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# BRIEF: INTEROPERABILITY AND DATA SHARING BETWEEN CIVIL REGISTRATION, HEALTH INFORMATION, STATISTICS AND ASSOCIATED SYSTEMS

*"Interoperability and data sharing between civil registration, health information, statistics and associated systems"* is a detailed examination of experiences in eight countries and territories in the Pacific: American Samoa, Cook Islands, Fiji, Niue, Samoa, Tokelau, Tonga and Vanuatu.

The **registration** of vital events such as births, deaths, marriages, and divorces requires data sharing among various governmental and civil entities, involving healthcare providers, vital-records offices, public health agencies, funeral directors and court systems. These need to collaborate to maintain accurate legal records and facilitate services like public health surveillance and civil document verification.

**Interoperability** is the ability of diverse systems to work together using compatible data formats, communication protocols, system interfaces, concepts, definitions, standards, classifications and even standardised non-digital records.

**Digital systems** offer fast and cost-effective data-sharing but create challenges such as data privacy, security concerns and the need for common standards. **Identity verification** depends on data exchange, allowing for real-time updates and the prevention of identity fraud.

**Pacific CRVS systems** exhibit varying levels of digital development, from initial digitisation efforts to moderately integrated systems, and some highly advanced digitised setups. Each country faces challenges in its journey towards an efficient, integrated civil registration and vital statistics system.

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# WHAT IS THE CURRENT SITUATION?

Digital data-sharing capabilities across Pacific CRVS systems can be categorised into three main levels of digital development:

- **Emerging digital systems with limited integration:** Countries in this category are in the early stages of digitising CRVS systems with limited integration into other government systems.
- **Digitised and moderately integrated systems:** These systems are more advanced, with a significant proportion of records digitised and some level of data sharing with other government systems.
- **Highly integrated and digitised systems:** This category includes systems with extensive electronic data sharing across various government departments.

Countries participating in this report were categorised as follows:

| Category | Country | Characteristics |
|---|---|---|
| **Emerging digital systems with limited integration** | American Samoa | Transitioning from manual to digital with the development of Familytrac on SILAS platform; limited integration with other systems. |
| | Cook Islands | Hybrid of manual and digital processes; relies on paper and a Microsoft Access database for registration records. |
| | Niue | Implementing OpenCRVS; streamlines data processing with limited integration with other government systems. |
| | Tokelau | Early-stage digitisation with limited integration and constrained digital infrastructure. |
| | Tonga | Partially digitised civil registry with potential for integration; ongoing plans for cross-linking registered events. |
| **Digitised and moderately integrated systems** | Samoa | Evolving towards digital integration; digitising civil registration records since 1993 with pilot projects to improve integration. |
| | Solomon Islands | Uses Promadis platform; supports data sharing protocols, full integration with other government systems is in progress. |
| | Vanuatu | Register Viz v4 platform for efficient data sharing; high digitalisation level and developing integration across sectors. |
| **Highly integrated and digitalised systems** | Fiji | Comprehensive electronic registration platform; DXP for seamless data sharing among many government institutions. |

Key challenges and options identified in the report:

| Some challenges identified by these countries | Some factors for these countries to consider |
|---|---|
| - limited interoperability, particularly with health<br>- outdated digital civil registration platforms<br>- poor data quality<br>- an urban-rural digital divide<br>- insufficient funding and a lack of skilled staff<br>- outdated laws and policies<br>- cultural hesitancy and mistrust of government handling of personal data | - common data requirements and formatting<br>- international standards for storing information in civil registration records<br>- periodic data sharing options:<br>  - stand-alone software in health facilities<br>  - electronic PDFs used for data sharing<br>  - the civil registration platform in health facilities<br>- real-time data sharing options:<br>  - data exchange between two systems<br>  - national data-sharing platform<br>  - cross-border data sharing |

What is seen as important by representatives from each country:

| Country | Data sharing priorities |
|---|---|
| Samoa | ▪ Data sharing with border management, e.g. American Samoa & Immigration New Zealand<br>▪ Electoral roll<br>▪ Genealogy (land purposes, ancestors, citizenship, land records, church records) |
| Tokelau | ▪ Pension – Date of Birth<br>▪ Memorandum of understanding with New Zealand, American Samoa & Samoa<br>▪ Some records archived in New Zealand (historical) |
| Cook Islands | ▪ Passport system<br>▪ Social services, banking<br>▪ Insurance, taxes |
| Niue | ▪ With New Zealand (Niue pension)<br>▪ Relationship with Tonga & Samoa<br>▪ Student loans/taxes<br>▪ Genealogy<br>▪ ID (one ID, multiple uses)<br>▪ Name changes & sharing to American Samoa |
| American Samoa | ▪ Residency genealogy<br>▪ US passport<br>▪ Electoral office eligibility<br>▪ Drivers licence office |
| Vanuatu | ▪ Labour, finance, justice, lands department, police<br>▪ Genealogy<br>▪ Citizenship office, pension<br>▪ Electoral office |
| Tonga | ▪ National ID-birth record discrepancy<br>▪ Health: gender record amendments<br>▪ Paternity records for land entitlements<br>▪ Courts/education/health (med tech)<br>▪ Name changes completed in New Zealand or Australia |
| Solomon Islands | ▪ Interoperability data layer should be created to enable data sharing between already digitalised systems |

# WHAT ARE THE OPTIONS?

The size of a country's population and number of births and deaths are important considerations. In very small Pacific nations, simple extensions of the civil registration platform into health facilities might be more advantageous and cost-effective than other forms of data sharing. For high-volume data sharing situations there are the following options.

## Periodic data sharing

**Periodic data sharing** is appropriate where immediate access to data is not needed or the frequency of vital events is low. A hybrid approach can also be taken combining real-time and batched data sharing. For example, larger, urban hospitals with higher volumes of vital events can benefit from real-time data sharing, while smaller, rural facilities might find batched data transfers more practical and cost-effective. There are a range of standards and file formats that are commonly applied to periodic data sharing.

## Realtime data sharing where timeliness is essential

Where high volumes of data need to be shared in a time-critical manner, establishing real-time data exchange between different ICT systems developed by various vendors remains the most optimal solution. Sharing data across diverse ICT platforms is a multi-layered process with varying complexities and benefits. There is an emerging trend to streamline and simplify data sharing between different government ICT systems and platforms. Rather than building custom point interfaces between agencies, a national platform provides common integration services, open standards, consistent security protocols, and shared data infrastructure.

## Data verification – 'sharing without sharing'

Sometimes there is a need for external systems to verify civil registration information such as certificates, identities and life events. It may be sufficient to validate against registry data without needing full access.

## What does this report recommend?

The implementation of digital data sharing systems in CRVS across the Pacific – within country, between countries and regionally – requires tailored solutions based on the specific requirements and constraints of each country. A flexible, hybrid model that accommodates both real-time and periodic data sharing, underpinned by standardised practices and a strong focus on security and privacy, emerges as a key strategy for effective and sustainable digital transformation.

Key considerations include:

- Consider country data needs and choose appropriate data sharing method – periodic, real-time, or data verification.  A hybrid approach maybe best.
- Use standardised data formats and APIs when sharing data between different systems.
- Develop national interoperability frameworks to streamline data sharing across government systems.
- Adopt secure and privacy focussed solutions for handling sensitive data in civil registration systems.

For more information, please refer to the full report at https://purl.org/spc/digilib/doc/zd7om or using the QR code below.

Alternatively contact jeffm@spc.int.