HOUSE OF REPRESENTATIVES

STANDING COMMITTEE ON FAMILY AND COMMUNITY AFFAIRS

Reference: Health Information Management and Telemedicine

ADELAIDE

Thursday, 14 November 1996

OFFICIAL HANSARD REPORT

CANBERRA

HOUSE OF REPRESENTATIVES STANDING COMMITTEE
ON FAMILY AND COMMUNITY AFFAIRS

Members:

Mr Slipper (Chairman)
Mr Quick (Deputy Chairman)

Mr Ross Cameron	Mr Kerr
Ms Ellis	Ms Macklin
Mrs Elson	Mr Allan Morris
Mr Forrest	Dr Nelson
Mrs Elizabeth Grace	Mrs Vale
Mrs De-Anne Kelly	Mrs West

Matters referred for inquiry into and report on:

The potential of developments in information management and information technology in the health sector to improve health care delivery and to increase Australia's international competitiveness with particular reference to:

the current status of pilot projects already commenced and an evaluation of their potential for further development;

the costs and benefits of providing advanced telecommunications and computer technology to general practitioners and other health care professionals throughout Australia, particularly in rural and remote areas;

ethical, privacy and legal issues which may arise with wide application of this technology and transfer of confidential patient information;

the development of standards for the coding and dissemination of medical information;

the feasibility of Australia becoming a regional or international leader in the development and marketing of this new technology; and

the implications of the wider development and implementation of medical practice through telemedicine for public and private health outlays, including the Medicare Benefits Schedule.

WITNESSES

BRITTAIN, Professor J. Michael, Professor of Information Management, and Leader, Health Information Research Group, University of South Australia, North Terrace, Adelaide, South Australia 5000 380

DAVIS, Mr Andrew, Chair, National Telemedicine Committee, and Director, Health Industry and Export Development Unit, South Australian Health Commission, 11-13 Hindmarsh Square, Adelaide, South Australia 5000 266

DISNEY, Dr Alexander Patrick Suffern, Project Director, North Western Adelaide Health Service Renal Telemedicine Network, Queen Elizabeth Hospital, Woodville, South Australia 295

DOLLMAN, Mr William Bentley, Director, Pharmacy Networking Project, and Manager, Drugs and Poisons Section, South Australian Health Commission, The Queen Elizabeth Hospital, Woodville Road, Woodville South, South Australia 5011 346

HAWKER, Dr Fiona Ellen, Senior Psychiatrist, Director of Telemedicine, Telemedicine Unit, Rural and Remote Mental Health Services, Glenside Hospital, 226 Fullarton Road, Eastwood, South Australia 5063 330

KAVANAGH, Mr Steven James, Telemedicine Consultant, Telemedicine Unit, Rural and Remote Mental Health Services, Glenside Hospital, 226 Fullarton Road, Eastwood, South Australia 5063 330

KRANZ, Mr Keith, Manager, IT Policy and Planning, South Australian Health Commission, 11-13 Hindmarsh Square, Adelaide, South Australia 5000 266

MANNING, Mr Roy, Technical Manager, Benson Radiology, 229 Melbourne Street, North Adelaide, South Australia 5006 358

MISAN, Mr Gary, Executive Editor, Australian Medicines Handbook Pty Ltd, PO Box 240, Rundle Mall, Adelaide, South Australia 5000 368

MITCHELL, Mr John Gregory, Managing Director, Telemedicine Australia Pty Ltd, Level 1, 169 Unley Road, Unley, South Australia 5061 315

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NELSON, Dr John Russell, Deputy Managing Partner, Benson Radiology, 229 Melbourne Street, North Adelaide, South Australia 5006 358

SWANSON, Dr Bruce, Telehealth Adviser, Health Industry and Export

Development Unit, South Australian Health Commission, 11-13 Hindmarsh Square, Adelaide, South Australia 5000 266

WALKER, Dr Donald, Database Consultant, Australian Medicines Handbook Pty Ltd, PO Box 240, Rundle Mall, Adelaide, South Australia 5000 368

WARREN, Dr James Roy, Lecturer in Computer and Information Science, University of South Australia, The Levels, South Australia 5095 380

HOUSE OF REPRESENTATIVES

STANDING COMMITTEE ON FAMILY AND COMMUNITY AFFAIRS

Health Information Management and Telemedicine

ADELAIDE

Thursday, 14 November 1996

Present

Mr Slipper (Chairman)

Mr Ross Cameron	Mr Allan Morris
Ms Ellis	Dr Nelson
Mr Forrest	Ms Vale
Mrs Elizabeth Grace	

The committee met at 9.00 a.m.

Mr Slipper took the chair.

CHAIRMAN—I am pleased to open this third day of public hearings on the inquiry of the committee into Health Information Management and Telemedicine as referred by the Minister for Health and Family Services, Dr Michael Wooldridge, in June this year.

The committee is looking at a range of matters relating to the potential of developments and information management and Information Technology in the health sector to improve health care delivery and to increase Australia's international competitiveness.

The main issues to be resolved by the inquiry are to establish an appropriate role for government in setting standards and guidelines for the evolving industry, to address issues of data security and the privacy rights of patients, to examine the impact on the medical profession and the community generally of new procedures enabling medicine to be practised across state, national and international boundaries, and to look at the strength of current Australian knowledge and expertise in the area.

In the minister's letter of referral he said that the inquiry would greatly assist the government and the wider community to obtain a better understanding of this important emerging policy issue. The committee will address the potential of this technology to assist health practitioners improve health status and patient care in all parts of Australia whether this be in hospital or home settings in urban and remote or rural areas.

To date the committee has received a total of 123 submissions from a wide range of organisations and individuals. I would like to take this opportunity to thank all of those who have made a contribution and whose cooperation has greatly assisted our efforts to come to grips with the complex issues being considered by this inquiry.

The committee, in seeking the views of representatives of organisations who have made submissions from South Australia is committed to broad consultation on this very important topic. The program will continue with further public hearings in Sydney in January and the remaining capital cities next year. For this reason the evidence to be given today will provide a good opportunity to explore some of the key issues from a state government perspective. To assist us in this task I now welcome representatives from the South Australian government who are appearing before us today.

While the committee has already authorised the publication of the majority of submissions received, the submissions from the South Australia government and the University of South Australia were only received recently. For this reason, before we commence the questioning and the inquiry I will seek leave of the committee to authorise publication of submissions No. 121 and 123 from the Premier of South Australia in the transcript of evidence of today's proceedings. Is it the wish of the committee that the documents be incorporated in the transcript of evidence? There being no objection, it is so ordered.

The documents read as follows—

[9.02 a.m.]

DAVIS, Mr Andrew, Chair, National Telemedicine Committee, and Director, Health Industry and Export Development Unit, South Australian Health Commission, 11-13 Hindmarsh Square, Adelaide, South Australia 5000

KRANZ, Mr Keith, Manager, IT Policy and Planning, South Australian Health Commission, 11-13 Hindmarsh Square, Adelaide, South Australia 5000

SWANSON, Dr Bruce, Telehealth Adviser, Health Industry and Export Development Unit, South Australian Health Commission, 11-13 Hindmarsh Square, Adelaide, South Australia 5000

CHAIRMAN—Mr Davis, you say you are on the Telemedicine committee.

Mr Davis—Yes.

CHAIRMAN—Could you outline what it is?

Mr Davis—It is a committee with representatives from each of the states on it.

CHAIRMAN—Thank you.

Mr Kranz—My responsibility is the strategic planning and implementation of common IT applications across the public health sector of South Australia.

CHAIRMAN—Thank you. Perhaps to get the proceedings under way, one of you might be able to deliver a very brief summary of your submissions and then we will commence questioning and exchanges of views.

Dr Swanson—I have prepared a further submission—it is fairly short—which relates to a few aspects of Telemedicine. I believe Mr Keith Kranz, who is very involved in our Information Technology and computing side, would like to talk for a short period about the Information Technology side of the things relating to the terms of reference. We would prefer it if Keith and I each had the opportunity to speak for perhaps five to 10 minutes.

CHAIR—No, only briefly.

Dr Swanson—Sure. The main issue which I would like to talk about is the applicability of videoconferencing in Telemedicine in Australia and how that might be developed further. South Australia has now had about four years of experience in developing Telemedicine services for people living in country regions and has two very well-developed programs—one in the renal area and one in the psychiatry area. You will hear more about that later when those hospitals give their evidence.

CHAIRMAN—We will be making a visit tomorrow.

Dr Swanson—That is right. The major findings that we have from this experience, from the point of view of the health commission, are that we believe that Telemedicine by videoconferencing, can enhance medical services provided in country regions, but that it cannot totally eliminate the need for face-to-face consultations with doctors.It is an area that is still developing and needs further exploration and more trials and pilot projects to determine the exact scope and range of services that might be appropriate. We do not believe that videoconferencing and Telemedicine are necessarily cost saving measures, because as you increase access to services you tend to increase the volume of services and there tends to be a net additional cost at the end of the day that has to be borne by someone, somewhere, within the health system.

I believe there is a very important funding issue that relates to Telemedicine, in that I think that Commonwealth-state funding issues and the ambiguity about the responsibility for non-inpatient services are some of the major obstacles to the development of Telemedicine in Australia. I say that because the major area of application of videoconferencing is in the non-inpatient area. It is quite clear that if someone needs to be in hospital and needs some of the equipment, or some therapeutic act that can occur only in a hospital, obviously you cannot do it by Telemedicine. If you can do something by Telemedicine, we have seen that it generally falls in the non-inpatient area.

Currently, non-inpatient services are funded by both the Commonwealth and the state government. The state government provides outpatient services via its public hospitals, mainly in metropolitan areas. In South Australia we have very little in the way of public outpatients in country areas. And the remainder of the non-inpatient services are provided privately by GPs and specialists, and are basically funded by the Medicare Benefits Scheme.

At the moment, in Telemedicine, the state governments are the ones installing most of the equipment in their public hospital systems but they do not have an incentive to do the pilot programs and the trials in the non-inpatient area, mainly because those are predominantly currently Commonwealth funded. For the state governments to proceed and pilot Telemedicine services in these areas would be net additional costs to them, with any benefits or offsets in services not being provided elsewhere. It would accrue to the Commonwealth in savings rather than to them. It is my belief that in this particular area of outpatient services there is a danger of a funding vacuum occurring, where neither the state nor the Commonwealth are taking the lead.

CHAIRMAN—What is the solution?

Dr Swanson—I think the solution, essentially, would be for the Commonwealth government to fund some of these trials. I know that they would be very reluctant to put Telemedicine consultations onto the medical benefits schedule.

CHAIRMAN—It might have to happen.

Dr Swanson—There is a danger though. You would have to define it fairly tightly as to what you actually wanted to put on the medical benefits schedule. At present, there

would be a lot of telephone consultations and similar. If they were being paid for by medical benefits, there would be a sudden large enormous increment of cost. It certainly would not be appropriate for brief telephone consultations to be funded in that way. One solution would be to have the medical benefits schedule fund some services but to tightly define who can provide them. You would have to give a special licence to a particular specialist unit in, say, the Royal Adelaide to provide Telemedicine services to remote locations which would all be predefined. You would have to have some sort of other controls on it so that it did not become an open slather scheme that could be abused or taken advantage of.

The alternative, which I think has a lot of potential for developing some of these non-inpatient Telemedicine services, would be for block funding to be provided directly to some of the remote regions, either to the divisions of general practice in remote regions or to area health authorities in the remote regions. For instance, they could be given a block grant of funding which they could then spend on Telemedicine, maybe with the payments going through the Medicare system. This would give them some control and give them the choice as to what services they wanted to access and what services they thought would provide the most benefit to the people they are looking after. To me that is the other real potential solution to the way ahead.

The other issue I wanted to touch on a little is the issue of medical registration. Once you start providing medical services via videoconferencing, you can very easily start to cross state boundaries. At the moment, it has not been clarified whether the doctor who is seeing a patient in another state needs to be registered in both states or only one state. That needs to be clarified.

CHAIRMAN—Is it being worked through now?

Dr Swanson—We are looking at it. Mr Davis's national Telemedicine committee is looking at this issue but it has not been resolved. I would like to stress that it is very impracticable for doctors to be registered in an inordinate number of states, particularly if, where we are providing an emergency service at, say, the Royal Adelaide Hospital, the doctors we had on emergency call rosters were being infrequently called in to give advice on someone in other states. It would need the entire medical staff at the hospital to be registered in South Australia and, say, the Northern Territory. We get a lot of patients from Alice Springs and we are also generally the referral centre for Broken Hill because we are much closer than the other capital cities. It would be very inconvenient for doctors to be registered in three states.

CHAIRMAN—I think either we need a national registration or, alternatively, some kind of automatic registration or recognition, in the way that I understand the legal profession has moved in more recent times.

Mr Kranz—We see the delivery of health care as highly fragmented in terms of not only the information resources but also in terms of the delivery. Clearly, we see the use of information and technology as key enablers of creating a cultural change, if you like, in the delivery of health care. So INFO2000, which is a project of the commission, is

charged with business change within the public health sector of the state and is very much focused on the implementation of clinical systems.

Again, we believe that the focus needs to come onto the patient and on the care end of the process, and really the administration component, which is where traditionally health has been focused in putting in their IT systems from an administrative perspective, becomes far more of a by-product of the care process, as opposed to the driver it has been in the past.

In addition to that then, we have the two Commonwealth coordinated care projects which really are working from the private end of the spectrum and so, from a state perspective, we are really looking to bring these from both ends, in other words to create that enterprise of health care across the public-private sector and also, at the same time, to create a continuum of care and, ultimately, move towards a population base type focus in terms of our information resources, from which we expect to derive an evidence based or an outcomes approach to the delivery of health care.

We see that as a fairly significant change and one where we have started a number of pilot projects to actually address some of the issues that will arise from there, because things like privacy and confidentiality become quite significant issues in terms of creating that continuum.

I think the other aspect is the integration of technologies. Telemedicine is not necessarily new because the telephone has been used as a form of Telemedicine for quite some time. It is the integration of the technologies which really then does make Telehealth a lot more powerful from a patient perspective. Certainly, if we are then able to move the concept of Telemedicine into the home environment or in a sense of deinstitutionalising care and moving towards more the concept of perhaps health villages and so forth, I think there are opportunities to actually change that model of care as we move to the 21st century. So I guess in a sense we are really focusing on information and also technology as a component to really engineer that change and bring about the cultural process.

CHAIRMAN—I noticed you used the term 'Telemedicine' and then you used the term 'Telehealth', in a way that it did not appear to me that you were using them interchangeably. What definitions would you give to those two terms? With the submissions we received from around the country, it seems that there is very great confusion over what is Telemedicine and what is Telehealth and a lot of other 'teles' along the way. Surely this whole area would be helped along if the health ministers could agree on a common definition which everyone could then adopt.

Mr Davis—Perhaps I can address that, Mr Chairman. It is an issue that has been brought up at the National Telemedicine Committee, which has now changed its name to the National Telehealth Committee, because it was agreed by the people who were around the table that it is—

CHAIRMAN—We will have to change the name of our inquiry soon!

Mr Davis—One of the things I was going to ask you to do was to show a bit of leadership because it is not just about medicine, it is in fact about many aspects of health.

CHAIRMAN—The government is all about leadership.

Mr Davis—And I am sure we are speaking to exactly the right people to show it, Mr Chairman.

CHAIRMAN—I thank you for that comment.

Mr Davis—Telehealth we see really as the health delivery system and its relationship to technology, and so it is not just about medicine and the traditional practices of a medical practitioner.

CHAIRMAN—And do you agree?

Mr Kranz—I do, yes.

Mr Davis—So Telemedicine, to answer Keith's question for him, we tend to use for things like teleradiology and when we are talking about telepsychiatry and the application of the way we normally talk about medicine being applied.

Mr Kranz—So I would really see it as a sort of vertical, in a sense, in that you are really talking about components whereas Telehealth talks about a whole range of media that you perhaps bring together—the education component, certification, some of the technologies together as part of that—so it really is a far more encompassing term in terms of the delivery of care.

CHAIRMAN—How far away are we from a common definition? You say you are looking at it.

Mr Davis—The word 'Telehealth' was really only used in Australia about 10 months ago and all the international literature still tends to refer to Telemedicine. It is just our view that in a few years time people will realise the folly of their ways and realise that it actually has far more applications than simply medicine.

CHAIRMAN—But there is Telemedicine throughout the world. Is there any point in having Telehealth here?

Mr Davis—It depends whether we want to be pure, I suppose. We thought we ought to be pure in our definition and define it in a way that we see it. Telehealth is a word that is used internationally but not commonly. Telemedicine tends to be the common usage.

CHAIRMAN—I would like to see us focused on outcomes rather than process. Where do you see Telemedicine/Telehealth in, say, 10 or 20 years? We have got a lot of pilot projects around. I know that South Australia is more advanced than some other

places in having some actual implementation of the technology. So there are a lot of pilot projects around. These projects are funded for a while and then they lose their funding. I just wonder whether we are really going forward in a coordinated way or whether, indeed, we have got a piecemeal approach, which is not satisfactory. How would you see this area looking in 10 or 20 years time?

Mr Davis—Historically, it started off very much as piecemeal and pilots, with the first flying doctor service with its pedal radios and people in the Antarctic doing urological surgery from dots and dashes over a telegraph. Until very recently, it still has been very much pilot projects and one-off experiments. I think it is for that reason that many of them have collapsed, because there has been no real understanding about what the applications might be. It is only in recent years that some of the original experiments have proven themselves and it has been agreed that there should be some coordinated approach.

Also, with the increasing understanding about Information Technology, the likely applications are to become commonplace. As the IT costs come down, as the telecommunication costs come down, as the cost of equipment come down, and with the more common usage of Telehealth facilities, there is no doubt that it will become commonplace. Therefore, you will be able to access a lot of health information in your own home. You will be able to conduct consultations with your clinician on-line. There will be information about radiological images and pathology images will all be stored on people's electronic central records. All those sorts of things are going to change the way in which we live and look after our own health. The responsibility for health will in fact come back to us as individuals.

One of the best examples that I have heard in the last month or so about the likely change in the environment is when we had the misfortune to need to make a teleconference to France. Because of the poor ISDN lines between here and France, we had to make a bridge in the United States and it cost us about $A960 to be on-line for about an hour and a half. About three weeks after that, there was an announcement by British Telecom that the cost for teleconferencing in Britain was down to 8p, and that could be for as long as you liked—that is, within Britain. It just seems to me that with the increased usage of it, the increased availability of the equipment with desktop teleconferencing facilities and so on nowadays, it will be very much part of our everyday life.

CHAIRMAN—Where do you consider we are in the world as far as progress in this area is concerned? By 'we' I mean we as Australia and not South Australia specifically.

Mr Davis—In some of the areas we are at the front, and in some areas we are well back. In terms of telepsychiatry and telerenal, Australia is probably the world's leader.

CHAIRMAN—Are we building on research overseas, or are we acting as though we are operating in isolation and reinventing the wheel—redoing pilot projects in areas where the pilot projects have already taken place in other countries?

Mr Davis—We draw a lot on international experience. In fact, we have produced a Telehealth annotated bibliography to encourage people within South Australia to keep themselves up-to-date with information overseas. We would not pretend to be experts at developing teleconferencing equipment, for example, or the software that goes with it. That is done well in Japan and the United States.

CHAIRMAN—So presumably, we just build on what you are able to acquire from there?

Mr Davis—Yes. All of that equipment comes from overseas, although some of it might be put together locally.

CHAIRMAN—What is the cooperation like within Australia?

Mr Davis—Cooperation has been piecemeal to date. I believe the National Telemedicine Committee formed at the same time as AHMAC formed its working group and so they have become the one group.

CHAIRMAN—AHMAC?

Mr Davis—The Australian Health Ministers Advisory Council. They sought some information about Telemedicine from each of the states and the Commonwealth government representatives. They have met on three occasions and have written a paper that has been adopted by AHMAC.

Mrs ELIZABETH GRACE—Just revisiting the Telemedicine-Telehealth challenge we have at the moment, one of the submissions says that Telemedicine is a human activity not a technological event and that technology is merely a vehicle for enabling the delivery of health care services. Do you think it is a possibility that we move right away from the word 'tele' and look outside the parameters to see if we can come up with a definition or a title that is all encompassing. I know that is not going to produce any better outcomes, but it might be something that could eventually be used universally that everybody understands.

Mr Davis—Whilst I understand why a person might have written that they are wanting to take a human focus on it, there is no doubt that the whole—the definition, in fact, does cover the interplay between technology and health and to ignore one would be silly. From our perspective we believe that it does need to be driven by human service need—by a sense of care and health responsibility—yet the focus is on the health or the caring side. We would certainly support that, but it is, in fact, a tool to help with the delivery of health services. The tool happens to be a telecommunications or technology one.

Mrs ELIZABETH GRACE—Yes, that is what I mean. Perhaps we should be looking at a more universal definition. I think the flying doctor was not known because of his radio. He was known because he was a doctor and able to move around. That is the type—looking a bit further beyond just being confined to the 'tele' side of it and that type

of thing.

Mr Davis—Obviously you are not a South Australian, with respect, because Mr Traeger who invented the pedal radio was a South Australian and is a hero.

Mrs ELIZABETH GRACE—Yes. I am not knocking it.

Mr Kranz—As we turn some of the technology towards the patient as well, we will actually bring some humanity to that process. I think what is important in the delivery of care is actually having the patient involved in it. Instead of the doctor sitting behind his desk, perhaps the doctor would sit by the side of the patient and they would look at a screen as part of that process. You actually bring it in as a third person. If you like, you are de-technologising the process, using it as a tool to get a message across to the patient, even if the patient walks away with a bit of paper and says, 'Well, this is what I'm going to go away and achieve this week.' It might be 20 steps or whatever it might be if they have had a stroke. At the moment we have got this technology bit in the middle and so it is a matter of opening up that technology because I think involving the patient is important in the care process.

Mrs ELIZABETH GRACE—I think it is important that we get a term or terminology that everybody understands. I said to people that I was going to South Australia for a public hearing on Telemedicine and I do not think that there was one person who did not say to me, 'What's that?' I know it is new and that sort of thing, but I think we have got to find a universal expression that covers what you people are trying to cover and what we are trying to find out about. It is something worth looking at.

The other thing I am interested in is the rural and remote areas. I would be interested if you could discuss the success of your projects in relation to that link with the rural and remote areas in the communities, particularly here because I know that you have done a lot of work in that area.

Mr Davis—I suppose for us the most immediate great benefit is in fact for the provision of health services to people in remote parts of Australia. I suppose it was one of our disappointments that the committee is in fact made up of people from the eastern seaboard and that there is nobody from South Australia, Western Australia or the Northern Territory on it, whereas the most remote parts of Australia—

CHAIRMAN—I want to pick you up on that. I made a note to remark adversely on your comment there. When this committee was set up, there was an opportunity for members from throughout the country to join, but we do have a very strong representation from Queensland and Queensland would have the same problems of remoteness that South Australia and the other states would have.

I agree that it would have been nice to have had someone from South Australia, but I do not think the fact that there is no-one from South Australia, the Northern Territory or Western Australia impacts adversely on our grasp of this subject. Mrs Grace has lived for most of her working life to date, I think, in western Queensland. So, I think the committee does have an understanding of the problems.

Mr Davis—We meant no disrespect to the members here present, Mr Chairman. I suppose it was our expression of disappointment that our colleagues from our own states did not put their hands up at the time.

CHAIRMAN—I can assure you that they are very active on other committees.

Mr Davis—Thank you for that assurance.

Dr NELSON—We could always coopt Mr Campbell, Mr Chairman. I am sure that that would be a positive contribution.

Mr Davis—Perhaps we could nominate the people. I am sorry; I have forgotten the question.

Mrs ELIZABETH GRACE—It was just about the success, or otherwise, of the projects that you are working on in the rural and remote areas.

Mr Davis—I guess it is one of the reasons why South Australia got off to an early start. We have a large problem in this state. We have something like 120 psychiatrists. Of those, only one, who only works half-time, happens to live in the country. She only does that because she is married to a farmer, I dare say.

So, the problem became for us a very expensive system of sending psychiatrists who did not actually live locally and understand local communities to places and, by the time they had flown in in the morning and had seen a few patients, they were ready to fly out again at night. It made it very difficult for the large number of people who live in remote parts of South Australia to access mental health services. That is the reason why mental health remote Telehealth services took off in South Australia. They have not taken off like that in the United States. It is relatively uncommon to have telepsychiatry in the United States. It really was a demand for remote access.

