

Concepts in Disaster Medicine

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Countermeasures for Health Care Disruptions During Lockdowns

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Abstract

Many countries did not have alternative healthcare arrangements during their initial coronavirus disease (COVID-19) lockdowns. This is surprising as partial and full lockdowns have been previously used to manage terrorism and the severe acute respiratory syndrome (SARS) outbreak of 2002–2003. This paper examines how lockdowns disrupt normal health care services and discusses countermeasures that can be used during lockdowns regardless of the emergency that engendered them. Solutions for consultations and pharmacy operations are discussed pragmatically with frontline clinicians, health care managers, and policy-makers in mind. Mental health services are used as a case in point with generalizable lessons for other healthcare specialties.

The Cambridge Dictionary¹ defines a lockdown as “a situation in which people are not allowed to enter or leave a building or area freely because of an emergency.” Lockdowns have been used to mitigate threats to public safety in pandemics (eg, COVID-19, SARS) and terrorism (eg, Boston Marathon bombings of 2013²; Brussels terrorist hunts in 2015 and 2016^{3,4}). The COVID-19 experience⁵ and other emergencies showed that the extent and duration of lockdowns varied significantly. However, they are structurally similar insofar as they are abruptly imposed when travel is unsafe or outrightly prohibited. This inherently disrupts the usual model of care where clinician and patient meet at a treatment site (eg, for psychological services⁶). The present paper integrates clinical experience together with existing literature on this evolving topic and presents several methods to prepare for, and provide services during, a lockdown.

Health Care Disruptions Under Lockdown

Disruptions are extensively discussed in the commercial sector. They are broadly defined in 2 ways: the entry of new products or technologies that cause existing companies and practices to falter,⁷ and unexpected events that interfere with the normal flow of goods or materials.⁸ For healthcare, the latter definition can be modified to describe lockdown-related disruptions as “unforeseen events that interfere with the provision of healthcare goods and services.” This definition is broad enough to accommodate lockdown disruptions of different causes and severities.

The disruption of psychological care under lockdown can be sector-wide. For example, Italy’s 2-month lockdown in 2020 over COVID-19⁹ saw day treatment centers closed, home visits suspended, and patients could only come on site if they needed depot medication or emergency psychiatric services. Most patients could not receive regular outpatient assessment, therapy, and prescription services. Telephone consultations were arranged for the most symptomatic cases while other patients had to wait.

Our experience at Singapore’s Institute of Mental Health bears many similarities. Singapore underwent a lockdown-like “circuit breaker,” lasting for about 2 months. Staff from several clinical and administrative functions began to work from home during and after this period. Some adjustment was needed for clinicians and patients to switch to telehealth. On-site therapy was restricted to severely distressed or high-risk patients. As with many other countries,¹⁰ several psychiatrists were redeployed to combat COVID-19. The remaining psychiatrists assessed if some appointments could be postponed with a renewed prescription. Pharmacists delivered medication through couriers, negating the need for many patients to come to the institute’s pharmacy. Like Italy, the lockdown disrupted business-as-usual and the institute adopted new methods of providing care while safeguarding all from the wider threat.

Challenges to Continued Care Under Lockdown

Many countries have the infrastructure to continue treatment in a modified form. However, effective implementation was impeded by various practical issues. As a case in point, these challenges are presently examined in 3 common outpatient psychiatric services: psychiatric consultations, psychotherapy, and pharmacies. Typically, consultations with a psychiatrist and/or psychologist are the primary means of providing mental health care. Psychiatrists usually

prescribe medication while psychologists deliver psychotherapy. The medication is dispensed at a pharmacy.

Psychiatric Consultations and Psychotherapy

The movement restrictions under COVID-19 lockdowns were intended to protect health care institutions and patients from the spread of infection that would otherwise compromise a health care system's capacity to cope with patients' needs. Telehealth is a commonly suggested workaround for disruptions during this period.^{6,9,10-12}

The extant literature generally refers to telehealth as consultations that are held through telephone calls or video conferencing. Telehealth may be especially suitable for psychiatry over other specialties as assessments are largely based on clinical interviews rather than physical examinations.¹² However, the international experience with COVID-19 showed that the switch to telehealth was fraught with difficulties.

