Guide to eHealth NSW Systems

Information for working on digital healthcare projects at NSW Health

About this guide

The purpose of this document is to provide introductory guidance for developers of apps or solutions on important aspects to consider in the interaction with eHealth NSW systems including the rules governing the handling and storage of patient or staff information.

This document provides guidance on security and privacy, interoperability, and intellectual property to developers and implementers working on a digital healthcare projects at NSW Health. eHealth NSW recommends the review of the applicable guidelines and policies before initiating an application/software.

Overview

[Future Health: Guiding the next decade of health care in NSW 2022-2032](#) is our roadmap for how we deliver our services over the coming decade.

A consistent approach towards fostering digital health innovation and research

eHealth NSW is continuing to map the current architecture, identify the different maturity levels of Local Health Districts (LHDs), and to develop a future state-wide architecture plan that drives the transformation of Information Communication Technology (ICT) solutions in line with the eHealth vision and strategic objectives.

The digital landscape is a dynamic one and the health sector must leverage evidence-based research to proactively anticipate the needs of its stakeholders to better predict and meet future expectations and trends. Concurrently, innovation is constantly occurring locally across NSW Health organisations.

Developing a culture of innovation and collaboration between all stakeholders is critical to fast-track the best ideas, maximise return on investment and building eHealth capacity. NSW Health is actively working towards creating and enhancing opportunities that encourage, develop and implement new ideas and innovations across the healthcare system.

eHealth NSW currently provides solutions in nine core areas (including data) to support NSW Health as listed [here](#). For an understanding of key NSW Government priorities in Health, please visit this [link](#).

Things to consider when applying technology

Your LHD technical team is your first point of contact when planning your design and its suitability for use within NSW Health. Your LHD technical team can support you in understanding and meeting the process guidelines to fully demonstrate the type of app or solution proposed, how it will interact with NSW Health systems and complies with the required legislative and security requirements.

1. Design / Architectural Information

eHealth NSW provides strategic and critical advice to support the development and implementation of next generation and innovative ICT solutions for the Clinical, Infrastructure, and Corporate programs across NSW Health, in supporting LHDs and Health Agencies.

When planning your design and its suitability for use within NSW Health, it is important to consider:

    i.   Design/Architecture type and platform, including how the solution/service will be managed
    ii.   Data/Content Lifecycle
    iii.   Workplace Accessibility and User Experience

2. Interoperability / Integration Information

Minimum standards need to be in place for key tasks such as **consistent identification of patients** and **sharing of information in a uniform approach** while **allowing innovation, localisation or specialisation** other components of the technology environment.

To best support patient-centric care, information must safely flow between systems creating a single view of current information. eHealth NSW continues to adopt health information standards, so that ICT interoperability can be better facilitated and streamlined and help to reduce integration costs while improving the overall quality of delivered components.

Current approved interoperability standards and guidelines for NSW Health include:

    i.   **Health Level Seven or HL7** (however work is in progress to move to FHIR)

    ii.   **SMART on FHIR** is the recommended standards for developing mobile apps and/or application capability.

HL7 refers to a set of international standards for transfer of clinical and administrative data between software applications.

Fast Healthcare Interoperability Resources (FHIR, pronounced "fire") is a draft standard describing data formats and elements (known as "resources") and an application programming interface (API) for exchanging electronic health records.

Key considerations in this area relate to the need to comply with HL7 standards, identifying how the system interfaces data with the electronic Medical Record (eMR), the information flows between systems to best support patient-centric care. Here are some useful links:

https://www.hl7.org/fhir/?ref=learnmore

http://docs.smarthealthit.org/

When planning how your system or software exchanges and make use of information, it is important to consider:

    i.   The approved interoperability standards and guidelines used by NSW Health

    ii.   The recommended platform for app development

    iii.   Demonstrating how your system interacts with the eMR

3. Human Centred Design

To ensure systems are usable, eHealth NSW is continuing to adopt Human Centred Design approaches for systems design and development. This involves adhering to the general principles of ISO 9241-210:2019, by having a clear understanding of the following components:

- End users and their needs,
- The context of use of the system, and
- How the design meets the underlying needs of the users within the context of use.

Human factors, ergonomics, and usability principles and techniques should also be considered to develop usable solutions. The end result should be a system that is efficient, effective and satisfying for end users.

In practice, a range of User Experience techniques such as contextual enquiry, interviews, surveys, storyboarding, journey mapping should be employed to understand end users' needs and the context of use. Most importantly, an iterative design and testing approach with end users will help ensure usability.

