

an Early Alarm on Covid-19

JAN. 11
41
OFFICIAL
CASES

定全力救治。二是深入开展流行病学调查。调查发现患者主要为武汉市华南海鲜批发市场经营、采购人员，2020年1月1日已对华南海鲜批发市场采取休市措施，并对全市公共场所、特别是农贸市场进一步加强防病指导和环境卫生管理。三是广泛宣传防病知识，增强公众自我防护意识。四是配合国家和省进行病原学研究。五是配合国家卫生健康委及世界卫生组织等通报疫情信息。

自2020年1月3日以来未发现新发病例。日前，**宋发现明确的人传人证据**。我市将继续加强患者救治、流行病学调查、深入开展爱国卫生运动、做好防病知识普及、维护人民群众身体健康。

当前，正处于冬春季传染病高发季节，公众要保持室内空气流通，尽量避免到封闭、空气不流通的公众场合和人群集中地方。必要时可佩戴口罩。如有发热、呼吸道感染症状，特别是持续发热不退，要及时到医疗机构就诊。（来源：武汉市卫生健康委）

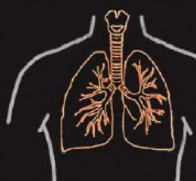
◀ "No Medical Workers Infected"

Authorities release a statement insisting that there is no evidence the virus is transmissible among humans and no medical worker has been infected. Neither is true. On this day, Dr. Li has a fever. A CT scan shows he has a lung infection. The next day, he checks into Wuhan Central Hospital.

1. No medical workers are infected;
2. No clear human-to-human transmission;
3. Multiple sites of infection.



- 附录：
1. 肺部多发感染，**接收重症**；
2. 双肺少实肺组织；
3. 肝及轻度脂肪肝。



LEFT AND ABOVE: BEIJING YOUTH DAILY; INSET: EXPRESS VIA REUTERS CONNECT

nytimes#l@l.l

nytimes#l@l.l

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◀ A Turning Point

For the first time, the government acknowledges that there is clear evidence the virus is contagious among humans. Wuhan hospitals soon become overwhelmed by the number of people infected.

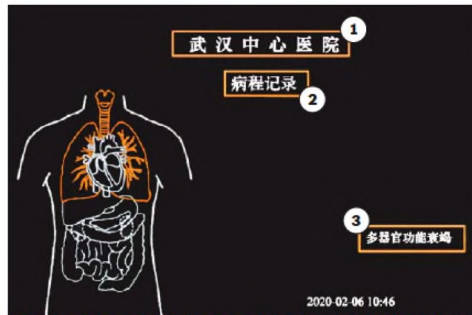
JAN. 23
830
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The entire city of Wuhan goes into lockdown.



FEB. 6 **HOUR BY HOUR ▶**
10:46 A.M. Doctors write in the daily progress notes that Dr. Li's lungs are severely damaged and he is at risk of multiple organ failure. Experts who reviewed his records for The Times say his doctors should at this point, or before it, consider intubation.

1. WUHAN CENTRAL HOSPITAL;
2. PROGRESS NOTE; 3. Multiple organ failure



7:20 P.M. Around this time, Dr. Li goes into cardiac arrest and starts receiving CPR. His pupils stop responding to light.

◀ FEB. 7 **3:48 A.M.**
Wuhan Central Hospital releases a statement that Dr. Li Wenliang has died. The official time of death is 2:58 A.M.

1. 3:48 A.M.; 2. Passed away at 2:58 A.M. on February 7.

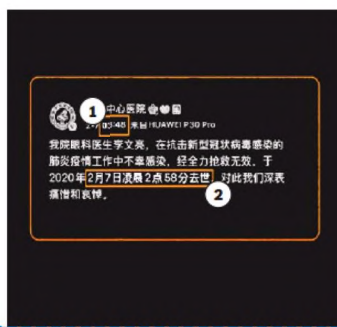
死去世



◀ **10:40 P.M.** "Life Times," a state-owned media outlet, publishes an article that says Dr. Li's time of death was 9:30 P.M. The article is later contradicted by other media outlets. Throughout the evening, conflicting messages about Dr. Li's condition generate confusion.

