

## Supplementary Tables

**Supplementary Table 1.** Influenza virus sequences downloaded from the GISAID EpiFlu database for the phylogenetic analysis

GISAID EpiFlu ID	Isolate Name	Subtype	Collection Date	Passage	Submitting Lab
EPI_ISL_173571	A/Alaska/38/2014	H1N1pdm09	2014-09-03	C3	Centers for Disease Control and Prevention
EPI_ISL_131353	A/Bangladesh/2021/2012	H1N1pdm09	2012-07-21	C1/C4	Centers for Disease Control and Prevention
EPI_ISL_145499	A/Bolivia/559/2013	H1N1pdm09	2013-06-08	C2	Centers for Disease Control and Prevention
EPI_ISL_158707	A/California/06/2014	H1N1pdm09	2014-02-03	C1	Centers for Disease Control and Prevention
EPI_ISL_159428	A/California/07/2009	H1N1pdm09	2009-04-09	E3	Centers for Disease Control and Prevention
EPI_ISL_188710	A/Delaware/39/2015	H1N1pdm09	2015-04-13	C1	Centers for Disease Control and Prevention
EPI_ISL_145504	A/Dominican Republic/7293/2013	H1N1pdm09	2013-05-01	C2	Centers for Disease Control and Prevention
EPI_ISL_178484	A/Egypt/4372/2014	H1N1pdm09	2014-10-04	C3/C2	Centers for Disease Control and Prevention
EPI_ISL_178482	A/Egypt/4758/2014	H1N1pdm09	2014-10-20	C3/C2	Centers for Disease Control and Prevention
EPI_ISL_172641	A/Ethiopia/1149/2014	H1N1pdm09	2014-10-30	C1	Centers for Disease Control and Prevention
EPI_ISL_172648	A/Ethiopia/63/2014	H1N1pdm09	2014-11-07	C2	Centers for Disease Control and Prevention
EPI_ISL_172640	A/Ethiopia/66/2014	H1N1pdm09	2014-11-14	C2	Centers for Disease Control and Prevention
EPI_ISL_189819	A/Florida/62/2014	H1N1pdm09	2014-10-28	C3	Centers for Disease Control and Prevention
EPI_ISL_163672	A/Hawaii/06/2014	H1N1pdm09	2014-03-01	C2	Centers for Disease Control and Prevention
EPI_ISL_150295	A/Hong Kong/5008/2013	H1N1pdm09	2013-09-19	CX/C2	Centers for Disease Control and Prevention
EPI_ISL_153089	A/Massachusetts/15/2013	H1N1pdm09	2013-11-13	C3	Centers for Disease Control and Prevention
EPI_ISL_166268	A/Minnesota/15/2014	H1N1pdm09	2014-08-09	C1	Centers for Disease Control and Prevention
EPI_ISL_167881	A/Minnesota/23/2014	H1N1pdm09	2014-09-06	C1	Centers for Disease Control and Prevention
EPI_ISL_159529	A/Missouri/02/2014	H1N1pdm09	2014-02-07	C1	Centers for Disease Control and Prevention
EPI_ISL_176807	A/Montana/05/2015	H1N1pdm09	2015-02-17	C1	Centers for Disease Control and Prevention
EPI_ISL_139900	A/New Jersey/04/2013	H1N1pdm09	2013-03-19	C1	Centers for Disease Control and Prevention
EPI_ISL_138664	A/New Mexico/02/2013	H1N1pdm09	2013-01-06	M1/C2	Centers for Disease Control and Prevention
EPI_ISL_188725	A/New Mexico/17/2015	H1N1pdm09	2015-03-11	M1/C2	Centers for Disease Control and Prevention
EPI_ISL_100059	A/Nonhaburi/78/2011	H1N1pdm09	2011-06-08	C1/C2	Centers for Disease Control and Prevention
EPI_ISL_166344	A/North Carolina/04/2014	H1N1pdm09	2014-02-16	C3	Centers for Disease Control and Prevention
