

Japan's Expert Meeting on COVID-19

Translation of pp. 35-38 of “Analysis of the Response to COVID-19 and Recommendation”
(May 29, 2020)

<Supplement>

Regarding Japan's Cluster Response

- As stated in the main document, “Cluster Response” refers to conducting a proactive epidemiological survey so that we can capture the beginning of a cluster (such as the source) and take measures early to slow or minimize the transmission. In our country, by implementing an “effective cluster response”, the following impact was achieved:
 1. We were able to prevent a massive outbreak that could have resulted from a chain of clusters
 2. Early on, we were able to identify the “place” of “**3Cs (Crowded place, Confined space, and Close conversation)**” as the common source of transmission as a result of the proactive epidemiological survey conducted. Because we worked to inform the public to avoid the “3Cs” with reference to relevant factors such as speaking loudly and singing, we were able to effectively appeal to the public to avoid environments that would have put them at a higher risk for forming clusters.
 3. By following links of cases based on clusters, we were able to estimate the status of transmission in various regions more accurately. This meant that we were able to determine the increase of “isolated cases” as increase in transmission in that region, which allowed us to respond quickly in those regions.
- There were 2 unique characteristics.
 - (1) We were able to detect the transmissions originating in China (first wave) and transmissions originating in Europe (second wave) early
- In the first wave that occurred between January ~ February originating in China, 149 cases were reported by February 25, including clusters, as a result of implementation of cluster response, etc. by *hokenjo* or health centers of local administrations. ⁽⁵⁾

Cumulative cases	Japan	Germany	France	UK	US	Italy	South Korea	Taiwan
Through 2/18	60	15	12	9	15	3	31	22
Through 2/25	149	15	12	13	53	229	892	30

- One of the things that enabled early reporting is that guidelines for surveillance for detecting an unknown infectious disease, etc. had been reviewed in preparation for the Olympics/Paralympics, and we had asked for wide reporting of cases in advance.
- On the other hand, developed countries such as European countries other than Italy and the U.S. that were already seeing serious local transmissions had not detected many local transmission cases by this time, as shown on [Chart 1. Trend of new cases in other countries (by date of reporting)].
- In reality, it is likely that there had been transmissions occurring under the radar in these countries, but it was not yet visible. By the time it had become visible, which was after mid-March, rapid increase in transmissions in both Europe and in the United States were occurring.
- Japan was able to detect transmissions early. Another reason why this was made possible was that Japanese citizens have good access to healthcare even in rural parts of the country. Physicians were able to order chest X-rays, CT scans, and PCR tests when they suspected COVID-19 from symptoms presented, such as fever and respiratory symptoms. This allowed early detection of transmission.
In fact, the first local transmission case reported on January 16th was a case in which the physician suspected COVID-19 and ordered a PCR test.

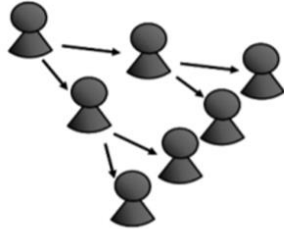
(2) Effective cluster response was implemented

- As noted in (1), Japan was able to detect new cases and clusters earlier than other countries. Through accumulation of these cases, the Expert Meeting already knew, as published on our view on March 2nd⁶, that regardless of the severity of the symptoms of patients, about 80% of cases were not infecting other people. Early on, we knew that COVID-19 had clearly different characteristics than the influenza virus (one patient likely to infect others).
- What this means is that COVID-19 was spreading largely via creation of clusters. We had supposed that if we can suppress clusters (within the area where cluster response can be implemented), we can suppress the increase in transmissions overall.
- In addition, from early proactive epidemiological survey, we had been able to analyze the places where clusters occurring. This enabled us to implement an effective response measure, “Avoid 3Cs”, which was not implemented in other countries.

