COVID-19 PANDEMIC: THE PHILIPPINE EXPERIENCE
The Case for a Precision Quarantine and Immunity (PQI) Approach
A Briefing Paper
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BACKGROUND

On April 18, 2020, the author wrote an Open Letter to Philippine President Rodrigo R. Duterte on "**World Experience and New Scientific Findings: Relevance for Containing COVID-19".** That Open Letter promised President Duterte that the points made by the Open Letter would be substantiated in a more comprehensive Briefing Paper. This is that Briefing Paper.

Our research team[2] took a look at the available date from official government sources, including the Department of Health (DOH). We also supplemented it with data from *Worldometer*, which, in turn, gets its data from the World Health Organization (WHO). In addition, for four weeks, daily, we followed news stories and scientific articles in dozens of varied sources available in the Internet.

We began our research with no preconceived notion of what position to take on the COVID-19 pandemic. We just wanted to learn what was going on. In the course of our research, however, we started seeing that the weight of scientific evidence called for a more nuanced approach to dealing with the pandemic, instead of a total lockdown. We wanted to advocate an approach that saves both lives and society, including its economy, all at the same time.

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[2] Members of the research team include Gemma Sumague, Enrique Cañizares, Keziah Lei S. Sarmiento, Mary Claire Artiaga, Fransil Sayson, and Danica Celiz. Others are also involved. They prefer to be anonymous at this point. Without their invaluable help, this Briefing Paper would have taken much longer to finish.

We thus relayed this new understanding and approach to President Rodrigo Roa Duterte of the Philippines in an Open Letter. (See Attachment B.) This Briefing Paper is an attachment to that Open Letter.

This Briefing Paper gives the evidence for embarking on a more nuanced approach to controlling COVID-19. We call this approach the **Precision Quarantine and Immunity (PQI) approach**.

Although we are dealing with COVID-19 as it is manifesting in the Philippines, we think our experience here is relevant to other countries, just as the global experience has been important for us and the Philippines.

A substantial portion of this Briefing Paper refers to experiences, scientific findings, and perspectives from all over the world. So those anywhere in the world, wanting to gain a sense of these perspectives may also benefit from the synthesis of data and perspectives that we have integrated together in this Briefing Paper.

PART 1 – SUPPORTING EVIDENCE FOR VIEWS IN THE OPEN LETTER TO PHILIPPINE PRESIDENT RODRIGO R. DUTERTE (APPENDIX B)

We will begin with the Philippine experience and, from there, look at what is going on in other countries.

a. The Growth of Total Cases is Increasing

The Table on the left of Figure 1 tracks the total number of cases, from January 30 to April 21, 2020. This can be seen clearly in Table 1 below. In Figure 1, the corresponding chart on the right (the blue line) appears to continually increase.

At first glance, the patterns from Table 1 and the chart in Figure 1[3] are alarming. People panic and get hysterical when they see this chart. That panic is understandable. It presents the number of ever-increasing new cases that are arising together with the number of deaths from COVID.

However, the increase of total cases daily **is starting to slow down**. (This can be seen in the curvature of the blue line. It is becoming less steep.) Moreover, the number of deaths, daily, is **also starting to decrease** (red line), and the number of survivors is increasing (green line).

Note how dramatic the increase of survivors is (the green line). The number of survivors have dramatically increased in the past week and now surpasses the

[3] Table 1 is incorporated in Figure 1. We give both kinds of data together because, in Figure 1, the numbers are so small that readers may not be able to read the actual numbers of new infections per day. The same is true for the other Tables and Figures below.

number of deaths from COVID-19. We will draw the strategic implications of this data in the later section on natural immunity.

TABLE 1. Total Number of New Daily Cases, Survivors and Deaths[4]

CASE DETAILS				
Date	**Total Cases**	**New Cases**	**Survivors**	**Deaths**
30-Jan	**1**	**1**	**0**	**0**
31-Jan	**1**	**0**	**0**	**0**
1-Feb	**1**	**0**	**0**	**1**
2-Feb	**2**	**1**	**0**	**0**
3-Feb	**2**	**0**	**0**	**0**
4-Feb	**2**	**0**	**0**	**0**
5-Feb	**3**	**1**	**0**	**0**
10-Feb	**3**	**0**	**0**	**0**
11-Feb to 4-Mar	**3**	**0**	**0**	**0**
5-Mar	**5**	**2**	**0**	**0**
6-Mar	**5**	**0**	**0**	**0**
7-Mar	**6**	**1**	**0**	**0**
8-Mar	**10**	**4**	**0**	**0**
9-Mar	**24**	**14**	**0**	**0**
10-Mar	**33**	**9**	**0**	**0**
11-Mar	**49**	**16**	**0**	**1**
12-Mar	**52**	**3**	**0**	**0**
13-Mar	**64**	**12**	**0**	**3**
14-Mar	**111**	**47**	**0**	**3**
15-Mar	**140**	**29**	**0**	**4**
16-Mar	**142**	**2**	**1**	**0**
17-Mar	**187**	**45**	**3**	**2**
18-Mar	**202**	**15**	**3**	**3**
19-Mar	**217**	**15**	**1**	**0**
20-Mar	**230**	**13**	**0**	**1**
21-Mar	**307**	**77**	**5**	**1**
22-Mar	**380**	**73**	**4**	**6**
23-Mar	**462**	**82**	**1**	**8**
24-Mar	**552**	**90**	**2**	**2**
25-Mar	**636**	**84**	**6**	**3**
26-Mar	**707**	**71**	**2**	**7**
27-Mar	**803**	**96**	**3**	**9**
28-Mar	**1075**	**272**	**4**	**14**

[4] The dates from Feb. 11 to March 4 are taken together because there were no changes in the data. If the data in these dates were added, at least 22 more additional rows would have had to have been added. This will make the graph spread out too much and the labels would have been even smaller, making them difficult to read.

29-Mar	**1418**	**343**	**7**	**3**
30-Mar	**1546**	**128**	**0**	**7**
31-Mar	**2084**	**538**	**7**	**10**
1-Apr	**2311**	**227**	**1**	**8**
2-Apr	**2633**	**322**	**1**	**11**
3-Apr	**3018**	**385**	**1**	**29**
4-Apr	**3094**	**76**	**5**	**8**
5-Apr	**3246**	**152**	**7**	**8**
6-Apr	**3660**	**414**	**9**	**11**
7-Apr	**3764**	**104**	**11**	**14**
8-Apr	**3870**	**106**	**12**	**5**
9-Apr	**4076**	**206**	**28**	**21**
10-Apr	**4195**	**119**	**16**	**18**
11-Apr	**4428**	**233**	**17**	**26**
12-Apr	**4648**	**220**	**40**	**50**
13-Apr	**4932**	**284**	**45**	**18**
14-Apr	**5223**	**291**	**53**	**20**
15-Apr	**5453**	**230**	**58**	**14**
16-Apr	**5660**	**207**	**82**	**13**
17-Apr	**5878**	**218**	**52**	**25**
18-Apr	**6087**	**209**	**29**	**10**
19-Apr	**6259**	**172**	**56**	**12**
20-Apr	**6459**	**200**	**63**	**19**
21-Apr	**6599**	**140**	**41**	**9**
Totals		**6599**	**676**	**437**

FIGURE 1. Total Number of Cases, Survivors and Deaths

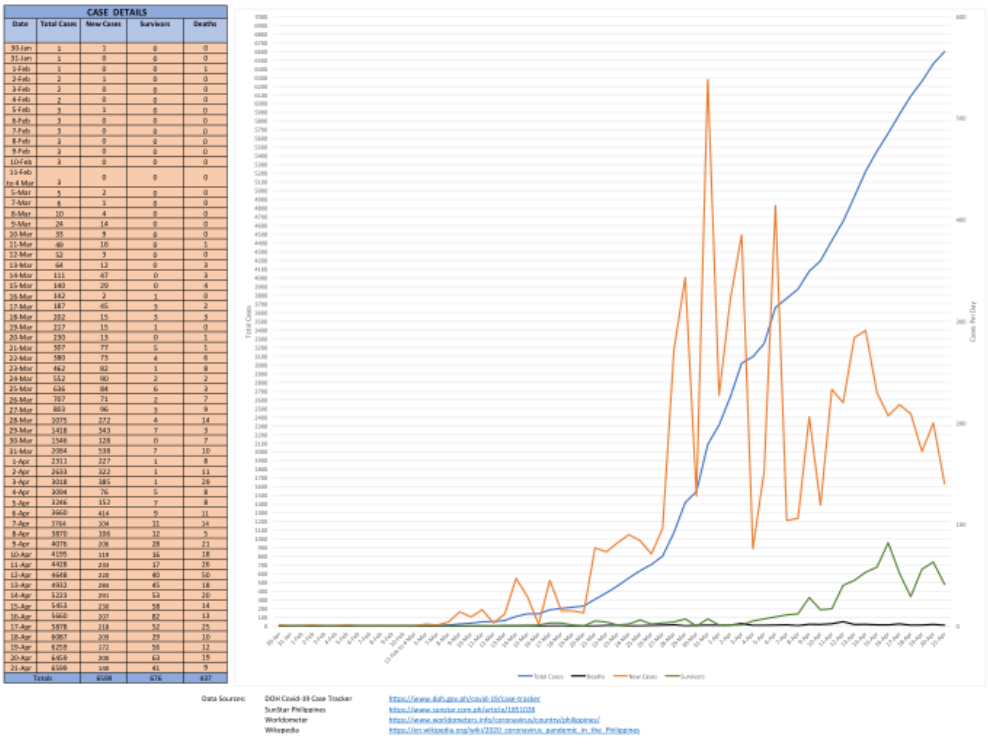


Table 2 shows these observations more clearly. It examines the growth rate of total cases. The growth rate of total cases is calculated by this formula:

(Total Cases for Today minus Total Cases Yesterday) x 100
(Divided by Total Cases Yesterday)

Figure 2 below is based on Table 2. Together they show that the **growth rate of total cases is decreasing significantly**. While the total number of cases is increasing, **the speed with which it is increasing is slowing down significantly**. It has gone from a peak of 73.44% to hovering around a low of approximately 2.17% to below 15% starting April 01, 2020. Except for occasional peaks, the tendency is towards a lesser and lesser growth rate.