Please contact the Health Prototyping Centre for specialist advice on your design requirements at ehnsw-hpc@health.nsw.gov.au

4. Privacy and Security Information

NSW Health aims to maintain a trusted digital environment where information security and privacy is an integral principle for delivering optimum benefits. The continued shift from paper-based systems to 'paper-lite' digital systems demands policies and standards that guide the responsible collection, storage, analysis and distribution of healthcare information.

Establishing and maintaining health information management protocols and monitoring tools are an essential professional and legal requirement for using digital health in the delivery of healthcare.

Key considerations for privacy and security for NSW Health information include:

A. **Undertaking a Privacy Impact Assessment** which provides recommended remedial actions to avoid or minimise risks to privacy when using personal and/or personal health information and addresses the general Australian community's wider privacy concerns and perceptions. NSW Health patient privacy resources are available here for your reference.

B. The **eHealth NSW Privacy and Security Assurance Framework (PSAF)** is the key document outlining the importance of information security throughout the project life-cycle. The PSAF provides detailed advice regarding to an assessment on privacy and security requirements when using technology.

C. The **Privacy Manual for Health Information** provides a guide to the legislative obligations and compliance procedures as stated in the Health Records and Information Privacy Act 2002 (NSW)

Privacy Manual for Health Information

Health Records Information Privacy Act 2002 (NSW)

D. **Mandatory Secure Messaging Standards**

In January 2020, State, Territory and Commonwealth Governments released a joint statement in support of new standards for secure messaging, stating that the standards will be mandatory in future procurement for applicable systems. Latest updates for developers is available at https://developer.digitalhealth.gov.au/products/secure-messaging

E. **Digital and Electronic Information Security Policy**

NSW Health is committed to providing the appropriate levels of security across all its information systems.

Health information systems that contain personal information have specific security requirements. When planning how your app, system or software **collects, uses or discloses personal or health information**, it is important to consider:

- Who will use the app and what is the method of consent
- How does the proposed app or system store patient data and where will it be held?
- Who is the data being shared with / disclosed to?
- What type of information will the app or system capture, and does it need all the information it is collecting
- Who will update the information stored on your app or system and how will user-added content be moderated

- What security measures will be included, or what happens if there is a privacy breach
- What happens to the information once the app is deleted or the subscription ends

When accessing or using health or personal information within NSW Health, the **legal requirements** will depend on the circumstances. It is important to be aware of **the obligations under the State Records Act** and designers should seek advice to ensure compliance.

Policy information to guide your design and the privacy and security considerations are included to follow:
Cyber Security Policy

Electronic Information Security Policy Directive

NSW Information and Privacy Commission website

NSW State Archives and Records

Commonwealth's Office of the Australian Information Commissioner website

NSW Health's Privacy Manual for Health Information

NSW Legislation website

Other key legislative and policy frameworks include:

• Health Records and Information Privacy Act 2002

• Privacy and Personal Information Protection Act

• Health Administration Act 1982

• Mental Health Act 2007

• Public Health Act 2010

• State Records Act 1998

• The Government Information (Public Access) Act 2009

• Privacy Act 1988 (Commonwealth)

• General Data Protection Regulation (EU)

F. For projects with an Artificial Intelligence component, and for Generative AI guidance, please refer to latest advice from NSW Government here. Additionally, please contact eHealth NSW for latest NSW Health specific guidance at ehnsw-ai-advisory@health.nsw.gov.au

Clinical Terminology

Clinical terminologies are structured vocabularies covering complex concepts such as diseases, operations, treatments and medicines. Clinical terminologies can be used in clinical practice to aid health professionals with more easily accessible and complete information regarding medical history, illnesses, treatments, laboratory results, and similar facts. Clinical terminologies enable the "computability" of clinical information and deal with the representation of health concepts which describe individual clinical conditions, problems or procedures in various settings and clinical practice types. SNOMED CT is an acronym for the Systematized Nomenclature of Medicine Clinical Terms. SNOMED CT has been adopted as the Australian standard for clinical terminology under the national e-health agenda. It provides a common language that enables a consistent way of indexing, storing and retrieving clinical data across medical specialities and sites of care. It supports the ability of clinicians, researchers and patients to share comparable clinical data worldwide. Its use as a "common language" will improve the flow of clinical information. More information is available at https://developer.digitalhealth.gov.au/clinical-terminology

Whilst not every listed standard and protocol is applicable for every ICT solution, integration with the Electronic Medical Records and one or more other NSW Health Systems, as well as building ICT solutions for interoperability are key strategic requirements for e-health.

Further information

Contact: ehnsw-innovation@health.nsw.gov.au