



TECHNICAL EXPERTS WORKING GROUP ON SURGICAL HEALTHCARE

Policy and Strategy for Surgical Healthcare During COVID-19

*Supporting Critical Care in SARS-CoV-2
Respiratory Infection & COVID-19 Disease Control
with Rapid Scale-up of Acute and Emergency
(A&E) and Intensive Care (ICU)*

*Strengthening Public Health, Primary Health
Care and National Health Service Institutions and
Delivery Systems*

1. Background

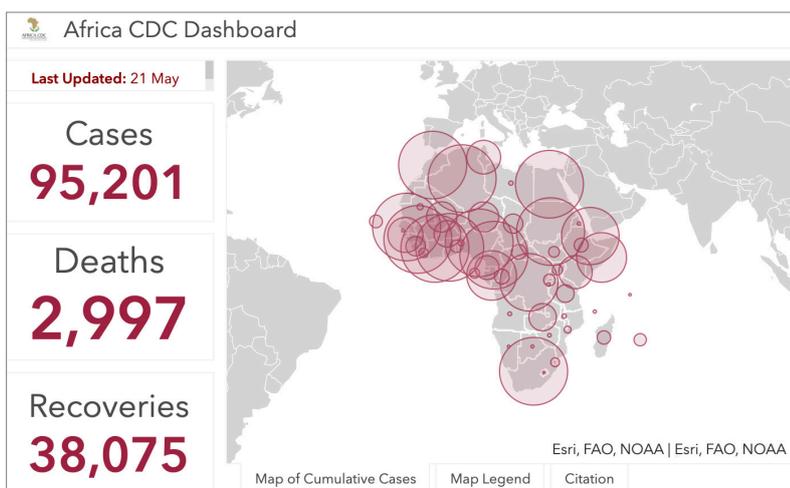
First cases of **Coronavirus SARS-COVID-19 respiratory infection and disease** started in December 2019 in Wuhan City, Hubei Province and was declared a national outbreak in China in January 2020. The World Health Organization declared COVID-19 as **Global Public Health Emergency of International Concern (PHEIC)** on 30th January and consequently a **Global Coronavirus Pandemic** on March 11, 2020. This was followed with major outbreaks occurring in other countries in Asia followed by other countries in Europe and in North, Central and Southern America and North Africa initially in the northern hemisphere.

Globally, by 10:00 CEST, 19 May 2020, there have been 4 731 458 cases and 316 169 deaths reported to WHO.

In continental Africa following initial high volume of two-way global air travel, imported cases were being reported sporadically from most African countries in February, March and April 2020. As of May 19th more than 63 521 cases and 1 796 deaths were being reported across Africa with early local transmission secondary to imported cases with now more and more local community transmission being reported in many countries in Southern Africa. South Africa reporting the largest local community transmission with 16 433 case and 286 deaths. Many other countries in SADC are seeing an increase of spread associated with cross border truck drivers moving goods. It is to be noted that many countries have weak national surveillance and information systems and reported cases and deaths could be higher.



Emergency COVID-19 respiratory infection preparedness, prevention and control such as port health screening of travellers, imported case investigation and active screening of contacts, isolation, travel restriction followed with social distancing, cough and hand hygiene, use of cloth face-mask and local and national partial and full quarantine-stay home orders or lockdown started in many countries in Southern Africa.



These combination of public health interventions with sustained population coverage greater than 80% in this early phase of the epidemic in Southern Africa could still prevent and slow down widespread local transmission and reduce the magnitude of potential major local outbreaks and avoid crises beyond national health sector coping capacity.

Going forward in Southern Africa, the anticipated seasonal change that started in May 2020 with low temperatures and increasing indoor crowding will see SARS-CoV-2 virus surviving longer and spreading exponentially with associated seasonal epidemic influenza which may lead to major outbreaks beyond national health sector surge capacity to manage and contain timely.

