H HEALTH IDENTIFIERS: OPTIONS IN AN ELECTRONIC WORLD

H1 Context

New information and communication technologies create opportunities both to improve patient care and simultaneously give consumers more control over health care decisions that vitally affect them. The use of these new technologies can also lead to better quality information about our health services, allowing better planning and the provision of more cost-effective health care services, including for people living in regional Australia.

The key to this opportunity is the potential for new technology to provide the right health care information, wherever it is needed, when it is needed.

Currently, the vast majority of health care records exist as discrete paper-based entities held at a variety of locations, resulting in a fragmented and inevitably incomplete picture of a person's health needs and history. Traditional boundaries around health and community care settings further impede the flow of essential health information and effective communication. At the same time, access to relevant aspects of a person's health information at the point of care delivery is central to good clinical decision-making — providers and consumers need the right information to be available when health care decisions are being made.

In this context, the reliable electronic linking and transmission of personal health information can provide a powerful tool to bridge isolated 'outcrops' of information — and allow providers immediate access to essential clinical information. In the longer term, with the advent of a national health information network supporting a system of electronic health records, consumers will have the capacity to enable essential information relevant to their health care to be available at any time to health care providers of their choice.

In a world in which health consumers and health professionals will increasingly base their decision-making on health information exchanged electronically at the point of care, absolute certainty is required in the following three areas:

- the identity of the person to whom the information relates — the 'patient identifier';
- the identity of the facility or location from which the information has originated —the 'facility identifier'; and
- the identity of the person who has created each piece of information – the 'provider identifier'.

In principle, this is no different from the processes currently used by health professionals to assess the provenance and status of information that they receive in hard copy format. However, in an electronic world the tools for identifying people, providers, locations (and even individual items of medical equipment) will need to be both accurate and instantly verifiable at the point of care. Otherwise, many of the benefits of being able to exchange health information electronically will simply not be realised.

The need to develop a personal health identifier was identified in *Health Online: A Health Information Action Plan for Australia* (*Health Online*) as one of the key building blocks that needs to be in place to enable the safe and secure transfer of health information electronically — and as such, has been accepted by the National Health Information Management Advisory Council as an issue of high priority on its agenda.[98]

Increasingly, the Australian public has come to accept and use a whole range of identifiers in going about their daily business and lives. Examples include bank and credit cards; Medicare cards; Tax File Numbers; Medicare provider numbers; and, most recently, Australian Business Numbers.

This appendix focuses on the issue of identification (ie establishing who a person or place or thing is) — rather than the wider issues of proof of identity and authentication processes which are considered elsewhere in this report.

H2 Patient identification

The issue of a national patient identifier has been singled out as a high priority for action by the National Health Information Management Advisory Council — and for sound reasons.

There are many people in Australia who share the same name and some of these may even see the same general practitioner, specialist or other health professional. Australians often change address and sometimes their names. This causes confusion when it comes to matching the right health information with the right person, especially in an electronic world.

Unless critical health information exchanged electronically can accurately identify the individual to whom it relates, the benefits of new technologies for the health sector will go largely unrealised.

There is the potential for serious misadventure and adverse patient outcomes if transfer of clinical information — such as prescription data or medical history — is not accompanied by a foolproof and unambiguous system of patient identification. Current methods of identification using name, sex and date of birth, were recently

[98] National Health Information Management Advisory Council (NHIMAC 1999), *Health Online: A Health Information Action Plan for Australia,* Commonwealth of Australia, Canberra.

evaluated using Australian data and found to provide a sensitivity (accuracy) of only 89%.[99] This level of certainty is hardly adequate for health care decision making.

In addition to the critical issue of patient safety, there are other benefits to be gained by being able to more accurately identify individual health consumers across the health sector, including:

- improved continuity of care by being able to bring together health records held in different locations more efficiently and effectively — and building up a longitudinal health record;
- improved integrity, comprehensiveness and completeness of the information held in records by being able to more accurately assign the correct record to the right person;
- better quality data for: evidence-based decision-making; evaluation of service quality and health outcomes; development of clinical practice guidelines; and research;
- enhanced privacy through:
- having an identifier as the tool for pulling files and test results together rather than having to use readily identifiable names and addresses when transferring information electronically;
- the ability to easily scramble numerical identifiers or replace with a numerical pseudonym ('pseudonymisation'); and
- administrative efficiency gains by being able to access and file information more quickly and simply.