EPI_ISL_156812	A/Pennsylvania/07/2013	H1N1pdm09	2013-10-02	C3	Centers for Disease Control and Prevention
EPI_ISL_159530	A/Pennsylvania/17/2014	H1N1pdm09	2014-02-11	C1	Centers for Disease Control and Prevention
EPI_ISL_145509	A/Puerto Rico/01/2013	H1N1pdm09	2013-06-14	C2	Centers for Disease Control and Prevention
EPI_ISL_111385	A/Rhode Island/02/2012	H1N1pdm09	2012-02-29	C1	Centers for Disease Control and Prevention
EPI_ISL_175880	A/South Africa/3626/2013	H1N1pdm09	2013-06-06	E1E2/E3	Centers for Disease Control and Prevention
EPI_ISL_142868	A/Tennessee/03/2013	H1N1pdm09	2013-03-26	C1	Centers for Disease Control and Prevention
EPI_ISL_142576	A/Utah/05/2013	H1N1pdm09	2013-04-14	C1	Centers for Disease Control and Prevention
EPI_ISL_143246	A/Utah/06/2013	H1N1pdm09	2013-05-12	C1	Centers for Disease Control and Prevention
EPI_ISL_145097	A/Vietnam/3050/2013	H1N1pdm09	2013-02-28	C3/C1	Centers for Disease Control and Prevention
EPI_ISL_158908	A/Washington/07/2014	H1N1pdm09	2014-02-10	C2	Centers for Disease Control and Prevention
EPI_ISL_128403	A/Washington/24/2012	H1N1pdm09	2012-06-17	C3	Centers for Disease Control and Prevention
EPI_ISL_145252	A/Wisconsin/12/2013	H1N1pdm09	2013-08-04	C1	Centers for Disease Control and Prevention
EPI_ISL_148737	A/Wisconsin/13/2013	H1N1pdm09	2013-09-05	C1	Centers for Disease Control and Prevention
EPI_ISL_167874	A/Wisconsin/28/2014	H1N1pdm09	2014-10-06	C1	Centers for Disease Control and Prevention
EPI_ISL_219303	A/South Australia/17/2013	H1N1pdm09	2013-05-23	E3	WHO Collaborating Centre for Reference and Research on Influenza
EPI_ISL_148587	A/Guizhou-Qingzhen/SWL1251/2013	H1N1pdm09	2013-06-04	C1/C1/MDCK1	National Institute for Medical Research
EPI_ISL_153261	A/Sichuan-Qingyang/SWL1599/2013	H1N1pdm09	2013-11-03	C2	WHO Chinese National Influenza Center
EPI_ISL_156441	A/Sapporo/16/2014	H1N1pdm09	2014-01-20	MDCK 1	National Institute of Infectious Diseases
EPI_ISL_160497	A/Shizuoka/46/2014	H1N1pdm09	2014-03-04	MDCK 1	National Institute of Infectious Diseases
EPI_ISL_144758	A/Acores_PT/139/2013	H1N1pdm09	2013-04-01	SIAT1/MDCK1	National Institute for Medical Research
EPI_ISL_134399	A/Dakar/20/2012	H1N1pdm09	2012-12-09	SIAT2	National Institute for Medical Research
EPI_ISL_134400	A/Dakar/22/2012	H1N1pdm09	2012-11-03	MDCK/MDCK1	National Institute for Medical Research
EPI_ISL_166054	A/Ghana/DILI-0567/2014	H1N1pdm09	2014-06-16	C1/MDCK1	National Institute for Medical Research
EPI_ISL_174950	A/Ghana/FS-14-1022/2014	H1N1pdm09	2014-11-24	MDCK1	National Institute for Medical Research
EPI_ISL_174951	A/Ghana/FS-14-1025/2014	H1N1pdm09	2014-11-27	MDCK1	National Institute for Medical Research
EPI_ISL_174954	A/Ghana/FS-14-1069/2014	H1N1pdm09	2014-12-19	MDCK1	National Institute for Medical Research
EPI_ISL_144784	A/Stockholm/15/2013	H1N1pdm09	2013-03-26	MDCK0/MDCK1	National Institute for Medical Research
