

Don't Panic, Be Cautious, and Together We Can Stop the Coronavirus Epidemic!

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22 March Supplementary Charts

23 March 2020

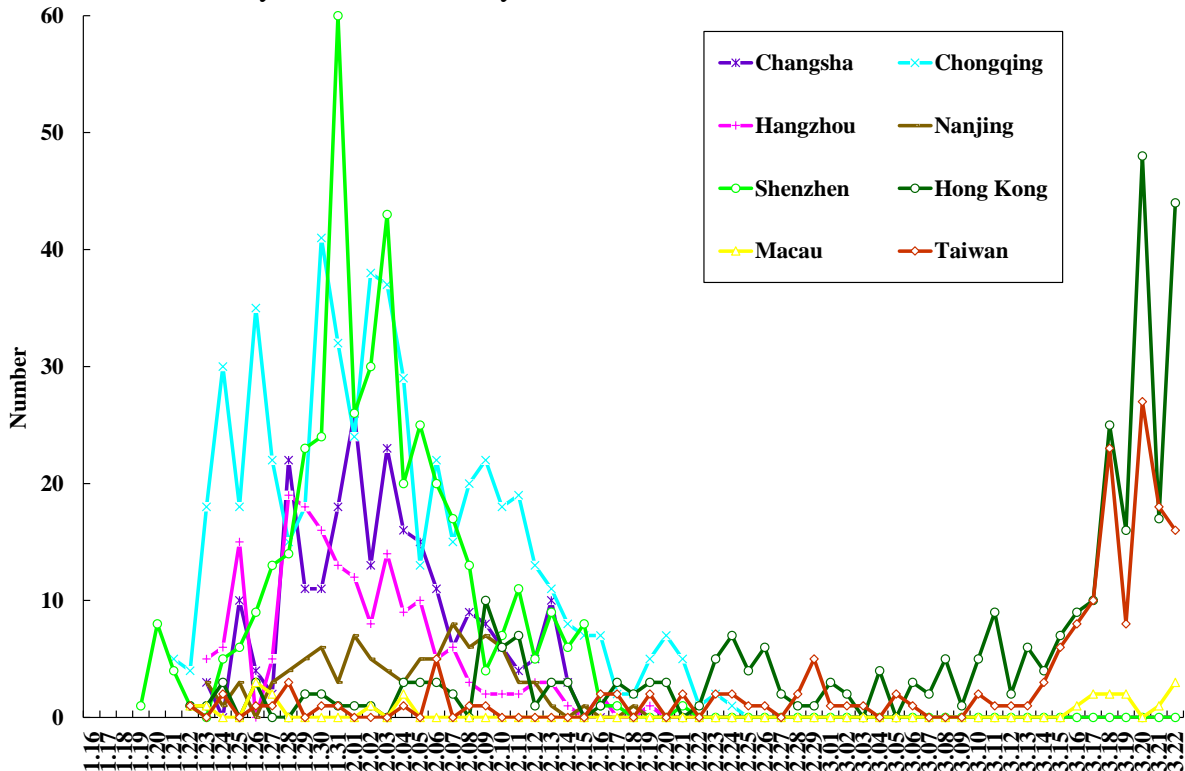
Since the publication of our paper in the *Asia Pacific Biotech News*², we have continued to monitor the development of the COVID-19 epidemic on the Mainland of China and updated the relevant charts in our original paper every week³. We have prepared this current update, through midnight (2400) of 22 March. We note that our earlier prediction, namely, that the COVID-19 epidemic should be over on the Mainland ex Hubei by the middle of March, has turned out to be true. And as a pleasant surprise, the daily number of newly confirmed cases in Hubei (almost all in Wuhan) has also fallen to the level of single digits at the same time, and to zero since. Thus, the epidemic may even be considered over in Wuhan by the end of March, sooner than our past predictions. Concern has now shifted to how to isolate and contain new cases imported into the Mainland from abroad, which have been rising fast.

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² Lawrence J. Lau and Yanyan Xiong, "Don't Panic, Be Cautious, and Together We Can Stop the Coronavirus Epidemic," *Asia Pacific Biotech News*, Special Issue 1, March 2020, doi: s0219030320001202, pp. 90-107.

³ The weekly updated charts may be found on the webpage of Lawrence J. Lau, <http://www.igef.cuhk.edu.hk/people/professor-lawrence-j-lau/>.

