

The Unprecedented Omicron Surge in Hong Kong: A More Natural or More Man-Induced Tragedy?

COVID-19 infection control in Hong Kong was effective through strict anti-pandemic measures in the first four waves beginning in 2020, although it hurt not only physiological and psychological health but also social and economic activities. However, there was an uncontrollable boom in local Omicron cases and deaths from late January 2022, particularly among the senior population. Epidemiologists bemoaned the low vaccination rate among older adults which attributed to the rapid contagion. This analysis looks into a nexus of causes, and discusses the roles of manpower, medical resources, management, healthcare policies, and the balance between anti-pandemic tactics and individual health. Fundamentally, trust in the government is indispensable to success in combating public health disasters. Medical veterans urge a comprehensive inquiry in order to improve the healthcare system and hence cope with future infectious diseases, which authorities should respond to positively and promptly.

Keywords: *epidemiology, infectious disease, novel coronavirus, pandemic, public health, SARS-CoV-2*

Introduction

An infectious disease briskly spread from Wuhan, China to other countries around the world, and has become a pandemic caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) since March 2020. Its on-going outbreak has brought over 754 million cases and 6.8 million deaths globally as of February 2023. This public health crisis has been greatly impacting physical, mental, social and economic dimensions from individual and community perspectives, which pressures governments in the post-pandemic stage to launch comprehensive reviews in order to ameliorate their healthcare systems.

The first confirmed case of novel coronavirus in Hong Kong was detected on January 23, 2020, going on to total 13277 cases by January 1, 2022. However, the number of cases suddenly climbed to 1157415 as of March 31, 2022 (Worldometer, 2022). Daily infections were less than 200 cases before February 4, 2022, but then peaked at 76991 cases on March 23, 2022 (56827 and 20164 cases diagnosed by nucleic acid tests and rapid antigen tests respectively) (Du et al., 2022). Worse, a sharp rise in cumulative deaths hit the city, rising from 213 on February 7, 2022 to 9451 on April 29 (Worldometer, 2022), because of which Hong Kong gained one of the highest death rates among developed territories, with the majority of deaths occurring among the older population (Walker, 2022). Such a disaster was induced by a low vaccination rate (Lew & Wallbank, 2022), as many medical professionals reiterated (P.-H. H. Cheung et al., 2022; Looi, 2022) that the elderly remained a higher risk group connected with slow viral decline (Li et al., 2022). Experts explained that a lower vaccination rate among seniors exerted a lower level of protective immunity and therefore a higher case-fatality

rate (Chen et al., 2022). Although a report was presented by the Chief Executive (the head of Hong Kong government) to calm fears related to this fatal spread (C. Lam, 2022), it lacked reviews for what caused the tremendous pandemic-related deaths over the seven week period, especially the onslaught against older adults.

Chaotic Wave

Hong Kong underwent four waves of COVID-19 from 2020 to 2021, in which the containment strategy led to comparatively low infection and death rates; however, the containment measures failed in the fifth wave (Strumpf, 2022). Before this wave, there were almost no local cases for six months (K. Yuen et al., 2022). The first local case of the fifth wave was reported on December 31, 2021 (Centre for Health Protection, Department of Health, 2022), associated with two flight attendants who breached anti-coronavirus rules (Tsoi, 2022). A series of incidents fuelled an outbreak in early January 2022, such as an Omicron restaurant cluster (Low et al., 2022), a birthday party involving senior officials and lawmakers (J. Lam, 2022), and a batch of pet-store-related Delta variant cases (Mallapaty, 2022). A cleaning worker who lived in a public housing estate was infected in a quarantine hotel and transmitted the virus to her family. Very soon, super-spreaders were tested for in that estate, resulting in the first lockdown building (P. Lee, 2022b). This large-scale outburst began in mid-February (Thomas, 2022).

Clinical research has shown that the Alpha variant produces more severe cases and deaths (Florensa et al., 2022) and the Delta variant generates higher transmission and mortality, together with increased likelihood of hospitalisation (Yomayusa et al., 2022). Despite its heightened transmission rate, Omicron inclines towards upper respiratory tract symptoms, a lower comorbidity burden and reduced severity (Leiner et al., 2022; Petersen et al., 2022). Asymptomatic or mild patients show symptoms similar to the flu or common cold (P.-H. H. Cheung et al., 2022); thus, a massive climb in fatality in this wave, which was dominated by the Omicron variant, is unexpected.

