

Supplementary Materials for

Gene flow and Bayesian phylogeography of serogroup C meningococci circulating in Italy

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Detailed information of *Neisseria meningitidis* strains used in this study

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A) Temporal dynamics of *N. meningitidis* C:P1.5-1,10-8:F3-6:ST-11(cc11) strains spatial diffusion, obtained from the location annotated Maximum clade credibility (MCC) tree and involving Italy. The snapshots of the main dispersal pattern were reported. The lines connecting different locations represent branches in the MCC tree on which state exchanges occur and circle areas reflect the number of branches maintaining a particular state at that time point. The maps were based on satellite pictures made available in Google Earth (<http://earth.google.com>).
B) The frequently invoked rates identified by Spread (Bayes factor test) were reported and reconstructed as a map based on satellite pictures made available in Google Earth (<http://earth.google.com>).

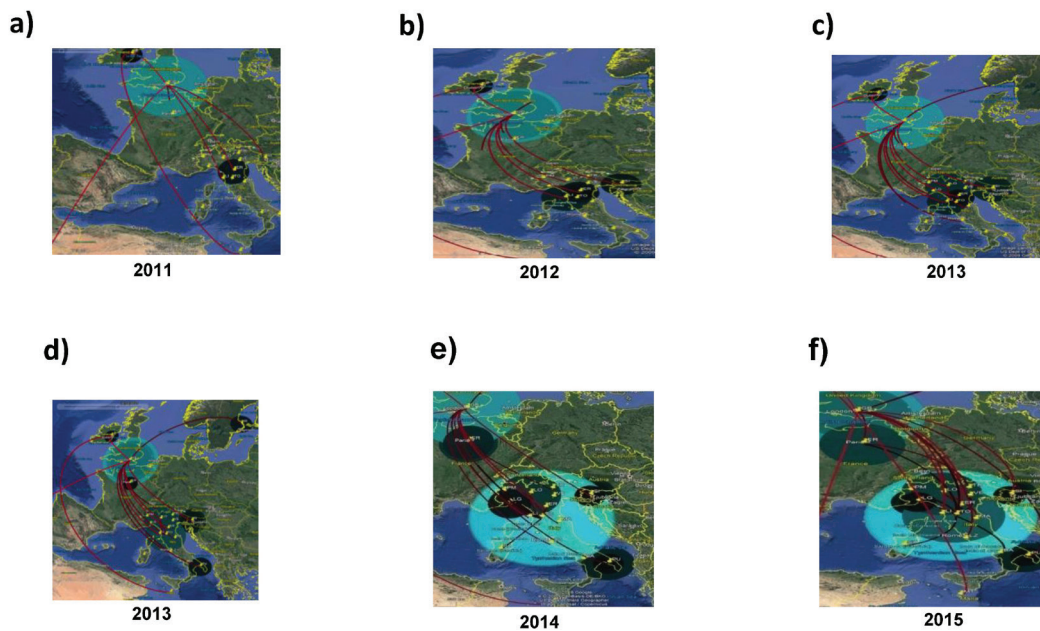
Supplementary Table 1SDetailed information of *Neisseria meningitidis* strains used in this study