First, some Zoom online meetings were infiltrated by third parties as the demand for Zoom meetings spiked during the pandemic.¹³ This is important as clinicians are ethically obliged to preserve patient confidentiality. Second, the health care sector was competing with other sectors for teleconferencing bandwidth. Corporations are likely to seek out the same remote working technologies during a lockdown, and telehealth services may not have the bandwidth to meet demand, especially if the surge in demand occurs globally as it did with COVID-19.^{14,15} Third, financial and socioeconomic problems may impede patients' engagement with telehealth services.^{6,12} Insurance providers were slow to provide telehealth reimbursements that matched in-person sessions. The assumption that patients have the knowledge and resources to access telehealth services also risks excluding poorer and less educated individuals. In our clinical experience, common challenges included limited data or telephone talk time or missed sessions because the patient could not pay for telecommunication bills. Fourth, clinicians or patients may be unfamiliar with telehealth,^{6,10,16} resist its adoption,¹⁷ or lack a conducive environment for consultations (eg, lack of privacy when locked down at home).¹¹ In our experience, nearby construction, heavy rain, and similar issues can make telehealth sessions difficult or impossible to hold. This is true for patients, as well as staff who are working from home. Finally, telehealth can significantly limit the process of psychological assessment and therapy. While a physical examination is less emphasized in psychiatry,¹² a patient's appearance and behavior can provide important signs of illness (eg, hand tremors suggestive of medication side effects). These observations may not be readily apparent in a teleconsultation. Certain psychotherapies, like in vivo exposure for obsessive-compulsive or posttraumatic disorders, may not be done correctly or safely without the psychologist's physical presence. The ability to monitor self-harm and intervene immediately is also limited and more community or emergency outreach services may be required.⁶

While continued in-person care might be preferred in light of the problems above, staff, union, and legal entities may protest against such arrangements without prior consent, protective measures, or added compensation. Staff buy-in is paramount to prevent further disruption. For example, Taiwan quarantined a hospital during the SARS period in 2003 and confined staff and infected patients within it. Staff tried to escape and clashed with police, stating that they are well and should not be kept together with infected patients.¹⁸ Further service disruption may ensue if staff have not agreed to working arrangements under emergency lockdowns.

Pharmacies

Pharmacies are essential for the acquisition, storage, and dispensation of medication. This involves logistical work (eg, temperature-controlled storage, inventory management) and patient interaction (eg, administering controlled drugs, counseling on side effects). Patients traditionally come to a pharmacy to obtain medication, but this is problematic in a lockdown.

First, lockdowns and closed borders can disrupt the global supply chain,¹⁹ and increased international demand for certain drugs could result in shortages. The shortages are associated with difficulties in obtaining bioequivalent drugs, doing so at greater cost, and a higher risk of adverse patient reactions.²⁰ This may be compounded by patients who stockpile medication for fear of shortages. Second, staff shortages may occur if pharmacists and other support staff are redeployed to serve in new settings during pandemics. This may lead to a backlog of prescriptions that prevents patients from receiving a continuous supply of medication, thus jeopardizing their health. Third, patients may also behave in an intimidating manner. Against a background of high public anxiety and uncertain drug supplies, some pharmacists wanted dedicated security staff as they dealt with difficult or frightening individuals during the COVID-19 outbreak.²¹ If some pharmacies are closed for safety reasons, the remaining pharmacies could face backlogs, uncertainties over the timely availability of medication, and prescribers may become unsure where prescriptions should be sent to.²² Thus, inadequate security during the broader emergency further disrupted the supply of pharmacy goods and services. Last, while in-pharmacy medication counseling and dispensation can be replaced by telehealth consultations and courier deliveries, the providers of these services may not be able to absorb a sudden spike in demand. The telehealth aspect was discussed previously. For couriers, an abrupt and large-scale transition to this mode of dispensation may be overwhelming. This is especially true when other sectors continue business operations by using couriers as well (eg, restaurant food deliveries when lockdowns prevent on-site dining). This last point is crucial as solutions to the aforementioned pharmacy problems are futile if medication cannot be delivered in a timely manner.

