AfricaCDC
Centres for Disease Control
and Prevention

Safeguarding Africa's Health

RESEARCH AND DEVELOPMNENT DURING EPIDEMICS AND PUBLIC HEALTH EMERGENCIES

AFRICAN CENTRED ETHICS FRAMEWORK

APRIL 2025

An entity of the
African
Union

AfricaCDC
Centres for Disease Control
and Prevention

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Africa CDC is a continental autonomous health agency of the African Union established to support public health initiatives of Member States and strengthen the capacity of their public health institutions to detect, prevent, control and respond quickly and effectively to disease threats.

Safeguarding Africa's Health

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FOREWORD

Only 3% of global health research emanates from Africa, despite its share of 18% of the world population and 25% of the disease burden. One challenge to this limited health research on the continent stems from the poor research ethics framework and failure of international research ethics principles to optimally protect African research participants. African populations have peculiar cultures, values, belief systems, and virtues that need to be explored and understood in the process of ethical conduct of research. For example, a study in an African setting reported information of cancer diagnoses as unfavorable during informed consent process could alter treatment and care outcome of the patients. In African settings, unlike developed nations, more emphasis is placed on community-level autonomy rather than individual autonomy. In African populations where health literacy levels are comparably low, understanding of research and disease during informed consent can compromise the ability to make informed decisions. Moreover, lower socio-economic status of African populations could render study participants vulnerable, as offered incentives might affect their decisions to participate in the study.

To address these challenges, the Africa Centres for Disease Control and Prevention (Africa CDC), an African ethics working group in consultation with Heads of national ethics committees of African Union member states developed a continent-wide Africa-centred research ethics framework that is based on a contextual understanding of the African cultural settings, values, and principles. The Africa-centred research ethics framework delved into context-specific realities, nuances, and challenges experienced by African countries and participating communities during research in the past and redress these through applying African values and virtues, as well as acceptable ways of conducting research in Africa. In addition to the existing international research ethics principles, the Africa-centred research ethics framework considered key attributes such as solidarity (altruism, reciprocity, and collective responsibility), friendliness (interdependence, interconnection, respect, and community survival/good), and social justice (equitable allocation, moral responsibility, holism, hospitality, and acceptability). This framework seeks to rebuild an image of Africa by instituting stringent ethical norms to be considered by key stakeholders in the research process. While considering the rights of communities and regions to make informed decisions about what research to permit in their region with a specific focus on addressing priority problems, this framework also seeks to limit arbitrariness in health research by setting minimum standards that are grounded in commonly accepted values across African societies. The framework aims for the long-term relevance and applicability of such standards even for secondary use of data arising from research on the continent.

In addition to the national-level research ethics committees, this framework also advocates for an accelerated establishment of a Continental Health Research Ethics Committee (CH-REC), under the administrative leadership and support of Africa CDC. The CH-REC will be composed of prominent multi-disciplinary stakeholders from the Member States and Africa CDC. The CH-REC will be responsible for providing ethics oversight and approval for multi-country health research conducted on the continent and strengthening the capacity of national research ethics committees. The CH-REC will develop and systematically monitor the compliance of researchers and partners to the provisions of the Africa-centric health research ethics framework.

The Africa-centric health research ethics framework will be instrumental in shaping the global health research efforts on the continent. The framework equally aims to ensure that the salient values in African communities are implemented in research conducted on the continent through scrutinization of previous and ongoing research ethics experiences, mitigating unethical research practices, and drawing values to tease out principles and duties for health research in Africa. I call upon all relevant stakeholders for the operationalization of this framework.

H.E. Dr Jean Kaseya,
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EXECUTIVE SUMMARY

The lack of an African research ethics framework during epidemic emergencies (EE) has been a glaring concern amongst African scholars for decades. In the context of major public health emergencies of continental and global health concern over the last five years, such as Ebola in 2019, COVID in 2020 and Mpox in 2024, and ongoing epidemics, including those of pandemic potential, the need for such a framework is evident. Ethics frameworks for research during emergencies have been published (World Health Organisation, 2016; Nuffield Council on Bioethics, 2020). However, there is currently no African and continent-wide, coherent guidance that promotes African values, elaborated by Africans for hosting research during EE on the continent. To address this gap, the African Centre for Disease Control convened an Ethics Working Group (Ethics WG) to develop an African framework that embraces dominant African principles/values that might guide the ethical conduct of research in Africa during EE to prevent harm to participants/communities.

This African ethical framework for research during EE draws on salient African values, which inform guiding principles for research involving African communities. Central to this framework is fully acknowledging the historical context, including violations, ethical misconduct and harms that Africans have experienced. Emergencies have the potential to exacerbate the risk of harm, vulnerabilities, and injustices; therefore, the framework seeks to expound on the context-specific realities, nuances, and challenges experienced in the African context during EE.

This framework seeks to redress an image of Africa often perceived as a place where researchers from high-income countries can easily engage in exploitative, unjust, and unethical research practices due to less stringent ethical standards or less oversight in Africa, so-called helicopter research and ethics dumping. Whilst taking seriously the rights of communities and regions to make informed decisions about what research to permit in their region with a specific focus on addressing priority problems, this framework also seeks to limit arbitrariness in research during emergencies "divide and research" – by setting minimum standards that are grounded in commonly accepted values across African societies. The framework aims for the long-term relevance and applicability of such standards even for secondary use of data arising from research during emergencies on the continent.

The framework seeks to meet three main objectives:

- To speak to the previous and ongoing experiences with epidemic emergencies on the continent.
- To mitigate unethical research practices during epidemic emergencies.
- To draw on the salient values to tease out principles and duties for research during epidemic emergencies in Africa.

The framework proposes an 'ethical compass' of three core values: solidarity (altruism, reciprocity and collective responsibility), friendliness (interdependence, interconnection, respect and community survival/good) and social justice (equitable allocation, moral responsibility, holism, hospitality and acceptability). In turn, these core values have informed and been drafted into what we have coined the C.U.R.E framework (i.e., collaboration; responsive utility; responsible science; and empowerment).

The framework applies these values and principles to all stages of research and considers their implications for participants, participating communities, researchers, partners and funders.

LIST OF ABBREVIATIONS

AU	African Union
AUC	African Union Commission
AUDA-NEPAD	African Union Development Agency – New Partnership for Africa’s Development
CIOMS	Council for International Organizations for Medical Sciences
ICREID	International Conference on Re-emerging and Emerging Infectious Disease
NEC	National Ethics Committee
PANDORA-ID-NET	Pan-African Network for Rapid Research, Response, Relief and Preparedness for Infectious Disease Epidemics
RCC	Regional Coordinating Centres
R&D	Research and Development
SARS	Severe Acute Respiratory Syndrome
TWG	Technical Working Group
UCL	University College of London
WHO	World Health Organisation

ACKNOWLEDGMENTS

The development of the African Centred ethics framework for research and development during epidemics and public health emergency was through a multistakeholder process. As such the Africa CDC would like to extend its sincere gratitude to all those who supported the process including but not limited to

- African Union Member States stakeholders
- Africa CDC Regional Coordinating Centres (RCC)
- African Union Commission (AUC)
- African Union Development Agency – New Partnership for Africa’s Development (AUDA-NEPAD)
- National Ethics Committees and Institution Review boards in Member States
- Pan-African Network for Rapid Research, Response, Relief and Preparedness for Infectious Disease Epidemics (PANDORA-NET)
- University of Witwatersrand, South Africa
- University of Ghana
- University of Cape Town, South Africa
- University of Yaoundé 1, Cameroon
- Michigan State University, USA
- University of Sudan
- Makerere University, Uganda
- Egerton University, Kenya
- Koinadugu College, Sierra Leone
- George Washington University, USA
- University of Pennsylvania
- GE2P2 Global Foundation
- Chatam House, UK
- University College of London
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1. BACKGROUND

1.1. Why the need for an African centred health research ethics framework for research and development during epidemics and public health emergencies?

