Clinical Practice Guidelines for the Physiotherapy Management of COVID-19 Cases in The Federal Republic of Nigeria

Prepared by:

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PURPOSE: This document has been prepared to provide information to physiotherapists all over Nigeria working in Private practice, Acute care settings, Primary, secondary and Tertiary Institutions' across the Country. The document details the role of physiotherapy in the management of patients with confirmed and/or suspected COVID-19 infection and also details the required personal protective equipment to protect physiotherapist as well as patients and limit the transmission of the virus while saving lives.

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Disclaimer: This document has been constructed using existing medical and physiotherapy guidelines, relevant literature and expert opinion nationally and internationally. The Ethics and Professional Practice Committee have made considerable effort to ensure the information contained with the recommendation is accurate at the time of publication. Further iterations of these guidelines will be published as new information arises. The information provided in this document is not designed to replace local institutional policies and should not replace clinical reasoning for individual patient management. The authors are not liable for the accuracy, information that may be perceived as misleading, or completeness of information in this document

BACKGROUND: Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is a new coronavirus that emerged in 2019 and causes Coronavirus Disease 2019 (COVID-19). SARS-CoV-2 is highly contagious. It varies from other respiratory viruses in that it appears that human-to-human transmission occurs approximately 2 to 10 days prior to the individual becoming symptomatic. The virus is transmitted from person to person through respiratory secretions. Large droplets from coughing, sneezing, or a runny nose land on surfaces within two meters of the infected persons. SARS-CoV-2 remains viable for at least 24 hours on hard surfaces and up to eight hours on soft surfaces. The virus is transferred to another person through hand contact on a contaminated surface then touching the mouth, nose, or eyes. Aerosol airborne infected particles created during a sneeze or cough remain viable in the air for at least three

hours. These airborne particles of SARS-CoV-2 can then be inhaled by another person or land on the mucosal membranes of the eyes. Individuals with COVID-19 can present with an influenza like illness and respiratory tract infection demonstrating fever (89%), cough (68%), fatigue (38%), sputum production (34%) and/or shortness of breath (19%). The spectrum of disease severity ranges from an asymptomatic infection, mild upper respiratory tract illness to severe viral pneumonia with respiratory failure and/or death. Current reports estimate that 80% of cases are asymptomatic or mild; 15% of cases are severe (infection requiring oxygen); and 5% are critical requiring ventilation and life support.

Physiotherapy may be beneficial during the initial early stages, moderate and severe cases using different modalities as required base on a case by case basis i.e exercises, respiratory treatment and physical rehabilitation of patients with COVID-19 during and post discharge from hospital or isolation centre. Physiotherapy may be indicated if patients with COVID-19 present with copious airway secretions that they are unable to independently clear. This may be evaluated on a case by-case basis and interventions applied based on clinical indicators. High risk patients may also benefit. For example, patients with existing comorbidities that may be associated with hypersecretion or ineffective cough (e.g. neuromuscular disease, respiratory disease).

Physiotherapists who practice in the ICU environment may also provide airway clearance techniques for ventilated patients who show signs of inadequate airway clearance and they can assist in positioning patients with severe respiratory failure associated with COVID-19, including the use of prone position to optimise oxygenation. Given the intensive medical management for some COVID-19 patients including prolonged protective lung ventilation, sedation and use of neuromuscular blocking agents, patients with COVID-19 who are admitted to ICU may be at high risk of developing ICU acquired weakness (ICU-AW). This may worsen their morbidity and mortality. It is therefore essential to anticipate early rehabilitation after the acute phase of ARDS in order to limit the severity of ICU-AW and promote rapid functional recovery.

Physiotherapy will have a role in providing exercise, mobilisation and rehabilitation interventions to survivors of critical illness associated with COVID-19 in order to enable a functional return to home.

SCOPE: The recommendations for physiotherapists are outlined below and focus on the specific health questions of this guideline

SECTION 1: Workforce planning and preparation including screening to determine indications for physiotherapy.

SECTION 2: Delivery of physiotherapy interventions including both respiratory and mobilization / rehabilitation as well as PPE requirements

Section 1: Recommendations for workforce planning and preparation including screening to determine indications for physiotherapy.

There should be a plan to increase the required physiotherapy workforce.

Priority staff for deployment should have prior experience in cardiorespiratory and critical care physiotherapy.

The priority staff should train physiotherapist from other specialties in order to increase number of physiotherapist with skills to manage patients with COVID-19.

In taking decisions on increase workforce, we have to take into cognizance the rotation of physiotherapist in order to reduce the risk of exposure to the virus. For example, if 5 therapists are required in the ICU at all times and we have 3 rotations then we should have a workforce of 15 physiotherapists for that period

Hospitals should identify appropriate physiotherapy clinical leaders to implement this recommendation.

Keep staff informed of plans. Communication is crucial to the successful delivery of safe and effective clinical services.

