


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Estimating clinical severity of COVID-19 from the transmission dynamics in Wuhan, China

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Supplementary Table 1. The number of confirmed cases of COVID-19 in Wuhan with no epidemiologic link to Huanan Seafood Wholesale Market between 1 Dec 2019 and 3 Jan 2020

Date	No. of confirmed cases with no epidemiologic link to Huanan Market
12/10/2019	1
12/11/2019	0
12/12/2019	0
12/13/2019	0
12/14/2019	1
12/15/2019	2
12/16/2019	2
12/17/2019	0
12/18/2019	0
12/19/2019	0
12/20/2019	1
12/21/2019	1
12/22/2019	2
12/23/2019	1
12/24/2019	0
12/25/2019	2
12/26/2019	0
12/27/2019	0
12/28/2019	1
12/29/2019	4
12/30/2019	3
12/31/2019	1
1/1/2020	6
1/2/2020	6
1/3/2020	10

Supplementary Table 2. The details of cases exported from Wuhan to cities outside mainland China* via air travel on each day between 25 December 2019 and 19 January 2020

Country/region	City	Sex	Age	Date of arrival	Date of symptom onset	Date of confirmation
Thailand	Bangkok	F	61	1/8/2020	1/5/2020	1/12/2020
Thailand	Bangkok	F	74	1/13/2020	1/5/2020	1/17/2020
Thailand	Bangkok	M	68	1/19/2020	1/19/2020	1/19/2020
Thailand	Nakhon Pathom	F	73	1/1/2020	12/31/2019	1/22/2020
Vietnam	Hanoi	M	66	1/13/2020	1/17/2020	1/23/2020
Japan	Kanagawa	M	35	1/6/2020	1/3/2020	1/15/2020
Japan	Tokyo	M	40+	1/19/2020	1/14/2020	1/24/2020
Japan	Tokyo	F	30+	1/18/2020	1/21/2020	1/25/2020
Singapore	Singapore	M	56	1/19/2020	1/25/2020	1/28/2020
Singapore	Singapore	F	56	1/18/2020	-	1/27/2020
South Korea	Seoul	F	35	1/19/2020	1/17/2020	1/20/2020
United States	Snohomish	M	30+	1/15/2020	1/19/2020	1/20/2020
United States	Chicago	F	60	1/13/2020	1/22/2020	1/24/2020
France	Paris	M	31	1/18/2020	1/19/2020	1/25/2020
France	Paris	F	30	1/18/2020	1/23/2020	1/25/2020
Nepal	Kathmandu	M	32	1/5/2020	1/13/2020	1/24/2020
Australia	Sydney	M	43	1/19/2020	1/20/2020	1/25/2020
Australia	Sydney	M	35	1/6/2020	1/7/2020	1/25/2020
Australia	Melbourne	M	50+	1/19/2020	1/23/2020	1/25/2020
Sri Lanka	Colombo	F	43	1/19/2020	1/25/2020	1/27/2020
Taiwan	Central Taiwan	M	40+	1/12/2020	1/21/2020	1/31/2020

* Cases reported in Hong Kong and Macau were not included in the estimation of outbreak size because most of the patients transit in Shenzhen/Zhuhai before coming to Hong Kong or Macau.

Supplementary Table 3. The number of passengers and confirmed cases who returned to their countries from Wuhan on chartered flights between 29 January and 4 February 2020*

Country or region	Date of arrival	Number of passengers	Number of confirmed cases	Number of asymptomatic cases
Japan	1/29/2020	206	4	1
United States	1/29/2020	201	0	-
Japan	1/30/2020	210	3	2
Singapore	1/30/2020	92	4	2
Portugal	1/30/2020	350	0	-
France	1/31/2020	200	0	-
Japan	1/31/2020	149	2	1
South Korea	1/31/2020	368	1	1
United Kingdom	1/31/2020	110	0	-
Germany	2/1/2020	124	2	2
South Korea	2/1/2020	333	1	0
Turkey	2/1/2020	42	0	-
Indonesia	2/1/2020	250	0	-
Bangladesh	2/1/2020	316	0	-
Sri Lanka	2/1/2020	33	0	-
India	2/1/2020	324	0	-
France	2/2/2020	254	0	-
United Kingdom	2/2/2020	11	0	-
Ukraine	2/2/2020	128	0	-
Belgium	2/2/2020	9	1	1
Saudi Arabia	2/2/2020	10	0	-
Kazakhstan	2/2/2020	83	0	-
Morocco	2/2/2020	167	0	-
Australia	2/3/2020	243	0	-
Taiwan	2/3/2020	247	1	-
Italy	2/3/2020	56	1	-
Malaysia	2/4/2020	107	2	2
Thailand	2/4/2020	138	1	-

