

Citizens versus Covid-19 initiative : a few ideas for citizens on the home front

- ★ This document is prepared for anyone that is not already working round the clock on the frontlines
- ★ It should not interfere in any way with the action of governments and authorities ; instead, it proposes ideas about what you can do in addition to what you are asked to do by them

This is only the beginning of a long fight ; However, due to exponential and cumulative effects, there is not one minute to loose

- ★ This is especially true on the front line, due to exponential growth

- <https://www.nytimes.com/2020/03/13/science/coronavirus-math-mitigation-distancing.html>
- <https://www.msri.org/workshops/917/schedules/28296>
- The following graphic shows the number of cases that can be averted for an action avoiding ONE contamination NOW, versus in 7 days



Every 3 days that are let pass do not just add to the problem : they double the number of deaths, the time to recover, the economic havoc etc ...

On the contrary, every anticipation by just 3 days divides the death toll by 2, the havoc to the economy to recover by probably a proxy of 2 etc...

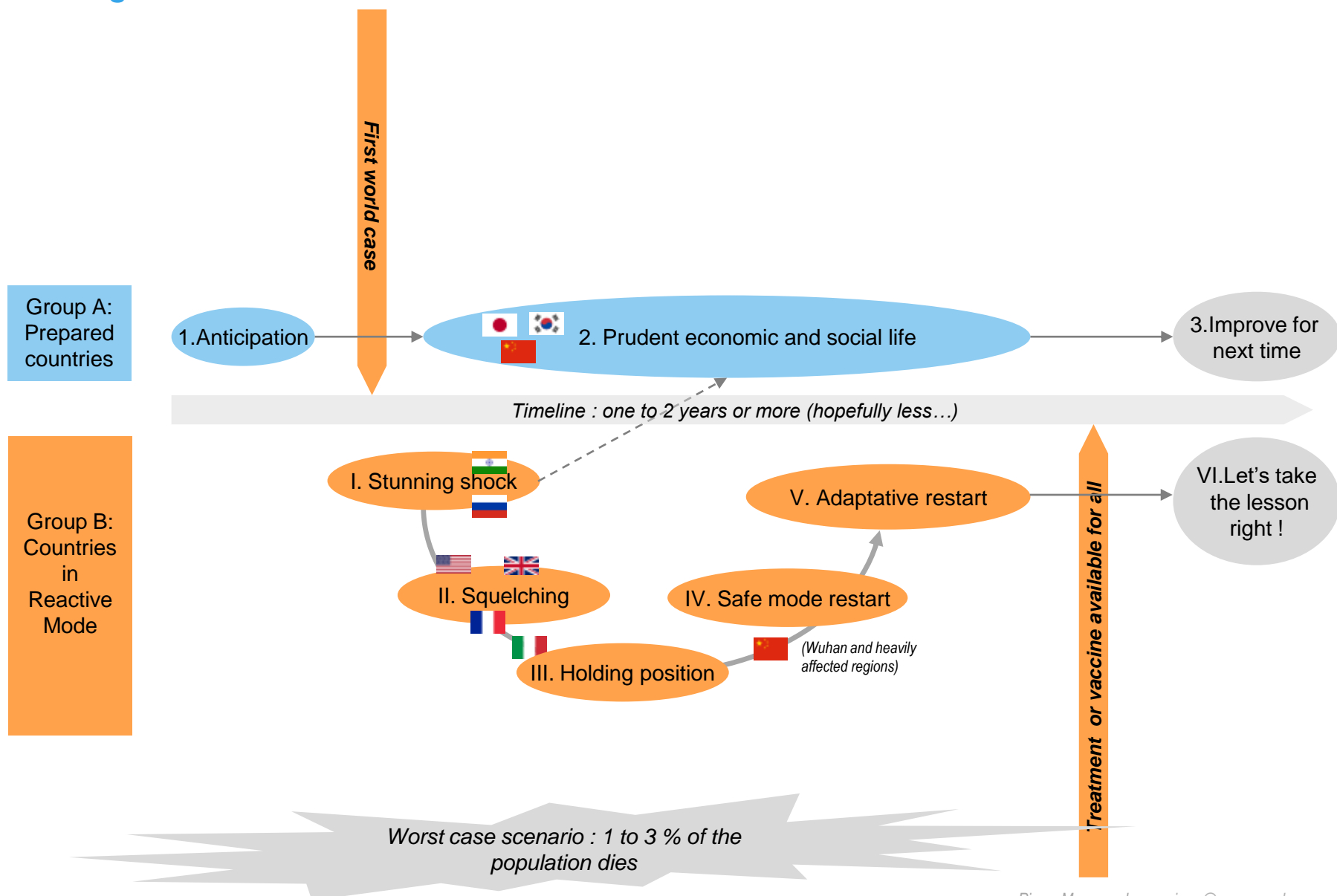
- ★ What is true for squelching a raging outbreak, is also true for adapting the economy : delays will result in a further degraded economic and social situation, which in turn will make recovery even more difficult, causing more delays etc...

