Comment Form:

WHO Principles for human genome access, use, and sharing

Reviewer (name, position, full contact details):

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Please return to Ciara Staunton, genomics@who.int by 3 May 2024

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GENERAL COMMENT				
On behalf of BBMRI, the ELSI expert network provides feedback on the draft WHO principles for human genome data access, use, and sharing (version 8 April 2024) and expresses the appreciation for the overall clarity and thoughtfulness of the document. It addresses crucial aspects of data access and sharing that are of utmost importance to our stakeholders. Whereas detailed comments are to be found below, here some general remarks: • **Scope and Data Life Cycle:** The document rightly emphasizes the significance of the data life cycle. We suggest carefully considering all stages of a data life cycle, including the implications of open access, data quality and the combination of larger as well as richer data sets whilst stressing the importance of understanding the consequences involved. • **Scope Clarification:** There is a need for clarification regarding whether the document encompasses data collection/genetic testing in both clinical and research contexts or focuses solely on the sharing of existing data. Again, the consequences of combined data sets come into play. • **Broad Scope:** The scope appears broad, encompassing healthcare and health research as well as all health sectors. Specifications are currently in development by national and regional strategies or legislations (e.g., EHDS), which will influence and specify data access, use and sharing. • **Incidental Findings and Benefit Sharing:** It would be beneficial to clarify the distinction between incidental findings and benefit sharing, with a particular emphasis on the latter and exploring mechanisms for giving back to the community, including clarity what is referred to when talking about "communities". • **Sharing Recipients:** The document should specify the intended recipients of shared data, including healthcare providers, industry stakeholders, and potential commercial users. • **Community Engagement:** We highlight the importance of incorporating bottom-up approaches to community engagement, ensuring that diverse perspectives are considered in decision-making processes. • **Age Specification:** We advise against specifying age due to variations in legislation on age of maturity across countries and contexts. Instead, we advocate for recognising the agency of minors, as well as temporarily incapacitated people in decision-making processes. • **Data Quality and Standardization:** Emphasizing the importance of data quality and standardization is crucial to ensure the reliability and usability of shared genetic data. • **Consideration of Vulnerability and Rare Diseases:** Vulnerable populations and rare diseases should receive special attention to address their unique needs and challenges in accessing and sharing genetic data. • **Policies and Cultural Change:** It becomes clear that policies and best practices on benefit sharing, incidental findings, and international guidelines for biobanking with children are needed to better implement a culture of ethical exchange of datasets.			
Background				
ll. 7-9	This can only be achieved by proactively	*Societal* issues, e.g., the impact of	This can only be achieved by proactively addressing the ethical, legal, societal,	

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	addressing the ethical, legal, social, religious and cultural issues that can arise in the process, but also acknowledging that there can also be risks if these data are not shared.	genomic data sharing on understanding of kinship or group identity, would fit better in this context, rather than *social* issues.	religious and cultural issues that can arise in the process, but also acknowledging that there can also be risks if these data are not shared.	
ll. 9-11	Such risks must be balanced and mitigated so that human genome data access, use, and sharing can occur in a manner that protects individuals and communities and at the same time, promotes their health.	Mitigation of risks should be a priority. Risks and benefits are to be balanced, rather than risks. Additionally, 'such risks' is ambiguous – risks of sharing? Or of not sharing?	Risks must be mitigated so that human genome data access, use, and sharing can occur in a balanced manner that protects individuals and communities and at the same time, promotes their health. Alternatively: Risks must be balanced and mitigated …	
ll. 15-17	It is also critical that the lack of diverse data sets and the consequent under-representation of many populations in those data sets be addressed if global equity in genomics is to be achieved.	It is of utmost importance not to turn the numerical representation of groups into the main concern without alluding to the broader practices. A standard example to the limits of numerical representation is	It is also critical that the lack of diverse data sets and the consequent under-representation of many populations in those data sets be addressed if global equity in genomics is to be achieved, attending to data practices, especially of categorization, standardization, and harmonization.	

