Access to Medicines for Non-Communicable Diseases (NCDS) during COVID-19 in Kenya: A Descriptive Commentary

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**ABSTRACT**
Evidence shows that those with non-communicable diseases (NCDs) are at higher risk for serious illness and mortality from COVID-19. In Kenya, about 50% of the COVID-19 patients who have died had an NCD. We sought to describe the challenges faced in accessing NCD medicines in Kenya during the pandemic, through a descriptive narrative informed by key stakeholders engaged in NCD service delivery and decision-making. Access to NCD medicines was affected at three levels, service delivery, health facility information systems, and the medicines supply chain to health facilities. In response to these gaps, the Ministry of Health released clear directives and interim guidelines for continuity of NCD service delivery. However, implementation of guidelines was not apparent from conversations with county officials or from assessment of county services by the Ministry. Rather, heterogeneity was observed in counties’ responsiveness to patient needs, where 5 out of 13 counties used mHealth technologies, while 5 had no established system to reach patients. COVID-19 amplified gaps that already existed in the system—particularly around lack of robust supply chains and sub-optimal health information systems. This descriptive paper will be useful to policy makers to provide a summary of the key challenges faced in accessing NCD medicines, identify gaps in medicines delivery, and make case for establishment of a more equitable health system to meet the needs of lower-income NCD patients.

**Introduction**

The COVID-19 pandemic has affected the health and livelihoods of populations across the world. In Kenya, the first case of COVID-19 was detected on 13th March 2020.1 The virus has had far-reaching impact, with 88,380 confirmed cases, 68,929 recovered and 1,526 deaths by 6th December 2020.2 Cases and deaths continue to surge, and numbers had doubled by 16th May 2021.3 It is believed that the true number of cases and deaths is much higher, in view of the relatively low testing rates resulting from testing kit shortages.4

Following the pandemic outbreak, the Ministry of Health put several measures in place to curb virus spread.1 These efforts included: stay at home guidance, banning public gatherings, national curfew, cessation of international travel, mandatory quarantine for international travelers and restricted movement across counties, specifically those with high caseloads—Nairobi, Kilifi, Mombasa and Kwale. Restrictions have since been applied to counties in Western Kenya, where COVID-19 cases have been on the rise.5 While these measures have been helpful, they have also come with some unintended consequences that negatively impacted health service delivery and routine management of chronic diseases, including cardiovascular disease, diabetes, cancers and chronic respiratory diseases. Re-allocation of health resources to address the emergency, fear to visit health facilities among people living with non-communicable diseases and fear among health workers have all contributed to interruption of routine NCD-care delivery. Furthermore, the income losses that have come with restrictions on movement and public gatherings may have also further impeded ability to access care.1,4

Epidemiological trends with COVID-19 show that the elderly, and those with underlying chronic conditions that compromise their immune systems, including NCDs, are more vulnerable to illness and mortality from the virus. In Kenya, about 50% of people with COVID-19 who have
died had an underlying NCD condition. The vulnerability of this patient group was evident before the pandemic, as shown through previous research. People with NCDs face several barriers in accessing their medicines, including stock-outs at public facilities and unaffordability of medicines, with poorer households paying more for their medications. The fact that the Kenyan health system has historically prioritized communicable diseases over non-communicable diseases has further compounded these challenges. Furthermore, the pandemic hit at the time when the Kenya health systems landscape was changing rapidly, with efforts to expand the national government’s universal health coverage (UHC) scheme “Afya Care” underway.

The existing challenges in the health care system are likely to have left people with NCDs even more vulnerable during the pandemic in view of re-allocation of resources to emergency response and fear of visiting health facilities because of perceived risk. This situation is reflected in the service delivery data assessment by the Ministry of Health and UNICEF, which showed a decline in provision and uptake of health care services during the first 3 months of the COVID-19 pandemic across health facilities. Concerns have been expressed by people living with NCDs through the civil society group, the NCD Alliance Kenya (NCDAK), who released a statement in August 2020, urging the government to put measures in place to safeguard their care. Their requests included social protection mechanisms to facilitate financial protection and continued access to care, a resilient supply chain to ensure availability of NCD medicines at facilities, guidance on how to resume NCD clinic visits safely, emergency transport for patients who must access health facilities for treatment such as dialysis or chemotherapy, and continuous education of health workers on managing people with NCDs as a high-risk group during the pandemic.