The first COVID-19 case in the SADC region was confirmed on March 5th, 2020, by the South African health authorities. The initial case density is correlated with the number of foreign visitors per million in each SADC country. Mauritius and Seychelles have the most cases per 1 million inhabitants, 215 and 112 respectively, while Comoros and Lesotho have not registered COVID-19 cases. The SADC region's response to the COVID-19 pandemic was prompt. Five days after the first case was confirmed in South Africa, SADC Ministers of Health on 9th March 2020 developed a unified regional strategy in Dar Es Salaam. This has been followed by monthly by virtual emergency meeting of the SADC technical committee to monitor the implementation of SADC protocol on health regional coordination to COVID-19 response.

Public health and national health service and system in Africa have continued to weaken since 2000 due to many factors including slow socio-economic development with chronic under financing of the health sector with parallel urban expansion of inequitable unaffordable private health sector and numerous massive international financing of vertical and fragmented global health initiatives, projects and programs. Current vertical COVID-19 preparedness and response is already threatening to add to the **ongoing fragmentation and tip fragile public health and national health systems into severe crises and humanitarian catastrophe.**

COVID-19 pandemic is stressing the public and private health systems in Southern African region. All health resources available are being diverted to the pandemic response leaving population and patients with non-COVID-19 diseases underserved. Universal access and sustained coverage to **Essential and Emergency Surgical, Obstetric, and Anaesthetic (EESOA)** care which has been even previously low has now become more severely affected. While limited Emergency SOA services have been maintained, Essential surgical healthcare (e.g. cancer care) has been suspended together with elective surgery, in-patient surgical cases prematurely discharged and surgical out-patient follow-up clinics suspended indefinitely. Surgical healthcare workers (SOA) have been drawn to the front-line without adequate infectious disease prevention training and appropriate personal protection gear. SOA services are also required for the proper management of COVID-19 patients, particularly A&E and ICU care and general and specialist anaesthesia services for oxygen support with assisted and invasive mechanical ventilation. Overall SOA capacity is low in the Southern Africa region with SOA specialist workforce density is 6.5 per 100,000 people. Seychelles is the only country with more than the recommended 40 SOA specialists per 100,000 people. The mean regional surgical volume, proportion of the population at risk of impoverishing, and catastrophic health expenditures are below the targets set by the Lancet Commission on Global Surgery. 30% of diseases are amenable to SOA care. Given the disparities between their national public health and clinical health services and civil defence disaster preparedness, SADC health secretariat and Ministers of health opted for collaborative coordination and monitoring and evaluation in partnership with the World Health Organization and the Africa Centres for Disease Control in jointly responding to the COVID-19 pandemic.

2. Introduction

SARS-COVID-19 is a highly airborne infectious disease through droplets and aerosols which is characterized by direct severe pathophysiology progressively affecting the upper respiratory tract and then the lower respiratory tract and the lung with progressive respiratory distress. Transmission is reported to be spread through droplets from nose/mouth and contact with hands of contaminated surfaces in the environment.

It is estimated that 60 to 80% of the population who are exposed will be infected and most will be infected, be asymptomatic and recover with few becoming carriers for short periods. It is estimated around 15-20% infected depending on nature and intensity of the exposure will get mild and moderate COVID-19 Respiratory disease. Again 10-15 % develop severe disease that requires hospitalization with oxygen and assisted ventilation support and of these 5% will require admission to an intensive care unit and require



oxygen and invasive mechanical ventilatory support. Severe cases of COVID-19 respiratory disease can be further complicated by the acute respiratory distress syndrome (ARDS), sepsis and septic shock, multi-organ failure, including acute kidney injury and cardiac injury. Successful outcome following mechanical ventilation can be as low as 30% especially when there is lack of 24/7 critical care with 1 to 2 nursing and medical support. Low success rates together with limited access to mechanical ventilators requires use of algorithms for selection and efficient ethical ICU care. The demand on medical oxygen by moderate and severe acute respiratory disease syndrome patients is so high that normal oxygen cylinders and piped oxygen from central hospital

tanks cannot cope. There is need to plan for additional oxygen concentrators and CPAP machines per COVID-19 severe respiratory disease patient. Good fluid balance monitoring and back up extra renal dialysis machine with associated renal failure needs to be planned for.