Observe Table 1 and 2 as well as Figure 1 and Figure 2 together. The effect is dramatic. Figure 1 induces despair. Figure 2 gives hope. The virus is still infecting people, but it is no longer infecting as many people as before.

TABLE 2: Growth Rate of Total Cases[5]

GROWTH RATE OF CASES		
Date	**Total Cases**	**% Growth Rate**
14-Mar	111	73.44
15-Mar	140	26.13
16-Mar	142	1.43
17-Mar	187	31.69
18-Mar	202	8.02
19-Mar	217	7.43
20-Mar	230	5.99
21-Mar	307	33.48
22-Mar	380	23.78
23-Mar	462	21.58
24-Mar	552	19.48
25-Mar	636	15.22
26-Mar	707	11.16
27-Mar	803	13.58
28-Mar	1075	33.87
29-Mar	1418	31.91
30-Mar	1546	9.03
31-Mar	2084	34.80
1-Apr	2311	10.89

[5] March 14 was chosen to make it comparable to global figures later.

2-Apr	2633	13.93
3-Apr	3018	14.62
4-Apr	3094	2.52
5-Apr	3246	4.91
6-Apr	3660	12.75
7-Apr	3764	2.84
8-Apr	3870	2.82
9-Apr	4076	5.32
10-Apr	4195	2.92
11-Apr	4428	5.55
12-Apr	4648	4.97
13-Apr	4932	6.11
14-Apr	5223	5.90
15-Apr	5453	4.40
16-Apr	5660	3.80
17-Apr	5878	3.85
18-Apr	6087	3.56
19-Apr	6259	2.83
20-Apr	6459	3.20
21-Apr	6599	2.17

FIGURE 2: Growth Rate of Total Cases

Another set of data that scientists like to look at is the doubling time of new cases. Doubling time refers to the number of days it takes for cases double. The doubling time is also starting to decelerate. This can be seen in Table 2A. Looking at the basic data in Table 1, we can derive the following Table 2A. [6]

TABLE 2A. Doubling Time of Growth Cases

Dates	Data (Number of Cases)	Doubling Time
March 14, 2020	111	
March 19, 2020	217	6 days
March 23, 2020	462	4 days
March 27, 2020	803	4 days
March 30, 2020	1546	3 days
April 03, 2020	3018	4 days
April 18, 2020	6087	15 days

Initially the doubling time was a matter of days. Now you will note that the doubling time starting April 3 is 15 days. **In short, the would-be pandemic is starting to lose steam.**

c. Death Rate or Case Fatality Rate (CFR) is also decreasing.

The current Death Rate or Case Fatality Rate (CFR) of COVID-19 in the Philippines is calculated by this formula:

$$\frac{\text{Total Deaths for the Day}}{\text{Total Cases for the Day}} \times 100$$

Table 3 shows the results for the calculation of the daily CFR.

TABLE 3. Trends in Case Fatality Rate (CFR)

DEATH RATE			
Date	**Total Cases for the Day**	**Total Deaths for the Day**	**% Deaths**
14-Mar	111	8	7.21
15-Mar	140	12	8.57
16-Mar	142	12	8.45
17-Mar	187	14	7.49
18-Mar	202	17	8.42

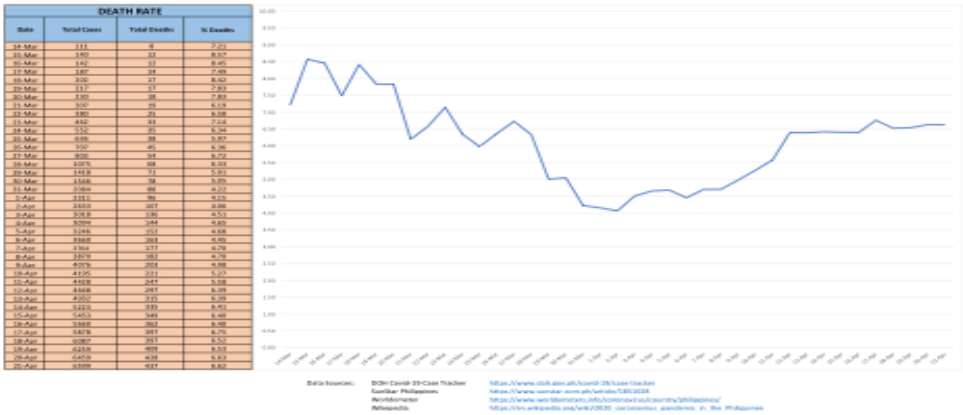
[6] Kindly note the doubling time is approximate. We chose the date closest to the doubling time.

19-Mar	217	17	7.83
20-Mar	230	18	7.83
21-Mar	307	19	6.19
22-Mar	380	25	6.58
23-Mar	462	33	7.14
24-Mar	552	35	6.34
25-Mar	636	38	5.97
26-Mar	707	45	6.36
27-Mar	803	54	6.72
28-Mar	1075	68	6.33
29-Mar	1418	71	5.01
30-Mar	1546	78	5.05
31-Mar	2084	88	4.22
1-Apr	2311	96	4.15
2-Apr	2633	107	4.06
3-Apr	3018	136	4.51
4-Apr	3094	144	4.65
5-Apr	3246	152	4.68
6-Apr	3660	163	4.45
7-Apr	3764	177	4.70
8-Apr	3870	182	4.70
9-Apr	4076	203	4.98
10-Apr	4195	221	5.27
11-Apr	4428	247	5.58
12-Apr	4648	297	6.39
13-Apr	4932	315	6.39
14-Apr	5223	335	6.41
15-Apr	5453	349	6.40
16-Apr	5660	362	6.40
17-Apr	5878	397	6.75
18-Apr	6087	397	6.52
19-Apr	6259	409	6.53
20-Apr	6459	428	6.63
21-Apr	6599	437	6.62

Table 3 above and Figure 3 below definitely show that the CFR of the Philippines is going down. One can see this in the **overall direction** of the chart.

The CFR is uneven through time and is fluctuating, but even that fluctuation is moving in a downward direction.

FIGURE 3. Trends in Case Fatality Rates or Death Rates



However, we need to emphasize that the CFR figures can only be totally determined with finality when we get all the contributing factors that make up its value.

On the numerator side, the side of reported deaths, personnel involved may not be distinguishing deaths **from** COVID-19 as contrasted to deaths **with** COVID-19. The latter means that the patient died "with" other complicating illnesses, especially respiratory illness including pneumonia and flu, and other illnesses. These cannot really be counted as COVID-19 deaths. At most scientists will have to figure out the complicated task of determining what percent of the death was attributable to COVID-19 and what percent are due to other illnesses, both contagious and degenerative diseases, especially when dealing with senior citizens.

If deaths "with" COVID-19 are also counted as deaths "from" COVID-19, this will increase the number of deaths to be counted in the statistics for COVID-19, which then increases the CFR statistics. This gives a false picture of the virulence of COVID-19.

On the **denominator side**, the CFR will also depend on the number of cases reported. If cases are under-reported, the CFR will appear to be high. However, there is increasing evidence the COVID-19 infections are more widespread than indicated in the test reports.

Take the case of the recent studies done by scientists and medical doctors at Stanford University. The researchers measured how many people in the general population (as determined by random sampling) had antibodies for COVID-19,

indicating that the people in the study have been infected by COVID-19. The results are revealing and have large implications as to how our current CFRs are calculated.

> "Under the three scenarios for test performance characteristics, the population prevalence of COVID-19 in Santa Clara ranged from 2.49% … to 4.16%. These prevalence estimates represent a range between 48,000 and 81,000 people infected in Santa Clara County by early April, 50-85-fold more than the number of confirmed cases. Conclusions. The population prevalence of SARS-CoV-2 antibodies in Santa Clara County implies that the infection is much more widespread than indicated by the number of confirmed cases. Population prevalence estimates can now be used to calibrate epidemic and mortality projections."[7]

Although, as far as we know, no similar study has been done in the Philippines, one can surmise that a larger population in the Philippines has already been infected. But these individuals are asymptomatic and have strong immune systems. We can have this hypothesis because it took some time for the Philippines to lockdown and the first several days of the lockdown were not too organized, increasing the likelihood of mutual infection by the population.