Globally, it is evident that COVID-19 has disrupted essential health care services, including diagnosis and treatment of NCDs. A global survey of 105 countries highlighted inequities in these disruptions, with a ten-fold difference in rates of disruptions between low- and high-income countries. The impact that COVID-19 has had on access to NCD medicines in Kenya is apparent but not well understood. We therefore sought to describe the challenges of access to NCD medicines during the pandemic, through the approach described below.

**Methods**

Given the current challenges of data collection at health care delivery sites and in-patient homes, we use a descriptive narrative approach based on data obtained from a review of Ministry of Health interim guidelines, private health facility websites and interviews with ten key informants, who are engaged in NCD service delivery and decision-making. Key informants were identified through an iterative process (Annex Table A1). First, established contacts of first and last authors were approached for an informational interview. These key informants then identified additional stakeholders who ought to be engaged. Interviews focused on three key talking points:

- The state of NCD care and access to medicines during the COVID-19 pandemic
- The ways in which their role in health service delivery/supply chain was affected by the COVID-19 pandemic
- Any efforts/systems put in place to overcome these challenges

The first and last author synthesized information from key informants, using essential elements of the health system as a theoretical base to identify themes. Based on this data synthesis we provide a summary of the key challenges faced in access to NCD medicines and identify gaps in medicines delivery for shared learning and further research. Several key informants are authors of this paper.

**Health Systems Response to COVID-19: The Challenge of Access to NCD Medicines**

**Health Service Delivery**

County officials, service providers and Ministry of Health officials described the pandemic as a shock to the health system in view of its novel nature. Availability, access to and utilization of NCD services were therefore compromised. The fear among both health workers and NCD patients was emphasized by key informants, characterized by absenteeism among health workers and a reduction in the number of patients presenting at health facilities. Some NCD clinics were shut down for health workers to focus on the COVID-19 response, further agitating public anxiety about visiting facilities for treatment.

Additionally, some NCD clinics halted services temporarily to facilitate restructuring of their clinics to adhere to social distancing measures. There was no clear system for health workers to maintain contact with NCD patients, who are typically on long-term treatment and need regular refills. One county official described situations where the onus was on the health worker to use their own resources to contact patients. In
line with this, a rapid needs assessment of diabetes and hypertension clinics undertaken by the Ministry of Health Division of Non-Communicable Diseases (MoH NCD) in June 2020 revealed heterogeneity across 13 counties’ capacity to adapt service delivery as illustrated in Figure 1. From this assessment, one of the counties reported demolition of an NCD clinic at a facility, to make room for a COVID-19 isolation ward. One could argue this would have long-term implications on NCD services at that facility, beyond the pandemic.

**Information Systems**

Information systems challenges that existed before the pandemic were further amplified, as described by county officials, a faith-based facility service provider and a technical advisor. Challenges mentioned include: lack of data for adequate quantification of NCD patients, lack of data for medicines quantification and forecasting, as well as lack of financing for NCDs. For instance, COVID-19 funding disbursed to counties were Conditional Grants, restricted to specific items, such as expansion of wards for isolation and sourcing of supplies including oxygen. They did not mention or allow for support of high-risk groups such as NCD patients.

In addition, poor data systems presented as a challenge in health facilities’ ability to efficiently communicate with NCD patients during the pandemic, likely translating to the heterogeneity described above in the public sector. While three large private health facilities in Nairobi County have telehealth and home delivery of medicines clearly advertised on their websites, the same is not evident for smaller, less-equipped, remote facilities, whose information systems are not technology-based or well established. Considering that private facilities primarily serve higher-income patients, the vulnerability of lower-income NCD patients is emphasized, in view of significant disparities. Furthermore, private health insurance company AAR Healthcare forged a partnership with a private online pharmacy store—MyDawa—to provide for home deliveries of medicines for its subscribers. We did not find any evidence that the public health insurance provider National Hospital Insurance Fund (NHIF), which covers four out of five insured Kenyans, has been able to provide the same. The pandemic therefore amplified inequities in access to medicines.

