

E-health – existing and future possibilities

The only barrier now is in our own heads. It is certainly not the technology. It is our own ability to engage it and accept that it is yet another technological tool that we can use to enhance the provision of our health services to our local people.¹

What is e-health?

- 7.1 The term telemedicine, which is the basis of one of the terms of reference for this inquiry, is one of a growing number of expressions used in conjunction with telecommunications technology in the Australian health system. Telemedicine tends to emphasise the role of doctors in providing health care to distant patients. The term telehealth emphasises a wider range of applications involving a range of health professionals. In addition, discipline specific terms such as teleradiology, telepsychiatry and telepathology are becoming part of the lexicon of health.
- 7.2 The Commonwealth Government has released two documents on the subject in recent years: *Fragmentation to Integration: The Telemedicine Industry in Australia* in 1998, and *From Telehealth to E-Health: The Unstoppable Rise of E-Health* in 1999, both prepared by John Mitchell of John Mitchell & Associates. The latter report discusses the transition from telemedicine to e-health which is much broader than either telemedicine or telehealth.
- 7.3 The Committee's preference is for the term e-health which is defined in *From Telehealth to E-Health: The Unstoppable Rise of E-Health* as:

1 Professor Carol Gaston, Transcript, p. 207.

the use in the health sector of *digital data* – transmitted, stored and retrieved electronically – for clinical, educational and administrative purposes, both at the local site and at a distance. Hence e-health is the overall, umbrella field that encompasses telehealth.²

- 7.4 Many witnesses spoke enthusiastically, though in general terms, of the benefits of telemedicine or e-health to a remote community. Most conveyed the impression that it was a boon that was still some distance away in the future, especially given the present limitations of the telecommunications infrastructure on Norfolk Island.
- 7.5 However, the Committee was impressed to hear late in the inquiry of a proposal by one of the Island doctors for a netconferencing facility which could be implemented with minimal cost in the very near future. The appeal of the proposal, which has already been demonstrated to members of the Norfolk Island Legislative Assembly, was in its simplicity and its capacity to integrate with equipment and expertise that already exists on the Island. Based on the Internet, which is already widely used, netconferencing offers many advantages over teleconferencing, which requires professional expertise to set up and maintain and is therefore much more expensive.
- 7.6 Further details of this proposal may be found below in the section *The development of e-health on Norfolk Island*, at 7.15 below.

Communications infrastructure on Norfolk Island

- 7.7 The *Telecommunications Act 1997* (Cth) does not extend to Norfolk Island.³ The Norfolk Island Government has the sole authority to establish, maintain and operate the domestic communications network within Norfolk Island, which it does under the *Norfolk Island Telecommunications Act 1992*. Norfolk Telecom was established to manage the local network. However, Norfolk Island has been the beneficiary of a number of Commonwealth grants for telecommunication purposes under the Networking the Nation scheme.
- 7.8 In 1994 the Norfolk Island Government established a commercial agreement with Telstra to provide an international telecommunications

2 Mitchell J, *From Telehealth to E-Health: The Unstoppable Rise of E-Health*, Department of Communications, Information Technology and the Arts, Canberra, 1999, p. 6.

3 Nor does the Universal Service Obligation, which operates within the Christmas and Cocos (Keeling) Islands, extend to Norfolk Island.

network link using the ANZCAN⁴ undersea cable as the carriage medium. The cable is expected to expire by 2005.⁵

- 7.9 An Internet Service Provider (ISP) on Norfolk Island, www.nf, was established by Norfolk Island Data Services (NIDS) in 1996. NIDS provides local customers with access to the Internet, on-line and e-mail services, and charges \$5 an hour to use its ISP operations.
- 7.10 The Committee's 1999 report, *Island to Islands: Communications with Australia's External Territories*, noted NIDS' concerns that Norfolk Telecom rates of \$98 000 per year for a 64 KBPS link on the ANZCAN cable, and restrictions imposed on line use, meant that NIDS could only provide channels with a limited data rate. An equivalent satellite line would give twice the performance for \$1 000 per month. However, NIDS was restricted to the use of Norfolk Telecom, which precluded it from exploring a direct link with the cable network or from accessing a satellite as an alternative.⁶
- 7.11 In October 1997 the Norfolk Island Government negotiated with Telstra over the establishment of its own ISP network, NI.NET, to provide standard Internet access and e-mail services to rival NIDS' operations.
- 7.12 NI.NET was established in May 1998 and is serviced by a 64Kbps⁷ line to Telstra Big Pond in Sydney. All local subscribers are connected by 33.6Kbps lines. NI.NET is a subsidiary of Norfolk Telecom and is wholly owned and operated by the Norfolk Island Government. It provides standard access to the Internet, e-mail and commercial web-hosting to its customers. Charges to the customer include a \$40 initial connection fee and \$4 per hour Internet access.⁸
- 7.13 The Norfolk Island Government has undertaken a review of its communications infrastructure and telecommunications and Internet service provisions. It received a grant of up to \$80,000 from the Remote and Isolated Islands Fund (RITF) of the Networking the Nation program (NTN) in order to:

4 Australia-New Zealand-Canada undersea telecommunications cable.

5 This agreement lasted from 1 May 1994 to 30 April 1999, and was subsequently extended until November 2000. It is anticipated that the agreement with Telstra will continue to be extended on an ad hoc basis until the Norfolk Island Government establishes alternate arrangements.

6 Joint Standing Committee on the National Capital and External Territories, *Island to Islands: Communications with Australia's External Territories*, pp. 42-43.

7 Kilo (1 000) bits per second data transfer rate.

8 The \$4 per hour access rate includes unlimited downloads and connection times as well as a free private e-mail box.

prepare documentation and conduct tenders to address the Island's need for mobile telephony, satellite services, a replacement exchange, and internet applications.⁹

- 7.14 This was to provide the basis for a further NTN application for funds to assist the Island in developing and implementing a strategic plan to enhance the existing communications infrastructure. The October 1997 report of the House of Representatives Standing Committee on Family and Community Affairs, *Health on Line: A Report on Health Information Management and Telemedicine*, recommended that all funding sought from RTIF:

should cover a minimum requirement of 128 Kbps ... so as to ensure adequate standards for Telehealth consultations and transmission of radiology and pathology images.¹⁰

- 7.15 In November 2000 funding of up to \$750 000 was approved by the Networking the Nation Board for the establishment of a two-way satellite earth station on Norfolk Island to supplement and eventually replace the existing cable link. In March 2001 the Chief Minister announced that Telstra had been awarded the tender for this project. Further funding of just over \$50 000 was also approved for the procurement of capital equipment, a service agreement and project management for the Island's first telehealth service. The deed of agreement between the Commonwealth and the Norfolk Island Government was still being drafted in May 2001.

The development of e-health on Norfolk Island

- 7.16 Among the primary benefits of e-health are the limitless possibilities and creative applications of telecommunications in the provision of health services. Despite limitations imposed by the available bandwidth, basic e-health facilities are, in fact, already established on the Island. For example, telephone and fax services are used for urgent off-Island medical referral and specialist advice, and for the provision of Lifeline services. E-mail and Internet access available at the Norfolk Island Hospital, although slow, provide medical staff with professional contact as well as access to the latest information.
- 7.17 The Department of Veterans' Affairs, as part of its *HomeFront* program, has been using a simple but very effective e-health service in remote parts

9 Under 'Networking the Nation Online – Successful Projects, 7th Round' at www.dcita.gov.au.

10 *Health on Line: A Report on Health Information Management and Telemedicine*, p. 25.

of New South Wales, the technology and expertise for which probably already exists on Norfolk Island. The service involves the use of a digital videotape of a veteran's home, focussing on risk areas such as bathrooms and stairways, made by a local service provider such as a physiotherapist.

- 7.18 The videotape is then sent via electronic means to one of the Department's occupational therapists for assessment which may not be able to be made by the individual on the site.¹¹ The application of a simple e-health measure such as this to the wider population of ageing people on Norfolk Island would have a positive impact on their ability to 'age in place'.
- 7.19 The Committee heard evidence from many different witnesses that the development of telehealth practices and facilities was expected to be of great benefit to the provision of health services on Norfolk Island.¹² A smaller number was aware that e-health had already arrived and was simply awaiting development and widespread acceptance.
- 7.20 Professor Gaston outlined a four-step approach for the development of telehealth which would be applicable to Norfolk Island:

You start off with education. You use it for educational purposes and as a management tool in meetings. The next thing is for consultation. A very good case for Norfolk Island which led the way in South Australia was mental health. Mental health really lends itself to telehealth. That has provided an enormous learning curve for practitioners but also for the community. They do not care about the means for communicating; they just want to communicate.

Then you move to diagnostics. As your telecommunications become more sophisticated and your lines thicker or your satellite bigger, then you can use it for transferring images, particularly radiology and pathology. Then there is the ultimate, I suppose ... of actual remote surgery.¹³

- 7.21 The Committee found this framework particularly useful for the examination of e-health possibilities for Norfolk Island and the ways in which they could be successfully accessed and utilised. When asked where she would rank telehealth on a list of priorities for Norfolk Island, Professor Gaston replied:

11 Ms Janet Anderson, Department of Veterans' Affairs, Transcript, p. 145.

12 Norfolk Island Hospital Staff Association, Submissions, p. 33; Norfolk Island Hospital Enterprise, Submissions, p. 47; Professor Carol Gaston, Submissions, pp. 62-63; DOTRS, Submissions, p. 87; Southern Cross Medical Care Society, Submissions, p. 133; Church of England on Norfolk Island, Submissions, p. 159; Ms Christine Sullivan, Submissions, p. 196; Mr Peter Young, Submissions, p. 200, and others.