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		the potential impact of genomics research on rare diseases, which may allow insights into molecular mechanisms that help understand the etiology of more common diseases, thus helping large numbers of individuals, rather the small subset of rare disease patients.		
l. 21	Accelerating access to genomic for public health…	typo	Accelerating access to genomics for public health…	
Purpose of this document				
l. 25		When stating the main purposes, the verb ”use” is not sufficient. Potentially adding “research-oriented re-use” should be distinguished.		

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		Differentiating primary and secondary use is proposed by some, whereas other point its European focus that will be regulated in EHDS.		
l 29	Promote social and cultural inclusiveness, equity, and justice….	If cultural inclusiveness and equity is mentioned, we should not forget about ethnical inclusiveness and perhaps vulnerable/underrepresented populations here (e.g. children, RD patients in LCIM countries, rural inhabitants).		
ll. 33-34	Promote communal and personal benefits arising from human genome data access, use, and sharing.	Rather than benefits, benefit sharing could be a more useful phrase and framing. Rights should clearly be framed as rights and benefits	Promote just benefit sharing both for the individual and the community, arising from the access, use and sharing of their human genome data.	

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		should be separated from rights. For instance, incidental findings reporting cannot be considered a benefit even if there is disagreement on what constitutes the right of the participant or the responsibility of the researcher/clinician under this topic. If the intention is to reflect the wider spectrum of benefits, not merely benefit sharing practices, the original general language appears more inclusive. It requires, however, throughout the document to clarify what is intended.		

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		Ibid for community – what precisely is intended.		
l. 34		Additional bullet point suggested by some: Critical to differentiate incidental findings from benefit sharing.	Promote safe and patient-oriented opportunistic screening and communicating incidental findings.	
Scope of this document				
l. 42	They apply to all prospective and retrospective collections of human genome data.	'Retrospective collections of human genome data' is too vague and requires clarification. In considering the ethical implications, we might explore the utilization (prospective and retrospective) human specimen collections for extracting genome data. Furthermore, could the sharing		

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		of specimens be. ethically justified as a means to generate human genome data?		
P2-linew 43	These 42 principles are intended to complement and inspire national legal and ethical regulations, frameworks, and guidelines.	Promoting cultural change.	…and promote the culture of ethical exchange of genomic datasets for future research.	
ll. 45-47	WHO strongly encourages making other health data available with human genome data when this is necessary and does not impose unacceptable risks.	This sentence is unclear. What is meant by 'when this is necessary' and 'does not impose unacceptable risks'?	Suggestion to use "violation of human rights" instead of the term breach, may be more consistent to the international law & UN language.	
ll. 51-52	Nevertheless, providing access to, use, and sharing of human biological samples should not be used to avoid the application of these principles.	Not very clear – please explain/expand. Biological samples utilized to generate human genome data should be treated comparably to any other data source associated	Nevertheless, providing access to, use, and sharing of human biological samples should not conflict with these principles.	

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		to the human genome.		
l. 53	Pathogen genome data and microbiome data do not fall within the remit of this document.	What about genomic data generated from ancient or historical samples, legacy samples, etc. Retrospective data mentioned above under scope.	Pathogen genome data and microbiome data, both retrospective and prospective data do not fall within the remit of this document.	
P2-line 56	Definition: Human genome data	Ensure the future-proof characteristic of this document by adding or making clear it includes data derived from the above (synthetic genomic or transcriptomic data)		
Context				
II. 60-61	This will include the individuals and community providing the data, those collecting, accessing, using, or	What about those involved in the "generation" of human genome data? It's crucial		

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	sharing human genome data.	to recognize the ethical considerations inherent in this process. Doing so will empower individuals and communities contributing their data, enhancing control over their genomic information.		
Audience				
ll. 66-68	These principles are intended to apply to those involved in governing, generating, storing, accessing, using, sharing, and disposing of human genome data in health and research contexts, and individuals and communities from whom human genome data originates.	Considering the potential genomic identifiability issues and cases of controversy, genomic data often cannot simply be regarded as data that belongs to an individual, e.g., close genetic similarity of monozygotic twins (see more for a nuanced discussion: Akyüz K, Goisauf M, Chassang G, Kozera Ł,	These principles are intended to apply to those involved in governing, generating, storing, accessing, using, sharing, and disposing of human genome data in health and research contexts, and those individuals and communities and individuals and communities from whom human genome data originate and those individuals, whose genome match substantially the shared genome data.	

