

Perspective

COVID-19 Pandemic: Need of the Hour – A Course Correction, Restructuring & Review of our Policies – An Indian Perspective

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Accepted 04 December 2020*Keywords*COVID-19 pandemic
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India**ABSTRACT**

The world stunned by a pandemic of such cataclysmic scale is reeling under the joint burden of health impact unleashed by the diseases and the strain on the economy. Glaring shortfalls and inconsistencies in strategies to combat the pandemic have surfaced worldwide irrespective of the country's economic and health care status. The responses have vacillated from mute to drastic. Gaps in health preparedness coupled with administrative tardiness, lack of co-ordination and foresight has heightened the impact of pandemic. Coordinated holistic approach with structured policies in place is the need of the hour. Surveillance and epidemiological models to predict the unpredictable and preempt the backlash will dictate our future successes and failures in this protracted fight against the pandemic. This article attempts to review the present status of health policy on COVID in general and with specific reference to India and their outcome thus far. We also propose a simple and practical framework on which a decisive, well-knit, reliable and acceptable policy can be framed.

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1. PRESENT STANDPOINT

We find ourselves in midst of a phase when the pandemic is waxing and waning, with countries and continents in peak phase, post-peak phase and some in post pandemic phase. The fact that the answers are not easily forthcoming, is central to this whirling juggernaut of problems with unprecedented scales of complexities. It is now clear to scientists and expert's alike, that the solution if any, will be in multitudes and evolving with time as the knowledge gap with disease narrows. As the turbulent storms of the pandemic continue to blow unabated, it is disconcertingly clear that this is one storm that's not going to quell in for quite some time and the world has to brace itself with concrete mid to long term mitigation measures.

A hard look at the strategies we have at our disposal:

1.1. The Elusive Vaccine

Vaccines are unlikely to be the panacea we are hoping it to be as there may be likely issues with absolute efficacy as seen with influenza vaccines [1], logistics of universal vaccination, data emerging of variable and short-lived immune response posing a scientific challenge [2] and need for repeated booster doses.

1.2. Mismatches in Medical Management

The major disease burden and controversies on the scale of infectiousness is mainly seen with asymptomatic to pre-symptomatic

groups who constitute roughly around 85% of the total cases [3]. There are hardly any medical interventions presently existing or in the pipeline targeting this set of COVID-19 cases and the strategy reverts back squarely on containment strategies [2,4].

1.3. Containment Strategies

The drawback with most of the containment strategies practiced world-over is lack of reliable scientific data and non-uniformity in implementation. That apart, an economically ravaged world looking desperately to find its fledgling footing again is wary of the impact of these draconian measures. Any of these measures to be implemented and sustained for a long period has to be a balanced approach to avoid it offsetting the economic shortfalls against health gains [5,6].

2. PROBLEM AREAS AND LOOPHOLES

- Lack of scientific credibility, administrative justification and evidence based on effectiveness of various lockdown strategies.
- Subjectivity and arbitrariness in impositions of lockdowns, travel restrictions and quarantine measures
- Absence of a vigilant and structured surveillance cell.
- Little coordination between medical arm, administrative, political and bureaucratic set-up.
- Lack of a definite medium to long term plan in place based on projection models.

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- Escalation, de-escalations and emergency measures in event of various contingencies poorly defined.
- Inconsistencies in emergency situational responses.
- Health programme and infrastructural preparedness from a long term perspective yet to be envisioned.
- Delivery of the models in terms of outcome assessment not reviewed judiciously.
- Political wisdom overriding medical and scientific opinions.
- Parallel arms in health, administration and bureaucracy creating multiple control with jurisdictional overlaps and power centers leading to conflicts in programme implementation.

We review the present policies and suggest methods to innovate and improvise them. These are a broad framework applicable in general universally but more relevant to third world countries like India. A successful approach against COVID must be multipronged, as the issues facing us are in both administrative and health fronts. This calls for a well-knit coordinated approach involving the health-care, bureaucracy driven by political intent and backed by strong community participation. The response to this pandemic has not been a uniform one and has varied across countries and continents. The responses have varied in terms of community engagement, public health capacity, health system capacity of the nation coupled with factors like severity of epidemic and travel restrictions imposed [7]. The policy takes into account the best and successful practices the world over and the models that have worked well. A set of proposals drafted as *a seven-point policy* framework with wider ramifications and directions for future implementation are as follows.