We came to much the same problem with the renal service. There were people, particularly in Aboriginal communities in the northern part of our state around Port Augusta and to the north of that, who needed regular dialysis. So, it was agreed that, if we were going to have specialists, then it would be better to have them located in one place and be able to monitor the work that the nurses or whatever were doing in the place on site. You will cover more of that this afternoon when you visit the Queen Elizabeth.

Ms ELLIS—I will start with a slight amount of flippancy. I am from the ACT, and we are accused quite often of being remote. So, if that is going to help fulfil a certain need, I am happy to offer ourselves up.

I want to go to a more basic level of question at this stage. I was talking to a GP last week—in fact, in my office in Parliament House—who was a representative of a number of GPs. I happened to bring up this question of Telemedicine with her. She raised a couple of questions which, I think, are really interesting ones. In relation to the problem we have of GPs happily living in and servicing remote areas, the first question was: can

we see whether or not the Telehealth approach—I will use your terminology—could be an encouragement to some of the GPs to be more interested in carrying their expertise out to those more remote areas?

The second question was: do you see any problem with those same GPs having to attend more carefully to their across-the-board skills in relation to carrying out procedures through the assistance of Telemedicine, and would that put a demand upon them to have a higher level of skill? Does that make sense? I do not know whether I have worded it very well, but I can see a concern, and a genuine one. I think the greatest gains from Telehealth will be through the remote areas. It has an enormous potential. Is there a problem that we need to address to make sure that we get the greatest potential out of it?

Mr Davis—One of the great fears about Telemedicine, from the point of rural communities, is that no longer will it be necessary for specialists or doctors to be located in those communities, because you can do it all remotely. In fact, the opposite is true. The experience in the United States shows two things. One is that, if you are a medical practitioner and you are willing to go to a remote place, you will feel much more comforted by the fact that you have the support and the education, and you can access information about current practice. It also means that you can treat local patients locally, because you can get a specialist on line who can give an opinion often that you can act on, rather than having to pay for that person to be evacuated to a major centre. So, in fact, for remote general practitioners, it tends to be a comfort and a support rather than a threat.

The second thing is that what is happening in the United States is, and we hope it will not happen here, that because of their tendency to litigation no cases have gone to court for cases that have been handled through teleconferencing, and the reason is in the United States that they in fact keep a video record of every teleconference and of course there is a digital record of radiology and pathology as well.

CHAIRMAN—That could be incriminating sometimes too, couldn't it?

Mr Davis—Well, it could be incriminating. In fact, the practice had been improper, but in the United States it has proven to be a great comfort to the medical people, and I am told that the insurance rates for those people who practise teleconferencing in the United States are diminished because of that diminished responsibility because it is all recorded.

Ms ELLIS—Can I just quickly say that in relation to your first answer, the point that was put to me was that that was agreed with, that there is a great comfort, there is a great encouragement, but that there also may be a requirement that we need to address, and that is to enable those GPs who may be—and I am not a medical person, as you can tell—in a position of carrying out a procedure under guidance from that distant specialist to hone their skills to feel confident they can in fact do that. They will have more opportunity to do more than they would in a normal GP suburban practice because of that. So the question being put to me really was, 'I would need to be encouraged that I would be able to continue to get those skills and hone them and maintain them to enable me to gain the benefits.' So I think there is a slightly two-edged thing to that. It was not a

criticism that was being made, it was actually a comment that the processes in the systems need to have that in mind. Would you agree with that in general terms?

Mr Kranz—Yes. I think one of the important things is the ongoing education program—

Ms ELLIS—Exactly.

Mr Kranz—That really the network can actually provide. As we move more to electronic libraries of information as opposed to our current paper, obviously there are ways that we can enhance people's postgraduate skills and so forth out in the country areas because country really sees, I guess, the communications network, the extension of the metropolitan area to country, as a support network for them. One of the difficulties that country has had in the past, certainly I believe in this state as well, is that we have looked at metro and country as two separate entities, but in actual fact we have got to bring them back together because we should really see that the service limit might be the 50 kilometres of your metropolitan area. Part of that really is that we have got to bring more value to some of those Telehealth type projects because if we are only just doing one component of that, that is not enough.

From a general practitioner's perspective, we have got to get them onside with using some of that technology and if you are only providing one thing then there is not enough value, but if we can add a whole lot of things to that process then all of a sudden they will see the benefit of that and we will move some of the Luddites, I guess, into wanting to use information and technology as a way of improving the care in that process.

Ms ELLIS—I agree.

Mr Kranz—The other thing that can happen is the problem in the country with a lack of bandwidth. In other words, we do not have the right sorts of pipes, if you like, going into the country areas. Clearly one possibility here is that the communities in those rural areas get together, and Telehealth is just one component. There might be a tele-education or the local council or the agricultural group there might want to start setting up some sort of cottage industry, and then they pull those resources together and bring ISDN type links into that country town. So you have got to think beyond health as well as far as that is concerned and ask how might we share some of those resources to benefit a community which traditionally would not get those services until late because Telstra will not go and put them in there because it is not cost-effective. So there have got to be incentives.

That is a big impediment we have in Australia. We have a small population and we have the tyranny of distance. Places like North Carolina and Iowa, which have got extensive networks across their states, are rich in terms of capital. They brought private investment to that process and they have built a network on which they are now building a whole lot of value added services, so in some areas they are ahead but in other places they are behind. I think we have got to be a bit more inventive in how we do things.

Mr FORREST—From the technical side, I see great merit in the whole concept. I

represent 26 per cent of Victoria. It is remote, in the real sense. I am a bit concerned that, as each of the states does what it does, we are going to end up with an incompatible system, which always happens. We had analog technology with mobile phones—

CHAIRMAN—As with railways.

Mr FORREST—Yes. I noticed in your submission that you use some software called OACIS. Is this a standard piece of software and are the other states in line with the use of that? What problems could be created if we do not get coordinated?

Mr Kranz—We are actually the first state to implement that product. It is a package. That system is about building an electronic medical record. It is really coming from what I call a clinical documentation end as opposed to, traditionally, capturing patient demographic data. We are now talking about collecting data at the point of care.

One of the things that has happened is that the IT health departments have got together nationally. Actually, we have become a lead agency for that. New South Wales is looking at what we are doing. As part of that, we have also done some marketing on what is happening in health generally. There is a lot of learning going on as part of the process. We do not want to reinvent the wheel either. The other thing that is important is bringing standards to that process so that it is not only the product. It is what is beneath the product that becomes important so that you end up with common nomenclature or you might use HL7, which is a common interfacing standard used internationally. We are about putting in a standards based architecture. We are also working in conjunction with other organisations so that we begin to build a foundation on which we can develop an electronic medical record.

Mr FORREST—So we are not going to end up with different standards of 'rail gauge' in that type of process?

Mr Kranz—You might end up with different databases being used. If we happen to be using different databases the main thing is the connections between the two—being able to pass data between the two environments is what is important and not necessarily the product. In other words, if one person is using Oracle and another person is using Sybase, the most important thing is being able to pass the data between the two. If we are using a HL7 standard interface, we should be able to pass the data between the systems.

Mr FORREST—The other aspect that worries me a great deal is cost control: we are all worried about the health budget. The committee has not been able to get a good feel of what potential there is for controlling the cost. Your report says that you are convinced that there are cost benefits. Could you lead us through how you are convinced of that and how we can give some thought to managing Medicare schedules, one day, with this kind of item included in it?

Mr Davis—I hope we did not in our submission give you the idea that Telemedicine or Telehealth was going to save money.

CHAIRMAN—I understood you to say at the outset that it was not going to save money. I think we are interested in what benefits you see, social benefits and perhaps cost benefits. But you say there are no cost benefits.

Mr FORREST—It is about delivering a better service.

Mr Davis—There are some cost benefits in that it increases the efficiency of delivering certain services. It also saves money for services such as the state retrieval services. If somebody in a remote place has a particular problem, and an ambulance driver can point a camera at them, you can decide whether you need to evacuate them and whether they can be driven to the nearest hospital or whether you need to put them in a helicopter or whatever. There have been some classic stories about how, with the use of a videoconferencing camera, we could have saved significant amounts of money in South Australia.

So there are ways in which you can improve the way you go about the delivery of certain services. The main benefit is threefold. The first is to improve the education and support that you might give to people in remote places. The second is to have a consistent digitalised record, which includes the radiology and pathology and so on, so that you have a digital system. The third benefit, and we believe this is the most important benefit or application for Telehealth at this time, is that it reaches people in remote places who otherwise would not have access to certain levels of health service. That is particularly so for Aboriginal communities and for people who live in very remote parts of Australia on stations and so on.

Mr FORREST—Do you have any experience with the use of this approach with GP services—the normal consultation with a sore throat, blemishes or blotches, or even worse—with a nurse practitioner at one end and a GP at the other, diagnosing ear infections and that sort of thing? Have you seen much use in that regard? I see great advantages in that for my area, in particular, where you have got a two- or three-hour drive for either the patient to come to the doctor or the other way around.

Dr Swanson—I think that potentially it could be used for that sort of thing. We have certainly had experience with our dialysis unit, where the specialist has been discussing patients with a nurse and he is with the patient in the satellite dialysis centre. In our telepsychiatry program we generally have a mental health nurse who is with the patient at the remote site, with a specialist in Adelaide who then gives advice which is relayed also to the patient's doctor. The patient's doctor in the country then provides the service. There has not been any real work done with GPs talking to their patients via Telemedicine and I do not think there has been any work of that type done in Australia. It could well be done in areas in Western Australia, where you come from, where there is one GP that covers a number of small towns widely dispersed.

CHAIRMAN—Could the Royal Flying Doctor Service not use that kind of technology?

Dr Swanson—Theoretically, I suppose, they could, but you would have to have

videoconferencing equipment at the remote site. But I do not think you would be able to put it on remote stations and I do not think you would be able to afford enough of them. I think it would be more likely where you had a doctor in a town of 1,000 who was servicing other towns of 500 to 1,000 on a regular basis, maybe, where you might get enough work to justify it.

I think the reason why those sorts of pilots have not been done gets back to this funding problem. The GP at the moment would have no way of charging for any of those consultations. If he charged the patient, the patient would not get a Medicare rebate and so, from a practical perspective, it would not work financially. That is not to say that, if the Commonwealth were to allow that sort of consultation for that particular doctor, with him linking to particular towns that he is servicing, the service would not work. In fact, I would think it might well work quite well if you had a nurse or similar person at the remote location.

Mr FORREST—I was interested in your suggestion about providing some sort of block funds to the divisions of general practice. That way you have really got a little bit of a handle on the management side rather than opening up the chequebook through the rebate system. I think that has got great merit.

Dr Swanson—I think you are correct there. With the current funding problems that the state governments and the Commonwealth have got in trying to keep budgets under control, I think it is very unlikely that anyone is ever going to fund an open-ended system, particularly in this area. There would be the potential for abuse in a system where you only had to relay a video picture for 30 seconds and say, 'Yes, you're going okay,' and charge for it. You would have to have some fairly tight criteria about what you were providing.

CHAIRMAN—But unless there is an incentive for people to use technology, they will not.

Dr Swanson—That is right, yes. At the moment, with the example that Mr Forrest has got of the general practitioner, if he cannot charge the patient and get any money back he will not provide the service. That is commonsense.

Mr FORREST—Exactly. I have just one more question. I am fascinated by the privacy challenge and hope that you might be able to lead us through this. My perspective is that that question is probably holding us back a little bit. I would like to know whether current privacy law is enough and, if it is not, whether some other legislative process can be introduced, bearing in mind that technology keeps changing. It is something you might have to keep upgrading. Could you address those issues and say how you have handled those sorts of things?

Mr Davis—There are probably two aspects. One is with the teleconferencing, when you have other people present in the room, for example, with the renal stuff, and Dr Swanson can address that. And the other one is with medical files and those data systems.

Dr Swanson—With the videoconferencing, privacy has been extensively discussed in some of our projects. It seems to be able to be managed quite well if you have simple protocols that really ensure that the patient is told that they will be introduced to anyone who is viewing the videoconference at the site that they are not at. If you are careful to make sure that the patients are introduced to all the people at the other end and that, if anyone new comes into the room and becomes part of the video consultation, they are introduced properly, then the privacy issues in videoconferencing seem to be perfectly well addressed by those simple means.

We do not keep any records of the videoconferences that we do in South Australia. The record keeping that we have is similar to an ordinary consultation where the doctor at the end of the consultation makes brief notes of the pertinent points in their written medical records. So there is no privacy issue regarding electronic storage of that.

Mr FORREST—Other than somebody intercepting the signal, and it can be done.

Dr Swanson—The signals go on ISDN lines. The signals are compressed, substantially, so whoever intercepts the signal would have to have the software to decompress the signal and turn it back into an audio and a video, and that equipment is fairly expensive. It would be more secure than the phone lines that we use at the moment because of this compression of the signal. I do not really regard that as a significant problem.

Mr FORREST—There is the other aspect of privacy with the storage of the data that there is probably more risk.

Mr Kranz—The other component is, I guess, that we are currently bringing together our four major public hospitals into a data repository and so that has created a number of issues in relation to the bringing together of records that were previously separate, but under the Health Commission Act the act neither states that we cannot do it nor that we can do it, in actual fact, so that is very non-specific.

Certainly, I believe that we will be wanting to change legislation as far as the privacy issues are concerned. We do have a standard AS4400, which is an Australian standard that does apply to the privacy of the information and how you might use that. I think we also have to adopt what I call a 'push-pull' approach, and that is, in a sense, that from the commission perspective we are looking to push change into the health sector and I think also the community would be wanting to pull change as well.

Part of the project in which we are bringing together the records is to provide a patient booklet and begin to educate the community in what we are actually doing. This is not a Big Brother database; this is about trying to change the way we deliver clinical practice and using an evidence approach to deliver better clinical care to them as individuals, and also individualise it and yet at the same time create a population base focus.

Most people say,'I'm an individual and what I've got is unique,' but when you put

that person in a database of 1.4 million people, then suddenly they are in a group of 20, 200, 2,000 or 20,000, so that uniqueness goes away from a clinical data perspective, but you have still got to come back with the treatment at an individual level. Again, I think it is very much having the patient involved in that process and getting them comfortable with what it is we are doing.

I think the other thing is that one of the biggest risks we face is a cultural change to have people actually enter passwords and unique IDs, because it is not uncommon for people to write their passwords on a yellow post-it note and they will hand it off to somebody else, but the risk is, as we move into technology in actual fact, from a legal perspective, you have a far more accurate record than we currently do on paper in terms of a sequence of events.

So people are going to need to start worrying about the fact that what we will be able to produce an event log of the action that has occurred if some sort of legal issue arises. So there are two elements to that, and some people do put up privacy as a barrier for going any further forward because they are very quick to think about, 'Why shouldn't we do this,' as opposed to, 'Well, let's think about how we might deal with this.'

I guess we are really at a point of doing an initial implementation and learning from that process. I believe that when we begin to touch areas such as obstetrics and gynaecology and women's health—I am not particularly picking on that but that is an area where there are a lot of issues in terms of abortion and so forth—then you are going to need to keep elements of those records a lot more secure. At the moment, medical records turn up in rubbish dumps, on the side of roads, in the boots of people's cars and there are multiple copies of them spread through the organisation. So I would suggest that putting them in an electronic system, whilst you have got access to more data, is actually more secure than it is at the moment.

CHAIRMAN—Dr Swanson mentioned that with teleconferencing you do not keep a record of the teleconference except that the doctor makes notes?

Dr Swanson—Yes.

CHAIRMAN—Is that the most efficient method of health management, that you have got a detailed record which effectively you throw away, and then you go back to the ark and just make a few notes on a card?

Dr Swanson—If you take psychiatry, for instance, a psychiatric examination may well take 45 minutes to an hour. When someone comes back to find out what happened in that hour, it is much easier to read a brief note that sets down the major symptoms and the major problems.

CHAIRMAN—Could you not keep both?

Dr Swanson—You could keep both, but then there would be a storage problem with regard to how you would keep 45 minutes of audio and videotape for each

consultation. In point of fact, it would probably be an unusual case where someone would want to go back to the videotape and actually go through to watch it bit by bit.

Mrs VALE—I have some questions on privacy and legal implications, the current laws and how they stand, and how you see this could fit in with the current legal regime. In your submission, you refer to the Telehealth and INFO2000 project, and you say that it was designed to ensure the transition to a full electronic medical record. You observed that the full patient electronic medical record would build up progressively so that optimal levels of data will not be available for some years. Therefore, legislative and confidentiality guidelines would be modified over an extended period of time. Would you be able to provide an overview of your INFO2000 project? Could you discuss how it is being implemented now, and how it is proposed that the legislative and confidentiality guidelines could be modified over time so that there can be better protection?

Mr Kranz—The INFO2000 project, as I said, is focused in the public health sector. I guess one of the differences with the health commission is that we are really leading from the top in a sense. We are being prescriptive across the health units in saying, 'If you are prepared to go with a common system, then we will fund that. If you want to go with your own solution, then you fund it for yourself.'

Currently, hospitals, and particularly health units, are not necessarily in a position to fund their own solutions because they do not have the dollars to do it. They are having enough difficulty managing beds without necessarily implementing technology. So we have adopted a common system approach, certainly with this clinical focus as well. As part of that process we are replacing our pathology system. We are implementing a common radiology management system. We are currently looking at ICU. We have done a registration of interest on picture archival communications, which is digital radiology. There is also a pharmacy project under way, a dietary project and there is a number of specialist systems.

Now the approach that is different here is that, in actual fact, what we do is to bring together groups of people. So we are taking a bit of a disease focus. With the OACIS project, for example, we have got the four renal units of our hospitals together. There is the renal unit in our Flinders Medical Centre, Queen Elizabeth Hospital, Royal Adelaide and Women's and Children's. We sat the four directors down around the table and we agreed on a common set of data elements, and then we built a system up from that.

What you have got then is a common base. I believe that we are making our clinical units internationally competitive because, as a group, they can focus more externally than worrying about competing against the hospital that is 10 kilometres up the road. That is not where we should be focused because, if we want to compete against the Duke universities who are setting up cancer clinics in Japan, then we need to get organised ourselves as far as that is concerned. There is very much this strategy of looking outwards as part of that and at the same time re-engineering how we work internally. We are doing that same thing into other clinical areas so our four ICU units are being brought together. All our radiology departments are being brought together as part of that. We are

really re-engineering at that enterprise approach. That is how we are dealing with our systems from a clinical level.

The OACIS project is probably the most strategic one we have because it raises most of the issues. We do not have a unique patient identifier in Australia, for example, so what you have got is individual patient numbers that live across those organisations. We are linking a machine number to those numbers so that in essence what you have got is a unique number; it just happens to be a machine number. Currently we do not use that. If you are at Flinders you see the Flinders number, for example. We do not change anything that is there as far as that organisation is concerned. But part of that is we are changing people's mind-set because the medical records people see themselves as the gatekeeper of the paper record. They thought they did not have a role in the electronic record but they do have a role because somebody has to manage the access levels to that electronic system and it is logical that they do that.

You need to come up with a security system that also works on a business based rules approach. That is, you do not want to look at the four million renal transactions you have got across that enterprise, you want to look at the exceptions where the provider who is providing the service is not the provider that is linked to that patient record. You then can say, 'Why is that provider looking at that patient?' It may have been an emergency admission but at least you are following up that process. I think we have to be a lot more diligent about what happens to people who break the rules in terms of security. You can build a system that has got 12 passwords. If it has got 12 passwords you will have 12 yellow post-it notes; if you have got one password you will actually end up with a system in which somebody is going to remember the password each time they come in. You really have to have a balance between too much security, and not enough security. That is why we challenge some of the privacy and legislative issues as we go. I would have to say to you that I do not have all the answers at the moment. What we are doing is learning and we are learning by doing. I think you learn a lot more by doing than sitting in a room and theorising about what might happen, because you actually have to find a resolution for issues as you address them.

That is our process. We selected renal. Renal is a fairly easy area to do because most of the patients are long-term and there is also quite a lot of data collection that goes on with renal; there are a lot of pathology tests and those sorts of things for them so it is an easy group. We have now started obstetrics, gynaecology, neonates and paediatrics in a state-wide group. Then we will have a lot more issues to deal with in terms of security because you want privacy in terms of all the notes. That clinician may want to write a note that only he can look at. Those are the things that you begin to develop as part of developing the security that lives as part of the system.

Mrs VALE—Have the privacy issues and the legal issues been raised by the community here in South Australia? We have found that it is something that is quite often raised here.

Mr Kranz—Not at this point because we are actually in the software development. What we are currently working on is a book which we are going to give the patients as

part of the implementation.

Mrs VALE—Part of the education process?

Mr Kranz—There will be a generic book which will also have a renal attachment so that we will be able to tell the renal patient issues that specifically relate to them. When we do thoracic or obs and gynae we will have a view for them but based on the generic book. That is part of the education process back to the community because I think that is an important part of that element. We have sought legal advice from our own legal people. The next step is to write to the privacy commissioner as well because we believe the more people we tell, the more people know about what we are doing so that we do not end up with what I call show stoppers. The last thing I think we can have with the development of electronic record is a show stopper where somebody gets access to data inappropriately and the whole thing stops.

Mrs VALE—But the whole thing will stop, will it not?

Mr Kranz—Yes, exactly. I guess what we are really doing is we are crawling before we start to move into that other area.

Mrs VALE—Do you find then that the privacy concerns might be slowing down the process at all, or are you just dealing with it as it presents itself as a different question?

Mr Kranz—Yes. In other words, we have established the medical records group to deal with some of the privacy issues. We have also established a committee process back into hospitals and health units as part of that and we will do the patient education. We have really dealt with those issues as we have gone. Also, this is a user driven system. This is not driven by me as an IT person. The people at the coalface have to use it, not me. They also have to address those issues and have to own the system at the end of the day.

Dr NELSON—Some people say to us that we ought to develop the domestic infrastructure and get Telehealth, Telemedicine, up and running in Australia first as a priority. But others, recognising the expertise we have—particularly in renal medicine—are saying we should be moving into the South-East Asian area and using Telemedicine for income generation, export potential and all the rest of it. Do you have any particular view on that?

Mr Davis—Dr Swanson and I have just returned from some time in Malaysia, talking to them about Telehealth and—

CHAIRMAN—You were not at the conference on East Timor, were you?

Mr Davis—No! We went to Telemed 96 first and we just avoided the East Timor one. But whilst we were there we found that people all over South-East Asia are mad about Telemedicine. I do not think it is because of any income generation and I do not

think for us it is ever going to be a great income generation source. It is because it is an IT application—health matters are becoming increasingly popular in that part of the world—and because they are looking for answers to support what is a low level of professional numbers. Doctors' numbers, for example, are extremely low.

There is an opportunity to be able to help people who work in remote parts—Sabah or wherever—to get access to good information and to be supported and educated and so on, and to get occasional consultations. We do not think that we are really going to generate big buckets of money out of that even though we might be directing that back to some of our universities and tertiary institutions.

It is more because we believe that there will be other business arising out of those communication lines, out of the sense of relationship that you get from working with people who live in your neighbourhood. So we are not looking at it as some huge cash cow but we are certainly doing it for the reasons that we have already stated. The other one is that I guess our belief is that IT in South-East Asia and East Asia is going to move a lot faster than it has here, particularly in hospital practice. I think they will probably leapfrog a lot of the mistakes that we have made and go straight on to the next one. We want to be around to see what they do so that we can pick up from the experience as well.

CHAIRMAN—There also would be opportunities for our foreign aid program, one would imagine, to provide facilities from here into some of those countries in South-East Asia.

Mr Davis—There will be in some. My understanding of the aid programs is that they are limited to certain countries. For example, we have been doing a lot of work in Malaysia. It is not common to do aid work in Malaysia. It is becoming independently wealthy. But we have been looking at places like Papua New Guinea and so on, but not in the same way.

Dr NELSON—I was just going to make a suggestion on a couple of things in relation to the funding. To me it would seem feasible to have an item introduced into the schedule where the services have been initiated by another registered health professional—maybe a nurse or a medical practitioner. It also seemed that one of the other options that might be available—particularly for your project—is that the Commonwealth has committed itself to $20 million a year in real terms over four years in the forward estimates for improvement of rural hospital services. It seems to me that in terms of block funding, program money, there might be an opportunity to have the Commonwealth fund infrastructure through that means and then to have the services themselves provided on a fee-for-service basis; firstly through a specific item in the schedule which required referral, and secondly, through divisions that Bruce mentioned earlier.

Mrs ELIZABETH GRACE—What do you consider would be the legitimate role of both the federal and state governments in this new area that we are emerging into in health?