13 Professor Carol Gaston, Transcript, p. 210.

I would actually put it up very high because of the process needed to actually develop people's familiarity with it and in recognition of the great advantages ... it does prevent medivacs from taking place ... it could also assist the staff and the board in developing their understanding of what is possible. I did not see any evidence of their knowing what is possible.¹⁴

- 7.22 The Committee believes that the situation is changing rapidly, and that the medical staff are well aware of immediate applications as well as various potential advantages.

Netconferencing proposal

- 7.23 In May 2001 a proposal to establish netconferencing facilities at the Hospital was made, which has the potential to accelerate the widespread, routine use of e-health on Norfolk Island. When implemented, this proposal, now approved, will result in the application of e-health to the management of patients' care on a daily basis. The proposal, outlined below, was accompanied by a practical demonstration for medical staff, members of the Hospital Board and members of the Legislative Assembly.
- 7.24 Netconferencing as an alternative to teleconferencing offers a number of advantages in the Norfolk Island context. Teleconferencing, while providing a high quality audio-video image delivery between multiple points, requires professional expertise to set up and operate, is limited to a maximum of ten access points (the functional limitation is much less) and is very expensive both to set up and to maintain. In contrast, netconferencing offers multipoint video conferencing, the only limit being access to a computer and the Internet. It is easier to set up and to use, and has an almost infinite capacity for the addition of new applications through the relatively simple upgrading of software.
- 7.25 Dr Damien Foong, who developed the proposal, informed the Committee of several instances in which he had already used his own personal equipment to transfer data which had spared patients a trip to the mainland to see a specialist. He described how he had taken a high definition photograph of the spinal X-ray of a patient with severe back pain, had then scanned this image into his own computer and transmitted it by e-mail to a mainland chiropractor. The chiropractor was able to advise that an immediate consultation was not necessary, thereby avoiding the stress, and expense, to the patient of an urgent visit to the mainland.

- 7.26 A similar result was achieved through the electronic transmission to a specialist of a high definition image of a suspicious mole. Dr Foong estimated that up to \$5 000 in airfares, accommodation and time off work may have been saved through the subsequent receipt of the specialist's opinion that it was safe to remove the mole on the Island. He predicted that the transfer of clinical data such as ultrasounds, X-rays, ECGs and pathology slides to one or more specialists on the mainland would rapidly become routine. He stressed that a doctor's 'duty of care' to patients would be better achieved using netconferencing.
- 7.27 While Dr Foong was able to achieve these results using the existing server capacity, he noted that the variety of applications would increase as soon as the anticipated new satellite coverage commenced. He also observed that by pursuing satellite telecommunication links, Norfolk Island would not find itself burdened with obsolete technology. It is anticipated that by 2005 the Teledesic project, with nearly 300 satellites in orbit, will provide complete, world-wide, telecommunication coverage. In the interim, Norfolk Island could access satellite link-up immediately using the Immarsat system; the main disadvantage would be the cost. Alternative satellite coverage should be available by October 2001.
- 7.28 Other advantages of the netconferencing proposal include access to continuing medical education, on-line conferences and courses, on-line real-time communication and real-time emergency assistance as well as rapid access to the Internet and multimedia libraries, and various time and labour saving administrative functions.
- 7.29 Dr Foong advised that the value of his own equipment used to demonstrate the possibilities of the proposal (laptop, scanner, software and SLR camera) would not have exceeded \$10 000. He estimated that the cost for up-to-date equipment commensurate with hospital requirements would be between \$50 000 and \$70 000. This would include the cost for a server, a high-speed laptop computer, a colour laser printer, a scanner, two digital video cameras, a high definition SLR camera, four web-cameras, a digital screen projector and software.
- 7.30 The Hospital Director and Dr Foong have suggested that the Hospital could be used as a pilot to demonstrate the many applications and immediate benefits for other users both on-Island and possibly in other external territories.
- 7.31 Dr Foong's proposal recommended that the Hospital get its own account with a server such as Bigpond, which offers eighteen months service, including hardware, for \$1100. He also referred to the possible advantages to Norfolk Island of Telstra's Special Digital Data Obligation for remote locations.

