS1691	transferrin-binding protein 1 (*tbpB*)
				NEIS1692	glutamate racemase
15C		1 177 124	1 179 806	NEIS1691	transferrin-binding protein 1 (*tbpB*)
				NEIS1692	glutamate racemase
				NEIS1693	hypothetical protein
				NEIS1694	N-acetylmuramoyl-L-alanine amidase (*amiC*)
15D	X	1 177 150	1 181 038	NEIS1691	transferrin-binding protein 1 (*tbpB*)
				NEIS1692	glutamate racemase
				NEIS1693	hypothetical protein
				NEIS1694	N-acetylmuramoyl-L-alanine amidase (*amiC*)
				NEIS1695	hypothetical protein
16A		1 222 382	1 226 133	NEIS1750	hypothetical protein
				NEIS1751	UDP-N-acetylmuramoylalanyl-D-glutamate--2, 6-diaminopimelate ligase
				NEIS1753	penicillin-binding protein 2 (*penA*)
16B		1 222 382	1 230 880	NEIS1750	hypothetical protein
				NEIS1751	UDP-N-acetylmuramoylalanyl-D-glutamate--2, 6-diaminopimelate ligase
				NEIS1753	penicillin-binding protein 2 (*penA*)
				NEIS1754	putative small periplasmic protein
				NEIS1755	S-adenosyl-methyltransferase *MraW*
				NEIS1756	cell division protein *MraZ*
				NEIS1757	hypothetical protein
				NEIS1759	undecaprenyl pyrophosphate phosphatase
17	X	1 247 776	1 250 014	NEIS1777	maltose phosphorylase (*mapA*)
				NEIS1779	integral membrane transport protein
18	X	1 297 533	1 305 508	NEIS0275	putative outer membrane solvent tolerance protein
				NEIS0274	hypothetical protein
				NEIS0273	thiol:disulphide interchange protein encodes DsbA1; oxidoreductase
				NEIS0272	putative inner membrane protein
				NEIS0271	hypothetical protein
				NEIS0270	indole-3-glycerol-phosphate synthase
				NEIS0269	ATP-dependent DNA helicase

19	X	1 432 459	1 433 843	NEIS0119	50S ribosomal protein L11 (*rplK*)
				NEIS0118	transcription antitermination protein (*nusG*)
				NEIS0117	*secE*
				NEIS0116	*tuf*
20	X	1 443 217	1 446 560	NEIS0106	putative two-component sensor kinase
				NEIS0105	hypothetical protein
				NEIS0104	SUN-family protein
				NEIS0103	methionyl-tRNA formyltransferase
21	X	1 461 464	1 463 242	NEIS0073	outer membrane transport protein
				NEIS2514	hypothetical protein
				NEIS0072	hypothetical protein
				NEIS0071	putative lipoprotein
22		1 574 985	1 576 160	NEIS2044	hypothetical protein
				NEIS2043	*ThiF* protein
23		1 657 466	1 662 375	NEIS1957	DNA polymerase I
				NEIS1956	S-ribosylhomocysteinase
				NEIS1955	hypothetical protein
				NEIS1954	frataxin-like protein
				NEIS1953	putative lipoprotein
				NEIS1952	diaminopimelate decarboxylase
				NEIS2995	membrane protein
				NEIS1951	putative sodium-dependent inner membrane transport protein
24		1 667 098	1 668 614	NEIS1945	hypothetical protein
				NEIS1944	putative para-aminobenzoate synthase component I

Supplementary Table ST3 – Recombination blocks identified on the branch between BL16188 and ST-10217 (With “X” in “All ST-10217”) and on internal branches of the ST-10217 phylogeny, with associated loci/products. Block = Recombination block number, corresponding to Supplementary Figure SF3. Coord start/stop = Determined breakpoints of the recombination block in an alignment of all *N. meningitidis* cgMLST v1.0 loci, total length 1 705 235 bp. NEIS no. = Accession number of locus in pubmlst, if available. Pubmlst annotation = Annotation of the locus in pubmlst.