Mr Davis—Our view to date has been that the work really needs to be done by the

people who are involved in the delivering of the services and who are planning the roll-out at the moment. The national committee and AHMAC have an agenda which is probably fairly similar to the list of things in your terms of reference, which are the things that we ought to be addressing to get some answers to some of the funding, legal, ethical and privacy issues and to also get onto things like standards of communication and making sure that there is proper evaluation of training and education. They seem to us to be the major issues.

A lot of them are things that will be done by people once they have a commitment. They will try and find a resolution to the problem and they will make it happen for them. Our view is that there are not terribly many legislative barriers to the practice of good Telehealth at the moment. There may be some opportunities that the federal or state government can take to encourage the roll-out. There are no real barriers other than probably the two that Dr Swanson mentioned earlier—the funding one and the matter of registration, which seem to be fairly thorny for us at the moment.

Mr ROSS CAMERON—I have two questions, one on the privacy issue and the other one on financing. It does seem that the health benefit of the technology is its capacity to accumulate and manage data on patients over the life of the patient. That allows medical professionals to make much more informed decisions about what options and choices are offered to patients. On the other hand, it clearly creates this much greater potential for abuse of data. One presumes, for example, in terms of health insurance, that insurers would be fascinated to know the life history. One can conceive of a situation where, if we went, for example, with the national patient identifier—which would seem from a health standpoint to be the most efficient long-term outcome—you could wind up rating patients according to their potential health risk very accurately across a range of data from their heredity issues to their lifestyle, et cetera.

You talked about the show stopper. I think about the Barings situation, where you had one guy who was able to effectively destroy a 200-year-old institution primarily because of the reach and capacity of the technology. In the past it would never have been able to do it, simply because of the inefficiency of the trading technologies that were available and their manual character. That is where it seems to me that the privacy of patients today has largely been protected by the inefficiency of information exchanged within the health system.

Are we in a situation where there is, in effect, a direct inverse relationship between the quality and quantity of data that is available and the likelihood of a show stopping event? Is it not conceivable that, if we establish a national patient identifier—which, it seems to me, is the logical long-term outcome—you are going to get penetration of a system by a hacker at some point and distribution on to the Internet or whatever of a massive chunk of data about all of our personal histories?

Mr Kranz—There are some options there, because you tend to split your database to start with. So, in actual fact, you use a third party to link elements together, which is part of what AS4400 talks about. You might actually have your demographic data here but your clinical data over there, and somebody in the middle of that joins that together. If

you are going to fire a nuclear rocket, you actually need two people to turn the key first and press the button rather than having it just happen. So you put in those sorts of stops to create that.

Because some of these technologies are relatively new, they are the sorts of things that we are going to need to put in place. They are the changes that I expect to come. You will be looking for things like end-to-end encryption so that I can ensure that, if somebody steals the PC belonging to the person who is taking data out of the system at the end of it, they are not going to be able to read it, because it will have a secondary encryption device on it to actually encrypt the data.

You offset that against things like, if we build things like smart orders into our systems, for example, at the moment if I order a pathology test on Friday and somebody goes and orders another one on Sunday, you have no mechanism to tell whether you have got two in the system. With a smart ordering system, when you begin to look at that aggregated data, you can say, 'But we have already done that test, why are we ordering another one?' I know the pathology providers will not be too happy about that because you are affecting their revenue in the process.

But if you are going to affect the decision process, what you have got to do is put the information there when the decision is about to be made, so we could have a great electronic trading system that just passes a message over, but you will not change anything. But if you actually begin to use that information to put a rule set in there, you can actually provide a lot of cost benefit from that process as well, whether it be that, whether it be drug interactions or things like biotech drugs and generic drugs.

There are something like 5,000 clinical publications a day across the world. That is beyond a person's capability to be able to read. The thing is, that information gets lost. It took something like 264 years for scurvy to be identified and what was the outcome? In a sense we are data rich in health but we are knowledge poor in some respects because we have got all this data but we cannot do anything with it.

I have to admit I do not have all the answers but what we are about I think is actually biting off bite-sized chunks as part of that process of saying, 'Well, what might we need to put in here as a protector of that process?' That is where I believe the benefits are. So you have got to balance that against the issue of if somebody might get in and access the system because there will people that will want to use web technology to access the repository, and then you will basically want to have an encryption device to ensure there is somebody at the end of it. I guess the banks are going to find this out first because they are using that as a means of electronic trading now.

Mr ROSS CAMERON—I have got just one supplementary on that one and then I have got one other question. We had a situation in New South Wales where staff of the Roads and Traffic Authority, who had a systematic record of people's driving record, were selling it to insurance companies in terms of what level of risk a person was. There are certain things you can do to protect against an external problem, but if you have got someone within the system, that data is going to be commercially valuable. I think it is

inevitable. I think that technology is moving so fast we just have to find ways to manage it, but at the moment it seems to me we are sort of blundering forward, to some extent driven by the incredible momentum of the technology, and we are going to just have to try and find ways to deal with this as we go.

Mr Kranz—I would like to think that we are not blundering forward, but that what we are actually doing is, in a sense, managing that change and that the change is an evolutionary one and not a revolutionary one. In actual fact, I hope we are learning from the processes that we are putting in place. And this is where clearly the Commonwealth has a role in terms of coordination, because I believe that what needs to happen is that this should not be just what we are doing in South Australia in terms of patient care, but this should apply anywhere as far as nationally is concerned. Clearly, there is a role there for the Commonwealth.

Recently, a group of people got together and formed the Collaborative Centre for Quality Health Care and it was a whole bunch of organisations that believe in an evidenced approach. The Commonwealth ought to be trying to pull those groups of people together rather than groups going off and forming those sort of things, so there needs to be some direction from the top as well in that process.

Mr ROSS CAMERON—Okay. My last question is: we have talked about privacy acting as a potential brake. In relation to the financing of health care, we have taken a view in this country that health is a kind of universal human right at some level and so, as a result, we have put in place a structure to finance health. So we are asking questions about whether we should be adding or something to the medical benefits schedule to facilitate this process.

Clearly, we have got technical problems, we have got privacy problems and we have got financing problems. In the financing area, is the socialisation of medicine in this country acting as a brake? I note when we say, 'How do we finance it?' that the response is, 'Block funding from the Commonwealth'—which is the response of just about every community organisation I talk to on just about any subject. Is the way we have chosen to finance health in this country acting as an impediment to the development of capital-intensive new technologies?

Dr Swanson—I think, in the case of videoconferencing, the way we are financing it is acting as an impediment to developing some of these services. The fact that it is not funded by the Commonwealth and would cost the patient the full amount out of their own pocket, compared with a system where they pay very little out of their own pocket, makes them not pay. If everyone paid for their GP out of their own pocket, then videoconferencing would go ahead fine. What you say, in a sense, is true; but we are not going to get rid of the Medicare system tomorrow. I think it is here to stay. Given that it exists, there comes a need for the people who are taking responsibility for that part of the health system and the way that it is financed and funded to take responsibility for saying, 'This is a part of medical care that fits under our umbrella. How are we going to allow it to develop appropriately?'

Mr ROSS CAMERON—I have drug companies saying to me that, because of the way the Pharmaceutical Benefits Scheme operates, Australian patients will be denied, potentially, a range of lifesaving drugs because companies are saying, 'It is impossible for us to carry the development costs and to launch a drug, say, in this market, because it may compromise our capacity to provide the drug to our other markets in a global environment.' So, your response would be, 'Okay. We have got Medicare.' I am not saying that we should abolish Medicare, but I just want us to understand what the impact of the financing equation is on the development of the technologies.

Dr Swanson—If you take your pharmaceutical benefits example, it is a system that works very well and it has done a lot of good things. Maybe that is one of the disadvantages of it. It might be the same with Medicare. It has done a lot of things to enhance access for patients to medical care, but in this aspect it has a small negative effect. It is a matter of whether we want to do something about the negatives or not.

Mr FORREST—I have a supplementary question to one of Mr Cameron's questions on the privacy issue. Would the ultimate password not be that the repository of the data is in my control on a smart card? That is the ultimate password. So, if someone wants access to it, they have to ask me. Is that a direction that this could take? On that I have all of my blood group details. If I am in an accident, it is ultimately swiped and—

Mr ALLAN MORRIS—If it is crossed by a magnet it is wiped out.

Mr FORREST—It is an option that could be used.

Mr Kranz—In Europe they are using it in conjunction with the service provider. So, in actual fact, the service provider and the patient swipe their cards and create a link between those two entities. There is certainly that system in use. I guess the issue there is that, if the patient carries all the data on the card, then one of the things we are not going to get is an outcomes approach either out of that process. If you want to do data analysis, it is going to be quite difficult to do it if people happen to be carrying the cards around with them. There will be the need to provide some sort of backup to that card. But we do see that smart cards have a role to play—or optical cards, or whatever you want to use—certainly in health care. I think we can learn from our other industries. Health, traditionally, is too insular. We tend to look inside health for the answers, but there are actually answers out in other industries as well, far beyond it.

Mr ALLAN MORRIS—I am a little bit concerned that most of the people we are hearing from all seem to talk about standards, HL7 and so on, but they all talk in very general terms. There does not appear to be any concerted effort by the professionals across the country to actually unify into a common standards system, structure, data placement and location. Are you talking about two repositories? One can argue for four or five repositories, not necessarily from the point of view of hackers, but also from the point of view of data analysis. So analysis could be done by students or researchers without any fears about privacy and so on.

On the one hand you claim to have a high level of technological expertise and

evolution, on the other hand technological processes appear to be way behind. What is happening, or what is the model? I guess you all say the Commonwealth should fund a working party to develop national structures and processes.

Mr Kranz—There is a national institute of health and welfare that has actually developed the national data dictionary. So there is a national data dictionary, but the trouble is that there are a lot of gaps there, particularly in the area of clinical documentation. Working off into some of those areas you do not necessarily have standards. In lieu of standards, what you then look at is other international bodies. There is a group in Europe that is looking at standards there, so we have a tendency to look internationally so as to say what standards exist elsewhere that are likely to be adopted in Australia.

That is one of the difficulties. If you are on the leading edge of anything, there is not much difference between bleeding edge and leading edge sometimes. In essence, what you are trying to do is to stay on the leading edge with things that you know and, at the same time, looking internationally for standards. So there is no doubt that standards lag but even in Europe the standards lag as well, because it takes quite a while to develop standards in some of those areas, to get people to agree that what they are going to enter is the same thing, and that a potassium test there is the same as a potassium test somewhere else.

Mr ALLAN MORRIS—That is one part of it, but the other part is the actual structures that are used. It is not simply dictionaries or definitions. It is also that, within your own organisations, I suspect interruptability is probably very slow—interruptability between radiology, pathology, orthopaedics or any other of your businesses as you call them. I would suggest that the structures and methods they are using are probably almost deliberately different.

Mr Kranz—There is no doubt that, because we have got a fragmented environment, moving from a fragmented to an enterprise model requires a lot of cultural change in that process. The thing is looking at what is already there and then getting people to think about the big model, not about what I am doing in my department as opposed to what we are going to do across the system, because a patient moves across the system. So it is really about putting something in place and getting people to think about the actual processes of change. And it is happening. But it happens slowly in health and that is one of the issues. Traditionally, I think, our wheels spin in the sand a lot.

Mr ALLAN MORRIS—It is more than that. What you are doing is building up a massive hardware and software and data which is almost, I would suggest, near critical mass and that it will be unchangeable will not be far out. Those of you who are doing it now, unless you are taking into account that blockage that you are creating, are going to create a system about which, in 10 years time, people will say, 'Why in the hell didn't these guys understand what they were doing?' because we now cannot fix it. We have got so much data and so many different compartments, stored in so many different ways, that the cost and difficulties of actually getting that transparency between them and sharing that data is now so difficult it just is not worth doing.

So what they can do then is perhaps start again. That whole range of choice is there. What I am suggesting is not a nightmare scenario but a fairly realistic one. I am not sure what the outcome is likely to be, but what I see is a lack of effort in terms of trying to overcome those things at the very start. You are an IT. Once you have a structure set up, it is like the 2000 scenario. I was part of that 30 years ago. We did not plan 30 years out. We said, 'Stuff it, that is Nelson's problem.' That is what is happening right now in your field. You are creating another 2000 scenario by creating structures, data, formats, models.

Mr Kranz—What we are creating is a change process over an elongated period of time. We were not going to have a full electronic medical record for five to 20 years, I believe, certainly in that process. You are really challenging the way people think. One of the problems that society is going to have with the amount of information that we have got available to us is: what do you keep, what do you throw away? That is one of the issues that you have got to address as part of a process. Do we actually want to keep all this data or do we need filter mechanisms as well? And that becomes part of that process.

CHAIRMAN—Thank you very much. We are almost out of time but I just want to touch on one point. You mentioned that you would be concerned if there were unrestricted access to the medical benefits schedule, and Dr Nelson came up with a suggestion as to how there could be access to the schedule in certain circumstances. Does the South Australian government have a view on how, if at all, the Medicare Benefits Schedule should be amended in order to accommodate multidisciplinary consultations via Telemedicine?

Dr Swanson—I do not think the South Australian Health Commission has an official view but my view would be that we are still at the point where there need to be the appropriate trials done to prove that it is worth putting on the Medicare Benefits Schedule. An example would be the general practitioner example that Mr Forrest was referring to, where the first step should be to run a pilot or trial of that in three or four places with three or four GPs. If it proved successful, then you would start to define what sorts of GPs would be allowed to do that sort of thing.

Similarly, Dr Nelson was saying that one way of keeping a control on it would be that the consultation had to be initiated from the remote end by a doctor or a nurse. That would certainly be a method of doing it but I would say that at the moment in South Australia there would only be a narrow range of areas—perhaps psychiatry and the renal area—where we would be at a stage to say that that sort of consultation has been proven effective in Australia.

CHAIRMAN—Dr Swanson, are you a medical practitioner?

Dr Swanson—Yes, I am a medical practitioner—I have got a medical degree and also I am a fellow of the College of Medical Administrators. I do not practise clinically but I work in medical administration.

Mr ALLAN MORRIS—Did you keep your provider number?

Dr Swanson—I have got a provider number, but—

Mr ALLAN MORRIS—Lucky you.

Dr NELSON—Is it possible that there could be some training program such that practitioners that go to a Telemedicine format would do some sort of three-month or six-month training, diploma or whatever you like? Are we likely to see that evolve?

Dr Swanson—I think it is unlikely, because I do not believe that Telemedicine will become a specialty in its own right. I think Telemedicine will be one medium by which a range of specialists practise their specialty. So it will be a medium by which a renal physician practises his specialty for a small part of his time, and similarly a psychiatrist. The GPs in the country who would be accessing it might need some training in how to use that medium to best access specialist services or the advice they need.

Dr NELSON—I was thinking of it not from a specialist's perspective but from the point of view of the general practitioner and perhaps also the nurses, that some sort of training/accreditation which then gives them access to a medicare item number, again initiated by a health practitioner, might be the way to go.

Dr Swanson—Yes, that is a good suggestion.

CHAIRMAN—I would like to thank the witnesses for appearing before us this morning. We have found what you have said very interesting and we will let you have a copy of the report in due course.

[10.48 a.m.]

DISNEY, Dr Alexander Patrick Suffern, Project Director, North Western Adelaide Health Service Renal Telemedicine Network, Queen Elizabeth Hospital, Woodville, South Australia

MITCHELL, Mr John Gregory, Managing Director, Telemedicine Australia Pty Ltd, 169 Unley Road, Unley, South Australia

CHAIRMAN—Welcome. Dr Disney, are you a medical practitioner?

Dr Disney—I am.

CHAIRMAN—We have received your submission and, hopefully, all the members have read it. I think that we are all very impressed with the practical application of Telemedicine that you have adopted. Would one of you like to make a brief opening statement prior to our getting into the questioning?

Dr Disney—We do have a further submission in addition to the material that you have got—if I could table that—to which we wanted to speak, perhaps briefly. It addresses a number of recent activities and also some issues which we think may be worth discussing and may act as a prompt to further discussion. I am sorry I was not able to get here earlier. I had intended to be here from 9 o'clock so that there was not too much repetition of issues.

There have been a number of recent activities. There is going to be a showcase of health information services established at the hospital. That is going to be funded by the Health Commission. This has been in project for some time; funding was on hold and funding is now available. We are also planning a business partnership between our hospital and the Women's and Children's, with obvious cross-links.

The most significant thing that we want to draw attention is that there have been links, just in the last couple of weeks—I was away in the States at a meeting, but John was involved and could provide more detail about this. The importance was that it was to the Tanami Desert, through the Tanami Network. This was a particular process which we had indicated would take place and obviously it has a number of implications. We were approached by the Tanami to participate and provide them with some sort of medical services, and AAP came along and have provided the communication technology. It has been to Yuendumu and adjacent areas. For a variety of reasons which we can address if it is appropriate, we have actually gone to a place called Kintore, which is out on the Western Australian-Northern Territory border. It is probably a couple of hours by light plane from Alice Springs and about six hours or more by road, so it is a very remote entity. That is where the communication took place.

The trial was conducted over a couple of weeks. It involved a number of people at the Queen Elizabeth and it also involved medical, nursing and Aboriginal health workers and administrators at Kintore. During the trials a number of pieces of equipment were

used. Unfortunately, one of them did not have a battery that worked, but two out of three was thought to be a fairly good strike rate. There was a focus on a number of issues and we could expand on that if you would like. It was meant to be a fact-finding, information sharing and technology testing exercise and I think all of us intended that we should go away and think seriously about whether it had some future role and exactly what. It was a pilot study.

Regarding renal Telemedicine, there is a copy of our second report which should be available to you today. It is predominantly an implementation report. We have now been operating for about two to three years and we have been conducting assessments at the end of each year on just how well people are responding to the project. It has certainly been very widely used. In the last 12 months or so it was used about 3,000 times. So we are a very active project; that is what we are stressing. Our intentions from here on are to try to establish best practice. We feel that we are moving out of being a pilot study; we are now moving into something which should be operating every day and we should try to show that we can compete with people.

CHAIRMAN—And that is happening now?

Dr Disney—That is this year. We feel we have moved from the pilot project to a daily functioning operation. What we are planning on doing is trying to bring more money to the project, more technology, to address a number of issues.

CHAIRMAN—There is great confusion about the definitions of Telehealth and Telemedicine. You seem to use the word 'Telemedicine'. The South Australian Health Commission seems to use the word 'Telehealth'. Do you think there are advantages in standardising definitions so that we all know what we are talking about?

Dr Disney—Definitely. 'Telemedicine' is an all- embracing term, just like 'Telehealth', and involves a number of technological aspects, clinical aspects and social aspects. Yes is a short answer.

CHAIRMAN—What do you see as being the principal advantage of Telemedicine in the field in which you have been operating? Do you see it as being cost effective, or giving better health and better social benefits to the community or a combination of both?

Dr Disney—We believe the main benefit of Telemedicine is improvement in the quality of care rather than cost reduction. One may be able to show that there is cost reduction, and I appreciate that that is an area which receives a lot of attention, but it is probably difficult to demonstrate that. We have attempted to do a cost-benefit assessment, and we have run into a number of problems.

What you tend to do is provide a service which is not provided in the rural and remote areas, or which is inadequately provided there or which is infrequent to those areas. The rural and remote areas are where the focus is. So you are providing a service that is not provided in those areas, that is the major benefit, and you are providing it so that it is readily available. Patients will stay in the country areas; they will not come in,

for a variety of reasons. Contact will not be made with appropriate specialists, for a variety of reasons.

CHAIRMAN—Although you say that a cost-effectiveness analysis of Telemedicine by itself may not be sufficient—and now you tell us that you feel there may or may not be cost savings, but definitely there would be improvements in health—would you consider that there is a likelihood of increased cost resulting from the use of this technology, or do you feel that at best there is an improvement in health and perhaps no extra increase in cost?

Dr Disney—I do not think there is a simple answer to that and I think everybody in the field would acknowledge there is no simple answer to that. First of all, by looking at cost benefit, one will show that there are savings to the individual but there may not be savings to the system. In other words, the individual does not have to cover the costs of travel from here to there and accommodation—all of the things that all of us can think of. So there are individual savings and there are social savings.

But, to the community, it may be possible that you do not have people occupying city hospitals. They can be supervised from a remote area and just be viewed using the camera. There may be savings of that sort. There will be transport costs. You do not have to cover the cost of people being flown out of remote areas. But you will inevitably generate increased demand. Once the system is there, it will be used more. A better quality of care will be provided. One only has to go into some of these areas to realise that.

CHAIRMAN—You say, 'A better quality of care.' Obviously you are referring to the fact that a lot of those people presently have no quality of care because of remoteness. Is it possible for the team to compare the difference between the quality of care through the renal dialysis Telemedicine project and the care that is provided through conventional means, particularly when a patient is able to see a doctor? In other words, is the quality of care that you deliver by Telemedicine as good as a face-to-face consultation?

Dr Disney—The issue is whether you have to be in the same room, in a word. I think that, ideally, you should be in the same room, for clarity of viewing and for the human interchange; but I do not think that that is essential. I would regard it as preferable. But, if people have seen each other before and established the necessary human interconnection, then I certainly do not think that it is essential. If you are using it for emergency assessment, for fairly low-level, predominantly physical, assessment, I do not think that there is a major problem. There are still some technological difficulties; but, in principle, I do not see them as being insuperable. I am sure you will be hearing the telepsychiatry people discuss with you their experience; but I am very impressed by their ability to cope with difficult human interactions using the medium.

CHAIRMAN—Are there any barriers which you consider prevent the adoption of Telemedicine and IT into the Australian health system more widely?

Dr Disney—That is a very broad question.

CHAIRMAN—I think you have got a great breadth of experience.

Dr Disney—In other words, what are the difficulties with Telemedicine? Cost is obviously one.

CHAIRMAN—What barriers are there? What is inhibiting its wider use? Is it cost; the fact that we have not had enough pilots; the fact that we have six states and a couple of territories all rushing off and doing their own thing; the fact that perhaps we are not taking notice of what has been studied abroad?

Dr Disney—I think probably cost has been the major issue. It has been very expensive. Costs are coming down. Costs have dropped considerably since we were started. Our project cost just under half a million dollars to get started. That was really quite considerable, and that was just with four pieces of equipment at about $70,000 each. That sort of equipment is now considerably cheaper. So, cost is one particular issue.

I think the other one is persuading people in the health care system, particularly doctors, that it has some sort of appropriate purpose; that you can address the issue of being in the same room; that you can somehow get together in front of the camera. You seem to be able to get together on the end of a phone, but somehow they see it as a bit more difficult to get on the end of a camera—and, of course, it is, because you have got to have a site that you go to, as opposed to the phone. I think there is the confidentiality issue; and I suspect that, in the private sector and to some extent in the public sector, there is the issue who is going to pay.

CHAIRMAN—And the lack of items in the medical benefits schedule perhaps?

Dr Disney—Perhaps, yes.

CHAIRMAN—How should that be changed—or should it?

Dr Disney—I think somehow it has to be changed, whether one continues to use the mechanism and overcomes the concern at fallacious billing of consultations that never took place. I would have thought there were ways to get around that. There could be an indication from the patient that the thing actually took place and perhaps a bit more information about it. My understanding is that there may be provision for telephone consultations to already attract some sort of financial return. I am not well informed about that, but I have heard that suggested.

I think that each consultation using the medium should be regarded as almost the same. The time taken is the same. The quality of interaction is very close to the same. So, what are the infrastructure charges? There will be that of the telephone line, which is not terribly expensive. There could be certain costs. There would be the infrastructure of the equipment. That charge is coming down all the time. It seems to me that there are two options: either you have a fee-for-service approach or, alternatively, you set up some sort of structure which says that you will provide the service at a set price for a year.

Managed care systems in the United States—as you are probably aware—are taking to Telemedicine very strongly because they have all sorts of advantages and, of course, they do not have to strike a fee for service for it. I could see other circumstances in which that could operate. We provide a service to one of the country hospitals in South Australia. We could agree that we would provide that service for a certain amount of money, and you could probably assume that there would be a certain number of consultations per year. I would see a mechanism by which that could be done.

Mrs ELIZABETH GRACE—I was interested in pages 6 and 7 of the Sanders report. I cannot decide whether Sanders is male or female because of a couple of comments that were made in the report, but there are some interesting comments, such as that revenue generated is staying at the rural site, that Telemedicine fosters and implements its capacity to alter the state of professional isolation—and having lived in western Queensland I am very aware of that in any industry, it does not have to be medical—and the multiple purposes of administrative meetings, nursing and other allied health education, direct patient care plans and things like that. They are all wonderful statements and they make it sound like it is the panacea to all the problems of people in rural and remote areas. Do you have any projects or ideas or networks in mind to take up some of those suggestions to extend beyond what you are doing ?