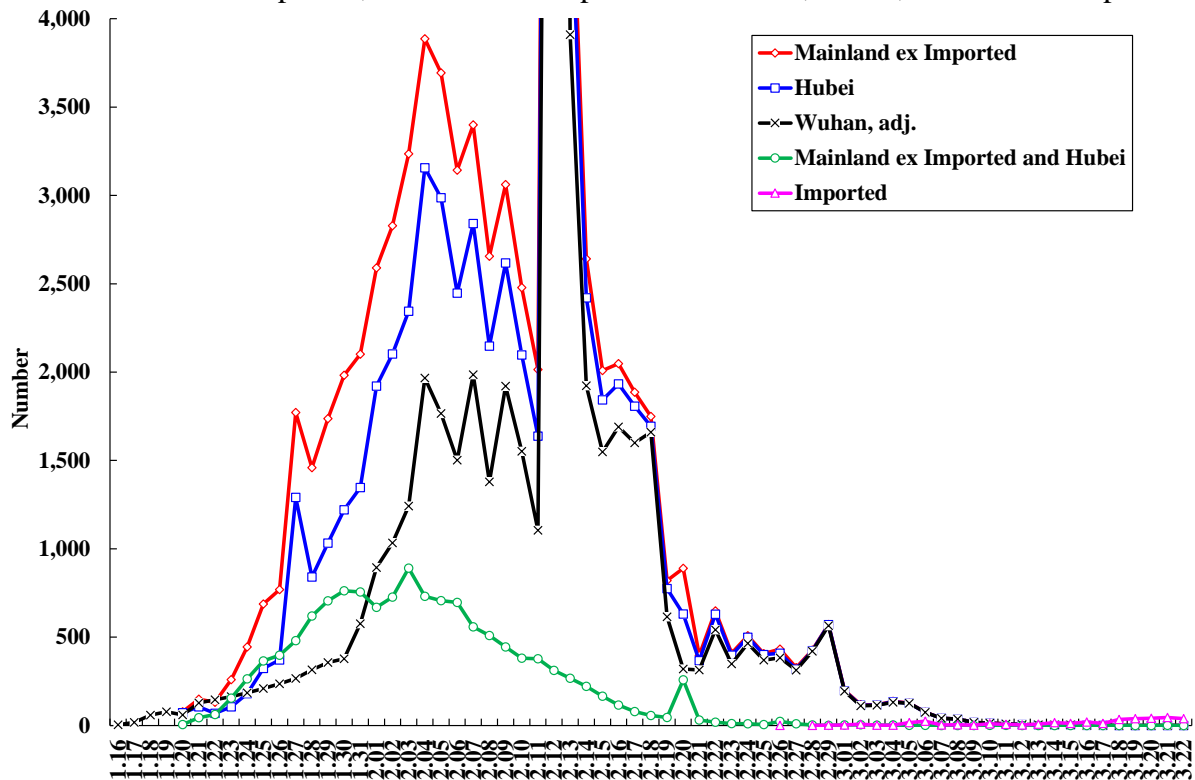
Chart 2: The Daily Number of Newly Confirmed Cases in Selected Areas outside Hubei



Sources: Same as Chart 1.

The updated Chart 2 shows that, on the Mainland, in the five major cities outside of the Province of Hubei, the daily number of newly confirmed domestic cases of the COVID-19 virus has continued to be zero since 25 February, due to the successful isolation of the confirmed infected patients, the lockdown, social distancing and other precautionary measures undertaken locally (we have added the word “domestic” to distinguish them from imported cases). In fact, economic activities on the Mainland have already been started up again. The epidemic is basically over in Mainland ex Hubei. We have not included other major cities such as Beijing, Shanghai and Tianjin in Chart 2 because, despite their large resident populations, the numbers of newly confirmed cases have also fallen to zero recently, aside from cases imported from abroad. However, the daily newly confirmed cases in Hong Kong and Taiwan rose rapidly between 15 and 22 March (respectively 44 and 16 on 22 March), because of the influx of a large number of returning residents from Europe and North America. We believe that while the numbers may go up further in Hong Kong and Taiwan for a while, widespread transmission should be controllable, given all the quarantine and isolation measures already undertaken, but may take some time. However, on the Mainland, newly confirmed cases imported from abroad have also been identified in Beijing, Chongqing, Shanghai and Tianjin, and the Provinces of Fujian, Gansu, Guangdong, Guangxi, Heilongjiang, Hebei, Henan, Jiangsu, Jiangxi, Liaoning, Ningxia, Shaanxi, Shandong, Shanxi, Sichuan, Yunnan and Zhejiang. Strict quarantine measures must be taken on the Mainland to prevent any imported case from spreading and possibly triggering a resurgence of the COVID-19 epidemic.