**Medicines Supply**

The lockdown in response to COVID-19 resulted in interruption of importation and exportation of NCD medicines. Some of the difficulties described by a nonprofit medicine supplier included unreliability of supplies due to supply chain constraints brought about by the lockdown, logistical challenges of port of entry clearances, supplying medicines to health facilities particularly in remote Northern Frontier counties (Garissa, Isiolo, Lamu, Mandera, Marsabit, Tana River and Wajir) and panic buying by health facilities. This

![Figure 1. System for communication with NCD patients during the pandemic (N = 13).](image)

**mHealth**—use of texts and phone calls, suggesting NCD registers in these counties adequately captured patient contact information; **CHVs**—Community Health Volunteers

Note: Please note that it is a small number of counties (13) which contributed data for this figure. Thus while this paints a picture of the status of NCD service delivery during the pandemic, it is not representative of all counties.

Source: Ministry of Health Division of Non-Communicable Diseases. Rapid Assessment of Diabetes and Hypertension Services in Counties. Nairobi, Kenya; 2020.
was evident at the county level with 11 out of 13 counties assessed by the MoH NCD division reporting lack of essential NCD medicines as a challenge. Three of these counties cited delays from Kenya Medical Supplies Authority (KEMSA) as an issue. However, KEMSA reported having medicines in stock, citing lack of ordering from counties as the challenge. There is therefore discrepancy between suppliers and counties as to what the root cause of poor access to NCD medicines were. One example of medicines challenges mentioned was access to insulin and medical devices, where 3 of the 13 counties reported this as an issue. Stock-outs of antidiabetic medicines in particular were also reported as a challenge by a nonprofit medicines supplier. Additionally, a nonprofit pharmaceutical network reported the issue of rising prices of raw materials, thus interfering with manufacturing. The fact that the country relies on importation of active pharmaceutical ingredients and does not have any local production has further exacerbated the medicines access challenge.

Furthermore, the concurrent expansion of the national government’s UHC scheme includes changes in the medicines covered in benefits packages. Briefly, the national government now supplements part of the costs for counties’ medicines and commodities for primary health care facilities. This has required disbursement of funds from national government to KEMSA under Conditional Grant arrangement to enable KEMSA to accept and fulfill county orders. There is also a pre-approved list of essential medicines that qualify for ordering under this UHC scheme, and county officials report relative under-representation of NCD medicines compared to medicines for acute and infectious conditions. Furthermore, the counties’ budgetary disbursements have decreased, adversely affecting their ability to make their own direct purchases. These developments have translated to delays in medicines delivery for some counties.

**Addressing Access to NCD Medicines during the COVID-19 Pandemic in Kenya**

The need for special attention to ensure continuity of NCD care was recognized by the MoH NCD Division in April 2020, following reports of clinic closures from some counties. As a result, a directive was issued to counties through the Council of Governors, from the Director General of Health, advising that NCD clinics at health facilities remain operational despite the increase in workload caused by the outbreak.20 The importance of employing strict infection prevention control measures was also emphasized. The circular letter was followed up by release of guidelines for continuity of NCD care in July 2020.20,21 The guidelines have clear provisions for care delivery for cancer, diabetes, cardiovascular disease and sickle cell disease management. They serve as a useful resource for adjustment of care delivery, and the general recommendation with regard to medicines is for health workers to ensure patients have sufficient medication stocks at home, with one-month’s supply at a minimum.21 Guidance pertaining to medicines access by disease is shown in the Annex Table A2.

Recognizing that development of guidelines does not necessarily translate to their implementation, the MoH NCD Division designed them for the interim period, with the expectation they would receive feedback from counties to inform revision of guidelines to support better implementation. In addition, the MoH NCD Division had originally hoped to evaluate the impact of the circular letter from the DGH and the interim guidelines through report from county NCD coordinators. This has, however, not been possible, in view of the rapid evolution of the pandemic. Nonetheless, findings from the MoH NCD division rapid assessment suggest that the DGH letter sent out in April 2020 was adhered to, with all but 1 of the 13 counties assessed reporting that their NCD clinics were open.

In addition to these guidelines, the MoH NCD division has continued its engagement with implementing partners. With support from nonprofit organization PATH, MoH NCD Division has designed and undertaken data quality audits for NCD records, including supply chain of medicines data. This was done during the pandemic in 5 out of 10 identified counties as part of a larger programmatic effort to strengthen the health system. The goal of these efforts was to assess the state of data management and highlight areas which may require intervention. The scale-up of these efforts to all counties has been limited by funding, as described by a MoH official.