1. Passed away at 9:30 P.M.

11:58 P.M. An entry in the daily progress notes from this time says the medical team has put Dr. Li on ECMO. But there is no record of ECMO in the doctor's notes — a set of documents listing exams, medications and procedures. This is the only discrepancy The Times found in the medical records. Dr. B leaves the I.C.U. around this time. According to him, ECMO has not been used, because an instrument needed for the procedure is not available.



Mourners gathered at a vigil for Dr. Li in New York City on Feb. 9, 2020. His death set off an outpouring of grief and anger on a scale and intensity rarely seen in China.

and heart, his medical records show. According to Dr. Yuan Jin, a pulmonary and critical care doctor at Good Samaritan Medical Center in Brockton, Massachusetts, these exams suggest that his medical team was responding to a worsened condition.

By the morning of Feb. 6, doctors wrote in the progress notes that Dr. Li was at risk of multiple organ failure. Several physicians we spoke to said that his condition was so serious that his medical team should have at this point, or before it, considered intubating him and placing him on a ventilator — a higher level of oxygen support.

The records indicate that Dr. Li had earlier been given oxygen through a nasal tube, and then an additional oxygen mask. His medical team also tried to use a noninvasive ventilator on Jan. 19, but wrote that "the patient could not tolerate."

It is unclear why Dr. Li was not intubated. Some doctors are more reluctant to intubate young patients; sometimes the patients themselves refuse it. To this day, there is no consensus on when invasive ventilators should be used on Covid-19 patients.

On Feb. 6, Dr. Li went into cardiac arrest at around 7:20 p.m. Though his daily progress note did not explicitly say that his heart had stopped, it recorded that the medical team started performing CPR — a procedure that is applied

in such an emergency. They intubated him at that point, a common practice during resuscitation. The note said his pupils were not responding to light.

According to the medical records, doctors tried to revive Dr. Li for more than seven and a half hours, but his heart never restarted.

The government investigation said doctors placed Dr. Li on extracorporeal membrane oxygenation. Also known as ECMO, it is a last resort, invasive treatment involving a machine that siphons blood out of the patient, runs it through an oxygenator and pumps it back into the body.

According to Dr. B, who arrived at Dr. Li's intensive care ward around 9 p.m., about two hours after Dr. Li entered cardiac arrest, the hospital's leadership pushed the medical team to use ECMO because it wanted to show the public that no effort had been spared.

But several doctors in the room argued that by that point it was too late for it to have been of any use, an assessment that six physicians we talked to agreed with. Dr. B also said putting Dr. Li on ECMO, given its invasive nature, would have been an "insult to his body."

Dr. B left the room around midnight. He said ECMO had not been used because an instrument to perform the procedure was not available. It is unclear whether it was ultimately used after he left.

There is also no indication in the doctors' orders from that night that the procedure was ever administered.

But for some reason, the daily progress notes say ECMO was used. It was the only discrepancy of this kind found in the medical records.

The Death of Dr. Li

That night, conflicting messages about Dr. Li's condition — some released by state media outlets, then deleted — generated confusion. At 10:40 p.m., a state-run publication, Life Times, said that he had died at 9:30 p.m.

It was nearly 4 a.m. the next morning, Feb. 7, when the hospital finally announced Dr. Li's death. It said he had died at 2:58 a.m. The government's investigation cited an electrocardiography performed at this time that showed he had flatlined.

The Times's investigation found that among the records was an echocardiogram report from around 9:10 p.m. the previous evening that showed that his heart had stopped beating.

"I think Dr. Li Wenliang had already died by the time I saw him around 9 p.m. on Feb. 6," Dr. B said. He added: "The normal process at this point would have been to pronounce him dead."

"They dragged their feet for so long over the announcement. It's like the hospital really did not treat us as human beings," he said. For Dr. B, going public with his version of events was an attempt to get his story out and honor Dr. Li's legacy.

The Times made multiple attempts to contact Dr. Li's medical team, but none agreed to answer questions. The press office of Wuhan Central Hospital told The Times that it was not accepting interviews from international media outlets. China's National Supervisory Commission, the country's top disciplinary body investigating Dr. Li's death, did not respond to requests for comment. The Chinese Embassy in Washington, D.C., did not respond to requests for comment.