3. SOCIAL DISTANCING, PERSONAL PROTECTION MEASURES AND HAND HYGIENE MEASURES

One reason why countries like South Korea have been able to fare better with this pandemic is due to good barrier hygiene measures like donning of masks by the community at large with good compliance [8]. Countries with disenchantment for social distancing suffered with disproportionately high mortality. Social distancing coupled with hand hygiene and masks will be the key, whether we like it or not for some time to come irrespective of phases of the pandemic. As more data emerges on relative risk of transmission quantum by droplet infection and airborne spread and the settings that pre-dispose, these recommendations are likely to be reviewed with more definitive hygiene measures including usage of masks and social distancing recommendations being advocated by health agencies [9,10]. Law reenactments and strict legislations with penalty may be a justifiable option in this highly contagious pandemic where in the community at large is at risk [11].

4. SURVEILLANCE SYSTEMS

The pandemic is very likely to persist the world over for some time in the form of waves cascading in peaks and ebbing. Regions will experience these patterns at different time intervals with varying intensity. Way ahead for effective containment is early identification of these spurts locally; prevent the spread to outside the cluster zone, remedial strategy based on the quantum of cases and

meticulous follow-up at a community level by creation of *surveillance cells*. Such a surveillance cell, set up at a block or district level is closely monitored by state surveillance units under the directive of regional and national bodies [12].

The *COVID-19 surveillance within the community* should be headed by an *epidemiological unit* teathed with support from physicians, infectious disease specialists, public health specialists, microbiological cells, health workers, paramedical staff, local administrators, non-governmental organizations and health volunteers. There is a pivotal role of public health specialist to take a larger role in overall governance and coordination between the various stakeholders for a better response preparedness more effective management of public health emergencies. This model can work only with political commitment backed by strong community participation.

Surveillance cells are already in place in most places, but they have been hastily constituted and lack in framework, modelling and intent. Innovations like improvising existing units at community level may be an option too. Like, in India a well-oiled machinery in the form of *National TB Elimination Programme* is already in place. This could be *buttressed to incorporate a COVID-19 surveillance programme*, but with safe-guards to ensure that the existing TB programme is not diluted [13].

As surveillance of the community at large is an improbable proposition, creation of a *database of comorbidity, risk stratified groups* for constant surveillance can lead to more incisive and humane approach to this health and economic menace. Technological advancements can be harnessed for effective implementation with lesser collateral damage. This kind of *specific targeted intervention* has the potential to reduce mortality, lessen the burden on health-care and may provide for less stringent but more specific containment measures.

A closed looped system of feedback, outcome assessment and improvisation should be the wheels of the surveillance systems.

5. DEDICATED COVID-19 HEALTH WORK-FORCE

This pandemic breakout has brought out to the fore the chink in our armour. There has been an acute shortfall of quality, specialized and dedicated health staff to deal with this burgeoning issue. This has led to non-specialists being trained, oriented and recruited at short notice. As infectious diseases are a constant threat and pandemics, a Damocles sword hanging over us, it's only prudent that we augment our resources. We will have to make *provisions in our medical education system* to create, train and increase the post-graduates qualifying in this nascent specialty. To bridge this acute gap, fellowship/diploma programme for physicians/Pulmonologist/Anesthetist/Pediatrician's may be considered too. *Respiratory therapists, laboratory technicians, specialized nursing staff* are vital cogs of the core team for high dependency units and Intensive Care Units (ICU) that are critical to the outcome.

6. MEDICAL INFRASTRUCTURE

This pandemic has sounded a clarion call to increase the budgetary allocation toward health care. Countries like India where, where health accounts to a miniscule proportion of the GDP will

be hard-pressed to revisit the skewed allocation. World has realized the hard way that health and economic health are irrevocably linked and the importance of preventive health in minimizing economic ravage.