Operational Countermeasures

This is not a criticism of any organization, government, or country. The commonalities across lockdown scenarios were not noted before and generalizable countermeasures were not created. Fortunately, they can be overcome with prior preparation.

Psychiatric Consultations and Psychotherapy

On the technological front, appropriate telehealth providers and the prerequisite hardware could be sourced for beforehand. This concerns both the quality of the technology (eg, security, reliability), its quantity (eg, spare bandwidth, extra devices in case of damage), and training in its secure and effective use. Once these are addressed, telehealth can even be incorporated into routine care outside an emergency for patients who cannot travel to treatment sites safely or conveniently (eg, those with ambulatory problems).

Telehealth is also free from the limitations of a fixed number of consultation rooms in a clinic. If a physical room is not needed, clinicians and patients can schedule teleconsults at a mutually convenient time instead of relying on room vacancies. The schedule can avoid times where environmental distractors are absent (eg, external noise, other family members). As such, the incorporation

Table 1. Suggested leaflet for patients who are new to telehealth^a

Your device	<ul style="list-style-type: none"> • Ensure you have a strong and stable WiFi and telephone reception. • Ensure that you can talk to someone clearly on speaker mode (you can call a friend to test this). • Use headphones to speak and hear more clearly.
Your environment	<ul style="list-style-type: none"> • Find a private and quiet place (eg, a personal bedroom or meeting room if you're at work). • If other people are around, ask them to leave the room and leave you undisturbed for the duration of the session. • Face a source of light so that your face can be seen clearly. • Schedule sessions during quieter times of the day (eg, away from construction activity or rush hour traffic).
Your caller	<ul style="list-style-type: none"> • Remember to check whether the person calling you is your psychologist. Someone else may coincidentally call you around the same time. • Your psychologist will never ask you for your financial details. If your caller does so, he or she could be an impersonator and you should report this to the police. • You can call our enquiries hotline at 6389 XXXX to verify the identity of our staff.

^aThis should be modified to fit local circumstances and data protection laws.

of telehealth services into routine care improves both treatment capacity and convenience. However, telehealth needs to be a routine practice if it is to be used effectively during emergencies.²³ The effectiveness and operational benefits of telehealth led our institute to incorporate it into routine care even after Singapore exited its “circuit breaker.”

Environmental and behavioral obstacles to telehealth can also be addressed beforehand. Clinics should brief patients on appropriate preparations for constructive teleconsultations. Table 1 provides some helpful information for patients who are new to telehealth. This is derived from our own experience and should be modified to fit local circumstances and data protection laws.

Financially, insurance providers can provide reimbursement for telehealth services during lockdowns. For instance, on March 6, 2020, the “1135 waiver authority and Coronavirus Preparedness and Response Supplemental Appropriations Act” in the United States temporarily expanded Medicare insurance coverage to include telehealth services for a broad swathe of health care professions.²⁴ However, lasting telehealth insurance coverage could facilitate a faster transition to telehealth during emergencies.

Patients with financial difficulties that impede telehealth engagement can be identified beforehand. Appropriate financial support can then be set aside. Alternatively, telehealth stations for patients may be set up outside danger zones. The booths can be disinfected between sessions or guarded by security personnel, depending on the nature of the emergency.

However, telehealth also implies a physical distance between the patient and the clinician or hospital. Risk management will thus depend on community or emergency outreach services.⁶ Organizations can consider setting up direct lines between telehealth clinicians and these services, as well as increasing these services' capacity to meet increased callouts over suicide or domestic violence during a lockdown.

