

## SECURE MESSAGING FACT SHEET

### BACKGROUND

The National E-Health Transition Authority (NEHTA) has been established to lead the uptake of e-health systems of national significance, and to deliver the essential integration infrastructure and standards required to enable interoperability between e-health systems across geographical and organisational boundaries. NEHTA is based on a collaborative approach to enabling reform through e-health and is jointly funded and governed by all Australian jurisdictions.

NEHTA aims to create the necessary conditions for the growth of a secure, connected e-health environment, based upon open standards, that is sustainable and can support all participants in the health sector.

The way in which health services are delivered will change dramatically over the next decade to meet emerging needs. This will require supporting information systems to be 'dynamic' and adaptable to respond to these changes. Information needs to flow securely between systems, to be available when and where it is needed.

Electronic health information systems have proven essential for the delivery of high quality care across the health sector. Exchanging clinical and administrative information between these systems has the potential to unlock substantial quality, safety and efficiency benefits. It is vital, however, that this exchange of information is conducted in an appropriately secure manner.

There are a number of current examples of information being transferred securely in the health sector to meet specific business needs. The experience gained to date will need to be built upon with a view meeting the increasing demands and evolving requirements across the health care continuum. Many of the current solutions, while adequate today, will not be sustainable to meet the diverse and increasing demands of modern health care and the mobility of the population.

A new approach is needed to ensure that clinical information can be transferred securely across a national e-health environment.

### OBJECTIVE

The NEHTA Strategic Plan 2009-2012 identifies a number of strategic initiatives which will deliver the outcomes required in four priority areas. The Secure Messaging initiative provides the foundation for electronic clinical communications in the e-health environment by describing a common set of open standards to be used when

exchanging clinical information between providers.

Interoperability is an important part of this goal. Without interoperability there can be no guarantee that the sender and recipient will be able to interchange information.

Interoperability occurs at a number of levels:

- the **business** level—with rules for how and when information is exchanged;
- the **information** or **semantic** level—so that computers are able to recognise and intelligently interpret the information that is exchanged; and
- the **technical** level—so that the information can get to the systems that need it with appropriate security during transit.

### SCOPE

The Secure Messaging initiative is concerned primarily with the secure transfer of clinical information among care providers. As such, the focus is more on the transport and security of messages (the carriage) rather than the structure and terminology of the message (the content). Message contents are defined by NEHTA's Clinical Terminology and Information initiative.

Although the Secure Messaging initiative concentrates on standards at the technical level, specifications are based on business use cases formulated via consultation with those who will implement and use the specifications. Secure Messaging specifications build upon functions provided by the National Infrastructure Services, specifically:

- Healthcare Identifiers Service
- National Authentication Service for Health;
- Endpoint Location Service

Other important aspects of security, such as security policies, security management processes, risk management, and physical security, are addressed by NEHTA's Security and Access Framework.

### DESIGN PRINCIPLES

Open standards have been specified as they allow for a flexible and dynamic approach to system interoperability and can help ensure the evolution of an e-health environment that is sustainable and affordable. NEHTA supports increasingly sophisticated business relationships covering many different participants.

The Secure Messaging initiative recognises some key design principles that must be addressed if the e-health environment is to be both sustainable and meet emerging needs. These principles are:

## **Compatibility**

Systems must be able to exchange information, irrespective of the technologies with which they are implemented, or the vendors which supply them. This requires standards for secure messaging that are open and aligned with the directions of the ICT marketplace.

## **Coherency**

Currently, there is a plethora of different approaches to secure messaging across the health sector. This causes confusion in the marketplace, limits interoperability, reduces usefulness, increases costs and hinders adoptions.

A consolidated approach, based around a clearly defined set of standards that work together, is critical to enable interoperability and widespread adoption.

## **Scalability**

One of the factors influencing the choice of standards and technologies supported by NEHTA is their scalability - ie the efficiency with which large scale and complex interactions can be handled in addition to accommodating simple point-to-point messaging.

## **Extensibility**

The e-health environment needs to handle requirements for new functionality, with as little impact on the current environment as possible. Additionally it should allow for new uses of existing services. Existing systems cannot simply be jettisoned in favour of newer designs.

## **Sustainability**

The e-health environment needs to be resilient and adaptable to a complex set of ever-changing requirements. It needs to be able to grow to meet emerging needs. Ensuring affordability will require an open and contestable market.

## **DESIRED FUTURE MESSAGING STATE**

The recommended goal state for secure messaging is defined by the following specific features which are based on (*or represent*) industry best practice.

### **Standards based**

To enable a flexible and viable secure messaging environment to support e-health, a standards based approach has been adopted. NEHTA's secure messaging specifications will align with existing standards where applicable or NEHTA will collaborate with standards organisations to develop new standards where needed.

## **Layered approach**

Clear delineation between the transport of the message and the contents of the message enables common transport protocols to be reused and applied to a range of message types.

## **Service Orientated Architecture (SOA)**

SOA is an approach to designing software applications to support business processes through the use of one or more "services". A service is simply a modular, identifiable unit of work defined by a specified interface (which is independent of its implementation).

## **Web services**

This refers to a specific set of technologies to enable communication between software applications using the transport protocols and infrastructure of the Internet. Web services technologies are a good fit to the requirements of communication in a distributed e-health environment.

## **The Way Forward**

Creating standardised solutions to secure messaging does not mean that systems currently in use need to be thrown away or turned off. Specifications for new approaches to e-health communication will provide for a transition from existing methods of communication, developed in consultation with stakeholders in the health sector.

The Secure Messaging initiative is implementing a number of activities aimed at enabling the health sector to move to a common environment for secure information transfer. These include:

- developing standards for Web services in e-health;
- fostering adoption of e-health Web services across the health sector, especially in Primary Care;
- establishing guidelines and methodologies to support the development of Web service specifications and interfaces;
- providing assistance with service and interface specifications to NEHTA's infrastructure initiatives, as well as to other complementary initiatives across the e-health environment; and
- influencing and contributing to emerging international standardisation efforts relating to service specifications.

Further information regarding Secure Messaging can be obtained from the NEHTA Website — <http://www.nehta.gov.au> or by sending an email to [securemessaging@nehta.gov.au](mailto:securemessaging@nehta.gov.au)