How does a pandemic start?

By Pier Paolo Ippolito

Pandemics, usually develops thanks to a disease ability to spread at an exponential rate. In the case of COVID-19, the number of cases from one day to the next was in fact equal to the number of nowadays cases times some constant between 1.25-1.5 (depending on factors such as population density and restrictions in place). The change in the number of cases from a day to another, can then be defined by the following equation:

$$\Delta N_d = E \times p \times N_d$$

Where **E** represents the average number of people we are exposed to every day, **p** represents the probability that an exposure might lead to an infection and N_d is the number of cases as of today.

Therefore, in this type of situation, the only possible way to try to slow down our exponential trend is by decreasing **E** and **p**.

In order to make this possible, different techniques

Pandemic Inception

First Day

Second Day

Third Day