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Role of hospital leadership in pandemic preparedness: experience at a tertiary hospital in Kenya during the COVID-19 pandemic

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ABSTRACT

Introduction Pandemic preparedness refers to being ready for, responding to and recovering from public health crises, and is integral for health security. Hospital leadership is a critical building block of an effective healthcare system, providing policy, accountability and stewardship in a health crisis.

Objectives and methods We aimed to describe the leadership and governance structures put in place at the Aga Khan University Hospital, Nairobi, a private not-for-profit tertiary healthcare facility, following the COVID-19 pandemic. We reviewed over 200 hospital documents archived in the COVID-19 repository including those received from the Kenya Ministry of Health, emails, memos, bulletins, meeting minutes, protocols, brochures and flyers. We evaluated and described pandemic preparedness at the hospital under four main themes: (a) leadership, governance and incident management structures; (b) coordination and partnerships; (c) communication strategies; and (d) framework to resolve ethical dilemmas.

Results The hospital expeditiously established three emergency governance structures, namely a task force, an operations team and an implementation team, to direct and implement evidence-based preparedness strategies. Leveraging on partners, the hospital ensured that risk analyses and decisions made: (1) were based on evidence and in line with the national and global guidelines, (2) were supported by community leaders and (3) expedite financing for urgent hospital activities. Communication strategies were put in place to ensure harmonised COVID-19 messaging to the hospital staff, patients, visitors and the public to minimise misinformation or disinformation. An ethical framework was also established to build trust and transparency among the hospital leadership, staff and patients.

Conclusion The establishment of a hospital leadership structure is crucial for efficient and effective implementation of pandemic preparedness and response strategies which are evidence based, well resourced and ethical. The role of leadership discussed is applicable to healthcare facilities across low and middle-income countries to develop contextualised pandemic preparedness plans.

INTRODUCTION

Pandemic preparedness is a state being ready for, responding to and recovering from public health crises. It is an ongoing process entailing planning, executing and revising pandemic response plans.¹ Preparedness to respond to and manage public

WHAT IS ALREADY KNOWN ON THIS TOPIC

⇒ With COVID-19 pandemic, countries relied only on experience and guidelines from previous epidemics. We evaluate hospital leadership and governance structures and the pivotal role played in guiding the dynamic process of pandemic preparedness within a complex healthcare system.

WHAT THIS STUDY ADDS

⇒ Hospital pandemic response is effective and efficient when guided and supported by hospital leaders who ensure communication and employee well-being in a coordinated, accessible and inclusive manner. Ethical guidelines should be formulated, contextualised and safeguarded. Harmonising hospital pandemic preparedness plans offers an opportunity to maximise available resources, increase coordination and partnership, thus reduce duplication of efforts in future pandemics.

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

⇒ Experiences discussed will contribute to future pandemic preparedness and management plans for facilities in low and middle-income countries. Hospital leadership should guide contextualised formulation of preparedness plans while supporting governments to develop national preparedness strategies.

health crises is an integral component in a healthcare system, and hospitals play a critical role for overall national and regional pandemic preparedness.² The COVID-19 pandemic underscored the importance of a robust preparedness structure at global, regional and facility levels. It challenged systems and exposed gaps in healthcare delivery especially in low-income countries.^{3 4} COVID-19 management required leadership at all levels of the healthcare hierarchy, especially at hospital level. WHO published during the pandemic blueprints for adoption by countries in response to the outbreak in their settings,^{5–8} but prior to these, hospitals relied on experience and guidelines from previous epidemics such as influenza⁹ and Ebola virus disease.^{10–12}

A pandemic preparedness plan at facility level is important to ensure hospitals care for patients with

minimal disruption in emergency situations.¹³ It is a mandate of hospital leadership to ensure no gaps in infection prevention and control (IPC) protocols, to prevent spread to healthcare workers (HCWs), homes and the community. Measures to augment IPC in healthcare facilities¹⁴ such as hand hygiene,¹⁵ proper use of personal protective equipment (PPE), redesigning of workspaces and processes, establishment of screening strategies, designating IPC champions and conducting formal audits^{5 16 17} can only be implemented where there are good leadership structures.