EPI_ISL_145683	A/American Samoa/4786/2013	H3N2	2013-02-22	C3	Centers for Disease Control and Prevention
EPI_ISL_134828	A/Beijing-Xicheng/12423/2012	H3N2	2012-10-04	C3/C4	Centers for Disease Control and Prevention
EPI_ISL_164402	A/California/02/2014	H3N2	2014-01-16	C1S2	Centers for Disease Control and Prevention
EPI_ISL_176747	A/California/20/2015	H3N2	2015-01-20	S1	Centers for Disease Control and Prevention
EPI_ISL_160427	A/Colorado/11/2014	H3N2	2014-04-13	C1	Centers for Disease Control and Prevention
EPI_ISL_153217	A/Delaware/17/2013	H3N2	2013-12-02	C2	Centers for Disease Control and Prevention
EPI_ISL_188884	A/Egypt/4870/2014	H3N2	2014-11-12	C3/S2	Centers for Disease Control and Prevention

GISAID Epiflu ID	Isolate_Name	Subtype	Collection_Date	Passage	Submitting_Lab
EPI_ISL_167413	A/Florida/34/2014	H3N2	2014-09-30	MX	Centers for Disease Control and Prevention
EPI_ISL_172592	A/Ethiopia/1147/2014	H3N2	2014-10-27	S1	Centers for Disease Control and Prevention
EPI_ISL_171380	A/Ethiopia/1153/2014	H3N2	2014-11-11	S1	Centers for Disease Control and Prevention
EPI_ISL_179009	A/Florida/26/2015	H3N2	2015-03-17	MX/S1	Centers for Disease Control and Prevention
EPI_ISL_164418	A/Hawaii/08/2014	H3N2	2014-03-11	S3	Centers for Disease Control and Prevention
EPI_ISL_168126	A/Hawaii/47/2014	H3N2	2014-07-18	S3	Centers for Disease Control and Prevention
EPI_ISL_167396	A/Kentucky/10/2014	H3N2	2014-10-04	MX	Centers for Disease Control and Prevention
EPI_ISL_171375	A/Kenya/124/2014	H3N2	2014-08-27	X1/S2	Centers for Disease Control and Prevention
EPI_ISL_171399	A/Kenya/127/2014	H3N2	2014-08-27	X1/S3	Centers for Disease Control and Prevention
EPI_ISL_171377	A/Kenya/128/2014	H3N2	2014-08-26	X1/S2	Centers for Disease Control and Prevention
EPI_ISL_164406	A/Louisiana/39/2013	H3N2	2013-12-29	C1S2	Centers for Disease Control and Prevention
EPI_ISL_167933	A/Maine/04/2014	H3N2	2014-10-09	S1	Centers for Disease Control and Prevention
EPI_ISL_145503	A/Maryland/04/2013	H3N2	2013-03-06	M1/C2	Centers for Disease Control and Prevention
EPI_ISL_174163	A/Massachusetts/02/2015	H3N2	2015-01-20	S1	Centers for Disease Control and Prevention
EPI_ISL_151025	A/Massachusetts/11/2013	H3N2	2013-07-10	C2	Centers for Disease Control and Prevention
EPI_ISL_167937	A/Michigan/10/2014	H3N2	2014-09-10	M1/S1	Centers for Disease Control and Prevention
EPI_ISL_166983	A/Michigan/13/2014	H3N2	2014-09-18	M1	Centers for Disease Control and Prevention
EPI_ISL_134881	A/Minnesota/01/2013	H3N2	2013-01-08	C1	Centers for Disease Control and Prevention
EPI_ISL_164399	A/Nebraska/04/2014	H3N2	2014-03-11	S4	Centers for Disease Control and Prevention
EPI_ISL_175191	A/Nevada/10/2015	H3N2	2015-02-14	S1	Centers for Disease Control and Prevention
EPI_ISL_178992	A/New Hampshire/16/2015	H3N2	2015-03-03	R1/S1	Centers for Disease Control and Prevention