E-health for training and education

- 7.32 Two primary areas where e-health would be most effective for Norfolk Island include:
- continuing medical education for health practitioners; and
 - health education and increased community awareness.
- 7.33 The provision of e-health services is heavily dependent upon the local health practitioners' familiarity and ability with the technology upon which e-health is based.
- 7.34 The National Health Information Management Advisory Council (NHIMAC), in its report *Health Online: A Health Information Action Plan for Australia*,¹⁵ identifies the need for increased training as a key priority for health practitioners implementing e-health technologies. For Norfolk Island, technology training resources are limited. While the use of information technology mediums such as the Internet is increasing rapidly, further training and education for health practitioners on the Island will be necessary.
- 7.35 Funding sought by the Norfolk Island Government for the implementation of a new telecommunications network will, by necessity, include an allocation of funds for technical training for Island residents to operate and maintain the new infrastructure. One option might be to extend this funding to include training and education for health providers in the operation of new e-health communications technology.
- 7.36 A number of state and territory-based telehealth networks provide training in the use of health technologies as part of their e-health strategy. For example, Networking North Queensland provides training in e-mail and Internet use, including search strategies, techniques in advanced searching and evaluating information on the Internet.¹⁶ The Queensland Telemedicine Network, in conjunction with Rural Health Training Units, also conducts regular videoconferencing training.
- 7.37 Once health professionals have increased their familiarity with the use of e-health technologies, the technology itself can be successfully used to provide further health-related training and education.

15 *Health Online: A Health Information Action Plan for Australia*, National Health Information Management Advisory Council, November 1999, p. 41.

16 www.health.qld.gov.au/qtn/nnq.

Continuing medical education for health practitioners

- 7.38 General practitioners and nursing staff in rural and remote communities often face obstacles to further professional training. E-health offers an excellent opportunity for health professionals to improve upon their skills and to access relevant, up-to-date information through the use of the Internet and videoconferencing. This could be achieved through both public and private networks already available and operating.
- 7.39 In evidence to the inquiry Dr Sexton stated that ‘education – and I see telecommunications as a magnificent tool for education over there – is an absolutely integral part of the progress of medical services on Norfolk Island’.¹⁷ The Norfolk Island Hospital Enterprise expressed a similar opinion in its submission, observing that telehealth ‘would be invaluable in diagnostic and teaching roles’.¹⁸
- 7.40 CMENet, coordinated by the Queensland Rural Divisions Coordinating Unit, is an excellent example of an Internet site offering online, continuing medical education for health professionals. Doctors wishing to undertake clinical attachments to refresh skills, learn new skills and fulfil requirements for maintenance of clinical privileges can interrogate the CMENet database by discipline on a wide range of subjects.¹⁹
- 7.41 The Women’s and Children’s Hospital (WCH) in South Australia is a major teaching and research hospital which uses videoconferencing and related technology to provide a range of services to professionals and communities in rural and remote areas. In addition to health promotion consultation and clinical consultation services, the WCH provides teaching and education services as well as international research expertise in all areas of health and health promotion. Educational applications include specific training for professionals, delivery of higher education courses and development of professional networks.²⁰
- 7.42 The Norfolk Island Hospital Enterprise could establish a working relationship for the facilitation of on-going training and education for medical staff on the Island with one or more of these kinds of facilities.

Health education and increased community awareness

- 7.43 Preventive health care has been identified as an area which could be considerably expanded by developments in e-health. The Island