In this paper, we detail aspects of leadership and governance for hospital pandemic preparedness by evaluating strategies developed by the Aga Khan University Hospital, Nairobi (AKUH,N), a tertiary facility in Kenya, following the COVID-19 outbreak. We evaluate pandemic preparedness under four main pillars, adapted from a framework by WHO for health service capacity assessment for managing COVID-19 in a hospital⁷: (a) leadership, governance and incident management structures; (b) coordination and partnerships; (c) communication strategies; and (d) framework for ethical resolution of expected clinical dilemmas.

Leadership, governance and incident management structures

Successful alleviation of a health crisis requires an effective and synchronised top-down leadership structure, which puts in place a plan to manage patients and HCWs and mitigate foreseeable risks.¹⁸ Pandemic preparedness planning is not a static process and requires input from all levels of hospital staff.^{6 9} Indeed, Saban *et al* concluded that cooperation between individuals, institutions, the community and religious leaders builds resilience in emergency situations.¹⁹ Coordinated, accessible and inclusive communication, education, adequate resourcing and employee well-being are necessary for pandemic preparedness²⁰ and should be guided from the top.

Coordination and partnerships

A second pillar of a preparedness plan is timely and efficient coordination, its first line being internal, that is, among the hospital leadership, management and staff.^{9 20} Coordination and partnership between the hospital and other local health facilities, the country's government through the Ministry of Health (MoH) and global leadership through WHO is necessary.²¹

Communication strategies

Efficient and effective vertical (top-down, bottom-up) and horizontal communication among a hospital's leadership, management, staff, patients and the public is essential for effective health crisis management.²² The H1N1 pandemic highlighted the need for inclusive risk communication and community engagement to improve reach, accuracy and timeliness of public health messages, ensuring compliance with recommended measures.²³

Framework for ethical resolution of clinical dilemmas

Pandemics cause panic, confusion and anxiety.^{24 25} To mitigate these, ethical considerations must be applied and safeguarded.⁹ During the COVID-19 pandemic, a major challenge faced by hospital leadership was the dilemma of 'who lives?'. With the high number of infected patients in relation to available resources, and the initial limited understanding of COVID-19, this became a concerning reality for HCWs. It begged the question, 'which patient should be prioritised for treatment and what would determine priority?' A framework on ethical decision-making for access to critical care services in patient influx therefore becomes a crucial part of the pandemic preparedness plan.

We share our experience in the operationalisation of these four pillars for pandemic preparedness at AKUH,N, and discuss the strengths and limitations, to augment preparedness protocols at healthcare facilities in our setting.

METHODS

AKUH,N is a tertiary and teaching hospital in Kenya providing healthcare within Kenya and across the East-African region. It served as one of the facilities for treatment and management of COVID-19 in the country. From its COVID-19 repository, all documents relating to leadership and management structures during the pandemic were included in the review. Medical records that contained specific patient treatment were excluded. We reviewed over 200 hospital documents dating between January 2020 and May 2021. These included emails, memos, bulletins, meeting minutes, brochures, flyers and protocols developed from all hospital departments. Source departments included accident and emergency (A&E), critical care units, nursing, radiology, pathology, paediatric, transport, house-keeping, catering and outreach services. Also reviewed were documents received from MoH. We verified all documents used as source documents for completeness. Based on WHO framework for health service capacity assessment for managing COVID-19 in a hospital,⁷ documents collected were evaluated and pandemic preparedness at AKUH,N described under the four main themes earlier enumerated:

- ▶ Leadership, governance and incident management—we assessed whether the hospital had: documented pandemic preparedness plan guided by WHO and Kenya MoH; defined specific actions and the responsibilities of key actors; a command and control centre and advisory/steering committee; a flexible plan based on pandemic severity; defined assumptions; mitigation measures outlined; and whether an exit strategy was defined.
- ▶ Coordination and partnerships—we assessed aspects of whether: the plan engaged local, regional and global partners; and the partnerships involved financial or technical support.
- ▶ Communication strategies—we assessed whether a communication plan was put in place, whether target audiences for communication were identified, whether measures were taken to inform perceptions and attitudes about the pandemic and whether there was a reporting and feedback mechanism established.
- ▶ Framework for ethical resolution of clinical dilemmas—we assessed whether an ethical framework for pandemic response was in place; presence of an ethical committee; and whether ethical protocols were established.

RESULTS

Leadership, governance and incident management structures

AKUH,N's pandemic preparedness planning began early in the pandemic. The first leadership meeting was held in January 2020, immediately following WHO announcement of a cluster of pneumonia cases caused by a novel coronavirus (SARS-CoV-2).²⁶ Three governance levels were established as illustrated in figure 1.

