

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

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29 March Supplementary Charts

30 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 on a weekly basis³. We have prepared this current update, through midnight (2400) of 29 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) also fell to the level of single digits at the same time, and to essentially zero since. Thus, the epidemic may even be considered over in Wuhan, sooner than our past predictions. Concern has now shifted to how to isolate and contain new cases imported into the Mainland from abroad, and similar cases in Hong Kong and Taiwan, which have been rising fast.

We have also taken advantage of this opportunity to adjust the Wuhan, and hence Hubei and Mainland, numbers on newly confirmed cases and deaths so as to smooth out the surges on 12 February which were primarily caused by a change in the definition of a confirmed case in Hubei, including Wuhan. We have redistributed the “excess” cases proportionally to the days between 16 January and 12 February⁴.

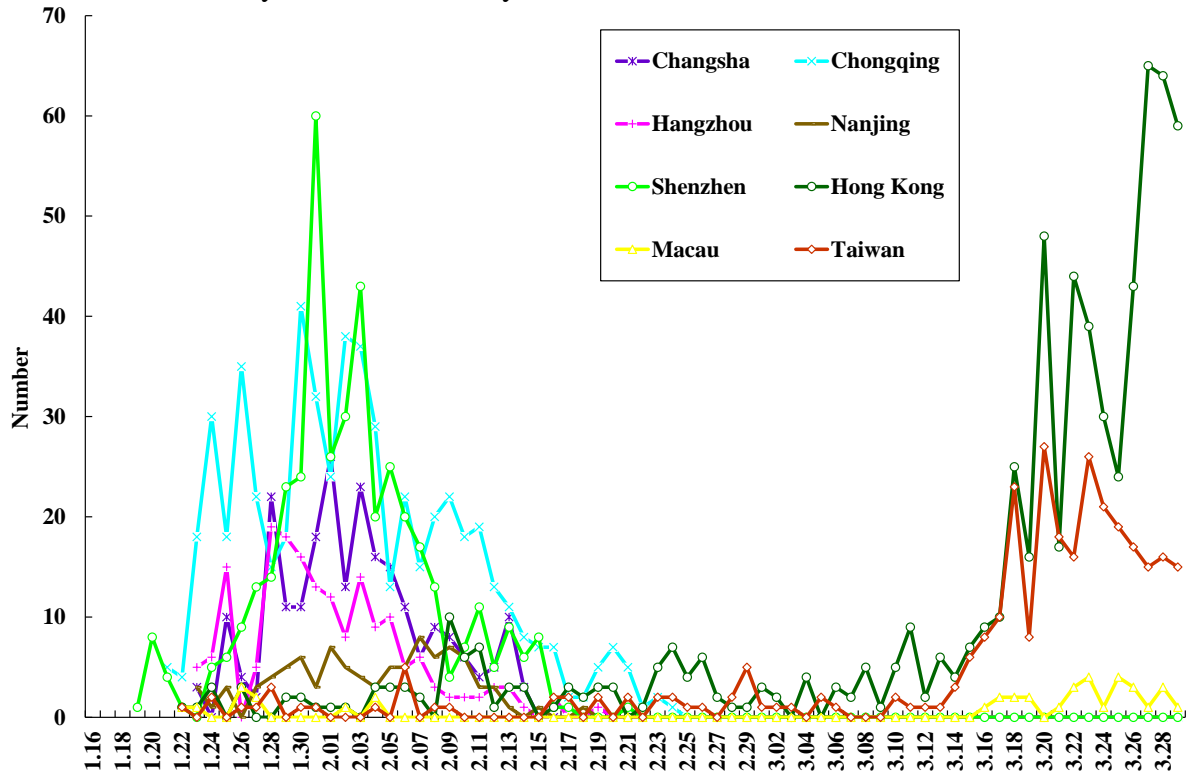
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² Lawrence J. Lau and Yanyan Xiong, “Don't Panic, Be Cautious, and Together We Can Stop the Coronavirus Epidemic,” *Asia Pacific Biotech News*, Special Issue 1, March 2020, doi: s0219030320001202, pp. 90-107.

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/>.

⁴ The redistribution makes no difference to our conclusions. However, it does facilitate the comparison across countries, regions and municipalities.