The absence of an African bioethics' framework for health research and development (R&D) has been a glaring concern amongst African scholars for decades[1,2] even though the need for such a framework for R&D especially during epidemics/pandemics and public health emergencies has become more apparent. Emerging and re-emerging infectious are increasingly prevalent and continue to be a major concern for global health especially in Africa where over 240 public health events were reported in 2024[3]. The Ebola outbreaks in Western and Eastern Africa and the recent COVID-19 pandemic have made clear the critical role of ethical and scientifically valid research in informing epidemic/pandemic responses[4]. However, undertaking research in suddenly occurring epidemics and public health emergencies is ethically complex due to possibly associated high morbidity and/or mortality-related time-pressure for decision making in the context of limited resources. As such, (re)emerging epidemics and emergencies often necessitate action with speed or *urgency* for R&D potentiating ethical violation and transgression in the context of increased individual and community vulnerability to exploitation and injustice. In an African context where research has been perceived as a means to an end, how to pre-empt ethical transgressions potentiated during public health emergencies, how to prevent or mitigate harm in the urgent R&D process to respond to public health emergencies while maintaining rigorous ethical standards for the respect and protection of study participants and communities remains a major concern

Albeit the existence of global ethics guidance for undertaking research during pandemics and other public health emergencies[5,6], there currently exists no such coherent guidance that promotes African values, elaborated considering the specificities of the African context characterized by genetic, phenotypic, geographical, social, behavioural and cultural diversity. Instead, currently available international guidance documents are imported and espouse foreign values, many of which are inconsistent with moral and societal norms commonly accepted in African communities. Despite numerous calls for African centred bioethics[7,8,9] , existing international research ethics guidelines are still predominantly influenced by Euro-American concepts and traditions with considerable disparity to be culturally appropriate practices in the diverse African cultural contexts. Therefore, to address this gap, the Africa Centres for Disease Control (Africa CDC)[10] convened an Ethics Working Group to develop an African-centred ethics framework that strongly considers dominant African values and principles for guiding ethical

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[1] TANGWA, G. B. 1996. Bioethics: an African perspective. Bioethics. 10(3), 183-200

[2] BEHRENS, K.G. 2013. Towards indigenous African bioethics. South African Journal of Bioethics and Law, 6(1), 32-35. doi:10.7196/SAJBL.255.

[3] Annual Report: 2024 A Year of Innovation, Response, and Resilience – Africa CDC

[4] TANGWA et al. (eds.), Socio-Cultural Dimensions of Emerging Infectious Diseases in Africa: An Indigenous Response to Deadly Epidemics. Springer Nature, Switzerland AG, 2019

[5] COUNCIL FOR INTERNATIONAL ORGANIZATIONS FOR MEDICAL SCIENCES and World Health Organization. 2016. International Ethical Guidelines for Health-related Research Involving Humans. https://cioms.ch/wp-content/uploads/2017/01/WEB-CIOMS-EthicalGuidelines.pdf

[6] NUFFIELD COUNCIL ON BIOETHICS. 2021. Research in global health emergencies: ethical issues. https://www.nuffieldbioethics.org/publications/research-in-global-health-emergencies

[7] BEHRENS, K.G. 2013. Towards indigenous African bioethics. South African Journal of Bioethics and Law, 6(1), 32-35. doi:10.7196/SAJBL.255

[8] FRIMPONG-MANSOH Y.A & ATUIRE C (Eds). 2019. Bioethics in Africa: Theories and Praxis. Vernon Pess publishers.

[9] TANGWA et al. (eds.), Socio-Cultural Dimensions of Emerging Infectious Diseases in Africa: An Indigenous Response to Deadly Epidemics. Springer Nature, Switzerland AG, 2019

[10] Home – Africa CDC

conduct of R&D during epidemics and public health emergencies in Africa that mitigates harm, promotes respect and enhances protection of research participants and communities.

1.2. What are the considerations for an African centred health R&D ethics framework for research in epidemics and public health emergencies?

First, the framework intends to delve into the context-specific realities, nuances and challenges experienced by African Union (AU) Member States and participating communities during research. Secondly, through this lens, the framework seeks to expound the realities, nuances and challenges experienced in the African context during epidemics and public health emergencies.

The framework seeks to consider the historical experiences and exploitation of Africans during health research and how the rights, dignity, and wellbeing of participating communities has not been respected. By acknowledging this past, the framework seeks to redress through applying African values, and acceptable ways of conducting research in Africa during epidemics and emergencies, where vulnerabilities within affected societies and participants can often be exacerbated. It is important to focus on how emergencies may increase risks of harm and injustice to participants. This framework takes into consideration historical experiences of disasters and emergencies in Africa and their impact and how these precarious situations have exposed African research participants to exploitation.

It seeks to redress the image of Africa often perceived as a place where researchers from high-income countries can easily engage in exploitative, unjust, and unethical research practices due to less stringent ethical standards or less oversight, the so-called helicopter research and ethics dumping. Whilst taking seriously the rights of communities and regions to make informed decisions about what research to permit in Africa with a specific focus on addressing priority problems, this framework also seeks to limit arbitrariness in research during emergencies "divide and research" – by setting minimum standards that are grounded on commonly accepted values across African societies. The framework aims for the long-term relevance and applicability of such standards even for secondary use of data arising from research during emergencies on the continent.

Moreso, the framework equally aims to ensure that the salient values in African communities are implemented in research conducted on the continent. To contribute towards this, we propose a framework that is African in at least three ways:

- Speaks to the previous and ongoing experiences with epidemics and public health emergencies on the continent.
- Mitigates unethical research practices during epidemics and emergencies.
- Draws on the salient values to tease out principles and duties for research during epidemics and public health emergencies on the continent.

The framework proposes an 'ethical compass' of three core values: 'solidarity' (*altruism, reciprocity and collective responsibility*), friendliness (*interdependence, interconnection, respect and community survival/good*) and social justice (*equitable allocation, moral responsibility, holism, hospitality and acceptability*). In turn, these core values have informed and been drafted into what has been coined the C.U.R.E framework (i.e., collaboration; responsive utility; responsible science; and empowerment).

Nevertheless, there is need to iterate the point that ethical conduct of research during epidemics and public health emergencies will guarantee ethically conducted in non-emergency or inter-emergency situations.

1.3. How do existing international ethical guidance for R&D during epidemics and public health emergencies relate to the African context?

The development of an African centred ethics framework for R&D during epidemics and public health emergencies acknowledges the existence of international guidelines for the same purpose and does not under any circumstance imply that these international guidelines for health research ethics are obsolete. Instead, the African centred framework builds on existing principles and is designed mainly to ensure that African contextual and cultural values are considered and respected in conducting research in Africa. It further iterates the roles and responsibilities of each major stakeholder in the R&D process as guidance to ensure the identified values are respected. Major ethical principles such as the respect for one's relational autonomy, the social value of research and minimization of risks, and fair beneficiation from research outputs are prioritized and contextualized to adequately accommodate African realities.

