The ASEAN genome consortium: advancing equitable precision medicine through regional solidarity

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Southeast Asia–home to nearly 700 million people and more than 1000 ethnic groups across diverse continental and archipelagic geographies—harbours rich genetic diversity that remains markedly underrepresented in global genomic databases and pangenome references. Yet the region stands on the cusp of a precision medicine revolution. While countries like Indonesia,[1] Malaysia,[2] Singapore,[3] Vietnam,[4] and Thailand[5] have launched genome initiatives, these largely operate independently, both within and across borders. Genomic research and precision medicine initiatives across ASEAN remain varied in development, funding, and national priorities.

As researchers engaged in national genome initiatives across ASEAN, we call for regional collaboration to enhance human resource capacity, establish shared infrastructure, align data governance standards, and coordinate investments to advance equitable access to genomic medicine: ASEAN Genome Consortium. While the Consortium is a proposal at this stage, it is inspired by the region's growing momentum, marked by recent national genome initiatives. We argue about the necessity of its development through collaborative efforts involving national genome programs, ministries of health, research institutions, and regional coordination bodies such as the ASEAN Secretariat.

This letter is directed at a broad audience of regional health policymakers, genome initiative leaders, public health researchers, bioethicists, and international organizations engaged in equitable genomics. As a practical step, our aim is to spark dialogue, invite collaboration, and catalyze a coordinated approach to precision medicine in Southeast Asia for maximizing the value of limited resources and fostering inclusive, representative datasets to support clinical applications.

The overarching goal of the Consortium is to foster equitable precision medicine in Southeast Asia by facilitating a coordinated, inclusive, and context-sensitive approach to genomics. Its Terms of Reference include establishing interoperable data standards, selective data and biospecimen sharing, ELSI research and harmonisation, co-developing polygenic risk scores (PRS), building workforce, and sharing public engagement strategies.

Without such a platform, siloed programs will fragment progress: hampering data sharing, interoperable system, policymaking, and access to clinical applications of precision medicine tailored to ASEAN's needs. This means widening gap of access across ASEAN communities.

Lessons from global initiatives offer useful but contextually distinct guidance. ASEAN must forge its own path—grounded in local realities and strengths. Harmonised frameworks must reflect ASEAN's values of mutual respect, inclusivity, and shared prosperity.

We propose a pragmatic and phased collaboration model that respects national sovereignty and data sensitivity. An open-access model may not be feasible at this stage, but selective, criteria-based sharing of de-identified genomic and clinical data is a realistic starting point. Member states could begin with initiatives in high-impact areas such as cancers, rare diseases, or

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newborn screening that present clear clinical utility and potential for shared protocols under defined ethical safeguards. This would embed ASEAN-led governance, regional equity, and context-sensitive ELSI principles, with the co-development of PRS tailored for ASEAN populations serving as an early, high-impact demonstration of clinical value.

The ASEAN Genome Consortium, while regionally focused, can offer a scalable model for other LMIC regional alliances to build context-sensitive, ethically grounded, and inclusive genomic infrastructures, contributing to more globally representative precision medicine.

The proposed ASEAN Genome Consortium should be a regionally grounded partnership that translates genomic research into tangible clinical and social benefits through precision medicine. It fills a critical gap in ASEAN's current health agenda,[6] aligning scientific leadership with policy priorities. It also positions ASEAN to collaborate meaningfully in global initiatives, such as the Asian Pangenome Consortium, complemented by the catalytic support of the newly launched WHO Genomics Programme.[7]

Declaration of interests

Gunadi is the president of Indonesian Society of Human Genetics (InaSHG), and Indonesian College of Pediatric Surgeons (KBA); coordinator for Rare Disease Hub, Dr Sardjito Hospital, Biomedical & Genome. Authors' participation in this correspondence do not imply institutional or governmental endorsement. Engagement is made in the spirit of scientific dialogue and regional collaboration.

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