In all likelihood, the **death rate or CFR of the Philippines will most likely be lower than its current rate by several orders of magnitude** because of inadequate testing of the larger population and because DOH is either not taking or not reporting asymptomatic people (persons who may be carrying the virus but show no symptoms of illness).

Table 4 below was constructed from DOH data from various years. It shows that here are more deaths from pneumonia (57,700) in 2016 alone than COVID-19 deaths, which, as of April 21, is pegged at 437 deaths. Even if we multiply the COVID-19 figure by 4, to get the equivalent of one year, we will obtain a figure of less than 1.900 deaths (most likely less due to the slowing down of death rates), which is only around 3.2% of the deaths due to pneumonia.

If COVID-19 is as virulent as feared, then we should be seeing more deaths (excess mortality) compared with existing historical numbers of due to pneumonia deaths. In addition, if we are so concerned with the relatively smaller numbers of death due to COVID-19, why are we not making the same amount of urgent measures over pneumonia and influenza? **Why are we not locking down the entire nation every time pneumonia hits?**

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[7] Eran Bendavid, Bianca Mulaney, Neeraj Sood, Soleil Shah, Emilia Ling, Rebecca Bromley-Dulfano, Cara Lai, Zoe Weissberg, Rodrigo Saavedra, James Tedrow, Dona Tversky, Andrew Bogan, Thomas Kupiec, Daniel Eichner, Ribhav Gupta, John Ioannidis, Jay Bhattacharya. "COVID-19 Antibody Seroprevalence in Santa Clara County, California" doi: https://doi.org/10.1101/2020.04.14.20062463

While the data is "noisy", the trend is clear. For now, it is important to note that the trend of the death rate or CFR is towards lesser and lesser numbers of dying people (Figure 3 is the chart that is generated from Table 3).

In short, as will be elaborated in greater detail below, the Philippine experience is also confirming that **COVID-19 is not hyper-virulent as feared** when it first broke out. It is stronger than the common cold, but definitely not the unstoppable virus that would claim millions of lives.

TABLE 4: Pneumonia and Influenza Cases in the Philippines (DOH)

MORTALITY: Pneumonia (J12-J18) Number & Rate /100,000 Population Philippines, 2016		
Year	No.	Rate
2000	32,637	42.7
2001	33,939	43.6
2002	34,218	43
2003	32,055	39.5
2004	32,098	38.4
2005	35,610	42.8
2006	34,958	40.2
2007	35,509	40.1
2008	39,707	43.9
2009	42,642	46.2
2010	45,591	48.5
2011	48,432	51.3
2012	50,144	52.1
2013	53,101	54.2
2014	52,460	52.5
2015	49,595	49.1
2016	57,809	55.7

The presentation of raw data without looking at the other sources of death gives the public a false picture of risks. The public then panic especially when the authorities step in to enforce lockdown measures.

This last point has to be noted quite seriously because images of horror from the thousands of deaths in Italy are painting a grim but false picture of the devastating power of the virus behind COVID-19. As it turns out, more than 99% of those who

died of COVID-19 in Italy already had two or more serious illnesses, and that most of those affected are 70 or 80 years or older. In addition, Northern Italy is also notorious for having the most air pollution in Europe, which causes the death of 8,000 people every year.[8]

This is the reason why Italy, and increasingly other nations including Sweden, are starting to **distinguish between death "from" and death "with" COVID-19** (See related discussion above on Figure 3 and CFR).

To aggravate the matter, there is no clear forensic strategy for understanding and coping with COVID-19. Examinations of the bodies of people who have died can make a precise determination if someone died of COVID-19 or some other illnesses that were aggravated by COVID-19.

Another way of viewing the original data (Table 1) is to look at it in terms of growth of new cases per capita. Based on DOH data, Table 5 below shows that, as of April 16, 2020, the total new cases per capita for the Philippines as a whole is only **0.0560** per 100,000 people or 0.0000560 per 100,000,000 million Filipinos.

TABLE 5. New Cases Per Capita

NEW CASES PER CAPITA		
Date	**Total Cases**	**Cases per 100,000 people**
14-Mar	**111**	**0.0011**
15-Mar	**140**	**0.0014**
16-Mar	**142**	**0.0014**
17-Mar	**187**	**0.0019**
18-Mar	**202**	**0.0020**
19-Mar	**217**	**0.0021**
20-Mar	**230**	**0.0023**
21-Mar	**307**	**0.0030**
22-Mar	**380**	**0.0038**
23-Mar	**462**	**0.0046**
24-Mar	**552**	**0.0055**
25-Mar	**636**	**0.0063**
26-Mar	**707**	**0.0070**
27-Mar	**803**	**0.0080**
28-Mar	**1075**	**0.0106**
29-Mar	**1418**	**0.0140**
30-Mar	**1546**	**0.0153**
31-Mar	**2084**	**0.0206**

[8] See letter of Dr. Bhakdi to German Chancellor, Angela Merkel, attached as Appendix A below.

1-Apr	**2311**	**0.0229**
2-Apr	**2633**	**0.0261**
3-Apr	**3018**	**0.0299**
4-Apr	**3094**	**0.0306**
5-Apr	**3246**	**0.0321**
6-Apr	**3660**	**0.0362**
7-Apr	**3764**	**0.0373**
8-Apr	**3870**	**0.0383**
9-Apr	**4076**	**0.0404**
10-Apr	**4195**	**0.0415**
11-Apr	**4428**	**0.0438**
12-Apr	**4648**	**0.0460**
13-Apr	**4932**	**0.0488**
14-Apr	**5223**	**0.0517**
15-Apr	**5453**	**0.0540**
16-Apr	**5660**	**0.0560**

This reality is more visible when we look at Figure 4, the growth rate of new cases.

FIGURE 4. Growth Rate of New Cases

Furthermore, compare Table 5 and Figure 4 with Table 6 and one will immediately notice that **our fatalities per capita are way below those of other nations.** This figure will even be lower if we take into consideration that the tests being used to identify test-positive persons have large margins of error.

TABLE 6. Total Cases per Capita

COUNTRY	TOTAL CASES	POPULATION	TOTAL CASES PER POPULATION	ADJUSTED X 10,000
USA	586,941	330,582,621	0.001775	17.7547
Spain	170,099	46,755,636	0.003638	36.3804
Italy	159,156	60,474,852	0.002632	26.3177
France	136,779	65,239,269	0.002097	20.9657
Germany	130,072	83,737,376	0.001553	15.5333
UK	88,621	67,810,273	0.001307	13.0690
China	82,249	1,438,173,900	0.000057	0.5719
Iran	73,303	83,770,259	0.000875	8.7505
Turkey	61,049	84,149,761	0.000725	7.2548
Belgium	30,589	11,579,015	0.002642	26.4176
Philippines	4,932	109,265,802	0.000045	0.4514

Source: https://www.worldometers.info/coronavirus/ and https://worldpopulationreview.com/. As of April 14, 2020 10:00 AM.
Note: Note that the last column in Table 6 is an artifact. It was added and multiplied by 10,000 to make it easier to compare the total cases per capita of 10 countries plus the Philippines. To make it comparable to other countries, the Philippine data here is for April 14, not April 16 as in Table 5. Also, the total cases per population has been rounded off.

What is striking with Table 6 is that there is no country in the world, neither the USA, nor China, Italy, Spain, and the other most infected countries in the world have an infection rate of over 1%. None. Even if one doubles the numbers infected, the top countries will still have less than 1% infection rate, at more than three months into the pandemic.

This striking point can be seen more clearly in Table 7 immediately below.

TABLE 7: Percentage of Population with COVID-19 Cases. Selected Top Countries.

COUNTRY	POPULATION	TOTAL CASES	% OF POPULATION WITH CASES
USA	330,582,621	586,941	0.1775474458
Spain	46,755,636	170,099	0.3638042695
Italy	60,474,852	159,156	0.2631771633
France	65,239,269	136,779	0.2096574687
Germany	83,737,376	130,072	0.1553332648
UK	67,810,273	88,621	0.1306896375
China	1,438,173,900	82,249	0.0057189885

Iran	83,770,259	73,303	0.0875048029
Turkey	84,149,761	61,049	0.0725480373
Belgium	11,579,015	30,589	0.2641761842
Philippines	109,265,802	4,932	0.0045137636

And when we take a closer look at the percentage infected (Table 7) and compare this with those who have recovered from the infection (Table 8 below), it is clear that there are hundreds of thousands surviving the infection. This is very important information that will guide our conversation in the next section on immunity.

TABLE 8: Percentage Recovering from Infection

COUNTRY	TOTAL CASES	TOTAL NO. OF RECOVERED	% RECOVERED
USA	586,941	36,948	6.29501091
Spain	170,099	64,727	38.05254587
Italy	159,156	35,435	22.26431928
France	136,779	27,718	20.26480673
Germany	130,072	64,300	49.43415954
UK	88,621	N/A	0.00000000
China	82,249	77,738	94.51543484
Iran	73,303	45,983	62.73003833
Turkey	61,049	3,957	6.48167865
Belgium	30,589	6,707	21.92618261
Philippines	4,932	242	4.90673155

What is amazing in Table 8 is that China is reporting the highest numbers of recoveries at 94.5%, assuming, of course, that the figures for China are accurate. On the other hand, the low recovery rates for the Philippines may be an indication of the generally poor state of health of Filipinos, including a compromised immune system of Filipinos. However, there is another way of reading this. This will be pointed out later below in the section on natural and collective ("herd") immunity.

