

Expert Advisory Committee on Developing Global Standards for Governance and Oversight of Human Genome Editing

REPORT OF THE THIRD MEETING

Background

The World Health Organization (WHO) has established a global, multi-disciplinary expert advisory committee to examine the scientific, ethical, social and legal challenges associated with human genome editing (both somatic and germline).¹ The Committee includes members from Africa, Asia, Europe, the Middle East, Oceania, North America and South America.²

The Committee has been tasked to advise and make recommendations on appropriate institutional, national, regional and global governance mechanisms for human genome editing. During the course of its work, the Committee will review literature on current human genome editing research and its applications, consider existing proposals for governance and relevant ongoing initiatives, as well as solicit information about societal attitudes towards the different uses of this technology. The Committee will explore how best to promote transparent and trustworthy practices and how to ensure appropriate assessments are performed prior to any relevant work being undertaken.

The recent application of tools, such as CRISPR-Cas9, to edit the human genome with the intention of treating or avoiding disease has highlighted the need for robust oversight in this area. The Committee will work in a consultative manner and build on existing initiatives to develop a responsible and responsive governance framework for the application of genome editing technologies going forward. It will liaise with relevant UN and other international agencies, and communicate with Academies of Science and Medicine as well as with other national or professional bodies, patient groups and civil society organizations that have worked, or are working, in this area.

Past work

The Committee held its first meeting from 18-19 March 2019. The first meeting included a review of the current state of relevant science and technology and briefings on existing initiatives and reports relevant to its work. Participants also began to identify and discuss specific issues, mechanisms and stakeholders that could comprise, or contribute to the development of, a governance framework. The Committee also considered how these elements may differ at international, regional, national or local levels. The group made three recommendations to the Director-General: (1) to develop a registry to provide a more structured mechanism for collecting and curating details of planned and ongoing relevant research and development; (2) that “it would be irresponsible at this time for anyone to proceed with clinical applications of human germline genome editing” and that the Director-General should communicate this view to relevant regulatory bodies around the world; and (3) to enhance WHO’s capacity to share information with, and collect information from, both technical and lay audiences. Each of these recommendations was aligned with one of the

¹ <https://www.who.int/ethics/topics/human-genome-editing/en/>

² <https://www.who.int/ethics/topics/human-genome-editing/committee-members/en/index1.html>

guiding principles adopted by the Committee: (a) transparency; (b) the responsible stewardship of science; and (c) inclusivity. A report of the meeting is available online.³

In a statement issued on 26 July 2019, the Director General formally and publicly endorsed the Committee's recommendation that it would be irresponsible for anyone to proceed with clinical applications of human germline genome editing.⁴ He stated regulatory authorities in all countries should not allow any further work in this area until its implications have been properly considered. The WHO has begun communicating this opinion to its regional and country offices.

The Committee held its second meeting from 26-28 August 2019. The second meeting focused on hearing additional views and insights relevant to the Committee's work. The meeting included updates on relevant activities in different countries and from national, regional, and international organizations, as well as briefings by external experts on aspects of its mandate. The Committee's working groups reviewed progress on establishing a registry of relevant research and development and responsible scientific stewardship. During closed sessions on the final day of the meeting, the Committee discussed a range of scenarios which could be used to help develop and test the governance framework, as well as opportunities for education, engagement and empowerment. The meeting outcomes included: confirming the scope of the Committee's work, providing clearer rationale for including somatic human genome editing in the committee's mandate and in the online registry; revising and updating the guiding principles; establishing a phased approach to the development of the Registry; the creation of a working group on education, engagement and empowerment; plans for two rounds of online consultation to further expand opportunities for input into the Committee's work; and initial reflections on content for a governance framework. A report of the meeting is available online.⁵

Work of the meeting

From 25-26 February 2020, 14 of the 18 members of the Committee and seven invited experts met in Cape Town, South Africa.

In its first substantive session, the meeting was briefed by individuals, organizations and peoples on human genome editing, including:

- (i) Kwanele Asante-Shongwe – Secretary-General Elect of the African Organization of Research and Training in Cancer,
- (ii) Collin Louw, Chairperson, Director of the San Council, South Africa
- (iii) Leana Snyder, Director of the San Council, South Africa
- (iv) Brian Watermeyer, Senior Research Officer, Department of Health & Rehabilitation Sciences, University of Cape Town
- (v) Glaudina Loots, Director for Health Innovation at the Department of Science and Innovation, South Africa

³ <https://www.who.int/ethics/topics/human-genome-editing/GenomeEditing-FirstMeetingReport-FINAL.pdf>