Dr Disney—I guess I wear two hats here. I am here representing north-western area Adelaide health service, which we will call the Queen Elizabeth for the purpose of the exercise and also the renal and they are two somewhat separate entities. The renal system is really very focused on its own activities, particularly support to people with renal failure and dialysis treatment. The amount that we will be able to offer to remote areas in Australia is going to be limited unless we manage to extend those sorts of services more widely. There are plans for that. There is electronic technology that will allow us to supervise dialysis processes more remotely, so there may be something happening there.

Mrs ELIZABETH GRACE—I see where you are also using low orbit satellites in the Northern Territory for communications.

Dr Disney—That is right. The Tanami network contact was made through a satellite. The north-western area health service has got a number of plans. It is keen to maintain contact with the Northern Territory with perhaps the Tanami network. Once the Northern Territory get its Telemedicine operation going we are certainly quite keen to provide whatever expertise we can and that may be predominantly educational. I think that there will be some clinical assistance as well. After talking to one of my colleagues yesterday who is an ophthalmologist, I think there is probably a distinct need for ophthalmology support services and quite possibly that can be provide remotely.

We have also got some intentions or some plans to look outside Australia which we could expand on if you like. John may want to make some comment on that because he has been involved a bit more than I have on that. We have had some contacts with Indonesia ourselves as the renal unit.

Mrs ELIZABETH GRACE—Do you think that this Telemedicine concept—I suppose is it too early to say but we have got this tyranny of distance in Australia—may be one way of making life a little bit more comfortable for people in those rural and remote areas?

Dr Disney—Yes. I think it provides all the anticipated services that come with having a face to face rather than an ear to ear communication and at all levels.

Mrs ELIZABETH GRACE—On the Aboriginal side of it, have there been any problems on the cultural side of it with the video-conferencing? Do they have any problems with this camera and this photographic bit? I do not know a lot about their culture but I wondered if that was something they had a problem with.

Dr Disney—Could I leave John to address that? He reviewed the Tanami network when it was first established and I could perhaps add some additional comment about medical aspects after that.

Mr Mitchell—I was lucky enough to do the evaluation of the Tanami network two years ago and I spent about five months studying it. It is a myth that Aboriginal people have a problem about eye to eye contact or using videoconferencing. There are cultural sensitivities about who is in the room, and they may have to avert their eyes because of the people but in terms of using the technology it is one of the stunning stories in Australia of how well the Aboriginal people have used that new technology. They have used it better than white people in lots of ways.

In terms of the cultural sensitivities there are many. Even in the last two weeks we linked almost daily to Kintore and the issues are immense. In what we did for the last two weeks, we were basically nursed along or coaxed along by the appropriate elders and the appropriate health staff at Kintore, but if we were to actively want to engage in delivering health services to an Aboriginal settlement we would need a comprehensive education program for all players on both sides. One of the nice things that came out of that project was a strong recommendation that we use this technology also for the flow of information from an Aboriginal community back to the white society and so the information that comes back could be for, say, undergraduate medical students, educating them about all these issues—cultural sensitivities and the health problems in these communities—so the cultural issues are immense.

Mrs ELIZABETH GRACE—So that is something that we could probably develop.

CHAIRMAN—Not directly on that point, but I noticed in one of the submissions you mentioned that the Tanami people have major health needs—renal failure, diabetes, trachoma, cardiac problems, substance abuse, hepatitis, asthma and renal illness. Why is it that they have a level of medical problems beyond that in the general community? It seems to me that for years we have thrown money at Aboriginal Affairs and yet at the coalface, their health, housing, infant mortality rate and educational standards have not improved. I think it would be better if we targeted their needs more appropriately. Perhaps

what you are doing is meeting that, at least partially in one area. Why do they have all these health problems, above and beyond the health problems of the general community?

Dr Disney—That is another loaded question! I am convinced that quite a lot of the problems are genetic, and we can go into the issue of diabetes. You have a member of the panel who is much better briefed on that than I. But I have no doubt that that has a lot to do with it. I also think some of it is behavioural, and I say that with a considerable degree of ignorance.

We have had Aboriginal people from very remote areas in the Territory coming into our renal unit for at least the last 10 to 15 years. Renal failure patient management is something that we have quite a lot of experience with. We have the same difficulties as everybody else in terms of their understanding of what needs to be done and their compliance with it. Let me just speak to the issue of dialysis treatment. They require that three times a week. The highest level of no show, of failing to turn up for what is essential treatment, is amongst the Aboriginal people. When we try to address this issue, there are a variety of reasons as to why they do not turn up.

At least one suggestion is that they have some difficulty in conceiving of much beyond tomorrow or next week. In other words, the concepts of long-term health care and long-term events are a bit more difficult to address them than it might be with people from more urban areas. I would not want that to be taken as a particularly expert or well-informed comment. It is just an initial impression that I have. There are a whole lot of other issues.

CHAIRMAN—You mentioned the contact with Indonesia. Do you see that as being on a cost recovery basis—in other words, an opportunity for medical exports to

Indonesia, or maybe in the area of foreign aid, or maybe both?

Dr Disney—John has been up there and I have been into the medical area there too. Frankly, I think one does it out of humanitarian requirements. You only have to go to Indonesia to see the enormous need for quality care and the desire to help. So that is the first reason for it. However, nothing comes cheap and everything has to be paid for. You either have to find Australian financial support or financial support from the other end. In our case, we are hoping that we may be able to achieve both. The particular hospital or entity that we are dealing with in Jakarta, may well get involved in a pilot Telemedicine project that the Indonesians are establishing. That may provide some funds which will then be able to support it.

Educationally, which is one of our intentions, one would hope that there would be some sort of cost recovery arrangement. I think clinical usage is talked about a lot, and there are a lot of people who are very keen to establish consultations with areas where there is money but there may not be expertise. The Americans, in particular, are a very keen to penetrate that market. My impression is that the penetration has not been very successful. I think one has to work very carefully on it. There may be some cost recovery from that.

Mr ROSS CAMERON—This is probably not strictly within the terms of reference but relates to an earlier question from the Chairman about renal failure among people in the Aboriginal communities. You said that you felt that some of the health problems were genetic and some of them were behavioural. I presume there is a connection between the level of alcoholism and renal problems.

Dr Disney—Very remotely. Alcohol can lead to poor general health, which may mean you are more susceptible to infection or to a variety of vascular and cardiac problems. Many Aboriginal people come to us with a cardiac state that is considerably worse than we would expect of someone of the same age and with the same degree of renal problems. So I think alcohol may have an involvement there but, otherwise, directly on the kidney, no.

Mr ROSS CAMERON—In relation to the issue of costs, I note you have provided us an with excellent analysis of the international position and of your position, which actually produces very little in terms of the take out. What it tells us is that it is very difficult to get a fix on where we are. We will eventually go back and, as a group of lay people, make some sort of recommendation about what Commonwealth resources ought to go into the development of Telemedicine. Obviously, one has to have some basis upon which to make that assessment, so we have to do some sort of cost-benefit analysis.

In your study you make the point that you cannot necessarily talk about Telemedicine or Telehealth in a generic sense as though every different speciality is going to operate on the same kinds of ratios or capital intensities or cost-benefit results. My general question is: what advice, if any, do you have on the criteria upon which you make decisions about investing public health resources into various Telemedicine disciplines?

It seems to me—and this would be a universally shared view around the table—that one of the problems is that the Australian community is somewhat spoilt in its access to medical services. There is a view of a high level of entitlement, so costly services have to be delivered either at low cost or not at all. My concern is that it will be a 'not at all' result for a range of services, because consumers have been so conditioned to getting health services at massively reduced costs that it will be difficult for us to invest in and develop these various technologies. So it is a question of what criteria we ought to employ and whether we are actually discouraging the development of Telemedicine because of the way in which we finance health services.

Mr Mitchell—I would like to respond, initially, because it is a big issue for you in terms of the criteria. It sounds trite, but there has to be a need. What we are seeing around Australia at the moment is that people are buying the glitz; Telemedicine is trendy. The problem is that the technology is actually very good but everything else is new—particularly the users—in the application of it.

There have been some examples around Australia of white elephants: equipment that has been bought by people but has not been used. Why doesn't it get used? The main reason, more often than not, is that there was not an identified need. So, it sounds trite, but a needs analysis would be number one in terms of criteria, and this committee might

be able to look at what those needs might be after you have completed your consultations. These needs might arise for such reasons as distance or isolation, or lack of service at the moment and so on.

Just flowing on to your next question, we are finding by following through with some of these projects, particularly in remote and rural areas—and we are now looking at Asia—that a lot of people do not have anywhere near the access to health services that people have in the metropolitan areas. That is why—as you were saying before, Doctor—we are all the time clarifying in our minds that the main application of Telemedicine, we believe, needs to be for people in rural and remote areas.

CHAIRMAN—Would it be easier in South Australia because it is a highly centralised state with one large city and perhaps all of the facilities concentrated in Adelaide? Would what you are doing be more difficult in some of the more decentralised states?

Mr Mitchell—My impression is that some other states are more appropriately set up for Telemedicine, such as Queensland because of its regional distribution. I am not sure whether you have done your consultations through Queensland, but what the psychiatrist Dr Paul Trott is doing out of Townsville, for instance, would seem to me to be excellent. There is enough critical mass and enough infrastructure in some of these medium sized places to enable you to start to distribute even more. I do not think South Australia is very well set up for Telemedicine in comparison to Queensland in particular.

Mrs ELIZABETH GRACE—Can I qualify that a little, geographically? You have not got a lot of medium sized rural towns, have you? You seem to go from one extreme to the other, don't you? You have got a fairly good centre and then there is a very remote village quite some distance away. Have I got the geography of the state fairly right?

Mr Mitchell—Yes.

Dr Disney—I would make two comments in relation to that: the telepsychiatry network is putting cameras into most of these villages, so we are pretty well serviced—or will be. An issue that is being pushed, I find, in other parts of the world is the role of educating the patient so that there will be less of what might be seen as unnecessary visits to the GP. They seem to think that, if people know what is going on, they will not go and see the GP. I have a feeling there is a certain amount of wishful thinking about that, because they will just turn up asking more difficult questions. But there are people pushing Telemedicine from the particular viewpoint of the educational role of it.

CHAIRMAN—Thus the need for more training for GPs: is that what you are saying?

Dr Disney—Yes; and we could provide that too, I guess—or they could get it off the Internet, which is where the questions seem to come from.

CHAIRMAN—It sounds like a one-stop shop.

Dr Disney—That is right. The other point is about costs of service. The cost of the phone lines that they are using is not particularly great. It is $6 or $7 or something like that for us to talk to Port Augusta for an hour. It is not a particularly expensive exercise. Once you have put in your infrastructure costs for the camera, et cetera—and that is coming down to the point where you can have a desktop videoconferencing capability for well under $10,000 for the sort of thing a GP could put on their desk—

Mr ROSS CAMERON—You are really saying that Commonwealth expenditure ought to be primarily directed at addressing the equity and access problems.

Dr Disney—Yes; having been out there in a limited way and seen how they just do not get it—for a variety of reasons, which are partly because of the individual and partly because of the doctor, sometimes.

Dr NELSON—I was going to ask whether so far the project has been used in the education of medical and nursing professionals, or whether you have basically used it as a clinical tool.

Dr Disney—The north-west area health service—in other words, the QEH entity—has been used extensively for educational purposes. We run a weekly series of physician and surgical one-hour or 1½-hour discussion sessions of items presented. Those workshops are being transmitted to our amalgamated hospital, the Lyell McEwin, which is about 25 miles away. That has been going on for quite some time. The problems are technical; they are not insuperable. It is running very well. There is always somebody at the other end; and there is a reasonable degree of interchange. So it is being used for that sort of continuing education.

For physician training—the terrible FRACP—daily tutorials are being run at 7.30 or 8 o'clock in the morning to this other facility. If the other major hospitals in Adelaide get their equipment, then there is no reason why you cannot have a city wide educational process. The educational side is well established and is functioning very well. Perhaps John wants to talk more about that.

Mr Mitchell—Two other instances are that we are running tutorials between Adelaide and Port Augusta once a week and, between Adelaide and Alice Springs, we ran them weekly for the first semester, and that was in the area of the postgraduate qualification in nephrology nursing.

Dr Disney—We run a renal course here—one of the few in the country; a number of hospitals run something—and people from remote areas do not find it convenient to come to Adelaide for a prolonged period, so they come down for two or three weeks and then there is continuing follow-up. It can be a talking head, face-to-face, tutorial discussion; they are sent videotapes of lectures which are being given down here; and you also have the capacity to assess their technical skills, which we have done.

Dr NELSON—At the moment, are you funding all that out of the project?

Dr Disney—Yes; it is being funded by the Health Commission directly to us, as a pilot study. Talking about needs analysis, we were approached by the Health Commission and asked, if we had a need, to put up an appropriate assessment. The challenge has been to show that the need is there, and we have met it. We think we are getting there.

Dr NELSON—You had just three lines in your submission on the issue of liability. Could you elaborate on what the medical practitioners themselves and perhaps the medical defence organisations see as the medico-legal implications of advice being given via the Telemedicine project? I notice some of the limited work done on it suggests that it actually reduces the liability. Is that the way the practitioners are seeing it?

Dr Disney—If I can just answer for the renal project, we are operating strictly within the public system and we have very little interaction with other professionals. It is predominantly nurses and patients that we are dealing with, and so that particular issue has not arisen. I do not think we have a particular position on it. Certainly, we have not conducted any discussions with the groups that you mentioned about the issues. We recognise that it is a serious one and, if we are to branch out into trying to provide some sort of service to the community in general—in particular, a potential fee for service—then there will be considerable concern.

Dr NELSON—Are you aware of any published work on the medico-legal implications of Telemedicine?

Mr Mitchell—There is some. Recently in Singapore, I was lucky enough to hear a lawyer from Gillette Sharp, a firm that operates between Sydney and Singapore. One of their legal staff gave a very good presentation about it. He basically argued that the whole thing is a minefield and that it is loose. He actually scared the audience by saying, 'You may be culpable if you don't use the equipment.' Most of us are worried about specialists giving poor advice and there being maltreatment. He actually spun it around and said that it might be the case, if you have got the equipment and you do not use it, that you are negligent. He did not satisfy anybody, but he was honest and said that the whole issue was still very open.

Dr Disney—We have certainly had a case where we discussed an issue by telephone from Port Augusta, 200 miles away, and we made a particular decision and then decided to assess it using the camera. The decision was initially that there was no particular problem and we would wait and see what happened in two or three days time. We took a look at it and it was quite obvious that we had a problem, and immediate transfer took place. That is just one example in our experience of this issue of how, if you do not use the camera, you can get it wrong.

Dr NELSON—It would probably be worth our while to look at the legal implications of the whole issue. I noticed when you covered the ethical issues that you mentioned that it might be considered negligent behaviour in an emergency medicine department, for example, not to use Telemedicine. You have also drafted a set of ethical principles for the use of Telemedicine. Could we get a copy of those?

Dr Disney—Certainly.

Dr NELSON—That would be of interest to us.

Ms ELLIS—Could I ask that both you and I be devil's advocate for a second? In playing the devil's advocate, is there any danger that you can perceive that, without a comprehensive approach from the Commonwealth level across state and territory borders in relation to how we handle the development of Telemedicine, there could be a potential for money to be made? I do not like to use that term, but I cannot think of another one. Could there be greater benefits in the export of this technology to countries outside of this country, and could we therefore run the risk of our remote areas losing out on the allocation of appropriate resources to address?

This is a devil's advocate question, but the development so far, as you have already said, is not at the level where we have got a big dollar hanging over it. If technology and the development of Telemedicine goes at the pace that I am imagining that it is going to, then there could be enormous advantages financially for some sectors of the medical professions in some areas, given that we do have terrific expertise in this country. Unless we have a properly coordinated approach, do we run the risk in the future that some of our remote areas that are not resourced financially will miss out on the advantages that we perceive today that they should be getting?

Dr Disney—Knowing the nature of man—and that is not a gender-specific term—I think there always is that risk. There are people who see a pot of gold in Asia; they see this enormous, wealthy group up there to whom they can sell these highly sophisticated services. There was a group in Western Australia who had great plans for that. Those plans have gone on hold, because they found that the demand and the difficulties were just not going to allow them to pursue it.

Ms ELLIS—Would a coordinated approach in fact help to alleviate that, to some degree?

Dr Disney—To some degree. I think there will always be some people who will be able to establish a serious money-making exercise, but they will be a small number. The Americans—the Mayo Clinic and all those major entities—are trying very hard to get into Asia. They are not getting very far.

Ms ELLIS—I am not saying that we should not.

Dr Disney—But I agree with you. I think that we should be making sure that we have the service. For instance, we do not have the service yet into the northern part of South Australia that we are offering to the Tanami. We are very aware of that. That is something that we are going to be pressing for.

Ms ELLIS—I have another question that goes a little further than that. What do you believe we should do to encourage the take-up of the technology that you are talking about at a GP level? You might differ with me because you are in the medical profession and I am not, but my perception is that a great proportion of GPs are fairly slow in taking

up new technology in the sense that we are talking about. Even in their own local surgery, with a computer, some of them are a bit slow. What do we have to do to encourage them to do that? I am not just talking about Medicare rebate payments; I am talking about the initiative to get into it in the first place.

Dr Disney—Make it as easy as picking up a telephone. I have talked to my general practitioner in Port Augusta, who has been involved with the dialysis unit, and asked him whether he would want to have a desktop in his surgery and he could communicate with us directly. He said, 'I will not have the time, and you will not be available at the time when I want to do it. More particularly, if I am trying to talk to a specialist, the specialist will not be available at eight o'clock in the morning and will not be available at six o'clock at night, which is when I tend to be making my hospital rounds.' That is one person's reaction to how they would use it.

Ms ELLIS—Also the necessity, would you say, for them to have the time to be trained in it?

Dr Disney—I do not think there is an awful lot of training required. It is like learning how to speak in front of a camera at any time. There is not a lot.

Ms ELLIS—So you do not have to be computer literate?

Dr Disney—No. It is more a matter of the technology and people being scared away by the technology. This is John's field. Do you want to talk about implementation?

Mr Mitchell—Yes. When I evaluated the telepsychiatry project in the six-month period in 1994 there was only one GP at Mount Gambier who was at all involved. There were no GPs at Berri, for instance. It was their work practices. Their daily routine just did not allow them to drive down to the hospital and wait for a link to Adelaide. I do not think we can skip over that lightly. Their whole work practices are geared for people in a waiting room. They file in, two, three or four an hour. What Alex is saying is that one of our only ways is to get the technology to such a point that it is a flick of a switch or a press of a button and it works.

What we are starting to see organically happen is that friends of colleagues at the Queen Elizabeth Hospital out in the country are starting to prick their ears up. If they have a difficult patient situation, they might be able to easily link in. We are having fairly regular links now from Clare, which is about 140 kilometres north of here, to registrars and specialists within the renal ward when they have got a difficult problem. So, it is starting to happen organically. As the equipment becomes easy to use and as it becomes cheaper, GPs will start to say, 'Perhaps I could.' But in that case it is a practice of GPs—it is not just a single GP—so the costs are spread across the group. That is probably where we are heading, if we can start to get it into the larger clinics and get some case studies up.

Ms ELLIS—It is done by example?

Dr Disney—I think that is what we are finding. It is difficult to get it into the medical profession, and it is not until they have a specific opportunity to use it and see the benefit. It has been operating in our unit for a couple of years, yet there are still several colleagues who are pretty lukewarm about it. Very recently they had occasion to use it, and they have become converts.

Ms ELLIS—So they are a bit less lukewarm?

Dr Disney—Yes.

Mrs VALE—I was interested in the privacy issues and the legal issues from the consumer point of view. From your answers to Brendan, it seems almost as if you are damned if you do and damned if you do not, in some circumstances. Your submission actually observes that the ethical, privacy and legal concerns are somehow lagging behind the technological advances. Could we have your observations on that? In a previous submission here today they were saying that health and medical information is often stored in the boots of cars. We have heard of those sorts of instances. Could we have your views on the privacy issues.

Dr Disney—First of all, we regarded them as very important from the beginning and tried to address them as best we could within our own environment, recognising that it was going to be essential for these issues to be resolved in a format such as this so that it was an agreed process. The privacy that we achieve at the moment is mainly in either providing a separate area so they are not overheard or, alternatively, trying to provide them with a means of communicating in an area where there are a number of other people by using earphones and microphones. We make sure that we identify people who are in the room. These are practical issues. But you never know who is off-camera, so we try to make sure that everybody is identified and everybody knows who is there. When we have been taking videos—and, as you are probably aware, there is a video that we have made—there is the usual approach to patients of seeking their permission and approval that they can be displayed. That is skirting around the edge a little bit.

The other issue relates to videotapes and I suppose the issue of interception of the transmission. I cannot speak sensibly on the issue of interception of the transmission. On the issue of videotapes, we are not using videotapes ourselves at the moment, but it has been suggested that you might well take a videotape of a consultation and show it to colleagues or keep it for teaching purposes or for your own library. I think that there will have to be some sort of approval process for patients to provide for that data to be kept. I do not see a particular way around scrambling it or encryption. People have talked about that but I see that as practically difficult. John, do you want to speak to that?

Mr Mitchell—We had one incident where we have looked at headphones for the patients, so the patient is sitting in the renal chair, looking at the monitor and talking to, say, Dr Disney from Adelaide—they are in Port Augusta. We looked at one cordless arrangement, only to find that what the patient was saying could have been picked up on a CB radio in Port Augusta. So we had to go back to a wired set-up, so there is a cable that comes out of the back of the machine. That was one of the little things that we had to

work through.

We can give the patient the privacy in the sense that they can sit in the renal chair and only they can hear what the doctor is saying at the other end, but the patients sitting in the chairs next to them can hear what they are saying. We have also set up in each of the renal satellite centres a withdrawal room, basically, so that before they go into the chair or after they come off the chair they can have a consultation. So we have worked it through probably to the best that we can to date.

Dr Disney—The other thing we have done is conduct a number of surveys of patient response to the system. That has been a question that has been asked. To this point, I think there were two people who expressed some concerns. Both of them came from the health care area: one was a doctor's wife and a nurse, and the other one was a nurse and a patient. Both of them were a bit concerned and I think would prefer not to have conversation in a public place, but they do not mind in a private place.

Mrs VALE—Were there any concerns in this regard raised by the Tanami network?

Mr Mitchell—I cannot say that we have got into full-scale teleconsultations with Tanami. We have had links since April with Yuendumu—we probably had a dozen links—and then we had two weeks of links with Kintore, but it was all general examination. You probably know some of the sensitivities within an Aboriginal community. Particularly, say, at Kintore, if you go into the clinic there, there is a men's room and a women's room. So we had that problem—we were only able to link into the one room so we were not able to do proper consultations. We did demonstrations. We looked in the ears of some people and in the noses, but it was all by way of testing the technology rather than trying to give a diagnosis to a genuine problem.

Dr Disney—I think perhaps that does raise one of the issues of what funding can do. I think it is essential that one has adequate space and adequate equipment. And, yes, Kintore has a crying need for it. But they have got their camera in their community council room; you cannot imagine having a particularly intimate sort of examination or whatever of a patient in those circumstances. You can have a talking head sort of interaction. If we were to go into their clinic, it is extremely small. There is just nowhere that you could conduct some sort of reasonable conversation or examination.

Ms ELLIS—Can I just ask where Kintore is?

Dr Disney—It is on the edge of the Western Australian-Northern Territory border and it is a couple of hundred miles north of the South Australian border.

Ms ELLIS—The Gibson Desert, is it?

Mr Mitchell—No, it is in the Northern Territory.

Ms ELLIS—Is it on the Tanami track?

Mr Mitchell—Just off it. I think theoretically it is not actually part of the Tanami Desert; it is off to the edge.

Mrs ELIZABETH GRACE—A couple of medical practitioners in Queensland told me that the only reason why they would use Telemedicine or that sort of technology is if it will save them time or save them money. That is fairly indicative of the views of other doctors. If they spend that sort of money then they need to have some sort of near guarantee that they are going to have some benefit for themselves out of it. How do you relate to that?

Dr Disney—There is a bit of that out in the country and, frankly, I would have liked to have heard my colleagues say that it was in the consumers' interests that they used it.

Mrs ELIZABETH GRACE—That is the side benefit. I know of a couple who are using it in some areas and they are finding it very beneficial now. The initial $10,000 investment caused them to ask, 'Am I going to save—

Dr Disney—Until people use it they do not recognise the possibilities. Even in our own unit we are still realising that we are not utilising it fully. You have to develop a different mindset and think of the ways you could use it and very rapidly that expands and you recognise there are a lot of opportunities.

