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Evolving the Application of the Five Safes in Federated Population Data Systems for Contemporary Data Use

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The Five Safes framework is used internationally to guide decisions about access to sensitive population and administrative data by considering safeguards across projects, people, data, settings, and outputs. While many implementations have focused on balancing data utility with privacy protection, there is an opportunity to embed equity, engagement, and sovereignty within this framework. This is especially important as we consider private sector use of health data. A pan-Canadian initiative within Health Data Research Network (HDRN) Canada was devised to evolve the application of the Five Safes in a multi-regional heterogeneous policy environment in which prescribing uniform standards is not not feasible. A survey, focus group and roundtable conversations were employed to gain insight about benefits, barriers and and safeguards that address privacy as well as equity, diversity, inclu-

sion, and respect for Indigenous data sovereignty. We found that community engagement and equity considerations could be explicitly integrated into all Five Safes. For example, Safe Projects could be enhanced by including a public benefit analysis and Safe Data could be assessed vis-a-vis community governance. These considerations were found to enhance privacy. This work illustrates how established governance frameworks can be strengthened to support responsible and trustworthy data use as population data systems expand in scope and scale. By clarifying minimum safeguard expectations while enabling proportional improvement across a federated network, this approach supports consistency, legitimacy, and trust while preserving local autonomy, and embeds a wider range of population data science principles more explicitly in data governance.