For now, let us look at Table 9 in order to give us an idea as to what is happening at the global level.

TABLE 9: Global Overview of Total Cases, % Infected and % Recovered

WORLD TOTAL CASES	WORLD TOTAL POPULATION	% OF THE INFECTED	TOTAL RECOVERIES	% OF RECOVERED FROM TOTAL INFECTED
1,925,224	7,800,000,000	0.024682359	447,948	23.2673185

Source: https://www.worldometers.info/coronavirus/ and https://worldpopulationreview.com/ as of April 14, 2020 1:55 PM. These are also the sources for the data in Tables 7 and 8.

Tables 7, 8 and 9 support a very important point about the pandemic and give us a huge clue on how to handle the viral outbreak. First, we have a global infection rate of less than 0.4% for many countries. And within this very narrow range of human infection, we have significant rates of recovery, which further reduce the significance of the total number of infections.

In this context, we can introduce the concept of net infections. Those who get infected do not necessarily die. They recover. Under this concept of net infections, the real infection rate becomes significantly smaller.

For the world as a whole, this would be calculated through this formula: (Total cases - Recoveries) = Net infection rate. Concretely, from Table 9: 1,925,224 (total cases) – 447,948 (recoveries) = 1,477,276 (net infection rate).

From this, we can derive an even more important statistic, and this is Net Infection per Capita which can be calculated as follows: (Total cases – recoveries) ÷ total world population times (x) 100 or Net Infection ÷ world population.

Concretely this would be: 1,477,276 ÷7,800,000,000 = 0.000189394 (rounded off) global infections per capita. Multiplying this by 100 will give us net infection of 0.0189394%, instead of the original 0.0002468 or 0.02468%.

The original infection rate is 1,925,224 (see Table 9) ÷ the population of the world x 100 = 0.02468%. The original infection rate is 32.25% higher than the real infection rate.

Natural Immunity and (Collective) Herd Immunity

From a certain perspective, **all the Tables above point to one thing: natural immunity**. This natural immunity determines the total cases of infection, the total cases recovered, the Case Fatality Rate (CFR) or death rate, the infections per capita and so on.

Of course, the virus is there to start with. Humans have a natural defense system against the virus. This is natural immunity. And when this natural immunity in a person becomes a collective phenomenon, it is called collective ("herd") immunity.

Currently, collective immunity is the only way to take the steam off the pandemic and slow it down. Mainstream media is finally starting to appreciate this vital reality, and is slowly moving away from focusing one-sidedly on the number of infections and death.[9]

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[9] Here are some links that now cover the immunity angle:
https://www.theguardian.com/commentisfree/2020/apr/10/heres-how-body-gains-immunity-coronavirus;
https://www.businesstoday.in/latest/trends/herd-immunity-homoepathy-not-lockdown-best-to-fight-coronavirus-rajiv-

News outlets that emphasize the dramatic surge in infections and deaths resulting from the infection are not helping humanity. Such figures as we have seen above and will see in greater detail below, are not accurate. When they do this, they disenfranchise people all over the world. They divert people's attention to their own natural power to withstand the virus. Instead they breed fear which in turn, increases susceptibility to disease in people.

This is now the proper place to take another read of the high death rates for the Philippines once people are infected. Table 7 shows that Filipinos have a very low per capita infection rate. But once they are infected, Table 8 seems to say that there is a high degree of probability that most of the infected will die.

For us, this indicates that those getting infected and dying really have a very weak immune system. This infection is aggravated by the lack of hospital facilities and services in the Philippines. This is an interesting phenomenon in itself but will not be subject to further elaboration in the context of this Briefing Paper.

But the COVID-19 lesson here is that, at least in the Philippine context, once someone is truly infected (not a false positive), that person should then receive immediate maximal care and attention to increase the chances of survival. This also necessitates the rapid improvement of hospitals, clinics, rural health units, and other health services infrastructure in order to minimize the deaths from COVID-19.

Integral Approach to Pandemic Prevention and Management

What Table 6 and 7 indicate for us is a new, more holistic and integral approach to address the COVID-19 pandemic. This scientific approach is telling us that, while there are indeed pathogens like the virus to be aware and concerned of, there is also the other part, the human and collective immunity to the pathogenic virus. Pathogens can only make "progress" if their host, the human body, is weak and vulnerable to attack.

It is this integral theory of disease that is the foundation of the new approach that our team is calling the **Precision Quarantine and Immunity or PQI approach**. We must be precise in how we build up our immunity, individually and collectively, and, at the same time, practice selective quarantine measures and sanitation to lessen the infection process of the virus. In short, when the virus manages to pass through the defense of our quarantine measures, the next and most potent line of defense is the strength of our own immune system.

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bajaj/story/400768.html; https://www.business-standard.com/article/economy-policy/we-have-to-achieve-herd-immunity-says-india-s-leading-epidemiologist-120041100923_1.html; https://www.theguardian.com/lifeandstyle/2020/mar/08/how-to-boost-your-immune-system-to-avoid-colds-and-coronav; https://www.theguardian.com/commentisfree/2020/mar/03/fear-about-the-coronavirus-is-normal-but-dont-let-the-fear-control-you; https://globalnews.ca/news/6807557/coronavirus-herd-immunity/; https://globalnews.ca/news/6802755/coronavirus-covid-19-young-people-herd-immunity/

This second to the last sentence can lead to a misinterpretation of what we are saying. Social distancing in total lockdown is very different from social distancing in a PQI context. Not all immune systems are created equal. Some are robust. Others are weak. We need to install some form of societal response that can gradually build up the immunity of those who are physiologically weak. And some form of graduated relaxation of social distancing will help in this process.

We will elaborate more on the **Precision Quarantine and Immunity or PQI approach** below, after we look at the global experience on both the spread and containment of the virus (quarantine aspect of the approach) and see how nations are beginning to build their collective inner resistance (herd immunity) to the virus.

PART II - THE GLOBAL EXPERIENCE

The Philippine experience is not unique when compared with what is being learned globally. It is almost like a fractal[10] of what is happening globally.

To get a sense of the global developments, let us look at the relevant quotes that one finds among scientists, including experts on pandemics, diseases, viruses and other related disciplines.

Strategic Significance of Focusing on Growth Rates of Infection, Not in the Daily Increase in New Cases of Infections

Dr. Michael Levitt is a biophysicist with the globally renowned Stanford University and recipient of the Nobel Prize. The *Los Angeles Times* reported an interview with him recently which states:

"Michael Levitt began analyzing the number of COVID-19 cases worldwide in January and correctly calculated that China would get through the worst of its coronavirus outbreak long before many health experts had predicted…Now he foresees a similar outcome in the United States and the rest of the world…'What we need is to control the panic,' he said. In the grand scheme, 'we're going to be fine'.[11]

What is interesting is that he focused his attention not on the number of new cases that were being reported on a daily basis. Instead he looked at the rate of growth of these new cases. And from this trajectory, he made his now famous prediction that China was going to experience much lesser outbreaks than in the past.[12]

If this argument looks familiar, it is because this is exactly the entire point of Table 2, Figure 2, Table 3 and Figure 3 above. The Philippine experience is

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[10] Fractal, in this context, is a part that has the same pattern as the whole.

[11] https://www.latimes.com/science/story/2020-03-22/coronavirus-outbreak-nobel-laureate.

[12] *Ibid.*

clearly showing a slowing down of the rate of growth of new cases as well as the rate of growth of deaths (CFR).

For the record, the Los Angeles Times article wrote: "Levitt told the China Daily News that the virus' rate of growth had peaked. He predicted that the total number of confirmed COVID-19 cases in China would end up around 80,000, with about 3,250 deaths…This forecast turned out to be remarkably accurate: As of March 16, China had counted a total of 80,298 cases and 3,245 deaths — in a nation of nearly 1.4 billion people where roughly 10 million die every year."[13]

Other highly qualified scientists are more direct than Dr. Levitt.

"The Milan microbiologist Maria Rita Gismondo calls on the Italian government to stop communicating the **daily number of 'corona positives' as these figures are 'fake' and put the population in unnecessary panic**. The number of test-positives depends very much on the type and number of tests and says nothing about the state of health..." [14] [Emphasis added.]

"German researcher Dr. Richard Capek argues in a quantitative analysis that the 'Corona epidemic' is in fact an '**epidemic of tests'**. Capek shows that while the number of tests has increased exponentially, the proportion of infections has remained stable and mortality has decreased, which speaks against an exponential spread of the virus itself. "[15] [Emphasis added.]

The German Network for Evidence-Based Medicine (EbM) is not happy at all with the way media reports on the pandemic. This is a very important criticism because this network has 1000 member scientists and doctors.