Tip label	ID Neisseria.org	Country	Date onset	Lab confirmation region	Year
1	20155	UK	unk	unk	2010
2	20329	UK	unk	unk	2011
3	20359	UK	unk	unk	2011
4	21185	Malta	unk	unk	2011
5	21232	UK	unk	unk	2011
6	21253	UK	unk	unk	2011
7	21359	UK	unk	unk	2012
8	21364	UK	unk	unk	2012
9	21407	UK	unk	unk	2012
12	28083	UK	unk	unk	2012
13	28085	UK	unk	unk	2012
14	28093	UK	unk	unk	2013
15	28094	UK	unk	unk	2013
16	28097	UK	unk	unk	2013
17	28099	UK	unk	unk	2013
18	28100	UK	unk	unk	2013
19	28103	UK	unk	unk	2013
21	28105	UK	unk	unk	2013
46	29627	UK	unk	unk	2007
75	29882	UK	unk	unk	2008
77	29885	UK	unk	unk	2009
80	29890	UK	unk	unk	2010
115	30209	UK	unk	unk	2013
116	30210	UK	unk	unk	2013
117	30698	Ireland	unk	unk	2014
119	34744	France	unk	unk	2014
120	35650	UK	unk	unk	2014
121	35693	UK	unk	unk	2014
122	36386	Italy	22/01/2015	Toscana	2015
123	36444	Italy	07/10/2012	Toscana (port of Livorno)	2012
311	36445	Italy	07/10/2012	Toscana (port of Livorno)	2012
124	36446	Italy	07/10/2012	Toscana (port of Livorno)	2012
125	36447	Italy	07/10/2012	Toscana (port of Livorno)	2012
126	36448	Italy	07/02/2015	Toscana	2015
128	36450	Italy	20/03/2015	Toscana	2015
129	36451	Italy	06/01/2015	Toscana	2015
130	36452	Italy	20/01/2015	Toscana	2015
131	36453	Italy	15/02/2015	Toscana	2015
132	36460	Italy	01/11/2012	Emilia Romagna	2012
133	36461	Italy	03/04/2014	Lombardia	2014
142	36670	Italy	25/04/2015	Toscana	2015
143	36765	Italy	16/06/2014	Toscana	2014
144	36766	Italy	12/04/2014	Toscana	2014
145	36767	Italy	11/05/2015	Toscana	2015
146	36768	Italy	06/05/2015	Liguria	2015
147	36769	Italy	06/02/2015	Toscana	2015

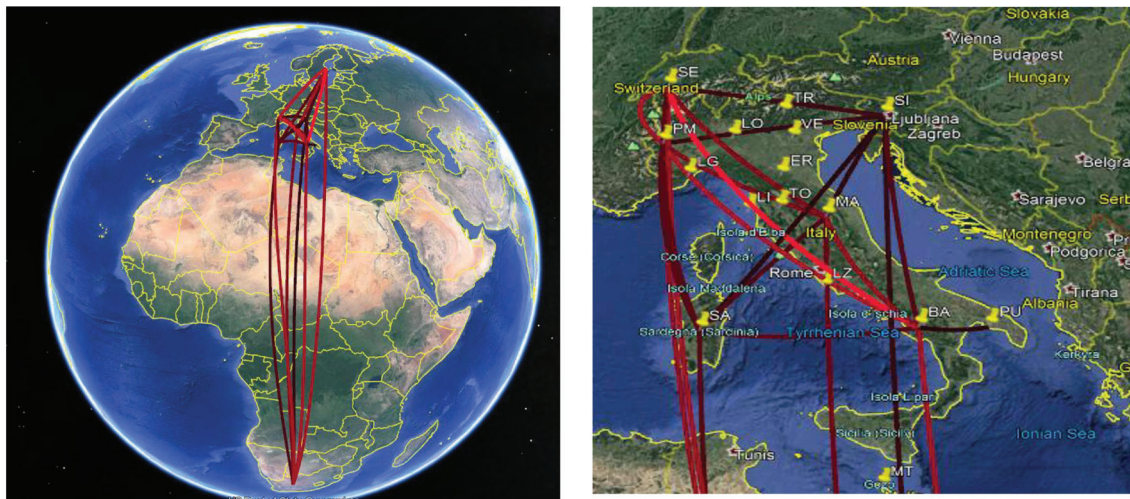
148	36770	Italy	15/02/2015	Veneto	2015
149	36771	Italy	20/01/2015	Lazio	2015
157	36784	Italy	08/06/2015	Toscana	2015
158	36821	Ireland	unk	unk	2014
159	36823	Ireland	unk	unk	2015
160	37019	Italy	14/03/2014	Trentino-Alto Adige	2014
162	37593	Italy	05/02/2013	Emilia Romagna	2013
163	37594	Italy	25/04/2013	Lombardia	2013
164	37595	Italy	07/08/2013	Lazio	2013
166	37597	Italy	13/01/2014	Puglia	2014
167	37598	Italy	18/01/2014	Puglia	2014
169	37600	Italy	14/11/2013	Lombardia	2013
170	37601	Italy	24/02/2014	Lombardia	2014
172	37679	UK	unk	unk	2014
173	37752	UK	unk	unk	2014
174	37758	UK	unk	unk	2014
175	37763	UK	unk	unk	2014
176	37816	UK	unk	unk	2015
177	37894	UK	unk	unk	2015
178	37918	UK	unk	unk	2015
179	38153	Slovenia	unk	unk	2012
180	38155	Slovenia	unk	unk	2013
181	38159	Slovenia	unk	unk	2014
182	38161	Slovenia	unk	unk	2015
183	38838	Italy	29/08/2015	Sardegna	2015
184	38839	Italy	30/07/2015	Toscana	2015
185	38847	Italy	14/01/2013	Marche	2013
188	38867	Italy	13/12/2013	Lombardia	2013
190	39319	UK	unk	unk	2015
191	39353	UK	unk	unk	2015
192	39361	UK	unk	unk	2015
193	39388	UK	unk	unk	2015
195	39409	UK	unk	unk	2015
196	39569	Italy	02/10/2015	Toscana	2015
205	40410	France	unk	unk	2016
222	40703	South Africa	unk	unk	2010
230	41642	Italy	24/11/2015	Toscana	2015
232	41648	Italy	01/10/2015	Lombardia	2015
233	41659	Italy	07/01/2016	Toscana	2016
234	41661	Italy	12/01/2016	Toscana	2016
235	41665	Italy	05/01/2016	Emilia Romagna	2016
236	41667	Italy	30/01/2016	Toscana	2016
237	41668	Italy	03/02/2016	Toscana	2016
239	41678	Italy	01/10/2015	Piemonte	2015
240	41695	Slovenia	unk	unk	2015
243	42032	Italy	05/02/2016	Toscana	2016
245	42035	Italy	04/03/2016	Piemonte	2016
246	42037	France	unk	unk	2016