EPI_ISL_169307	A/New Jersey/26/2014	H3N2	2014-11-17	Original	Centers for Disease Control and Prevention
EPI_ISL_160782	A/New York/07/2014	H3N2	2014-02-10	C2	Centers for Disease Control and Prevention
EPI_ISL_164405	A/New York/39/2012	H3N2	2012-10-20	C2S2	Centers for Disease Control and Prevention
EPI_ISL_167399	A/North Carolina/20/2014	H3N2	2014-09-08	S1	Centers for Disease Control and Prevention
EPI_ISL_179007	A/Ohio/11/2015	H3N2	2015-03-20	S1	Centers for Disease Control and Prevention
EPI_ISL_139166	A/Oregon/01/2013	H3N2	2013-01-11	C1	Centers for Disease Control and Prevention
EPI_ISL_164404	A/Palau/6759/2014	H3N2	2014-03-26	S2	Centers for Disease Control and Prevention
EPI_ISL_182625	A/Pennsylvania/09/2015	H3N2	2015-01-07	S2	Centers for Disease Control and Prevention
EPI_ISL_189817	A/South Australia/55/2014	H3N2	2014-06-29	C1/S3	Centers for Disease Control and Prevention
EPI_ISL_165829	A/Switzerland/9715293/2013	H3N2	2013-12-06	E4/E2	Centers for Disease Control and Prevention
EPI_ISL_172814	A/Tanzania/1906/2014	H3N2	2014-12-09	S1	Centers for Disease Control and Prevention
EPI_ISL_174125	A/Tanzania/3565/2014	H3N2	2014-11-20	S2	Centers for Disease Control and Prevention
EPI_ISL_172737	A/Tanzania/3580/2014	H3N2	2014-11-26	S1	Centers for Disease Control and Prevention
EPI_ISL_172773	A/Tanzania/594/2014	H3N2	2014-12-05	S2	Centers for Disease Control and Prevention
EPI_ISL_127832	A/Texas/50/2012	H3N2	2012-04-15	E4	Centers for Disease Control and Prevention
EPI_ISL_145498	A/Utah/07/2013	H3N2	2013-07-05	C2	Centers for Disease Control and Prevention
EPI_ISL_166309	A/Washington/18/2013	H3N2	2013-11-29	S2	Centers for Disease Control and Prevention
EPI_ISL_176732	A/Wisconsin/20/2015	H3N2	2015-02-24	S1	Centers for Disease Control and Prevention
EPI_ISL_167397	A/Wisconsin/26/2014	H3N2	2014-09-25	S1	Centers for Disease Control and Prevention
EPI_ISL_161267	A/Brisbane/1/2013	H3N2	2013-01-03	MDCK3	WHO Collaborating Centre for Reference and Research on Influenza
EPI_ISL_168899	A/Canberra/82/2014	H3N2	2014-07-31	MDCK2	WHO Collaborating Centre for Reference and Research on Influenza
EPI_ISL_168901	A/New Caledonia/71/2014	H3N2	2014-08-13	MDCK1	WHO Collaborating Centre for Reference and Research on Influenza
EPI_ISL_161272	A/Victoria/504/2013	H3N2	2013-06-17	MDCK1	WHO Collaborating Centre for Reference and Research on Influenza
EPI_ISL_149682	A/Hunan-Lusong/1532/2013	H3N2	2013-06-10	C1C1/C2	Centers for Disease Control and Prevention
EPI_ISL_179373	A/Zambia/04-288/2014	H3N2	2014-12-11	MDCK2/SIAT2	Crick Worldwide Influenza Centre
EPI_ISL_172339	A/Algiers/249/2014	H3N2	2014-12-30	SIAT2	National Institute for Medical Research
EPI_ISL_174979	A/Algiers/08/2014	H3N2	2014-10-12	C0/SIAT1	National Institute for Medical Research
