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Letter to the Editor

Covid-19 Related Disruption of Out-Patient Services: An Opportunity for Integrating Telemedicine into Clinical Practice in Public Hospitals in Nigeria

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Dear Editor,

In December 2019, the first cases of a viral pneumonia were reported in Wuhan, Hubei Province, China. Deep thoroughput sequencing of airway secretions of the patients revealed a novel coronavirus named severe acute respiratory syndrome SARS-CoV-2. On February 11, 2020 the World Health Organization (WHO) named the disease Coronavirus disease-2019 (COVID-19) and declared it a global pandemic on March 11, 2020. As the COVID-19 cases escalated, it became a source of tremendous disruption of the lives and means of livelihood of huge populations of people worldwide. The pandemic continues to spread and the number of cases of COVID-19 worldwide numbered a cumulative 22,034,395 with 776,801 deaths as at August 17, 2020. (Worldometer COVID-19 Pandemic, 2020) Nigeria had recorded 49, 485 cases and 977 deaths by the said date while South Africa leads the continent's tally of the disease with 589,886 cases and 11,982 deaths – the fifth highest in the world. (Worldometer COVID-19 Pandemic, 2020). The implementation of measures instituted to limit the spread of the disease by most national governments included wearing of face masks in public and restriction of human movement and physical interaction.

The early identification of the hospital workplace as an area of potential transmission of COVID-19 to the Doctors and other health workers (and by extension their families and social contacts) galvanised many public hospitals in Nigeria and indeed worldwide to close down outpatient clinics encouraging only severe ill patients to access care through the accident and emergency unit. This no doubt brought about a lot of disruption of care especially for patients being managed for chronic illnesses such as systemic hypertension, diabetes mellitus, heart failure, chronic kidney disease, Human Immunodeficiency Virus (HIV)/Acquired Immune Deficiency Syndrome (AIDS), and cancers to mention a few. The potential deleterious effects of this interference in the patients' usual access to scheduled care must be emphasised as they are myriad, including patients resorting to seeking medical consultation from unqualified professionals and quacks, use of herbal remedies, self-medication, poor drug compliance because of missed medication prescription refills, missed drug adherence or disease counselling sessions, missed scheduled medications such as chemotherapy courses which are administered on out-patient basis and loss of the psychological reassurance a patient gets from physical interaction with his or her doctor or caregiver.

Whereas in Nigeria many public secondary and tertiary health institutions instituted varying degrees of scaling down of out-patient consultation and in several cases outright shutdown of services for up to three months during this period, elsewhere health systems rapidly adapted by instituting Telemedicine services or upscaling existing Telemedicine services as a stop-gap measure to guarantee patient's access to outpatient medical consultation in spite of the raging pandemic (Adebayo *et al*, 2020; Song *et al*, 2020). When the government –initiated lockdown measures were eventually eased and outpatient clinics began to open in public hospitals, many re-opened with new guidelines which restricted the number of patients who could be attended to per clinic day, reduced the duration of consultation and in some instances the venue of clinic consultation was changed to more open, spacious locations which however often sacrificed patient privacy and at times the scope of patient evaluation. Physical distancing restrictions in the re-opened clinics have also come with increased waiting time to see the doctor as patients have to go through formal triage processes. With the current scenario of reduced physical contact, and social distancing

occasioned by the COVID-19 pandemic being labelled as the 'new normal' it is apt to consider that out-patient consultations may not return to their usual pace, depth and thoroughness for some time to come. This may translate to exclusion of many patients including the most vulnerable from standard out-patient care.

We therefore posit that the current trend presents an opportunity for the introduction of Telemedicine in the outpatient departments of public hospitals in Nigeria. Telemedicine is the use of electronic, digital, internet-based, or telephone-based communication for direct patient care including the exchange of medical information from one site to another through information communication technology modalities that also involve synchronous discussion over a telephone or exchange of information through video or images with the aim of improving a patient´s health (Blue *et al*, 2020) The earliest reports of the use of telemedicine are over forty years old (Glazer *et al*, 1978) and several authors have documented its acceptability to patients and healthcare practioners in the developing world (Adebayo *et al*, 2020; Kiberu *et al*,2019) A review by Hassibian also found telemedicine acceptable to medical practioners in the developing world in most fields of Medicine (Hassibian & Hassibian, 2020) In the current pandemic, telemedicine has been embraced by different medical and surgical specialties including Neurosurgery, (Gadjradj *et al*, 2020) Internal Medicine (Neurology), (McGinley *et al*, 2020) Orthopaedics, (Tanak *et al*, 2020) Paediatrics, Otorhinolaryngology (Jawayardena *et al*, 2020) Psychiatry (Zweig, 2020) and Gynaecology (Nanda *et al*, 2020) A recent survey of 51 General practitioner (GP) practices in the United Kingdom between March 1 and June 30, 2020 revealed a 50% increase in video consultations during the COVID-19 induced lockdown (Clarke, *et al*, 2020) Indeed, in the early days of the pandemic, some African countries such as Mali, Botswana, Uganda, Senegal, South Africa, and Ghana advised patients to seek medical attention online rather than through physical consultations (David *et al*, 2020) Professional Regulatory bodies (including African) have also developed or updated existing guidelines for use of telemedicine in patient care (COVID-19 South Africa, 2020)

The benefits of Telemedicine in a pandemic situation are myriad. The reduction in physical patient-doctor interaction engenders optimal personal safety of healthcare providers, allows for continuity of patient care, and reduces the use of personal protective equipment (PPE) and other consumables used during physical visits and thus minimizing the overall risk of viral transmission in the hospital (Lin *et al*, 2020). Telemedicine may also ultimately reduce the cost of healthcare.