* Japan, Singapore, South Korea, Germany, Belgium and Malaysia had tested all the passengers and a few pre-symptomatic or asymptomatic cases were confirmed. For other countries, it is unknown whether they had tested all the passengers or only those showing symptoms.

Supplementary Table 4. The age distribution of confirmed cases of COVID-19 in Wuhan, Hubei and mainland China

Age	Wuhan	Hubei	Mainland China
0-9	0.4%	0.4%	0.9%
10-19	0.4%	0.7%	1.2%
20-29	4.5%	6.6%	8.1%
30-39	13.1%	15.4%	17.0%
40-49	15.6%	18.3%	19.2%
50-59	22.0%	23.4%	22.4%
60-69	26.5%	21.4%	19.2%
70-79	12.6%	10.1%	8.8%
80-89	4.5%	3.3%	2.9%
≥ 90	0.5%	0.3%	0.3%

Supplementary Table 5. The age distribution of confirmed death cases of COVID-19 in mainland China

Age	No. fatal cases	Proportion of fatal cases
0-9	0	0%
10-19	1	0.1%
20-29	7	0.7%
30-39	18	1.8%
40-49	38	3.7%
50-59	130	12.7%
60-69	309	30.2%
70-79	312	30.5%
≥ 80	208	20.3%

Supplementary Table 6. The daily number of laboratory-confirmed cases and deaths of COVID-19 in Wuhan up to 25 February 2020

Date	Cumulative no. of cases	Cumulative no. of deaths
12/31/2019	27	0
1/3/2020	44	0
1/5/2020	59	0
1/8/2020	59	0
1/10/2020	41	0
1/11/2020	41	1
1/12/2020	41	1
1/13/2020	41	1
1/14/2020	41	1
1/15/2020	41	1
1/16/2020	45	2
1/17/2020	62	2
1/18/2020	121	3
1/19/2020	198	4
1/20/2020	258	6
1/21/2020	365	9
1/22/2020	425	17
1/23/2020	495	25
1/24/2020	572	38
1/25/2020	618	45
1/26/2020	698	63
1/27/2020	1590	85
1/28/2020	1905	104
1/29/2020	2261	129
1/30/2020	2639	159
1/31/2020	3215	192
2/1/2020	4109	224
2/2/2020	5142	265
2/3/2020	6384	313
2/4/2020	8351	362
2/5/2020	10117	414
2/6/2020	11618	478
2/7/2020	13603	545
2/8/2020	14982	608
2/9/2020	16902	681
2/10/2020	18454	748
2/11/2020	19558	820
2/12/2020	32994	1036
2/13/2020	35991	1080
2/14/2020	37914	1123

2/15/2020	39462	1233
2/16/2020	41152	1309
2/17/2020	42752	1381
2/18/2020	44412	1497
2/19/2020	45027	1585
2/20/2020	45346	1684
2/21/2020	45660	1774
2/22/2020	46201	1856
2/23/2020	46607	1987
2/24/2020	47071	2043
2/25/2020	47441	2085

Supplementary Table 7. The time between onset and death or the time between admission and death for 41 death cases of COVID-19 in Wuhan