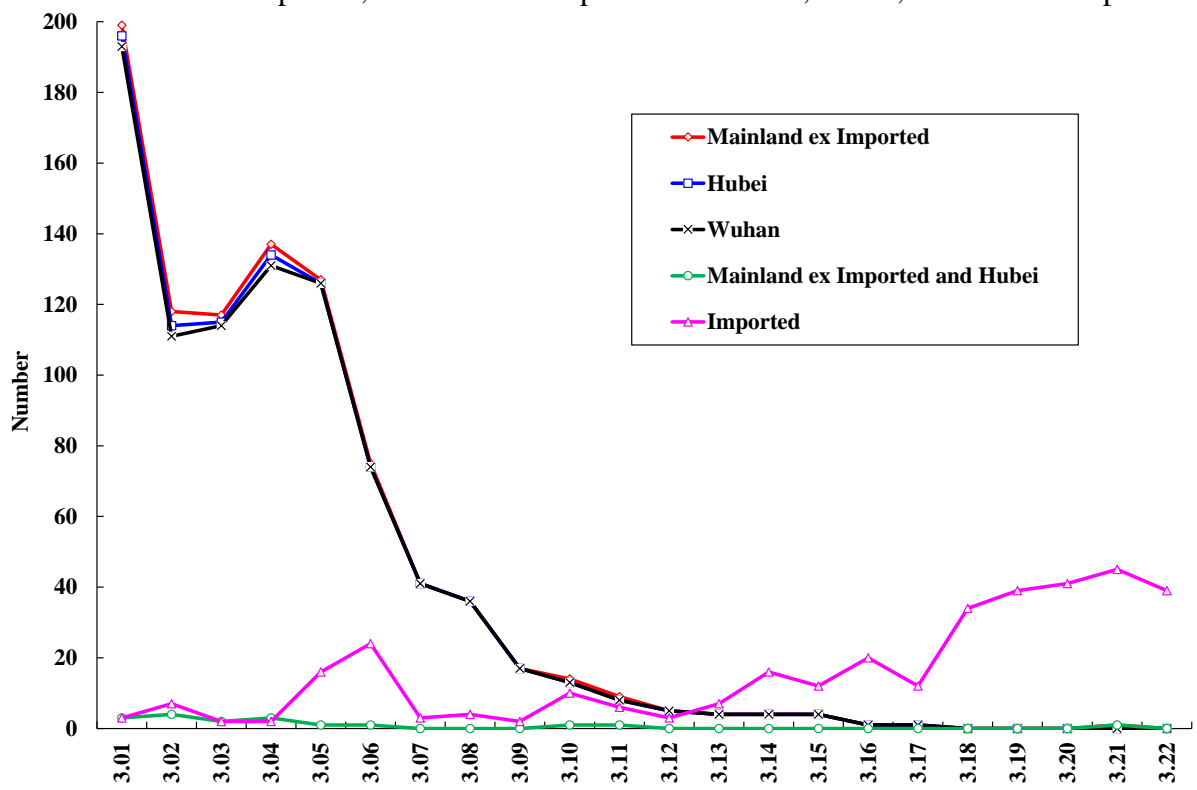
Chart 3: The Daily Number of Newly Confirmed Cases under the Current Definition: The Mainland ex Imported, Mainland ex Imported and Hubei, Hubei, Wuhan and Imported



Sources: Same as Chart 1.