Transmission characteristics of COVID-19

○ In case of H1N1 in 2009

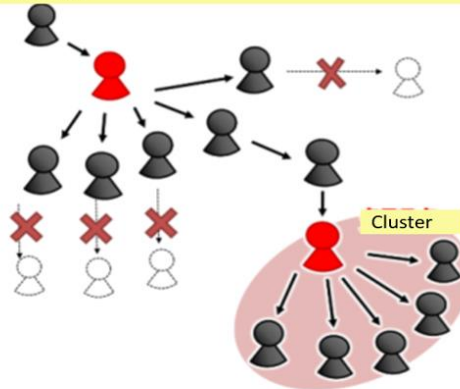
→ One patient infects many people



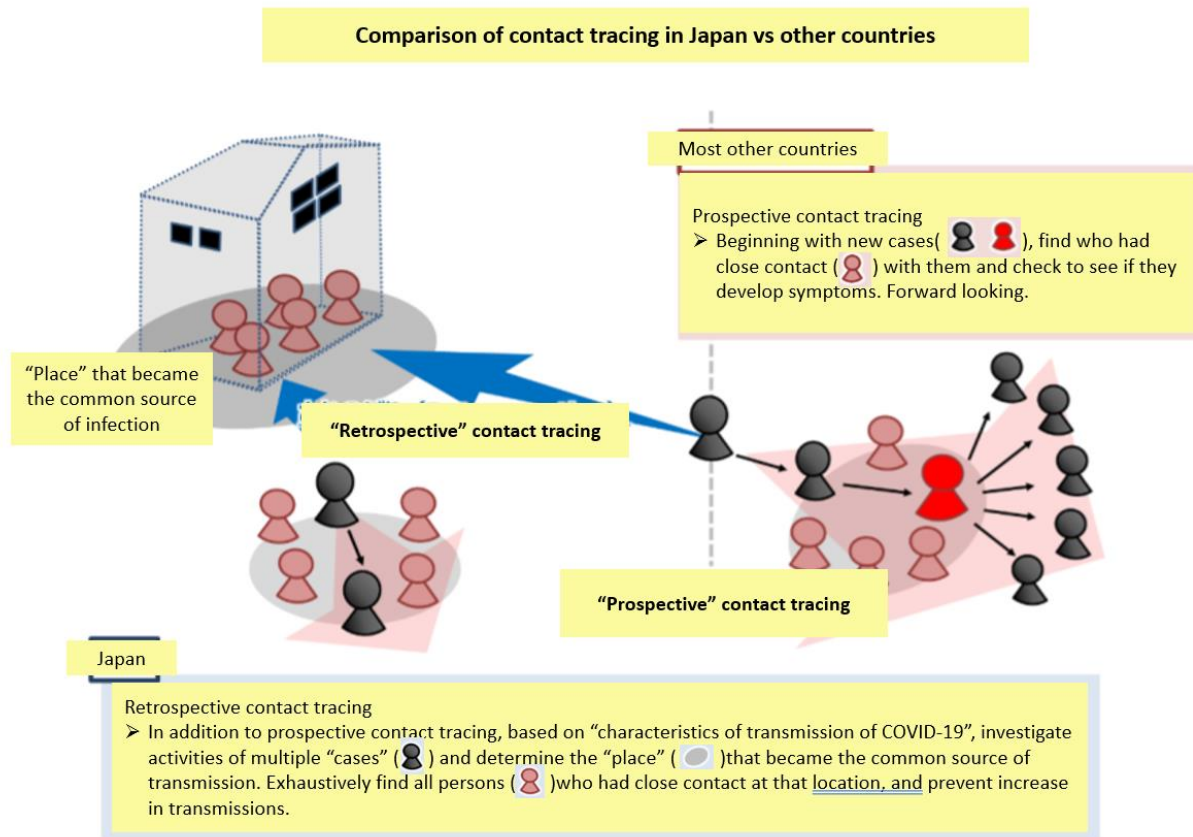
○ In case of COVID-19

→ Regardless of the severity, 4 of 5 patients (about 80%) do not infect others

Remaining 1 patient (about 20%) infects others; but rarely, there are cases where 1 patient infects many others. This causes cluster transmission



- Contact tracing deployed in other countries takes new cases as a starting point. Then you figure out every person who have had close contact with that case and find future cases. This is a “prospective” investigation.
- “Prospective” investigation was conducted in Japan too; however, based on the known characteristics of this virus, when we found multiple cases, we looked carefully to see if they had common sources. In other words, when we found a case, we went back in time and identified the “place” that was the common source of transmission. This is a “retrospective” investigation. This also enabled us to find the concept of “3Cs” early on. Also, for those who were present at the same place (common source), we put effort into conducting proactive epidemiological survey. Such “retrospective” contact tracing was based on methods that had been done for tuberculosis patients through health centers of local administrations.
- What was unique about Japan’s response was that based on “retrospective” contact tracing, we went back to the source of the infection and made sure that we did not miss the chains of transmissions that followed. Focus was on ① identifying the source early on, ② identifying those who are related to the source early on, and as a result, ③ early treatment of patients, and ④ early implementation of response measures to suppress increase in transmissions.



- As we have described, Japan was able to estimate the transmission status in each region by mainly following the links of cases in clusters. This enabled us to determine that the increase in isolated cases without known links would suggest an increase in transmission in that particular area. This enabled us to strengthen response measures early for each region.
- We know at this point through genetic analysis that imported cases have had major impact on spread of local transmissions as well. What this means is that, as a result of having a larger number of imported cases as a second wave originating in Europe, etc., isolated cases in various regions increased. As the number of new cases increased and number of isolated cases without known links increased, we had no option left but to declare a state of emergency on April 7th.

5 Source: Data for other countries are from <https://ourworldindata.org>

6 https://mhlw.go.jp/stf/seisakunitsuite/newpage_00011.html