Mrs ELIZABETH GRACE—In the submission you were talking about the issuing of prescriptions. You said that in the US, standards have yet to be set to allow a physician to transfer the prescription to a remote site. Are we having similar difficulties here in Australia or have we not got the same constraints on us? They are saying that they do not even allow the pharmacist to fill the script even if they see them physically sign it on the video camera and things like that.

Dr Disney—I think members of the committee may be better briefed than I am on exactly what is happening in the different states. Certainly, at this point, I believe we cannot use an electronic signature but that may vary around the country. My impression is that that undoubtedly will have to come, that electronic signatures will have to be accepted one way or another.

Mrs ELIZABETH GRACE—So that is an area that we as a committee should be looking at in Telemedicine.

Dr Disney—I realise it is much broader issue and I am sure it is being addressed widely elsewhere.

Mrs ELIZABETH GRACE—I just wanted to know what the situation was. Thank you.

Mr ROSS CAMERON—Ms Ellis talked about the role of government to ensure that the benefit of the services got to the people who needed them. Concerns have been

raised, though not specifically in the teleconferencing area but also in data management, about the interactivity of different technologies and the risk of setting up infrastructure in different states that is incompatible with each other. There has been the question of the role of the Commonwealth as some sort of coordinating body.

It seems to me that where things are happening they are happening because you have got a dynamic, expert, committed team of people who have a vision for where they want to go. At the same time we feel that inevitably there is a slightly ad hoc feel about that and, as you say, people are still discovering the technology or there are waverers who need to be converted. I would not want to create a massive bureaucracy which has some pretence to be able to micromanage the development of this technology in different parts of the country. However, at the same time there is a legitimate concern that we actually get to the people who need the service and do not have it at the moment. Have you got a view about what is an appropriate role for the Commonwealth?

Mr Mitchell—Our view, which comes through all our documentation, is that high quality projects are probably still the way to go in the short term. We would have the same fear as you, we are very worried about bureaucracies getting in the way. In the Tanami exercise, both leading up to it and over the last two weeks, we had very great difficulty in negotiating with government officials. We wanted to link to Yuendumu and we were told we could not. These things are real and they will keep going.

It is quite distressing to us as citizens that people in administrative or bureaucratic positions may stop what may end up being something for the good of the patient. The patient is hardly mentioned sometimes in some of this discourse because people are more worried about it being their backyard and it is their patients and keep out and so on. We would agree with you that at the moment the situation with Telemedicine is driven by champions. It is still ad hoc, it is still very patchy.

There are some good examples around Australia at the moment where bureaucrats have tried to direct it and it has gone horribly wrong. I think what we are saying in our documentation is: do everything professionally in terms of needs analysis; work it all through; get all the agreements in place and do it thoroughly and well; and then evaluate it. We would be worried, as you are, that you could put in place a big Commonwealth structure and it just would not bring about any good. What both the renal unit and the QEH are wanting to do is get it right—cover all the bases and finetune and get everything working well rather than expect the governments to solve it.

Dr Disney—Just so that we do not go away leaving the impression that bureaucrats are all obstructive, it is people like Keith Kranz and others in the commission and Ray Blight who have recognised that the technology is there. They have a vision, but what is sensible about them is that they have come to the clinicians and asked the clinicians to drive it. As John has said, unless you have someone who is actually going to use it promoting the system—a champion—it just does not work. We have had an element of that in our own hospital where they brought in a second system—the general system—and they really did not do anything much about implementing it. It just sort of sat there, waiting for someone to do something. It gradually got going with education and it will

spread. But our system got going very quickly because, fortuitously, we were put onto John as a project manager and his expertise has been in implementation. What I am really emphasising is the need for that sort of individual to get it going.

What can the Commonwealth do? I think that making sure that standards are adhered to—and there are all sorts of technological standards. I do not think there should be too much difficulty with that. As you are aware, there are various database standards around and there is a particular group who are establishing a database system—or they are looking at a pilot to establish a database system—in South Australia, the so-called OACIS system. That is starting off in the renal units and it is starting off in our hospital, the Queen Elizabeth hospital, and the Royal Adelaide. But, as you may be aware, the intention is that it should roll out and encompass everybody in the state, so that all the electronic data—case notes et cetera—could be accessed. If that does become the world of tomorrow, then I guess there is a need for people to be able to talk across state lines. People travel so one needs uniformity of standards. I think the Commonwealth could help in trying to make sure that equipment is available. That may be funding to states; I do not pretend to look into that. I do not see the Commonwealth as having some sort of overall top-down management. I just see this as another means—it is a video phone, that is really what it is, and it should be looked at as a video phone. I do not think we need to have a whole lot of infrastructure other than making sure that people know how to use the thing. The privacy, confidentiality, the billing, those are the sorts of things that I see as probably being within the Commonwealth's ambit.

I was reading last night that the Congress in the United States has mandated a group to come back with some means of working out appropriate charging and that has to be done within the next three or four months. As one so often finds, the Americans put a lot of time, money and effort into things and frequently we can learn from that.

Ms ELLIS—I have a question on standards for coding and dissemination which you have just very briefly touched on. This committee is aware that the question of standards setting is controversial. The Commonwealth Department of Health and Family Services highlighted a number of areas which need to be addressed if the potential for improving health sector information management is to be realised. These include standard definitions and concepts, uniform standards for electronic data transmission and standard classifications for all items of interest. Can you discuss those issues and suggest some solutions?

Mr Mitchell—Our project has been predominantly in the video-conferencing field. We are working with Keith Kranz, whom you heard from before. We are wanting to integrate the transmission of live computer data at the same time that we have the visual. We would only really want to comment on the video-conferencing side in terms of standards. The International Telecommunications Union—the ITU—is a very good body, and they are fast catching up and putting in place international standards for equipment, so that interoperability is fast disappearing as an issue. We do have some outstanding problems in Australia about the quality of picture that we think is satisfactory for clinical purposes. Our project is controversial because we are running at a low transmission rate of 128 kilobytes per second, which is the equivalent in space of two telephone lines. What

we have done to succeed is we have got everything right in terms of lighting, positioning of the camera and we have trained the operators, so we have lived within that framework. It was partly because when we came into the field in mid-1994 it was unaffordable to run with a higher transmission rate of, say, 384 and we also felt that if we could make some compromises in terms of getting people trained in how to use it we would save a lot of money, and we have held to that. So it is still an issue, it has not been resolved. Some people would push that we have 384 kilobits a second as the standard. The other thing is we are running at what is called 15 frames per second. What you see on your television at home is 30. You can now get 30 frames per second with videoconferencing, so some would argue that you should have it or you should not do it.

What we have proven with the renal project is, if you can live within your budget and make appropriate compromises in terms of making sure the lighting is right and the camera is held still and so on, you can actually go a long way. We are probably doing that partly for the cause in terms of saying to GPs and smaller hospitals, 'You do not have to buy the latest and the best to get a lot of benefits.' But, Alex, it is fair to say that you have worked out what the limits are and you have worked within those limits in terms of what the technology can provide you.

Dr Disney—Yes, and I think that people can communicate that sort of uncertainty to each other. It may be inadequate in five per cent of cases, but when you are triageing, when you are making your emergency assessment, it is quite adequate. If we do get to the six lines and the 30 frames, that is a very much better picture, and then you go to satellite and you can cover a much broader area. The problem with ISDN is you have to have an ISDN line in.

CHAIRMAN—Thank you very much, gentlemen. We have now reached the end of time for the submissions. I see that Mr Mitchell is appearing in another capacity and I see that Dr Disney is actually a consultant to Telemedicine Australia. I gather that you are not going to be part of this next submission?

Dr Disney—No, it is up to John.

[11.47 a.m.]

MITCHELL, Mr John Gregory, Managing Director, Telemedicine Australia Pty Ltd, Level 1, 169 Unley Road, Unley, South Australia 5061

CHAIRMAN—You remain on oath. Would you like to outline briefly why you are appearing before us in yet another capacity?

Mr Mitchell—I would like to clarify that my company does more than just work with the Queen Elizabeth Hospital. We have got quite extensive experience in Telemedicine. If I could just give you an example, in August of this year we finalised a business case for the introduction of Telemedicine at the Women's and Children's Hospital. Recently, this week, we have completed an implementation plan for Telemedicine for that hospital. We have recently appeared at the telemed Asia conference in Singapore where we conducted the one-day workshop for 45 people who represented 10 different Asian and European countries. We are consultants to the Australian Catholic University, who are pioneering a lot of uses of Telemedicine into hospitals. Currently we are completing a business plan for two Adelaide hospitals to form the clinical showcase for South Australian health services, and so on. We actually work much broader than just the Queen Elizabeth Hospital, so that was the point of our appearing separately.

CHAIRMAN—Telemedicine Australia, according to the summary to the submission, claims to be an innovative consulting company providing a range of new services in planning, management and evaluation of Telemedicine, as you have just indicated. Is this a private company?

Mr Mitchell—Yes.

CHAIRMAN—A private enterprise company in pursuit of profit. I do not think that profit is a dirty word, but I just wanted to know whether you were a semi-government organisation or private.

Mr Mitchell—It is a private company and it is owned by JG Mitchell and Associates Pty Limited. We normally run under the business name of John Mitchell and Associates. We have developed the company of Telemedicine Australia in case of large international work in particular where sometimes particular funding bodies want to see that it has national representation and appropriate things in place.

CHAIRMAN—I personally think it is a good thing to see private enterprise getting into Telemedicine because it means that the expansion of it will be demand driven to a certain extent and obviously if there is a dollar in it then it will expand even faster. So I do not see anything wrong with that at all. But I notice your submission says that you are qualified to provide an exhaustive summary of one of Australia's most significant Telemedicine projects, the renal Telemedicine project for the Queen Elizabeth Hospital. You are obviously happy as to how that is going. Do you have written detailed information on the evaluation of those Telemedicine projects you refer to in your submission?

Mr Mitchell—Yes, we do. We have actually supplied the secretary with the two reports. Today we handed over the more recent one. Twelve months ago we completed this report, which we have also handed over. What we are wanting to model within the Telemedicine community is the need for high-quality and extensive evaluation and professional project management.

CHAIRMAN—You obviously take a long-term view of Telemedicine. You are not in it for short-term gains.

Mr Mitchell—No.

CHAIRMAN—I notice that the submission draws our attention to a worrying trend, that those with limited experience of Telemedicine claim large cost savings in the early stages of Telemedicine projects. We are aware that accurate costing is not available. Could you comment on the future costs and benefits, in both economic and social terms. Also, how do you expect that your company will receive an adequate return, and over what time frame are you looking at it?

Mr Mitchell—In terms of the broader question about costs and benefits, we are wanting to be honest in all of our evaluations and our documentation. It varies. As Dr Nelson was saying before, it does vary from specialty to specialty, from hospital to hospital and from state to state. So, we are wanting to promote that. We are railing against imitators of ours. There was one instance here 12 months ago when somebody came in and did a business plan for a particular Telemedicine operation where they claimed that the $2 million investment would be recouped. I think they claimed that about half of it would be recouped in the first six months. It did not happen, and it will not happen. That is disgraceful.

I think Alex would be happy for me to speak on his behalf here. What happens when you are associated with successful projects in Telemedicine is that people will come and have a look for half an hour, and basically they will say, 'That looks easy. We are from a bigger state' or 'We are from a bigger hospital. If you can do it, we will do it. It is probably only money that you need to throw at it to get it to work.' So, they go away and buy the equipment. The vendors are waiting with bated breath, because it is not in the vendors' interest to say, 'If you have got $400,000, keep 10 or 15 per cent of it aside for professional project management, implementation, evaluation and so on.' It is in their interest to say, 'We can sell you the absolutely latest bells and whistles, and you should be able to handle internally all the implementation, guidance and so on that you need.' We are very worried about that trend at the moment. Generally, the costs and benefits have to be talked about in terms of individual specialities and individual applications. You just cannot talk globally about it for Telemedicine.

As for our company and where we are heading, we feel that we are positioned very sensibly within this market, because what we are wanting to demonstrate is best practice in generic areas of evaluation, methodology and project management, and there will always be a need for it. The vendors will tell you that there is not, because their argument will be that the equipment has got legs and it will run and it will do all the things for you

that you need it to do. But our constant evaluation of Telemedicine tells us that the main issues are human, organisational and cultural, not technological.

Mrs ELIZABETH GRACE—Views differ about the role of the government. Would you like to make a comment on a possible role for government?

Mr Mitchell—For the Commonwealth or for the state?

Mrs ELIZABETH GRACE—Both.

Mr Mitchell—We feel that the South Australian government has demonstrated good practice in the way it has funded a few projects well—in particular, the renal project and the telepsychiatry project. We think that is an appropriate role for them. We are concerned that neither state nor Commonwealth seem to be getting their teeth into the difficult issues which Dr Disney has just run through, which you are also coming up against. We are looking to the government to solve those thorny questions about legal issues, remuneration, privacy, ethics and so on.

CHAIRMAN—The minister himself referred this inquiry to us. So, the government is clearly looking at it.

Mr Mitchell—Yes. We think the major contribution of government would be to solve those sorts of structural blockages.

Mrs ELIZABETH GRACE—So you, as an industry, are looking to us to put those guidelines in place for you. How long have you been involved in Telemedicine, as a business?

Mr Mitchell—Since early 1994. We were invited to evaluate the telepsychiatry project. That was in April 1994, and in June 1994 we were invited to project-manage the renal Telemedicine project. We came into the field because of our experience in managing videoconferencing and various other technologies in the open learning field. We have come from an educational administration framework.

Mrs ELIZABETH GRACE—That is my next question: where would we come from to get into this?

Mr Mitchell—And that perhaps explains why we take the long view. I have personally lived with the videoconferencing field within education since 1987 and I have seen it go through quite a number of phases. I see Telemedicine as being in its early years, obviously, and it is about where educational videoconferencing was in 1990 and 1991. I have lived through the other experience and I am bringing that to bear in this.

Mr ROSS CAMERON—Do you have major competitors in the field at the moment?

Mr Mitchell—Our major competitors are coming out of the big six, the big

accounting companies, who are starting to see the health budget is massive, that all you need to do is cream a tiny percent off the top for innovations like Telemedicine, and that is a lot of money. So they are positioning themselves, we believe, to do business planning, implementation strategies, cost-benefit analyses and so on. We are quite comfortable that our competitive advantage is that we have actually got real, in-depth experience. So we tend to get a good flow of engagement because of that real world knowledge.

Mr ROSS CAMERON—People have been talking about the capacity for technology to export health. I think it was McKinsey who did a study on what they called the new globals, which were the small to medium sized enterprises that were specifically created to target an export market—or they had over 50 or 75 per cent of their revenues or something. Do you think we are going to see consortia of doctors and medical specialists and clinicians banding together around a technology like this in a feasible, export oriented business?

Mr Mitchell—Yes, it will take time though. If I can use the comparison of what has happened with education, we have got massive export income in the educational field. We see it at the moment that the medical and health industry is scratching its head and wondering how it can also get going. We believe that there is a lot of possibility in the longer term but, at the moment, people are very unclear as to how to get started. That is why we advocate: be real about it, start small, start with concrete opportunities.

For instance, some of the studies that have come out in the last few years have started by saying that there are X thousand hospitals in Indonesia so if you just had a slice of the action you would be a millionaire. Our approach is exactly the opposite. We are working with the Queen Elizabeth Hospital and we are looking at one hospital and we are hoping to be part of a three-hospital trial next year. That is where we see the sense that you start small, you get it right and then you can start to advocate a much bigger opportunity.

Dr NELSON—John, do you think we are going to get to the point where the technology will be sufficiently portable to assist with the development of the hospital in the home concept in metropolitan areas?

Mr Mitchell—I believe we are just about there. The renal project is going to be working with Keith Kranz from the health commission on that, starting soon. The Women's and Children's Hospital here in Adelaide is also proposing next year to have a Telemedicine in the home project where they will select three patients and do three three-monthly trials. They will have a combination of videoconferencing and Internet technology in the bedroom basically.

So what we are all doing is positioning and getting our thinking clear because the technology, as you know, is converging. For instance, at the moment, with the Women's and Children's Hospital project, it will probably be that we will have two separate sets of technology in the room. We will have an ISDN line into the bedroom for videoconferencing and we will have a phone line in there for the Internet site. We all know that it will converge in the very near future. We believe we are actually there and

that what we need to do is to do it sensibly and well, and then advocate to others that this is how you go about it.

Mr FORREST—I have one question on cost. One of the things that the committee is wrestling with is that we are aware that there are often some outrageous claims about huge savings to be made, and we are trying to keep that in perspective. But I would not want to see the development of this approach hamstrung by a paranoia about costs, when clearly the social benefits, in terms of delivering a service to people who do not readily have access to it, ought to have a pretty significant priority in any policy approach. I would be interested to tease out of you any comments in that regard, given your experience.

Mr Mitchell—Our experience is that there is a lot of social benefit to be gained by using the technology, but we work just as much in the education field as in the medical field. Education is more advanced in terms of being aware of what technology can do, but it is still not in everybody's homes. There are still massive issues. It is easy to say, 'The Internet is fantastic and let's use it for all these different courses,' but straightaway you have got a problem: has every student got a PC and a modem? It is going to be the same with Telemedicine.

We have got the situation where the technology is probably five years ahead of the user's ability to use it well, and it is probably five years ahead of all of our structures in terms of who pays for it and where the funding sources come from. We see this dislocation continuing indefinitely, because all the time the technology will get better and it will keep ahead of the users.

The social benefits are potentially huge, and what we see facing us is a massive management problem. How do you manage these opportunities and perhaps, divide them up and approach each part and make it real? Rather than stay global and just keep saying, 'Telemedicine is fantastic, the technology is great and these are all the possibilities,' the only way forward is the way forward, we feel, that we have been involved with in working with the QEH and with the Health Commission here—that is, to take it bit by bit.

Mr FORREST—The potential for reinforcing a preventative approach to medicines, I think, is one of the great attractions. From home you would have access to dietary information. I recently used the Internet for access to immunisation information. We have sent a daughter overseas and found it quite helpful. It had a list there; your organisation might have been responsible for getting it up, I am not sure. But we found some very useful information there about the requirements for different countries and so on. But to me, it is the preventative potential that is best, against heart disease, smoking and all of the other ills that cost a huge amount of money as a nation once they become a medical problem. Are you promoting that aspect as well?

Mr Mitchell—Yes, we are. But we see education as in front of health in this regard, and it is very clear in the education field that the home is driving the bureaucracy. The homes are grabbing hold of the PCs and the modems, and getting on the Internet, for instance, or they are buying a CD-ROM player and buying the CDs. People are tending to

stand up at school councils and elsewhere and say, 'We demand that our children have access to computers and to the latest.' We are predicting that the same will happen in the health arena, that the consumer will eventually—it is not happening yet—cotton on and become aware that you can get more information, that the information or knowledge has perhaps been guarded and protected for industrial reasons. So there is going to be this pressure eventually, as there has been in the education field, that the people holding on to the knowledge start to let some of it go.

Mrs VALE—But isn't interpretation also a very important component of that access to that kind of knowledge?

Mr Mitchell—Yes.

Mrs VALE—Consumers who have no medical background or training cannot necessarily interpret exactly what it means to them.

Mr Mitchell—That is right. There are two scenarios. There is the one that Dr Disney said, which is almost certainly going to happen, that the more the consumers read about possible ailments, the more ailments they will have, and they will self-diagnose. That will be a problem. But that is the negative side.

On the positive side, the Women's and Children's Hospital here in Adelaide has just been granted $600,000 to develop material that will be used internationally in the area of promoting information about mental health, and it will be directed particularly at adolescents. With our problem with, say, youth suicides that what we expect here—and I am sure it will happen—is that the information will be properly managed, properly presented, so that it cannot be misconstrued. Where things are done thoroughly and they are done well, and they are done on the basis of research and of thorough investigation, it is exciting.

But the nightmare scenario of people self-diagnosing is probably going to happen, because you cannot control people throughout the world and what they will do, say, with the Internet. A lot of people will be reckless with it.

CHAIRMAN—There being no further questions, I thank you very much for appearing this morning.

Is it the wish of the committee that the two further submissions and the listing of ethical guidelines from Queen Elizabeth Hospital be received and incorporated in the transcript of evidence? There being no objection, it is so ordered.

The documents read as follows—

[1.22 p.m.]

HAWKER, Dr Fiona Ellen, Senior Psychiatrist, Director of Telemedicine, Telemedicine Unit, Rural and Remote Mental Health Services, Glenside Hospital, 226 Fullarton Road, Eastwood, South Australia 5063

KAVANAGH, Mr Steven James, Telemedicine Consultant, Telemedicine Unit, Rural and Remote Mental Health Services, Glenside Hospital, 226 Fullarton Road, Eastwood, South Australia 5063

CHAIRMAN—Welcome. Would you like to give us a brief opening statement? Perhaps you would like to summarise the submission we have received which has been circulated and, hopefully, read by all of our committee members.

Mr Kavanagh—The Telemedicine unit based at Glenside Hospital was the first of the psychiatric projects that was undertaken within South Australia and the intention was to try to deliver mental health services equitably to country communities. The whole purpose of the project, whilst it involves country communities, is also to try to involve as many other community or health related disciplines as possible so that we can maximise the community advantage from having videoconferencing units installed out there.

To date we have seven units installed in country centres. Predominantly, those units are being used for psychiatric consultations or mental health applications. The main advantage of having these units out in the country is primarily so that we can respond quickly to the needs of the communities without the need to have them come down from the country and report to city based hospitals.

For us what was initially a project for Telemedicine has now become integrated as a mainstream service delivery strategy within the health commission to deliver mental health services out to the country centres. The needs for the technology that we use are really quite simple. It is that facet of our service that has let us use videoconferencing and it has made it the success that it is. Primarily, we do not rely heavily on the technology or the technological bells and whistles that this technology has to offer and in that way we minimise the possibility of problems that we might face with the technology.

Put simply, we use a talking head scenario. We have patients or mental health workers or clinical support and administration applications. We just look at them and they look at us. Therefore, we do not need all the add-ons that many of the other health related disciplines might have to use. That is a big advantage for us and it has lent itself to the success that we have achieved over the last three years.

CHAIRMAN—Is Glenside Hospital a psychiatric hospital?

Dr Hawker—Yes, it is. Perhaps I might give a bit more background. Steve was involved as project manager right from the very beginning and at that stage was working with Dr Peter Yellowless who was the chief psychiatrist. You have already had submissions from him, if you have not already spoken to him.

CHAIRMAN—Yes, before he went to north Queensland.

Dr Hawker—Steve and Peter developed the initial project. I was a latecomer inasmuch as I became involved through my role as a psychiatrist in the casualty department at Glenside Hospital, which is a psychiatric institution. It seemed appropriate that rather than have patients coming down for an assessment in the casualty area we should provide the assessment over videoconferencing. I made myself available and became quite busy doing that. As the service evolved, it became evident that the initial use for videoconferencing was not eventuating as they were expecting. Rather, the service that I was developing, as far as providing relatively emergent consultations, became the increasing mainstay of the service.

It was initially envisaged that the psychiatrists who otherwise visit the country, say for one or two days a month, would be able to use videoconferencing to link up with the mental health team or patients or GPs in the country in between their visits. That did not really happen because the visiting psychiatrist either was not working on campus and it was just too difficult to make the effort to come to use the equipment, or was a private psychiatrists who was travelling to the country and therefore was not otherwise employed by the mental health system and so would not be paid for doing any videoconferencing.

There was also the thought—and it did happen to some extent, though not as much as it was expected—that patients who were admitted to a psychiatric in-patient ward would be able to link up with their family or GP or a worker from the country before discharge, and then be followed by the admitting team after discharge. That cut across the current mental health strategy here in South Australia, which is—as everywhere—to deinstitutionalise, to place the in-patient psychiatric beds in general hospitals, which has been occurring here. It went against that, so most of the patients were admitted off campus to other hospitals. It was very difficult for the treating team to come to Glenside to use the equipment. Though it still happened on occasion, it was not very often and the emergency assessments became a very credible, useful and meaningful clinical service to be delivered over videoconferencing.

CHAIRMAN—Do you believe the quality of care you were able to deliver through Telemedicine was as high as that you would be able to deliver to the same person talking face-to-face?

Dr Hawker—Almost.

CHAIRMAN—Particularly in your area of specialty, perhaps not as much in others?

Dr Hawker—Yes. It is important to set and perhaps further describe the service that we provide. That has evolved primarily out of my work from casualty, because I subsequently moved over to take a 0.5 position as a director of Telemedicine services.