Robust evidence on the uptake of interim guidelines from MoH is not readily available from the public sector. Nonetheless, implementing partners have emerged with an interesting case study demonstrating adaptation to the challenges presented during this pandemic, particularly in rural or underserved parts of the country.

**Case Study: A Medicines Delivery Initiative—NCD Medicines Drop-off Points in Bungoma County**

An academic consortium, in collaboration with the MoH, established a system of medicines drop-off points in the community for one of its care programs targeting diabetes and hypertension patients in Bungoma County. Following the COVID-19 outbreak, the program adapted its approach to care by delivering medicines to central pick-up points in the community and providing a three-month supply of medicines. They used telehealth
to communicate with patients, and involved local leaders, to support selection of an appropriate schedule and location for medicines deliveries. They also engaged local government and established protocols that would allow them to reach patients whose contacts they did not have in their database, as well as utilize their network of community health volunteers (CHVs) for this initiative. In addition, they provided medicines on credit for the period of May and June in view of sources of income being compromised, with the requirement that patients would pay their debt.22

Conclusions

Access to NCD medicines has been a challenge in Kenya during the pandemic. Interrupted service delivery due to closure of NCD clinics, interruptions in supply chain and inability of the health system to be responsive, are some of the key issues impeding access to medicines. COVID-19 amplified gaps that already existed in the system—particularly around lack of robust supply chains and sub-optimal health information systems. While private caregivers including large private health facilities, a private health insurer and the Ministry of Health-linked academic consortium have attempted to bridge the access gap through delivery of medicines to patients’ homes, the same is not evident in the public sector. The issue of affordability of medicines also remains unaddressed, since even the academic consortium who provided medicines on credit will eventually ask them to pay off their debt to preserve the sustainability of this effort. This is concerning, because prior research has established that poorer households tend to pay more for their NCD medicines.7

While the Kenya health system is taking steps to address NCDs, the trend of prioritization of acute/infectious conditions is still present, as seen from reports of under-representation of NCD medicines that can be obtained under the UHC scheme. In view of this trend we would expect access to NCD medicines to be more compromised relative to communicable diseases. There are mixed reports on this, with reduced access to antiretroviral therapy (ART) reported in Nigeria during the pandemic, while an analysis exploring the extent of interruption in ART in seven African countries which had high ART coverage reported more interruptions before COVID-19 lockdowns relative to during the lockdowns.23,24 Strategies that minimized interruption included rapid uptake of policies providing for multi-month dispensing and community delivery of ART.24

The COVID-19 pandemic exacerbated the persistent inequities in the health system, as highlighted during the 2020 United Nations General Assembly (UNGASS).25 Rather than restoring pre-pandemic systems, we are challenged to reimagine and create a robust health system that is equitable for all, addressing all health needs including NCDs. To achieve this, further research to describe the extent of the challenges of access to NCD medicines, particularly in the public sector where many low-income patients seek care, is needed. Research that captures the patient perspective, which our work did not explore, is also crucial. Such research would provide evidence to inform sustainable interventions that will transform and strengthen the health system and improve access to medicines for NCD patients, whose vulnerability is magnified by emerging and reemerging health system challenges.

Acknowledgments

We would like to thank the following key informants for sharing their time and knowledge with us to inform this commentary: Dr. Stella Njagi, Mr. James Kamadi, Dr. John Ndengwa, and Ms. Elizabeth K. Muthinji. This paper was presented at the 2021 AcademyHealth Annual Research Meeting, Global Health & Healthcare Interest Group session.

Disclosure of Potential Conflicts of Interest

No potential conflict of interest was reported by the author(s).

Funding

The author(s) reported there is no funding associated with the work featured in this article.