Staff who are judged to be of high risk should not enter the COVID-19 isolation area. This includes staff who;

- are pregnant,

- have significant chronic respiratory illnesses,
- are immunosuppressed or older e.g. >60 years of age,
- have severe chronic health conditions such as heart disease

  Lung disease, diabetes, and
- have other immune deficiencies

Consider organization of the workforce into teams that will manage COVID-19 versus non-infectious patients.

Be aware of and comply with relevant international, national, state and/or hospital guidelines for infection control in health care facilities.

Senior physiotherapists should be involved in determining the appropriateness of physiotherapy interventions for patients with suspected and/or proven COVID-19 in consultation with senior medical staff and according to a referral guideline.

Patient documentation should be comprehensive and robust to manage post COVID-19 era. It should take cognizant of future infectious disease outbreak

Also consideration has to be given to some patients that are asymptomatic by ensuring that all Physiotherapist treat ever referral as a potential Covid 19 carrier by wearing the appropriate gear as detailed in the PPE session

Physiotherapists will have an ongoing role in providing interventions for mobilisation, exercise and rehabilitation e.g. in patients with comorbidities creating significant functional decline and/or (at risk) for ICU acquired weakness.

Physiotherapy interventions should only be provided when there are clinical indicators, so that staff exposure to patients with COVID-19 is minimized. Unnecessary review of patients with COVID-19 within their isolation room/areas will also have a negative impact on PPE supplies.

Physiotherapy staff should not be routinely entering isolation rooms where patients with confirmed or suspected COVID-19 are kept.

All Physiotherapist that are treating COVID-19 Patient should routinely be tested so as to ensure that staffs are not carriers themselves due to viral overload Precautionary measures should be in place at all time.

Physiotherapists and patients to wear face mask may be enforced during and after assessment post COVID 19.

Options for screening of patients via subjective review and basic assessment whilst not being in direct contact with the patient should be tried first whenever possible e.g. calling the patients' isolation room telephone and conducting a subjective assessment for mobility information and/or providing education on airway clearance techniques.

Physiotherapy interventions are not indicated for airway clearance or sputum samples *No physiotherapy contact with patient.*

Pneumonia presenting with features:

A low-level oxygen requirement (e.g. oxygen flow ≤5L/min for SpO2 ≥ 90%);

Non-productive cough;

Patient coughing and able to clear secretions independently. Physiotherapy interventions are not indicated for airway clearance or sputum samples. *No physiotherapy contact with patient.*

Mild symptoms and/or pneumonia AND co-existing respiratory or neuromuscular comorbidity e.g. Cystic Fibrosis, neuromuscular disease, spinal cord injury, bronchiectasis, COPD) AND current or anticipated difficulties with secretion clearance Physiotherapy referral for airway clearance. Staff use airborne precautions. Where possible, patients should wear a surgical mask during any physiotherapy.

Mild symptoms and/or pneumonia AND evidence of exudative consolidation with difficulty clearing or inability to clear secretions independently e.g. weak, ineffective and moist sounding cough, tactile fremitus on chest wall, moist/wet sounding voice, audible transmitted sounds. Physiotherapy referral for airway clearance. Staff use airborne

precautions. Where possible, patients should wear a surgical mask during any physiotherapy.

Severe symptoms suggestive of pneumonia / lower respiratory tract infection e.g. increasing oxygen requirements, fever, difficulty breathing, frequent, severe or productive coughing episodes, chest x-ray / CT / lung ultrasound changes consistent with consolidation. Consider physiotherapy referral for airway clearance.

Physiotherapy may be indicated, particularly if weak cough, productive and/or evidence of pneumonia on imaging and/or secretion retention.

Staff use airborne precautions. Where possible, patients should wear a surgical mask during any physiotherapy.

MOBILISATION, EXERCISE, & REHAB

Any patient at significant risk of developing or with evidence of significant functional limitations e.g. patients who are frail or have multiple comorbidities impacting on their independence e.g. mobilization, exercise and rehabilitation in ICU patients with significant functional decline and/or (at risk for) ICU-acquired weakness

SECTION 2: RECOMMENDATIONS FOR THE DELIVERY OF PHYSIOTHERAPY INTERVENTIONS INCLUDING PPE REQUIREMENTS

Physiotherapy management principles – respiratory care:

Physiotherapy led respiratory interventions (or chest physiotherapy)

Airway clearance techniques.

Positioning, active cycle of breathing, manual and/or ventilator hyperinflation, percussion and vibrations, positive expiratory pressure therapy (PEP), mechanical insufflation-exsufflation (MI-E).

Non-invasive ventilation (NIV) and inspiratory positive pressure breathing (IPPB).

Assisted or stimulated cough manoeuvres, and airway suctioning.

Exercise prescription and mobilisation.