Task force

Immediately, a task force headed by the hospital chief executive officer was constituted to serve as the hospital's command and control hub. It was composed of clinical department chairs; heads of human resources, communications, security, biomedical

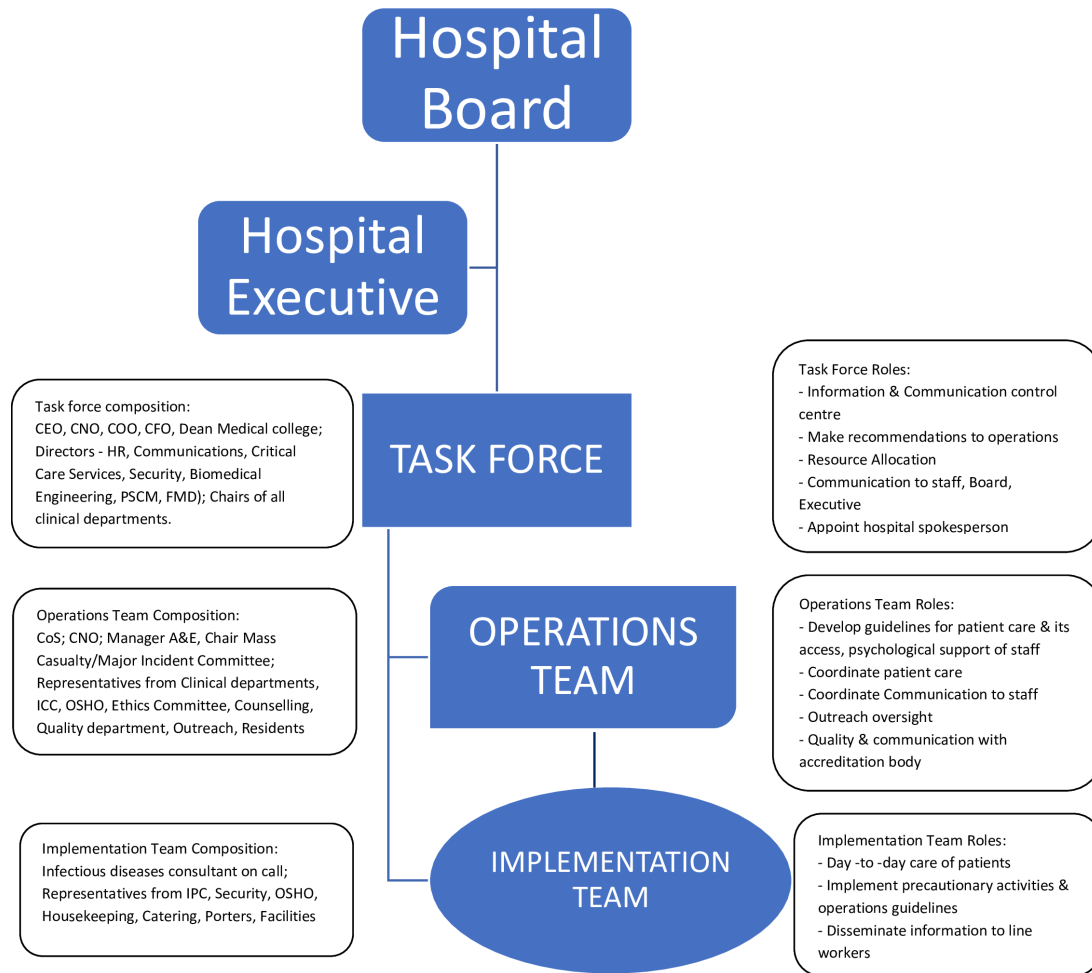


Figure 1 Schema showing levels of governance for handling the COVID-19 pandemic specific to Aga Khan University Hospital, Nairobi (AKUH,N). Members of the various teams outlined can be tailor made for the health facility. A&E, accident and emergency; CEO, chief executive officer; CNO, chief nursing officer; COO, chief operations officer; CFO, chief financial officer; CoS, chief of staff; FMD, facilities management division; HR, human resources; ICC, infection control committee; IPC, infection prevention and control; OSHO, occupation and safety health office; PSCM, purchasing and supply chain management.

engineering, facilities, and purchasing and supply chain management departments. Meeting daily, the task force had the role to (1) receive and review information from the operations team for handling the pandemic, (2) make recommendations to the operations team, (3) allocate resources, (4) facilitate communication to the hospital staff and the executive board and (5) appoint and facilitate a hospital spokesperson.