As such, the framework acknowledges the CIOMS and WHO guidelines[11] as well as the recent Nuffield Council on Bioethics guidance on "Research in global health emergencies: ethical issues''[12]. The CIOMS and WHO guidelines provide thorough and clear guidance that address ethical issues associated with research, including among others; social value, research conducted in low-resourced settings, caring for participants' health needs, community engagement, collaborative partnerships and capacity building, as well as research during health disasters and viral outbreaks. This guideline is for researchers, sponsors, research ethics committees, health regulators and policymakers. The Nuffield Council on Bioethics report focuses on ethical issues during global health emergencies and proposes an ethical compass of three core values: equal respect (respect for others as moral equals), fairness and helping reduce suffering. The document further makes recommendations for researchers, research institutions, research ethics committees, journals, national governments and sponsors/funders and international organizations, including humanitarian groups.

Both guidance documents cover salient ethical issues that must be considered and prioritized when conducting research in general and when conducting research during outbreaks, disasters and emergencies. Though the African centred ethics framework have points of convergence with the afore-mentioned guidelines, its scope of guidance is the African context to ensure African values inform principles at different stages of the research cycle notably pre-research, during research and post-research. Moreover, this framework identifies three major stakeholders in the research cycle including researchers, research participants (and communities) as well as partners (including sponsors and funders) and iterates individual and collective responsibilities in their relationships to ensure ethical conduct of research. However, research ethics committees, policymakers and health/research regulators should be the gatekeepers with a major oversight role to monitor, referee and ensure the responsibilities of key stakeholders and their relationship during the research cycle are respected and implemented.

1.4. What was the methodology involved in the development of an African centred health research ethics framework?

Developing the African centred ethics framework required numerous steps with consultation of stakeholders at different levels in the process.

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[11] COUNCIL FOR INTERNATIONAL ORGANIZATIONS FOR MEDICAL SCIENCES and World Health Organization. 2016. International Ethical Guidelines for Health-related Research Involving Humans. https://cioms.ch/wp-content/uploads/2017/01/WEB-CIOMS-EthicalGuidelines.pdf

[12] NUFFIELD COUNCIL ON BIOETHICS. 2021. Research in global health emergencies: ethical issues. https://www.nuffieldbioethics.org/publications/research-in-global-health-emergencies

1.4.1. What triggered the need for an African centred research ethics framework and how was it developed?

The idea of the development of an African framework for research ethics in epidemics was born during the International Conference on Re-emerging and Emerging Infectious Disease (ICREID)[13] that took place from 13th to 15th March 2019 in Addis Ababa. Africa CDC in collaboration with the Pan-African Network for Rapid Research, Response, Relief and Preparedness for Infectious Disease Epidemics (PANDORA-ID-NET) consortium, Chatham house and the University College of London (UCL) during the conference and through a series of webinars, consulted African stakeholders on the value of such a framework. Building on these online consultations, Africa CDC formed an Ethics Technical working group (TWG).

This TWG comprising 15 African experts in African philosophy, bioethics, social science, public health, and epidemiology, representative of the regions of the continent were identified through a mapping process based on expertise and track records of work addressing ethical issues on the African continent. The TWG kick-off online meeting was on 15th July 2022, where the rationale, scope and intended outcomes of the framework were discussed, then periodic online workshops to discuss and develop the draft of the framework were planned with an in-person workshop of the group held on June 1st and 2nd 2023 in Cape Town, South Africa. The updated draft from this face-to-face engagement was circulated to get additional inputs from other stakeholders, then an in-person consultative workshop with National Ethics Committees (NEC) was held on the 14th and 15th of December 2023 in Addis Ababa, Ethiopia. The inputs from these consultative workshops were used to further enrich the framework and a validation workshop was held from 21st to 23rd November 2024 in Addis Ababa, Ethiopia where the validated draft was finalized and officially launched through a ministerial workshop involving ministers of health, finance and higher education in Addis Ababa, Ethiopia from 31st March to 1st April 2025.

1.4.2. What were some of the African contextual considerations in the development of the framework?

Developing an African ethical framework for research during epidemics and public health emergencies presents many challenges in a socio-cultural context characterized by diversity. However, the 2014 - 2016 Ebola outbreak which affected neighbouring countries albeit this existing socio-cultural diversity presented an auspicious and timely opportunity to consider middle grounds and trade-offs amidst this diversity to ensure R&D for emergency response to future outbreaks and pandemics is ethically conducted.

The AU is made up of 55 member states, comprises over 3,000 ethnic groups speaking more than 2,000 languages in different parts of the continent. Therefore, claiming to elaborate a single comprehensive framework that encompasses and fits across all the different cultures, covering all the different worldviews and experiences that are on the continent was far-fetched. Nonetheless, the development process of the framework builds on the conviction that research ethics informed by key concepts and salient broad values that are culturally sensitive across diverse groups on the continent is a better tradeoff. As such, the proposed African-centred research ethics framework builds on similar African-led frameworks[14] demonstrates concrete ways African experience and knowledge systems can influence ethical conduct of research respecting African cultural values and framed around priority health problems in the communities.

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[13] International Conference on (Re-) Emerging Infectious Diseases (ICREID) 2019 | AME

[14] Framework for Fair, Equitable and Timely Allocation of COVID-19 Vaccines in Africa – Africa CDC

2. KEY CONCEPTS IN AFRICAN CULTURES AND SCHOLARSHIPS

There are indeed existing systematic and literature reviews that aim to outline core values in Africa[15,16,17,18,19,20,21,22]. There are also different bioethics, applied ethics and global health ethics publications that draw on these values to articulate, defend and contribute African perspectives to various health and research-ethics-related discourses. However, among this plethora, the most salient, interacting and interdependent parts of a complex whole are *solidarity, friendliness, and social justice* (as three sides to the coin). The description of these concepts and values from an African societal perspective and scholarships, will subsequently be outlined to the principles emanating from them as well as the specific norms for different stages of research (Figure 1).

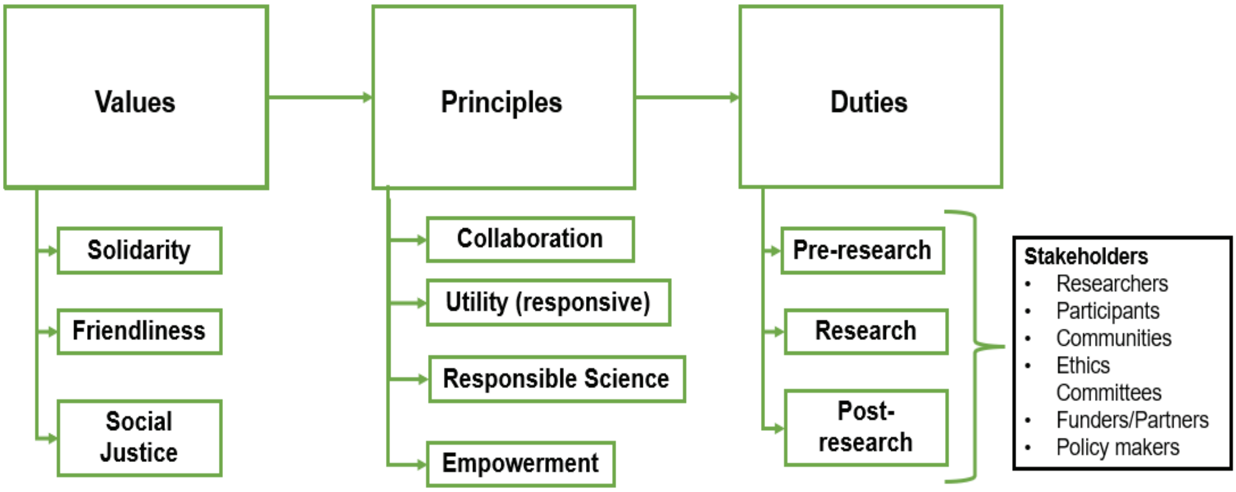

Figure 1: Flow diagram of values, principles and duties for ethical conduct of research in Africa

