

**House of Representatives Standing Committee on Infrastructure and Communications  
Inquiry into the National Broadband Network (NBN) Public Hearing 4 March 2011**

**Response to questions raised during public hearing**

In responding to these questions, the following information sources were consulted:

- The Department of Broadband, Communications and the Digital Economy.
- Divisions of the Department of Health and Ageing including Aged Care Division, Pharmaceutical Benefits Division.
- The Australian Institute of Health and Welfare (AIHW) report *General practice activity in Australia*, (2008-09).
- The Primary Healthcare Information Research Service.
- The National E-Health Transition Authority's [Healthcare Identifiers in Primary and Ambulatory Care Proposed Implementation Plan](#) (2010).

**Question:** *Did the Department of Health and Ageing provide advice to the government before it made the announcement in April 2009 as to speeds that would be required to deliver telemedicine?*

**Question:** *What advice was provided by the department to the government in advance of its announced decision in April 2009 to build a 100-megabit per second fibre-to-the home network?*

In November 2005, the then Minister for Communications, Information Technology and the Arts, Senator Helen Coonan released the 'Broadband Connect and Clever Networks: Supporting Investment in Sustainable Broadband Infrastructure - Discussion Paper'. The following information has been extracted from the response by the then eHealth Implementation Group, Department of Health and Ageing of January 2006.

In its submission the Department noted the following in relation to broadband technology and its impact on the delivery of regional broadband services in the next three to five years: 'Fibre infrastructure can provide high performance connectivity to areas which have existing cable laid. Where cable exists within a reasonable range of consumers, it would be practical for investment to be made in providing the last mile link by some means. Although the initial costs may be high, ongoing performance benefits and running costs should ensure sustainability and scalability.'

With regard to the 2005, Broadband Connect model the Department recommended speeds similar to the 'business grade' specifications of the Broadband for Health program as follows: 'While the model is functional, service speeds of at least 512Kbps download and 256Kbps upload should be set as a minimum requirement. Download allowances should be increased to a minimum of 3GB with options for 10GB and above.'

In relation to the Clever Networks minimum broadband specifications the Department again suggested speeds similar to the Broadband for Health program: 'The minimum specifications for broadband services for Clever Networks should be service speeds of at least 512kbps download and 256kbps upload together with download allowances should be increased to a minimum of 3GB with options for 10GB and above. Specifications above and beyond these levels are recommended to assure 'clever' or 'next generation'

network status. Specified requirements for latency of connections will provide a level of assurance for the use of advanced applications which are affected by latency issues. The benchmark for broadband download speeds in the near future will be at 10,000kbps and above.'

**Question:** *Could you give us some of the examples of what you might see as the top end utilisation of telehealth that a specialist and GP might be looking at and what you would see as the required speeds and widths for that sort of service?*

In terms of the broadband speeds for telehealth, a June 2010, report by NICTA for the Department of Broadband, Communications and the Digital Economy 'Telemedicine in the context of the National Broadband Network' (section 4.1.1) noted the following.

'There are very few studies addressing the minimum or maximum clinical requirements for video (although some standards exist for medical imaging). As yet, it is not determined what video specification is necessary for each clinical (or non-clinical) application. It is also not clear at what point 'enough bandwidth' provides sufficient fidelity. The following studies provide a range of bandwidth suggestions.

- (Cooeenet@qld, 2009) has suggested bandwidths from 10Mbps to 100Mbps network connectivity will be needed for health applications, such as team-to-team video conferencing with data support.
- (NBN Co, 2010) suggested broadband speeds of up to 100Mbps for telemedicine – with applications such as high definition, 3D video consultation and education.
- (Wilson, 2010) outlined applications of high-bandwidth video conferencing, using a 720x520 pixels, 48kHz CD quality audio, and 70Mbps user initiated video stream. In this experimental setup the video was compressed frame-by-frame (no inter-frame compression or motion prediction was used). It would be possible to reduce this bandwidth requirement if modern video codecs were used, however, latency may still limit how much compression is possible.
- (Queensland Health, Clinical and Statewide Services) evaluated desktop video conferencing over ISDN, no minimum requirements were given and the context was varied clinical care.
- (Song, Chan, Smith, & Watson, 2002) evaluated ultra-sound video under clinical conditions between the Mater Mothers' Hospital and Kirwan Hospital for Women in Queensland (1,500km). A minimum of 1.52Mbps were needed for fine detail (diagnostics).
- (Cuzzani, 2000) evaluated bandwidth requirements for ophthalmology images and video. They found that a T1 network (1.5Mbps symmetric) operated well and network speeds below 0.5T (750kbps) were inadequate.
- High bandwidth for remote viewing is not always essential: (Sharyn Crowie, 2009) demonstrated IP security cameras, operating at 12fps, to provide remote imagery of patients in emergency departments.
- During a 1-day workshop to evaluate the clinical usefulness of videoconferencing, desktop video (700kbps) was typically sufficient, although some clinical comments suggested 10Mbps was necessary. (Steele, 2010).'

**Question:** For whatever classes of health institution you typically think about (hospitals and other health sites in Australia—however you would define them, (pharmacists, GPs, community health centres etcetera), and it might well be 10 or 15 classes, how many there are and, to the extent that we know, the percentage of them that have fibre and other types of connections.

The Department is unable to provide data on the type of broadband connectivity currently being used by various health services across Australia at this time.

However, information on classes of health is included below for the following services. Information on the now concluded Broadband for Health Program, GP computerisation, eHealth readiness surveys currently being undertaken by the Department is also included below.

### **Australian Institute for Health and Welfare**

The Australian Institute for Health and Welfare (AIHW) has indicated that Australia had 1,317 hospitals in 2008–09. 756 public hospitals accounted for 67% of beds (56,500) and 561 private hospitals accounted for 33% (27,500). The Department was not able to source data on the type of connectivity for hospitals.