17 Dr MichaelSexton, Transcript, p. 214.

18 Norfolk Island Hospital Enterprise, Submissions, p. 46.

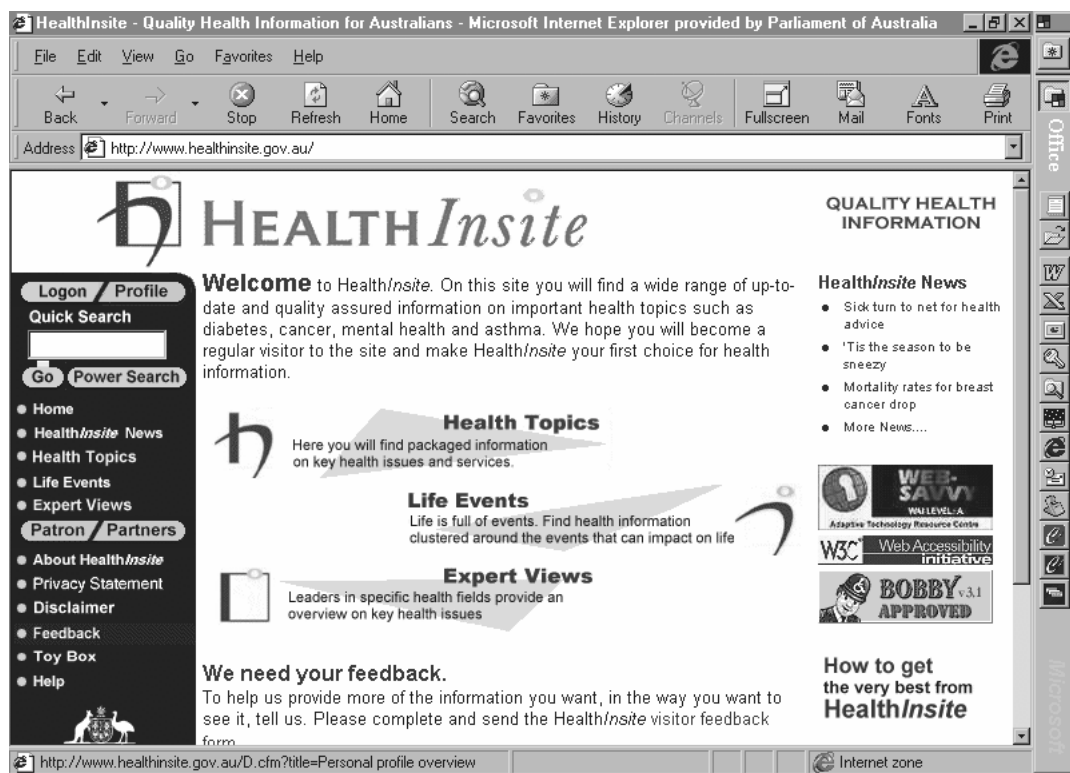
19 www.cme.net.au

20 www.wch.sa.gov.au/tele

community's ability to access this information is also relatively unrestrained by ignorance of the technology. The Committee heard that:

People on the Island are becoming very literate on computers and I think that, as a community, we are very foolish if we do not tap into that resource.²¹

- 7.44 There are a number of online resources established, both at the Commonwealth and at the state level, to facilitate improved community access to health awareness initiatives.
- 7.45 Health*Insite* is Australia's most comprehensive health information web site. It was established by the Commonwealth Government, and the Minister for Health and Aged Care, Dr Michael Wooldridge, is the site's patron. Health*Insite* currently has over fifty information partner sites, 'featuring information on vital health topics such as diabetes, cancer, heart disease, children's health, asthma and mental health'.



Home Page for www.healthinsite.gov.au – a Commonwealth online health information resource.

- 7.46 There are also issue-specific web sites which could provide Norfolk Islanders with readily available, up-to-date information about a potentially limitless variety of topics.²²

7.47 Such sites would be especially effective for Islanders wishing to access information in a highly confidential manner. Ms Pauline Butler from Greenwich University commented that:

To go to a web site you simply tap into it; nobody knows what you are reading; nobody knows what your concerns are or the information that you are seeking. And when you live in a small community like this ... you would realise that nothing is a secret.²³

7.48 Norfolk Islanders could readily access information to help deal with mental illness or to promote more effectively community awareness of the issues involved. For instance, *Headroom* is a web site established by the WCH in South Australia which focuses on young people's mental health. The stated intention of the web site is:

To educate the broader community about mental health, because we all have our mental health to consider and there are many things we can do to promote and protect our mental health ... Headroom aims to provide information to support young people and families through stressful times, providing food for thought about issues which affect all young people.²⁴

7.49 If local residents are encouraged to seek health-related information for themselves through the medium of the Internet, the resulting community awareness and sense of ownership of health services will assist in shifting the emphasis from acute care to preventive care.

7.50 This could be facilitated by the provision of free access to the Internet for health related reasons, through the hospital or proposed community health centre. People could be encouraged to book time to access health information web sites through the Internet, in a similar manner to the Internet services available through public libraries for community use.

E-health and consultations

7.51 In evidence provided to the Committee the Royal Flying Doctor Service stated that it has expanded on its 'remote consultations' to include teleconsultations to the services it delivers from Broken Hill.

