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The Need for an Evidence Based COVID-19 Pandemic Response Policy That Incorporates Risk Benefit Considerations, That Does Not Accentuate Health Inequalities, and Guided By Ethical Principles-Hong Kong as A Case Study

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ABSTRACT

Pandemic policies in the initial phase are dominated by public health measures to control spread of disease to save lives and prevent the collapse of hospital systems dominated policy. Ethical considerations also support this approach of public health measures taking precedence. Over a period of two years, the diverse consequences of such policies in terms of economic impact, financial, physical and psychological health of individuals, health and social service provisions, and magnifying wealth and health inequalities become increasingly problematic. An ethical approach would require that pandemic policies be reviewed in terms of benefits, adverse consequences directly arising from these policies, and risk assessments carried out based on scientific evidence. Although there have not been outbreaks of local transmissions for over six months in Hong Kong, current policies are still heavily weighted towards 'elimination' of infection in the community as the single consideration, without any systematic evaluation of adverse consequences of such policies followed by risk benefit analysis to guide policy formulation. Duration of quarantine, system of widespread testing, hospital and residential care homes visitation policy, and continued provision of community day and home care services for older adults are health and social policy areas that need to be re-visited based on risk assessment underpinned by ethical principles in this later stage of the pandemic.

Keywords: COVID-19 Pandemic; Vaccination; Quarantine; Older adults; Health inequality; Ethics

Highlights

- COVID-19 policies in the persistent phase of the pandemic in Hong Kong are dominated by elimination of the virus towards zero infection.
- Such policies accentuate health inequalities, as well as resulting in considerable health, psychological, economic and financial adverse outcomes, particularly affecting care of older adults. These aspects have not been considered in policy formulations.
- Current policies need to be reviewed in the light of changing evidence, to incorporate risk benefit assessments guided by ethical principles.

The COVID-19 pandemic has thrown a spotlight on the resilience of health systems worldwide. The effectiveness of initial government responses depended on previous experiences of epidemics of a similar nature, capacity and affordability of healthcare infrastructure, and cultural characteristics (liberal v. collectivistic). In the initial phase, public health measures to control spread of disease to save lives and prevent the collapse of hospital systems dominated policy. Ethical considerations also support this approach of public health measures taking precedence. Much has been written about the diverse consequences of pandemic control measures, in terms of economic impact, financial, physical and psychological health of individuals, health and social service provisions, as well as personal freedom framed as a human right. Demonstrations have occurred in some countries to protest against the infringement of the latter.[1] These consequences become increasingly important with persistence of the pandemic (nearly two years).

A particular feature of the pandemic measures is how they magnify wealth and health inequalities. Among the scientific community, there is consensus that the pandemic is likely to persist for the foreseeable future. An ethical approach would require that pandemic policies be reviewed in terms of benefits, adverse consequences directly arising from these policies, and risk assessments carried out based on scientific evidence. Policies may need to be reviewed continually to be responsive to continuing development of new information resulting from intensive research activities worldwide, with a goal of formulating a policy that is evidence based balancing pandemic control and societal costs. Overall policy needs to be guided by ethical principles rather than irrational ‘fear’ or political factors. This article examines how well the above considerations have been incorporated into current pandemic policies in Hong Kong, where there has not been an outbreak of local transmissions for over six months.

THE FACTS ABOUT COVID-19 PANDEMIC

Epidemiology

Unlike the short-lived 2003 SARS epidemic in Hong Kong, the current COVID-19 pandemic is persistent, suggesting that government policy response may need to be adapted. Rapid viral mutations producing new strains

with differing infectivity, clinical symptoms, severity of impact in terms of hospital admissions, need to be taken into account in pandemic policies; yet the lag time in availability of clinical information required to inform policy precludes timely responses, since such information is largely gathered from communities with a high number of cases rather than those with very few local cases. In particular the number of asymptomatic cases circulating in a community is unknown, but may have increased as a result of mass vaccination policy. For example between 50 to 100% of cases detected at border control in HK Airport have been fully vaccinated and are asymptomatic.