⁴ <https://www.who.int/news-room/detail/26-07-2019-statement-on-governance-and-oversight-of-human-genome-editing>

⁵ https://www.who.int/ethics/topics/human-genome-editing/GenomeEditing-Report-2nd-Meeting-August_FINAL.pdf

- (vi) Ames Dhai, Founding Director of the Steve Biko Centre for Bioethics, Professor of Bioethics, Faculty of Health Sciences, University of the Witwatersrand
- (vii) Judith McKenzie, Head of Division of Disability Studies, University of Cape Town

At its second substantive session, the meeting was briefed on satellite meetings supported by Committee members, including at the Global Forum on Bioethics in Research meeting in Singapore in November 2019, and the Sickle Cell Disease-Genome Editing Consultation, held on 24th February 2020 in Cape Town, South Africa. Members of the Committee also provided updates on relevant initiatives. The Committee heard an initial overview of responses to its first online consultation.

The afternoon of the first day and the entire second day of the meeting were dedicated to closed working sessions. The Committee began by hearing updates to reports from the Working Groups. It then held sessions in which it further developed a governance framework, explored further engagement activities relevant to its mandate, and expanded on its plans for a second online consultation.

During the final working sessions of the meeting, the Committee met again in private to consider its work plan and next steps, including agreeing on an intersessional work plan and an outline for its Fourth Meeting.

Summary of discussions

The Committee affirmed that somatic and germline genome editing raise different ethical issues that need to be distinguished. The Committee also acknowledged that ethical discussions on somatic and germline genome editing will impact the formulation of governance frameworks in different ways. The Committee reiterated that the scope of its work covers both human somatic and germline genome editing.

Although ethical issues associated with somatic genome editing may not be unique to genome editing, the Committee acknowledged that such issues remain important and need to be further addressed. For example, the Committee recognised that relatively few countries have established an appropriate translational pathway for somatic interventions involving human genome editing, with robust regulation and oversight to ensure patient safety and public confidence.

The Committee heard arresting testimonies and presentations from patients' rights advocates, people living with disabilities and an indigenous first-nations representative Council. In addition, an Africa-based bioethicist, representatives of the South African Medical Research Council and of the South African government afforded significant ethical and institutional perspectives on the opportunities, concerns and governance perspectives for human genome editing.

Ms Kwanele Asante-Shongwe is a lawyer, bioethicist, person-living with medication-induced heart disease and bipolar mood disorder and patient advocate. The salient perspective she provided was that, while somatic genome editing offered very considerable benefits to patients, from a patient's perspective vexing questions regarding informed consent, justice,

equity and accessibility had first to be addressed. She called for “distributive justice and fairness in the allocation of global genome research development funding for black African scientists and scientists from other minorities populations currently underrepresented in biomedical research”. Ms Asante-Shongwe highlighted “the need for justice and fairness in the distribution of global research funds and research opportunities to ensure that African populations are studied by scientists who resemble them and who understand their socio-cultural context”.

Ms Leana Snyder and Mr Collin Louw, representatives of the San Council of South Africa, South Africa’s first-nations indigenous people, the San/Bushman underscored the unforeseen consequences that apparent technological advances might entail for humans, plants and animals. They referred to the Committee the San Code of Research Ethics (2017) and its sister code, the Global Code of Conduct for Research in Resource-Poor Settings, which the European Commission adopted in 2018. The code aims to counter ‘ethics dumping’, where practices that would be forbidden in the researcher’s own jurisdiction are undertaken in generally resource-poor settings that do not forbid them), which the European Commission adopted in 2018. Both codes embrace principles of justice, care, honesty, fairness, respect and process-observance.

The meeting also heard from a disabled persons’ rights advocate living with severe congenitally impaired vision. Dr Brian Watermeyer, of the Division of Disability Studies at the University of Cape town, is a trained clinical psychologist, patient advocate, and a disability studies researcher. He cautioned the Committee against harmful consequences that the drive to “cure” might have for disabled persons. He urged the Committee to reflect with care and humility on the meanings its recommendations and report might communicate, and the potentially damaging discourses of hope and denigration it might unwittingly support. Instead, the Committee should pursue inclusive, humane goals in regulating somatic genome editing, with clarity about what is possible, with discussion, inclusive at all stages of disabled people, couched in an awareness of real, functional lives lived by disabled persons, and which gives central place to economic questions of access and power. The discussions fostered by the Committee should at all stages be inclusive of disabled people.