Health workers, medical equipment manufacturers, governments, police and military forces are already working round the clock on the frontlines. But what can we, confined citizens, do to help ?

Battle mapping

- ★ Synopsis
- ★ A.1 – What prepared countries can do for others
- ★ B.1 – stunning shock
- ★ B.2 – Squelching the epidemic
- ★ B.3 – Holding positions
- ★ B.4 and B.5 Safe Mode restart and Adaptive restart

Synopsis : Countries are at different points down the lines of many battles to be fought



A-1 Prepared countries suffered casualties, but on a much smaller scale, and they did not have to stop all their economy for more than a month

- ★ Following recent SARS epidemics that were squelched early but nearly caused uncontrolled outbreaks, some Group A countries have prepared themselves
 - A few people have advised the western hemisphere to prepare also (M. Bill Gates for example) without being heard. This will need to be remembered when the crisis is over and it is time to learn and anticipate for the next one, so that we do not repeat the same mistakes.
- ★ When COVID-19 emerged Group A countries were prepared and their early prevention and intervention systems were not overwhelmed
 - They are still very careful as unexpected events can favor an uncontrollable outbreak – it nearly happened in Korea and can still happen anywhere in the world
- ★ What can Japanese, Korean, ... citizens do ?
 - It is a reasonable assumption to think that their governments are willing to help the rest of the world
 - However **the amount of understanding, education and cultural evolution that needs to be deployed in the western hemisphere in just a few days is overwhelming** so bottom to bottom approaches can be useful to ease and hasten the process

What citizens can do:

If your country is one or more steps ahead, (Korea, Japan, China, ...) please inventory your network of close foreign relationships, send each of them what you think will help them progress (and help them promote success around them) the fastest .

Knowing what works, knowing our contacts and their country's culture, what is the most important thing they should understand to promote chances of success, avoid failures, focus on the essential ?

Of course this can be reversed : those who know Japanese, Korean, Chinese people can contact them and ask for advise.

The same applies and works, should you be an "ordinary" citizen or a high level decision maker

B-I -Shortening the « stunning shock » period just by one day saves thousands of lives ; shortening it by ten days changes the nature of the problem to solve, with immense impact on the economy

