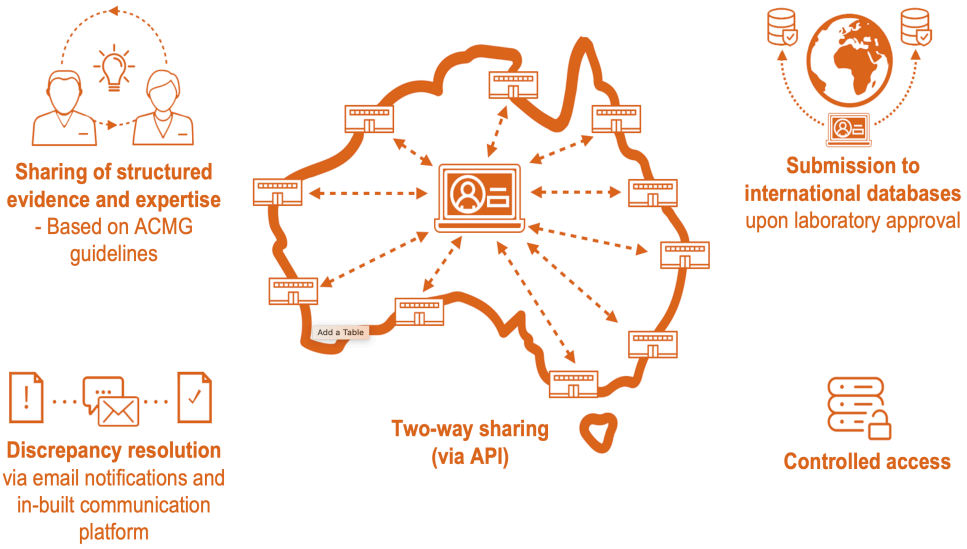
Australian Genomics

Research Snapshot

June 2021

Shariant

Shariant is a controlled access platform designed to allow Australian laboratories and clinical services to automate sharing of detailed and structured scientific evidence about clinically curated variants; communicate in real-time to resolve variant interpretation differences; and access gene- and disease-focused expertise.



Background

Decoding the clinical significance of DNA variants is complex and challenging, and is impeded by the operation of clinical laboratories as data silos.

It is currently difficult for one Australian laboratory to know if others hold evidence to support or refute the clinical impact of a variant they have assessed. Failure to share information leads to the risk of missing a diagnosis or misclassifying a variant.

Further, sometimes members of the same family - tested by different laboratories - can receive differing variant interpretations and thus different medical advice.

Another advantage of sharing data is that pooling information across laboratories can consolidate interpretation of a variant that might otherwise be considered clinically uncertain – that is, the whole is greater than the sum of its parts.

Altogether data sharing facilitates important changes to patient treatment.

Project aims

Sharing variant interpretations is encouraged by Australian governing bodies.

However, submission to existing databases is manual and time consuming, meaning that Australian genetic testing laboratories do not have the resources to share. This project was established in response to an identified need from Australian Genomics' member organisations and Australian clinical genetic testing laboratories for assistance in meeting the growing technical and administrative requirements for clinical data sharing.

Australian Genomics, in collaboration with the **Centre for Cancer Biology** (an **SA Pathology and UniSA** Alliance) and **QIMR Berghofer Medical Research Institute**, has developed the platform Shariant to unite clinical genetic testing laboratory data silos and simplify sharing of variant interpretations between testing laboratories and ultimately clinical services as well.

shariant.org.au

By sharing key variant information, laboratories and clinical services can better interpret genomic tests and improve the outcomes of testing for Australian patients.

Key products

Shariant is a controlled access platform designed to allow Australian laboratories and clinical services to:

- **Automate** sharing of detailed and **structured** scientific evidence about clinically curated variants
- Communicate in **real-time** to resolve variant interpretation differences
- Access gene- and disease-focused **expertise**.

By sharing key variant information, laboratories and clinical services can better interpret genomic tests and improve the outcomes of testing for Australian patients. Exchange of information is **automated** via **secure** links to and from Shariant, so that there is minimal administrative burden on laboratory staff.

Interpretations from other Australian laboratories are visible inside a laboratory's curation system or via **controlled access** log-in to the Shariant website, so they will be aware when a variant has been seen before, and can re-use the expertise and effort of others.

Shariant automatically emails laboratories to notify them of clinically significant interpretation differences between relevant laboratories.

As Shariant captures interpretation evidence in a detailed and structured format, laboratories can easily identify how and why interpretations differ for specific variants.

Shariant is also designed to streamline communication between laboratories via an online, in-built chat platform, an important feature for documenting resolution of interpretation differences.

Updated interpretations will be available to all Shariant contributors, as a trigger to report clinically relevant variant re-classifications to clinical services and patients. Additionally, to assist in international sharing efforts, laboratories can elect to have variant level information shared with international databases via a semi-automated submission from Shariant. Full technical support is being provided to assist laboratories with connection to the platform.

Shariant has now connected to ten laboratories across four states and shared more than 7000 interpretations.

Potential impact

Ultimately, Shariant aims to share information about clinically curated variants to:

- Combine siloed information and expertise for increased and faster diagnoses across Australian laboratories for targeted treatment and better health care of patients and their families.
- Reduce the risk of variant misclassification by allowing laboratories to identify potential interpretation differences before they occur.
- Streamline communication between laboratories via an in-built communication platform.
- Standardise and improve practices, information and terminology relating to genomic information across Australia, providing greater consistency in how we diagnose and treat diseases.
- Facilitate knowledge transfer between the Australian clinical genomics community and international data sources, benefiting patients in Australia and globally.

Conclusion

Given the rapid growth in large-scale genomic testing in Australia, we anticipate that Shariant will be instrumental in assisting healthcare professionals deliver better genomics results, thereby improving Australian patient management and treatment.

Published 22 October 2019. **Reviewed and updated June 2021.**

ACKNOWLEDGEMENT

Australian Genomics Health Alliance is funded by NHMRC grant 1113531 and the Medical Research Future Fund.