To execute these core objectives, the task force developed hospital response, risk anticipation and mitigation plans.

Hospital response plan

A response plan was developed and executed in four stages based on the number of patients anticipated in the country and within the facility, outlined in table 1. The plan emphasised continuous education and training, standard operating procedure development, movement control and screening procedures to identify a ‘suspect’ case, testing and treating capacity, IPC measures and support measures for the HCWs and staff including psychological support.

Risk anticipation and mitigation plan

Table 2 outlines the risk anticipation and mitigation plan developed by the task force to provide guidance to the operations and

implementation teams. Potential risks included staff infections, supply shortage, patient surge, panic, misinformation and myths. Mitigation strategies included staff training and education, supply stocking including of PPE, enhancing staff COVID-19 medical cover, conducting patient influx drills and simulations, timely communication, implementation of IPC protocols and establishing a field hospital.

Operations team

The second level of governance was the operations team. It was multidisciplinary, comprising the hospital leadership, representatives from all clinical departments, occupation and safety health, IPC, counselling and quality departments. Its roles were to (1) develop and implement operational guidelines for patient care and staff support, (2) coordinate communication and (3) ensure quality and communicate with quality assurance bodies. This team met weekly to analyse and adjust guidance based on updated COVID-19 situation in the world, in Kenya and at the hospital.

Implementation team

This multidisciplinary, cross-cadre team had representatives from the IPC clinical department, security, housekeeping and

Table 1 Hospital COVID-19 response plan

Stage	COVID-19 cases anticipated	Plan of action
0	None	<ol style="list-style-type: none"> 1. Focused education <ol style="list-style-type: none"> a. To staff <ul style="list-style-type: none"> ▶ Infection prevention. ▶ Internal procedures for care of a patient with COVID-19. b. To public on infection prevention c. To non-infectious disease doctors and nurses on clinical manifestations of COVID-19 and patient management 2. SOP development <ul style="list-style-type: none"> ▶ For prevention, screening, diagnosis, treatment and management. ▶ Specific SOPs for different hospital departments, for example, critical care, maternity, paediatrics, surgery and anaesthesia. 3. Entry point and facility planning <ul style="list-style-type: none"> ▶ Identify and map out possible points of entry of patients with COVID-19 and prepare these for triaging. ▶ Identify and map out all facilities and machines needed to care for patients.
1	Case detected in Kenya	<p>All actions in stage 0 plus:</p> <ol style="list-style-type: none"> 1. Increase testing capacity 2. Infection prevention and control <ul style="list-style-type: none"> ▶ HCWs to have N95 masks fitted. ▶ Set up triage rooms. ▶ Set up negative pressure rooms for cases requiring intubation. 3. Training and drills <ul style="list-style-type: none"> ▶ For HCWs on patient with COVID-19 care. 4. Ensuring materials and supply availability <ul style="list-style-type: none"> ▶ Stock levels adjusted to avail 6-month supply.
2	Local and community transmission confirmed	<p>All actions in stages 0 and 1 plus:</p> <ol style="list-style-type: none"> 1. Revise hospital accessibility <ul style="list-style-type: none"> ▶ Restriction of entrance to the hospital. ▶ Restriction of visitors to the hospital. 2. Enforce IPC protocols <ul style="list-style-type: none"> ▶ Set-up of screening points, for example, temperature screening at all entrances for staff, patients and visitors. ▶ Mask wearing—mandatory for all.
3	Case reported at the hospital	<p>All actions in stages 0, 1 and 2 plus:</p> <ol style="list-style-type: none"> 1. Psychological support for staff caring for patients with COVID-19
4	Hospital capacity exhausted	<p>All actions in stages 0, 1, 2 and 3 plus:</p> <ol style="list-style-type: none"> 1. Consideration of alternative management sites 2. Activate diversion protocol to other hospitals

HCW, healthcare worker; IPC, infection prevention and control; SOP, standard operating procedure.

catering departments, with the mandate to execute risk mitigation activities while disseminating validated information to line workers. The team was also tasked with coordinating drills and staff training and worked to manage patient surges.

