# Ethics of AI in global health research

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## Developing a governance framework for data science health research in Nigeria

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**Introduction**
Data Science Health Research (DSHR) has enormous potential for discovery and optimization of healthcare. Data science models that incorporate Artificial Intelligence (AI) and Machine learning technologies are examples of data science related innovations that are yielding transformative changes for DSHR in Nigeria. Following COVID-19, the use of AI in health research have become common, with institutions such as the Nigeria Center for Disease Control (NCDC), the Nigerian Institute of Medical Research (NIMR), and the Institute of Human Virology Nigeria (IHVN) utilizing AI for surveillance, health research, and infection dynamics. Through 'ubenwa' and 'helpmum', the private sector's involvement has gained global attention. Data science can be used to aggregate huge amounts of data from multiple levels of the health care system and other spheres of human activities to make discoveries and inferences, however, it raises substantial ethical, legal, and social issues, such as questions about the content and quality of the consent given by individuals, privacy, ownership of data, and benefits and harms to individuals participating in DSHR. These issues are urgent global concerns, particularly in low- and middle-income countries like Nigeria, where regulation is evolving. To effectively respond to these challenges, in the Bridging Gaps in the Ethical, Legal, and Social Implications of Data Science Health Research (BridgELSI) project, we reviewed existing legal and ethical oversight for DSHR in Nigeria as a foundation for development of novel ethical oversight of DSHR in the country.

**Methods**
Legal research and analysis approaches, including text analysis and case law research, were used to review and assess legal rules such as statutes, guidelines, regulations, and policies applicable to DSHR. We conducted manual and electronic searches using the index of Laws of Federation of Nigeria 2010 and its Annual Supplements, Nigerian Weekly Law Report, LawPavillion Electronic Law Report, and WestLaw. Other secondary sources were accessed using Google Scholar, Jstor, PubMed, and HeinOnline.

**Result**
Our review reveals that Nigeria has a robust health research ethics framework for health research whereas data privacy and protection fall under several laws and regulations. The Federal Constitution, the National Health Act, the Nigeria Data Protection Regulation, the National Code for Health Research Ethics, and the Code of Medical Ethics, provide guidance for DSHR, particularly in relation to data subject rights, privacy and confidentiality, consent of research participants, protection of cultures, groups and communities, and protection from discrimination. However, there are gaps in the laws as it relates to use of anonymized data, de-identified data, and publicly available data for research.

**Conclusion**
There is a need for the development of new governance frameworks for DSHR that builds on existing laws and includes broad stakeholders' engagement. This ensures the protection of participants, researchers, and their products, and enhances trust and buy-in by the general population.

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