2.1. Solidarity (Altruism, reciprocity and collective responsibility)

Solidarity suggests cooperation, service (or responsiveness to others for their sake) and reciprocity. Specifically, dominant thinking about solidarity tends to entail acting for the good of others, sharing in their mis/fortunes, exploring ways for improvement, and enhancing their conditions for their benefit (that is, altruistically). This form of altruism requires sympathy, empathy, sensitivity, and the affirmation of the humanity of others owing to our interdependence. This way of thinking about solidarity does not imply that gestures cannot or ought not to be reciprocated. The latter is supported by maxims like *the right arm washes the left arm, and the left arm washes the right arm.* As the African philosopher Julius Nyerere[23]

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[15] A Literature Review on African Leadership and Ubuntu Philosophy | Human Resource and Leadership

[16] C. Ewuoso & S. Hall, Core aspects of ubuntu: A systematic review - PhilPapers

[17] An African Research Ethics Reader – From the Ground Up | Brill

[18] Mangaroo-Pillay, M. and Coetzee, R. (2022), "A systematic literature review (SLR) comparing Japanese Lean philosophy and the South African Ubuntu philosophy", International Journal of Lean Six Sigma, Vol. 13 No. 1, pp. 118-135. https://doi.org/10.1108/IJLSS-11-2019-0118

[19] GADE, C. 2011. The Historical Development of the Written Discourses on Ubuntu, South African Journal of Philosophy, 30:3, 303-329, DOI: 10.4314/sajpem.v30i3.69578

[20] GADE, C. 2012. What is Ubuntu,? Different Interpretations among South Africans of African Descent, South African Journal of Philosophy, 31:3, 484-503, DOI: 10.1080/02580136.2012.10751789

[21] TANGWA, G. B. 1996. Bioethics: an African perspective. Bioethics. 10(3), 183-200

[22] BEHRENS, K.G. 2013. Towards indigenous African bioethics. South African Journal of Bioethics and Law, 6(1), 32-35. doi:10.7196/SAJBL.255

[23] NYERERE, J. 1968. Ujamaa: Essays on socialism, Oxford, Oxford University Press

remarks, "in our traditional African society, we were individuals within a community. We took care of the community, and the community took care of us. We neither needed nor wished to exploit our fellow men."

Finally, solidarity entails cooperation in ways that imply that we ought to take responsibility for each other's fate and destiny. One ought not to separate their humanity from the humanity of others. This is famously typified by the motif of the Siamese crocodile with a single stomach. This African art is influential, expressing how the actions of another, impact individuals. For this reason, Lekan Balogun[24] remarks, "solidarity involves commitment, and work, as well as the recognition that even if we do not have the same feeling or the same lives, or the same bodies we do live [and grow] on common grounds." The Nguni people of Southern Africa believe that a community that cooperates, where individuals respond to others for their sake; and reciprocate gestures, has no orphans or stepbrothers. In that community, we are simply siblings to one another *because you are them and they are you*. It is from this way of being that hospitality is recognized as a norm. In other words, everyone is perpetually incomplete and is continually added to others and flourishes only after their destinies become one. The abiding duty the individual owes society is that he/she ought to contribute to the community both because it is expected of him/her, and because *it*, the community, *is him/her*[25] .

2.2. Friendliness (Interdependence, dignity, respect and community survival/good)

Friendliness suggests harmony and communal relationships, described as a combination of sharing a way of life and goodwill with others. It is through interconnectedness and interdependence that communal relationships and harmony are founded. Like the concept of solidarity, friendliness epitomizes the popular communalistic worldview associated with Africa as expressed by Mbiti[26] that *I am because we are and since we are therefore, I am*. As the late human rights activist Archbishop Desmond Tutu[27] remarks, "we say a person is a person through other people. It is not I think therefore, I am. It says rather: I am human because I belong. I participate; I share…. Harmony, friendliness, and community are great goods." This is understood to mean that in the African context a human being is only complete through others and that is the root of dignity and fulfilment. Friendliness in some way requires showcasing humanity or humanness to others (Ubuntu). Humanness is sometimes moralized such that the more humanness one showcases to others, the more of a person one becomes. Showcasing humanity partly entails respecting the values of others, their worldviews or how they have dignity, responding to their basic needs if one can, cooperating with others to realize their shared ends, and doing these because *this is who we are.*

2.3. Social Justice (Equitable allocation, moral responsibility, holism, hospitality and acceptability)

Social justice emerges as distributive and commutative in African thought. The distributive feature entails first-order duties which ought not to be violated when questions about civil liberty and property allocation arise and are binding principally on States, institutions, funders, and other established organizations, to name a few. Distributive justice often implies that these entities (States, institutions, and funders) have a moral responsibility to do what they reasonably can to ensure that objects of their duties have the decent minimum to interact communally or cooperatively. This includes creating equitable conditions that make interaction possible,

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[24] Balogun L."Agbajo Owo…": Thought on African concept of solidarity for peace. Int J Educ Res (Dhaka). 2013;1:1-10

[25] An African Research Ethics Reader – From the Ground Up | Brill

[26] MBITI, J. S. 1969. African Religions and Philosophy. London: Heinemann

[27] TUTU, D. 1999. No Future Without Forgiveness, London, Rider Random House.

protecting the freedom/values - in varying degrees - of their objects of relationships, and creating opportunities for them (that is, the objects of their relationships) to lead meaningful lives in *objectively reasonable ways.*

On the other hand, commutative justice describes individuals' and non-State actors' responsibilities to one another and society as subjects of these interactions[28]. This may include participation in projects which promise reasonable social benefits and impacts, desisting from acting in ways that undermine the well-being of their compatriots and society, and subordinating the interests of others. It is important to note when considering well-being, that this extends beyond physical health achieved through allopathic medicine, rather this considers a holistic sense of well-being wherein the psychological, social and spiritual aspect to a being and their community are maintained. A fitting way to exhibit commutative justice is to help one another escape conditions that render living a decent life impossible. Wrongfully and intentionally setting back others' interests is a failure to be commutatively just[29].

However, solidarity, friendliness, and social justice are not unique to the African continent. Indeed, scholarships have been developed around the same in other regions. For example, Alena Buyx and Barbara Prainsack have a corpus of work on solidarity. Nevertheless, they have been outlined from African intuitions and the moral norms that arise from them. From the vantage point of these core values, key principles emerged that will be coined henceforth as CURE framework, i.e., *Collaboration, responsive Utility*, *Responsible science* and *Empowerment* to guide ethical conduct of research during epidemics and public health emergencies in Africa.

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[28] METZ, T. 2020. Relational Normative Economics: An African Approach to Justice. Ethical Perspectives, 27, 35-68

[29] EWUOSO, C., BERKMAN, B., WONKAM, A. & DE VRIES, J. 2022a. Should institutions fund the feedback of individual findings in genomic research? J Med Ethics

3. THE C.U.R.E FRAMEWORK

3.1. Collaboration

This principle employs a relational approach to conducting research for response to outbreaks of infectious disease and other health related challenges. The key relationships to be established are between researchers and participants, researchers and the community and researchers and partners and then between these stakeholders and ethics and regulatory committees. The aspiration is to develop horizontal relationships, where each member of the relationship is valued as an essential and indispensable part of the success of research and public health response. The power dynamics within these relationships in the past have been unbalanced, stifling meaningful engagement and trust. Trust is the foundation for these relationships and influences the success of the relationships and meaningful collaborative efforts.