Supplementary Figure SF4: Maximum-likelihood tree based on SNPs from a whole-genome alignment of all outbreak isolates, with carrier strain BL16188 set as the outgroup. Colors are according to sample year. This tree is used to infer a root-to-tip time signal, for use in a regression analysis to determine the most probable time of horizontal acquisition of the capsule and the MDA prophage (Left).



Supplementary Figure SF5: Allele-based minimum spanning tree of capsule locus only (NEIS0049-NEIS0059), intended to show potential donors of ST-10217s capsule. Colors are according to country of origin. European/Canadian group C capsules appear to be more closely related to ST-10217’s capsule than other African NmC.

Isolate name	Year	Country	Host status	Serogroup	PorA type	ST	BIGS id.
BF0689	2009	Burkina Faso	carrier	C	5-2,10-2	206	57302
BF0692	2009	Burkina Faso	carrier	C	5-2,10-2	206	57303
BF0751	2009	Burkina Faso	carrier	C	7,30-8	206	57304
BF0791	2009	Burkina Faso	carrier	C	7,30-11	7929	57305
BF1626	2010	Burkina Faso	carrier	C	7-43,30	206	57306
BF1736	2010	Burkina Faso	carrier	C	5-1,2-2	865	57307
BF1742	2010	Burkina Faso	carrier	C	5-1,2-2	865	57308
BF2880	2012	Burkina Faso	carrier	C	7-2,30-11	206	57309
FAM18	1983	USA	diseased	C	5,2	11	698
HF170	1973	South Africa	diseased	C	5-1,10-4	8245	38577
Niger15/91	1991	Niger	diseased	C	5,2-1	11	38578
MK338/93	1993	Guinea	diseased	C	5,2-1	11	38579
MK85/94	1994	Mali	diseased	C	5,2-1	165	38580
MK91/94	1994	Mali	diseased	C	5,2-1	165	38581
IC9/98	1998	Ivory Coast	diseased	C	7,30-8	206	38582
C14/01	2001	Congo	diseased	C	5-2,10-64	206	38583
S97/93	1993	Algeria	diseased	C	18-1,34	409	38584
S41/98	1998	Algeria	diseased	C	18-1,3	11	38585
S70/98	1998	Algeria	diseased	C	18-23,1	206	38586
S13/98	1998	Algeria	diseased	C	18-3,1	11588	38587
3252/99	1999	Algeria	diseased	C	18-3,1	337	38588
S96/98	1998	Algeria	diseased	C	18-3,1	4711	38589
SB19	1990	South Africa	diseased	C	5-2	8	38590
SB3	1990	South Africa	diseased	C	5-2	8	38591
M12 240255	2012	UK	diseased	C	5-2	11	21458
M12 240716	2012	UK	diseased	C	5-2	11	28084
M04 241156	2004	UK	diseased	C	5-2	11	29589
M07 240686	2007	UK	diseased	C	5-2	7779	29626
M98 253000	1998	UK	other	C	5-2	11	29646
M10 240229	2010	UK	diseased	C	5-2	11	29891
M13 240496	2013	UK	diseased	C	5-2	11	29895
M13 240514	2013	UK	diseased	C	5-2	11	29898
M14 240100	2014	UK	diseased	C	5-2	11	30214
M14 240107	2014	UK	diseased	C	5-2	11	30215
M14 240184	Unknown	Canada	diseased	C	5-2	11	30287
12009-14	2014	Ireland	diseased	B	5-2	11	30694
12038-13	2013	Ireland	diseased	C	5-2	11	30727
M14 240168	2014	UK	diseased	C	5-2	11	35628
M14 240405	2014	UK	diseased	C	5-2	11	35762
M14 240436	2014	UK	diseased	C	5-2	11	35775
12034_2014	2014	Ireland	diseased	C	5-2	11	36156
12035_2014	2014	Ireland	diseased	C	5-2	11	36157
12008_2015	2015	Ireland	diseased	C	5-2	11	36817
12020-2015	2015	Ireland	diseased	C	5-2	11	36828
85Mo	2012	Slovenia	diseased	C	5-2	11	38152
2533	2012	Italy	diseased		5-2	11	38865
LNP28303	2015	France	diseased	C	5-2	11	40239