Vaccination

The rapid development and roll out of population vaccination programs represent a triumph of science and public health. Yet it is precisely because of the speed of development that gave rise to considerable vaccine hesitancy, which required various strategies to tackle. Furthermore there is no clear understanding of the goals of vaccination: that it does not prevent infection, but likely reduce the severity of illness in reducing the risk of hospital as well as intensive care unit admissions. The increased morbidity and mortality of those with chronic illness and frail older adults living in residential care settings would accord priority in vaccination to these groups. Yet there is low awareness that among frail older adults (which represent a large proportion of those in residential care), the immune response to vaccinations is muted, highlighting that the elderly population is very heterogeneous.[2] Ageism is evident in the media that portray older people refusing vaccination as a threat to Hong Kong's recovery from the pandemic,[3] when in reality there are various barriers to vaccine access, which when recognized, have resulted in improving uptake among older people.

Vaccinated people can spread the virus but remain infectious for a shorter period, and the viral load is lower. Population target vaccination rate have also been used in connection with the 'relaxation' of pandemic policies relating to travel. There is little scientific basis to determine what the rate should be, particularly in view of the currently dominance of the Delta strain and ongoing future mutations. Furthermore a recent study has shown that increases in COVID-19 are unrelated to levels of vaccination across 68 countries and 2,947 counties in the United States,[4] suggesting that vaccination policy should continue to be accompanied by other measures such as social distancing, hand hygiene, wearing of masks, and adequate airflow. Furthermore there is a realization that the level of protection shown in clinical trials differs from real life scenarios, such that trials data may not be directly extrapolated to protection from population vaccination drive. For example the effectiveness of the Pfizer vaccine was 39% compared with the trial efficacy of 96%;[5] the immunity may be less than that acquired from a COVID infection; and there is an increase in the rates of hospitalization and deaths even among the fully vaccinated.[6,7] Therefore there is considerable uncertainty regarding the benefits of vaccination translated into number of new cases, hospital admissions and deaths. The authors of this article conclude that stigmatizing sectors of the population that have not received vaccination is unjustified, but that populations should be encouraged to received vaccination 'with humility and respect'.

Virus Testing

Currently there are two approaches that differ between countries, reflecting on the test as screening or diagnosis; countries such as the UK use a two step approach, with the cheaper lateral flow test that is self administered and used frequently with a turnaround time of 30 mins but is not as accurate, followed by the PCR test if positive. In contrast in China and Hong Kong SAR the PCR test is used for screening as well as diagnosis at the same time. The latter has a longer turnaround time of at least 24 hours and is more expensive. In the UK, the use of the lateral flow test enables members of the public to purchase kits from pharmacies, enabling frequent (e.g. twice weekly) testing for those engaged in occupations involving increased risks such as schools, hospitals, residential care settings, or those attending schools, with clear cut policies of action for those testing positive and those who are classified as close contacts. Adopting this policy enables schools to remain open, minimizing disruptions in education; and facilitates total community testing when positive cases have been identified. This is in contrast to the use of the PCR test more as a diagnostic tool, whereby those testing positive are admitted to a hospital irrespective of presence of symptoms. There is a delay of at least 24 hours in getting the results, during which time theoretically community transmissions could occur. Clearly each approach has advantages and disadvantages, and is an example of how risks are perceived and managed in different countries. Low cost tests with rapid turnaround time would enable widespread coverage and frequent testing. Furthermore for both tests, inaccuracies may arise from the method of getting the samples, and this is difficult to factor into calculations of risks.

With regard to the frequency of testing, there is no study to indicate how frequent testing should be done in asymptomatic people who have tested negative but are considered at higher risk of being infected such as those working in health care, schools, or those arriving from other countries. A reasonable guide would be close contacts, or during one incubation period of the predominant circulating strain, currently the Delta strain. Continue testing of arrivals from other countries merely because these countries have high number of cases is difficult to justify.