Collaboration is informed by the values of solidarity and friendliness, where working together and cooperating to realize shared ends is the intended consequence. Shared responsibility and reciprocity to collectively resolve challenges presented by emergencies is pivotal. Furthermore, collaboration has an important link to social justice since it expresses the shared or collective moral responsibility to overcome conditions and diseases that inhibit life and well-being within communities. Partnering across disciplines, across borders and between sectors is key in finding solutions to emergencies. Scientists, communities, institutions, and States ought to collaborate in information, study design, resource mobilization and sharing, as well as implementation of research to achieve positive health outcomes. In many African communities with significant experiences in encountering epidemics and public health emergencies, most with limited healthcare capacities and capabilities, there have been development of indigenous coping mechanisms and valuable community knowledge. "Doctors and epidemiologists can provide the medical facts, but communities can provide the contextual details and knowledge of what has worked (or still working) for them ..."[30]

Therefore, the principle of collaboration entails valuing the contribution of African communities in research as response. Surveillance and reporting cooperation and information sharing mechanisms on infectious events between actors is essential and equally mandated by the principle of collaboration. This framework reiterates that finding lasting solutions to the complexities associated with emergencies requires collaboration and community-based participatory research, through a *One Health* approach that addresses complex connections between human, animal, and ecological health[31]. With specific reference to collective and global challenges posed by pandemic infectious diseases, including zoonoses such as H5N1 (bird flu), H1N1 (swine flu), HIV/AIDS, SARS, influenza, and COVID-19, new approaches have been urged "to understand how biological emergencies and health alerts deploy new scales of action"[32].

Collaborations are the means through which problematic power dynamics are abolished, trust and reciprocity are initiated, and meaningful engagement and partnerships are established and maintained. This principle is communitarian in nature and applied interdependence to respond to emergencies and establish research practices in general especially, during emergencies.

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[30] de WAAL, A., and P. RICHARDS. 2020. Coronavirus: Why lockdowns may not be the answer in Africa. BBC News, April 15 https://www.bbc.com/news/world-africa-52268320

[31] Iyioke, I. 2019. We are not part of nature; we are nature: An African view on One Health. In Sandul Yasobant & Depak Saxena (Eds.), Global Applications of One Health Practice and Care, pp. 33-58, IGI Global Publishers

[32] TIRADO, F., GOMEZ, A., & ROCAMORA, V. (2015). The global condition of epidemics: Panoramas in A (H1N1) influenza and their consequences for One World One Health program. Social Science & Medicine, 129, 113-122.

3.2. Responsive Utility

Considering friendliness (which requires parties in relationships to meet the basic needs of others when they can) as a key value in many African societies, research under such conditions ought to demonstrate clinical, social, and other utilities. Research undertaken during public health emergencies should aim at enhancing the well-being or addressing the health needs of individuals. This implies that research should aim for overall benefit, social value and footprints of a better off situation for individuals and their communities. In this case, utility is responsive in generating scientific and social values that reflect and prioritizes the community(ies) that are the most affected by a disaster or a health emergency. Research approaches during emergencies should prioritize and be responsive to the contextual realities and needs in addressing infectious diseases and conditions. This ought to directly impact research prioritization, especially when considering the urgency associated with emergencies - this is in line with the value of social justice, specifically distributive justice. While emergencies will be prioritized, it is also important to note that diseases that may not be considered priorities would be granted due consideration during and after a successful response to an emergency.

This framework reiterates that research ought to be equally assessed based on such utility, and its capacity to favorably balance benefits and risks. This requirement may sometimes mean carefully balancing some internationally acceptable norms or gold standards and ensuring their implementation is adapted, respecting local African contexts. For example, the WHO COVID-19 recommendation requiring physical distancing as a method to curb the spread of the pandemic, such measures in many African contexts needs to consider many factors among which frequent cultural events and gatherings, overcrowded shanty towns, where communalism is a core value and survival strategy. In these contexts where togetherness translates to effective sharing of basic needs, particularly during such crises, this requirement would be deemed naively optimistic[33]. In such situations, emphasis on physical distancing would be perceived as harm. A sensible middle ground needs to be established and implemented that considers the best international practices and equally the needs, values and realities of the context in which best practices are implemented.

Where risks exist, there is a need for thorough assessment for appropriate mitigation. If risks are high and/or unmitigable, the risks must be morally defensible and foster communal benefits and well-being.

3.3. Responsible science

The moral requirement for researchers to act with goodwill necessitates responsible science. Evidently, scientific liberty is important to foster innovation within health sciences and related fields to enhance prevention, detection, and response capabilities to emergencies. However, it is important to espouse solidarity and social justice. Innovation must prioritize and/or be guided by the public good or desire for community survival, thus focused on priority problems that drive the highest positive impact. Therefore, scientific liberty must not result in undue harm to research participants and the public. While scientific freedom is important, this would require an understanding and responsibly balancing of other interests, such as the outcomes and effects of innovation on the lives and well-being of people. A balance between professional liberty and social justice must be promoted. Responsible science in public health emergencies ought to prioritize cooperation with others to achieve shared and acceptable outcomes. Shared

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[33] NDERITU, D. & KAMAARA E. 2020. Gambling with COVID-19 Makes More Sense: Ethical and Practical Challenges in COVID-19 Responses in Communalistic Resource-Limited African. Journal of Bioethical Inquiry. https://doi.org/10.1007/s11673-020-10002-1

responsibility by all actors in the research process is essential to achieve harmonious cooperation and positive ends for all.

The urgency with which research and response to emergencies are expected may mean that normal processes of research need to be expedited, and resources pooled to promote an urgent response to an emergency. However, research integrity and respect of processes such as informed consent despite the pressure associated with this situation are paramount. Ensuring that participants and communities are not forced to partake in research or that research adheres to acceptable standards is the manifestation of responsible science.

3.4. Empowerment

Scientists should continuously learn about principles, practices, and legal requirements for research ethics and to respond to emergencies. Through education and technical capacity building, researchers are empowered. The empowerment of researchers ought to enhance their ability to empower communities. In the spirit of reciprocity, the gestures of those who consented to contribute to research success is an expression of humanity. For this reason, just and beneficial responses are expected. The empowerment of the community allows members of the community to understand and be engaged as active participants in the research process from inception to implementation of findings for public health responses. Through reciprocity, the community can provide epistemic experiences and contextual ways of being that can facilitate community-oriented ways of research and achieving shared ends.

Empowerment during emergencies, especially in resource-limited settings proves to be even more important. For example, ancillary care in trials, post-trial access to resources leaves the participating communities empowered by post-research. It is unacceptable for research participating countries not to have access to interventions and response mechanisms to emergencies that resulted from their active and positive contribution. Reciprocity makes it obligatory to ensure that countries and participants are not used as a means to an end during research.

Similarly, the empowerment of researchers is indispensable, especially in collaborations with sponsoring partners. The practice of research, even when done during emergencies, ought to leave researchers and emergency responders with enhanced capacities than prior to the research. Empowerment for researchers also considers their ability to be equal collaborators with partners where they own and have access to research data, resources and information during and post the research. This redresses the exploitative nature of some research collaborations within the African context.

The empowerment of researchers and the communities fosters researchers' and participants' collaborative partnerships towards achieving the shared end of finding sustainable and contextually relevant solutions during public health emergencies.

4. THE RESEARCH CYCLE

Though research is a continuum, considering the C.U.R.E principles, this framework identifies three distinct but logical stages, for which specific norms are spelled out for different stakeholders of research during emergencies. These stages include pre-research (from conceptualization through research design, ethics review sought and clearance), per-research (from interaction with communities and participants through sampling, experimentation/hypothesis testing, data and sample collection, and analysis of results) and post-research (the period after last participant follow up, reporting and publication of the results, data and sample storage for potential future use, design and implementation of interventions based on the evidence generated from the research), *(Figure 2)*. The C.U.R.E principles address norms to each research stage, in a thematic and stepwise manner, considering key stakeholders involved in this cycle (Tables 1, 2 & 3).