We have got a lot of expertise in using the telephone to deliver health care to isolated communities and now we are using telehealth videoconferencing. We have been using acute

22 Some examples include the Australian Kidney Association: www.kidney.org.au; Osteoporosis Australia: www.osteoporosis.org.au; and Panic and Anxiety Hub: www.paems.com.au

23 Ms Pauline Butler, Transcript, p. 106.

24 www.headroom.net.au

consultations in Wilcannia for some time now as part of the New South Wales outback telehealth project.²⁵

- 7.52 One of the most successful applications of teleconsultations in Australia has been through the provision of telepsychiatry services to rural and remote areas. At the state/territory level, South Australia has had the most experience, and the most success, in working to provide telepsychiatry services to isolated areas.²⁶
- 7.53 The Rural and Remote Mental Health Service of South Australia, through Glenside Hospital in Adelaide, has one such successful program. It currently has over 25 videoconferencing units located within rural South Australian hospitals, which operate on ISDN at a transmission speed of 128 Kbps.²⁷
- 7.54 This service works to complement local health services and allows local health providers to retain ownership of the process and overall management of the patient's treatment, while ensuring best practice treatment.
- The local GP retains responsibility for clinical management of the patient. A given number of booking slots are available each week and rural practitioners ring a secretary to book the patient in. The patient sees the psychiatrist with the GP or mental health worker sitting at the patient's end. At the completion of the consultation the consultant telephones the GP to discuss with them, the diagnostic assessment and treatment recommendations. A letter summarising what has been discussed is then written and faxed through to all relevant carers.²⁸
- 7.55 Norfolk Island already has a working program of visiting specialists. This form of teleconsultation could be used effectively to complement existing services in many areas such as cardiology, dermatology, ophthalmology and others, as well as in mental health. By allowing for follow-up consultations with the specialist on a more frequent and regular basis, a more effective patient-doctor relationship can be developed. This could be further boosted by a six-monthly on-Island consultation.
- 7.56 The ability to access teleconsultations with specialists is particularly effective in emergency situations where the only other option is an

25 Dr Bruce Sanderson, Royal Flying Doctor Service, Transcript, p. 228.

26 These services are also provided to parts of the Northern Territory, including Alice Springs.

27 *Information Technology and Under-Served Communities*,
www.telehealth.org.au/discussion_papers/info_tech, p. 11.

28 *Information Technology and Under-Served Communities*,
www.telehealth.org.au/discussion_papers/info_tech, p. 11.

expensive and sometimes traumatic medivac. As Professor Gaston commented:

Consultation, which is the second step, could also facilitate the medivac issue. I know that here in the Northern Territory, just by having the facility available out of a couple of remote areas in the Tanami region, it does prevent medivacs from taking place. We had one early last year where it was thought that this person had some dreadful brain tumour; in fact they had an abscess on their tooth and it was easily dealt with locally.²⁹

- 7.57 The ability to consult with specialists from remote and isolated areas leads logically to the next stage in the process, which is the ability to provide diagnostics through the utilisation of e-health technologies.

E-health and diagnostics

- 7.58 The use of e-health technologies for diagnostics in remote areas can have significant ramifications in terms of improving the availability and cost-effectiveness of health services to the local community. This is especially true for isolated areas such as Norfolk Island, where the only other options are to send the test results, or to require the patient to travel, to the mainland for diagnosis, at considerable expense.
- 7.59 The transmission of medical images and data includes X-rays, ultrasound, CT scans, nuclear medicine investigations, echocardiograms, coronary arteriography, dermatology photographs, ophthalmology images, such as slit lamp images, fundoscopy, otoscopy, ECGs, cardio-respiratory indices, pathology images and other diagnostic information.³⁰
- 7.60 Radiology and Pathology are areas where the transferral of diagnostic information via telecommunications networks could markedly and rapidly improve the health services available on Norfolk Island. If the netconferencing proposal is adopted by the Norfolk Island Government, health professionals on Norfolk Island may soon be transferring images on a regular basis, particularly in the fields of radiology and pathology. Advances in computer technology in pathology, in particular, appear long overdue.
- 7.61 Teleradiology, which involves the transmission of X-ray images, ultrasound or brain scans, is the largest single application of telemedicine

29 Professor Carol Gaston, Transcript, pp. 210-211.

30 Telehealth Development Unit, Health Department of Western Australia, information brochure, *Telehealth: A New Era*.

in Australia, with an estimated 150 sites around the country.³¹ It generally requires 128 kbps of ISDN.

- 7.62 The use of teleradiology and telepathology would be especially effective for Norfolk Island, in the light of previously expressed dissatisfaction with the mail delivery system between the Island and the mainland. The Committee's *Island to Islands* report noted that:

For the hospital, relying on mail services at present often delays patient diagnosis by weeks. This can pose difficulties in patient management and possible expense for the patient needing to travel to the specialist. The alternative would be to send the X-rays for specialist review by tele-medicine link. The Norfolk Island Hospital therefore supports the setting up of a tele-radiology link.³²

Health informatics

- 7.63 Health informatics, which focuses on the management, storage and retrieval of health data, can improve the ability of health professionals to manage patient records and pharmaceutical dispensaries.
- 7.64 In December 1998 the Norfolk Island Hospital installed a dispensing computer system, on which the medical records and drug histories for every resident of Norfolk Island were entered. The system is also used for cataloguing all pharmaceuticals and over the counter medications.³³
- 7.65 This system could be used to transfer patient and dispensary records between general practitioners and specialists for diagnostic consultations. It would also be useful when visitors to the Island require medical treatment.
- 7.66 In 1996 the PeCC project (Project Electronic Commerce and Communication) was established by the then Department of Industry, Science and Tourism, in collaboration with the Commonwealth Scientific and Industrial Research Organisation and pharmaceutical companies. The goal of the project was to rationalise clinical supply chains through the implementation of electronic commerce using Internet based technologies.³⁴

31 *Telemedicine in Australia: Industry Trends and Business Models*, www.jma.com.au/TelemedAus, p. 5.