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		Mežinska S, Tzortzatou-Nanopoulou O and Mayrhofer MT (2023). Post-identifiability in changing sociotechnological genomic data environments. *Bio Societies*. https://doi.org/10.1057/s41292-023-00299-7)		
To affirm and value the right of individuals or people and communities to make decisions				
ll. 73-75	In addition, a commitment to promote the best interests of individuals who do not have the capacity to make decisions for themselves.	Same as above	In addition, a commitment to promote and protect the best interests of individuals who do not have the capacity to make decisions for themselves as well as for those individuals, whose genome match substantially the shared genome data.	
II. 81-82	Clear, transparent, accessible, understandable, and ongoing information should be provided on human genome data access, use, and sharing to individuals and communities.	It should be mentioned what information should be provided to whom.	Clear, transparent, accessible, understandable, and ongoing information should be provided on human genome data access, use, and sharing to individuals and communities. To individuals about their own data and to communities about the logistics and logic behind the processing of human genome data.	
ll. 86-87	Consent should be as specific and granular as possible about potential uses of the data and should provide	This section should be formulated stronger.	Consent should be as specific and granular as possible about potential uses and access of the data and the governance in place and should provide information on who is intended to benefit and how.	

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	information on who is intended to benefit.	Aspects that relate to the GDPR are not in scope of the WHO document but aspects may be considered: details if a commercial use is foreseen, intellectual property, technical and organizational measures in place to protect the privacy and data security, as well as specifications on procedures to follow in the event of any liabilities arising from the participation or its consequences. Globally, the information to be given to the participant during consent should be amended with other important aspects (see Taipei declaration §12): - In addition to the "use", the		

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		"access" to the data should be mentioned - the governance in place - The potential commercial use and the resulting intellectual property - The technical and organizational measures in place to protect the data - The benefit sharing ("profit sharing agreements, access to resulting diagnostics and therapies, technology transfer,		

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		and capacity strengthening “) - the procedure in the event of any liabilities caused by participation or its consequences		
II. 94-95	Where possible, interactive and dynamic consent models that facilitate ongoing communication and enable individuals to quickly update their consent preferences are encouraged.	Rephrased and including withdrawal.	To the extent possible, the use of interactive and dynamic consent models should be encouraged, as it facilitates ongoing communication and enables individuals to quickly update and withdraw their consent if required.	
ll. 96-97	Any uncertainty on the scope of consent on human genome data access, use, and sharing should be determined by an independent body to consider, amongst others, the context and local customs and ethical norms in which the consent was provided and the adequacy of the consent for current technologies.	Same as above Composition and expertise of the independent body should be defined beforehand, especially to have the competency and capacity to assess such topics. Can recommend Ethics Committees.	Community engagement and the informed consent process as well as the broader governance framework should consider what to do in cases of where individuals who do not provide the consent are also impacted by the decision of consent. Any uncertainty on the scope of consent on human genome data access, use, and sharing should be determined by a competent, independent body to consider, amongst others, the context and local customs and ethical norms in which the consent was provided and the adequacy of the consent for current technologies. Composition, mandate and expertise of the independent body should be defined	

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		Suggestion to follow international guidelines such as COE, https://www.coe.int/en/web/bioethics/guide-for-research-ethics-committees-members	beforehand, in particular regarding the capacity to assess such topics.	
ll. 100-101	Children, upon reaching the age of maturity, can if desired, provide a new consent or change their preference relating to the use of their human genome data.	How it is written now, it is not clear who can express the desire if it is the researcher/parent /child. Definition of adolescents by WHO is defined in II. 10-19. The term “maturity” could be clarified related to consent. Age of maturity for children differs by context (i.e. health care vs. health research) as well as by national laws (differs globally).	Children, upon reaching the age of legal maturity, can if they desire be offered the opportunity to provide a new consent or change their preference relating to the use of their human genome data in cases where the use of the genomic data is still useful.	