'The media coverage does not in any way take into account the criteria of evidence-based risk communication that we have demanded…The presentation of raw data without reference to other causes of death leads to an overestimation of the risk'.[16]

Why Panic When Deaths due to Pneumonia and Influenza Are Much Higher

Dr. Pablo Goldschmidt received his doctorate in molecular pharmacology at the prestigious Pierre and Marie Curie University in Paris. He is knowledgeable in related disciplines including virology and molecular biology. He has also obtained diplomas in pharmacokinetics, clinical pharmacology, neuro-psychopharmacology, and antimicrobial pharmacology. He is a volunteer at the WHO where he helps with humanitarian missions in several African countries.

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[13] *Ibid.*

[14] https://swprs.org/a-swiss-doctor-on-covid-19/ (29 March 2020)

[15] https://swprs.org/a-swiss-doctor-on-covid-19/ (27 March 2020)

[16] https://swprs.org/a-swiss-doctor-on-covid-19/ (27 March 2020)

This is what Dr. Pablo Goldschmidt has to say.

> "Respiratory viral conditions are numerous and are caused by several viral families and species, among which the respiratory syncytial virus (especially in infants), influenza (influenza), human meta-pneumoviruses, adenoviruses, rhinoviruses, and various coronaviruses, already described years ago. It is striking that earlier this year global health alerts have been triggered as a result of infections by a coronavirus detected in China, COVID-19, knowing that each year there are 3 million newborns who die in the world of pneumonia and 50,000 adults in the United States for the same cause, without alarms being issued."
>
> Our planet is the victim of a new sociological phenomenon, **scientific-media harassment** , triggered by experts only on the basis of laboratory molecular diagnostic analysis results . . . without being confronted from a critical point of view."[17] [Emphasis in the original.]

Again, this **supports the perspective of this Briefing Paper as found in Table 4 above** and its related discussion. The Philippines is panicking when the historical figures for flu and pneumonia are way higher than for COVID-19.

Questions Connected to Tests

The issue of tests continues to dominate the scientific debate.

"The latest data from the German Robert Koch Institute show that the increase in test- positive persons is proportional to the increase in the number of tests, i.e. in percentage terms it remains roughly the same. This may indicate that the increase in the number of cases is mainly due to an increase in the number of tests, and not due to an ongoing epidemic. …" [18]

A preliminary study by researchers at Stanford University showed that 20 to 25% of Covid19-positive patients tested additionally positive for other influenza or cold viruses..."[19]

"Italian immunology professor Sergio Romagnani from the University of Florence comes to the conclusion in a study on 3000 people that 50 to 75% of the test-

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[17] "Coronavirus panic unjustified" at https://www.clarin.com/buena-vida/coronavirus-panico-injustificado-dice-virologo-argentino-francia_0_yVcmJ4RM.html.

[18] https://swprs.org/a-swiss-doctor-on-covid-19/ 27 March 2020

[19] https://swprs.org/a-swiss-doctor-on-covid-19/ (27 March 2020)

positive people of all ages remain completely symptom-free – significantly more than previously assumed."[20]

The director of the German National Health Institute (RKI) admitted that they count all test-positive deaths, irrespective of the actual cause of death, as "coronavirus deaths". The average age of the deceased is 82 years, most with serious preconditions. As in most other countries, excess mortality due Covid19 is likely to be near zero in Germany.[21]

Case Fatality Rate (CFR)

"The renowned Italian virologist Giulio Tarro argues that the mortality rate of Covid19 is below 1% even in Italy and is therefore comparable to influenza. The higher values only arise because no distinction is made between deaths with and by Covid19 and because the number of (symptom-free) infected persons is greatly underestimated.[22]

The two Stanford professors of medicine, Dr. Eran Bendavid and Dr. Jay Bhattacharya, explain that the **WHO death rate estimates of 2-4% are 'deeply flawed'.** The Palo Alto Daily Post in Silicon Valley interviewed both Dr. Bendavid and Dr. Bhattcharya. They write:

"When people were evacuated from Wuhan, China, in late January, 2,433 of the evacuees were tested on arrival, quarantined, and tested again 14 days later. Of those, 0.9% tested positive for the coronavirus, the researchers said. …. Applying the 0.9% positive rate to the population of the Wuhan area produces an estimate of 20 million people infected with the virus — and a death rate that's at least 10-fold lower than figures based on number of reported cases, they said."[23]

Interestingly the WHO admitted that: "that the death rate as a percentage of infections, rather than reported cases, would be lower"[24], further affirming the point that the two Stanford scientists are claiming.

At this point, readers are encouraged to look at the death rates of the Philippines in Table 3. The Philippine CFR, moving in the range between 0.21% to 0.95% since March 29, 2020 is way below the 2-4% estimate of the WHO. The empirical data of the Philippines confirms that judgment of both scientists that the WHO estimate is "deeply flawed"!

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[20] https://swprs.org/a-swiss-doctor-on-covid-19/ (17 March 2020

[21] https://swprs.org/a-swiss-doctor-on-covid-19/ (24 March 2020)

[22] https://swprs.org/a-swiss-doctor-on-covid-19/ (26 March 2020)

[23] https://padailypost.com/2020/04/06/stanford-experts-say-covid-19-death-estimates-may-be-too-high/

[24] *Ibid.*

German immunologist and toxicologist, Professor Stefan Hockertz, explains in a radio interview that **Covid19 is no more dangerous than influenza (the flu), but that it is simply observed much more closely.** … Professor Hockertz also notes that most so-called "corona deaths" have in fact died of other causes while also testing positive for coronaviruses. Hockertz believes that up to ten times more people than reported already had Covid19 but noticed nothing or very little.[25] (Emphasis added.)

Prof. Dr. Karin Mölling is known around the world as an expert on diagnostics, virus, and AIDS. In 2007, she received the Swiss-Award for her outstanding scientific work. In 2018 the Federal Republic of Germany awarded her its 1st Class Cross of Merit for her outstanding achievements in the field. In an interview she shared this perspective:

"This virus has led to a pandemic … **But the virus does not cause a severe illness.** (Emphasis in the original.) There is a cousin of this virus, Mers-Corona, in camels. 37 percent of the infected camels will die. There is also the Ebola virus: those who are infected have an up to 90 percent chance of dying. These orders of magnitude are not the case here! The number of infected people and the exact death rate are not entirely known. **Therefore, the death rate fluctuates, but it is low**.[26] (Emphasis added.)

The last point is directly relevant to the point we made earlier above on Table 3 and Figure 3 on CFR. The Philippine CFR is fluctuating for similar reasons, but the trend is definitely going down.

Dr. Mölling continues. "**The 2018 influenza epidemic, with 25,000 deaths, never disconcerted the press**. The clinics had to deal with an additional 60,000 patients, which was no problem in the clinics either! ….I feel what's going on right now is what we experience more or less every winter. This was particularly noticeable two years ago with influenza, the flu." (Emphasis added.)

"I believe that one actually only selectively looks at one thing here and fills it with a certain panic. You are now told every morning how many SARS-Corona 2 deaths there are. But they don't tell you how many people already are infected with influenza this winter and how many deaths it has caused. This winter, the flu is not severe, but around 80,000 are infected. You don't get these numbers at all. Something similar occurred two years ago. This is not put into the right context.[27]

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[25] https://swprs.org/a-swiss-doctor-on-covid-19/ (25 Mar 2020)

[26] https://www.anti-empire.com/german-virologist-of-international-renown-warns-government-lockdowns-are-a-horrible-mistake-will-make-crisis-worse/

[27] *Ibid*.

The context is: the large flu deaths did not push governments to institute lockdown measures, but the currently much smaller COVID-19 deaths have led to massive panic and lockdowns.

Still on the issue of the CFR of COVID-19, Dr. Yannis Roussel and his research team from different scientific research institutes in France, conducted a peer-reviewed study on Coronavirus mortality for the government of France. They published their study with the title, "SARS-CoV-2: fear versus data", at the *International Journal of Antimicrobial Agents.* It is a "Journal Pre-Proof" version of the study.

This study is significant because it is based on existing data instead of educated estimates.

In the Abstract of the article, their team concluded the following:

"SARS-CoV-2, the novel coronavirus from China, is spreading around the world, causing a **huge reaction despite its current low incidence outside China and the Far East**. Four common coronaviruses are in current circulation and cause millions of cases worldwide. This article compares the incidence and mortality rates of these four common coronaviruses with those of SARS-COV-2 in Organisation for Economic Co-operation and Development countries. **It is concluded that the problem of SARS-CoV-2 is probably being overestimated, as 2.6 million people die of respiratory infections each year compared with less than 4,000 deaths for SARS- CoV-2 at the time of writing.**[28] (Emphasis added.)

In an article entitled, "Corona: an epidemic of mass panic", published on 21 March 2020, Dr. Peter Goetzche wrote that the "WHO estimates that an influenza season kills about 500,000 people, or about 50 times more than those who have died so far during more than 3 months of the Coronavirus epidemic.[29]

Dr. Goetzche is Professor of Clinical Research Design and Analysis at the University of Copenhagen and founder of the famous Cochrane Medical Collaboration. He has written several books on corruption in the field of medicine and the power of big pharmaceutical companies.

He does not have much patience over the hype of COVID-191's virulence. He has been cited as saying the COVID-19 is '**an epidemic of mass panic' and 'logic was one of the first victims.'**[30] (Emphasis added.)