The model that has evolved is we do a psychiatric assessment of a patient. I believe that the assessment we do over videoconferencing is more than adequate; it is as

good as being in the room with the patient. But our intention is not to treat the patient over videoconferencing. Our intention is to do a consultation liaison where we are doing an assessment and providing the primary care providers of the patient in the country with advice and guidance as to how best to manage that patient. That is a very important principle and I believe very strongly that we certainly do not pretend—and I would question anybody who does pretend—to treat patients at a distance over videoconferencing.

It is important, from a specialist's point of view, that we are providing support to the primary care practitioners—the general practitioners and mental health workers in the country. So we always have somebody sitting in with the patient while we are doing the assessment. It is usually a one-off interview.

CHAIRMAN—You mentioned that there was no incentive for private practitioners to use the facility because they did not get paid. What changes, and possibly what safeguards, would you want to see to the schedule to enable people to be paid but to protect the revenue as much as possible?

Dr Hawker—One of the most exciting potentials—and it is a reality for us—is providing specialist consultation over videoconferencing. I see the most important and immediately useful way of using videconferencing as a general practitioner being able to access whatever specialist they want to provide a consultation via teleconferencing so that a patient does not have to travel down to the centre or wait for the specialist's next visit to town. If there was some way a consultant could charge for their time in providing that consultation that would enable both the patient and the general practitioner to have a greater choice and a greater responsiveness in the request for a specialist opinion.

CHAIRMAN—Do you see Telemedicine as a means of saving money or delivering better health care, or both?

Dr Hawker—The saving money bit depends on where you are arguing from, or even on making money, which some people argue as well. The most important issue is that it delivers or enables better health care to be provided. One could from that argue that you are saving money if you get into the issues of primary care prevention. I travelled as a psychiatrist to Wudinna, which is a small country town in the middle of Eyre Peninsular with a population of only 600—

CHAIRMAN—As a private practitioner?

Dr Hawker—as a private practitioner. Because it was a relatively small patient population, with only one GP in the area, sometimes I would travel up there and only see five patients, which was barely worth the hassle and the expense. It really was not and I subsequently stopped because of that. Some of those patients I saw should have been seen a week or two previously. If I had been able to see them when they needed it, then it would have been of greater assistance to them and possibly reduced any subsequent morbidity.

Though the cost of putting in videoconferencing for small towns in particular means that they are way down the list for when to put it in, the need is greater really because private practitioners are less likely to travel there as there is not a critical mass of patients at any one time.

CHAIRMAN—There have been varying definitions of Telehealth and Telemedicine and some people feel strongly about using one term or the other. Which term do you feel is better and do you think it would help the development of this technology if everyone could agree on just what Telehealth and Telemedicine mean?

Dr Hawker—It is really just a matter of semantics and there is a danger of getting a bit precious about some of the semantics at times. I like to use words that most aptly describe what is happening. As far as I am concerned, Telemedicine probably most aptly describes what is happening and that is delivery of medical services over telecommunications.It can also be argued that paramedical services could also be delivered over those telecommunications, in which case one might then more aptly argue that it is Telehealth rather than Telemedicine because medicine in many quarters is a bad word.

Mr FORREST—Just further on that fee discussion before, how are your current programs funded?

Dr Hawker—Currently it is funded from our Health Commission here in South Australia.

Mr FORREST—By some grant process or something, is it?

Mr Kavanagh—The process we went through, when we recognised in the early days—in November 1995—that this had potential to deliver services to the community, was that I basically just put together a business case proposal to our Health Commission to install units in the country centres and to establish the Telemedicine unit. That business case was primarily based upon service delivery aspects. The cost issue, of whether or not there is money to be saved in this, is something that it is very difficult for us to ascertain at this stage. Various areas where we can save money include, of course, travel from the country centres to the city and the costs that incurs. There is also an argument in relation to the general health of the community, and putting an actual value on the health of the community is difficult to do in the short term.

The primary difficulty we face is that all of our efforts are intervention. We will receive calls from GPs in the country centres who are experiencing difficulties with their patients. That is when Dr Hawker and other consultants will come in and intervene in what may otherwise have been a long waiting period before the patients could see a visiting consultant or had to come down to the city. How we measure that intervention effectiveness is very difficult for us to do and, effectively, what we are doing is looking at trends for that. So the question of costs and the savings that can be made from this was not in that original proposal to the commission purely because of the difficulties involved in ascertaining the cost benefit. There is no doubt that that cost exercise is under way. It is just going to be a longer-term strategy to actually identify these cost savings and the

impact of intervention.

Dr Hawker—What has happened as far as ongoing funding is concerned is that there was initially project funding made available by the South Australian Mental Health Service, as it was then. That service has been effectively dissolved or disappeared. Our Telemedicine service was initially aligned under what was the country division of the Health Commission, which has subsequently also been dissolved. We are now sitting within a region which has been defined in rural South Australia; just as there are regions of south, north-east, north-west and east within the metropolitan region, there is a country region for mental health services. We put together a budget that we felt was necessary to be able to sustain our service and expand it. That has been put to the Health Commission and accepted for funding, so it has its own budget and is proceeding.

Mr FORREST—You mentioned that your service does not need the bells or whistles. But what is involved with the basic teleconferencing facility, capital-wise? I would be interested if you have had any difficulties with the lack of an infrastructure. If your rural communities are anything like mine, there is no capacity to handle ISDN yet. What sort of money is involved and could you tell us about any infrastructure?

Mr Kavanagh—There are two separate issues: one is the technical possibility to have the videoconferencing equipment made available to the community; and, secondly, there is the cost if they can have it made available to them. The accessibility to ISDN in the country is really quite expansive now. I am not sure what is happening on a national level, but within South Australia Telstra's last estimate to me was that 80 per cent of the country communities will have access to it by the end of this financial year. That is quite significant. So most of those small country centres will be able to have ISDN connected.

The other issue is whether or not ISDN is even going to be the medium that is going to deliver videoconferencing in the next couple of year. I do not believe that the issue that exists today about accessibility is going to be a problem for us down the track. So we are left with the cost aspect and what the cost will be for putting these units in. Again, there are two arguments. One that is current is the room system versus the PC based system. They are the two generations of equipment, if you like, that we have available to us. The PC based system you can install and run for about $12,000 to $15,000. That is the sort of budget ballpark that you need to put a PC unit in. A room system would be anything from $30,000 to $100,000 to put in. But, typically, the units that are being funded for at this stage will be about $30,000 per unit in capital outlay and running costs for the first year.

Dr Hawker—And our budget has encompassed actually putting in the units in the country end. As Steve said, we have now got seven sites around South Australia and we are about to put in another nine—

Mr Kavanagh—Another 10 country sites by the end of this financial year.

Mr FORREST—That is on the capital side. What about on the operating side? Is there a high telecommunications cost as well?

Mr Kavanagh—The actual cost to run these units at the moment is $40 an hour for your running costs into the country. Our budgets are based on what clinical time we have available to give to the country centres at $40 an hour, effectively. So, it is a simple mathematical equation to work out what budgets are required for that. But $40 an hour is today's figure for ISDN. Again, who knows what is going to happen to that figure down the track? The PC based units look very attractive, because their capital costs are down; but, if we talk about a network, my personal belief is that the network is running—I apologise for the jargon; I assume, if you have been around here, you probably know it all by now anyway—at 128 K at the moment. Within the next five years—and I will be surprised if it is not sooner—384, I think, will be the standard that we will run at. Bearing that in mind, that is foremost in my mind when recommending what sort of equipment we should put in place, because I believe that the network will make available 384. So, if we have a network of a number of PC based units that cannot be upgraded to 384, then that is the concern for me at this stage. That is the primary consideration in the network.

Mr FORREST—You need a crystal ball to second-guess the changes in technology.

Mr Kavanagh—You do, indeed.

Mr FORREST—I would like to switch to a couple of other issues that we are fascinated by—the ethical and privacy issues. Have you had any difficulties with them? You might think that the transmission is in private; but it is fascinating sometimes to learn who can pick up the signals. I was assured earlier that digital signals need specialist interpretation. Videoconferencing does not.

Mr Kavanagh—I suppose the reality of the privacy issue is that it is a damned sight easier, if somebody wants to listen in on the call, to stand out the front of the door and just put their ear to it than to tap into the technology, which is, of course, a privacy issue that would be faced whether it is face-to-face or using the technology. The question has been asked at every turn about privacy issues. It is a very hot topic. But, in reality, it has not been a concern for us. I suppose that is based primarily on the advice I have received from Telstra. To actually tap into, if you like, an ISDN line is extremely difficult and requires considerable resources. But, if that was your mission, you would be better off just to put a bug in the room rather than try to tap into the actual network.

Mr FORREST—So, you have not had any challenges to address in that regard?

Mr Kavanagh—Only from colleagues who have raised the concern, but not at a legal level, no.

Dr Hawker—We do not videotape any of the sessions. We obviously could, but we do not. If we choose to videotape a session, for whatever reason, which happens very rarely, then of course we get signed consent from the patient—an informed consent from the patient. But we do not otherwise videotape the call.

CHAIRMAN—A lot of the queries in relation to privacy tend to presuppose that

existing procedures are entirely protective of the patient's privacy, but we have heard that people have found medical records on the dump. Indeed, often the information is not secure now. Perhaps, with some of the modern means of transmission of this information, there is increased privacy with what you are doing over and above what has traditionally been the case.

Dr Hawker—This is the legacy that Steven and Peter established to start off with. We have just carried on and delivered the service rather than spin our wheels ruminating about this issue. I know that has been one of the concerns in New South Wales. I have been very concerned about informed consent and privacy.

Mr FORREST—I want to respond to Mr Slipper's question about quality; I have probably misinterpreted it. Obviously, because it is not clinical, the body language and all the things I would imagine that you need—

Dr Hawker—It is clinical.

Mr FORREST—It is clinical?

Dr Hawker—Yes.

Mr FORREST—When you are doing this assessment, are you able to pick up the body language and all of the other external signs that you need?

Dr Hawker—It is good enough for what we are doing; it really is. We have not had any feedback at any stage from, say, the patient, or the patient's GP or the mental health worker who might be sitting in with the patient, that we have totally missed the boat or misinterpreted things.

Observation of the person and the finer body movements is not as good as being in the same room. Often we might have to ask the person who is sitting in with the patient for some further details to help us come to a diagnostic assessment. That is why it is very important not to pretend that we are the ones delivering and maintaining the service. We are assisting clinicians who are on the ground with the patient.

What is remarkable, though, is that through videoconferencing it is possible to develop a rapport with the patient. Within psychiatry a lot of our diagnostic assessment is on the quality of that feeling of connectiveness with the patient. Through videoconferencing, that certainly is possible to get.

Mr FORREST—Because you can actually interview them in that way when they are having a crisis, rather than two weeks later when it has all disappeared, is it possible for you to get a better feel?

Dr Hawker—Yes, very much so.

Mr Kavanagh—It is worth mentioning the evaluation studies we have done. That

concern as to whether or not it is as good as face to face is something that has been asked, and is very valid, of course—'What is the quality of care you are delivering?'

Two particular studies have been done. Doctors Michael Baijent and Chris Lloyd, who are both psychiatrists, looked at the very question of what is the quality of care of this medium compared with face to face. The results demonstrated that the primary diagnosis was not affected by the medium. However, there were a number of smaller issues—such as slight tremors, degree of dishevelment and other issues—that cannot be resolved using the equipment.

That study was very important in, firstly, ascertaining for us that, yes, it is satisfactory for primary diagnosis and, secondly, giving the consultant specific questions that they would need to address—that they know the equipment is deficient in these specific areas and, if those specific areas are relevant, then of course pursue those areas with the clinician or the mental health worker who is with the patient. So that was very important.

The other evaluation study that was done was on the degree of satisfaction of using this equipment between the clinicians who were using it in the country centres and the patients in the country centres. Both of those studies were very positive in that the patients were very happy to make use of this equipment rather than their having to come to the city or wait for the length of time required to see a visiting psychiatrist or their getting no treatment.

CHAIRMAN—Couldn't that mean, though, that they were just pleased to have some psychiatric help and they were not actually suggesting that what you are doing is better than seeing Dr Hawker in her surgery?

Dr Hawker—But the issue and what GPs have commented on is that it is actually much easier for the patient to get a psychiatric assessment over videoconferencing than to see a private psychiatrist in the town, because we all tend to be pretty booked up and it can take several months to get in to see a private psychiatrist, even if the patients are prepared to come down to Adelaide, let alone wait for the psychiatrist who is visiting the town. So it is not necessarily as good as face to face. But, if a face to face is not available within a timely fashion, then it is certainly a lot better than the alternatives. Some GPs have actually commented that it is easier to get patients to agree to see a psychiatrist via videoconferencing than to see them face to face. That is another twist, that it is less threatening for some people.

CHAIRMAN—Not as bad a stigma?

Dr Hawker—And you can turn the psychiatrist off, I suppose.

Mr FORREST—I do not want to steal the limelight Mr Chairman. I would like a second opportunity. I have been fascinated by where Australia sits as in terms of how far we have progressed in this technology and so on. In a country like ours, being so remote, we ought to be the world leaders. It seems to me that, with four years experience in the

field you have been investigating, we would probably be well regarded in our progress in that area.

Mr Kavanagh—We clearly are well regarded and we are very proud of the fact, as well. We have spoken at many international conferences about our experiences over the last few years. To our knowledge we are the most experienced at what we do, particularly with the psychiatric applications. That is recognised. There are a number of Telemedicine organisations internationally that we are known to and they have consulted with us as well. In answer to your question, yes, we are and we are very proud of the fact. I think primarily it is because in the early days we were keen to make sure that this project moved ahead, rather than stalled on the issues that have already been tabled, such as the privacy and the legal issues, the quality of the care. All of those were issues that we chose to push on through, I suppose, looking at it retrospectively in terms of how far we progressed, rather than trying to tidy it up before we started.

Mr ROSS CAMERON—You probably would not have achieve very much in life if you had everything perfect before you started anything. You have already answered a number of questions, but I just want to understand your role. This is a primary diagnostic tool. Is that what we are talking about? So you come in when you are trying to get a handle on what a person's condition is?

Dr Hawker—That has been one of our major clinical uses of the equipment to date, yes. But the other thing that is happening is that the country mental health service is evolving. It is basically a new service and we are just in the process of opening an in-patient unit—it is sort of opened—just for country patients, which again is new. Previously they were just distributed evenly amongst other in-patient wards.

This is a ward just for country patients and we now have installed a videoconferencing unit on the ward, so that unit will be much more used for linking up with mental health workers or supports for the patient when they are actually on the ward. Discharge planning can be done in conjunction with people in their own community. Also I am envisaging that, once that person is discharged, there can be some follow-up assessment. So that is slightly different from just the diagnostic assessment.

Mr ROSS CAMERON—What would be the usual number of consultations that you would have with a patient, if you did an statistical analysis?

Dr Hawker—It has been steadily increasing as people are gradually getting to know about the service and accepting the service, and as our structure is developing and having clinicians available at our end to meet the needs. I would say that on average, at the moment, we probably have five or six clinical sessions a week. There would be other sessions as well, either teaching or for administration and meetings, that sort of thing. But that is increasing.

Mr ROSS CAMERON—Obviously, the length of time you would see any individual patient would vary enormously.

Dr Hawker—Mostly it is around an hour.

Mr ROSS CAMERON—And then how many times—

Dr Hawker—Afterwards?

Mr ROSS CAMERON—Yes. Are you usually dealing with patients on a one-off basis?

Dr Hawker—Yes, I am, personally. I am envisaging that, once we have got our in-patient unit really established, and once the medical staff, the social work staff and the nursing staff in that unit get to know certain patients, they may provide more support to them and the community and their primary care providers. They may well see them more frequently. For example, if they have been admitted and problems arise, the person who has treated on the ward will then link up. That type of clinical interaction would be different from the work that I have personally been primarily involved with.

Mr ROSS CAMERON—Would the technology be suitable? In terms of these quality of care questions, if you diagnose someone as a schizophrenic and you recognise, 'This is going take 20 consultations,' will the technology still give you the quality of outcomes that you need in terms of the relationship with the patient?

Dr Hawker—I believe so. Although I am not involved in the provision of that sort of service and as far as I am aware it is not really given on a routine basis from Glenside, we have one psychiatrist who lives outside metropolitan Adelaide. She lives in and works from Port Lincoln. That is Elaine Skinner. As soon as she moved to Port Lincoln she was adamant that videoconferencing units be installed in Port Lincoln. It has made an enormous difference to her practice, because she was travelling up to Whyalla, Ceduna and around Eyre Peninsula. We put a videoconferencing unit into Ceduna so that she could drastically reduce the amount of time that she travelled, and she has actually been doing much more of that ongoing follow-up with patients, in association with the GP and the mental health team. So she has been following patients more. She has a session every Thursday afternoon, when she sees a number of patients over videoconferencing. Then when she comes here, as she does for meetings, she can still do that. She uses our equipment to link up to Whyalla and Ceduna.

Mr FORREST—How is she paid?

Dr Hawker—For the times that she is using it, we pay her a sessional fee. She works, I think, three sessions now for the country mental health unit.

Mr ROSS CAMERON—My last question is one which I think you have pretty much answered. It may have been an urban myth, but I remember there was some story about a hospital for infants. I think they were orphaned infants, from Romania or pre-war Germany—I cannot remember where. The argument was that they had this incredibly high mortality rate because nobody ever touched the children. It was not to do with the drugs, it was just a lack of human contact. I feel that one of the reasons people are losing a sense

of control over their lives is that they live these virtual lives. People used to say that the idea of the doctor making a house call and physically laying hands on the patient and asking questions was important—it was the whole experience that was health giving rather than the prescription at the end. What do you see about those kinds of incidental aspects of human care?

Dr Hawker—I think that that should never be replaced by technology delivered services. It is important to have that extra connectedness that you get in the same room. Telemedicine or Telehealth or whatever should not replace that, but it can certainly augment it and it can certainly make that much more effective. What we have found—and this is one of the things—is that initially there was a lot of resistance and there still is in some quarters for the services that we are providing, for fear that it is going to mean that they are not going to get as much support by the visiting psychiatrist or they may preclude any chance of attracting a resident psychiatrist into the town. I think it can be argued quite the reverse.

Our experience is that Elaine Skinner has certainly found her job much more viable as an isolated psychiatrist with the use of videoconferencing. The visiting psychiatrists have commented that—these are going to reasonable sized communities like Port Augusta and Mount Gambier areas and so forth—prior to Telemedicine their work was very stressful, it was very pressured, and they were being forced to assess new patients in 20 minutes and they were working from eight in the morning until eight at night on the day that they were there.

Telemedicine has meant that their initial assessments, the emergencies, are not being squeezed in to the same extent to the visiting psychiatrists' time because we are taking care of them. If we feel they need ongoing psychiatric monitoring we refer them to the visiting psychiatrist, but the case has already been worked up, they are able to pace their day in a much more viable and meaningful manner, and so it has really helped that.

Dr NELSON—Are there any sort of patients that you cannot treat in this way? Are there any that are really unsuitable for Telemedicine?

Dr Hawker—There are some that are very difficult. In fact, I had a very difficult one just last Tuesday. It was a woman and, as it happened, we had some technical problems to start off with and I started speaking to her over the phone and she was very clipped, with very minimal verbal response, and when the link was finally established and we could finally communicate with each other she did not have any verbal response at all over the videoconferencing. But I suspect had I been there in person there would not have been any verbal response either. So that was a very interesting clinical experience. I got her back on the telephone and had her talking to me over the telephone while I watched her over the videoconferencing.

The most obvious example that people think of is, 'What about the schizophrenic patient who believes that they are getting messages from the TV?'—and we have had a few of those. Interestingly, they differentiate and they are quite comfortable, and often the comment from the mental health worker who is sitting in is, 'We have never had as much

information from this person as they have given you.'

Dr NELSON—It probably confirms their—

Dr Hawker—But nevertheless they still talk about getting messages, but they differentiate it as not being over this particular screen, so that has not been so much of an issue for those patients.

Dr NELSON—Do you feel it would be feasible to establish a Medicare item number for Telemedicine consultations in psychiatry? Do you see any logistic problems with that?

Dr Hawker—No. In the actual practice of delivering the service, I think it would free things up a lot. I think it is interesting and varied and the type of consultation service that is provided, particularly if it is, say, done from general practice rooms, very much clarifies the GP as intrinsically involved in ongoing involvement with the patient and you are just helping clarify a point or two. That is very rewarding and interesting work to do, and so I think there are a number of psychiatrists who would be more than willing and interested in providing such a service, but do not—

CHAIRMAN—If it was financially rewarding as well—

Dr Hawker—If it was financially rewarding and yet they do not want to get involved with all the bureaucracy and hassle and problems that they might incur if they do some sessional work within the state government service. I think, in fact, practically speaking it would be a very quick and easy way of meeting clinical needs and it would be very responsive.

I think a lot of psychiatrists, if they have friends, or if GPs know a psychiatrist personally, they will ring them up and discuss a case in the evening or in between patients or something anyway. This would just be a much more effective way of doing that and you would have more of a chance to actually assess the patient.

I guess the issue you would need to cover would be making sure that there is some validation that it happened and the service was delivered, so I guess the patient would still need to sign. Then you have got the other issue of, if you have got the GP and the psychiatrist, who bills for what, and whether both can charge Medicare. At the moment what is happening is that because we are paid by the state, if the GP sits in on the session, and a few do—an increasing number are now choosing to sit in on the session—then it is for the patient and they are delivering a service, albeit with the help of this link. So I believe the GP is entitled to still bill the patient for that time that they spend with them, because nobody is being charged by the psychiatrist. There are still some tricky issues involved.

Dr NELSON—Presumably the GP will still provide a referral for the psychiatrist. Possibly you could have a structure a bit like an assistance fee with surgical procedures or something like that. That would be one way.

Dr Hawker—Yes. There have been some very positive experiences. There is one notable instance of a GP in Whyalla who has made a point of sitting in on all sessions with Elaine Skinner, a psychiatrist from Port Lincoln. I heard him talk about his experience and he says it has totally turned round his way of working with patients. His general practice and his experience within general practice has really changed dramatically because he has learnt so much in dealing with people. He has found it a very positive experience just from his own learning point of view. That is one of the things that the mental health nurses have commented on, too, that by sitting in while a psychiatric assessment is occurring and then discussing the case with the patient regarding the management plan and so forth, it is a very rich learning experience in itself.

Mr ROSS CAMERON—So you think GPs generally should spend more time with psychiatrists?

Dr Hawker—I will not get into that one.

Mrs ELIZABETH GRACE—At the learning environment and technology Australia conference held in Adelaide in September-October, a number of speakers warned about a computer underclass that would emerge because of the basic health and education services that have been denied to the emerging underclass. This is particularly so in rural areas and with the people that are less well off. They are still being denied health services even though Telemedicine would allow local GPs to access more. With your involvement with telepsychiatry, have you been able to determine whether this is likely to happen, or is happening, that there is a computer rich and a computer poor class emerging?

Dr Hawker—It is irrespective of how literate they are or how interested they are in computers. That does not have any bearing whatsoever on whether they access the service. At the moment, the push is for us to install these videoconferencing units into regional and subregional hospitals so they are ultimately owned by the regional health authority, and all the patient has to do it come along and sit in front of it and talk. There is a problem with some of the GPs being somewhat technophobic and being reluctant to have anything to do with this, but that is probably not what you mean.

Mrs ELIZABETH GRACE—You do not see that as an emerging problem then?

Dr Hawker—No. Although, sort of related to that, I personally feel that the whole concept of these telecottages which, in Western Australia, they are looking at as far as rolling out their Telemedicine services is concerned. That is an answer for the smaller community, where you have a centre for the community where they are able to have a combination of a multitude of different types of technologies that is owned and accessible to all people in the community. Videoconferencing equipment is part of that and people could access Telemedicine via that. Again, that would stop the underclass occurring. I think that is a very good solution to the small communities where any one agency within that community cannot justify the equipment itself, but pooling it so that the bank, the school and the doctor could all access the videoconferencing equipment is a way of getting around that.

CHAIRMAN—There is one last question.

Mr FORREST—I have a question for you, Mr Kavanagh, because we do not often get the opportunity to talk to somebody with your technical experience. Taking us beyond the terms of reference of this committee, do you think that the Commonwealth could learn by the use of this technology? I have just added up 12 air fares to get us all here. We have been travelling around the nation. The *Hansard* people have had to lug that equipment everywhere. If we were sitting in Canberra, would it be possible for us to conduct this inquiry with the use of this technology? It would save the taxpayers a lot of money.

