

Supplementary Materials for

Dissecting the early COVID-19 cases in Wuhan

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The PDF file includes:

Fig. S1 Supplementary References

Correction: The Perspective text and supplementary materials were corrected to more accurately reflect the evidence suggesting that the 41-year-old male accountant became ill with COVID-19 on 16 December, rather than 8 December.

Figure S1

Nov 18	- Mean estimated date of pandemic index case (S1)
Dec 8	- Reported symptom onset of 41-YO man from Jiangxia District (<i>S2</i> , <i>S3</i>). Conflicts with patient interview, hospital records, and scientific paper indicating onset on Dec 16 (<i>S4</i>) (see Dec 16, below)
Dec 10	- Symptom onset of Huanan Market vendor (S5) - First Huanan Market patients hospitalized at Union (Xiehe) Hospital? (S5) - Reported onset of some cases in Lancet study (S6), but this conflicts with WHO-China report (S2, S3)
Dec 11	- Huanan Market vendor encounters other possible Huanan Market COVID-19 patients at private clinic at Huanan Market (S4, S5) - Earliest cases, other than "Dec 8" patient, in WHO-China report (S2, S3)
Dec 13	- Symptom onset (?), 65-YO man (S7) (see Dec 15, below; it is not clear whether onset was Dec 13 or Dec 15). He was a deliveryman at Huanan Market
Dec 15	- Symptom onset (?), 65-YO Huanan Market deliveryman (<i>S8</i>) (see Dec 13, above) - Symptom onset, 62-YO wife of Cluster 1 (<i>S2, S3</i>) (see Dec 26, below)
Dec 16	- Reported COVID-19 symptom onset of 41-YO man from Jiangxia District (S4, S8) (see Dec 8, above). Quote from the patient (S4): "I started having a fever on the 16th, and I would experience tightness in the chest and shortness of breath".
Dec 18	- Ai sees 65-YO Huanan Market deliveryman at WCH (S5, S7)
Dec 22	- 65-YO Huanan Market deliveryman moved to ICU at WCH (<i>S5, S7</i>) - 41-YO man from Jiangxia District admitted to Jiangxia People's Hospital (<i>S4, S8</i>)
Dec 24	- 65-YO Huanan Market deliveryman's sample sent to VM (S5, S7)
Dec 26	- 62-YO couple admitted to HPHICWM (<i>Sg. S10</i>). They are Cluster 1 from China-WHO report (<i>S2, S3</i>) - VM identifies SARSr-CoV, most closely related to a bat virus, in 65-YO Huanan Market deliveryman (<i>S11, S12</i>) - 41-YO man, a Huanan Market merchant from Quanzhou, Fujian, admitted to WCH (<i>S11</i>). Not to be confused with 41-YO from Jiangxia District who was not linked to the market
Dec 27	 Zhang at HPHICWM notes ground glass opacities in Cluster 1 couple and their son (SB, S9) Zhang at HPHICWM sees fourth case, Huanan worker (SB, S9) HPHICWM alerts Jianghan District CDC of new viral disease, likely infectious (S9, S10) Ai at WCH sees second case (S5, S7) VM phones WCH by noon to report that 65-YO deliveryman is SARSr-CoV-positive (S12) VM generates near-complete genome of SARS-CoV-2 (S12)
Dec 28	- Ai at WCH sees seventh case (S5, S7)
Dec 29	- VM representative visits Wuhan in person to report SARSr-CoV (\$12\$) - Zhang at HPHICWM has seen three more cases, all linked to Huanan Market (\$8, \$9\$) - HPHICWM expert group meets about seven cases (\$8, \$9\$) - Xia at HPHICWM learns about similar patients at Tongji and Union Hospitals (\$13\$) - Xia at HPHICWM then immediately alerts Wuhan and Hubei CDC about cases and Huanan Market link (\$10\$) - District/Wuhan/Hubei CDC team visits HPHICWM then WCH - Jinyintan Hospital picks up six of seven cases from HPHICWM (son of Cluster 1 refuses to be transferred) (\$9\$)
Dec 30	- Wuhan CDC posts Emergency Notices: hospitals must report any new cases (S14) - This information leaks twelve minutes later (S15) - Evening: George Gao sees online chatter about Emergency Notices, phones WHC to confirm, alerts NHC (S16)
Dec 31	- First NHC team dispatched to Wuhan (<i>S16</i>) - WHC's first public statement: 27 cases linked to Huanan Market (<i>S16</i>). It explicitly credits medical institutions with discovering the disease and its Huanan Market link - Zhongnan Hospital discovers two Huanan-Market-linked cases (<i>S17</i>)
Jan 1	- Huanan Market shut down and disinfected (S15)
Jan 2	- Zhang Yongzhen receives sample 'Wuhan-Hu-1' from 41-YO male Huanan Market merchant from Quanzhou admitted Dec 26 (S18)
Jan 3	 WHC releases updated statement, 44 cases, only some linked to Huanan Market (S19) Zhongnan Hospital: three more cases, no links to Huanan Market (S17) NHC issues 'gag order' prohibiting release of genomic data (S20) WHC imposes strict guidelines on hospitals favoring Huanan-Market linked cases (S21, S22)
Jan 5	- WHC releases updated statement, 59 cases (S19) - Zhang Yongzhen completes Wuhan-Hu-1 genome (S18) - Zhang Yongzhen writes to MoH: outbreak due to contagious respiratory virus, protective measures recommended
Jan 11	- Zhang Yongzhen breaks gag order, releases Wuhan-Hu-1 genome with help of Edward Holmes and Andrew Rambaut (S18)
Jan 20	- Chinese government announces human-to-human transmission (S23)