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[28] Yanis Roussel , Audrey Giraud-Gatineau, Marie-Therese Jimeno, Jean-Marc Rolain , Christine Zandotti , Philippe Colson , Didier Raoult , SARS-CoV-2: fear versus data, *International Journal of Antimicrobial Agents* (2020), doi: https://doi.org/10.1016/j.ijantimicag.2020.105947

[29] https://www.deadlymedicines.dk/corona-an-epidemic-of-mass-panic/

[30] https://swprs.org/a-swiss-doctor-on-covid-19/ (23 March 2020)

"In a new fact sheet, the World Health Organization WHO reports that Covid-19 is in fact spreading slower, not faster, than influenza by a factor of about 50%. Moreover, pre-symptomatic transmission appears to be much lower with Covid-19 than with influenza."[31]

According to Italian Professor Walter Ricciardi, "**only 12% of death certificates have shown a direct causality from coronavirus**", whereas in public reports "all the people who die in hospitals with the coronavirus are deemed to be dying of the coronavirus".[32] (Emphasis added.)

Lockdown Blues

The Israeli newspaper recently interviewed former chief of the Health Ministry of Israel, Prof. Yoram Lass. The interviewer reported, in an article called, "**Lockdown Lunacy**" that Lass "says governments can't halt viruses and the lockdown will kill more people from depression than the virus…Prof. Lass feels that it is wrong to shut down the entire country because of a virus that is ultimately less of a killer than the flu."[33][Emphasis added.]

Professor Sucharit Bhakdi, a world renowned expert in medical microbiology, says blaming the new coronavirus alone for deaths is "wrong" and "dangerously misleading", as there are other more important factors at play, notably pre-existing health conditions and poor air quality in Chinese and Northern Italian cities.

Professor Bhakdi describes the currently discussed or imposed measures as "grotesque", "useless", "self-destructive" and a "collective suicide" that will shorten the lifespan of the elderly and should not be accepted by society.[34]

With all these issues connected with tests and measurements and misleading statistics, it is therefore not surprising that the President of the World Doctors Federation, Frank Ulrich Montgomery, argues that lockdown measures as in Italy are "unreasonable" and "counterproductive" and should be reversed.[35]

Precision Quarantine and Immunity (PQI) Approach – A Bit of Science

What is to be done then? This section is provides an overview of the scientific foundations for some of our key recommendations that will be found below.

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[31] https://swprs.org/a-swiss-doctor-on-covid-19/ (23 March 20)
[32] https://swprs.org/a-swiss-doctor-on-covid-19/ (22 March 2020)

[33] https://en.globes.co.il/en/article-lockdown-lunacy-1001322696
[34] https://swprs.org/a-swiss-doctor-on-covid-19/ (21 March 2020)

[35] https://swprs.org/a-swiss-doctor-on-covid-19/ (23 March 2020)

Given these perspectives, it is therefore not surprising that epidemiologist Dr. Kurt Wittowski said in a recent interview that the COVID-19 virus could be 'exterminated' if lockdowns around the world were lifted and that focus should be on the most vulnerable in society.[36]

Wittowski comments are some of the most discussed contrarian views today in the Internet. Wittowski remarks cannot be dismissed outright because he is one of the pillars of epidemiology in the US. For 20 years, Wittkowski headed the Department of Biostatistics, Epidemiology, and Research Design at the Rockefeller University in New York City. In addition, as will be seen below, there is convergence with his views by some top epidemiologists in the world.

He recommends an approach similar to what is being proposed in this Briefing Paper (**see discussion in Philippine Experience above and below**):

> 'With all respiratory diseases, the only thing that stops the disease is herd immunity. About 80% of the people need to have had contact with the virus, and the majority of them won't even have recognized that they were infected, or they had very, very mild symptoms, especially if they are children. So, it's very important to keep the schools open and kids mingling to spread the virus to get herd immunity as fast as possible, and then the elderly people, who should be separated, and the nursing homes should be closed during that time, can come back and meet their children and grandchildren after about 4 weeks when the virus has been exterminated…'[37]

In a very important interview by Ratical with Dr. Wittkowski entitled "Perspectives on the Pandemic II: A Conversation with Dr. Knut Wittkowski", the scientist gave a brief by concise scientific description of how herd immunity develops.

> "If 80% of people have had contact with the virus and are therefore immune and that typically **that contact is just a form of immunization.** So there is no disease, there's nothing happening and still there is immunity. If 80% of people are immune and somebody has a virus and is infectious, it will be very difficult for that infectious person to find somebody who's still susceptible. Not immune. And therefore, this person will not infect anybody else and therefore we won't see the disease spreading. That is herd immunity."[38] [Emphasis added.]

Dr. Wittkowski is not alone. He has independent support from Dr. Andrew Tegnell. This matters a lot because Dr. Tegnell is taking the lead in Sweden's efforts to

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[36] https://www.thecollegefix.com/epidemiologist-coronavirus-could-be-exterminated-if-lockdowns-were-lifted/

[37] *Ibid.*

[38] https://ratical.org/PerspectivesOnPandemic-II.html

contain the virus **without** resorting to full-scale lockdown. Dr. Tegnell has been State Epidemiologist of the Public Health Agency of Sweden since 2013 in the control of infectious diseases for many years.

Christian Stickler, journalist of *Zeit Online*, interviewed Dr. Tegnell and summarized the views of the latter.

"The Swedish way can be epidemiologically reduced to two basic rules. Older people or people with previous health problems should be isolated as much as possible. So no visits to children or grandchildren, no journeys by public transport, if possible no shopping. That is the one rule. The other is: Anyone with symptoms should stay at home immediately, even with the slightest cough…If you follow these **two rules**, you don't need any further measures, the effect of which is only very marginal anyway,' Tegnell repeats".[39] [Emphasis added.]

Also echoing Dr. Kurt Wittkowski's comments is Yoram Lass, the former Health Minister of Israel and whose views we saw above. He said "**China … stopped the virus…because of natural immunity**, which they've forgotten to talk about. What stopped the swine flu pandemic and what generally stops viruses? **Whoever thinks that the government ends viruses is completely wrong**. What really happens? The virus, which nobody can stop, spreads throughout the population and then the population, not those at risk, [is] exposed to the virus and simultaneously **the body creates antibodies to shut down and prevent the disease.** "[40]

Nobel Laureate Dr. Michael Levitt, Dr. Pablo Goldschmidt, Dr. Kurt Wittkowski, Dr. Andrew Tegnell, Prof. Lass, and others are not voices crying in the wilderness. They are not alone. Our research team has uncovered over three dozen trained experts and prominent scientists who share similar views.

Before transition to a solution based both on the Philippine and global experience, we would like to point the attention of readers to the Letter of Dr. Prof. Sucharit Bhakdi to German Chancellor, Angela Merkel. The full letter is found in Appendix A.

This letter is highly significant because it summarizes, in very lucid terms, many of the issues pointed out above. It distills the issues into a powerful expression pointing to the necessity of a new approach.

Instead of continued lockdowns, we can build upon existing gains and refine it with a more nuanced approach that we will detail in the next section.

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[39] https://www.zeit.de/politik/ausland/2020-03/coronavirus-schweden-stockholm-oeffentliches-leben/komplettansicht

[40] https://en.globes.co.il/en/article-lockdown-lunacy-1001322696

Precision Quarantine and Immunity (PQI) approach.

Based on the updated scientific understanding of the virus and the experience of nations, we can promulgate **seven basic principles** that would enable you, Mr. President, your team and concerned citizens to save lives and regenerate our badly damaged society especially our economy,

The seven principles of **PQI** are based on the medical understanding that the gravity of a pandemic depends on: a) the virulence of the pathogen; and b) the prevailing strength of the immune system of countries. The virus spreads faster when the immune systems of people are weak and/or compromised by pre-existing illnesses (Italy and Spain are the prime examples of this).

These seven principles have been gathered from the on-going experience of nations in dealing with the COVID-19 pandemic.

The seven principles of **PQI** are:

1. Protect risk groups especially the elderly.
2. Self-isolate oneself immediately if one has cough, fever, or any symptom of illness.
3. Re-open schools for children to hasten achievement of herd immunity.
4. Allow teenagers and the working population, in the various institutions, to continue their normal lives, provided they follow safe distancing and hygienic practices.
5. Re-open regions, provinces, cities, and towns on the basis of their low risk densities.
6. Instruct all age groups on how to strengthen their immune system.
7. Install a communication, monitoring and enforcement system, to ensure that this new approach works. This would include occasional randomized antibody testing, using the most accurate tests, to determine progress towards herd immunity.

Implementation of Principles

What we will describe below for each principle will be general perspectives. These descriptions are not meant to be exhaustive treatments of each principle. Rather the general descriptions are there to familiarize the reader with the nature of the principles.

However, once these principles are accepted and become state policy, we can easily develop the detailed protocols in partnership with different sectors of society, especially the Department of Health.

Principle 1. Protect the Risk Groups Especially the Elderly

As has been the experience of many countries, especially Spain and Italy, the elderly face the greatest risk from COVID-19.

Therefore, great efforts should be done to find the elderly, especially those with illness. After locating those who have some form of illness, we recommend isolating them with a caregiver. This will protect them from the virus. They will be isolated in places where they can be properly cared for.