Mr Kavanagh—The commercial application of videoconferencing is what videoconferencing is there for—those administrative applications. That is where the Picture Tels and the CLIs of the world are making their money from the corporate sector. The CEOs of the world have clearly recognised that the travel dollar is expensive, and they are just providing these units around the world and saving on travelling. The short answer is, of course, yes.

Given that there is a huge difference between what is technically possible to do and what is culturally acceptable—today, the technology is there to do whatever you want to do—the reality is that maybe we are just not ready yet, and there is a handover period that is just going to have to happen. We are going to see that in terms of health delivery as well. We can technically deliver health on any level using this technology, but people are just not ready to accept it yet.

So, yes, you can do whatever you want to do; but, no, I do not see it happening in the short term—if for no other reason than that people may well enjoy these perks. In fact, it is threatening to many people throwing these units in. To people who travel a lot and constantly, it is a godsend. They say, 'Thank heavens for this.'

CHAIRMAN—The defect in Mr Forrest's argument is that we would all have to travel to Canberra, with the exception of Ms Ellis, to participate in a videoconference.

Ms ELLIS—*Hansard* would not mind.

Mr FORREST—I raised the question to make a point. It could be a useful exercise if we, as part of our inquiry, did a videoconference and got first-hand experience of it.

Mr Kavanagh—In response to that as well, you do not have to travel to Canberra. You can all stay where you are and participate via videoconferencing.

CHAIRMAN—There is one other drawback at this stage. The parliament has not yet determined whether privilege extends to committee hearings by videoconference. So, that is one matter that would have to be looked at.

Mr FORREST—I use videoconferencing a lot to consult with constituents and

industry groups in my electorate, and it is quite useful. But that is only a standing order. We can fix that.

CHAIRMAN—Thank you very much for appearing before the committee today. We appreciate that. We have found your evidence very interesting. Good luck with your work in this area.

Mr Kavanagh—Thank you.

[2.12 p.m.]

DOLLMAN, Mr William Bentley, Director, Pharmacy Networking Project, and Manager, Drugs and Poisons Section, South Australian Health Commission, The Queen Elizabeth Hospital, Woodville Road, Woodville South, South Australia 5011

CHAIRMAN—Welcome. In what capacity are you appearing before the committee?

Mr Dollman—I appear as the director of the pharmacy networking project, which conducted an ambulatory care study for the Commonwealth during 1995 and 1996.

CHAIRMAN—The Queen Elizabeth Hospital, where you are at, seems to be very much at the cutting edge of Telemedicine in South Australia.

Mr Dollman—I think that is a fair observation. There are a lot of good people there who, opportunistically, happen to have been in the same institution and have supported one another to a great degree in achieving these things.

CHAIRMAN—We have read your submission. Would you like to outline perhaps the highlights of it, briefly, before we commence questioning.

Mr Dollman—If I may, and as an adjunct I can distribute a summary of some of the important issues that I think need to be addressed in the health care system in Australia.

Firstly, thank you for the opportunity of appearing before the committee. My colleagues and I were involved in a Commonwealth-sponsored ambulatory care program which was completed this year and we worked with a number of general practitioners in the western suburbs of Adelaide, networking with the Queen Elizabeth Hospital which is now part of the North-West Adelaide Health Service.

I would like to highlight some of the issues that I addressed in the summary that I presented to the committee. I am focusing on general practice, although my background is in pharmacy—

CHAIRMAN—You are a pharmacist?

Mr Dollman—I am a pharmacist. I have looked at GPs in relation to the prescribing of pharmaceuticals. I think the technology is equally applicable to other areas of primary care, including community pharmacy, but I have not addressed them in the submission. In fact, I have focused very much on general practice. Interestingly, as an aside, the patient responses were very favourable in terms of the use of this technology.

The health care system in Australia has inherent in it a number of limiting factors with regard to the use of good technology and good practice. I have summarised them in the sheet which I have just distributed. There are five points there which you may like to

go over in more detail. It needs to be emphasised that the use of this technology by general practitioners will require a degree of training and assistance to GPs. The previous submission referred to technophobes. I am not sure that is quite the expression to use. However, even the most interested GP had some difficulty in coping with some of the software that was presented to them as part of our study.

The dot points that I have listed on the second page of the submission focus on the need to provide better links between hospitals and GPs, providing drug information electronically and trying to draw together electronic medical records. With the push in South Australia towards a coordinated care program—and you would be aware of the health plus program that is being piloted in South Australia by Professor Peter McDonald—the need will be there for good technology to support innovative programs.

One of the ways of better informing GPs, I believe, is by electronic mailing of information, such as bulletins, and allowing on-line access to recent clinical publications. As these things become available—and it is fair to say they are, to some extent, in their infancy now—I believe that attitudes will change to the use of this technology. We saw that during our study. We believe that general practitioners have become aware of the cost-benefit equation and its shift towards the use of this technology—even if it provides them simply with better communication between the local hospitals.

I would say that for GPs to accept the step into this area they need support in terms of training. But, more and more, I hear of GPs who say they cannot afford the technology. Whether the Commonwealth or the states, or whichever body is responsible for this, chooses to subsidise the purchase of computers by general practitioners is not for me to say. However, I do think that general practices should be run more like small businesses, because that is what they are, and the use of this technology in small businesses is prevalent. In terms of pharmacies it would be virtually 100 per cent.

CHAIRMAN—Could you tell us what you know about the PharmaNet trial in British Columbia and how that trial might contain some advantages for this country, particularly given your own experience?

Mr Dollman—I am sorry, I do not know about the trial in BC.

CHAIRMAN—There have been definitions of Telemedicine and Telehealth around for a long time, but nobody can agree on what the words mean. Do you prefer one term or the other, or do you think it would be good to have an industry standard?

Mr Dollman—Your inquiry is covering a wide range of areas from videoconferencing right through to the sorts of things that we did, which was just electronic transmission of data. The word Telemedicine is a suitable expression to use. It is all embracing.

CHAIRMAN—Do you think there are changes necessary in the medical benefits schedule to encourage greater use of Telemedicine?

Mr Dollman—That may be one way of providing the incentive that is required to increase the penetration of this technology into general practice. But, on the face of it, no, I do not think so. Down stream from the consultation the potential for electronic reimbursement of funds and so on, which is, again, something that community pharmacy has benefited from, may flow from that.

CHAIRMAN—And what role do you see government having in the area of Telemedicine?

Mr Dollman—The government has to take the initiative because I do not think that left alone the professions will.

CHAIRMAN—Unless there is financial incentive.

Mr Dollman—The financial incentive is required, and that needs to be coupled with better information that they can use. But the professions, by and large, will wait until it comes to them, and if we want to look at the rational use of drugs in this community, and the better use of drugs in this community, that needs to start in primary care. We have to have practitioners who are prepared to explore non-drug interventions and follow that through with modest and sensible drug interventions before moving on to the more expensive compounds that are available for use in this country.

That will be achieved through the better use of technology, which will enable pharmacists and medical practitioners to interact much more closely. And that is through the passive provision of information, but also through the active provision of information by academic detailing and by the reference I made earlier to the production of online drug bulletins and so on.

The experience in the UK would suggest that having medical practices which incorporate an academic side to the informing of prescribers through pharmacists or through other GPs results in better use of drugs. You can monitor the use of drugs, you can do audits, you can do interventions where that is appropriate, and the outcome should be cheaper use of drugs and better use of drugs.

CHAIRMAN—The last question I have before I invite other questions relates to whether the government involvement should be state or federal.

Mr Dollman—At the moment we have a drug supply system, PBS, which is federally based, and the MBS, which is also federally based. Inevitably, it follows that there needs to be a Commonwealth initiative. If, through coordinated care studies and so on, that starts to change then the states must have a greater interest in it. But while it is an uncapped system, I suspect that you might have it on your own.

CHAIRMAN—Would you mind if I had the secretary send to you details of evidence we have received in relation to the PharmaNet trial in British Columbia.

Mr Dollman—I would be pleased to see that.

CHAIRMAN—It seems to have a lot of advantages, and it seems to touch on a lot of the areas in which you are interested. Perhaps you might come back to us with a submission on how you think that system would work here, or, indeed, how you feel your proposals would be better than what has been trialled in British Columbia.

Mr Dollman—I would be pleased to, yes.

CHAIRMAN—Thank you. Any further questions?

Mrs ELIZABETH GRACE—In the additional piece of paper that you have just given us, you refer to 'the need for a common drug history for each person'. That rather appeals to me because I feel that could stop a reasonable amount of the doctor shopping that they talk about. You also refer to 'the current uncapped access to the PBS system which allows the overuse and misuse of pharmaceuticals'.

Where do you see Telemedicine, Telehealth or whatever we are going to call it really assisting in that area and how do you see it happening?

Mr Dollman—I agree with you that it is vital to avoid what is currently possible under the existing culture of the way medicine is practised in this country where patients can go wherever they like, as often as they like, to get prescriptions. They can go to any pharmacy and get quite potent compounds over the counter. They can go into their supermarkets and buy paracetamol, which I regard as quite a toxic compound if taken in overdose. They are areas we will not capture I suspect.

But where the technology is such a boon is with electronic prescribing, which I believe is inevitable because it produces printed prescriptions which are legible and not subject to error, or electronic transfer of prescribed data into a central data repository or incorporation onto a smartcard. All of those things enable the patient to go to whichever GP or pharmacy they wish and all of that data becomes captured either on the card or in the central data repository. As long as people continue to use their own names and their own Medicare numbers or whichever tracking mechanism is employed, then we would have some confidence in a common drug history for our patients.

I believe that as technology improves and as the culture of medicine and the way it is practised in this country changes and as the public is better informed of the risks associated with inappropriate drug use, we may be able to take that step. Impediments will be arguments about privacy and privacy of data and integrity of data and so on, but the technology is there to overcome all of those things I believe.

There will have to be a different approach to the uncapped access to PBS drugs. Certainly a better informed prescriber can make better choices and can, as we found in our program, just by reference to the computer during the consultation, inform the patient in a better way. The prescriber can produce printed documentation about the drugs that are being prescribed. We found that patients enjoyed that access, if you like, to the technology and were not bothered by it. The fact that the GP had to turn away from them to access the screen was overcome by the fact that they could see the screen. It was a positive thing

rather than a negative thing.

The whole PBS scheme I think needs to be revisited. I think the costs are escalating exponentially. Better informed prescribers and better informed consumers will only go part of the way to controlling that. There are a myriad of interests involved here—the industry, the professions and what have you—and once more one wonders if we had a more tightly controlled system of general practice and pharmacy whether we might start to get on top of some of those issues.

Mrs ELIZABETH GRACE—Often—and I know of a couple of cases personally—people use two or three GPs and they never tell each one the full story for any number of reasons. They forget, they want something, they want to get the right story across or whatever. Do you see this system being one where that information, particularly the drug information, can be centralised so that doctor A knows what doctor B prescribed and knows what doctor C prescribed and at least when they get to doctor D, there is some idea of what has been handed out and what the patient has been shopping around for? Do you see that as a possibility?

Mr Dollman—I do. It would need to be mandated that the patient produced a card at each consultation and the practitioner would need to have access to the information. But the proposition you put is happening even innocently now because as we all know, getting to a general practitioner is not the easiest thing. More often than not they are in group practices. If the person you like to see is unavailable you see someone else in the practice. So an electronic medical record coupled with a drug history will facilitate the care of the patient even within a single practice.

Mrs ELIZABETH GRACE—Do you see also that some record is kept of whether those scripts have been dispensed? Do you see a means of keeping track of that because somebody may issue a script and it may never ever get dispensed for any number of reasons?

Mr Dollman—You are absolutely right and the storage on a card or in a central data repository would mean that the health carers would know what has been dispensed and what has not. It could be a completely paperless system.

Mrs ELIZABETH GRACE—So you see that as all possible within the system?

Mr Dollman—Yes.

Mrs ELIZABETH GRACE—Thank you.

Mrs VALE—Apart from the fact of having all that stored on smart cards there is also the problem that is often brought to this committee, the concerns of privacy and the ethical nature of the technology. How do you see it should be addressed? Do you have any solutions for the issues of privacy? How do you think that the law or the practices could adjust to those challenges?

Mr Dollman—There certainly are a number of issues and they cannot be ignored. There would have to be a judgment made—and I guess it is the community that needs to make it—about the benefits of such a system over the disadvantages which might include what would appear to be a lack of privacy. But the encryption of data is good. There are now standards that have being produced and the Australian standard is being adopted from Europe.

There is a lot of effort being put into the confidentiality aspects of these sorts of things. Some of the technical issues such as electronic signatures on prescriptions and so on are readily addressed. Certainly in the foreseeable future, whether it is a voice recognition or a thumb print or something like that on a computer screen—this is getting out of my area—these things will be done and it means that you have some confidence that the data is secure.

It needs work still. It is very conceptual but I believe that as a community we will be better off for knowing what drugs are being used in the community and by whom and for whom because, as I have said in the last dot point on the paper I circulated today, the Health Insurance Commission has at its fingertips an enormous amount of data on drugs that have been prescribed in the community. If we could start to plot drug use against diagnosis and start to look at trends in drug use, the best drugs to be used in certain conditions, outcomes, then we as a community will be better informed. If along the way prescribers who misuse or overuse certain compounds are identified, good.

Mrs VALE—Thank you.

Ms ELLIS—Mr Dollman, I hope I am not asking you something that you have already covered because I did have to leave the room for a phone call so I apologise if that is the case. The project that is referred to in the submission, namely, the continuous pharmaceutical care of patients moving between hospital and primary care through the implementation of a computerised drug management system, identified a number of issues relevant to the inquiry. Could you discuss any evaluations made of the project?

Mr Dollman—Yes. We, through a process of structured questionnaires and structured interviews and open questions, addressed the issues with regard to the general practitioners who were involved—their patients—and formed our own conclusions about the merit of what we had done. Our report, a copy of which I have here, but is rather too voluminous to leave with you, addresses our findings in all of those respects.

I must emphasise that we had only six GPs in the state because that was the scope of the experiment. They ranged in age from their 60s to their high 30s, men and women. There were different sorts of practices from mainly indigent patients through to relatively affluent patients, elderly patients, young patients. What we found was that, irrespective of their age and their use of computers in the past, which was again a variable, the GPs all endorsed the experience and found it a very positive one to the extent that they all purchased the PCs that we had loaned them at the end of the study. I thought that was a telling statement.

CHAIRMAN—I suppose they had a discount rate because they were demonstration models?

Mr Dollman—Yes, I have to concede. The patients alike found it a positive experience. Their comments ranged from simply, 'It was nice to get printed information about our drug therapy' through to how they found it useful to find the information on their screen. It often was just information about their previous drug history, although the GPs could go in and bring up the databases which gave information on dose and contraindications and so on—all very positive.

The hospital experience was equally positive. We are looking for, and I think it is fair to say most hospitals still have not found, a timely and accurate way of communicating patient information to general practitioners at discharge, or through the outpatient section. As hospitals tend to be discharging patients quicker and sicker, that seems to me to be even more important than it ever was before.

Ms ELLIS—You might already have answered the next part of my question inadvertently, but you might have also given us a clue as to how we can answer it. That is, given that the pilot project identified the need for GPs to access electronic sources of drug information and other medical data, what are your views on how GPs could be influenced to use the appropriate technology, particularly when about 14 per cent of them use computers in the clinical side of their practice? You may have suggested that the way to do it is to have a buy-by-trial process put into every GP's office in the country.

Mr Dollman—I think the answer is to get PCs, not just into their practices, but onto their desks. What we found was that most of them—perhaps not all of them, but certainly in our study all of them—had PCs in the practice for billing purposes and so on, and that they were able to justify. Having it on their desk and using it as part of the consultation was the big step for all of them. We found, as I said, that it was a very positive response. We may have had an atypical group because we invited interested parties to take part in the study. But given the age range and their backgrounds, both in terms of experience and patient mix and indeed, ethnicity, I think that what we found could be translated pretty much to a broader range of general practitioners. In the end, I suspect that the government may have to subsidise the introduction of this technology into practice, and seek to achieve its greater use by some sort of incentive. Whether it is through some sort of vocational training register or whatever, or, as someone else suggested earlier, co-payment or something in terms of the MBS, I just do not know. But if you do that, of course, you are going to have to audit their use of it, and, interestingly enough, the technology will allow you to do that. You can set up shell programs which will tell you how often the GP accesses a certain database, and you can just keep a record of that, which you can interrogate later on if you wish.

Mrs ELIZABETH GRACE—In regard to the rural and remote areas, could you tell us some of the advantages of the telecommunications technology for the GPs in this area? Second to that, are there any pilot projects envisaged in the rural and remote areas, particularly in relation to your area?

Mr Dollman—If I can talk about the rural areas just for the moment, we believe that, quite apart from the fact that it is difficult to get general practitioners to go and work in rural areas, those that are there now need access to information. We did not particularly go out and seek their views, I must say, although in the publication of our drug and therapeutics bulletin we decided, after some little while, to distribute it to rural divisions of general practice in South Australia. We did that and then we surveyed those people to find out how useful they found it. Interestingly, the response was very good, they found it very useful, and the areas they wanted addressed were very much in parallel to the community practitioners in metropolitan areas.

So perhaps their needs are not that different. Perhaps there is a perception that they have less access to information, although the technology, just the telephone, I suppose, can bring them close to, say, a drug information centre in a major hospital in the state. However, I do believe that it may be a way of improving the practice of medicine in rural areas, by providing information such as this. And I would argue that it ought to be provided at the same time to other health carers in rural areas such as pharmacists, physiotherapists, social workers and so on, because there are now specific databases which address the specific needs of different health practitioners.

So whether that is done through central points in country towns, a bit like the Tanami is trying to do with its videoconferencing to certain positions, or whether it is by the more traditional hard wire access on telephone lines to PCs, needs to be established. Certainly, as GPs move about in the country, they may profit from having remote access via mobile phones and the like, but then the reception problems can be a difficulty.

Mrs VALE—The Commonwealth Department of Health and Family Services has indicated that there are several issues that need to be addressed if the potential for improving the health sector information management is to be realised. Some of these issues include the standardised definitions and concepts, also uniform standards for electronic data transmission, and standard classifications for all items of interest. Could you discuss with us and how these questions of standards were addressed in the pilot programs?

Mr Dollman—We looked at the standards as they applied to data encryption for transfer of information. We did this in a peripheral way, because the software that we employed was commercially available and it did not require us to delve technically, I suppose, into the issues. We used basic electronic mail facilities to transmit between the hospital and the general practice. I can tell you that Standards Australia are looking at the very issue of encryption of data and its security. I think we talked about this a little earlier. Standardisation of data in a number of areas is critical to the success of these sorts of issues.

I will touch on just one issue that I am familiar with—there will be others that I am not—which is drugs. Basically, computers need to recognise drugs as numbers. It is no good as the name; they have to refer to a digitised number. One of the difficulties that we became aware of was that the different commercial houses and government agencies are using different sorts of coding to code drugs. I will focus on drugs because that is what

we were looking at. For example, it is not possible at the moment for commercial software programs—I will quote two; one is called MIMS Script and the other one is called Medical Director, I think, both being commercially available now for GPs in private practice—to relate readily to other sources of information or, indeed, to hospital systems because the way they have coded the drugs is different. What is needed is some sort of software to enable those programs to be mapped to one another, or everyone needs to fall into line with a common system. That is a huge technical issue, one which in South Australia we are looking at but which we have not overcome, not by a long straw.

Dr NELSON—Does this technology or this project have any application for residential aged care institutions? The second question is: were you able to include any cost-benefit evaluation in the study? If you were not, obviously the difficulty for governments is whether to invest resources in something which is not proven to be of a cost-benefit nature. I realise there are imponderable benefits but I am referring to tangible, financial ones.

Mr Dollman—For residential care facilities, no, we did not specifically address those things. Certainly, we know that a number of our GPs did visit centres like that and did a lot of home visits too. I would simply put the view that was put to us, that if the technology was capable of it, as I believe it is, then taking, say, a laptop computer to a remote site, whether it is a nursing home or whether it is a remote area, enabled the GP to tap into a database back in their surgery and bring up up-to-date information on patients/histories. I believe the technology that we looked at would have that sort of benefit in the care of hostels, residential care facilities, nursing homes or whatever.

We did not do a rigorous cost-benefit review. We simply referred to what we believe to be—as you have said—some of the intangible benefits through the better use of drugs, fewer side effects and therefore, perhaps, fewer readmissions into hospital, fewer acute care admissions and so on, better informed prescribing, better choices of drugs, perhaps cheaper drugs and those sorts of things.

Dr NELSON—So you did not set up the study so that you could compare the prescribing and practice profiles of the six practices in a period leading up to the study and then during it?

Mr Dollman—No, we did not have time to do that. The project was completed over a 12-month period. Neither did we use them as their own controls nor did we have the time to use a similar practice as a control group. It is a pity. I think we could do more in that area, and perhaps we should, but it would rely on external grants moneys.

Mr FORREST—In response to Mrs Vale's question, I think you mentioned that the Australian Standards Association are looking into standards. Did I mishear what you said there?

Mr Dollman—No, that is correct.

Mr FORREST—One of the things we are struggling with is that we have been

challenged to show some leadership on the terminology, but if there are some people already looking at it, particularly the Australian Standards Association, it could be worthwhile that we had them in to talk to us. Would you recommend that?

Mr Dollman—Highly. I believe that that would be critical. If they did not put in a submission, I am rather surprised, but if they have not then I would recommend that very strongly.

CHAIRMAN—I understand that they will be talking to us in Sydney. Thank you very much for appearing before the committee this afternoon. We will get you the information on the PharmaNet trial in British Columbia, and we would really appreciate a response. Thank you very much.

Mr Dollman—Thank you.

CHAIRMAN—Is it the wish of the committee that the document entitled 'Important issues inherent in the Australian healthcare system' be incorporated in the transcript of evidence? There being no objection, it is so ordered.

The document read as follows—

[3.02 p.m.]

MANNING, Mr Roy, Technical Manager, Benson Radiology, 229 Melbourne Street, North Adelaide, South Australia 5006

NELSON, Dr John Russell, Deputy Managing Partner, Benson Radiology, 229 Melbourne Street, North Adelaide, South Australia 5006

CHAIRMAN—Welcome. We have already received your submission. We have circulated it to the members, read it and digested it. Would you have a brief opening statement before we kick off the questioning? Perhaps you could highlight some of the points you would like us to particularly take notice of.

Dr J. Nelson—Benson Radiology is a large, comprehensive radiology practice and we have experience in teleradiology—

CHAIRMAN—Confined to South Australia?

Dr J. Nelson—That is right. I understand that the inquiry is about Telemedicine, but our expertise is in teleradiology. We use that already in a number of situations. Firstly, we use it between city locations where we may not have a radiologist currently available to perform a report in a short space of time, so we can transmit images to where we do have a radiologist who can provide such a report, usually within half an hour.

Secondly, we use teleradiology in an after-hours situation. We service geographically a wide area within the Adelaide metropolitan area, including two public casualty areas, and we have the ability to receive on a laptop computer CT and ultrasound examinations after hours—or during hours for that matter. We do not need to be geographically present and we can provide a report, such as a CT or ultrasound examination, in a short space of time. Thirdly, we do have country locations and one of those has teleradiology capabilities. So either during hours or after hours we can give a second opinion or provide a report in a short space of time.

CHAIRMAN—So, basically, the teleradiology involves a connection or link between one of your facilities with your major facility, not with outside people to your practice?

Dr J. Nelson—No, it is purely within our practice. The images may be received by a laptop computer, so all we need to do is to be able to plug that into a telephone line wherever we are.

CHAIRMAN—Why haven't others followed suit?

Dr J. Nelson—I am not sure whether they have or have not, to tell you the truth.

Mr Manning—If I can break in, I believe some of the other private practices have. Perhaps in the larger metropolitan hospitals at the moment there has not been a need to,

but I believe that they are looking at that sort of thing for providing country reporting and second opinions. There is no reason why these systems could not intercommunicate, given compatibility.

CHAIRMAN—There has been a lot of evidence given to the committee that it would be necessary for there to be changes in the medical benefits schedule to encourage use of Telemedicine more widely. But with your use of it there would be no need for any change in the schedule, or would you in some way suggest a change that would encourage you to continue this work?

Dr J. Nelson—With our current use, you would have to divide off the different ways that we use it. When we use it from our country location we do not expect that this is going to be a situation where we are doing anything more than providing an after-hours service—and it is at our cost, basically. It is certainly not a situation where we are going to end up in a positive balance. We are providing an after-hours service as part of our overall service. We are using it after hours to receive images from around Adelaide and from different locations. Again, it is primarily to provide a service after hours which is a fast service. We can provide emergency opinions. When we are using it between rooms during office hours, that enables us to more efficiently use our radiological staff. In that situation, we are really using it for our benefit.