Surge contingency

The hospital's ability to expand beyond its regular operations was periodically evaluated by the implementation team for potential expansion of staff (human resource), stuff (materials and equipment) and space (capacity), as necessary to accommodate more patients.

Bed capacity

All the beds available at the hospital's intensive care unit (ICU) were designated for patients with COVID-19. At one point, entire wards were converted into COVID-19 wards following discharge of many non-COVID individuals who would be able to continue treatment as outpatients.

Establishment of a field hospital

To increase bed capacity, with assistance from donor partners, a field hospital with capacity to scale to 100 beds was set up for non-critical patients. Admitted here were patients who (1) would not require oxygen levels higher than those delivered through nasal prongs, (2) were stable for more than 72 hours and only

required weaning-off oxygen therapy, (3) were stable but still required other ongoing treatment, (4) were not on treatment for other comorbidities and (5) had no more than 50–75% liver involvement on CT scan regardless of oxygen requirement. Discharge from the field hospital occurred when patients no longer required oxygen supplementation (online supplemental figure A).

Mass patient influx management plan

To contain anticipated patient surges, a mass patient influx checklist was developed and documented for all hospital departments including safety and security, porters and patient transport, laundry, catering, housekeeping, A&E, pathology, radiology, paediatrics, critical care units and outreach services (online supplemental figures B–D). The checklist followed the acronym *CS-ACCTTT*, that is:

Command—precisely stating the person(s) in charge.

Security—outlining security measures, security contact person(s) and need to have full PPE donned.

Assessment—'METHANE' summary generated. Assessment to ensure:

Mass COVID-19 patient influx was on standby or declared.

Exact location of patient identified.

Type of incident defined.

Table 2 Anticipated risks and mitigation plans

Anticipated risk	Underlying causes of risk	Anticipated impact	Mitigation strategy
Reduced materials and supplies	Disruption of the supply chain	<ul style="list-style-type: none"> ▶ Increased infection exposure to staff ▶ Inability to care for patients 	Stocking 6-month worth of supplies (calculated on an ongoing consumption basis)
Staff infections while on duty	<ul style="list-style-type: none"> ▶ Inadequate information ▶ Inadequate or inappropriate PPE 	<ul style="list-style-type: none"> ▶ Low staff morale ▶ Clinical duty abandonment 	Peer training of staff <ul style="list-style-type: none"> ▶ Training of trainers at department level. ▶ Guidelines and training on use of PPE. ▶ Provision of PPE.
Staff anxiety and panic	<ul style="list-style-type: none"> ▶ Inadequate information ▶ Inadequate process of knowledge assimilation in high-risk situation 	<ul style="list-style-type: none"> ▶ Low staff output and morale ▶ Suboptimal patient care 	<ul style="list-style-type: none"> ▶ Staff and immediate dependants with full COVID medical cover ▶ Reserved staff COVID-19 treatment facility ▶ Clear guidelines and handbook to staff and families of admitted patients
Staff shortage	<ul style="list-style-type: none"> ▶ Patient surge ▶ Infected staff under treatment or quarantine ▶ Multiple unplanned staff absenteeism due to infection ▶ Low staff morale 	<ul style="list-style-type: none"> ▶ Increased infection exposure to staff ▶ Inability to care for patients 	<ul style="list-style-type: none"> ▶ Adequate PPE provision ▶ Staff training ▶ Staff treatment
Exceeding internal hospital capacity and the national health system capacity	Patient upsurge	<ul style="list-style-type: none"> ▶ Ethical dilemmas—of ‘who lives?’ and ‘who gets priority for treatment?’ ▶ Multiple fatalities ▶ Increased infection spread 	<ul style="list-style-type: none"> ▶ Ensure mass patient influx plans are in place ▶ Conduct mass patient influx drills ▶ Establishment of field hospital ▶ Treatment innovations ▶ Establish ethical guidelines
Internal and community transmission	<ul style="list-style-type: none"> ▶ High number of admitted patients ▶ Hospital contamination ▶ Failure to follow guidelines 	<ul style="list-style-type: none"> ▶ Increased infections and fatalities ▶ Potential to drive community spread of infection 	<ul style="list-style-type: none"> ▶ Implement IPC procedures at all levels ▶ Personal protection guidelines ▶ Decontamination protocols
Misinformation, disinformation and myths	<ul style="list-style-type: none"> ▶ Communication breakdown ▶ Unverified sources of information 	<ul style="list-style-type: none"> ▶ Confusion ▶ Lack of community support ▶ Loss of trust 	<ul style="list-style-type: none"> ▶ Timely communication leaving room for questions ▶ Share only verified information ▶ Familiarise with existing WHO and MoH guidelines

IPC, infection prevention and control; MoH, Ministry of Health; PPE, personal protective equipment.