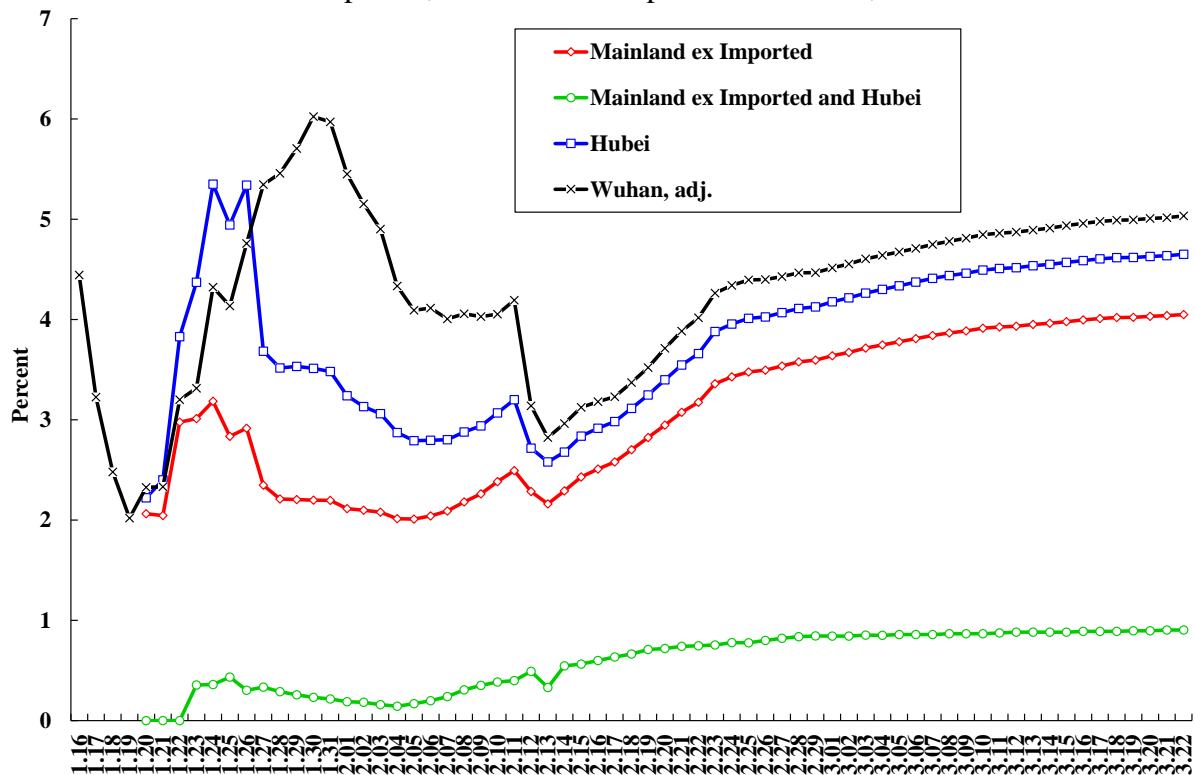
The updated Chart 3 shows that the daily numbers of newly confirmed domestic cases on the Mainland excluding imported cases (henceforth Mainland ex Imported) and in Hubei and Wuhan have essentially fallen to zero. On 26 February, the first imported COVID-19 case was identified. The updated Chart 3A, which covers the period beginning on 1 March, shows that excluding imported cases, almost all of the daily newly confirmed cases on the Mainland since 5 March have been from Wuhan. The number of daily newly confirmed cases on the Mainland ex Imported and Hubei has been either 0 or 1 since 5 March. Hubei ex Wuhan has had no newly confirmed cases for eighteen days in a row (5-22 March). The daily number of newly confirmed cases in Wuhan has fallen to single digits since 11 March and to zero since 18 March. All the signs suggest that the epidemic is about to be over on the entire Mainland, including the Province of Hubei and its capital Wuhan. The daily number of imported newly confirmed cases has been significantly larger than the daily newly confirmed domestic cases on the entire Mainland since 13 March. It averaged 33 for the week 16-22 March. China must take steps to prevent the number of imported cases from growing because it may rekindle domestic transmission of the COVID-19 virus in an uncontrollable way.

Chart 3A: The Daily Number of Newly Confirmed Cases under the Current Definition:
The Mainland ex Imported, Mainland ex Imported and Hubei, Hubei, Wuhan and Imported



Sources: Same as Chart 1.

Chart 5: The Instantaneous Cumulative Mortality Rates:
The Mainland ex Imported, Mainland ex Imported and Hubei, Hubei and Wuhan

