We Could Win Virus by Testing All Nation People in a short Time & Expense.

Now global massive people are facing the virus riot,Then most troublesome,but simple fact is that *we can't know who is infected or not !!.*Thereby **All People Testing** is decisive to settle it at ONCE. Also you could calculate and see the Time and Cost is comparably Small !!

*2020/06/05:Large version up was done.

If we could have tested all 100million nation people by possible time and cost ,we could win. It can **by at once** determine Negative Healthy People toward coming back business,and Positive Patients for isolating and medical treatment.<2020/05/9,10,11,15;6/5>

*Anti body tester assures past infection,however can not assure virus negative at now.

❶We Could Win Virus by Testing All Nation People in!! a short Time & Expense.

Now **All People Testing** had actually accomplished as follows.

(a)***Corona Test for 9.8 Million Wuhan Residents,300 Positive, "Now the Safest City"**, 6/3*

https://news.yahoo.co.jp/articles/f121a85e77b901d1c313211d89de14aac0678eee

Approximately 9.8 million people were tested between 4/14 and 5/ 1, and only 300 tested positive,The cost is 13.6 billion yen / 10 million people = 1360 yen/person ＝12.6$/person.

This is a historical and clear winning against the Virus In Wuhan the first attacked city!!.

*This is the 1st region where they tried All People Testing toward Virus Eradication.

How one Italian town fought coronavirus,The evidence is clear:
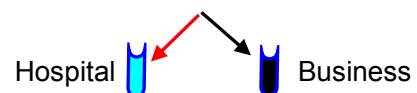
Mass testing for the virus is the key to its eradication － and to saving lives.

https://www.aljazeera.com/indepth/opinion/home-italian-town-fought-coronavirus-200326110756424.html?xif=;utm_medium=article_page&utm_campaign=read_more_links

(b)**How to Detect the Virus by real time PCR Tester.**

Overview of qPCR<Real-time PCR explained>
https://www.youtube.com/watch?v=1kvy17ugl4w

Hospital Business

Necessary process is picking up virus from patient and mix with reagent(sample making) .

*Note now easy saliva sampling had become realized,which employ no experts,but amateur. And set those into automatic tester and the switch on !,In a time,the result is to output.Virus Positive is detected by fluorescence(this is action of reagent)threshold level in the concentration amplification cycle time.Nothing fluorescence is Negative going back home.

*Sample Making(this might cause error possibility?!) process needs test engineer with protection suits,however amateur could be by the short time training. Note now is wartime !!!"

⒞**An example calculation on a PCR tester.**

There may be another,but similar performance instruments in the world.

https://www.bmbio.com/Portals/0/images/news/support/2020_Palm%20PCR%20S1.pdf

Detecting single-copy genes by 24 samples real-time test output in 9 minutes.

Effectively reduces the risk of sample contamination.

*This tester is not officially approved as medical use by the Japan health ministry.

Virus Sensitivity	1 gene→2^{15}＝33000 by doubling 15times amplification
Samples in each test	24 samples
Maximum test samples	400 samples/8hours＝1200samples/24hours
Cost of instrument	300000$=25$x1200people=2.5$x12000=0.25$x120000＝
Testing Cost_1 (Setting times 400/24 ＝17times/8hours＝ 1time/28minute)	Test engineer cost~250$?(8hours)/400people＝0.6$/people Reagent cost～200$?/120samples＝1.7$/people http://catalog.takara-bio.co.jp/product/basic_info.php?unitid=U100003224
Testing Cost_2	?
Total Cost	Wuhan=¥1360/(¥109/$)＝12.5$

⒟**Very Coarse Estimation may be 10～20$x100million people＝1～2B$.**

10～20$ is twice times testing cost by very coarse estimation by author.

Trump signs $2.2 trillion coronavirus rescue package

https://www.aljazeera.com/news/2020/03/congress-approves-2-trillion-coronavirus-rescue-package-200327133845317.html

Thus we could repeatedly declare that All People Testing is Short in Time and Expense !.

❷Multi-Times Testing toward Complete Virus Eradication,

Minimum cost and time, but strong accuracy is decisively necessary.This is problem of experts at that place,for example,in Wuhan,they tested multi-persons samples in a test tube to largely reduces testing cost.If positive,re-test become single person sample.

(a){n times verification tests in a time}

PCR test accuracy is not 100%,but less than it,so{n times verification tests in a time} is necessary to assure negative group come backing to business as usual.For an example, If 50 people are invisibly infected,not missing the1 people needs at least 3times testing. <APPENDIX-2>.{n times verification tests in a time}depends on tester & each region. If testers accuracy is higher,test times is rapidly reduced,while not,rapidly increase.

(b)<an example calculation>1,or 10%with virus but without onset in regional people. In order not test missing 1person in testing,how much test times by the accuracy=0.8 ?. *Note all infected are not to contact causing infection,so contacting population is important

(c)How much test times?<by Near Contacting Population with infection rate>

testing times=N	Test days T=3(N-1)	None missing positive group=#P＜$0.5/0.2^N$	Near Contacting Population=NCP by(infection rate)IR=0.1%	IR=1%	IR=10%
N=2	T=3days	#P=10	1,0000	1000	100
N=3	T=6days	#P=60	6,0000	6000	600
N=4	T=9days	#P=300	30,0000	30000	3000
N=5	T=12days	#P=1500	150,0000	150000	15000
*PCR tester accuracy=0.8 This may vary in each testers.			This is after at lifting lock down success.	These are dangerous states.	