Hazard presence and potential hazards defined; PPE, HEPA (High Efficiency Particulate Air) filter, isolation room availability defined.

Access and exit routes marked.

Number and severity of patients already received and those expected defined.

Emergency staff currently present and additional required staff defined.

Communication—the METHANE report was communicated to all relevant departments within 30 min of activation. Communication to the patient, family, public and press as necessary was conducted through a designated public information officer.

Clearing—the waiting areas were cleared of patients; patients without COVID-19 transported to designated clinics for continued management.

Transport/traffic control—patient transport coordinated.

Triage and tagging—by the designated staff according to patient symptom severity.

Treatment and support services—designated clinical teams were defined.

Drills and staff training

Drills

Within 3 weeks of the first COVID-19 case reported in Kenya, AKUH,N conducted a patient influx drill simulating care for up to 30 patients, six requiring critical care, arriving the hospital within 2 hours. The key assessment areas of the drill included:

- ▶ *Staff safety*, assessing the donning and doffing of PPE.

- ▶ *Reception and isolation* of a suspect patient.
- ▶ *Decontamination* of surfaces and equipment used, for example, stretchers, wheelchairs.
- ▶ *Portable imaging* and safety of radiographers.
- ▶ *Exit* of patient from A&E.
- ▶ *Safe transportation* of patient and safety of transport team.
- ▶ *Effective handover* of patient at care units, for example, to ICU or ward.
- ▶ *Phlebotomist safety* during sample collection.
- ▶ *Activation* of hospital incident *command structure*.

Staff training

Training of clinical and non-clinical staff commenced 2 months before the first COVID-19 case was announced in Kenya. Over 633 staff across all hospital departments were trained on IPC protocols, personal and family safety, departmental preparedness, crisis training and patient safety. Information communication and technology training was also conducted as many hospital processes became digitised and telehealth care enhanced. These trainings, which continued through subsequent months, served to inform, update, educate, clarify, answer questions and address concerns of staff.

Staffing

Hiring of staff was done incrementally across all cadres. By mid-2020, an additional 47 staff had been hired to the nursing, administration, pathology, finance and physiotherapy departments to

augment care and support of patients. Newly recruited staff also underwent staff training. At the same time, tracking staff infections, treatment, recovery and number on sick leave was conducted so as not to have major gaps in staffing.

Facilities, equipment, materials and medication

Isolation rooms were created to prevent spread of the COVID-19 causing virus, SARS-CoV-2. Further, acquisition and reorganisation of machines required for patient management such as mechanical, non-invasive and transport vents, dialysis and continuous renal replacement therapy machines was done. Within a few months of the outbreak, the hospital's testing requirement averaged 230 tests per day. This necessitated increasing its testing capacity by purchase of an additional PCR machine with support of a donor. The surge mitigation plan was followed to ensure maintenance of at least a 3–6 months' stock of test kits and 6–9 months' stock of PPE through the pandemic.

As anticipated, drug requirement for treatment of COVID-19 and related symptoms also increased. The pharmacy department ensured at least a 3-month supply of medication was available throughout the pandemic. Oxygen, which is essential for the management of critically ill patients, was consistently available and all liquid oxygen levels maintained above 80% capacity. To avoid stock gaps, a supply tracker was developed and maintained for all PPE, test kits, medications and oxygen.

Exit strategy

The task force, operations team and implementation team were retained even when the pandemic appeared to ease off. In fact, even into the second year of the pandemic, members of the task force held meetings every week.

Coordination and partnerships

The internal governance structure described in *Leadership, governance and incident management structures* was the first line of coordination. The hospital also worked in concert with other Aga Khan hospitals across the country to ensure that each facility had adequate supplies of test kits and PPE, coordinating cross-hospital sharing as necessary. Additionally, external partners and donors from the local community, business community and religious leaders were involved in the hospital's pandemic preparedness and response planning. The hospital leveraged these partnerships to expand its capacity through hiring of additional staff, set-up of the field hospital, purchase of testing equipment and medication and enhancing telehealth care, thus minimised shortages and interruption of patient care.