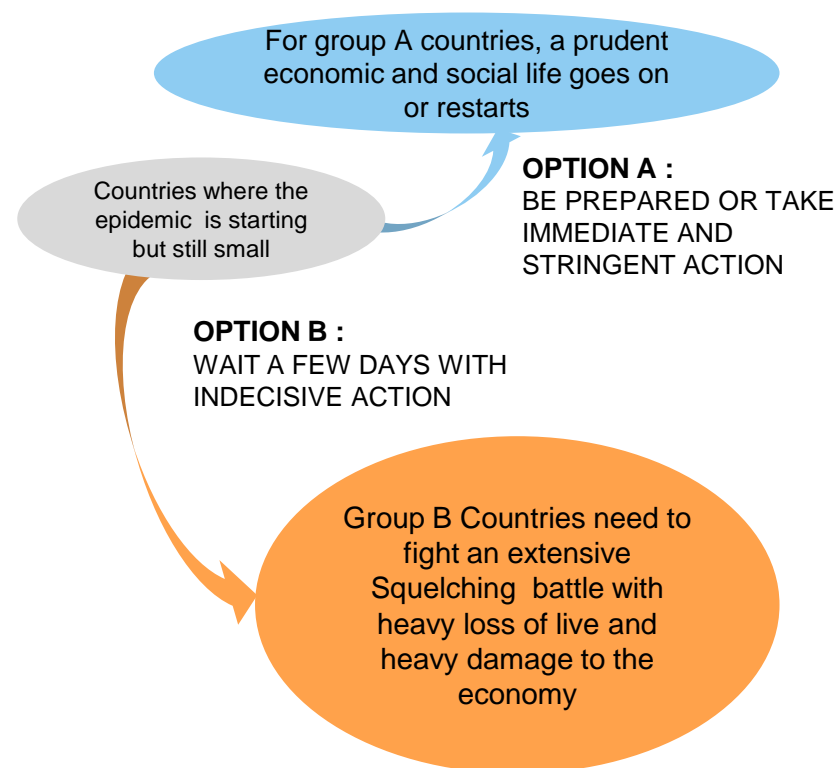
Country	Total	New	Active cases	Daily New / total cases	Active cases per million hab.
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China (*)	81 050	50	5 350	0.1%	3.7
S. Korea	8 900	100	5 880	1.1%	120
Japan	1 090	820	60	2.9%	7

India	390	60	360	15.1%	0.3
Russia	370	60	350	16.6%	2.9
Brazil	1 210	30	1 190	2.6%	6
Canada	1 390	60	1 350	4.1%	36

UK	5 680	670	5 310	11.7%	78
USA	35 750	11 540	35 180	32.3%	110
Iran	21 640	1 030	12 320	4.8%	150
Ireland	790	130	780	16.1%	160
Portugal	1 600	320	1 580	20.0%	160
France	14 460	1 598	12 310	11.1%	190
Netherlands	4 200	570	4 020	13.6%	230
Estonia	330	20	320	6.1%	240
Germany	24 710	2 350	24 360	9.5%	290
Spain	28 600	3 110	24 720	10.9%	530
Italy	59 140	5 560	46 640	9.4%	770
Switzerland	7 230	370	7 010	5.1%	810
Iceland	570	100	560	16.7%	1 650

Source : 22/03/2020 from <https://www.worldometers.info/coronavirus/#countries>
Digit in bold grey : Who report n° 61



(*) :The case of China is special : it had a major outbreak in one region, contained before spreading to the whole country. **As a result China has a lower case per habitant ratio the almost all countries in the list.** And it's pattern is both similar to group A and group B countries

B-I -Shortening the « stunning shock » (continuation)

What citizens can do:

Everything you can to shorten this period : talk to people, explain, create maximum round the clock social pressure so that :

- Governing bodies take immediate action
- Society as a whole understands quickly the threat and accepts these actions

Key messages :

- Each period of 10 days of insufficient action changes the Nature of the problem by multiplying it by 10
- And, due to the incubation period and unless compulsory and extensive testing and quarantine is organized for every detected case, the actual number of cases in the initial period of the epidemic is 10 times the number of detected cases (there probably are 100 000 to 500 000 cases in the USA today, and 3500 in Russia)

- ★ Why is it so difficult to understand the scope of the epidemic ? As observes Albert Camus in his novel *The Plague*, “Everyone knows that pestilences have a way of recurring in the world. Yet somehow we find it hard to believe in ones that crash down on our heads from a blue sky. There have been as many plagues as wars in history; yet plagues and wars always take people by surprise.”
 - The last pandemic of this lethality dates back to 1918 : no one alive today has known it ; besides it was almost concomitant with World War one, which overwhelmed it and reduced its memorial footprint
 - The last event with a comparable destructive potential in the “developed world” was world war II : less than one fifth of people living today have known it ; For all other people today’s epidemic is just inconceivable.
 - Confronted to the inconceivable, swift mental adjustment is difficult : on September 11, people seem to have been instructed not to evacuate the second tower after the crash of the first plane, and a lot stayed or even went back to their desks.
- ★ Some hope in view : Countries that are not fully prepared today may be able to act swiftly enough to avoid a catastrophe, as the world is now aware of the danger, and example to follow as well as examples not to follow are fully available

Sources and hypothesis :

- Incubation period is 3 or 6 days, during which the number has more than doubled already ; and 2/3 of cases have mild enough symptoms so that you may not report them, so only 1/3 get detected. So during the ascending phase, the actual number of cases is most probably a in proxy of 10 folds the number of detected cases, unless systematic testing has been conducted.