The AIHW has also provided the following information regarding Aboriginal Medical Services (business entities).

### **Indigenous primary healthcare services for which service activity reporting (SAR) data are reported (number) (a), (b)**

	<i>NSW and ACT (c)</i>	<i>Vic</i>	<i>Qld</i>	<i>WA</i>	<i>SA</i>	<i>Tas</i>	<i>NT</i>	<i>Aust</i>
2003-04	29	21	26	20	10	5	27	138
2004-05	28	22	26	20	13	5	27	141
2005-06	30	22	27	23	14	5	29	150
2006-07	28	22	28	25	10	6	27	146
2007-08 (d)	29	23	30	30	10	7	26	155

(a) The SAR only includes Aboriginal and Torres Strait Islander health organisations that receive at least some of their funding from the Australian government to facilitate access to primary health care (including health promotion, dental and counselling services).

(b) The number of services that provide SAR data changes each year. Changes are due to new Australian government funded primary health care services opening and existing services gaining Australian government funding. In addition, previously excluded Australian government funded services may be required to commence SAR data reporting if there are changes in the types of services provided and/or reporting arrangements.

(c) Data for NSW and the ACT have been combined in order to avoid the identification of individual services.

(d) 2007-08 data are preliminary results.

## General Practice

At 30 June 2008, there were an estimated 7261 general practices<sup>1</sup>.

It is believed that general practice in Australia is highly computerized with high rates of connection to broadband services based on the following:

- Only 5.3% of GPs did not use a computer at all for clinical purposes.
- Computers were used mainly for prescribing, receiving pathology results electronically and for internet use.
- 77.0% of GPs were producing prescriptions electronically.
- 73% were receiving pathology results on line, and three in five were producing and printing pathology orders via their clinical software.
- 22% were ordering pathology electronically.
- More than half (54%) had electronic medical records exclusively (i.e. were paperless).
- Over one-third (34%) reported maintaining a hybrid record where some patient information is kept electronically and some on paper records (for the same patients).<sup>2</sup>

## Medical Specialists and Allied Health Care Providers

As at 2010, the Australian Institute of Health and Welfare estimated that there are a total of 24,700 medical specialists and 127,200 Allied Health Care Professionals<sup>3</sup>.

The [Healthcare Identifiers in Primary and Ambulatory Care Proposed Implementation Plan](#) released by the National E-Health Transition Authority in March 2010 identified the lack of available data on eHealth readiness (including connection to the Internet).

The plan noted that “more information about the state of maturity and usage of computing in primary care, particularly in relation to specialists and allied health providers, would be beneficial”<sup>4</sup>.

In order to address this information gap, on 12 November 2010 the Department released requests for tenders from organisations to evaluate the eHealth readiness of Australia’s Medical Specialists and Australia’s Allied Healthcare Professionals. The tender closed on 8 December 2010 and McKinsey and Company has been contracted by the Department to undertake this research.

## The Broadband for Health Program

The Broadband for Health Program (BFHP) was established to build capacity in the health sector for secure, functional and equitable participation in eHealth. It aimed to allow eligible health care organisations - general practices, Aboriginal Community Controlled Health Services (ACCHS), the Royal Flying Doctor Service (RFDS) and community pharmacies - to take advantage of the potential benefits of broadband technologies. The BFHP operated between 1 July 2004 and 31 December 2007 and provided incentive payments to eligible healthcare providers to assist them to purchase BFHP qualified services for connection, or upgrade to, business grade secure broadband.

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1 Primary Health Care Research Information Service - <http://www.phcris.org.au/fastfacts/fact.php?id=6752>

2 Australian Institute of Health and Welfare, *General practice activity in Australia*, 2008-09, <http://www.aihw.gov.au/publications/gep/gep-25-11013/gep-25-11013-c04.pdf>

3 ‘Australia’s Health 2010’ Ch 8 Expenditure and Workforce. Australian Institute of Health and Welfare 2010.

4 [Healthcare Identifiers in Primary and Ambulatory Care Proposed Implementation Plan](#) - <http://www.nehta.gov.au/ehealth-implementation/sector-plans/primary-care>

Success was measured by both the number of organisations who participated in the program and the number of participants connecting to broadband for the first time. To demonstrate this success at the conclusion of the program a business grade broadband connection had been taken up by:

- 66% of eligible practices
- 96% of eligible pharmacies
- 100% of RFDS; and
- 88% of ACCHS.

62% of participants were connecting to broadband for the first time.

Of eligible general practices, 80% of remote and 61% of rural practices took up the incentives.

The penetration across rural and remote locations was higher than metropolitan areas where 57% of eligible practices took up the incentives.

88% of eligible ACCHS received an incentive under the program. This has contributed to participation and adoption of other programs and systems including, Patient Information Recall Systems (PIRS), the Managed Health Networks Grants Program and the HealthConnect, Northern Territory Program <sup>5</sup>. 100% of eligible Royal Flying Doctor Services participated in the BFHP.

Business grade broadband under BFHP included:

- 512/256kbps upwards (or 512/192 kbps for satellite)
- carrier firewall
- antispam
- antivirus
- email service
- download allowance
- professional installation
- support
- broadband specific hardware up to and including the ethernet point (this was provided by the Service Provider and excluded computers, keyboards etc).

For the purposes of the BFHP, types of broadband were classified as terrestrial (DSL and cable), wireless and satellite. Satellite incentives were only available where access to terrestrial or wireless services were not available.

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<sup>5</sup> National Strategic Framework for Aboriginal and Torres Strait Islander Health. Progress against jurisdictional implementation plans. Report to the Australian Health Ministers' Conference 2006.