Further, throughout the pandemic, AKUH,N consistently followed directives and guidelines provided by the Kenya MoH to ensure compliance with latest global consensus. The hospital also maintained a reporting system to the MoH of its testing, treatment and outcome statistics, thereby effectively contributing to national COVID-19 daily tallying. Coordination and partnership between AKUH,N and other local healthcare facilities also ensured patient transfers were conducted efficiently.

Communication strategies

The hospital's communication strategies were tailor made and targeted staff, patients and the community. The goals were to educate, allay fear, correct misinformation and myths and enable feedback loop. Communication approaches used included open discussion forums, question and answer sessions, frequently asked questions preparation, visual messages like flyers and brochures,

and press releases; hotline numbers were also provided. Table 3 summarises the hospital's communication plan and approaches.

Framework for ethical resolution of expected clinical dilemmas

A triage committee formulated, reviewed and updated ethical guidelines for use at AKUH,N. The committee was made up of a member of the hospital's ethics committee, critical care clinician, infectious disease specialist, palliative care specialist, faith leader, social scientist, social worker and a layperson, and reported to the medical director. Parameters for determining critical care or intensive interventions for a patient were evaluated using the Sequential Organ Failure Assessment score²⁷ and the Acute Physiology and Chronic Health Evaluation II scoring system.²⁸ The committee met or liaised via conferencing media, making recommendations which were communicated to the medical director within 1 hour of scoring, after which final decision on patient treatment was made (online supplemental figure E summarises the decision-making schema). The mitigation strategies earlier described (*Risk anticipation and mitigation plan*) also helped keep staff motivated to continue working ethically even in the face of uncertainty.

Additionally, an informed consenting protocol specific to COVID-19 treatment was developed and put in place. Consent from the patient or next of kin for treatment including for use of trial medicines and participation in any clinical trials was sought. Consent was sought to collect anonymised patient information and biological material for teaching, quality analysis and research. Beyond this, consent was sought from the hospital's staff to agree to conduct research activities during the pandemic (online supplemental figure F).

DISCUSSION

AKUH,N experience demonstrated the importance of hospital leadership in establishing and steering appropriate and scalable pandemic responses at their facilities. The hospital leadership expeditiously responded to the COVID-19 pandemic. Effective execution of the responsibilities of the leadership teams was hinged on efficient coordination and adaptability of staff (human resource), stuff (materials and equipment), space (capacity) and systems (management).

A major strength in AKUH,N's leadership, governance and incident management structure was the multidisciplinary and cross-cadre involvement of staff in designation of the task force, operations team and implementation team, with shared decision-making and delegation of responsibility in trust-based teamwork and continuous accountability to each other. Pandemic preparedness planning is not a static process and requires input from all levels of hospital staff.^{6,9} Similarly observed at the Sultan Qaboos University Hospital, cross-departmental structures accelerated the operational outcome of its response plans.²⁹

AKUH,N leveraged its partnerships to hire additional staff, set up the field hospital, purchase additional testing equipment and enhance telehealth care. This ensured patient care continued with minimal interruption. Indeed, cooperation between individuals, institutions, community and religious leaders builds resilience in emergency situations¹⁹ and accelerates the operational outcome of response plans.²⁹ Additionally, its preparedness plan was guided by the Kenyan MoH and WHO, thus the hospital was part of a national harmonised system for readiness, response and recovery.

Although there was some fear and anxiety among staff, the hospital's leadership provided real-time verified information,

Table 3 COVID-19 communication strategy and approaches

Target audience	Strategy	Goal	Approach
Clinical and non-clinical staff	Proactive risk communication and education	Ally fears and educate on IPC measures.	1. Transparent and direct communication from the senior leadership on: ▶ Commitment to staff safety. ▶ Major happenings and announcements about the pandemic. 2. Personalised emails and FAQs brochures
		Dispel misinformation/myths and correct disinformation.	Staff meetings—opportunity for staff to ask direct questions
	Situational-based communication and education	Maintain open staff engagement with channels for feedback.	Transparent and direct communication from leadership and sharing of outbreak response plans as the pandemic evolves
Patients and general public	Proactive risk communication and education	Equip all staff to receive up-to-date information.	Engage team leads via Q&A sessions who in turn hold similar sessions with their staff teams
		Ally fears and equip visitors with correct information.	1. Transparent and direct communication on IPC measures 2. Visible flyers around the hospital for easy and quick reference 3. Provision of a list of answered FAQs through various media platforms ▶ Department-specific FAQs, for example, in oncology, paediatrics, geriatrics, pregnancy.
General public	Inform on preparedness and mitigation strategies	Inform on level of preparedness, ally fears, and dispel misinformation/myths and present correct information.	1. Press releases 2. Hotline contact numbers staffed by professionals 3. FAQs shared on various media platforms 4. Providing information about health-seeking alternatives such as telemedicine 5. Providing information on wellness, nutrition, psychological support and home-based care