LNP28344	2015	France	diseased	C	5-2	11	40274
LNP28383	2016	France	diseased	C	5-2	11	40408
LNP28270	2015	France	diseased	C	5-2		40472
LNP28276	2015	France	diseased	C	5-2	11	40475
LNP28289	2015	France	diseased	C	5-2	11	40482
M15 240872	2015	UK	diseased	C	5-2	11	41468
LNP28411	2016	France	diseased	C	5-2	11	41578
LNP28422	2016	France	diseased	C	5-2	11	41587
149M	2015	Slovenia	diseased	C	5-2	11	41717
LNP28426	2016	France	diseased	C	5-2	11	41793
LNP28448	2016	France	diseased	C	5-2	11	41801
LNP28451	2016	France	diseased	C	5-2	11	41804
LNP28456	2016	France	diseased	C	5-2	11	41809
LNP28470	2016	France	diseased	C	5-2	11	41821
16-88	2016	Sweden	diseased	C	5-2	11	41965
LNP28481	2016	France	diseased	C	5-2	11	42047
1459000190	2014	Sweden	diseased	C	5-2	11	42366
1459000254	2014	Sweden	diseased	C	5-2	11	42374
15-29	2015	Sweden	diseased	C	5-2	11	42414
15-81	2015	Sweden	diseased	C	5-2	11	42437
M16 240142	2016	UK	diseased	C	5-2	11	42577
LNP28568	2016	France	diseased	C	5-2	11	42879
LNP28570	2016	France	diseased	C	5-2	11	42881
16-8702245	2016	UK	diseased	C	5-2	11	44693
M16 240383	2016	UK	diseased	C	5-2	11	44770
704070003	2007	Iceland	diseased	C	5-2		44880
DE8555	2002	Germany			5-2	11	46977
WUE2121	1997	Germany			5-2	11	47012
M16 240564	2016	UK	diseased	C	5-2	11	47298
Nmiss2821	2016	Italy		C	5-2	11	49274
16-482	2016	Sweden	diseased	C	5-2	11	50862
14.8703928	2014	UK	diseased	C	5-2	11	51613
14.8705635	2014	UK		C	5-2	11	52835
16.8710714	2016	UK		C	5-2	11	52888
2636	2016	Italy		C	5-2	11	52959
M16 240752	2016	UK	diseased	C	5-2	11	53088
M16 240760	2016	UK	diseased	C	5-2	11	53095
M16 240775	2016	UK	diseased	C	5-2	11	53105
M17 240066	2017	UK	diseased	C	5-2	11	53262
M17 240136	2017	UK	diseased	C	5-2	11	53303
M17 240153	2017	UK	diseased	C	5-2	11	53317
114728	2017	Finland		C	5-2	11	53426
NMLC249	2006	Canada		C	5-2	11	53786
NMLC113	2009	Canada		C	5-2	11	53788
NMLC203	2009	Canada		C	5-2	11	53789
NMLC066	2013	Canada		C	5-2	11	53796
NMLC102	2014	Canada		C	5-2	11	53797
NMLC107	2014	Canada		C	5-2	11	53798
12010-16	2016	Ireland		C	5-2	11	55530

12020-16	2016	Ireland		C	5-2	11	55537
12027-16	2016	Ireland		C	5-2	11	55542
12030-16	2016	Ireland		C	5-2	11	55543
12046-16	2016	Ireland		C	5-2	11	55554
12048-16	2016	Ireland		B	5-2	11	55555
12001-17	2017	Ireland		C	5-2	11	55566
12002-17	2017	Ireland		C	5-2	11	55567
12016-17	2017	Ireland		C	5-2	11	55577
12017-17	2017	Ireland		C	5-2	11	55578
12026-17	2017	Ireland		C	5-2	11	55585

Supplementary Table ST4 – Other related isolates (mostly serogroup C) available from pubmlst and used for comparison in Supplementary Figure 1.