- On Sept 11: The Guardian, <https://www.theguardian.com/world/2001/sep/16/september11.usa3>

B-II Squelching the epidemic

- ★ There is only one method, known since the 19th century: Total confinement, with the exception of really necessary activities
 - Very early action is needed, as people need time to adjust and enter deeper and deeper into confinement progressively : it takes a few day, which in epidemics dynamics is an eternity, especially in democracies
 - Police and army deployment is necessary in all countries, as a small (but big enough to ruin the efficiency of the confinement) portion of the people will resist the confinement until they are forced to abide



The wall against Plague, built in the 18th century in Provence (South of France)

What citizens can do:

Not much, except support and promote the harshest possible confinement measures...

- ***the stricter, the shorter it will be,***
- ***Also, don't forget helping vulnerable people via phone and Internet***

B-III – Holding position implies social engineering

- ★ Past mass confinement attempts have revealed that it is difficult to hold long enough, especially if it does not yield quick results. Lassitude may lead to unrest.
- ★ Use of force is needed, but without supporting adhesion it can soon escalate to uprisings and open rebellion, totally ruining very quickly the benefits of it.
 - Especially in poor areas, where the level of scientific education is low and where exists a pre-existing feeling of being let aside / discriminated exists
 - Evacuation and relocation of densely populated areas may be to consider (for example confinement may be unbearable in the poor urban areas, where sometimes 10 people – especially illegal migrants – can live in places fit for a family)
- ★ Reasons for hope :
 - We observe in France (and probably in other counties) that the educational system had adapted astonishingly quickly to the situation, and course continue. It could be used as double level amplifiers for governing bodies
 - *To relay the message to pupil*
 - *And, once the pupils convinced, hope that they will relay the message those among themselves that are*
 - There are probably multiple other channels to be used

What citizens can do:

Anyone with social skills or position:

- ***Teachers, social workers, NGO workers***
- ***Community leaders – in the politic, religious and any other field***
- ***Social and politics research scientists and labs***

should immediately scale up their knowledge about the interaction between epidemiology and social dynamics, in ordered to be able to explain and promote efficiently the appropriate message.

History of the 18th and 19th century is an excellent field of study to this respect, as well as present successful examples (or even failures to be avoided)

They should also identify in their communities / network people in each above category, in order to create multi disciplinary Local action groups. When time comes IN A FEW DAYS or at most weeks they will be ready for institutionally coordinated action.

B-IV – Safe Mode restart and Adaptative restart

- ★ Assuming the lethality of the disease stays at a proxy of 1% for several monthes, “spread the peak” and “collective immunity” strategies will not be applicable
- ★ The economy will need to restart first in “safe mode” (relying on lightened confinement types, and focusing on the most strategic sectors only) then an adaptative solution will need to be developed to allow other sectors to develop. This will most probably rely on :
 - Mandatory Protecting equipment (Masks among other) in all high density situations (common transportation, gatherings...)
 - Long distance travel restrictions and modular confinement of infected cells (cells could be municipalities, boroughs etc...)
 - Special protection for contacts with long distance travelers (use of personal vehicle by travelers, meetings held behind protective windows, special tracking of contacts....)
 - Special IT tracking systems such as practiced in Korea / China and teams of epidemiologist to track down each case
 - Local (depending on place, activity sector company, social group...) adaptation of work procedures, culture and habits

⇒ restarting the economy will only be possible if all of the above enable to bring the resulting “R0” (average number of people infected by an infected persons) below one, even if within the smaller cells it can remain higher than one as the contaminated smaller cells can be quarantined to purge them when a burst happens
- ★ Trained epidemiologist are not very numerous today : an effort must be engaged to train a high number of people toe the basics of epidemiology so that they can perform, centrally and locally ;

What citizens can do:

Literally everyone can start learning about epidemiology, hygiene techniques applicable, main known loopholes identified in the past. And bests practices today.

