



ASIA-PACIFIC PATHOGEN GENOMICS NETWORK

Advancing public health through partnerships,
training and implementation

Background

Pathogen whole genome sequencing (pathogen genomics) is a transformative technology that enables rapid, precise, and accurate pathogen characterisation for national and international comparison, contributing to public health responses for communicable disease control. The COVID-19 pandemic has highlighted the need for equitable access to pathogen genomics for public health surveillance, outbreak detection and response.

To address this, the World Health Organization (WHO) Western Pacific Regional Office formed the Western Pacific Region Emerging Molecular Pathogen Characterization Technologies (EMPACT) Surveillance Network. The EMPACT Surveillance Network inaugural meeting was held in September 2021 and provided recommendations on increasing access and strengthening pathogen genomics capacity across the Western Pacific Region. The meeting particularly highlighted the need for greater understanding of, and collaboration between, laboratories undertaking or interested in genomics to support public health surveillance.

About

The Asia-Pacific Pathogen Genomics Network (APGN) was established to bring together a large program of work spanning key laboratories across our region to support the use of genomics for public health, and formalises frameworks for collaboration which have been developed throughout the COVID-19 pandemic.

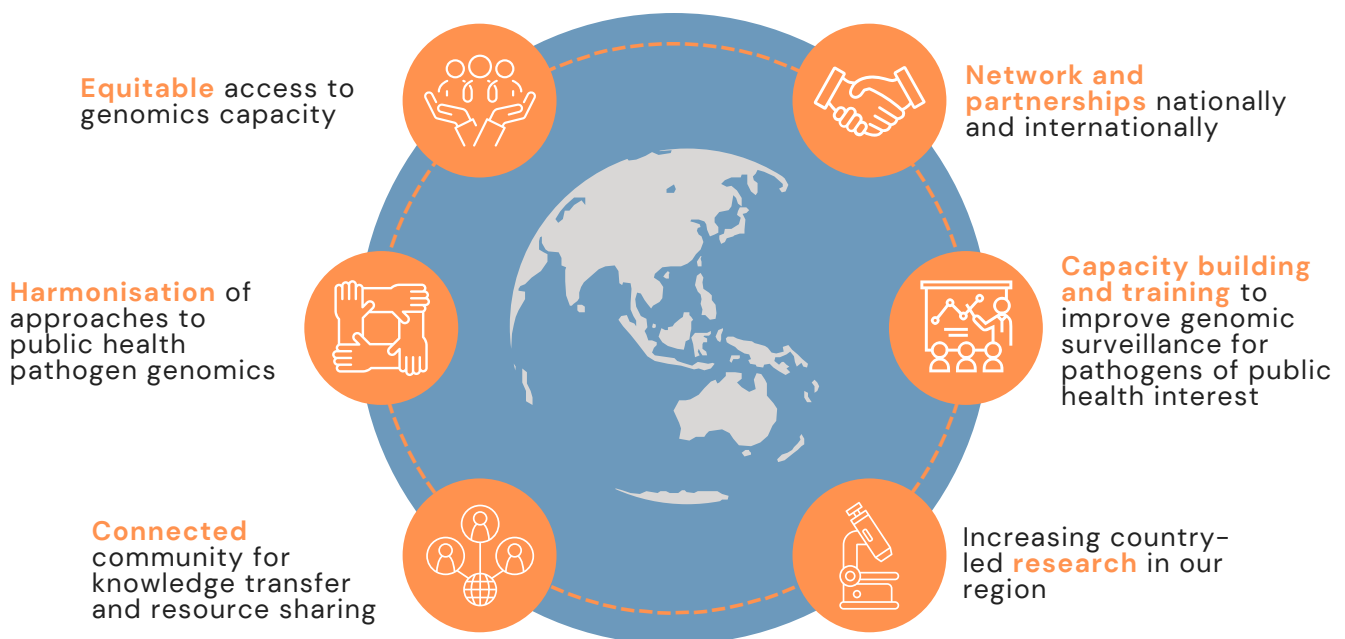
We aim to advance public health through access to and the implementation of pathogen genomics to support communicable diseases surveillance and response across the Asia-Pacific Region.



ASIA-PACIFIC PATHOGEN GENOMICS NETWORK

Objectives

- Provide end-to-end technical capability and capacity across the Asia-Pacific for access to and implementation of pathogen genomics
- Define and promote international best-practice approaches for equitable access to pathogen genomics for public health, within a sustainable framework for our region
- Develop and implement procedures and policies that allow for data sharing to support bioinformatic and epidemiological analysis to enhance outbreak response and surveillance
- Provide access to teaching and training activities to enhance public health pathogen genomics
- Maintain a coordinated public health pathogen genomics network to advise and interact with country level and regional laboratory and public health networks, government, policy makers, WHO, and other relevant stakeholders





ASIA-PACIFIC PATHOGEN GENOMICS NETWORK

Membership

We welcome all laboratories across the Asia-Pacific that are interested in access to or implementation of pathogen genomics for public health. Importantly, we are also seeking laboratories that have established genomics capabilities and can contribute to building equitable access to the technology across the region to be part of the network.

We acknowledge the significance of coordination, communication and resourcing required to achieve equitable access and invite observers from relevant stakeholder organisations, including the WHO, government, industry, and institutions who look to support the activities of the network and its members.



Our work

Partnerships

We have established partnerships with public health laboratories and Ministries of Health across the Asia-Pacific region, including formal memorandums of understanding, agreements of collaboration, and joint planning and monitoring of pathogen genomics activities. We are providing practical training and support for access to and use of genomics for over 15 countries across our region, within a structured and sustainable implementation model.

Coordination and partnership with regional stakeholders including the WHO, Australian Government Department of Foreign Affairs and Trade and The Pacific Community (SPC) also contribute to the Network's overall program of work.

Capacity building and training

The APGN is contributing to capacity building and training to develop a skilled workforce regionally in genomics, across wet-lab sequencing techniques, genomic epidemiology and bioinformatics data analysis, and interpretation and use of data for public health. This includes development of a coordinated framework for content and delivery of training across members.

Available training ranges from short online courses, in-country and remote training workshops, ongoing mentorship, through dedicated international training teams and training facilities across partners. We are collaborating with WHO WPRO to deliver training in the areas of need identified through EMPaCT and will deliver training that is enhanced by the breadth of expertise across the network.



ASIA-PACIFIC PATHOGEN GENOMICS NETWORK

Support for genomics implementation

APGN members are supporting the development and implementation of strategic frameworks for sustainable deployment of pathogen genomic capability in countries across the Asia-Pacific region. This includes the development of policies and procedures with Ministries of Health, support for scoping and capability assessments, practical guidance for infrastructure and procurement, and development of a comprehensive training plan across wet-lab techniques and data analysis and interpretation through bioinformatics and genomic epidemiology. Genomics implementation supported by APGN ensures review of cost-effectiveness, sustainability planning, and use across multiple public health disease surveillance programs are being informed by the laboratories that implement the capacity.

Facilitating equitable access to whole genome sequencing

The APGN facilitates equitable access to whole genome sequencing and analysis with laboratories, predominantly public health laboratories, across the Asia-Pacific region through the capability to provide pathogen genomics services. This includes establishing referral pathways, protocols for sample selection and shipping, sequencing, data transfer and capacity building and knowledge sharing to support laboratories and Ministries of Health with interpretation, reporting and public health communication of genomic data for public health action.

Donors supporting network laboratories



Contact

Asia-Pacific Pathogen Genomics Network Secretariat
contact@apg-network.org
apg-network.org