Figure S1. A timeline of key events in the early days of the pandemic. This includes the 19 early cases of COVID-19 at Hubei Provincial Hospital of Integrated Chinese and Western Medicine, Wuhan Central Hospital and Zhongnan Hospital in Wuhan, China, which are discussed in the main text. Regarding the 62-vear-old Cluster 1 couple at Hubei Provincial Hospital of Integrated Chinese and Western Medicine on 26 December: It is clear the husband was the source of the earliest lineage A virus genome because references S2 and S3 confirm that: (1) the virus was collected from a patient with symptom onset on 26 December; (2) there were four cases with 26 December onset linked to any market; (3) two of the four were linked to Huanan Market, leaving two linked to other markets; (4) those two are the 62-year-old husband of Cluster 1 and the 70-year-old Spouse 1 of Cluster 6; (5) the Cluster 6 patients were only clinically diagnosed and could not therefore have been the source of any viral genome sequences; (6) the Cluster 1 patients were confirmed by sequencing, and therefore must have been the source of the viral genome; and (7) the husband was the Cluster 1 spouse with symptom onset of December 26 (whereas the wife's onset was 15 December). Regarding the 41-year-old man from Jiangxia District said in the WHO-China report (S2, S3) to have had a COVID-19 symptom onset on 8 December: when talking about COVID-19, the patient makes clear in his own voice that his fever, tightness of chest, and difficulty breath started on or after 16 December (S4). His medical record from Wuhan Central Hospital, where he was transferred on 27 December from Jiangxia People's Hospital, where he was admitted on 22 December, states that he had had a fever for ten days as of 27 December, further corroborating a ~16 December onset (S4). And a peer reviewed scientific article describing this case states his symptom onset as 16 December (S8). Abbreviations—CDC: center for disease control and prevention; HPHICWM: Hubei Provincial Hospital of Integrated Chinese and Western Medicine; ICU: intensive care unit; MoH: Ministry of Health; NHC: National Health Commission; SARSr-CoV: severe acute respiratory syndrome-related coronavirus; VM: Vision Medicals; WCH: Wuhan Central Hospital; WHC: Wuhan Municipal Health Commission; WHO: World Health Organization; YO: year-old.

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