Sex	Age	Date of symptom onset	Date of first admission	Death date	Time between onset to death	Time between admission to death
M	61	12/20/2019	12/27/2019	1/9/2020	20	13
M	69	12/25/2019	12/31/2019	1/15/2020	21	15
M	89	1/5/2020	1/8/2020	1/18/2020	13	10
M	89	1/13/2020	1/13/2020	1/19/2020	6	6
M	75	1/4/2020	1/11/2020	1/20/2020	16	9
F	69		1/14/2020	1/20/2020		6
M	66	1/10/2020	1/16/2020	1/20/2020	10	4
F	48	12/10/2019	12/10/2019	1/20/2020	41	41
M	86	1/2/2020	1/9/2020	1/21/2020	19	12
F	85		11/26/2019	1/21/2020		56
M	82	1/9/2020	1/14/2020	1/21/2020	12	7
M	81	1/9/2020	1/13/2020	1/21/2020	12	8
F	70		1/13/2020	1/21/2020		8
F	66	1/8/2020	1/19/2020	1/21/2020	13	2
M	66	12/22/2019	12/22/2019	1/21/2020	30	30
M	66		1/11/2020	1/21/2020		10
M	65	1/5/2020	1/11/2020	1/21/2020	16	10
M	53		1/13/2020	1/21/2020		8
M	84	1/6/2020	1/9/2020	1/22/2020	16	13
F	82	1/3/2020	1/3/2020	1/22/2020	19	19
M	81		1/18/2020	1/22/2020		4
F	80		1/11/2020	1/22/2020		11
M	73	12/30/2019	1/5/2020	1/22/2020	23	17
F	70		1/18/2020	1/22/2020		4
M	87	1/12/2020	1/19/2020	1/23/2020	11	4
F	82	1/10/2020	1/17/2020	1/23/2020	13	6
M	72	1/11/2020	1/18/2020	1/23/2020	12	5
M	70	1/15/2020	1/19/2020	1/23/2020	8	4
F	67	1/10/2020	1/12/2020	1/24/2020	14	12
M	65	1/12/2020	1/16/2020	1/23/2020	11	7
M	58	1/1/2020	1/1/2020	1/24/2020	23	23
M	36	1/6/2020	1/9/2020	1/23/2020	17	14
M	79	1/11/2020	1/17/2020	1/24/2020	13	7
M	78	1/13/2020	1/23/2020	1/24/2020	11	1
F	76		1/5/2020	1/24/2020		19
M	67	1/10/2020	1/15/2020	1/24/2020	14	9
M	58	1/3/2020	1/18/2020	1/24/2020	21	6
M	55	1/8/2020	1/19/2020	1/24/2020	16	5
F	73		1/23/2020	1/28/2020		5

F	73			1/26/2020		
F	31	1/21/2020	1/23/2020	1/26/2020	5	3

Supplementary Table 8. Dates of symptom onset of infector-infectee pairs

Region	Age of index patient	Sex of index patient	Date of arrival of index patient	Date of onset of index patient	Age of secondary patient	Sex of secondary patient	Date of onset of secondary patient	Source of secondary patient
Wuhan	61	M		12/20/2019	57	F	12/25/2019	Li et al
Wuhan	61	M		12/20/2019	31	F	12/29/2019	Li et al
Wuhan	62	F		12/27/2019	64	M	1/3/2020	Li et al
Wuhan	49	M		12/12/2019	78	M	12/19/2019	Li et al
Wuhan	52	F		12/21/2019	25	F	12/24/2019	Li et al
Huanggang	32	M		1/4/2020	28	F	1/11/2020	Li et al
Shenzhen	65, 66, 37, 36	F, M, F, M	1/4/2020	1/1/2020 - 1/4/2020	63	F	1/8/2020	Chan et al
Chicago	60+	F	1/13/2020	1/22/2020 - 1/23/2020	60+	M	1/28/2020	6th case in US
Taiwan	40+	M	1/12/2020	1/21/2020	40+	F	1/27/2020	9th case in Taiwan
Hong Kong	73, 72	F, M	1/22/2020	1/22/2020 - 1/25/2020	37	F	1/28/2020	11th case in Hong Kong
Hong Kong	39	M	1/23/2020	1/29/2020	72	F	2/1/2020	15th case in Hong Kong
Singapore	28	F	Local infection	1/29/2020	45	M	2/1/2020	27th case in Singapore
Singapore	28	F	Local infection	1/29/2020	44	F	2/2/2020	21st case in Singapore
Vietnam	23	F	1/17/2020	1/25/2020	42	F	1/31/2020	10th case in Vietnam
Vietnam	23	F	1/17/2020	1/25/2020	49	F	2/3/2020	11th case in Vietnam
Vietnam	23	F	1/17/2020	1/25/2020	16	F	2/3/2020	12th case in Vietnam
Hong Kong	60	M	Local infection	1/22/2020	28	F	1/30/2020	19th case in Hong Kong
Hong Kong	60, 28	M, F	Local infection	1/22/2020 - 1/30/2020	56	F	2/4/2020	20th case in Hong Kong
Malaysia	42	M	1/23/2020	1/29/2020	40	F	2/1/2020	14th case in Malaysia
Shenzhen	64	F	Local infection	1/4/2020	69	M	1/12/2020	12nd case in Shenzhen
Shenzhen	69	M	1/15/2020	1/12/2020	25	F	1/25/2020	188th case in Shenzhen
Shenzhen	64, 71	F, M	1/12/2020	1/12/2020 - 1/15/2020	38	F	1/22/2020	39th case in Shenzhen
Shenzhen	73	M	1/19/2020	1/20/2020	49	M	1/24/2020	68th case in Shenzhen
Shenzhen	73	M	1/19/2020	1/20/2020	49	F	1/22/2020	69th case in Shenzhen
Shenzhen	62	F	1/22/2020	1/19/2020	43	F	2/4/2020	320th case in Shenzhen
Shenzhen	30	F	1/21/2020	1/22/2020	38	F	1/28/2020	108th case in Shenzhen
Shenzhen	61	M	1/22/2020	1/24/2020	35	F	1/26/2020	120th case in Shenzhen