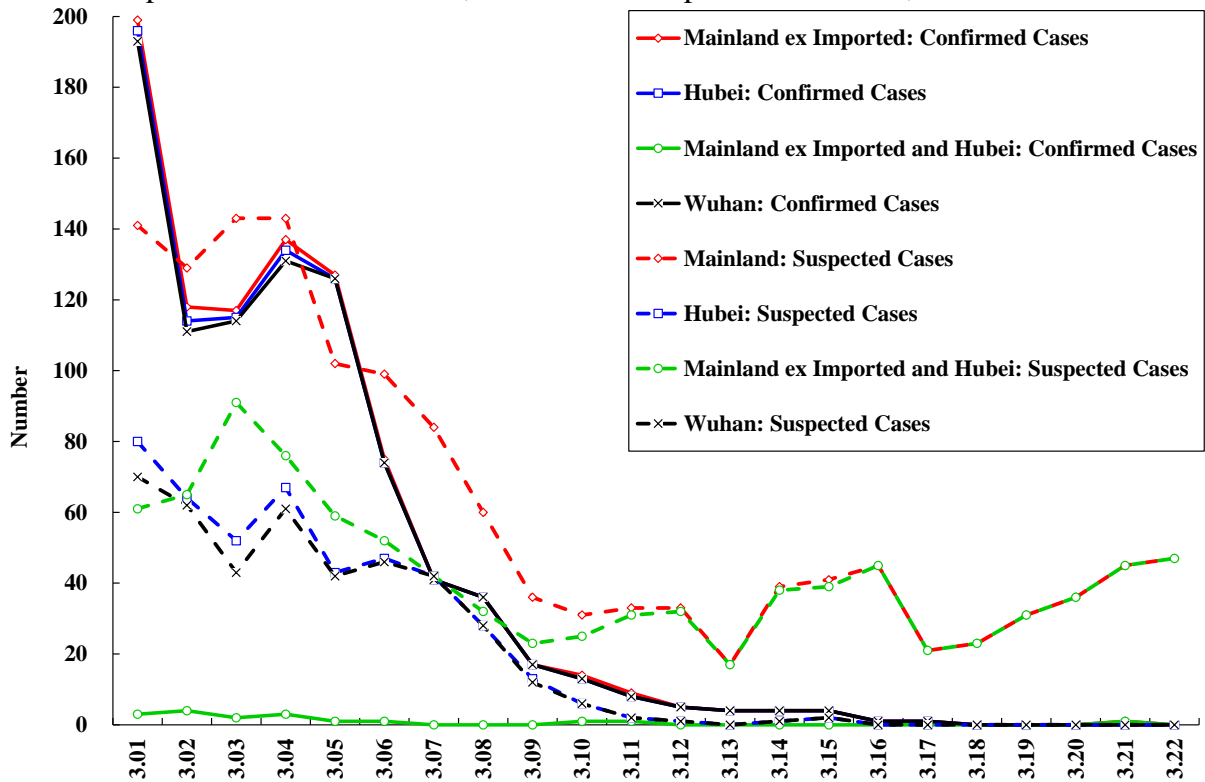


Sources: Same as Chart 1.

The updated Chart 5 shows that because the cumulative newly confirmed domestic cases to date is no longer rising, the instantaneous cumulative mortality rate (the cumulative total number of domestic deaths due to the COVID-19 virus divided by the cumulative newly confirmed domestic cases to date) is expected to continue to rise in Wuhan (5.0% as of 22 March), Hubei and the Mainland in the near future, as there are still almost 2,000 confirmed patients who are listed as seriously ill. Outside of Hubei, the mortality rate of the Mainland has remained steady and been rising very gradually because the cumulative number of confirmed cases is no longer increasing. It stood at 0.9% as of 22 March, less than one-fifth of the mortality rate of Wuhan. These numbers confirm our assessment that the mortality rate of the COVID-19 virus is relatively low, probably not more than 1%, in places where adequate medical care is available.

In the updated Chart 8, the daily newly confirmed cases are compared with the daily newly increased suspected cases, only for the period beginning on 1 March, in order that the more recent developments can be examined more clearly. Suspected cases are cases that have yet to become confirmed cases pending further clinical observations and/or nucleic acid tests. Once a case is determined one way or the other, it will no longer be retained as a suspected case. Thus, in general, the number of newly increased suspected cases should exceed the number of newly confirmed cases, or at least should do so after a short time lag to allow for the testing.

Chart 8: The Daily Newly Confirmed Cases and Newly Increased Suspected Cases: A Comparison for the Mainland, Mainland ex Imported and Hubei, Hubei and Wuhan



Sources: Same as Chart 1.

The updated Chart 8 shows clearly that the numbers of new suspected cases on the Mainland (excluding imports) and in Hubei and Wuhan have generally continued their declines. For the Mainland as a whole, the daily number of new suspected cases has apparently stabilised below 50, whereas the number of newly confirmed cases (excluding imported cases) has been either zero or one during the past seven days, indicating that most of the suspected cases have been false alarms. However, in both Hubei and Wuhan, the number of new suspected cases have been zero during the past seven days. This reflects the greatly improved availability of medical care in Wuhan and Hubei so that the backlog of unreported and suspected cases has essentially been cleared. It further reinforces our confidence that the number of newly confirmed domestic cases in Wuhan, and hence in Hubei and on the Mainland, is likely to remain zero in the near future. Imported cases are another matter altogether. They must be strictly controlled, isolated and quarantined to prevent a resurgence of the epidemic on the Mainland.