We propose that public health institutions acquire telemedicine infrastructure for use in this era. This may include incorporation and proper structuring of tele-activities the populace is already used to as part of their day-to-day engagements into modalities such as telephone consultation, video consultation, instant messaging and image sharing. It may also include the development of specialized mobile phone applications (apps) through which patients can interact with the hospital staff for virtual triage, and scheduling of Telemedicine appointments or in-person visits as may be deemed applicable. We propose a model to integrate Telemedicine into out-patient consultation with both physical and Tele-consultations existing side-by-side with capacity to scale up Telemedicine contribution in the event of another COVID-19 induced lockdown or a rise in the number of COVID-19 cases that endangers healthcare practitioners.

This model, (Figure 1) involves the patient presenting himself or herself for physical triage or engaging the hospital's personnel virtually via an app or by phone to answer some triage questions such as presence of a fever, recent onset catarrh, or cough, malaise, and other such symptoms that may raise a suspicion of COVID-19.

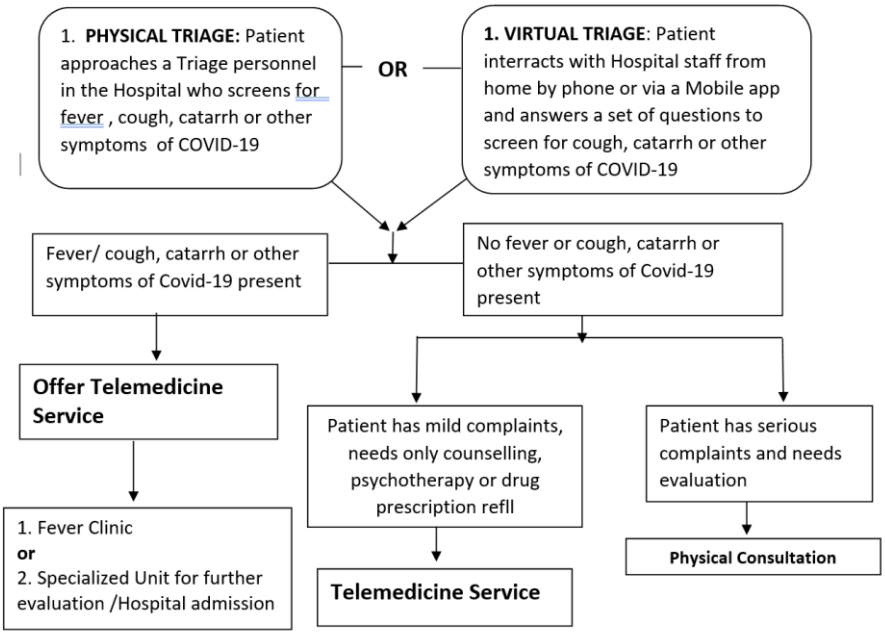

Figure 1
Patient Triage model for the use of Telemedicine in the Outpatient clinic

If the patient is cleared at triage, he or she is advised to engage the Telemedicine service if the purpose of hospital visit is just for sundry complaints, drug refill or counselling. Only those with serious complaints proceed to physical consultation. Patients who have fever or other symptoms that raise suspicion of COVID-19 are directed to a designated Fever clinic for further screening or hospital admission as may be necessary.

Integrating Telemedicine to outpatient care in a developing country will come with potential challenges. But these are not insurmountable. There is a high penetrance of mobile phone use in Nigeria and most African countries, and the use of smart phones and personal computers is on the increase. Unstable electricity supply, the high cost, and poor quality of internet connection may be a concern and the need for basic knowledge about telemedicine platforms may appear daunting, but considering that the kind of technology involved in Telemedicine is already in use for social interraction and business among the populace through video calls and live chats, the populace will have no problem learning the techniques of Telemedicine. Hospitals may also have challenges with how to bill and get patients to pay for Telemedicine consultations, but this is also easily surmountable by employing electronic payment options which are widely available. Health insurance firms will also need to be encouraged to expand their policies to accommodate paying for Telemedicine consultations. The issue of medicolegal liability may also worry some medical practitioners, but with appropriate institutional frameworks, patient-doctor charters can be enacted to protect the interest of both parties in a Telemedicine consultation.

In conclusion, the public health system of Nigeria and most of Africa is already fragile, and is severely confounded by the social and economic disruptions caused by the COVID-19 pandemic. While physical patient-healthcare provider interactions are still most desirable, prevailing circumstances and limitations imposed by the pandemic call for innovative adjustments such as Telemedicine that will help to guarantee access to healthcare by the teeming population. There is, therefore, an urgent need for policy frameworks that will guide its introduction so that accessibility to quality healthcare will be guaranteed.

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