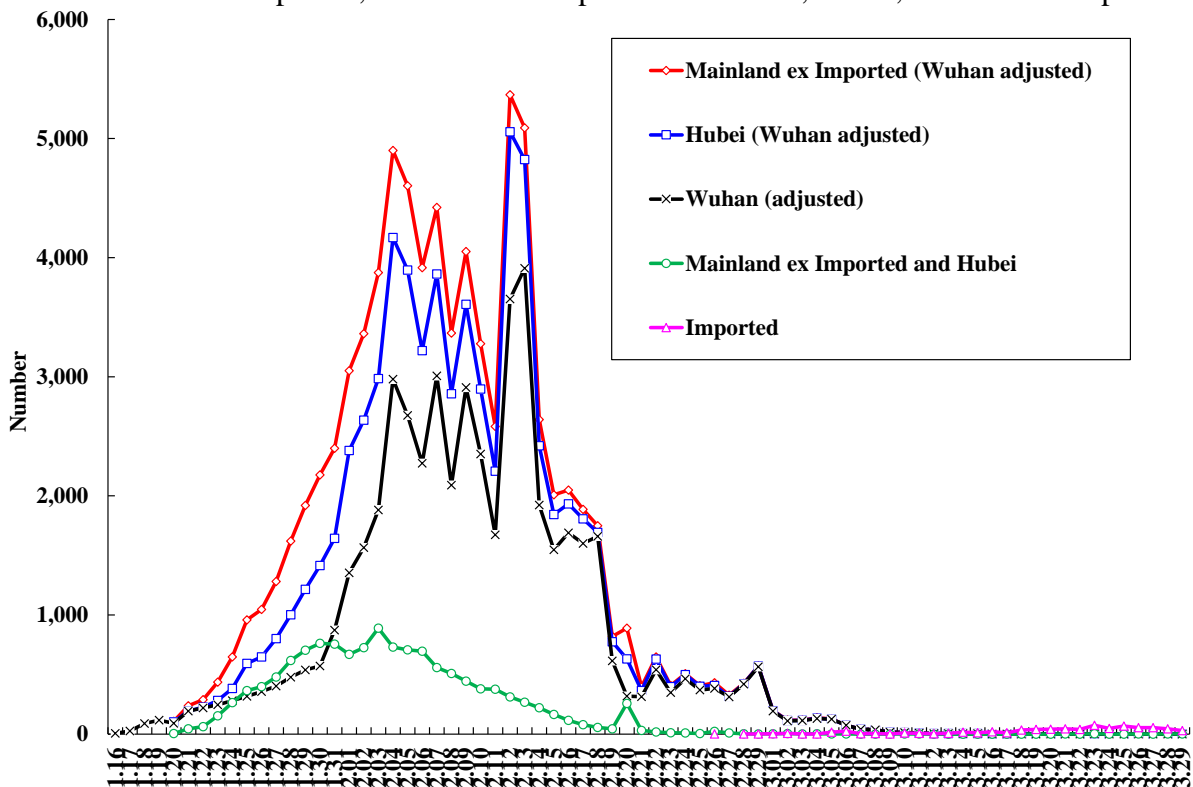
Chart 2: The Daily Number of Newly Confirmed Cases in Selected Areas outside Hubei



Sources: Same as Chart 1.

The updated Chart 2 shows that, on the Mainland, in all of the five major cities outside of the Province of Hubei, the daily number of newly confirmed domestic, as distinct from imported, 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. In fact, economic activities on the Mainland have already begun to return to normal. The epidemic is basically over on the entire Mainland except for imported cases. However, the daily newly confirmed cases in Hong Kong and Taiwan rose rapidly between 16 and 29 March (respectively 59 and 15 on 29 March), especially in Hong Kong, because of the influx of a large number of returning residents from Europe and North America. They now have more current cases than any other municipality, province and region on the Mainland except Hubei. However, we believe that while the numbers may go up further in Hong Kong and perhaps Taiwan for a while longer, widespread transmission should be controllable, given all the quarantine and isolation measures already undertaken, but may take some time. In the meantime, on the Mainland, newly confirmed cases imported from abroad have also been identified in many places, notably Beijing, Shanghai and the Province of Guangdong. 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.