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Annex

Table A1. Description of key informants

| # of key informants | Institution | Role in NCD service delivery |
|---------------------|-------------|------------------------------|
| 1                   | Ministry of Health | For a policy perspective, since the NCD agenda is set at the National level |
| 4                   | County Health Departments from two counties | For an implementation perspective, to better understand what has worked and what has not worked in public health facilities |
| 1                   | Faith-Based Nonprofit Pharmaceutical Network/Implementing Partner | For an implementation perspective, to better understand what has worked and what has not worked in faith-based facilities |
| 1                   | Faith-Based Nonprofit Pharmaceutical Network/Implementing Partner | For a better understanding of their efforts to support pharmaceutical systems for improved access to medicines |
| 1                   | Nonprofit Medicines Supplier | To understand the challenges faced in the supply chain |
| 1                   | Academic Consortium | To explore how they adapted to COVID-19 and what lessons can be learned in view of their extensive network of community and clinic-based programs for patients in Western Kenya. To draw from their understanding of the Kenya health landscape in view of their extensive work with both government and implementing partners in Kenya |
| 1                   | Technical Advisor/Consultant |  |

Annex

Table A2: Interim Guidance for NCD care delivery

| NCD | Addressing health service delivery | Addressing health information systems | Addressing medicines delivery |
|-----|-----------------------------------|-------------------------------------|-------------------------------|
| • Cancer | Since there is currently no evidence to withhold cancer treatment, and there may be negative effects for cancer patients if treatment is delayed—continuation of treatment is recommended. |  |  |

- For patients visiting the health facility specifically for treatment their appointments should be scheduled to reduce waiting times and patients should be encouraged to arrive on time (not too early)
- Consider alternative regimens for patients that could be deliveries either at different locations or through different modes of administration, for example changing intravenous therapy to subcutaneous or oral, shortening duration of regimens, using 4-week immunotherapy regimens and dispensing larger quantities of oral medicines to cover a longer duration
- For cancer patients with suspected COVID-19 or known exposure to COVID-19: it is recommended to delay oncology treatment for 14 days, administer COVID test and advise patient to self-isolate
- For cancer patients with active COVID-19: withhold immunosuppressive oncology treatment until they are COVID-free (after a negative test result).
- Where possible, routine COVID-19 testing for all cancer patients is recommended 48–72 hours before immunosuppressive therapy is recommended
- Prioritize care for newly-diagnosed patients, patients on active treatment and patients who are clinically unstable.  

(Continued)
### Table A2: (Continued).

| NCD | Addressing health service delivery | Addressing health information systems | Addressing medicines delivery |
|-----|-----------------------------------|--------------------------------------|-----------------------------|
|     | • For counties with high community transmission, postponing patient follow-up where possible (that is with no harm caused to patients) is recommended | • Ensure patients for follow-up are able to access online and telehealth services for self-management and monitoring | • Where possible home delivery of oral medication is recommended |
|     | • For palliative care patients: alternative approaches to medicines delivery is recommended including using telemedicine, home deliveries and care-givers of the patient picking up opioid prescriptions that cover a longer period of time | • Health workers should be aware of the potential adverse interactions, specifically cardiovascular toxicities, of medicines that are being used off-label for treatment of COVID-19 | • Health workers should advise patients to keep taking their medication and ensure they have enough medicines to last at least one month. |
|     | • Cardiovascular diseases | • Health workers are advised to caution patients in discontinuing their established therapy without consulting the health care provider | • Health workers are advised to optimize the patient’s current therapy if appropriate and ensure patients have adequate supply of essential medicines, which translates to at least 3 months’ supply |
|     | • Counties are advised to map the supply chain for essential cardiovascular medicines. In line with this, counties are advised to ensure accurate forecasting and quantification of essential medicines and nutrition commodities for continuity of essential services. | • Health workers are advised to caution patients on discontinuation of established therapy without consulting the health care provider | • Health workers are advised to optimize the patient’s current therapy if appropriate and ensure patients have adequate supply of essential drugs (3 months’ supply) |
|     | • Diabetes | • Use of telemedicine and community health workers is recommended to reduce patient exposure at health facilities | • Sickle-cell disease |
|     | • Health workers are advised to caution patients on discontinuation of established therapy without consulting the health care provider | • Sickle-cell disease | • Health workers are advised to optimize the patient’s current therapy if appropriate and ensure patients have adequate supply of essential drugs (3 months’ supply) |
|     | • Health workers are advised to use telemedicine and Community Health Workers to protect patients | | |
| **Source:** Ministry of Health. Interim Guidance on Provision of Services for Noncommunicable Diseases (NCDs) During the COVID-19 Pandemic. Nairobi, Kenya; 2020.