



**BEST PRACTICES FOR  
GENOMICS-DRIVEN  
PRECISION MEDICINE IN APEC**

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**APEC BUSINESS ADVISORY COUNCIL**



# INTRODUCTION

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Genomics-driven precision medicine is rapidly transforming and significantly influencing healthcare by shifting the focus from reactive treatment to preventive, targeted, and more efficient care. For APEC economies, these innovations hold the potential to improve health outcomes, reduce long-term costs, and foster new industries that drive economic growth.

Many APEC economies have launched national genomic programs aimed at advancing genomics-driven precision medicine. These initiatives aim to transform healthcare by integrating genomic data into clinical practice, improving public health outcomes and fostering innovation. While these innovations hold tremendous potential, they also present significant challenges, including questions of equity, privacy, sustainability, and integration into existing health systems.

The following best practices are organized into eight thematic areas with suggested best practices, outlined in bullet points, that economies may consider. They reflect common themes identified through stakeholder dialogue, case studies, and input from regional experts. The aim of this list is to support policymakers, regulators, and private sector partners in building and integrating genomic and precision medicine programs in APEC economies that are innovative, trusted, and inclusive, while recognizing the diverse stages of readiness across the region.

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# Best Practices for Genomics-driven Precision Medicine in APEC

## 1. Ethics and Trust

Trust is the foundation of any successful genomics initiative. Ethical considerations such as patient consent, fairness, and accountability are central to building public confidence. Creating legitimacy and ensuring communities feel secure in participating in genomic programs is essential.

Suggested best practices for APEC economies:

- Establish transparent governance frameworks that articulate responsibilities, ethical standards, and oversight mechanisms.
- Ensure patient consent processes are culturally appropriate, written in plain language, and adapted for different literacy levels.
- Build public confidence through education campaigns, accessible information, and community engagement.

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## 2. Equitable Access and Inclusion

Equity helps ensure that the benefits of genomics extend to all populations. Without deliberate attention to inclusion, rural and underserved groups risk being left behind, and scientific findings may not reflect the diversity of the region.

Suggested best practices for APEC economies:

- Expand sequencing networks and clinical services beyond major cities.
  - Engage patient organizations, community groups, and local leaders in program design and implementation.
  - Prioritize the inclusion of diverse populations in genomic datasets to strengthen the applicability of findings across APEC.
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# Best Practices for Genomics-driven Precision Medicine in APEC

## **3. Data Sharing with Security and Safeguards**

Genomic data is powerful but sensitive. Responsible sharing practices can accelerate discovery while protecting privacy and sovereignty. This section focuses on safeguards that enable collaboration while building confidence.

Suggested best practices for APEC economies:

- Adopt harmonized regional standards for encryption, interoperability, and anonymization.
- Develop legal and regulatory frameworks that clarify data ownership, sovereignty, and accountability.
- Enable cross-border collaboration with mechanisms that guarantee transparency and public trust.

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## **4. Public-Private Partnerships and Sustainable Funding**

Strong partnerships combine the strategic legitimacy of government with the innovation and expertise of industry. Sustainable funding ensures programs are not limited to short-term pilots but are integrated into long-term healthcare priorities.

Suggested best practices for APEC economies:

- Foster partnerships with clearly defined roles for government, academia, and industry.
  - Develop blended funding models that combine public financing with private sector resources.
  - Launch joint initiatives in diagnostics, clinician training, and infrastructure development.
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# Best Practices for Genomics-driven Precision Medicine in APEC

## **5. Policy and Regulatory Alignment**

Clear and predictable policy frameworks in the region would safeguard patient rights, provide direction for responsible implementation, and foster confidence among investors and biotech firms. Regional alignment helps reduce fragmentation and speeds access to services.

Suggested best practices for APEC economies:

- Develop domestic strategies that outline objectives and pathways for genomics and precision medicine adoption.
- Work toward regional standards for testing, validation, and quality assurance.
- Provide guidance on intellectual property and benefit-sharing to enable fair and sustainable collaboration.

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## **6. Clinical Integration and Health System Readiness**

Integrating genomics and precision medicine into healthcare delivery is essential for realizing its benefits. By focusing on areas of clear clinical impact and aligning with financing systems, genomics and precision medicine can improve outcomes while supporting efficiency.

Suggested best practices for APEC economies:

- Focus on domestically-relevant priority areas such as oncology, pharmacogenomics, and rare diseases.
  - Align genomic and precision medicine services with healthcare financing, including insurer and payer engagement.
  - Design implementation approaches that simplify rather than complicate service delivery.
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# Best Practices for Genomics-driven Precision Medicine in APEC

## **7. Education, Workforce, and Capacity Building**

Human capacity is at the core of successful genomics programs. Training, professional development, and regional exchange equip economies to manage technical, ethical, and clinical dimensions.

Suggested best practices for APEC economies:

- Invest in training programs for clinicians, researchers, and policymakers.
- Support continuing education to keep pace with technological change.
- Engage the public through awareness and education initiatives.

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## **8. Regional Collaboration and Knowledge Sharing**

Cross-border collaboration allows economies to learn from one another, avoid duplication, and scale innovations more effectively. APEC provides an important platform to facilitate this cooperation.

Suggested best practices for APEC economies:

- Use APEC and other regional platforms to share lessons learned, scientific research outcomes, data, case studies, and practical approaches to enhance transparency, accelerate innovation, and support evidence-based policymaking.
  - Promote cross-border research collaborations to expand dataset diversity and build shared capacity.
  - Encourage dialogues on governance, financing, and ethics to strengthen alignment while respecting diverse contexts.
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# CONCLUSION

Genomics-driven precision medicine presents transformative opportunities for APEC economies, requiring thoughtful strategies that balance innovation with equity and trust. These best practices are intended to guide policymakers, regulators, and stakeholders as they integrate genomics into health systems in ways that are sustainable and inclusive.

By sharing lessons and experiences across the region, APEC economies can accelerate progress, strengthen resilience, and ensure that the benefits of genomics and precision medicine are widely and fairly realized.

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