32 *Island to Islands: Communications with Australia's External Territories*, p. 44.

33 Mrs Dale Hogden, Submissions, p. 36.

34 *Health Online: A Health Information Action Plan for Australia*, National Health Information Management Advisory Council, November 1999, pp. 68-69.

- 7.67 The project has been highly successful in increasing the efficiency of pharmaceutical supply chains through online ordering systems. With the introduction of the new computerised dispensary system to the hospital, Norfolk Island is in an excellent position to take advantage of projects such as PeCC.

The cost of e-health

- 7.68 Although e-health does require an initial outlay of capital for telecommunications and information technology, in the longer term it allows for much more efficient, cost effective management of health services, especially for rural and remote communities, where often the only alternative may be a medical evacuation.
- 7.69 There are Commonwealth funding schemes which Norfolk Island can access in order to supplement the cost of establishing an e-health capacity on the Island. As noted above, the Norfolk Island Government has already sought and received funding from the NTN scheme.
- 7.70 There is also the *Regional Solutions Program*, launched on 27 October 2000 by the Minister for Regional Services, Territories and Local Government and the Deputy Prime Minister and Minister for Transport and Regional Services.³⁵
- 7.71 Schemes such as these, as well as investment by the Norfolk Island Government, will help to meet initial infrastructure costs. There is also a number of health service providers, both public and private, assisting in the implementation of e-health networks, infrastructure and practices for remote and rural communities. These may help to reduce the operational costs of an e-health network.

Access to e-health support

- 7.72 *Health Online: A Health Information Action Plan for Australia*, released in November 1999, was developed in response to calls for a national strategic approach to the application of e-health. With the aim of promoting new ways of delivering health services, it details e-health projects currently operating, as well as proposed future projects. It is a 'living document', which is monitored and updated by the National Health Information Management Advisory Council (NHIMAC) on a regular basis.³⁶

35 This provides funding for small and larger scale projects, with grants of between \$1000 and \$500 000 available. Projects might include community planning, local project implementation, community adjustment initiatives, regionally based or infrastructure projects, or the employment of community based development officers. Joint Media Release, 27 October 2000.

36 www.health.gov.au/healthonline

- 7.73 NHIMAC will use the information in the document to provide high-level advice to health ministers from the states and territories and the Commonwealth Government. This will serve to forge a national collaborative approach to the use of information technology in the provision of health, and to ensure consistency and coherence. Consultation with various stakeholders in the industry, and with local governments, will help to ensure that there is a coherent and universal understanding of the issues involved,³⁷ and the standards of service provision required.³⁸
- 7.74 The Committee believes that the Norfolk Island Government should familiarise itself with *Health Online* and investigate the means of becoming a participant in this continuing strategic approach to e-health. A small, isolated community has much to gain, and to share, by tapping into the intellectual resources of similar mainland communities.

State and territory e-health providers

- 7.75 Each state and territory has established an e-network of health services for rural and remote areas, as well as implementing a number of e-health initiatives for the provision of more efficient and effective health services to isolated areas. New South Wales, Queensland and South Australia are three prominent examples of state-based e-health networks operating successfully in Australia.
- 7.76 The New South Wales Department of Health has implemented an extensive telehealth network which includes a number of telehealth services across the State. The NSW Health web site states that:
- The impact of telehealth on work practices include improved working relationships between staff at remote sites; greater integration of remote health services; support for isolated staff; identified training and support programs; improved access to supervision for staff.³⁹
- 7.77 Queensland has also established an extensive telehealth network, the Queensland Telemedicine Network (QTN) which coordinates and supports the use of e-health in the state. There are currently over 160 videoconferencing sites with health facilities. The main areas currently utilising videoconferencing are mental health, paediatrics, and intensive

37 These issues include ensuring that the necessary legal, data protection and security frameworks to facilitate electronic transfers of health information are developed.