As for the healthy elderly people, they should be encouraged to take shopping trips only if necessary.

They should not co-mingle with young children who may be carriers of the virus but who are not vulnerable to them because of their strong immune system. However, the healthy ones can be in a social setting (with proper social distancing and other sanitary measures) with their loved ones.

For both elderly groups, they will need to practice all the sanitary measures like social distancing, washing of hands, and so on.

Those with illness will be considered PUIs or Persons Under Investigation. And their health will continue to be monitored.

The caregiver or hospital staff should have the proper personal protective equipment when caring for the sick elderly.

Principle 2. Self-Isolate Oneself Immediately Upon Having Symptom of illness

The core element of this principle is that all self-isolate themselves if they have the slightest symptom of illness, whether this be coughing, fever, or other symptoms of non-wellbeing.

The period of waiting is four weeks. If one is infected, the height of infection is around 14 days. And during this process, a lot of antibodies are being created by the immune system of our body. If all is well, then one can go out again after another 14 days.

If the symptom worsens, one should immediately seek medical help.

Principle 3. Re-open schools for children to hasten herd immunity.

Schools for children should be re-opened and children should be allowed to go back to school. As a general principle, children have stronger immunity than adults. And

they have a high degree of resistance to a viral attack. As Dr. Tegnell pointed out above, children should be allowed to infect each other. In this way, herd immunity develops faster.

Principle 4. Allow Teenagers and the Working Population to Live Normal Lives, but with Guidelines.

As for the rest of the population, their lives should be normalized. Workers should be able to go back to work in all sectors of society: government, business, and civil society. The young generally still have good immunity unless they have compromised it with immunity-depleting habits (See next principle). And the working population is generally healthy and have immune systems that have made them survive pneumonia and the flu.

The caveat here, however, is that this segment of the population should continue to practice safe distancing and sanitary measures (washing of hands, masks, and so on), no matter where they are. They should not pack themselves tightly in mass transport systems, in offices, in restaurants, in airports, in planes and so on.

Principle 5. Re-open regions, provinces, cities, towns, barangays (villages) and institutions based on their low risk densities.

The country needs to have a geographic map based on infection rates. Regions, provinces, cities, and towns with no or very low infection rates should be re-opened while maintaining safe distancing in collective places and proper hygienic measures.

This geographic risk-based map can also include barangays or sub-areas in towns and cities that have high concentration of infected cases. These maps should then be communicated, using all means available, so citizens will know where the currently safe or high-risk areas are located.

With these low infection areas, ensure that all the other principles remain operative.

Principle 6. Program to Strengthen Immune System

Currently, the only way to stop this virus is a strong immune system. This is clear from the statements of the scientists quoted above.

Therefore, it is important to educate all age groups on how to strengthen their immune system. At minimum this should include the following elements:

- Adequate sleep and rest
- Healthy high antioxidant foods preferably organic food if available
- Staying away from polluted areas and avoidance of toxins
- Exposure to natural places and fresh air
- Adequate and appropriate exposure to sunlight

- Exercise
- Adequate management of stress (especially stressors like fear)
- Prayer and Meditation
- Hygienic Measures (washing of hands, etc.)
- Greater understanding of the immune system itself and how it works

Principle 7. Install a communication, monitoring and enforcement system.

Old Habits die slow. And new habits take some time to take root. Therefore, there should be some form of structure to support the inner and institutional changes required to deal with the virus. Thus, an adequate communication, monitoring, and enforcement system must be set in place.

Constant communications from government are important so that all citizens know what their responsibilities are, as well as the responsibilities and policies of government. Government, most of all must be transparent so people will not be left out in the dark.

Government should also make an effort to issue uniform guidelines that do not vary from one Local Government Unit (LGU) to another, or one barangay (village) to another.

But the communication needs to be two-way. A system must be set up where anybody can inform the appropriate government agency regarding issues arising in the implementation of Precision Quarantine and Immunity Approach.

Monitoring and Enforcement System, while clear, should also be flexible. No one can totally determine how all the different kinds of situations will play out all over the country.

Monitoring can take the form of large-scale antibody testing and appropriate RT-PCR testing (See reference above to recent results of researches by scientists and medical doctors at Stanford University). The antibody tests, if properly used and timed, can help gauge whether the country is moving towards herd immunity or not. The RT-PCR test (if corrected for false positives and false negatives) will give an idea as to whether or not the rate of infections is still rising.

The testing will be done based on scientific randomized sampling, not a universal testing process. Randomized tests are faster and cheaper and, if done properly, can generally represent an accurate picture of what is going on.

In this approach, everyone monitors and enforces: in the work setting, the family setting, the recreational setting and so on.

As a last resort, there will be police reinforcement when clearly needed to stop public health violations. Doctors and other authorized medically trained personnel

should also play a special role in this process by mediating between the police and the citizens.

This latter should not be difficult to do as lockdowns have already created a system for doing enforcement. They just need to be tweaked under the new approach.

CONCLUSION

The intent was to mobilize current global experience and scientific understanding of that experience so that new and more precise approaches can be tried.

Indeed, Mr. President, **you can save both lives and our society**, especially its economy, its political stability, and our culture of freedom from unnecessary intrusions by whatever institutions, which could result to hardships and suffering by millions of people.

APPENDIX A

Open Letter to German Chancellor Dr. Angela Merkel
From Professor Dr. Sucharit Bhakdi
26 March 2020

From: Dr. Sucharit Bhakdi, Professor Emeritus of Medical Microbiology at the Johannes Gutenberg University Mainz,

To: Dr. Angela Merkel, Chancellor of Germany

Dear Chancellor,

As Emeritus of the Johannes-Gutenberg-University in Mainz and longtime director of the Institute for Medical Microbiology, I feel obliged to critically question the far-reaching restrictions on public life that we are currently taking on ourselves in order to reduce the spread of the COVID-19 virus.

It is expressly not my intention to play down the dangers of the virus or to spread a political message. However, I feel it is my duty to make a scientific contribution to putting the current data and facts into perspective – and, in addition, to ask questions that are in danger of being lost in the heated debate.

The reason for my concern lies above all in the truly unforeseeable socio-economic con- sequences of the drastic containment measures which are currently being applied in large parts of Europe and which are also already being practiced on a large scale in Germany.

My wish is to discuss critically – and with the necessary foresight – the advantages and disadvantages of restricting public life and the resulting long-term effects. To this end, I am confronted with five questions which have not been answered sufficiently so far, but which are indispensable for a balanced analysis.

I would like to ask you to comment quickly and, at the same time, appeal to the Federal Government to develop strategies that effectively protect risk groups without restricting public life across the board and sow the seeds for an even more intensive polarization of society than is already taking place.

With the utmost respect,
Prof. Emeritus. Dr. med. Sucharit Bhakdi

1. Statistics

In infectiology [epidemiology] – founded by Robert Koch himself – a traditional distinction is made between infection and disease. An illness requires a clinical manifestation. [1] Therefore, only patients with symptoms such as fever or cough should be included in the statistics as new cases. In other words, a new infection – as measured by the COVID-19 test – does not necessarily mean that we are dealing with a newly ill patient who needs a hospital bed.

However, it is currently assumed that five percent of all infected people become seriously ill and require ventilation. Projections based on this estimate suggest that the healthcare system could be overburdened.

My question: Did the projections make a distinction between symptom-free infected people and actual, sick patients – i.e. people who develop symptoms?

2. Dangerousness [Virulence]

A number of corona viruses have been circulating for a long time – largely unnoticed by the media. [2] If it should turn out that the COVID-19 virus should not be ascribed a significantly higher risk potential than the already circulating corona viruses, all counter- measures would obviously become unnecessary.

The internationally recognized International Journal of Antimicrobial Agents will soon publish a paper that addresses exactly this question. Preliminary results of the study can already be seen today and lead to the conclusion that the new virus is NOT different from traditional corona viruses in terms of dangerousness [virulence]. The authors express this in the title of their paper "SARS-CoV-2: Fear versus Data". [3]

My question: How does the current workload of intensive care units with patients with diagnosed COVID-19 compare to other corona virus infections, and to what extent will this data be taken into account in further decision-making by the federal government? In addition: Has the above study been taken into account in the planning so far? Here too, of course, "diagnosed" means that the virus plays a decisive role in the patient's state of illness, and not that previous illnesses play a greater role.

3. Dissemination

According to a report in the *Süddeutsche Zeitung*, not even the much-cited Robert Koch Institute knows exactly how much is tested for COVID-19. It is a fact, however, that a rapid increase in the number of cases has recently been observed in Germany as the volume [number] of tests increases. [4]

It is therefore reasonable to suspect that the virus has already spread unnoticed in the healthy population. This would have two consequences: firstly, it would mean that the official death rate – on 26 March 2020, for example, there were 206 deaths from around 37,300 infections, or 0.55 percent [5] – is too high; and secondly, it would mean that it would hardly be possible to prevent the virus from spreading in the healthy population.

My question: Has there already been a random sample of the healthy general population to validate the real spread of the virus, or is this planned in the near future?

4. Mortality

The fear of a rise in the death rate in Germany (currently 0.55 percent) is currently the subject of particularly intense media attention. Many people are worried that it could shoot up like in Italy (10 percent) and Spain (7 percent) if action is not taken in time.