Medical infrastructure must have an emergency response to deal with spurt of epidemic. As in Italy when the pandemic erupted and health system was getting overwhelmed three categories of measures were instituted for the containment and mitigation of the epidemic and the department of prevention was overall in charge in co-ordinating the response. One is support to the local health authority for coordination and management of the crisis. Secondly, internal reorganization and infrastructure which included contingency plans and rescheduling of non-essential activities. Thirdly, blocking and tackling methods which are active interventional ground level work like testing, tracing and treating [14]. Strengths, weaknesses, opportunities, and threats analysis is essential to provide a quick, pragmatic, and preliminary overview of the perceived state of response strategies and operations from the health infrastructure and adequacy perspective.

In most countries a system is already in place wherein COVID-19 dedicated hospitals and COVID-19 care centers have been set-up. These need to be streamlined and their use optimized in future for eventuality of flu epidemic and same may be considered for utilization for other outbreaks too. All tertiary centers must provision for dedicated isolation wards and beds to be allocated for the pandemic. Flu-clinics have to be mandatorily commissioned in all health facilities providing for basic screening services with management and referral protocols in place.

A reliable, quality assured and wide network of certified **laboratories with microbiology units** capable of extensive testing is the need of the hour. Apart from routine testing, periodic surveillance of healthy population and sero-surveillance may find a way into protocols in future once and if serological tests become standardized.

A decisive policy in **triaging patients** as asymptomatic and pre-symptomatic to home care or COVID-19 care centers; mild-moderate symptomatic to COVID-19 dedicated hospitals and severe disease to ICU's will be the key to mortality reduction and reducing burden on health care. A system of **home quarantine with a reliable monitoring system for asymptomatic & pre-symptomatic** with saturation monitoring and when necessary biochemical and hematological markers making the course and outcome more predictable. Only the symptomatic and those with significant comorbidities who are high risk should be rendered hospital care. It is both an administrative and a medical exercise that will free the health care of a huge burden, paving way for a more focused and timely intervention in the diseased group. We foresee reliable **predictions and severity scores** being a part of standard care that will be critical in **triaging the patients** which will be critical to the disease outcome.

7. POLICIES ON LOCKDOWNS & TRAVEL RESTRICTIONS

Policies on lockdown and travel restriction are being increasingly viewed as draconian and harsh measures in today's free world that is fast getting acclimated with the concept of living with the

pandemic. However due to the dearth of incisive strategies and magnitude of this problem that can easily overwhelm the best of health infrastructure, we will have to re-strategize on this option.

To usher in much needed uniformity, accountability, scientific credence and administrative justification it is imperative we bring in a **draft policy on lockdown and travel restrictions**. The broad guidelines should be formed by a broad **expert committee panel** of epidemiologists, health administrators, physicians, politicians and bureaucrats. As no single strategy is likely to work, the cornerstone of any implementation hinges on having policies that best fit a country, state and regions.

These guidelines should take into cognizance these factors and frame as per the best evidence available.

- A. **The type and length of lockdown:** This pandemic has seen a slew of models ranging from national, local lockdowns, triple lockdowns, weekend lockdowns, reverse lockdowns etc. A model may work depending on factors like population density, size of country, phase of the epidemic, health and administrative infrastructure in place. For example, the containment model in slums of Dharavi, Mumbai is a good model to replicate in closed dense populated impoverished communities. Possible strategies are **modifications of existing practices, reinforcing the successful strategies, learning from our failures, review of the best practices** and innovations world-wide. A broad recommendation on the viability, success and feasibility of each of these policies needs to be gathered at the earliest based on **evidence from structured scientific studies**. These can serve as guidelines for the panel for imposition of these containment measures.
- B. **Timing of lockdowns:** For the lockdowns to be off any benefit coming at minimal economic cost, it has to be **imposed timely at critical time before the epidemic scales** out of proportions. A lockdown imposed a tad too late with less stringent measures have seen countries reeling with mortality and overwhelmed with numbers. Once a critical value of infection is attained in the community we have come to understand from our nightmarish experiences, it becomes impossible to contain the bubble of epidemic. We have examples of countries which with timely imposition of lockdowns were able to blunt the peak with significantly lower mortality but it came at the cost of broadening the curve with protracted pains of economic fallouts offsetting the health gains. This should be prompted by **inputs from epidemiological and microbiological surveillance cells. Statistical modelling** should be the prompt in forecasting the time, the critical period if and when the lockdowns should be imposed.
- C. **Scale of lockdown: The extent and magnitude of the lockdowns** including need for **travel restrictions** determine the success of these measures. This must be justifiable from a health view point and guidelines should aim at eliminating the arbitrariness that is identified with these unpopular measures.
- D. **Universal early warning alert system:** various countries have adopted different warning systems. This can be **homogenized to have a universal and also a local early warning system** as is in vogue for natural calamities worldwide. Such a system will allow better recognition and appreciation of relative threats to each region, promote better co-ordinations in terms of travel