38 To this end the *HealthInsite* was established.

39 'What is telehealth', at: www.health.nsw.gov.au/pmd/telehealth

care, with new developments in areas such as ophthalmology and cardiology.⁴⁰

- 7.78 Queensland has also recently launched the Networking North Queensland project. This is a two-year project, funded by NTN, DOCITA and state and private health providers, which aims to improve health outcomes for people living in North Queensland by increasing access to technology.⁴¹
- 7.79 The South Australian Government has a number of e-health initiatives running in conjunction with universities and private hospitals. For instance, *HealthySA*, established by the South Australian Department of Human Resources, provides a comprehensive listing of health information web sites on the Internet, as well as information on a wide variety of health management issues.⁴²
- 7.80 Western Australian services will potentially be available on Christmas Island. In a submission to this inquiry the Indian Ocean Territories Health Service (IOTHS) stated that:
- We are hoping to link up with the WA Health initiative, for remote areas in Tele-radiology through the radiology Department of Fremantle Hospital ...there are discussions occurring in relation to projects under “Networking the Nation” in relation to tele-medicine, tele-centres and mobile phone access for the Indian Ocean Territories.⁴³
- 7.81 With the Northern Territory connecting to South Australian initiatives, and Christmas and the Cocos (Keeling) Islands poised to link up with Western Australian services, it is clear that e-health enables health service providers to connect with telehealth networks regardless of their origins.
- 7.82 There are similar opportunities for Norfolk Island to link up with either the New South Wales or Queensland telehealth networks. This would reduce the need for the Norfolk Island Government, or the Hospital Enterprise, to ‘research and develop improved, customised, comprehensive telemedicine programs and infrastructure’.⁴⁴
- 7.83 Furthermore, the then Norfolk Island Minister for Health told the Committee that the Norfolk Island Government was keen to pursue solutions:

40 www.health.qld.gov.au/qtn/network

41 www.health.qld.gov.au/qtn/nnq

42 www.healthysa.sa.gov.au

43 Indian Ocean Territories Health Service, Submissions, pp. 119-120.

44 Mr Geoffrey Gardner MLA, Transcript, p. 15.

From the Norfolk Island perspective, cooperation is vital in developing our strategy, be it with the New South Wales Department of Health, universities, foreign consultants or institutions. We are attempting to be proactive on the implementation of improved Telemedicine services to Norfolk Island.⁴⁵

Private e-health providers

- 7.84 There are a number of private companies which provide assistance in helping rural and remote communities move their health services online.
- 7.85 *Med-E-Serv*, formed in 1994, is an Internet healthcare community for healthcare professionals with over 22 000 Australasian health professionals and numerous colleges, societies and health organisations registered on its user base. It claims to have delivered over 200 successful programs to the online health community, including developing and implementing web-based solutions, distance professional education, web-enabled data collection and overall solutions for health care suppliers.⁴⁶
- 7.86 There is also a wide variety of discipline specific 'tele' projects operating out of universities and colleges across Australia. A link between Norfolk Island and any one of these schemes would have the potential to enhance e-health services to the Island community. A combination of services could be used in conjunction with facilities and infrastructure already in operation on the Island.
- 7.87 The Royal Flying Doctor Service offers telemedicine facilities as part of its contractual agreement for the provision of health services to remote and rural areas.⁴⁷ The RFDS proposal for services to Norfolk Island, discussed in Chapter 6, includes implementation and development of telemedicine as well as the advantages of its strong links with the University Departments for Rural Health (UDRH), Colleges and tertiary hospitals.
- 7.88 The use of health information in the promotion of community awareness forms an important part of calls by Norfolk Island health professionals to shift the emphasis of health care on the Island away from acute care to preventative and primary care. Norfolk Islanders should be encouraged to take ownership of their health treatment by accessing the wide range of health related information services available through the Internet. In turn, the Norfolk Island Government should encourage its residents to become part of the e-revolution transforming the provision of health services.

45 Mr Geoffrey Gardner MLA, Transcript, p. 15.

46 www.medeserv.com.au

47 Royal Flying Doctor Service, Submissions, p. 189.

Recommendations

Recommendation 28

7.89 **The Committee recommends that the Norfolk Island Government investigate opportunities for expanding its e-health potential by:**

- **becoming involved in nation-wide collaborative consultations, such as *Health Online: A Health Information Action Plan for Australia*, regarding standards and guidelines for the implementation of e-health across Australia; and**
- **establishing links with a state-based e-health network.**

Recommendation 29

7.90 **The Committee recommends that the Norfolk Island Government, in conjunction with community groups on the Island such as the Community Health Awareness Team, make available computer facilities to allow residents on the Island to access information on health services.**

Recommendation 30

7.91 **The Committee recommends that all health staff at the Norfolk Island Hospital receive education and practical training in e-health technologies.**