Shenzhen	61	M	1/22/2020	1/24/2020	39	M	1/26/2020	121st case in Shenzhen
Shenzhen	61, 35, 39	M, F, M	1/24/2020	1/24/2020 - 1/26/2020	2	M	2/5/2020	327th case in Shenzhen
Shenzhen	61, 35, 39	M, F, M	1/22/2020	1/24/2020 - 1/26/2020	62	F	2/5/2020	345th case in Shenzhen
Shenzhen	64	F	1/22/2020	1/17/2020	37	F	1/28/2020	275th case in Shenzhen
Shenzhen	34	M	1/20/2020	1/20/2020	32	M	1/23/2020	100th case in Shenzhen
Shenzhen	34	M	1/20/2020	1/20/2020	32	M	1/25/2020	101st case in Shenzhen
Shenzhen	34	M	1/20/2020	1/20/2020	34	M	1/26/2020	102nd case in Shenzhen
Shenzhen	64	M	1/17/2020	1/18/2020	37	M	1/24/2020	169th case in Shenzhen
Shenzhen	78	M	1/16/2020	1/26/2020	78	F	1/30/2020	283rd case in Shenzhen
Shenzhen	59, 61	F, M	1/21/2020	1/24/2020	34	F	1/25/2020	253rd case in Shenzhen
Shenzhen	50	F	Local infection	1/26/2020	37	F	2/5/2020	354th case in Shenzhen
Shenzhen	42	M	Local infection	1/20/2020	6	M	2/6/2020	340th case in Shenzhen
Shenzhen	69	M	Local infection	1/21/2020	66	F	2/2/2020	335th case in Shenzhen
Shenzhen	69	M	Local infection	2/9/2020	69	F	2/10/2020	402nd case in Shenzhen
Shenzhen	69	M	Local infection	2/9/2020	49	M	2/10/2020	397th case in Shenzhen

Supplementary Table 9. Population age distribution in Wuhan

Age	Nationwide Census 2010*	Proportion 2010	Household Survey 2017**	Proportion 2017
0-9	655178	6.7%	862676	10.1%
10-19	1193294	12.2%	588047	6.9%
20-29	2279487	23.3%	1241695	14.5%
30-39	1486647	15.2%	1479178	17.3%
40-49	1668609	17.1%	1313647	15.4%
50-59	1261163	12.9%	1262768	14.8%
60-69	718296	7.3%	1069800	12.5%
70-79	391084	4.0%	481999	5.6%
80+	131630	1.3%	236707	2.8%
Total	9785388	100.0%	8536517	100.0%

*Nationwide Population Census included residents who had lived in Wuhan for at least 6 months prior to the Census.

**Household Survey only included residents whose household registrations (Hukou) were in Wuhan during the Survey. These residents might not live in Wuhan while the Survey was conducted.