The dynamic zero-COVID policy was implemented in China from August 2021 to curb the highly transmissible Delta variant (Bai et al., 2022) and lessen the negative influences on socio-economic stability (Liu et al., 2022). Hong Kong also enforced it (Burki, 2022), even though the Chief Executive was incapable of defining it (V. Wang & Ramzy, 2022). Long-lasting, stringent measures did not only invoke anti-pandemic burnout, but also inevitably isolated Hong Kong from the outside world and created an economic downturn (Stevenson, 2022), including extensive contact tracing and screening, social distancing, vaccine pass implementation, masking, working from home, school suspensions, quarantines, travel restrictions and flight bans (S. S. S. Lau et al., 2022). If these draconian means had been able to relieve this coronavirus tsunami, the Omicron catastrophe could have been prevented.

1 *An Uncontrollable Surge: Avoidable or Unavoidable?*

2
3 LeaveHomeSafe, a digital tracing application, was launched in November
4 2020 and was mandatory for entering government offices, which was extended
5 later to include restaurants and many other businesses (H. Leung, 2023a). It was
6 devised to warn those who visited premises with coronavirus cases, but people
7 used it unwillingly because of worries about privacy and security (L. Chan, 2021).
8 Indeed, this tool failed to deal speedily with the ceaseless growth of Omicron, and
9 stopped sending notifications from late February 2022 (Yeo, 2022). However, the
10 government insisted in forcing its use until mid-December 2022 (P. Lee, 2022g),
11 though this regulation was often breached even by bureaucrats (Radio Television
12 Hong Kong, 2022a).

13 Medical staff, visitors to hospitals, restaurant employees, care home staff and
14 visitors, school staff and students, inbound travellers, and close contacts of
15 infected persons undertook mandated polymerase chain reaction (PCR) or nucleic
16 acid tests (Pang & Master, 2022). In addition, residents who lived in buildings with
17 detected coronavirus in sewage, along with visitors to those locations, were
18 required to fulfil testing orders. During the Omicron outburst, long queues for
19 compulsory testing with elderly individuals and children lining up for hours in
20 tight spaces appeared outside makeshift testing stations in different districts
21 (Ramzy, 2022), increasing the risk of transmission chains (Heung & Tsang, 2022).
22 Later, rapid antigen tests (RAT) were accepted and kits were distributed for
23 voluntary self-testing (C. Lau et al., 2022), offering an online registration system
24 for self-reporting (Hong Kong Government, 2022b). Mandatory testing challenged
25 laboratory capacities by producing a huge backlog volume, but the requirement
26 persisted even though it was found helpless in combating this wave (The Asean
27 Post, 2022).

28 An explosion in confirmed Omicron cases hampered the overloaded
29 emergency service from properly triaging people who needed medical care,
30 causing hospitals to be jammed up with patients and causing a decline in
31 healthcare service. In fact, most had only moderate symptoms such as headaches
32 and fevers. Medical leaders exhorted mild and asymptomatic cases to stay home,
33 drink more water and take medications such as painkillers or cough syrup
34 (E. Cheung, 2022b; P. Lee, 2022a). Inadequate healthcare arrangements diminished
35 public health service capacities.

36 Compulsory hospital admissions and isolation for thousands of infected
37 residents and their close contacts, along with certain persons arriving in Hong
38 Kong, quickly filled up hospital beds and isolation centres. Some epidemiologists
39 suggested adjusting discharge criteria and allowing mild and asymptomatic
40 individuals to return home to free up hospital facilities (Frost, 2022; Master,
41 2022a). However, these adjustments made discharge arrangements more
42 complicated and therefore reduced outcomes (Canete, 2022).