On behalf of the South African Department of Science and Innovation, Ms Glaudina Loots illuminated the regulatory and ethical framework that the South African Genetically Modified Organisms Act of 1997, the National Health Act of 2003 and the 2018 consensus study the Academy of Science of South Africa created. Within the legislative framework, the consensus study envisaged building relationships and stakeholder engagement. Guiding principles are respect for persons and sound stewardship of scientific innovation. The Department’s Precision Medicine Programme seeks better ways to use a patient-centric approach to create sustainable health care. Indispensable for this is a strong regulatory framework for somatic genome editing.

Two representatives of the South African Medical Research Council, Dr Mongezi Mdhuli and Dr Seeiso Koali, also made brief interventions. Dr Mdhuli emphasised that, in developing regulations pertaining to human genome editing, it was important to involve a wide range of departments and stakeholders. He noted research in new technology development should ensure that research is not only *on the participants* but also *with the participants*, and *for the participants*. Dr Koali noted that, in relation to research participants, the objective is not merely to obtain a signature on an informed consent form, but to ensure that there is substantive respect afforded the participant’s human dignity.

Professor Ames Dhai urged that the Committee’s quest should be to harness technologies for improvement of health for all, and not just for a very few. Currently, South Africa lacks an ethical legal framework for research and clinical applications in genome editing. The regulatory framework must be informed by ethics and allow for access to interventions for all. Her presentation underscored the marginalisation of Africa and African patients’ needs. She described that the Academy of Science of South Africa (ASSAF) has established a working group with multidisciplinary experts and government representatives to develop a national framework for governance of genome editing.

Prof. Judith McKenzie, the Head of Division of Disability Studies at the University of Cape Town, underlined that diversity brings richness. Prof. McKenzie underscored how the range of disabilities and the needs of disabled people make us think creatively about diversity and difference. She noted “disability is difficult to deal with because it reminds us of our own vulnerability, but vulnerability is part of being human and cannot be ignored”. She suggested that “the discourse of pain and suffering around disability eclipses the positive experiences that can, and do, arise as in, for example, families who have children with Down Syndrome”.

The Committee agreed that the insights gathered, and contributions received, during their Third Meeting will shape its future work.

Outcomes

The Committee reflected on responses to its first online consultation, as well as lessons learned from its conduct. Members of the Committee will review the responses in detail after the conclusion of the meeting. Key insights from responses will shape the Committee’s future work, in particular the development of the governance framework, as well as for education, engagement and empowerment. The Committee agreed to simplify the processes used for its second consultation, to expand its distribution, and to extend the length of the consultation. Members of the Committee will continue to work with the WHO in the development of the next round of consultation.

The Committee agreed that its governance framework will include (in no particular order):

1. A range of elements or tools to help identify challenges, mechanisms, and institutions, organizations, and peoples that might need to be involved in governance efforts. These will need to be revised and updated in light of responses to the first online consultation;
2. Guidance for governance practitioners on the use of these tools, such as insights into how these tools might fit to specific contexts, and illustrative questions to be considered when developing governance measures;
3. Examples of how governance measures could be implemented in different contexts and to effectively address key issues, such as through scenarios. These scenarios will be illustrative and explore a limited number of potential developments discussed by members of the Committee. They will include scenarios based on current real-world examples including Sickle Cell Disease, Huntington’s Disease, and Muscular Dystrophy, as well as longer-term, more speculative events such as enhancements for space travel and future fertility clinics;

4. Understandings on how the governance framework and associated governance measures might be implemented, metrics that provide insights into the impact of the framework and progress to build relevant capacities, as well as arrangements for reviewing and updating the governance framework; and
5. A glossary that clarifies what key terms mean and how they are being used by the Committee. The Committee agreed on the importance of continuing to work with relevant organizations, such as the International Commission on the Clinical Use of Human Germline Genome Editing and national standard setting organizations.

During its work, the Committee has identified a number of systemic issues connected to public health and sustainable development agendas that relate to its charge. The Committee recognises that these issues will likely have a notable impact on future development of human genome editing. The Committee further recognises that these issues are unlikely to be resolved through actionable recommendations to the Director-General. The Committee will continue to reflect on how its work and recommendations it might make, will help contribute to progress in these areas.

Future work of the Committee

The Committee agreed that its next meeting will take place in September 2020. The next meeting of the Committee will focus on finalisation of Committee outputs and recommendations to the Director-General.

In advance of its final meeting:

- The WHO will facilitate a second online consultation on the Committee's outputs;
 - The Working Groups will continue to explore their respective topics and help refine relevant outputs; and
 - The Committee will continue to consult with relevant groups, in particular through the use of remote meeting tools.
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