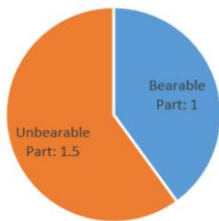
In face of a probable huge lack of trained epidemiologists, active or retired Sociologists, Biologists, Data Scientists, IT developers, Business consultants should scale up their knowledge about epidemics and identify in which of the above (or other action) they can participate to and at what level (governing bodies, companies, local authorities, companies etc...)

***They will become Emergency Epidemiologists:** each and every organization will need to audit their processes, adapt them, train and convince their staff to respect new procedures, and hopefully restart activities*

B-IV – For Economies to restart, R_0 must be in the proxy of 1 or lower (*figures here are purely ILLUSTRATIVE*)

- ★ R_0 is the average number of people an infected person will contaminate. If R_0 above one, the epidemic is in exponential growth and uncontrollable. If it is in a proxy of 1 it is controlled (like in Korea), and under 1 it dies off. R_0 depends on the disease, the climate, but also on cultural habits, population density, field of work and work procedures, mitigation measures, protective measures etc...
- ★ Please note that **figures given here are only illustrative** : only after studies have been conducted in each country, then in each socio-economic situation and in each field of human activities, can figures be established

Natural R_0 split



Adaptive restart

Complete studies and implementation

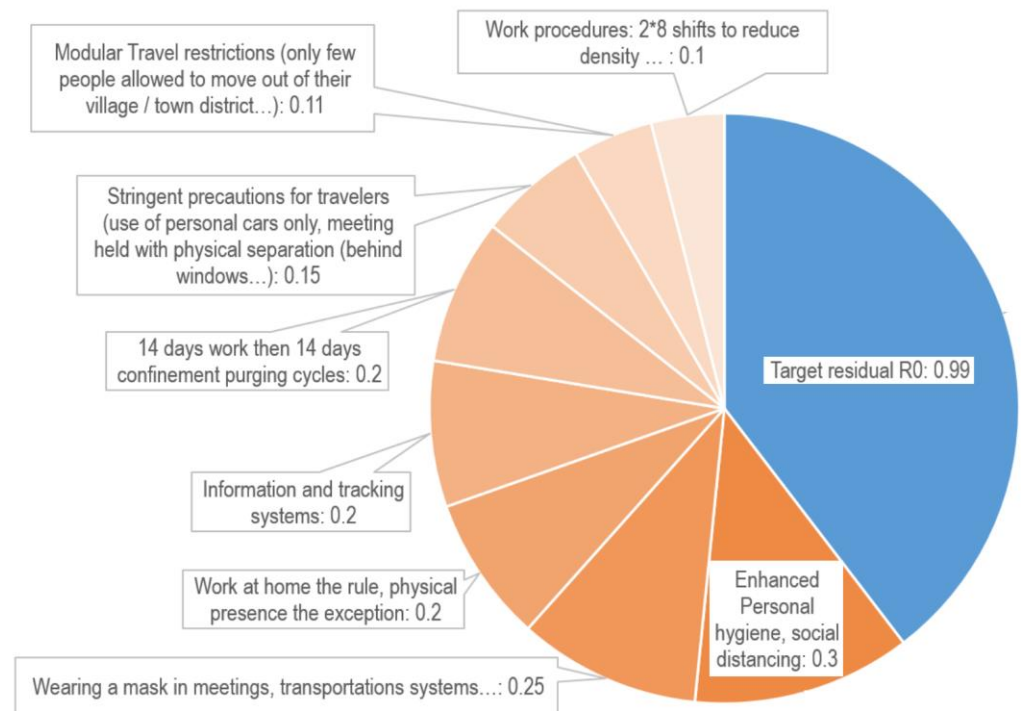
- By qualified epidemiologists lead teams at top levels, setting frames and directions
- Applied and Completed by Emergency teams in each human organisation

Please note that figures given here are only illustrative

What citizens can do:

Because study and implementation teams will be highly multi-disciplinary, prepare and ramp up your knowledge to be ready when you are called to action

Split of R_0 gains by adaptive measure



Thank your for your time and attention