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		Consider Casati, Sara, and Bridget Ellul. 2024. 'ELSI Challenges with Children in Translational Medicine'. Contemporary Issues in Clinical Bioethics - Medical, Ethical and Legal Perspectives [Working Title]. IntechOpen. doi:10.5772/intechopen.1002550. or Contact at legal age of maturity should be obligatory. However, what happens if it is not possible to re-contact (there might be many reasons for that). Should the data be destroyed in such a case? It is after all the only legal consent provided by the		

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		individual, now an adult – previously it was assent, with legal consent provided by parent or guardian. Casati S, Ellul B, Mayrhofer MT, Lavitrano M, Caboux E, Kozlakidis Z. Paediatric biobanking for health: The ethical, legal, and societal landscape. *Front Public Health*. 2022;10:917615. Published 2022 Sep 27. doi:10.3389/fpubh.2022.917615 Consider including principles related to incompetent due to age, illness or disability, esp. when temporary. Going beyond this document: information		

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		obligation guidelines, advise on dealing with minors, esp. how (e.g. written, video, cartoon) someone (e.g. a biobank, hospital) to inform whom (e.g. guardian, child) need to be drafted and internationally agreed. This also includes training.		
Social justice				
l. 108	A commitment to strengthening the capacity and enable access to adequate resources, skills, training and capacity-strengthening for researchers,...	Capacity-strengthening repeated	A commitment to enabling access to adequate resources, skills, training, and capacity-strengthening for researchers,...	
ll. 115-117	Results should be returned to individuals, if such results are clinically relevant, validated, and legally and ethically permissible. Any return of results must follow an approved policy and be in line with the individuals' consent.	3 additional aspects could be considered: 1.The clinically actionability criteria, i.e. there is a therapeutic or preventive intervention or other possible actions that have the potential to	Results should be returned to individuals, if such results are clinically relevant, validated, clinically actionable and legally and ethically permissible. Any return of results must follow an approved policy and be in line with the individuals' consent. In equivalent ways, the participant's right to forgo such information should be respected.	

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		change the course of this disease or condition 2. The participant's right not to know regarding the return of results on her/his health. 3. Return of incidental findings policy (specifying responsibilities and its limits).		
Solidarity				
ll. 127-129	Interests and rights of individuals providing human genome data access, use, and sharing should continue to be protected, particularly as efforts to scale up diversity and representation are increased.	The distinction between the participant and infrastructures/researchers has to be clear to separate the latter as actors who make already collected data available to others.	Interests and rights of individuals providing their human genome data for access, use, and sharing should continue to be protected, particularly as efforts to scale up diversity and representation are increased.	
ll. 133-134	Commercial interests should not be used to justify limiting access to, use, and sharing of	Commercial use should be clearly stated in the consent for transparent information and informed decision		

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	human 133 genome data.	(see comments under l.86-87)		
Equitable access to, and benefit from, human genome data				
ll. 139-141	A commitment to provide equitable access to and use of human genome data and its resulting benefits, recognizing that this requires addressing current capacity and power imbalances between different actors that may exist due to exploitative practices and inequities in health systems.	Needs to be mentioned that the access and use to human genome data can be provided only while respecting the data protection legislation of the country, including transnational requirements. Guidance should be provided on public availability and good practices of community engagement related to genomic research programs. Policy-development for researchers/biobanks involved in large genomic studies which result in societal	Adding: …while respecting the relevant data protection legislations.	

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		benefits (e.g. mandatory website updates, how to release some details of the database, or curated datasets publicly).		
Collaboration, cooperation, and partnership				
ll. 159		Industrial partnership terms and conditions and agreeing on IP rights must be clarified by written contract, DTA.		
ll.167-168	Policies should clarify that human genome data should be accessed, used, and shared within and across the health sectors to improve human health and wellbeing.	Add solely	Policies should clarify that human genome data should be accessed, used, and shared within and across the health sectors solely to improve human health and wellbeing.	
ll. 169-172	To promote collaborative decision making and partnership development, efforts should be made to increase health literacy on genomics and human genome data access,	Guidance should be provided on when sharing amongst stakeholders, privacy-preserving		