247	42190	France	unk	unk	2016
248	42192	France	unk	unk	2016
249	42375	Sweden	unk	unk	2014
250	42382	Sweden	unk	unk	2014
251	42383	Sweden	unk	unk	2014
252	42390	Sweden	unk	unk	2014
253	42540	UK	unk	unk	2016
254	42541	UK	unk	unk	2016
255	42597	UK	unk	unk	2016
257	42768	France	unk	unk	2016
258	42772	France	unk	unk	2016
259	42781	France	unk	unk	2016
261	42863	Italy	25/02/2016	Basilicata	2016
262	42864	Italy	07/03/2016	Puglia	2016
266	43997	France	unk	unk	2016
268	44779	UK	unk	unk	2016
269	44824	UK	unk	unk	2016
274	44976	Italy	17/06/2016	Toscana	2016
278	47308	UK	unk	unk	2016
280	49275	Italy	18/04/2016	Lombardia	2016
282	49277	Italy	26/05/2016	Lombardia	2016
285	49281	Italy	28/07/2016	Lombardia	2016
286	50946	Italy	14/07/2016	Toscana	2016
288	50948	Italy	26/02/2016	Emilia Romagna	2016
289	50949	Italy	01/11/2016	Toscana	2016
293	52947	Italy	26/11/2016	Emilia Romagna	2016
294	52952	Italy	29/08/2016	Lombardia	2016
295	53090	UK	unk	unk	2016
296	53100	UK	unk	unk	2016
297	53276	UK	unk	unk	2017
298	53304	UK	unk	unk	2017
300	53574	Italy	10/01/2017	Piemonte	2017
301	53575	Italy	03/02/2017	Liguria	2017
302	53576	Italy	31/12/2016	Lombardia	2016
305	53713	Italy	18/06/2014	Lombardia	2014
306	53714	Italy	21/04/2015	Toscana	2015
307	53715	Italy	29/06/2016	Toscana	2016
308	53717	Italy	06/03/2017	Emilia Romagna	2017
310	53719	Italy	17/04/2017	Lombardia	2017

A)



B)



Supplementary Figure 15

A) Temporal dynamics of *N. meningitidis* C:P1.5-1,10-8:F3-6:ST-11(cc11) strains spatial diffusion, obtained from the location annotated Maximum clade credibility (MCC) tree and involving Italy. The snapshots of the main dispersal pattern were reported. The lines connecting different locations represent branches in the MCC tree on which state exchanges occur and circle areas reflect the number of branches maintaining a particular state at that time point. The maps were based on satellite pictures made available in Google Earth (<http://earth.google.com>). B) The frequently invoked rates identified by Spread (Bayes factor test) were reported and reconstructed as a map based on satellite pictures made available in Google Earth (<http://earth.google.com> ; Google Earth Pro V.7.3.2.5491).