Health identifiers for individuals have now been introduced successfully in New Zealand and the United Kingdom. Also, the use of a health identifier has been mandated under the USA's Health Insurance Portability Act which requires that the Department of Health and Human Services adopt a number of standards to support the electronic exchange of administrative and financial information in the health sector — including identifiers for individuals, employers, health plans and health care providers.[100] In the Australian context, as far back as 1997, the House of Representatives Standing Committee on Family and Community Affairs in its report *Health on Line: A Report on Health Information Management and Telemedicine* advocated the assignment of a unique patient identifier in conjunction with an electronic health card. It also viewed with concern the slow progress in resolving the

99 Kelman CW. (2000) *The Australian National Death Index*, Australian and New Zealand Journal of Public Health, 24-2 p91-2.

100 *Unique Health Identifier for Individuals: A White Paper*, US Department of Human Services and Health, http://.aspe.os.dhhs.gov

issue of a patient identifier at the national level as it "directly affects the deployment and use of technologies."[101]

Some States and Territories have already developed their own systems for identifying individuals within their services, setting up the potential for providers and consumers encountering insuperable problems in accessing critical information around Australia, thereby negating the benefits to be gained through a national approach to electronic health records.

H3 Options for a national health identifier for individual consumers

While there are many that could be utilised for uniquely identifying individuals in an electronic world, these options generally fall into three categories:

- options that do not require a universal, unique identifier — such as Patient Master Indexes;
- biometric identification — which are based on unique physical attributes (eg finger prints, iris scans, DNA analysis, voice pattern recognition etc); and
- an identifier based on the assignment of a number unique to each individual — this number could be an entirely new one or based on an existing one, such as the Medicare number.

The first group of options includes such systems as Patient Master Indexes (or PMIs). PMIs link a patient's medical record number with a common set of other identifying characteristics — such as an individual's first name, last name, date of birth and other characteristics sufficient to achieve unequivocal identification. The Northern Territory has established such a system through its Client Master Index for individuals receiving services from community and/or hospital settings.

The second group of options (biometric identifiers) would be costly, requiring a substantial infrastructure and specialised equipment. They are also potentially more intrusive. Moreover, as some biometric forms of identification (such as fingerprints and DNA samples) are used for law enforcement purposes, the potential to link such information beyond the health sector poses a potential threat to privacy and could even deter people from seeking health care.[102]

The third option (assigning a number unique to each individual) is the one which would appear to be most easily implemented — either through the introduction of an entirely new 'health identifier' (which could be assigned to an individual on the first

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101 House of Representatives Standing Committee on Family and Community Affairs (1997), *Health on Line: A Report on Health Information Management and Telemedicine*, AGPS, Canberra, p. 90- 92.

102 US Department of Health and Human Services (1998) *Unique Health Identifier for Individuals: A White Paper*, Washington DC. Available at http://.aspe.os.dhhs.gov.

encounter with a health service or sent out to every Australian individually), or by extending the current use of an existing number.

An option for a health identifier that has been flagged in several arenas (including *Health Online*) is to build on the existing Medicare card system. The Medicare card is already out there, is well accepted by the Australian community and is recognisable across the health sector. Much of the infrastructure for recording the number is already in place via embossing machines or magnetic readers. Expanding the use of the Medicare card would largely obviate the considerable costs that would be incurred in introducing an entirely new system of identification.

However, the number that appears on existing Medicare cards is not unique to the individual — a person can appear on several cards and may change card numbers over time. However, an identifying number which is unique to the individual and which is linked to the Medicare card number is held by the Health Insurance Commission (HIC). This number (commonly referred to as the HIC PIN) is currently not available on the card or to the consumers and is not used outside the HIC.

A relatively simple and cost-effective option, then, could be to either extend access to the HIC PIN or to reissue the Medicare card and include the HIC identifier.