The World Health Organization (WHO) Regional Office for Africa has conducted a research study in May 2019 on prediction modelling, looking at 47 countries in the WHO African Region with a total population of one billion. The research projects that 83,0000 to 190 000 people in Africa could die of COVID-19 and 29 million to 44 million could get infected in the first year of the pandemic if containment measures fail. The predicted number of cases that would require hospitalization is expected to overwhelm the available medical capacity in most countries. There would be an estimated 3.6 million–5.5 million COVID-19 hospitalizations, of which 82 000–167 000 would be severe cases requiring oxygen, and 52 000–107 000 would be critical cases requiring breathing support. Such a huge number of patients in hospitals would severely strain the health capacities of countries. A survey of health services in the African region undertaken in March 2020 based on self-reports by 47 countries to WHO revealed that there were on average 9 intensive care unit beds per one million people. This currently inadequate for even essential critical care to support current low volume of surgery and obstetrics and anaesthesia service delivery. Additionally, the physical access to these services to the general population is very low, suggesting many people would not even have the chance to get to the needed care. Diseases that could be managed could easily become more complicated as a result and requiring more critical care services.

This COVID-19 infections occur in parallel to the seasonal winter respiratory viral infections such as the common cold and influenza and other ongoing coinfections and comorbidities such as Hypertension, Diabetes, AIDS, renal failure and others. The joint consequences are an overall increase in all causes of mortality with lower respiratory disease such as pneumonia due to both viral and bacterial infection resulting in Acute Respiratory Disease Syndrome. Not only COVID-19 related but other severe life threatening disease require timely life-saving acute and emergency care and a number of severe illnesses need to timely reach Acute and Emergency critical care units for stabilization and further management in high dependency care units (HDU) and intensive care units (ICU).

It is estimated that 5 billion people lack access to safe, affordable, surgical and anesthetic care of which 93% live in Sub Saharan Africa & Asia. The current COVID-19 crisis will certainly increase this burden. Perioperative abdominal and obstetric care lacks standardization, is surgeon rather than patient centric and less than 15% is evidence-based. The International Surgical Outcomes Study patients in LIC and MIC had poorer outcomes despite lower baseline risk. The ASOS trial is one of the few studies describing surgical outcomes in Africa. The study looked on over 11,000 patents in 25 countries, showed that mortality after surgery is twice the global average despite the patients being at lower risk when compared to similar international cohorts. 94% of these

deaths occur within the first 24 hours after surgery, most likely the result of the concept of “failure to rescue” as result of substandard perioperative care. The maternal and neonatal outcomes after caesarian section in the African Surgical Outcomes Study showed that perinatal maternal mortality is 50 times higher and neonatal mortality is twice that in Africa when compared to developed countries. The last decade has seen increasing calls to improve access to surgical and anesthetic care to address this huge unmet global need. As global efforts increase to address this, it is crucial that this is combined with clearly defined perioperative guidelines and tools to measure and monitor patient outcomes, and common solutions to teaching, training and clinically relevant research.

Universal access and coverage to Emergency and Essential surgery, obstetrics and anesthesia services also require adequate and high-quality A&E, HDU and ICU before and after to ensure safe and timely lifesaving obstetrical and general surgery.

3. SOA Vision



To increase universal access and coverage to high quality accident and emergency and high dependency and intensive care units as part of acceleration and scaling up of anaesthesia, obstetrical and surgical services towards strengthening national primary health care, public health and national health service institutions and systems towards WHO 3B-2023 and SDG3-2030 goals and targets.

4. SOA Goals



To reduce the high morbidity and mortality due to respiratory emergencies associated with severe COVID-19 disease and pneumonia, by rapidly increasing access, equity, and coverage to quality acute and emergency care (A&E) centres, high dependency (HDU) and Intensive care (ICU) beds and facilities with essential and emergency surgical, obstetric and anaesthesia (EESOA) service delivery supported by high level of infection prevention and control (IPC) and personal protection and special motivation of health work force (HWF).