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	use, and sharing amongst all stakeholders, including those contributing human genome data and those involved in decision making.	techniques should be applied, and if sharing should be performed through a safe platform, or only via within a secure data center-e.g. a protected Amazon cloud. Recommendations on minimal data obfuscation requirements should be offered.		
Transparency				
l. 174		Publicly available policies esp. on handling incidental findings and the stance for opportunistic screening is important.		
ll.175-176	A commitment to provide openly available and easily accessible information on policies and processes that describe human genome data access, use, and sharing, including how the data are to be protected.	How the data should be protected should be briefly explained, i.e. the technical and organizational measures in place to protect them.	A commitment to provide openly available and easily accessible information on policies and processes that describe human genome data access, use, and sharing, including the technical and organizational safeguards in place to protect the data.	

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II. 178-180	Publicly available policies should describe who has responsibility for deciding on access to, use, and sharing of human genome data, the criteria for decision-making, and how human genome data will be protected.		Publicly available policies should describe who has responsibility for deciding on access to, use, and sharing of human genome data, the criteria for decision-making, and how human genome data will be protected, including from access requests by law enforcement, where measures to ensure the validity of such requests should be in place.	
ll. 181-182	Systems should be put in place to enable individuals and communities to be informed about the use of their human genome data and the resulting outcomes.	The duty to inform should not be understood as a bulk information transfer or automated communication of any findings, but should consider the context, and the ethical, legal and societal issues.	Systems should be put in place to enable individuals and communities to be informed about the use of their human genome data and the resulting outcomes, in line with the ethical, legal, and societal considerations.	
Accountability				
ll. 169-172	To promote collaborative decision making and partnership development, efforts should be made to increase health literacy on genomics and human genome data access, use, and sharing amongst all stakeholders, including those contributing human genome data and those involved in decision making.	Guidance should be provided on when sharing amongst stakeholders, privacy-preserving techniques should be applied, and if sharing should be performed through a safe platform, or only via within a		

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		secure data center-e.g. a protected Amazon cloud. Recommendations on minimal data obfuscation requirements should be offered.		
Stewardship of human genome data				
ll. 210-212	Human genome data should be accessed, used, and shared, as applicable with the FAIR and CARE 210 principles. 211 There should be appropriate attribution of those who provide the human genome data	Define “The term is not adequate. We would use the term “traceability”. We should be able to trace the sample on the whole life cycle, but not always to attribute it (e.g: pseudo-anonymization). Extend FAIR and CARE” to FAIR-Health which includes data quality and ethical, legal, and societal considerations (Holub, P.,	Human genome data should be accessed, used, and shared, as applicable with the FAIR-Health and CARE principles and with appropriate attribution of those who provide the human genome data.	

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		Kohlmayer, F., Prasser, F., Mayrhofer, M. T., Schlünder, I., Martin, G. M., . . . Litton, J.-E. (2018). Enhancing Reuse of Data and Biological Material in Medical Research: From FAIR to FAIR-Health. *Biopreservation and Biobanking, 16*(2), 97-105. doi:10.1089/bio.2017.0110)		
ll. 217-219	Resources required (including financing, infrastructure, and personnel) to sustain the use of human genome data should be considered at the outset of the collection and should be reviewed through the data life cycle.		Resources required (including financing, infrastructure, and personnel) to sustain the use of human genome data should be considered at the outset of the collection and should be reviewed through the data life cycle, respecting the environment, and limiting the ecological impact.	
II. 219-221	Current ethical, legal, privacy, data protection, and security standards and practices should be		Current ethical, legal, privacy, data protection, and security standards and practices (including those pertaining to data repositories themselves) should be followed,	

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	followed, recognising that they may be informed by standards and practices on health data generally.		recognising that they may be informed by standards and practices on health data generally.	
Other comments				
Whole document	NA	No detailed point on data quality. FAIR principle is mentioned in I.2 but the measures in place to guarantee fair data (in the sense of fairness) are not included.	NA	
Whole document	NA	There should be no resulting cost to the participants or, if applicable, their insurance.	NA	