43 The citywide COVID-19 Vaccination Programme was launched on February
44 26, 2021 free of charge for those aged 18 and above to safeguard the public health,
45 and then starting on June 14 those aged 12-17 were included. The age inclusion
46 was lowered further to age 11-5 on January 21, 2022, and again on August 4 for

infants as young as six months. Regrettably, vaccine resistance and hesitancy remained, particularly among older adults (P. Lee, 2022e). The government made much effort to promote vaccination, but without satisfactory results, including requiring the debated Vaccine Pass in 24 specified premises starting February 24, 2022, and even in public medical centres from June 13, 2022 (F. K. Cheng, 2022b). Defiance was connected to individual (lack of trust and confidence in the vaccine, perceptions of poor long-term effectiveness, fragile social networks, and peer pressure), micro-social (stigma against “dirty” healthcare workers), intermediate-social (distrust in the government), and macro-social (cultural influences, perceptions of vaccination as viral injection, the role of medical experts, and civic responsibility) factors (Siu et al., 2022), largely related to vaccine safety and side effects (K. Wang et al., 2021), especially for those with chronic illnesses (Zhang et al., 2022). Instead of solving problems, the government gave baffling reactions. For example, it swiftly stipulated an ordinance in mid-2022 in which unvaccinated workers may be terminated without compensation (K. Ho, 2022b) in order to boost inoculation, implying agreements with social injustice and inequality at the workplace as recognised by the government. Failure of the Programme likely initiated with a misstep in which Sinovac, an inactivated virus-based vaccine, was approved for use before the third phase clinical data had been released (Kwan, 2022). The underlying cause is distrust of the government (R. Cheung et al., 2022).

Low morale among health practitioners (Mahtani & Yu, 2022a) further exacerbated this wave. The crushing widespread increase in cases catalysed an unbearable burden on a healthcare system already at the edge of collapse (Hollingsworth et al., 2022) from an immense patient load and COVID-positive healthcare personnel (Sataline, 2022) in an underfunded healthcare system (H. Chan & Xinqi, 2022). Additionally, under the Emergency Regulations Ordinance, mainland healthcare workers were allowed to work in Hong Kong provisionally in February and March, 2022 (Hong Kong Government, 2022a, 2022c), avoiding licensing regulations. Collaboration between local workers and their mainland counterparts did not run well in practice: for example, resource allocation, ward patrol and shift schedules (Ma, 2022).

Calamitous Deaths

Under the Prevention and Control of Disease Ordinance, COVID patients were sent to hospitals, and their close contacts to isolation facilities (Tsang et al., 2022), as explicated earlier. Mandatory hospital admission was not a scientific consideration, and instead increased health risks during the Omicron wave (Master, 2022b). An influx of positive carriers, regardless of asymptomatic and mild cases, flooded the Accident and Emergency Department of public hospitals just to satisfy the purpose of dynamic zero-infection policy (E. Cheung, 2022a); hence, hospitals were filled to overcapacity, which made things worse, as a 140% occupancy rate (K. Ho, 2022a) resulted in a low turnover rate of hospital beds (Master & Siu, 2022; The Standard, 2022). Patients on gurneys or wheelchairs were lined up outside hospitals, and thousands awaited isolation facilities (S.

Cheng, 2022; Wai, 2022), without sufficient numbers of frontline healthcare workers. Unfortunately, the cold weather worsened this predicament (Sedgman, 2022). All these unfavourable factors spiked the mortality rate to the highest death rate in the developed world (Hutton, 2022a), and overwhelmed already scarce mortuary and funeral facilities (Mahtani & Yu, 2022b).

Case mishandling has been complained of repeatedly throughout the pandemic. The crumbling healthcare system during the Omicron storm increased the number of COVID cases where patients were not served in time or even died before being delivered to hospitals (P. Lee, 2022c), together with confined people dying in quarantine venues (Yiu, 2022). Such a tragedy unveils not only misjudgements made in this deteriorating situation and how the problem was underestimated by relevant officials, but also the weaknesses of primary medical care and neighbourhood support (Mingpao, 2023).

Reflection and Recommendations

Complicated, harsh, illogical and inconsistent restrictions (Davidson et al., 2022) are ineffective in dealing with this contagion. The accumulative infected cases and deaths reached 2880328 (1219813 PCR confirmed and 1660515 RAT confirmed) and 13409 respectively, as of February 9, 2023 (School of Public Health, LKS Faculty of Medicine, 2023). More than 99.9% of infections and fatalities occurred in this Omicron outbreak, after US\$76.9 billion (HK\$600 billion) had already been spent for three years of pandemic control and relief programmes among 7.4 million people (K. Ho, 2023). Medical specialists have proposed an independent inquiry to look into various aspects of anti-COVID restrictions (L. Cheng et al., 2023; Radio Television Hong Kong, 2023; The Standard, 2023), but the Hong Kong government has clearly refused (H. Leung, 2023b).