5. Strategic Objectives

To support a national and regional joint COVID-19 Respiratory Disease and SOA response through:

1. To strengthen and expand the *access to acute and emergency care, HDU and ICU facilities* to effectively support the case management strategy of the national COVID-19 emergency preparedness and response and EESOA.
2. To lobby and advocate to maintain *access to defined emergency and essential surgery, anaesthesia, obstetric and surgery (EESOA)* for non COVID-19 patients during short or long intermittent periods of localized or nation-wide public health quarantine (Lockdown).
3. To expand EESOA *general and specialist health workforce especially A&E and Anaesthesia*, enhance their skills and ensure support for supply of *high quality personal protection equipment and infection prevention and control occupational environment with participatory involvement in health facility decision making with emergency health response insurance cover and special working and living conditions*.

6. Strategic Interventions



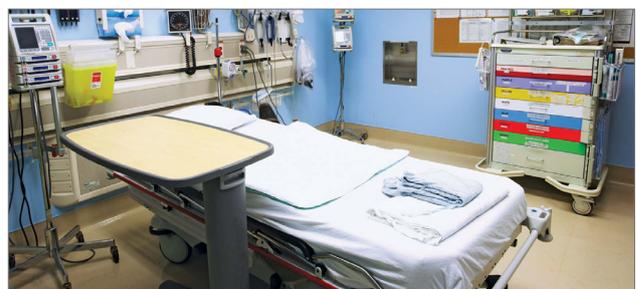
The combination of strategic activities are to support rapid review of capacity (**focusing on workforce, infrastructure and service delivery**) and establish a real time web-based data base and dashboard of all A&E HDU and ICU and designated COVID-19 Respiratory Disease isolation areas and wards and safe wards for Essential and Emergency Surgery, Obstetrics and Anaesthesia (EESOA) service delivery.

This will include the following:

1. To establish a national SOA Situation Room to compliment the national COVID-19 situation room supported by the SOA task force and network of provincial and district EESOA focal points.
2. To conduct a national rapid review and establish data base of capacity and required temporary and long-term expansion all A&E, HDU and ICU facilities and designate safe and COVID-19 infection isolation sections at all levels of the national health service.
3. To conduct a national rapid review and establish data base of ambulances and medicine, PPE commodities supply vehicles for emergency transfer from home and primary health care units to district hospitals and referral between hospitals.
4. To define the required national number of generalist and specialist A&E and Anesthesia health staff with adequate PPE required per Emergency Centre, HDU and ICU bed and unit.
5. To define the required type and number of national medical and surgical equipment required per A&E, HDU and ICU bed and unit.
6. To define the required type and number of national medical drugs and consumable required per A&E, HDU and ICU bed and unit.
7. To provide simple regional algorithms and wall charts to guide diagnosis, treatment, rehabilitation and palliative care of severe respiratory distress.
8. To advocate and lobby for continuation of a defined triage of emergency and essential obstetric and surgical services through and parallel supporting safe SOA structure and systems in line with completion and implementation of national SOA strategic plans and resource mobilization.

7. Expected Output

The strategic intervention and support of SOA teams to COVID-19 case management teams will increase special short term temporary COVID-19-HDU-ICU structures, capacity and systems that will lead to lead sustainable capacity for long term scaling up scaling up capacity to increase in access to safe and high quality Surgery, Obstetrics and Anaesthesia in SADC member states.



- Increase in no of PHC and Hospital health facilities and specifically A&E and HDU and ICU meeting specific COVID-19 Respiratory disease highly infectious disease control general infection control standards and also
- Increase in no of HDU beds at all level of the national health service
- Increase in no of ICU beds at all levels of the national health service

- Increase in no of general doctors and nurse trained in A&E and Intensive care
- Increase in no of specialist doctors and nurse trained in A&E and Anaesthesia

8. Expected Outcome

- No of HDU and ICU bed per population
- No of specialist nurse and doctors A&E and Anaesthesia per population

9. Expected Impact

The major impact will primarily depend on the quality of Intensive care for COVID-19 disease that will need to be followed though at the end of the epidemic with focus on peri-operative and post-operative care following surgery and obstetrics.