FAQs, frequently asked questions; IPC, infection prevention and control; Q&A, question and answer.

training for all staff and avenues for psychological support. It also ensured provision of PPE and medical care while enhancing the medical insurance cover for staff who became infected. These measures helped keep staff motivated to work. This echoes an evaluation of healthcare data from Pakistan which concluded that supportive and participatory leadership enhanced employee workplace thriving and HCW helping behaviour.³⁰

Besides ensuring coordination of patient care and keeping up of staff morale, training and drills served to provide core knowledge about the pandemic. Staff, having gone through training, thus played a pivotal role in direct communication to patients, their relatives and the public. AKUH,N's leadership leveraged on this as it effected its communication platforms, ensuring that verified information was disseminated by its staff, while also designating the hospital's spokesperson. Efficient and effective vertical and horizontal communication among a hospital's leadership, management, staff, patients and the public is essential for effective health crisis management.²² The H1N1 pandemic previously also highlighted the need for inclusive risk communication and community engagement to improve reach, accuracy and timeliness of public health messages, ensuring compliance with recommended measures.²³

The risk anticipation and mitigation plans developed for AKUH,N ensured timely management of supply shortage and patient surges. Important too for mitigation planning is surge in volume of clinical waste.^{6 31 32} AKUH,N's plan indicated cleaning, decontamination and disinfection of COVID-19 clinical areas (*Risk anticipation and mitigation plan, Implementation team*) but did not specifically address surge in clinical waste. The mitigation for disposal of increased medical waste, as would be

expected in a pandemic, needs to be outlined in future preparedness plans.

Notably, during preparedness planning, surplus materials may be purchased, as it was at AKUH,N which maintained stocks of up to 9-month worth of supplies and materials. Noted was that the exit strategy did not specify protocols for disposal or repurposing of excesses, an important aspect to prepare for future pandemics. Interestingly, a study evaluating the quality of preparedness plans in 35 countries of WHO African region found that only four had postpandemic exit strategies.⁹ Without national postpandemic strategies hospitals may not develop internal strategies. Overall, the exit strategy should outline the process of weaning-off action and restoring hospital operations to a prepandemic time; hospital leadership should lead the formulation of contextualised exit strategies.

The framework for ethical resolution of clinical dilemmas developed and implemented was a major strength. It echoes an 'accountability and reasonableness' framework to guide fair priority setting for hospitals as used at a tertiary hospital in Toronto, Canada, during COVID-19.³³ Regrettably, an assessment following 2009 H1N1 pandemic found that only one country in WHO African region had in place an ethical framework in its pandemic preparedness plan.⁹ Nonetheless, hospital leadership should support their facilities to develop ethical guidelines³⁴ for pandemic preparedness plans, while supporting the development of the same at national level.

Finally, the leadership structure at AKUH,N ensured coordination and orderly implementation of mitigation plans outlined and, although the roles are discussed in four pillars—leadership, governance and incident management; coordination and

partnerships; communication strategies; framework for ethical resolution of clinical dilemmas, we note that there is much interdependence between these pillars and the actors within each. Although the leadership experience discussed here is limited at a single private tertiary healthcare facility, the components of each pillar as discussed are applicable to any healthcare facility as it develops individual pandemic preparedness and response plans.

CONCLUSION

Pandemic preparedness is a continuous process of planning, executing and revising into action emergency responses for equitable healthcare and safety. Here, we have demonstrated the critical role of hospital leadership in guiding a dynamic process within a complex healthcare system. We expect these experiences to contribute to future pandemic preparedness and management plans in low and middle-income countries. Overall, hospital leadership should be alert and highly supportive during pandemics with elaborate plans that guarantee constant and inclusive communication, up-to-date knowledge sharing, adequate resourcing and attention to well-being of their employees.

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