Figure 2: The stages of the research cycle

Table 1: Norms for the pre-research stage of the research cycle according to the C.U.R.E framework

Pre-research	Researcher(s)	Participants / Community	Funders/Partners
Responsive utility, understanding the problem and developing the research question and hypotheses for research as response	● Research, though primarily meant to expand knowledge, during emergencies, should aim at providing intervention benefits through clear and justifiable research priorities based on the needs of the communities. ● The scientific and social value must be clear and acceptable to the community. ● Studies involving placebo in the control group during outbreaks are strongly	● The well-being of the host/participating community should be the utmost consideration. Utility should be guided by optimal benefit and least harm that may potentially be associated with any intervention (research for public health emergency response). ● The interventions must be informed by the contextual realities, i.e. needs,	● Funders' calls to request research proposals in Africa should be reflective of and guided by priority health problems that affect communities on the continent. ● Funders should be altruistic enough to ensure that funded research primarily addresses local needs and not their own interest.

Table 1: Norms for the pre-research stage of the research cycle according to the C.U.R.E framework

Pre-research	Researcher(s)	Participants / Community	Funders/Partners
	discouraged, new designs including platform adapted trials should be a way forward if standards of care are absent. ● Openness to allow inclusiveness of all relevant stakeholders in the identification and prioritization of health problems will be achieved through collaboration especially with the participating communities, an opportunity for researchers to empower the community to contribute their knowledge to inform how the problem is perceived, understood and how it should acceptably be resolved. ● Research in Africa should imperatively involve local African-based researchers as lead investigators. ● The research question should be conceptualized and designed to be adaptable to the contextual norms and needs, without losing focus on the research objectives, especially as public health emergencies do not affect all communities the same way. Research should fit into society and not the other way round. ● Considering local solutions to and approaches to understanding and creating interventions for diseases that plague individuals and communities need to be thoroughly explored and promoted	strengths/opportunities and challenges of the host community. ● The civil society as a community voice should also be involved in setting research agenda and in the entire research cycle. ● The community from which participants will be selected and recruited ought to be involved in the identification and conceptualization of the problem and the solutions, an acknowledgement and consideration of their knowledge, experiences, perceptions, and context-specific realities. This approach mitigates false assumptions, establishes a synergistic understanding between stakeholders and guarantees buy-in by the host community. ● The community should be actively involved in the design of the research question(s) and hypothesis for potential solutions to ensure that the questions and solutions are reflective of and responsive to the community needs. ● Written approval from participating communities in research should be considered a requirement for seeking ethics approval.	● Partnership in identifying the problem and collectively contributing to potential solution is an optimal use of limited resources, an opportunity to develop trusting relationships where local researchers can clearly voice their understanding of the problem, considering the views of the community. ● Helicopter research where questions are designed to get the relevant answers and antigens to address funders/partners interests during emergencies should be highly discouraged. Involvement of local researchers should not only be a means to an end to the data and antigens, but this involvement should also lay a roadmap of benefits sharing firstly with participating communities and secondly with affected populations. ● Non-African researchers should not partner in research to be conducted in Africa that is not permissible in their home country (research dumping). ● Local partnership to establish a continental research governance mechanism to streamline

Table 1: Norms for the pre-research stage of the research cycle according to the C.U.R.E framework			
Pre-research	Researcher(s)	Participants / Community	Funders/Partners
		● Communities should not be expected to change the pathways of acceptable norms and activities to adapt to research, the study should be adaptable to the communities.	key research questions to be addressed during emergencies. This governance mechanism serves as a reference to funders and partners to guide them on what to fund or what research to embark on.
Research proposal	● Speed in generating the evidence for emergency response should not jeopardize the quality of the study design as was seen during the COVID-19 pandemic where remarkable proportions of studies were futile due to poor design. ● A formal agreement ought to be established between the research team and the local communities describing the goals of research, timeline, roles and responsibilities of key stakeholders in research, and potential benefits that may accrue to the local community . ● The deliberations and decisions agreed upon must be reflected in the proposal and should only be changed through written consensus. ● Researchers should undertake research justly without prejudice or biases or for profit.	● The community should have access to the research proposal and other key documents of the research. These documents should be available in the main local language of the community. ● Major amendments of the protocol should be in consultation with the participating community and should be implemented only after agreement.	● The proposal that is awarded a grant needs to be vetted for safety, potential risks, conflicts, biases, contextual considerations and a deliverable-based community engagement plan with defined timelines that should equally be budgeted for funding consideration.
Education and awareness	● It is the responsibility of the researcher to raise awareness on the research purpose. The researchers should also provide education on key concepts of the research process such as	● The agreements established from research and hypothesis synthesis should inform the selection of participants who should also be adequately	● Funders should allocate funding for education and awareness raising and ensure a comprehensive community engagement plan is presented in the

Table 1: Norms for the pre-research stage of the research cycle according to the C.U.R.E framework

Pre-research	Researcher(s)	Participants / Community	Funders/Partners
	blinding, placebo, therapeutic misconception, risks and benefits and benefit sharing. A comprehensive community engagement plan with sufficiently allocated resources and timelines to ensure thorough understanding should be clearly outlined in the research proposal.	informed of the purpose of the research	funding application for consideration as a core thematic area for attributable funding and not just as tick-box activity.
Rapidity in response	● Research ought to be designed in ways that are uncomplicated but still answers the research questions to generate the evidence for timely use of findings to effectively drive responses. ● Harnessing local and cross border capacity in research for response through creation of consortia, networks of researchers for joint research as response is an efficient way of using limited resources. When a country experiences an outbreak, it is important to have a collective and collaborative (across borders and health systems) response approach, including the sharing of resources (infrastructure and human), to adequately respond to the affected areas, even when the assisting country is not affected. ● Coordinated multidisciplinary (social and behavioural sciences, biomedical research etc) and multi-sectoral involvement enhances efficiency in conducting research as response.	● To promote justice and reciprocity during global health disasters, there is a collective responsibility to undertake thorough situational analysis of how particular communities are impacted by public health disasters and how research ought to be tailored to address specific needs of individual communities. ● Post outbreak debriefs should be done in the communities to share lessons learned and challenges, and address what ought to be done in case of recurrence.	● Distributive justice requires African States to dedicate and allocate resources from their budgets for health research. This obligation is even more important during outbreaks and pandemics. ● Research during an epidemic /pandemic requires cooperation, wherein scientists ought to work together to promote science without compromising key values. ● Action-oriented respectful partnership initiatives such as Incident Management Support Teams with clear emergency response strategies that clearly identifies research as response as a major pillar should be encouraged and supported.

Table 1: Norms for the pre-research stage of the research cycle according to the C.U.R.E framework

Pre-research	Researcher(s)	Participants / Community	Funders/Partners
	● Research as response should not reinforce existing and/or emergency-induced injustices and should respond to empower participating societies. ● Research prioritization to identify diseases of outbreak potential and intentionally investing in developing measures (vaccines, diagnostics and therapeutics) ensures effective and efficient response. ● For emergency preparedness, generic adaptable protocols that address commonly emerging outbreaks could be developed prior to emergencies to ensure timely evidence generation to guide the response when these emergencies occur.		
Ethics and institutional review and approval	● Research should be undertaken only after a valid ethical clearance has been obtained from a recognized local ethics committee and/or legitimate agency. ● Review processes during emergencies should be adapted for enhanced efficiency through joint reviews by networks of ethics committees of countries affected the ongoing emergency. Expedited reviews can be fast-tracked through invitation of the researchers to present the protocol to the ethics committee instead each member of the committee to have to read and review.	● Community representation within ethics review boards would ensure the voices of the communities are heard and considered in the review process	● A continental ethics committee should be established with the secretariat at Africa CDC for oversight in multi-country and international studies and a gatekeeper for ethical conduct of research in Africa. This committee does not override the national ethics committee, but funders and partners should refer to this committee and get approval prior to engaging with Member States national ethics committees which have the final say whether the study will be conducted in the country or not.