Finally, staff buy-in is paramount to prevent further disruption. Staff, unions, and employers need to agree on treatment arrangements, adequate compensation and safeguards for extraordinary work-related risks, along with additional costs (eg, for telehealth infrastructure while working from home). The conflict between hospital staff and police in Taiwan over a SARS outbreak in 2003¹⁸ underscores the importance of developing a consensus before it is needed in a lockdown.

Pharmacies

For COVID-19, pharmacies have attempted to meet patients' needs through teleconsultations, temporary pick-up locations

within a locked-down region, medication home delivery, and drive-through collection points, among others.^{25,26} These may be implemented for lockdowns, in general, if the following are addressed.

First, pharmacies need adequate stockpiles of medication before lockdowns disrupt supply chains. Creating a “reserve bank” of medications for pandemics has been previously suggested,¹⁹ and this can be extended to other drugs that may face supply disruptions.

Movement restrictions are commonly used during lockdowns so medication must be delivered to patients who cannot come to a physical pharmacy. Timely delivery ensures that patients can continue to take their medication at the prescribed dose and frequency. Organizations need to ensure that the logistics sector can meet the increased demand for medication deliveries during lockdowns, especially if other industries are using similar services to deliver goods. The military can be mobilized if the commercial logistics sector cannot accommodate demand. Militaries tend to have extensive logistical capabilities and personnel that can be adapted for humanitarian purposes like medication delivery.²⁷ Military logistics can also be used if existing stockpiles are nearing depletion. Militaries can manage and rapidly transport large quantities of supplies, and this has been used to respond to humanitarian disasters before.²⁷ The same capabilities can be used to restock medical supplies (inter)nationally. For instance, the United States Air Force and Indian Air Force flew oxygen supplies to India to alleviate shortages amidst an overwhelming surge of COVID-19 cases.^{28,29}

Second, pharmacies can hire dedicated security personnel. Security guards who are trained to manage human behavior and aggression can reduce the threatening behavior of visitors, although they need to be informed of site-specific risks and appropriate responses.³⁰ For example, restraining an elderly osteoporotic patient as if he were a strong young man could cause serious injury. The appropriate management of threatening persons can prevent further disruption to pharmacy operations.

Third, target hardening refers to architectural or engineering designs to control access to specific areas and impede violence.³⁰ Police officers who are familiar with violence prevention can conduct shopfloor audits and advise pharmacies on appropriate security measures. Of the strategies discussed by Mayhew and Chappell,³⁰ locked staff working areas and designated safe escape rooms may be the most versatile way of securing staff and drugs alike if security guards are overwhelmed. At the very least, evacuated staff can be redeployed to manage the spill-over demand at other pharmacies, thereby minimizing disruptions to the pharmacy sector in general.

Limitations

This discussion triangulates information from academic sources, news media, and direct clinical experience or clinical reports. Regrettably, we could not obtain quantitative measures of disruptions like canceled/rescheduled appointments, prescription delays, or adverse patient outcomes during the discussed lockdowns. Nevertheless, existing evidence clearly shows that substantial disruptions occurred even if their extent could not be quantified.

The emergencies discussed also occurred in developed, urban countries where infrastructure for services like telehealth and couriers is present. Their availability may also be presumed in discussions about technological or logistical innovations in health-care. However, countermeasures that presuppose the existence of such infrastructure may not be appropriate for developing countries, or rural areas in developed ones. Local modifications should then take precedence over the broad countermeasures discussed.

Conclusion

Lockdowns inherently disrupt the traditional model of health care delivery. Many countries have the resources to provide continued care under lockdowns, but prior planning is needed if we are to respond in a timely and effective manner. Beyond the COVID-19 crisis, health care leaders must consider how we can operate as a hospital without walls¹² and why some of the aforementioned measures have not already become routine practice.²³

Conflict(s) of interest. None

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