Zero COVID Policy

This is essentially a political decision. Closing borders, severely restricting movement of people, would certainly be very effective in countering spread of infectious diseases, such as for outbreaks of Ebola virus, or the SARs epidemic in 2003. With rapid mutations of SARS CoV 2 and population vaccination policies, the clinical presentation has changed from a severe illness requiring hospital/intensive care treatment, to one where the correlation between number of infection and hospitalization or deaths is weaker. At the same time COVID-19 infection appears to confer immunity that is stronger and longer lasting than vaccinations. Other factors contribute to the maintenance of Zero COVID-19 policies: irrational fear and the resilience of the healthcare system [availability of publicly funded primary care and hospital systems].[8] Zero COVID-19 policies are not sustainable, particularly in a society such as Hong Kong which thrives on movement of people in its role as a world city, and adverse consequences increase with increasing duration of the policy. No country adopting a Zero COVID policy has been able to keep out the virus without incurring other societal adverse consequences for the economy, unemployment,

and general population well- being. Therefore the adverse consequences need to be articulated and taken into account in policy formulation.[9]

However the government inexplicably stated that Zero-COVID strategy is best not only for public health but also for reinvigorating the economy and that it is in line with the aspirations of our community and therefore 'not unethical'.

Duration of Quarantine

The duration should be based on the incubation period of the dominant circulating strain, which is Delta. The mean incubation period is 6.74 days with a 90th percentile 11.64 days (based on publicly available data in Canada of 251,338 cases).[10] For the Delta variant the viral load drops rapidly after day 7 in fully vaccinated people.[11] The duration should not be governed by the number of cases in countries of travel origin. Furthermore, the frequency of air exchanges in hotels in Hong Kong, which rely on central air-conditioning, is unlikely to meet infection control environment in terms of air exchanges per hour. Such data are used to plan quarantine facilities but are not available for hotels. Moreover windows and doors of the hotel quarantine room are not allowed to be opened, seemingly for fear of the virus passing from one room to another through open doors and windows. Yet spread through the hotel ventilation system is ignored. Cases of cross infection during hotel quarantine have occurred. Prolonging duration of quarantine not based on scientific evidence may actually incur increased risk of infection.

There are other adverse effects of hotel quarantine as a result of forced confinement to a small space, in terms of muscle loss, poor nutrition and food poisoning,[12] psychological consequences that cannot be solved by providing a manual alone,[13,14] as well as barriers to accessing care in acute emergencies.[15] Possession and ability to use a mobile phone is essential in navigating the whole quarantine process, discriminating against older adults who may not be competent with digital technology as a result of declining cognitive function.

Contrary to infection control policies, certain groups of people are exempted from 21 days hotel quarantine based on political and economic considerations determined by the government, such as diplomats, and persons considered vital to the economy (such as teams arriving for filming in Hong Kong). The former has resulted in identification of COVID-19 positive tests among such personnel. Fortunately no community spread has resulted. The quarantine policy appears to be somewhat arbitrary and not dependent on infection control but again influenced by other socially determined factors. Recently patients discharged from hospitals are required to undergo a further 14 days of quarantine, again a decision that does not appear to be based on evidence and yet clearly would create adverse impact on the provision of health services as well as on the individual.

Ethical principles taking scientific evidence as well as adverse consequences balancing risk and benefits should inform decisions relating to duration of quarantine. The differing duration of quarantine lasting up to 21 days

according to the case load of the country of travel origin is difficult to justify, as it is neither scientific nor ethical. Neither is the requirement of a further 14 days of quarantine on discharge form hospital.