- No of Respiratory COVID-19 cases- mild and moderate and severe managed in A&E and Outpatients.
- No of Respiratory COVID-19 cases- severe managed in HDU/ICU and recovered and died.
- Reduced specific case fatality rate (CFR) from COVID-19 Respiratory Disease in patients and health workers.
- Reduced general case fatality rate in HDU and ICU.
- Reduced mortality rate due to COVID-19 respiratory disease.



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Annexe 1

Indicators for check list for rapid situation analysis and gap assessment of capacity of COVID-19 Respiratory disease isolation A&E, HDU and ICU facilities.

Essential Requirements:

- Stabilization and intensive care: *Extra trained general and specialist nurses and doctors*
- Oxygen and more Oxygen: *Oxygenmeters*
- Assisted ventilation: *CPAP machines with masks and tubings*
- Invasive Mechanical Ventilation: *Ventilators*
- Logistic and transport: *Ambulances and Support vehicles*

1. EMERGENCY AND ANAESTHESIA HEALTH INFRASTRUCTURE

- Number of rooms for Acute/Emergency care
- Small theatre in A&E unit? Yes/No
- Total number of high dependency unit beds
- Total number of Intensive care unit beds
- Total number of post-anaesthesia care beds
- Total number of surgical beds
- Total number of maternity beds
- Total number of hospital beds

2. EMERGENCY AND ANAESTHESIA HEALTH INFRASTRUCTURE

- Number of qualified physician anaesthetist
- Number of qualified nurse anaesthetists
- Number of general doctors providing anaesthesia
- Number of general nurses providing anaesthesia
- Do you have access to internet and email
- What email can we use to send you guidance and distance learning materials

3. EMERGENCY AND ANAESTHESIA EQUIPMENT

- No of infra thermometers
- No of Suction Machines
- No of Nasogastric tubes
- No pulse oximetry
- No of Oxygen concentrators
- No of Medical Oxygen Cylinder
- Central piped Medical Oxygen
- Total number of functional ventilators in the ICU
- Functional anaesthesia machines

- Adult oropharyngeal airway
- Pediatric oropharyngeal airway
- Adult endotracheal tube
- Pediatric endotracheal tube
- Adult laryngoscope
- Pediatric laryngoscope
- Adult facemask bag valve
- Pediatric facemask bag valve
- Difficult airway kit (LMA)
- No of functional XRAY Machine
- No of functional UltraSound machines

4. EMERGENCY AND ANAESTHESIA DIAGNOSTICS. MEDICINES AND SUPPLIES

- No of Face masks
- No of Eye Shields
- No of gloves/ Packets of 10/20
- No of Apron
- No of Gowns
- Inhalational general anaesthesia
- IV sedation anaesthesia (Ketamine, Midazolam, Propofol)
- Antibiotics
- IV fluids
- Muscle relaxants/paralytics
- Sedatives
- Vasopressors
- Post-operative narcotics

5. EMERGENCY AND ANAESTHESIA DIAGNOSTICS. MEDICINES AND SUPPLIES

- No of functional Ambulances
- Number of referrals per week
- Types of referrals

Annex 2

Southern African Development Community(SADC)-COVID-19 Regional Measures

Ten (10) coordinated regional actions taken by SADC in response to COVID-19

- 1. Disaster Risk Management:** Member States have agreed to establish National Emergency Operations Centres to facilitate coordination of logistics and stockpiling for disasters at the national level, and to establish National Emergency Trust Funds and National Resource Mobilization Strategies to facilitate

mobilization of resources for national disaster responses.