Ⅰ:**None missing** in positive group＝#P＜$0.5/0.2^N$.

＊Failure Rate by 1time testing＝1 ー 0.8=0.2.→Failure Rate by N time testing＝0.2^N.

#positive peoplex(0.2^N)＝average missing people number by N times testing.

This must be smaller than 0.5.→0.5＞#Px(0.2^N)

Ⅱ:**Regional Near Contacting Population(NCP)with Infection Rate.**

This may be most important,but troublesome concept which estimates population of stationary near contacting people in dairy routine life such as {home,office or factory, school,commuter train,shops,etc}.NCP is monitoring and control targets.

＊NCP needs problem setting and solution by mathematicians toward testing optimization,etc.

Ⅲ ; Caution:above numeric are all expected value derived in probability calculation,but
 <mark>the actuality can not be assured</mark> in operation the complete virus eradication.
Thus even people judged negative must take careful protections in order not to cause
repeating infection to many others for certain period assuring complete eradication
in coming back job places,school,and etc.

(d)Thus most of people assured negative could come back business in rather shorter time.

(e)Emergent National Wartime Order the Production and Training !!!.

It is TIME that decide our winning.By rapid global competition and cooperation,
 a standard tester should be urgently developed and produced ?!.
Emergent massive the operator training is necessary.

❸Positive Patients for Isolation and Medical Treatment.

(1)Some need urgent medi-care in hospitals.

(2)Some without clear symptom are isolated and cared by doctor or nurse.
 They are tested in a cycle days toward coming back to home.

(3)The Medical Treatment needs New {Drugs,and Treatment},
 which needs urgent strong Research & Development by global cooperation..

❹Toward the Global Cooperative Operation.

Thus we could recover society as usual by certain degree in a time,and this strategy may be
varied due to peculiar circumstance of each nations,so early recovered nations must assist
nations facing the crisis toward rapid global recovery by Complete Virus Eradication.
If we fail,once again we repeat and repeat the operation in own nation.

Even if we could have wined the global operation,however another more and more stronger
disasters are waiting on.It is the rapid climate collapsing now heading toward global
extinction by Arctic Methane Catastrophe very about at <mark>2040</mark><if nothing countermeasure>.
http://777true.net/Rapid-Launching-Climate-Engineering-could-Save-the-World.pdf
http://777true.net/Blocking-Nares-Strait-Gate-to-Intercept-Methane-Catastrophe.pdf

APPENDIX-1:Virus Testing for All People is the Key to its Eradication

⑴*The most drastic confinement in the western world*

https://www.francetvinfo.fr/replay-radio/un-monde-d-avance/la-nouvelle-zelande-a-quasiment-remporte-la-bataille-contre-le-coronavirus_3912391.html

"Detect toward the last patient like as searching needles in a haystack" .

New Zealand has adopted drastic containment since March 26. With one goal: not to stop the spread of the disease, but to eradicate it completely. the government has decided to stop everything, Everything was closed: schools, offices, beaches, bars, restaurants, even for takeout. Visitors arriving from abroad were all placed in quarantine. the government does not intend to relax its effort. " We will continue to search for the last cases like needles in a haystack,

⑵**Virus Testing for All People is the Key to its Eradication**

Do try this at home(2020/3/28):

how one Italian town fought coronavirus,The evidence is clear:

Mass testing for the virus is the key to its eradication － and to saving lives.

https://www.aljazeera.com/indepth/opinion/home-italian-town-fought-coronavirus-200326110756424.html?xif=;utm_medium=article_page&utm_campaign=read_more_links

Full testing is the only way in which countries will gain a clear picture of the actual numbers who have the virus and, therefore, how many people risk infecting others without even knowing they are doing it.............

In the absence of a vaccine, the identification of all carriers (both symptomatic and asymptomatic) appears to be the most effective way to control the pandemic.

APPENDIX-2:Accuracy of PCR Tester for the Complete Eradication.

It becomes evident that low density of the virus could cause large infections in a time.
Also PCR tester is told not exact,however recent developments could improve it.If positive finding accuracy＝0.8, it takes 5 times test for not missing 1 person in 1500 of a group. Followings are example of simple calculation.

1500x(5 times series failure in testing)＝1500x(0.2x0.2x0.2x0.2x0.2)＝0.46 person.

50x(3 times series failure in testing)＝50x(0.2x0.2x0.2)＝0.40 person.

｛**1500,50**｝are important number people assumed positive infected(corrected 2020/5/11).

Note that numbers are all expected value,but not assured in the actuality,thereby

Thus even people judged negative must take careful protections in order not to cause repeating infection to many others for certain period assuring complete eradication in coming back job places,school,and etc.

As for the details,the global experts would overcome every possible problems.
By anyhow in large endeavoring with optimism in technology and methods improvement,
we must win !!