At the same time, the mistake is being made worldwide to report virus-related deaths as soon as it is established that the virus was present at the time of death – regardless of other factors.

This violates a basic principle of infectiology [epidemiology]: only when it is certain that an agent has played a significant role in the disease or death may a diagnosis be made. The Association of the Scientific Medical Societies of Germany expressly writes in its guidelines: „In addition to the cause of death, a causal chain must be stated, with the corresponding underlying disease in third place on the death certificate. Occasionally, four-linked causal chains must also be stated.“ [6]

At present there is no official information on whether, at least in retrospect, more critical analyses of medical records have been undertaken to determine how many deaths were actually caused by the virus.

My question: Has Germany simply followed this trend of a COVID-19 general suspicion? And: is it intended to continue this categorisation uncritically as in other countries? How, then, is a distinction to be made between genuine corona-related deaths and accidental virus presence at the time of death?

5. Comparability

The appalling situation in Italy is repeatedly used as a reference scenario. However, the true role of the virus in that country is completely unclear for many reasons – not only because points 3 and 4 above also apply here, but also because exceptional external factors exist which make these regions particularly vulnerable.

One of these factors is the increased air pollution in the north of Italy. According to WHO estimates, this situation, even without the virus, led to over 8,000 additional deaths per year in 2006 in the 13 largest cities in Italy alone. [7] The situation has not changed significantly since then. [8] Finally, it has also been shown that air pollution greatly increases the risk of viral lung diseases in very young and elderly people. [9]

Moreover, 27.4 percent of the particularly vulnerable population in this country live with young people, and in Spain as many as 33.5 percent. In Germany, the figure is only seven percent [10]. In addition, according to Prof. Dr. Reinhard Busse, head of the Department of Management in Health Care at the TU Berlin, Germany is significantly better equipped than Italy in terms of intensive care units – by a factor of about 2.5 [11].

My question: What efforts are being made to make the population aware of these elementary differences and to make people understand that scenarios like those in Italy or Spain are not realistic here?

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Sourc: Swiss Propaganda Research (SPR) 01 April 2020**.** Dr. Bhakdi and SPR have no connection with each other.

APPENDIX B

AN OPEN LETTER TO RODRIGO R. DUTERTE
President, Republic of the Philippines

World Experience and New Scientific Findings:
Relevance for Containing COVID-19
18 April 2020

Dear Mr. President,

Given the incomplete and sketchy scientific and global information available to you then, you understandably had no real choice but to lock down the entire country in an attempt to control COVID-19 infections and deaths. Your quick and decisive action gave the nation some breathing space in the face of the unknown. However, in the meantime, new challenges have surfaced, needing to be addressed urgently.

As you acknowledged from your recent addresses to the nation, you are now caught in the middle of a **cruel choice: Saving lives or saving the economy?**

One way to express this with more elaboration is as follows. In the attempt to save lives (from an enemy that cannot be killed by bullets – your comparison), shall you continue to collapse the economy, generate mass unemployment and spawn starvation and social unrest that ironically may result in more misery and deaths than the disease itself? Shall you continue to save lives and destroy the economy in the process, including endangering government stability itself with a significant shrinkage of its tax base, among others?

You have recently mentioned (April 9) that government has only two months' worth of funds to fight the pandemic. What if, as scientists are starting to warn heads of state around the world, a **second wave** will hit the nation, a side-effect of the lockdown and flattening the curve approach? We are already beginning to witness this in China. What shall we all do then?

Mr. President, what if you can have it both ways: save Filipino lives while at the same time save Philippine society and its economy from self-imploding? Will you be open to a scientific approach that can achieve this balance?

Reason for Writing

Encouraging rapid developments in the world, especially in the field of scientific understanding and innovative societal approaches, are showing that **there can be an approach that can save lives WITHOUT necessarily destroying Philippine society and its economy** (For details, kindly see attached Briefing Paper).

Prominent mainstream scientists and experts on viral pandemics, including a Nobel Prize winner, have analyzed the global experience in controlling the viral pandemic. And they are coming up with very interesting ways of **controlling the virus without compromising the economy and society.**

Overview of the Current Philippine Experience

Current health statistics of the Philippines strongly show that there is a reason for grave concern. (All Tables and Figures cited in the overview are found in the attached Briefing Paper.)

- Even as the cumulative cases per day are increasing, the number of new cases per day in the Philippines is tending towards decline as compared with previous days. This is already being hinted at in Table 1 and Figure 1 of the attached Briefing Paper. (Table 1 and Figure 1)
- This conclusion is more clearly seen when one looks at the **growth rate of new cases per day. It is definitely declining.** (Table 2 and Figure 2)
- The Case Fatality Rate (CFR) or death rate of the Philippines is also decreasing significantly. (Table 3 and Figure 3 below)
- *Furthermore, our deaths per capita from COVID-19, is one of the lowest in the world. (Table 5 in comparison with Table 6.)*
- These results and the conclusion arising from the Figures and Tables below serve as necessary reality check to the daily figures being announced by DOH and the media. In fact, in your televised Cabinet Meeting on April 9, the Secretary of DOH acknowledged the declining figures of infection.
- The figures from DOH, which then gets press coverage, overstate the number of infections for many reasons, including the use of tests resulting in large numbers of false positives. This inaccurate test results create unnecessary panic and hysteria among our citizens. (See Briefing Paper for scientific evidence of a similar phenomenon around the world.)
- **The declining rate of new cases and low death rates (CFR) indicate that the virus behind COVID-19 is not a virulent as feared. At most it is a stronger version of the flu as scientists from all over the world are discovering.**
- A more precise elaboration of the death rate data enabled Nobel Prize winner, Dr. Michael Levitt, to successfully and accurately predict the decline of the pandemic in China. (See attached Briefing Paper.)
- The Philippines has suffered more deaths from pneumonia and flu when compared with the deaths from COVID-19 for the same period of time. (Table 4)
- Yet we never locked down our society every time there was pneumonia or flu epidemic.
- The reason for the declining growth rates is that health authorities around the world understand the huge importance of natural individual immunity and collective herd immunity in stopping the virus. (See Briefing Paper.)

- Herd immunity is on the way in many countries. This means that the collective natural immunity of people can withstand viral attack, as manifested in the huge numbers of humans who have not succumbed to COVID-19. (See Briefing Paper.)
- The lockdown and social distancing of the past weeks may have helped achieve these promising results.
- However, continued lockdown and social distancing will predispose the country to another epidemic wave of the COVID-19. (To be explained more fully below.)
- This will worsen the economic and societal impact that has already resulted in massive unemployment, decline in the GNP/GDP, and a likely increase in poverty and increasing social unrest which could result in even more deaths due to loss of livelihood, starvation, and stress

In short, Mr. President, there is really no need to extend the tight lockdown any further. Instead we can build upon existing gains you have achieved and refine it with a sister approach: **Precision Quarantine and Immunity (PQI) approach,** a scientifically more precise version of the "selective quarantine" alternative being proposed by many sectors, especially the business sectors.

Regarding lockdowns, kindly see Appendix A of Briefing Paper on the Open Letter of Prof. Dr. Sucharit Bhakdi to German Chancellor, Angelina Merkel on 26 March 2020. Dr. Bhakdi is a world-renowned scientist and expert in pandemics and is one of Germany's most cited scientists in the field of medicine.

Based on the updated scientific understanding of the virus and the experience of nations, we can promulgate **PQI's seven basic principles** that would enable you, your team and concerned citizens to save lives and regenerate our badly damaged society especially our economy,

The seven principles of **PQI** are based on the medical understanding that the gravity of a pandemic depends on: a) the virulence of the pathogen; and b) the prevailing strength of the immune system of countries. The virus spreads faster when the immune systems of people are weak and/or compromised by pre-existing illnesses. (Italy and Spain are the prime examples of this.)

We gathered these seven principles from the on-going experience of nations in dealing with the COVID-19 pandemic.

The seven principles of **Precision Quarantine and Immunity (PQI)** are:

1. Protect Risk Groups especially the elderly.
2. Self-Isolate oneself immediately if one has cough, fever or any symptom of illness.
3. Re-open schools for children to hasten achievement of herd immunity.

4. Allow teenagers and the working population, in the various institutions, to continue their normal lives, provided they follow safe distancing and hygienic practices.
5. Re-open regions, provinces, cities, towns, barangays, and institutions on the basis of their low risk densities.
6. Instruct all age groups on how to strengthen their immune system.
7. Install a communication, monitoring and enforcement system, to ensure that this new approach works. This would include occasional randomized antibody testing, using the most accurate tests, to determine progress towards herd immunity.

Kindly find attached a copy of the Briefing Paper that provides detailed support for all the conclusions and recommendations given above including the **PQI approach and its seven Principles**.

Mr. President, we now have a better scientific understanding of how to contain the not-too deadly virus after all. We all truly hope that you will decide to save both lives and the stability of Philippine society including its precious economy.

Sincerely,

(Sgd) Nicanor Perlas
Former Undersecretary-Designate,
Department of Environment and Natural Resources (2016-17)
Recipient, Alternative Nobel Prize (2003)