restrictions. Developing such an early warning surveillance system will be crucial in developing a more specific and objective response and at the same time in weeding out unnecessary subjectivity, bias, administrative apathy and political interference in taking these critical decisions.

- E. **Regional and local quarantine policies:** Every state, block, cities and village should adopt quarantine and containment strategies based on inputs and recommendations from surveillance units and should be within the *broad ambit of the guidelines with flexibility for adaptations as per loco-regional equations*.

8. CENTRAL TASK FORCE

The pandemic has seen nations going through administrative logjams, breakdown of health care machinery and numbed by sheer numbers. We have seen a flush of policies lacking credibility, consistency and cohesiveness necessary for good implementation. There have been far too many players like health care personnel, bureaucrats, politicians, epidemiologists, NGO, volunteers, scientists and pharma pitching in, but efforts diluted due to lack of coordination. There is a need for reinforcing the *central task force* with uniform representation from various concerned sectors by eminent panels to oversee and direct the functioning of each independent unit. A *government response stringency index* is a composite measure of nine response indicators including school closure, workplace closure, travel bans, testing policy, contact tracing policy etc. rescaled to a value from 0 to 100 (100 = strictest). This is already in place wherein policies of countries across the globe are compared. This should be reinforced for better international co-ordination and similar models can be implemented at state level too for comparison of different state government policies. This should ensure the *best practices being pursued with accountability driven by thrust, consistency, innovations and credibility in policy making with an in-built mechanism for redress and reviews*.

9. POST COVID-19 CARE

As we slip into the post-pandemic phase there will be a likely emergence of new problems caused as a fallout of this pandemic. *Post COVID-19 lung fibrosis* as a discrete clinical entity is now increasingly recognized by pulmonologists. Assessment and monitoring the lung fibrosis radiologically and by periodic spirometry with timely intervention may be indicated. Tertiary health care centers need to be set-up post COVID wherein patients are screened and directed to multi-disciplinary team for appropriate rehabilitation services and follow-up. Apart from *medical rehabilitation, psychological and socio-economical rehabilitation programs* may have to be put in place. A dedicated team of clinical researchers and epidemiologists must follow the cohort of corona to understand the long term complications and morbidities associated with COVID-19 infection among survivors [15].

10. SUMMARY

- Stringent social distancing, personal protection measures and hand hygiene measures have to be reinforced and if necessary, legislation is enforced for strict compliance.
- Setting up of surveillance cells for preempting, early detections and timely interventions.
- A dedicated health force comprising of medical and paramedical workers to combat pandemic will give a cutting edge.
- Triaging of patients with stratification based on risk, comorbidities and symptoms is the key in mortality reduction.
- Creation of credible, scientific and evidence based data on the feasibility of various lockdown and travel restriction measures will be critical in imposition of these stringent but necessary measures in future.
- Forming a central task force to coordinate between health, epidemiological and microbiological services to liaise with administrators and to guide the politicians.
- A post COVID care rehabilitation should be initiated taking into account the possible need for medical, psychological and socio-economic rehabilitation.

CONFLICTS OF INTEREST

The authors declare they have no conflicts of interest.