Table 1: Norms for the pre-research stage of the research cycle according to the C.U.R.E framework			
Pre-research	Researcher(s)	Participants / Community	Funders/Partners
	● As gatekeepers for ethical conduct of research, research ethics committees and institutional review boards are mandated to reject or terminate unethical research without any risk of personal or institutional jeopardy. The independence and autonomy of ethics committees and institutional review boards are non-negotiable and should be respected by researchers. ● Human trials should not be permitted in the absence of preliminary data. ● Given that health emergencies often require urgent actions to limit harm, ethics committees and institutional review boards ought to prioritize emergency/outbreak-related protocols. ● Any amendments done on the protocol after ethical clearance and prior to the research needs approval from the competent ethics review board. ● Post-research request for ethics approval request should be rejected.		

Table 2: Norms for the per-research stage of the research cycle according to the C.U.R.E framework			
During research	Researcher(s)	Participant(s)/Community	Funders/Partners
Communication	● Communication between the research team and the host community is vital to building trust and strengthen partnership with the community. ● All documents should be available in the common language spoken in the community. ● Communication should prioritize commonly used community channels with adaptable messages that are context and user friendly. ● Establish a communication channel for interim and final results with stakeholders, especially policy makers, to facilitate and fast-track translation of promising findings to policy.	● Solidarity and friendliness in the communication process should empower the participant to request for clarification and provide subjective feedback on the research. ● The community must be aware and approve recruitment and sampling process of the research. ● If there are any changes to the study, the community must be duly informed.	● The community engagement strategy must clarify how communication with the participants/community will be done.
Conflicts of interest	● Researchers should disclose all potential conflicts of interest to participants, host communities and partners. Clear steps concerning managing such conflicts should be communicated to them.		● Funders should ensure all parties in a study to be funded should express their conflict of interests. Research in partnership should be done cognizant of conflicting interests.
Recruitment and methods	● Researchers must develop inclusion and exclusion criteria, sampling, and recruitment protocol that are understandable and acceptable in the community.	● Implementation of the research methods or intervention should be contextually appropriate and acceptable. ● Participants should be able, where possible, to participate in research in their own language.	● Proposals to be funded should be at the highest international ethical standards acceptable to the principle of the funder but respecting contextual norms in the process of recruitment of study participants

Table 2: Norms for the per-research stage of the research cycle according to the C.U.R.E framework

During research	Researcher(s)	Participant(s)/Community	Funders/Partners
		● The community must be aware and approve inclusion and exclusion criteria, sampling, and recruitment protocol.	
Participant autonomy	● Researchers must appreciate that while potential participants with cognitive and legal capacities are able to consent to participate in the study on their own, they may choose to consult their family and community about participating. ● Researchers must reassure participants who decide not to consent or those who decide to withdraw their consent at some point, that the care they receive from the hospital (in case of hospital-based study) or their integrity in the community would not be jeopardized by their decision.	● Even though community approval is important, members must participate only if they choose to and there should not be any risks or losses associated with refusing to participate in the research. ● Participants should be able to withdraw from the study if they choose. ● Participants should be able to consult their family or community on consenting to the research project. ● The community directly or through a representative should express their approval of the research being conducted in their community.	● The study participant is a stakeholder whose integrity must be respected and protected in any study that has to be conducted in Africa
Privacy, confidentiality, and data handling	● Researchers should communicate to participants how they plan to protect participants' confidential information. ● Researchers should collect only information that is relevant for answering the research questions as pre-specified in the case report form approved by the ethics review board.	● Anonymity and confidentiality of participants must be respected. ● Participants should be aware of and consent to the data, information and samples that will be collected and stored. ● The data handling, storage and if applicable,	● A comprehensive outline of the process of management of privacy, confidentiality and samples handling as well as the stakeholders involved in the process and the different levels of access should be clearly stated in the funding proposal or in the partnership agreements between parties.

Table 2: Norms for the per-research stage of the research cycle according to the C.U.R.E framework			
During research	Researcher(s)	Participant(s)/Community	Funders/Partners
	● Researchers should not collect samples beyond the minimum necessary to answer clearly defined questions and hypotheses. ● Data management and analyses ought to be undertaken in ways that are consistent with established principles and approved protocols with clear plans on who has access and how breach will be prevented and mitigated. ● The protection of participant and community data and information is crucial. Handling of biological samples in research should be done in a manner that respects African indigenous worldviews and communities' cultural practices.	secondary use, needs to be communicated to and consented by the participants. ● The community should be aware of the justifications and handling of the information, data and/or samples (types and amounts) that are needed from its members or storage repositories. ● The community needs to be clearly aware that the data/information/samples collected during the research belongs to the community and a justified community decision to stop further/secondary use cannot be overridden by other stakeholders.	● Data and material sharing agreements between partners should be signed, respected and implemented in a respectful manner that considers the values of all parties involved.
Vulnerability	● The research should not exploit participants, even when the community approves of the study, researchers should respect every individual participant. ● The researcher's primordial role is first to protect and respect the study participant and has no right to do research on populations with impairments/immaturity/legal rights that interferes with their autonomy and should only involve these groups	● Participants are to be considered not as mere subjects, but as dignified stakeholders whose opinions, experiences and needs are to be respected. ● To reduce their vulnerabilities, participants should be discouraged from yearning for lucrative research. Participation in research should be informed by the desire to contribute towards	● Collaboration between low and high-resourced countries ought to be respectful, professionally just, with equal and autonomous intellectual contributions and not driven by financial resource dynamics. ● Host researchers should have rights to samples, data, authorship, intellectual property, and patent.

Table 2: Norms for the per-research stage of the research cycle according to the C.U.R.E framework			
During research	Researcher(s)	Participant(s)/Community	Funders/Partners
	after written consent from legal guardians or custodians of these populations have been obtained. ● The researcher should not conduct research purely for economic reasons and should be motivated not by direct personal financial benefits but by the benefits that affected populations get from the conduct of the study. ● The research must not expose individual participants and the community to vulnerabilities such as exploitation, stigmatization and discrimination.	providing solutions to emergencies. ● The research question and its outcomes should not exacerbate already existing vulnerabilities, and the process should anticipate how to mitigate existing vulnerabilities and empower the community. .	● The host researchers must have negotiating abilities and a fair opportunity in decisions for all agreements in the partnerships.
Conflict and withdraw from participating in the research	● The researcher or team ought to establish clear principles/steps for addressing differences that may arise during research with host communities or participant	● Participants and host communities should be provided with the freedom to disengage from participating in research without any need for further explaining their reasons for withdrawal.	
Monitoring and evaluation	● Researchers should provide a clear monitoring plan for foreseen and unforeseen events that may arise during the research. ● Researchers to present periodic reports of monitoring and evaluation findings of potential and recorded adverse events to competent ethics committees and national regulatory authorities	● Participants should be clearly informed of the potential adverse events that could arise from participation in the research as well as how these will be monitored, mitigated and managed. ● Communities should be aware of potential unforeseen events to be able to report the ones that happen within the	● For research that involves new or repurposed interventions, independent data and safety monitoring boards should be created and implemented accordingly.