Regardless of what option might be chosen for identifying an individual health consumer, there would clearly have to be stringent safeguards in place to ensure that privacy and confidentiality are maintained. Unless consumers and providers have confidence that their privacy is assured, any such tools will not be utilised.

Clearly, there is a number of risks that have to be recognised and appropriate counter measures put in place to manage those risks within acceptable limits.[103]

In brief, these risks include:

- potential breaches to privacy and confidentiality;
- unauthorised access to health information;
- unauthorised use of a health identifier;
- inadequate/incorrect identification through lack of agreed standards for identification; and
- widening of uses over time ('function creep').

Before the Commonwealth were to embark on developing any such system of patient identification it would therefore be likely to be required to meet the following strict criteria:

- use of a patient identifier would be limited to the health sector;
- there would need to be absolute transparency and accountability — with control over an identifier’s use residing with the consumer;

[103] No system is risk free, including existing manual (paper-based) methods of keeping personal health information.

- participation by consumers and providers would be voluntary;
- it would need to be backed by a robust privacy/legislative framework which limits the circumstances in which a health identifier could be used (with appropriate penalties for misuse);
- appropriate security measures and standards would need to be in place throughout the health sector to maintain privacy and confidentiality of health information; and
- agreed standards would need to be in place to provide assurance of the integrity and quality of the information being exchanged electronically.

Clearly, issues of security would be of paramount importance and safeguards would need to be in place to ensure that:

- a person cannot use someone else's identifier to access that person's record without permission. This is particularly important in the case of minors or people with impaired decision-making ability;
- consumers are able to maintain control over who has access to their personal health information — with mechanisms in place to allow them to see who has accessed their information; and
- providers or organisations that have access to identifiable personal health information have adequate security precautions in place to protect and safeguard such information.

While the potential for breaches of privacy must be acknowledged, the introduction of a health identifier could also provide the opportunity to *enhance* individual privacy by helping to set boundaries around the use of information — that is, can be as much about privacy as it is about information. Control over their health identifier will provide consumers with the key to unlock essential health information held elsewhere in order that the health professionals of their choice can access the critical information they need for sound decision-making.

H4 Provider identification

Providers also need to be able to be uniquely identified:

- to ensure that the information is only accessed by the provider (at a particular location) authorised by the consumer;
- to ensure that a provider is a bona fide health professional (via links to professional registration bodies or other appropriate sources);
- for professional accountability purposes (such as to establish duty of care); and
- to facilitate the efficient payment of any relevant professional fees or rebates.

Provider authentication will ensure that information is sent to the appropriate person at the correct destination. In addition, a provider may supply professional services from a variety of locations. A system of electronic health records also needs to be able to access information from the location at which it is stored, and transmit

information to the location at which the information is required — that is, a location or facility identifier is also integral to the system.

H5 Identification of facilities

A facility may be defined in a number of ways, including:

- the location at which services are actually provided;
- the location at which health records are electronically stored; or
- a combination or linkage of these locations.

A facility identifier could also be used to administer health programs that need to differentiate between locations at which a service is rendered by a particular provider, as well as distinguishing between providers rendering services at a specific location.

Finally, particularly for some highly sophisticated medical technologies, the actual piece of equipment used may need to be identified to allow a clinical decision to be made (for example the reliance to be placed on a result depending on the resolution of imaging equipment), or an administrative process to occur (such as the differential payment of a rebate).

H6 A way forward

This appendix has focussed almost exclusively on the issuing and use of health identifiers, and in particular on the need to accurately identify the individual health consumer, in an electronic world. However, even in the current climate where such initiatives are relatively few in number and extent, the need for such an identifier for the individual consumer is readily apparent. These needs are multiple but include: the tracking of individuals exposed to the risk of contracting HIV/AIDS or another infectious disease following possible exposure in a public hospital; the recall of individuals with faulty implantable medical devices; reducing the potential for mix-up between test results or procedures due to confusion between individuals with similar or the same names; the failure to bring together critical information because of misspelt names, illegibility of handwriting and the individual benefits to be gained from the surveillance of medical treatments in general.

Ultimately, however, most of the direct benefits to the individual consumer or provider from the use of such an identifier will be delivered within the context of widespread use of electronic health records and electronic communication of critical health information.