AUTHORS' CONTRIBUTION

VA contributed in conceptualization. BU and PR contributed in methodology and validation. VA and AS contributed in formal analysis, software and investigation. VA and BU contributed in writing (original draft) the manuscript. All authors contributed in writing (review and editing) the manuscript and approved the final version.

REFERENCES

- [1] Treanor JJ, Talbot HK, Ohmit SE, Coleman LA, Thompson MG, Cheng PY, et al. Effectiveness of seasonal influenza vaccines in the United States during a season with circulation of all three vaccine strains. *Clin Infect Dis* 2012;55:951–9.
- [2] Elhusseiny KM, Abd-Elhay FA-E, Kamel MG. Possible therapeutic agents for COVID-19: a comprehensive review. *Expert Rev Anti Infect Ther* 2020;18:1005–20.
- [3] Aguilar JB, Faust JS, Westafer LM, Gutierrez JB. A model describing COVID-19 community transmission taking into account asymptomatic carriers and risk mitigation. *medRxiv* 2020.
- [4] Huang L, Zhang X, Zhang X, Wei Z, Zhang L, Xu J, et al. Rapid asymptomatic transmission of COVID-19 during the incubation period demonstrating strong infectivity in a cluster of youngsters aged 16-23 years outside Wuhan and characteristics of young patients with COVID-19: a prospective contact-tracing study. *J Infect* 2020;80:e1–e13.
- [5] The Lancet. India under COVID-19 lockdown. *Lancet* 2020;395:1315.

- [6] Sibley CG, Greaves LM, Satherley N, Wilson MS, Overall NC, Lee CHJ, et al. Effects of the COVID-19 pandemic and nationwide lockdown on trust, attitudes toward government, and well-being. *Am Psychol* 2020;75:618–30.
- [7] Han E, Tan MMJ, Turk E, Sridhar D, Leung GM, Shibuya K, et al. Lessons learnt from easing COVID-19 restrictions: an analysis of countries and regions in Asia Pacific and Europe. *Lancet* 2020;396:1525–34.
- [8] What Lessons Can the US Learn from Japan and South Korea for Combating Coronavirus?. *Global Biodefense* [Internet]. Available from: <https://globalbiodefense.com/2020/03/16/united-states-lessons-learned-COVID-19-pandemic-response-south-korea-japan-observations-hyunjung-kim-gmu-biodefense/> [cited July 23, 2020].
- [9] Jefferson T, Del Mar CB, Dooley L, Ferroni E, Al-Ansary LA, Bawazeer GA, et al. Physical interventions to interrupt or reduce the spread of respiratory viruses. *Cochrane Database Syst Rev* 2011;2011:CD006207.
- [10] Alqutob R, Al Nsour M, Tarawneh MR, Ajlouni M, Khader Y, Aqel I, et al. COVID-19 crisis in Jordan: response, scenarios, strategies, and recommendations. *JMIR Public Health Surveill* 2020;6:e19332.
- [11] Varalakshmi R, Swetha R. COVID-19 lock down: people psychology due to law enforcement. *Asian J Psychiatr* 2020; 51;102102.
- [12] Ministry of Health and Family Welfare, Govt. of India. “STRENGTHENING COMMUNITY” SURVEILLANCE FOR COVID-19 [Internet]. Available from: <https://sciwheel.com/work/item/9326549/resources/8932683/pdf> [cited July 1, 2020].
- [13] World Health Organisation. Surveillance strategies for COVID-19 human infection [Internet]. Available from: <https://apps.who.int/iris/rest/bitstreams/1277579/retrieve> [cited July 2, 2020].
- [14] Torri E, Sbrogiò LG, Rosa ED, Cinquetti S, Francia F, Ferro A. Italian public health response to the COVID-19 pandemic: case report from the field, insights and challenges for the Department of Prevention. *Int J Environ Res Public Health* 2020;17:3666.
- [15] Li T, Lu L, Zhang W, Tao Y, Wang L, Bao J, et al. Clinical characteristics of 312 hospitalized older patients with COVID-19 in Wuhan, China. *Arch Gerontol Geriatr* 2020;91:104185.