Table 2: Norms for the per-research stage of the research cycle according to the C.U.R.E framework

During research	Researcher(s)	Participant(s)/Community	Funders/Partners
		community outside the research space and beyond the end of the study. ● Community representation in monitoring and evaluation boards should be highly encouraged	

Table 3: Norms for the post-research stage of the research cycle according to the C.U.R.E framework

Post-research	Researcher(s)	Participant(s)/Community	Funders/Partnership
Monitoring	● The end of the study does not strip the responsibility of researchers to continuously monitor after the findings become interventions.	● Pathways for reporting potential unforeseen long term adverse effects of research products should be put in place and participants trained on how to report. ● Communities should report any adverse outcomes potentially resulting from an intervention.	● Funders and partners should monitor the outcomes of the research and its effects in the host communities. ● Research ethics committee members should ensure that there are clear plans about how adverse events would be managed in submitted protocols, as well as monitor the implementation of these plans.
Post-research benefit	● Researchers may prioritize those who are most at risk and vulnerable when demands outweigh available interventions. ● Post-trial access plans and roadmaps for potential conclusive findings need to be made clear to participants and participating communities. ● The findings and outcomes of the	● Communication of potentially actionable results of research to participant is a showcase of humanity requiring pathways to ensure these results get to the participant unless the participants explicitly elected not to receive any incidental findings. ●Research benefits, interventions and outcomes ought to be accessible to the local communities, especially the most affected even if	● Researchers and State actors should partly take responsibility for defraying the cost of returning actionable and clinically important information/interventions to participants who cannot afford such cost.

Table 3: Norms for the post-research stage of the research cycle according to the C.U.R.E framework			
Post-research	Researcher(s)	Participant(s)/Community	Funders/Partnership
	research during emergencies are likely to benefit more communities than the participating communities, therefore there needs to be communication made to other communities that may benefit from the findings of the study.	they did not directly participate in the research. ● Reciprocity requires that those who contributed to successful development of interventions should have unimpeded access to these interventions.	
Outreach, communication, uptake and use of findings	● Researchers should take responsibility for providing research updates to participants and host communities. ● Effective science communication by researchers and key informants is essential to ensure that many people can benefit from the findings of the research. ● The ways in which research is communicated must use existing and trusted channels, to engage participants, policymakers and professionals. ● Research outputs ought not to be published via medium (including in non-openly accessible journals) that participants and communities cannot access.	● Research knowledge ought to be transferred to participants through formal training and/or used to improve local communities' health and empower the community. ● Insights from research should be timely shared through different accessible channels (e.g., open access journals, townhall meetings, religious gatherings and media forums) to better inform the public, and/or deposited in open access repositories that scientists and the scholarly community can easily access. ● Community outreach can be enhanced through field agents, community nurses or medical officers, who are drawn from the communities.	● Funding and partnerships should define at inception of the research how dissemination will be supported and done to ensure that the rightful information from the findings reach respective stakeholders.

Table 3: Norms for the post-research stage of the research cycle according to the C.U.R.E framework

Post-research	Researcher(s)	Participant(s)/Community	Funders/Partnership
	● Researchers should have a plan for utilizing viable platforms, including social media, to ensure findings are widely disseminated. ● Publication of research outputs ought not to be permitted before such outputs have been thoroughly vetted by the competent review authorities.		
Benefit-sharing	● Sustainable platforms for timely sharing resources even beyond the research outcomes ought to be established to facilitate access and use of resources to the host community.	● A patient-centred approach requires that affected populations should be the target benefactors of any output that comes out of the research project.	● Partners and funders should discuss the resourcing of host communities, access to resources and intervention post-research. An agreement must be facilitated by all the parties involved to ensure that the affected communities get equitable access to the interventions that come out of the research projects.
Justice	● There should be a well-defined process of seeking redress if host communities and participants feel their contributions have not been adequately reciprocated. ● Future research studies, post-epidemic/emergency, should continue to prioritize diseases that remain endemic on the continent.	● If there were prejudices incurred because of the research, the appropriate compensation to the participants needs to be provided. ● Communities whose culture requires the return of biological materials after the research should be able to get them back in required time.	● Data storage and access to resources post-research needs to be accounted for, with local researchers having access to data and resources needed. ● Funders should also be willing to support the creation of databases in Africa where data can be stored for local ownership, easy access and sharing according to local data sharing agreements. ● Funders and promoters should allocate resources to provide comprehensive insurance in case damages are incurred due to participation in research

5. STRENGTH, WEAKNESSES, OPPORTUNITIES AND THREATS TO THE FRAMEWORK

Strengths	Weaknesses
- An Africa CDC led initiative, leveraging the convening power of the AU to consult relevant stakeholders in the process of developing the framework - Priority-based ethical conduct of research in Africa during the numerous outbreaks and public health emergencies that occur on the continent, paves the way to ethical conduct of research during non-emergency periods - Consideration of local African values in research is an inclusive approach that ensures community buy-in to the research process from inception to implementation of the resulting interventions. - An African centred ethically accepted, context friendly health priority-based and impact-focused approach to research and development of solutions indispensable for local manufacturing of medical countermeasures, consumables and devices on the continent is a major step for health security and independence of Africa.	- Lack of competent ethics committees or institutional review boards in some Member States. - Fragmented systems across Member States in the process of ethical conduct of research, with little or no inter-Member States collaboration in the ethical review process. - Ethics committees, though the gatekeepers of the security of people and communities participating in research projects, are not empowered enough in terms of competent human resources, with most committees being run pro-bono. - Most ethics committees in Member States are not truly independent to exercise their duty and may be influenced or coerced to take decisions that may favor the interest of other stakeholders and jeopardize the security of research participants - Many ethics committees do not have the capacity to objectively evaluate specific types of research (trials involving vaccines, therapeutics, diagnostics or socio-behavioural studies) especially in emergencies related to unknown diseases where prior data/information to inform the review process is scare or lacking. - Reliability on manual processes among which paper-based approaches to submission and evaluation of protocols may delay the ethical process during epidemics and public health emergencies. - Absence of accountability frameworks to govern different stakeholders involved in the ethical conduct of research.

Opportunities	Threats
- Availability of technology and platforms that are customizable for remote submission, tracking and evaluation of submitted protocols. - Expressed interest by Member States National ethics committees and institutional review boards to work together, nationally and internationally through joint reviews and inter-reliance on each other's competence and capacity. - Disease threats that require research as response do not respect national boarders thus the need for bilateral and multilateral collaboration harnessing existing capacities in affected Member States to expedite ethical review and conduct of research. - The creation of a continental ethics oversight committee with secretariat at Africa CDC, whose members are drawn from National Ethics Committees will leverage Africa CDC's convening power to speed up joint ethical reviews, implementation and monitoring of studies in numerous Members States affected by the epidemic or public health emergencies. - Numerous priority diseases of outbreak potential on the continent to be addressed through ethical conduct of research create niches for researchers to conduct research during emergencies and build their skills.	- Numerous institutions in Member States are involved in health research ethics, some with no clearly defined mandate and/or level of responsibility vis-à-vis human health research. - Ethics committees in some Member States are fully staffed or run by non-African partner institutions which may foster the conduct of research that address partner interest with no consideration of African cultural values. - The pro-bono approach through which many ethics committees are run is a threat to the competence of ethics committees due to high rates of staff turnover. - Lack of resources and capacity to conduct community monitoring of approved research. - Absence of harmonized African guidelines on protocol design, submission and evaluation makes the process cumbersome, time consuming and tedious to ethics committees and researchers especially for muti-country studies.

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