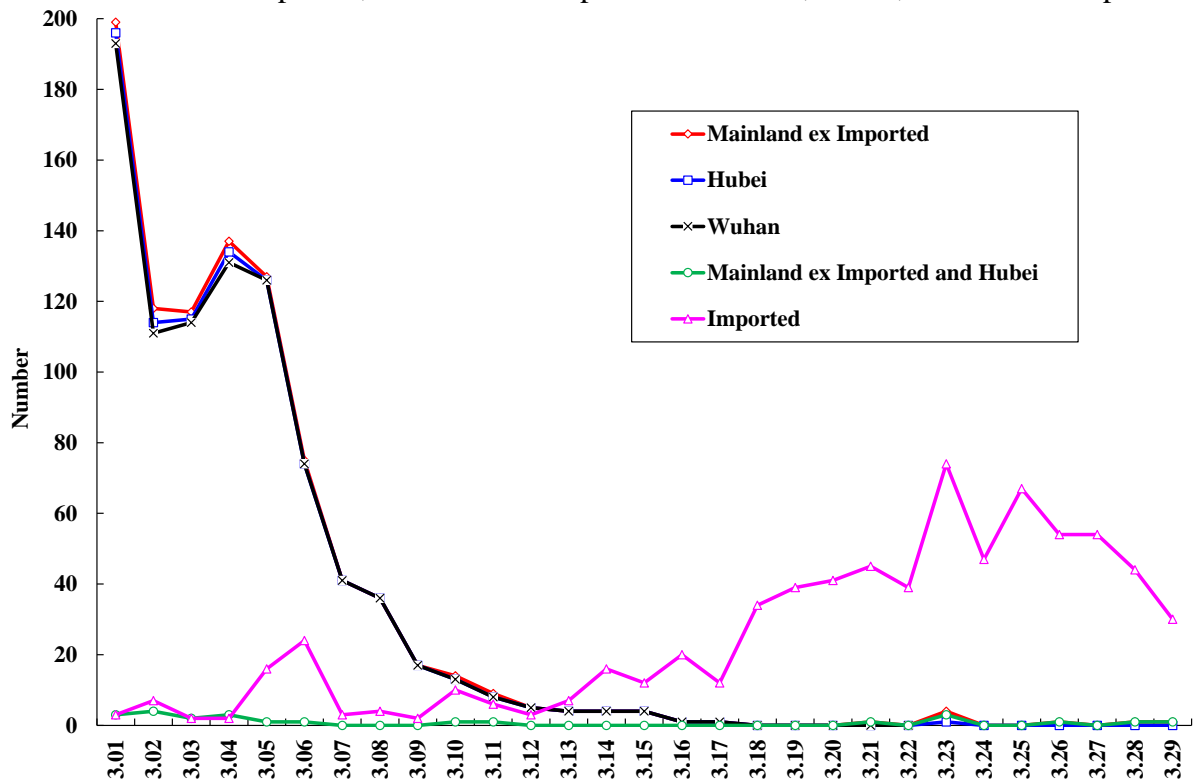
Chart 3: The Adjusted Daily Number of Newly Confirmed Cases:
The Mainland ex Imported, Mainland ex Imported and Hubei, Hubei, Wuhan and Imported



Sources: Same as Chart 1.

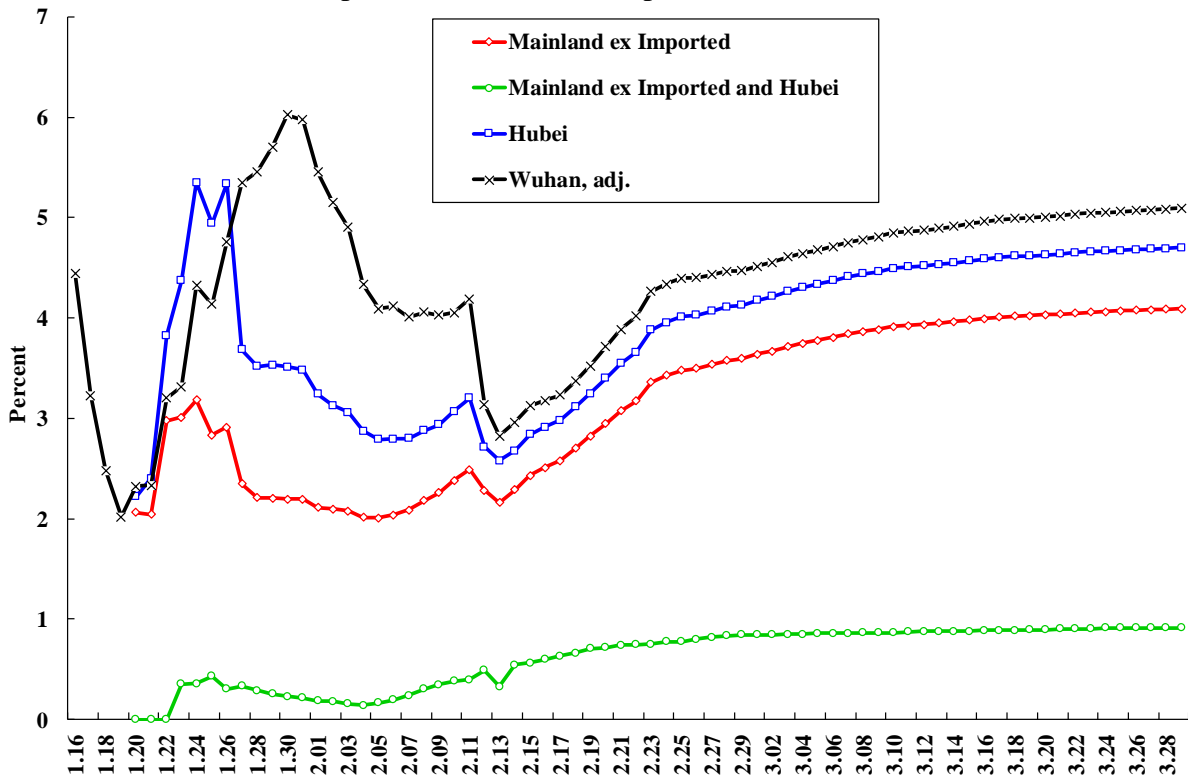
The updated Chart 3 shows the trajectory of daily numbers of newly confirmed domestic cases on the Mainland after the reallocation of the surge on 12 February. The average number of newly confirmed domestic cases per day during the two weeks from 16 March to 29 March is less than one. The first imported COVID-19 case was identified on 26 February. The updated Chart 3A shows that almost all of the daily newly confirmed cases on the Mainland since 16 March have been imported cases. All the signs suggest that the epidemic is over on the entire Mainland, including the Province of Hubei and its capital Wuhan. The daily number of imported newly confirmed cases averaged 43 for the two weeks 16-29 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