SOCIETAL COSTS OF PANDEMIC POLICIES

Institutional settings

The pandemic policies essentially accentuate health inequalities in myriads of ways, with vulnerable groups bearing the brunt of the consequences of these policies. Visitors have been prohibited at hospitals and residential care homes, as for many other cities. This policy has resulted in poorer quality of care for vulnerable groups who are dependent on others for their self-care, such as frail older people with or without dementia, and those who are dying. The former group relies in relatives or helpers to provide care in hospitals such as feeding, and other basic personal care which hospital staff are seldom able to provide due to shortage of manpower, aggravated during the pandemic. The prohibition of this 'informal' care resulted in poor quality of care in both hospitals and residential care settings. Ageism is evident in formulation of these policies, since for paediatric wards, parents continue to be allowed to care for their child in the ward. The fact that many frail older adults have needs from their relatives is ignored, in the name of infection control regulations. Likewise those who are dying would die alone under these policies, although lip service is paid by saying that visiting may be allowed on compassionate grounds. In reality the final decision is left to front line staff who will be reluctant to deviate from the general guideline for fear of being blamed. While such policies in general are put in place to limit the risk of infection, there is no feedback or discussion about whether they are overly restrictive to the detriment of quality of care especially for those who are dying. Infection control policies should include the perspectives of patients and families and it cannot be assumed that it is ethically correct to assume infection control overrides all scenarios in hospitals and residential care settings. It has been suggested that legal strategies based on existing patient rights frameworks may be needed to reconceptualize these policies as a civil rights issue.[16]

Training of healthcare professionals in hospitals has been completed halted, as the view is that these trainees represent an infection risk. It is ironic that as soon as they qualify they will be working in such environments of increased risk, and surely it would be logical to train them to work in such environments. There may be future cohorts of graduates who have spent very little time on the wards actually involved in the management of patients.

Community social services

There is an extensive network of health and social services in the community that support older adults with increase frailty, especially after hospital discharge. Yet such services have not been considered essential, on a par with outpatient, accident and emergency, and in patient services. It has been left to individual operators to decide whether to continue providing services. While some have been even busier than before pandemics, others have suspended services in the absence of clear guidelines. In contrast to the UK, social care services have been regarded as essential and continue operations with suitable protection. It has been documented that particularly for persons with dementia,

the suspension or reduction of day care services have resulted in increase in caregiver stress as well as cognitive and physical functional deterioration of care recipients.[17] The year of pandemic has also resulted in a record number of suicides among older people.[18]

Public Health

Unlike the data collected by the Office of National Statistics in the UK, it is difficult to assess the impact of such infection control policies on other health needs such as waiting list for specialist consultations, elective operations, increased morbidity and mortality from other diseases or conditions. For example the World Health Organization has provided data to show that there is a resurgence of tuberculosis, as the pandemic has effectively dismantled previous public health initiatives in combating this disease. The public may be more reluctant to seek help for various conditions due to a fear of COVID-19 infection or to the infection control barriers. It would be helpful to be able to document excess mortality due to other diseases during this period, since this would likely be due to COVID-19 policies rather than the disease itself, as the numbers of infections are now very low.

The overall psychological impact from disrupted social support networks (especially for families with members outside Hong Kong) should not be neglected. Major life events such as births, deaths, and marriages are important, and there is a clear social gradient in the ability to cope with the restrictions around travel and time off work. Those in the lower social economic gradient will be impacted the most.

Economic

Pandemic policies clearly accentuate income inequalities in that they impact those in the lower socioeconomic groups, such as the restaurant trade, the travel industry, retail workers, and convention and exhibition sectors. The need for change in policies with regard to lockdowns and quarantines when public health services are no longer under pressure have been discussed by Dodwell and echoed by numerous Letters to the Editor published in the South China Morning Post.[19, 20]

TOWARDS AN EVIDENCE-BASED POLICY GUIDED BY ETHICAL PRINCIPLES

In summary current policies are heavily weighted towards ‘elimination’ of infection in the community in the name of public health as the single consideration overriding all others, without any systematic evaluation of adverse consequences of such policies followed by risk benefit analysis to guide policy formulation. Such policies should be formulated with the input from all government departments to include expertise in ethics, as well as members of the public. The underlying rationale has been poorly communicated to the public: this is evident from the almost daily letters to the Editor and newspaper feature articles querying pandemic policies, as well as poor understanding of vaccine side effects causing vaccine hesitancy. While the need for mask wearing and social distancing have been well accepted by members of the public, duration of quarantine, system of widespread testing, hospital and residential care homes visitation policy, continued provision of community day and home care services with suitable

protection are health and social policy areas that need to be re-visited based on risk assessment underpinned by ethical principles in this later stage of the pandemic. Such principles are being actively debated in Europe, as key considerations in promoting community resilience.[21] A revised approach is needed when an infectious agent becomes endemic.

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