- 2. Suspension of regional face-to-face meetings and instead, utilizing modern technology such as Video conferences, Webinars and Skype Calls until such a time when the situation has been contained:** On 9th March 2020, SADC convened an extra-ordinary meeting of SADC Ministers of Health where existing knowledge and information on the COVID-19 outbreak was shared, and Member States were urged to put in place National Preparedness and Response Plans as well as contingency and emergency funds to address gaps in prevention, impact mitigation and other interventions. On 16 to 18th March, 2020 SADC convened the SADC Council of Ministers meeting via video conference and among others, the meeting deliberated on the implementation of SADC regional integration programmes and the region's response to the COVID-19. On 6th April, 2020 SADC convened an emergency SADC Council of Ministers meeting via video conference where the Ministers adopted regional Guidelines for the harmonisation and facilitation of movement of critical goods and services across SADC during the COVID-19 pandemic.
- 3. Re-establishment and expansion of the Technical Committee for Coordinating and Monitoring the Implementation of the SADC Protocol on Health,** which has been meeting on a regular basis to advise the region on health and related matters, and other socio-economic matters related to the COVID-19 pandemic.
- 4. Mobilisation of regional support towards containment of the COVID-19 pandemic, and mitigation of its socio-economic impact on the SADC region.** The regional resource mobilisation initiative builds on national initiatives, and is based on gaps identified by individual Member States to respond to the COVID-19 short to long-term needs. Immediate needs, include, resources to support SADC Member States in the acquiring of essential medicines, medical supplies and medical equipment, especially testing kits, Personal Protective Equipment and ventilators. To this effect, the SADC Secretariat is working with the African Development Bank (AfDB) and the Government of the Federal Republic of Germany through Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ).
- 5. The SADC Pooled Procurement Services for pharmaceuticals and medical supplies is being implemented** to provide sustainable availability and access to affordable and effective essential medicine and health commodities, and Member States have been encouraged to utilise this facility for the procurement of the needed supplies for prevention, treatment and control of COVID-19 and any other epidemics.
- 6. Adoption of guidelines on Harmonisation and Facilitation of Cross Border Transport Operations across the Region during the COVID-19.** The guidelines are to facilitate and ease the process of transporting essential goods and services within the region during the COVID-19 Pandemic. Member States have agreed to establish National Transport and Trade Facilitation Committee (TTFC) or use similar body structures (comprising officials from the Ministries responsible for Transport, Health, Police/Army, and Trade) to coordinate the implementation of the guidelines, and resolve operational issues at borders or road blocks. In addition, a SADC Regional COVID-19 Trade and Transport Facilitation Cell (TTTFC) has been created at the SADC Secretariat to assist and coordinate Member States and Corridor Groups in implementing guidelines, and Member States can contact the TTFC Coordinator, Mr. Lovemore Bingandadi at lbngandadi@sadc.int or bingconsult@gmail.com. Telephone +267 71 828 493.
- 7. Partnership with the United Nations Educational, Scientific and Cultural Organization (UNESCO).** To support SADC Member States in mitigating the effects of the coronavirus on education, and in ensuring the continuity of education and learning programmes, the SADC Secretariat has partnered with UNESCO on an initiative known as #LearningNeverStops. Through this partnership, the SADC Secretariat and UNESCO commit to work with SADC Member States, and other Global Coalition partners to provide support to Member States to ensure continuity of education under the hashtag #LearningNeverStops. Support will be provided to SADC countries to come up with and implement innovative and context appropriate solutions to provide education and learning remotely, while leveraging hi-tech, low-tech and no-tech approaches, and seek equitable solutions and universal access.

- 8. Introduction of SADC Regional Status report on COVID-19 19**, which are produced and shared with Member States on a weekly basis with recommendations for consideration by Member States.
- 9. Monitoring and analysing the socio-economic impact of the COVID-19 on SADC economies. The SADC Macroeconomic Subcommittee**, in coordination with the SADC Secretariat, has been monitoring and analysing the impacts of the COVID-19 on SADC economies, and providing policy recommendations to Member States on a continuous basis.
- 10. Daily updates on the status of COVID-19 in the region.** Daily updates on COVID-19 in the region are shared on the SADC website on: <https://www.sadc.int/issues/COVID-19/> to facilitate sharing of information and experiences.
- 11. The SADC Secretariat** commends the Governments of the Member States for their efforts in responding to the COVID-19, and calls upon everyone to play their part and to adhere to all measures being put in place by their Governments.

SADC Secretariat remains committed to the coordination of regional responses to the COVID-19 pandemic, and appeals for continued regional co-operation and solidarity in the efforts to contain and address the COVID-19 pandemic.



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