The Principal Officials Accountability System has been in place since 2002 in order to ensure a clear understanding of officials' respective responsibilities, implement policies effectively, cope with challenges proactively, respond to community needs efficiently, and enhance public services (Hong Kong Government, 2002). A SARS Expert Committee investigated the severe acute respiratory syndrome (SARS) outbreak in 2003, which resulted in 1755 cases and 299 deaths (S. H. Lee et al., 2006), and issued a report (SARS Expert Committee, 2003) to review the causes of that public health disaster and suggest improvements in deploying healthcare resources. This checks and balances mechanism resulted in officials' being personally responsible for the failure of their policies, and therefore gained trust and support from the public. The COVID-19 pandemic has yielded many times more medical expenditures and losses of both life and economy than SARS, nonetheless the government refuses to acquiesce to the Accountability System, by its rejection of in-depth, thorough, open, transparent, reliable, and legally binding examinations of this three-year public health fight.

Prevention and control tactics should be scientific and evidence-based decisions. Notwithstanding, the government is frequently to be blamed for

1 ignoring public health expertise while making overly politics-driven efforts to
 2 show fidelity to the mainland authority, whereas opposition voices are silenced
 3 (McLaughlin, 2022). In early 2022, medical professionals warned that
 4 containment measures were impractical for controlling the Omicron spread and
 5 that a strategy change was necessary in order to resume normal life (Lung et al.,
 6 2022). Social distancing was no longer effective against Omicron (I. F. Hung et al.,
 7 2022): for instance, restrictions on gathering limits in public and private places.
 8 Thereafter, microbiologists realised that the pandemic has become endemic (Radio
 9 Television Hong Kong, 2022b), and urged preparation for a living with COVID
 10 approach (P. Lee, 2022d). The government still integrated closely with the
 11 mainland anti-pandemic policy (Hong Kong Government, 2022e). Unexpectedly,
 12 the zero-COVID strategy began to be lifted in December 2022 after the stance was
 13 abandoned by Beijing (Magramo, 2022), with full reopening of the Hong Kong-
 14 China border on February 6, 2023 (S. Zhao, 2023). Such an abrupt relaxation is
 15 paradoxical whilst local cases continued to soar (S. Zhao & Creery, 2022), which
 16 was an irrational contradiction of the evidence.

17 Human resource is a significant asset in healthcare service. Lamentably,
 18 healthcare practitioners were disappointed by the authorities which greatly harmed
 19 their morale. About 8000 healthcare workers from public hospitals joined a strike
 20 in early February 2020, pressuring the government to close the Hong Kong-China
 21 border completely to inhibit the spread of COVID-19 in order to sustain the
 22 healthcare system and community safety (F. K. Cheng, 2021b). Their demand was
 23 not in error, but they were eventually penalised (C. Leung, 2020). Coupled with
 24 political concerns (S. Cheng, 2020; Dimsumdaily Hong Kong, 2021), these
 25 severely bungled outbreaks accelerated the growing exodus of medical
 26 professionals (Kihara, 2021; The Standard, 2021), and nearly paralysed healthcare
 27 services during the Omicron invasion. Supplementary retention plans (Hong Kong
 28 Government, 2022d), such as retirement extensions, a new rank hierarchy and a
 29 low-interest home loan scheme, did not alleviate the turnover effectively.

30 The highly dense city population encourages the rapid transmission of
 31 infectious diseases (Das, 2022), and the open-plan layout design of residential care
 32 homes congested with numerous single-person beds speeds the spread of
 33 infections (Chow, 2021). Deaths among those over 65 years old made up 91.67%
 34 of the third wave, which involved many elderly care homes in mid 2020 (F. K.
 35 Cheng, 2021c; Pao, 2020). Infection rates increased among care workers, reaching
 36 9.5% in the fifth wave (Das, 2022). Poor working conditions, long working hours
 37 and under-paid salaries make it difficult to recruit trained staff (China Labour
 38 Bulletin, 2022). Workforce shortages and crowded work environments erode
 39 service quality and the wellness of residents. The government should take more
 40 responsibilities for elderly welfare services.