EPI_ISL_141668	A/Bulgaria/270/2013	H3N2	2013-02-04	C1/SIAT1	National Institute for Medical Research
EPI_ISL_171746	A/Dakar/30/2014	H3N2	2014-10-07	C2/SIAT1	National Institute for Medical Research
EPI_ISL_175025	A/Ghana/DILI-14-1014/2014	H3N2	2014-11-04	?/SIAT1	National Institute for Medical Research
EPI_ISL_175026	A/Ghana/DILI-14-1152/2014	H3N2	2014-12-10	SIAT1	National Institute for Medical Research
EPI_ISL_165554	A/Hong Kong/4801/2014	H3N2	2014-02-26	SIAT1	National Institute for Medical Research
EPI_ISL_168972	A/Hong Kong/7127/2014	H3N2	2014-07-29	MDCK1/SIAT2	National Institute for Medical Research
EPI_ISL_171756	A/Madagascar/3069/2014	H3N2	2014-10-22	MDCK2/SIAT1	National Institute for Medical Research
EPI_ISL_175044	A/Mauritius/853/2014	H3N2	2014-10-22	MDCK2/SIAT1	National Institute for Medical Research
EPI_ISL_175045	A/Mauritius/912/2014	H3N2	2014-11-10	MDCK2/SIAT1	National Institute for Medical Research
EPI_ISL_162129	A/Norway/466/2014	H3N2	2014-02-03	SIAT2	National Institute for Medical Research
EPI_ISL_171762	A/Zambia/04-303/2014	H3N2	2014-11-14	MDCK2/SIAT1	National Institute for Medical Research
EPI_ISL_175067	A/Zambia/06-024/2014	H3N2	2014-09-15	MDCK2/SIAT2	National Institute for Medical Research

**Supplementary Table 2.** GISAID EpiFlu database accession numbers of DR Congo influenza virus isolates genetically characterized at the CDC Atlanta

GISAID EpiFlu ID	Isolate Name	Subtype	HA Genetic Group	Collection Date	Passage	CDCID	Characterization
EPI_ISL_175254	A/Congo/2275/2014	H1N1pdm09	6B	2014-11-06	C2	3000095216	A/CALIFORNIA/07/2009-LIKE A(H1N1)pdm09
EPI_ISL_175259	A/Congo/2278/2014	H1N1pdm09	6B	2014-11-05	C1	3000095217	A/CALIFORNIA/07/2009-LIKE A(H1N1)pdm09
EPI_ISL_176547	A/Congo/2611/2014	H3N2	3C.3	2014-12-29	S2	3000095242	A/TEXAS/50/2012-LIKE A(H3N2) A/SWITZERLAND/9715293/2013-LIKE A(H3N2)
EPI_ISL_176548	A/Congo/2557/2014	H3N2	3C.3	2014-12-18	S2	3000095233	A/TEXAS/50/2012-LIKE A(H3N2) LOW A/SWITZERLAND/9715293/2013-LIKE A(H3N2)
EPI_ISL_175217	A/Congo/2461/2014	H3N2	3C.2a	2014-12-08	S1	3000095220	A/TEXAS/50/2012-LIKE A(H3N2) LOW A/SWITZERLAND/9715293/2013-LIKE A(H3N2)
EPI_ISL_176513	A/Congo/2538/2014	H3N2	3C.2a	2014-12-18	S2	3000095231	A/TEXAS/50/2012-LIKE A(H3N2) LOW A/SWITZERLAND/9715293/2013-LIKE A(H3N2)
EPI_ISL_175210	A/Congo/2471/2014	H3N2	3C.2a	2014-12-09	S2	3000095222	INSUFFICIENT TITER FOR TESTING INFLUENZA A(H3N2) BY SEQUENCING/PYROSEQUENCING
EPI_ISL_175211	A/Congo/2458/2014	H3N2	3C.2a	2014-12-04	S2	3000095219	INSUFFICIENT TITER FOR TESTING INFLUENZA A(H3N2) BY SEQUENCING/PYROSEQUENCING
EPI_ISL_176515	A/Congo/2544/2014	H3N2	3C.2a	2014-12-17	S3	3000095232	INSUFFICIENT TITER FOR TESTING INFLUENZA A(H3N2) BY SEQUENCING/PYROSEQUENCING
EPI_ISL_189842	A/Congo/2495/2014	H3N2	3C.2a	2014-12-11	S3	3000095227	VIRUS NOT RECOVERED INFLUENZA A(H3N2)BY SEQUENCING/PYROSEQUENCING