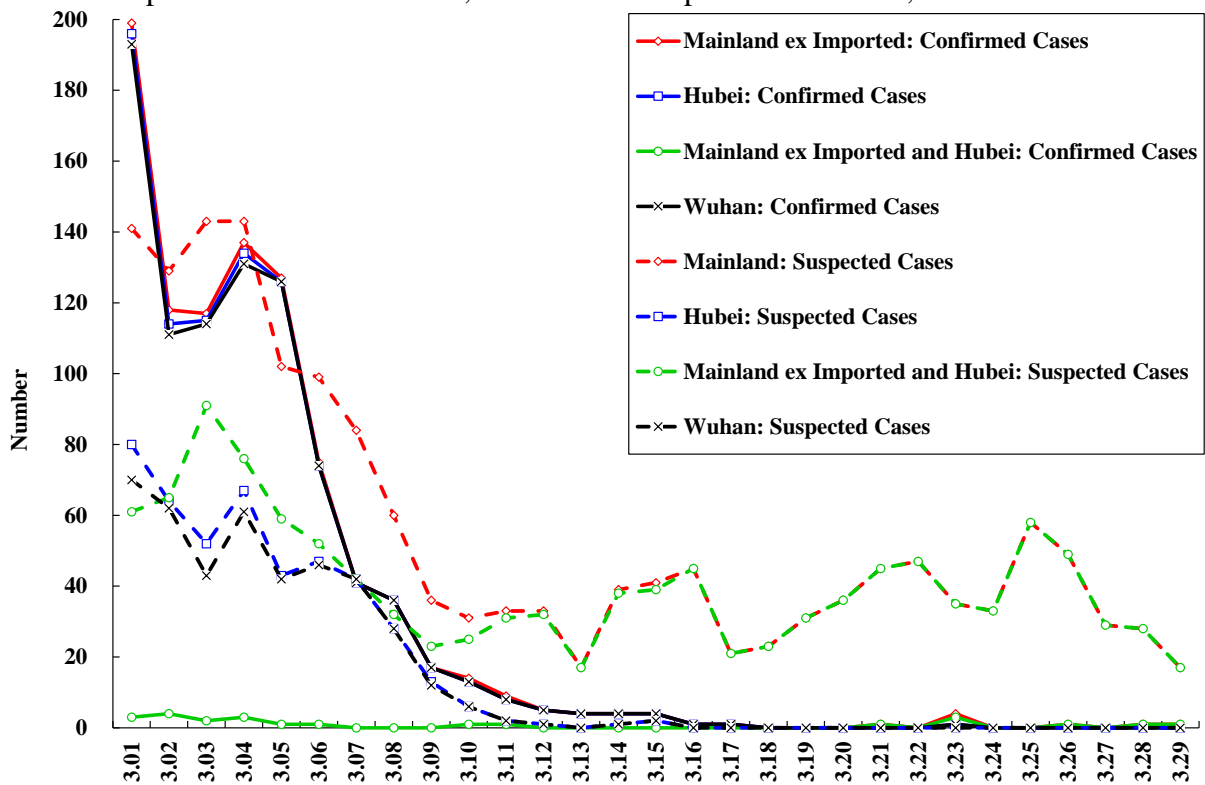


Sources: Same as Chart 1.

The updated Chart 5 reflects the reallocation of the surge in the number of deaths in Wuhan on 12 February. 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) continues to rise, as expected, in Wuhan (5.1% as of 29 March), Hubei and the Mainland, as there are still 633 confirmed patients who are listed as seriously ill as of 29 March. 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 also no longer increasing. It stood at 0.9% as of 29 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 for the period beginning on 1 March. 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 new 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 averaged 36 per day during the week of 23-29 March, compared to an average of 1 per day for newly confirmed cases. What is most remarkable is that in Hubei (and Wuhan), there have been zero new suspected cases since 16 March. This reflects the greatly improved availability of medical care in Wuhan and Hubei so that the backlog of unreported and suspected cases has been completely 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 essentially 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.