Recommendations for PPE:

It is strongly recommended that airborne precautions are utilised during respiratory physiotherapy interventions.

Cough etiquette: Both patients and staff should practice cough etiquette and hygiene.

During techniques which may provoke a cough, education should be provided to enhance cough etiquette and hygiene.

Ask patient to turn head away during cough and expectoration

Patients who are able should “catch their cough” with a tissue, dispose of tissue and perform hand hygiene. If patients are unable to do this independently then staff should assist.

In addition, if possible, Physiotherapist should position themselves ≥ 2m from the patient and out of the “blast zone” or line of cough.

Therefore, there is a risk of creating an airborne transmission of COVID-19 during treatments. Physiotherapists should weigh up the risk versus benefit to completing these interventions and use airborne precautions.

PPE: Droplet precautions should be appropriate for the provision of mobilisation, exercise and rehabilitation in most circumstances. However, physiotherapists are likely to be in close contact with the patient e.g. for mobilisation, exercise or rehabilitation interventions that require assistance. In these cases, consider use of a high filtration mask (N95). Mobilisation and exercise may also result in the patient coughing or expectorating mucous.

PPE Recommendations for physiotherapists: All Staff will be trained in correct donning and doffing of PPE, including N95 “fit checking”. “Fit testing” is recommended when available, but the evidence for fit testing effectiveness is limited and the variation in supply of N95 mask types may make any recommendation on fit testing difficult to implement from a practical perspective

Staff with beards should be encouraged to remove facial hair to ensure good mask fit

For all suspected and confirmed cases, at a minimum droplet precautions are implemented. Staff will wear the following items:

Surgical mask

Fluid resistant long-sleeved gowns

Recommended PPE for staff caring for COVID-19 infected patients includes added precautions for patients with significant respiratory illness, Airborne precautions are followed including:

An N95/P2 mask

Fluid resistant long-sleeved gown

Goggles/face shield

Gloves

Hair cover for AGPs. - Shoes that are impermeable to liquids and can be wiped down.

Recurrent use of shoe covers is not recommended as repeated removal is likely to increase the risk of staff contamination.

PPE must remain in place and be worn correctly for the duration of exposure to potentially contaminated areas. PPE, particularly masks should not be adjusted during patient care.

Minimise personal effects in workplace. All personal items should be removed before entering clinical areas and donning PPE. This includes earrings, watches, lanyards, mobile phones, pagers, pens etc.

Positioning including gravity assisted drainage

Physiotherapists can continue to advise on positioning requirements for patients. Prone positioning: Physiotherapists may have a role in the implementation of prone positioning in ICU. This may include leadership within ICU “prone teams”, providing staff education on prone positioning (e.g. simulation-based education sessions), or assisting in turns as part of the ICU team.

Physiotherapy management principles

Mobilisation, exercise and rehabilitation interventions:

Physiotherapists are responsible for the provision of musculoskeletal / neurological / cardiopulmonary rehabilitation tasks including:

Passive, active assisted, active, or resisted joint range of motion exercises to maintain or improve joint integrity and range of motion and muscle strength

Mobilisation and rehabilitation (e.g. bed mobility, sitting out of bed, sitting balance, sit to stand, walking, tilt table, upper limb or lower limb ergometry, exercise programs).

Handwashing/ sanitizing should become a normal routine in our Physiotherapy Department and clinics irrespective of any disease outbreak or control.

Department should make provision for hand gloves

There should be wash hand basin or Tap Bucket with running water for basic hand hygiene with soap and soap dispenser for both staff and Patients

Hair care: Females should cover their hair before wearing PPEs and Patients should be asked to cover their hair

Disposable bed linen to be changed after each patient contacts

Refer to local guidelines regarding ability to mobilize patients outside of their isolation room. If mobilizing outside of the isolation room, ensure the patient is wearing a surgical mask.

Physiotherapists will actively screen and/or accept referrals for mobilization, exercise and rehabilitation. When screening, discussion with nursing staff, the patient (e.g. via phone) or family is recommended before deciding to enter the patient's isolation room. For example

Early mobilisation is encouraged. Actively mobilize the patient early in the course of illness when safe to do so.

Patients should be encouraged to maintain function as able within their rooms, sit out of bed, Perform simple exercises and activities of daily living

Mobilisation and exercise prescription should involve careful consideration of the patients' state (e.g. stable clinical presentation with stable respiratory and haemodynamic function).

Mobility and exercise equipment:

The use of equipment should be carefully considered and discussed with local infection, monitoring and prevention service staff before use with patients suspected or confirmed with COVID-19 to ensure it can be properly decontaminated.

Use equipment that can be single patient use. For example, use Theraband rather than distributing hand weights.

Larger equipment (e.g. mobility aids, ergometers, chairs, tilt tables) must be easily decontaminated. Avoid use of specialized equipment unless necessary for basic functional tasks.