41 Restrictive controls implemented to curb COVID spread negatively impact
 42 not only psychological and emotional health (T.Cheung et al., 2021), but also
 43 family relationships and adaptation to social challenges (M. S. Y. Hung et al.,
 44 2022), especially for disadvantaged groups (Liao et al., 2021; S. Z. Zhao et al.,
 45 2020), including sexagenarian individuals and low-income families. This
 46 consequence very apparent in the senior population, in which more than one-third

exhibit signs of depression and anxiety (Hutton, 2022b). Particularly, those in care homes suffer from loneliness (K. H. M. Ho et al., 2022) due to the no visit policy and related forbidding measures. In spite of modern communication technology, online relationships never replace bodily connections and interaction between residents and their family members (A. T. W. Hung, 2022). The government ignored the imperative of mental and emotional care, and lost the balance between anti-pandemic methods and quality of life.

Tight restrictions have fiercely battered the economy and ushered in the demise of various segments such as the tourist industry (Tsui et al., 2021) and catering sector (P. Lee, 2022f). Subsequently, deficits fell to US\$29.9 billion (HK\$233 billion) and US\$17.9 billion (HK\$140 billion) in the 2020-2021 and 2022-2023 fiscal years correspondingly (P. Lee, 2023; The Treasury Branch, Financial Services and the Treasury Bureau, 2023), with a drop of in the gross domestic product of 4.5% to 9% (Grundy, 2022; V. Yuen, 2022). Recession was inevitable (Riordan & Chan, 2022). Although the post-pandemic budget proposes a US\$97 billion (HK\$761 billion) expenditure to boost economic activities, recovery seems uncertain (CNBC, 2023).

Incompetent leadership, “failed” (Marques, 2020) governance, inflexible tactics, policy loopholes (H. Cheung, 2020) and loose preparation deteriorate the leading role of the government. With lessons learned from SARS 2003, the Hong Kong people are vigilant against infectious diseases, reinforcing community health awareness (F. K. Cheng, 2021a). They responded to the outbreak proactively through personal protection behaviours, including personal isolation, physical distancing, masking and personal hygiene. For example, the first confirmed COVID case evoked citizen to panic-purchase masks even while the government rejected masking (Chung, 2020). Moreover, the slow reaction on the part of authorities was ineffective for different stakeholders; most terribly, for vulnerable groups. Social workers consolidated a variety of limited resources to serve the needy, forming a community development approach (S. M. Lau et al., 2021).

Strengthening personal immunity is the basic element to optimising health status, and for which healthy lifestyle interventions (Monye & Adelowo, 2020) are introduced. Diet and nutrition are essential, specifically regarding foods rich in protein, vitamins and minerals (Calcuttawala, 2022), as well as paying attention to good food hygiene (Coelho-Ravagnani et al., 2021). Physical exercise is helpful in preventing chronic diseases, enhancing mental well-being, and reducing the severity of COVID (Castoldi et al., 2023; Cerasola et al., 2022). Sleep problems were reported during the pandemic (Silva et al., 2020). Breathing and relaxation exercises can improve sleep quality and mental health (Kepenek-Varol et al., 2022) because these techniques tend to favour immune functions (Mohamed & Alawna, 2021). Social connection is conducive to physical and psychological health (Holt-Lunstad, 2022). Keeping adequate social activities also enhance individual, family and social wellness. In contrast, tobacco and alcohol comprise proinflammatory or immunosuppressive molecular markers (Piaggeschi et al., 2021), and thus disrupt immunity (Calleja-Conde et al., 2021). Minimising the use of such substances is advisable.

Conclusion

Despite evidence of a negative correlation between vaccination rate and mortality rate (Smith et al., 2022), inoculation is not the only, or even a sufficient, intervention (F. K. Cheng, 2022a): therefore, it is an untenable liability in connection to the high death rate in the fifth wave. Instead, distrust of the government remains the core component (J. Lau, 2021). Although the government claimed that they had well prepared for fighting the Omicron strain (Hong Kong Government, 2021), healthcare practitioners have blamed the authorities for under-preparation and feeble plans to defy this unprecedented public health battle. Issues of manpower, medical resources, management, policies and practices, and the balance between anti-pandemic measures, individual health (physical, mental and social) and economic development should be officially and comprehensively investigated in order to cope with similar future healthcare emergencies, while recognising that building mutual trust is a prerequisite condition for substantially addressing infectious diseases with minimal collateral damages.

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