I think where we would be in trouble is in the situation of a small country town. We have practice locations in country areas which do not have teleradiology capabilities and there are occasions—it is hard to exactly state how many occasions; it would be based on the population, of course—on which a small country town practice may require a radiological opinion as quickly as possible. That may happen in a small country town only five times a week. We cannot, obviously, be in a situation to set up a teleradiology system to cover that possibility occurring because it just is not viable for us. We can receive images—we have the capabilities to receive them—but to set up a sending station in a country town to be used once a day is just not possible for us.

CHAIRMAN—It would be financial madness, wouldn't it?

Dr J. Nelson—That is right. Absolutely. If the government were looking at that situation, you would have to look at some way of subsidising a situation like that.

CHAIRMAN—There has been a lot of confusion over the terminology: Telehealth, Telemedicine, teleradiology, telepsychiatry. It is probably not a problem with the words telepsychiatry or teleradiology, but Telemedicine and Telehealth have been used interchangeably. Different people seem to support one term or the other, yet there is no standardised definition of either. What would you suggest should be done to achieve such a standard? Do you think it is desirable?

Mr Manning—I think that is a very sweeping statement. I think it should be categorised as we are talking about it now. In other words, it is teleradiology or it is telepsychiatry or even teleconsultations. I think 'Telemedicine' or 'Telehealth' just covers all of that.

CHAIRMAN—So you would say that teleradiology is a branch of Telehealth or Telemedicine?

Mr Manning—Most certainly.

CHAIRMAN—So you see the two terms as being completely meaning the same thing?

Mr Manning—I see that the terms Telehealth and Telemedicine are loose terms covering a whole group of technologies which are based on electronic transfer of data.

Mrs ELIZABETH GRACE—Your submission observes that the current Medicare rebates for radiology could not be expected to cover the costs of establishing a quality teleradiology service and that the cost of the equipment alone would be between $120,000 and $200,000. Could you discuss with the committee how teleradiology is likely to affect the Medicare schedule or how you see the costs being handled into the future?

Dr J. Nelson—I think it is almost the other way around. It depends which way you put the horse and the cart. The situation I was alluding to before would not arise under the current Medicare system because teleradiology simply will not be available to small country locations. It is not necessarily through Medicare. It can be, if it is desired to do it this way, under one-off grants or whatever for various country locations to have a teleradiology service.

There could be some sort of grid set up based on population statistics so that people would not have to necessarily travel very far to a location where they could have an X-ray. Standard X-ray facilities are out there. What is not there is the expertise to report them, necessarily. If people had the ability to go to such a location and have a report within the hour, which is certainly within our capabilities, then that would impact on the health care of remote locations.

That would impact in two ways. Firstly, we are looking at patient management in that situation. I will give you the illustration of a doctor with a patient who comes in with shortness of breath and that patient has a chest X-ray. General practitioners have varying degrees of expertise in interpreting X-rays. Some have not had much experience. A person may have a chest X-ray and it may show pneumonia, it may show fluid on the lungs or it may show that air has escaped. Each one of these situations would require different treatment. In that situation, we could give them a report in a very short space of time and point them in the right direction as to which way to treat the patient. So we are looking at changing patient management in an acute situation.

Ms ELLIS—The bottom line is: who pays for the service you provide in that instance? That is what I am getting at. How do we handle those costs? They will inevitably become part of the process as this whole thing grows.

Dr J. Nelson—It is all a matter of numbers. Because we have the one-off cost of the capital equipment purchase, if a radiology practice had sufficient numbers coming

through on a daily basis they could probably wear those costs under the current situation. It is where you have got a country location, for instance, that is only having a handful of cases a week that we could not cover those costs. In that situation, the government would have to look at some way, be it via Medicare or via one-off grants, of financing such a service.

Mr FORREST—How are you currently reimbursed for these consultations?

Dr J. Nelson—Just the same as any X-ray done on site, no differently.

Mr FORREST—Could you explain to me how the technical side of the process works? Somebody might take an X-ray in Berri or Renmark, but then that photograph has to be digitised and then sent to you? It does not need special X-ray equipment, does it?

Mr Manning—You need specialised equipment to digitise it.

Mr FORREST—A digitising table would be enough?

Mr Manning—It is basically laser cameras, a common device used for digitising. They are fairly expensive devices. For radiology needs, you have to have very high quality. Certainly standard video cameras, which you can just point at an image, are nowhere near sufficient for digitising radiological images. It does require quite expensive laser cameras.

CHAIRMAN—What would one cost?

Mr Manning—A laser camera is around about $60,000. There are cheaper ways. There are devices called CCD digitisers, which are about $30,000. These were the early devices which we used for digitising but were relatively unsatisfactory. Most people doing any quality teleradiology now use laser digitisers. That cost is for only the digitiser. You then have to have PCs, transmission means, receive stations, monitors.

Mr FORREST—So the GP in Berri or Renmark has that done on your equipment up there, I assume. Then they send it down electronically and you assist him with a diagnosis or with what to do. But that step is not on the Medicare schedule. There is no payment for that. The doctor would have to pay you directly for helping him make the diagnosis. Is that the way it happens?

Mr Manning—There is only the one fee for the X-ray and report.

Dr J. Nelson—Whether the X-ray is taken in Berri, digitised and sent to Adelaide, a report given and then faxed back, or whether an X-ray is taken in our rooms in Adelaide, the fee is for the X-ray and report and it is the same.

Mr FORREST—So you absorb the original cost?

Ms ELLIS—You have obviously decided to carry the cost of the equipment that

allows you to do that.

Dr J. Nelson—That is correct.

Ms ELLIS—Instead of the office in the next room, it is an office in Renmark.

Dr J. Nelson—That is right.

Mr Manning—I think what we are trying to suggest, particularly in acute or trauma cases, is that we believe there are savings to be made in terms of hospital stay, unnecessary examinations and travel costs. We believe that in those situations it probably makes up for that, given a reasonable volume.

Dr NELSON—One of the possibilities might be licensing of teleradiology centres in the same way we might have collection centres in pathology, so teleradiology services provided from places where clearly there was a need for it might attract a higher benefit for the same services, which then allows for the capital cost of the teleradiology equipment. With the recent restructuring, particularly with what the college will be doing with the Commonwealth now, there is an opportunity there, I would think, to try and push some ideas like that. So it would help you recover the capital costs that you put into it but the Commonwealth would have to be satisfied that there was a real need for a teleradiology service in a particular area.

I was going to ask you two things: the submission talks about the benefits outweighing the cost. Mr Manning, you just referred to that. I think instinctively we know what you are talking about, but is there any formal analysis that you have done?

Mr Manning—We have not done any formal analysis of it at all. It has basically arisen out of a need to provide a service, particularly for a large country area which did not have a weekend coverage of a radiologist. It was a location where there was quite a high occurrence of motor vehicle accidents so there was a need for urgent reporting facilities.

Dr J. Nelson—To acquire a cost-benefit analysis would mean that we would have to delve into patient management and transfer costs, which is really out of the scope of our practice and not our area of expertise. We are not in a situation, unfortunately, to do that. All we can do is to imagine from our experience, from times when we have seen patients transported perhaps unnecessarily, from times when we have seen patients not transported when we believe they should have been, and then the changes in patient management which occur from having an X-ray report sooner rather than later.

Dr NELSON—So in terms of government, what sort of assistance do you require to maintain and enhance the teleradiology service? Is it a better return on capital investment—is it as simple as that?

Mr Manning—The simplest thing really is probably some sort of loading on the fee for a particular examination if it is done by teleradiology, with certain parameters on

that, perhaps similar to some of the fee suggestions that were made a number of years ago where there was a certain distance from a major capital centre. I would suggest a loading on the Medicare benefits for particular examinations from a particular distance, provided that teleradiology examination was performed on equipment of a particular standard, because I think it is important that that be put in as well. I believe that this is being looked in terms of radiological equipment in general, anyway.

Dr NELSON—Finally, radiologists do not need any specific training in teleradiology. Essentially, is it the same skills required?

Mr Manning—Some basic computer literacy, really. They are very simple to use in terms of the reporting stations.

Dr J. Nelson—Yes, as Mr Manning said, basically the general use of a PC. They are done on a PC with a particularly good screen which enables high quality images to be accepted and read. These are called soft copies, and you may well be aware of that, of course. Soft copy reporting as opposed to hard film copy reporting is a little different. In general, it is accepted that, in the first few years that someone is reporting soft copy films, it takes them about 20 per cent longer to do the report. That is for a number of reasons. One is that, as you only usually have one screen in front of you, you are continually flicking between images. Whereas if you have a bank of X-ray lights you can put them all up and then you can just look between them. So there is a time difference. It usually takes significantly longer to report soft copy than hard copy.

Dr NELSON—Are there medical indemnity implications in teleradiology?

Dr J. Nelson—I am not aware of any at the moment, but it is part of our submission that this is of slight concern to us, not so much for the length of time for reporting, but compression has to be used to transfer radiology images because the memory needed for each image is vast. So, they have to be compressed before they can be sent down a telephone line and then uncompressed at the other end. Whenever that occurs, you do inevitably lose some quality.

As the years go by, the amount of quality loss is becoming increasingly less, but there is still some quality loss. I do not believe that this has ever occurred—I am not aware that it has—but it would be interesting if an X-ray had been reported soft copy and a diagnosis missed, for instance, and picked up on hard copy later on. I do not know where we would stand medico-legally in such a situation. I do not believe that indemnity insurance or medical insurance has looked specifically at that question.

Mr Manning—The other consideration is the fact that teleradiology tends to cross state and national boundaries, and you may need to look at or consider accreditation and licensing in the different states or countries.

Mr FORREST—Is this applicable to ultrasound as well as to X-ray?

Dr J. Nelson—Yes, absolutely. We receive ultrasound in exactly the same way as

we do the other images. That is not necessarily true. I will go back one step. As you heard, plain radiographs taken in country locations need to be digitised. For ultrasound and CT we can accept the image directly off the machine.

Mr FORREST—Electronically?

Dr J. Nelson—Yes; without need for hard copy, first of all, and then digitisation.

Mr FORREST—That is already a fuzzy imagine. Is there any deterioration of that, even by the time you receive it?

Mr Manning—Very little, because it requires minimal compression. In fact, it is a much simpler and cheaper method of doing it. The most difficult teleradiology is plain film digitisation. CT and ultrasound, because they are already digital images, are quite simple. The quality is really exactly the same as what you get on the viewing monitor of the machine. So, it is a very good procedure.

Mrs VALE—One thing that is often brought up before this committee is the problems of the ethical codes and privacy considerations. It is a very real community concern, especially with the advance of this kind of technology and, of course, the nature of the information. Have you dealt with this in any way?

Mr Manning—We have not, because ours is basically a closed system rather than an open one; so, it is not possible, say, for anybody with a computer like the Internet to actually tap into that. It is not a problem there. Again, because our transmit and receive units are within our own practice, it is only authorised staff who can gain access to those. Certainly, in a wider situation such as a hospital, it may be necessary to have coded access to them. The images themselves, I do not think, in terms of confidentiality, are a great problem, because unless the people are trained they would not be able to interpret what is on those images. I think the concern in terms of confidentiality does come in when the reports are being transmitted by the teleradiology. Maybe you need to consider some sort of standard for simple encryption or something so that is not accessible. But at the moment, because it is a closed network just within our practice, it is not a problem.

Mrs ELIZABETH GRACE—When you are talking about your work in remote or country areas, you need an actual radiologist technician there, do you not, someone to operate your machinery, but you do not need to have a diagnostic radiologist? Is that what you are saying? You just have to have a technician there who can use the machinery. Is that right?

Dr J. Nelson—That is right. In our situation, where we have our practice location, we have radiographers there who take the images. But, in a situation where we do not have a practice already, the images are often taken by general practitioners themselves.

Mrs ELIZABETH GRACE—One of the suggestions that have been put to the committee today is that possibly we could have a unit in these towns where videoconferencing interchange could come in, and it could be used by the whole

community—banks, schools and GPs. Would you see yourselves as being interested in coming into something like that, if there was a central point where all this technology was being concentrated? Would that be an area where you could perhaps even see an improvement in your service?

Mr Manning—I think what has been suggested to us in the past is perhaps we can be part of these videoconferencing centres. Unfortunately, what has usually happened is that somebody is suggesting that we point a video camera at an X-ray viewing box and transmit that image, and unfortunately that is no good, the quality is not enough. There is very little need for videoconferencing between whoever took the X-ray and the radiologist reporting it, other than perhaps some verbal contact to say, 'Mrs Jones's images are coming, I'll fax you through the request form with it,' and if they were conscious or unconscious or in a lot of pain. That is probably about the limit of their clinical information.

Mrs ELIZABETH GRACE—So you do not see a big use in that area for yourselves?

Dr J. Nelson—There is no doubt it could be incorporated in such a centre, but its needs are necessarily a little different from standard Telemedicine.

Ms ELLIS—Dr Nelson, are you in a position to discuss the question of standard setting in teleradiology and why Diacom-3 compatible hardware is preferred?

Dr J. Nelson—That is why Mr Roy Manning is here, actually.

Mr Manning—The Diacom-3 standards were originally proposed—at least in regard to teleradiology, and they do set standards for teleradiology—by the American College of Radiologists, and are quite good standards as such. The problem, as I understand it, with Diacom is that it is a very large document and there are basically levels of conformation with Diacom standards, and some people who claim Diacom-3 compatibility are not fully Diacom compatible.

Diacom was basically proposed as an area network for digital medical equipment so that there could be a transfer of digital information from workstations and CTs and ultrasound. Where I understand it falls down with teleradiology is that it does not specify particular compressions to be used on the telephone. Compression is used to speed up what are basically very large files of equipment. Most of the manufacturers at the moment have their own proprietary methods and levels of compression, and because these images are then compressed and come off the telephone line is where Diacom at the moment falls down, and I think this is something that could perhaps be addressed in the future. If this was addressed and suppliers were fully Diacom compatible in terms of their teleradiology and their compression standards, we would have equipment that no matter who manufactured it could communicate with each other for second opinions and reporting.

Mr FORREST—Who sets that standard? In your submission you say it should be done to give you some statutory protection, but who should set that standard?

Mr Manning—Yes, that is a very good question, and perhaps the Australasian College of Radiologists should look at that, perhaps in conjunction with Standards Australia. To me it would seem to be the appropriate sort of body.

CHAIRMAN—We have Standards Australia coming before the committee in January. I think that is a question we will ask them.

Mr Manning—They may well be looking at that at the moment, but I have not heard if they are.

CHAIRMAN—The submission suggests that there is keen interest in the Asia-Pacific region for Australian medical expertise by using teleradiology, and that Australia is well placed to step into this niche market. Could you elaborate on a possible role for Australia in the Asia-Pacific, and comment on views put to the committee that Australia needs more experience in Telemedicine domestically before it can become a player internationally? Do you see teleradiology as being a major medical export as such, which could earn income not only for companies or firms like your own but for the country, and also what possibilities do you see in the area of foreign aid?

Dr J. Nelson—We have been approached in the past few years on occasions by Asian countries seeking us to help them out with radiological services. They have not necessarily focused on teleradiology, but they have established in our minds that there is an apparent need for expertise in radiology in Asian countries. Apparently even South Africa at one stage approached us.

I think teleradiology would be very helpful in this situation. As I understand it, radiology in the Asia-Pacific area in general is a rapidly expanding field. A lot of new equipment is being placed. The thing that seems to be lacking more than anything at the moment is the expertise to read the images coming from such equipment—that is what we are led to believe. In that situation we are looking at a different type of thing from the remote teleradiology we were speaking about before, because here we are not influencing acute patient management in general as such; what we are doing is giving a second opinion on images.

There are radiologists in Asia, of course, and very fine radiologists, but in a lot of situations they may be looking for an expertise which they do not have, especially subspecialties within radiology. Different practices in Australia have their own subspecialties and may be able to provide an expert opinion on images sent to us from Asia.

I do not believe that our proximity to Asia is going to be a strong suit for us for very much longer because, if we are using teleradiology, it can be done from the United States, from anywhere you like. There is not going to be that much change in image quality just because it is slightly further away. I think if we are going to do it, or want to get into that market, we should be looking at it sooner rather than later while there is a perception that physical proximity is helpful. I think there is export potential there, for sure.

CHAIRMAN—Do you see that it could be a major cash cow for a firm like yours?

Dr J. Nelson—I am not sure if it would provide a large percentage of our income. I do not expect that we would do it at a loss, necessarily—I am not saying that—but I do not expect that it would be something that would make us millionaires, by any means. I think that what we would be doing is really a little more altruistic, in providing a second opinion for such countries. I am sure that, if it were set up in the correct way, countries that are willing to pay for such expertise. I have no doubt about that. But I do not think that we can expect that there is going to be an enormous cash flow under that situation.

CHAIRMAN—There being no further questions, I thank you very much for appearing before the committee this afternoon. There will be a draft of what you have said, taken down in *Hansard*, sent to you for correction over the next couple of weeks.

[3.34 p.m.]

MISAN, Mr Gary, Executive Editor, Australian Medicines Handbook Pty Ltd, PO Box 240, Rundle Mall, Adelaide, South Australia 5000

WALKER, Dr Donald, Database Consultant, Australian Medicines Handbook Pty Ltd, PO Box 240, Rundle Mall, Adelaide, South Australia 5000

CHAIRMAN—Welcome. Do you have any comments to make on the capacity in which you appear?

Dr Walker—I am computer consultant to the *Australian Medicines Handbook.*

Mr Misan—I am executive editor of *Australian Medicines Handbook* and CEO of Australian Medicines Handbook Pty Ltd.

CHAIRMAN—Would you like to make a brief opening statement?

Mr Misan—Thank you. I understand the submission has been—

CHAIRMAN—The submission has been received and forwarded to all of our members, who have had the opportunity of reading it. Perhaps there are some aspects of it you would like to highlight or draw particularly to our attention.

Mr Misan—With the permission of the committee, I have taken the opportunity to table a summary document which, at least on the reverse side, in a schematic sense expands a little on some of the concepts that we speak about in the submission. To provide a brief overview of the AMH project, it has been established on a federal government initiative commencing at the beginning of this year with the aim of producing an independent drug information resource for use by clinicians, medical practitioners, pharmacists and other health professionals, with the objective of enhancing quality use of medicines and of improving patient care as a result and, hopefully, of reducing overall costs associated with adverse drug events and so on.

The approach that we are taking is rather unique, certainly in Australia and in the world, in terms of the development of a resource such as this. Whereas most of them are developed using either word processing or desktop publishing systems, this has been developed using a relational database approach. The reason is that we then have much better flexibility in terms of output of our products; whereas, with most other information resources, the industry struggles to actually take that information and break it up into a form that computers can understand so that it can be applied in computer applications systems and so on.

We have a number of unique features, we believe, in the database itself. These have become more apparent in recent months as we have progressed in the development phase. It has become apparent to us that we are developing, if you like, a generic platform which actually has broad applicability to a range of other knowledge resources being

developed for the medical sphere. We are populating our database at the moment with drug information, and to do that requires the adoption of various standards for drug codes and for terminology for diseases, adverse effects and the like. It is quite clear that the same terminologies and coding systems have broader applicability across the board for a range of different medical applications.

If I can direct you to the handout, I have tried to illustrate that we have developed a database with particular components for a specific purpose, which is to produce a range of drug information references in hard copy and electronic form; but the structure of the database actually can be applied, as I indicated before, in a broader context to actually provide a range of different products. What we are proposing as a requirement or an imperative for the Telemedicine knowledge resource base—and Telemedicine applies to different fields of medicine, as you have heard—is one platform which can unify a range of standards, terminologies and so on.

We have done a lot of the thinking in order to achieve what we want for our immediate purposes; but, in doing so, we have developed a standard structure into which any number of different terminologies or coding systems can be dropped, mapped and then distributed out to the marketplace—computer software vendors, and so on—so that in fact there is a common vocabulary, if you like, that all the different systems can use to talk to each other.

CHAIRMAN—One problem about common definitions with respect to Telemedicine and Telehealth is that we find that these terms seem to be used interchangeably or else some people seem to think that they mean different things. It would be nice if we could agree on a standard definition for Telemedicine or Telehealth. Is that likely to happen? How do you suggest that that desirable goal should be pursued?

Mr Misan—I think what tends to happen when people sit down and start talking about standards is that they determine that there are so many stakeholders that it is difficult, if not impossible, to come up with a single definition that meets everybody's needs. So we are coming at it from a different perspective, suggesting that you do not necessarily have to apply a particular standard or coding system for particular concepts, terms or even a broader definition of Telemedicine or Telehealth. The important thing is to try and bring them all together in some kind of map so that, regardless of which terminology or definition people are using, other systems actually understand what that concept means because it will be mapped through to a different terminology system.

What we are actually doing is not developing our own terms. We appreciate that that has been done before by organisations with a lot more resources and money than we have got—in America, Europe and other places. What we are determining, at least in our instance, is to derive our definitions for concepts and terms from those standard sources. But because the different sources accommodate different types of information—diagnostic, pathology, drugs or diseases—no one source is sufficient to answer even the relatively small needs of our project. By creating a system which links some of the major terminologies, we can derive the appropriate term from the relevant terminology.

Because those terminologies are already mapped, however, if you choose a relevant term from one particular aspect of the terminology then there is a link inherent in the design of those terminologies and also in our database. It is that concept that has universal application. It is then just a matter of determining which standards or definitions for concepts and terms are being used around the place, and to bring them all together in one place, so that people can use one or other term according to their system but there is a unified structure which the industry can use to get everything to talk to each other.

CHAIRMAN—I see that you are a Commonwealth funded, national, non-profit project. Firstly, does that mean that when you have completed this project the company will be no more, or does it have an ongoing, permanent existence? Secondly, how big is that budget? Thirdly, how long have you been going and how many staff do you have? Fourthly, are there any other relevant things you should tell us about the company?

Mr Misan—The company is a joint venture between three professional organisations, as indicated on the paper—the Australasian Society of Clinical and Experimental Pharmacologists and Toxicologists, the Royal Australian College of General Practitioners and the Pharmaceutical Society of Australia. These groups have been interested in quality use of medicines for some time and the project, because of their involvement, has the imprimatur of the groups that they represent—for example, GPs, academic and practising pharmacologists and pharmacists, as well as community based pharmacists.

The project has been operational since June 1995 but really did not get off the ground until February this year, when the project offices were established. As executive editor, I was appointed in December of last year. The project was funded in June or July of last year—certainly about that time. It was given $1.639 million over four years, being about $750,000 in the first year, $580,000 in the second, $240,000 in the third and about $70,000 in the fourth. The proposal was that the project would develop a drug information database and then, on the basis of advance sales and sustaining sales, would meet the gap as the project budget dropped off, and that we would be self-sustaining in terms of continued development through sales of one or other products.

As to our being non-profit, the three organisations that are involved are professional organisations, and are classified as non-profit by the Taxation Office. We, as a trustee company of those three organisations, by definition are non-profit. But that is not to say that we do not expect to make any money. Without making money we obviously do not survive. We have to market our products in the commercial marketplace, so we have to compete. Any additional funds, at this stage, we anticipate being put back into the project for further development and so on. Ultimately, if there are surplus funds they will, under the terms of the trust deed which governs the company, be returned to the professional organisations to further their professional objectives. But our current budget figures do not indicate that that is likely happen until about year 8 or 9 of the project.

At the moment the project, in terms of the IT platform, is underfunded. The publishing phase of the project is not funded by the government grant. The government grant, effectively, provides money for staff and equipment, for infrastructure costs and so

on. We are based at the Royal Adelaide Hospital campus in Adelaide. We are renting office space, on normal commercial arrangements, from the hospital. We currently employ about five full-time equivalent staff—an executive editor and an assistant editor, and about three full-time equivalent associate editors. Don Walker is our database consultant but he is not full time because, as I said, the project cannot sustain his services full time. We also have an admin officer.

CHAIRMAN—Are there any further questions?

Mr FORREST—Our inquiry covers a whole range of things. Your work fits into a niche within that. Reading your submission, I think you are suggesting that the model you have approached here in setting some standard terminology is one that we ought to take notice of for the future and there may be a role for your group in helping us with the task. Is that what you are trying to convince us of in your submission?

Mr Misan—That is right. That implies two components. I will talk about one of them and let Dr Walker talk briefly about the terminology system and where that fits into the broader scheme of things.

People may be aware that there has been concern for some time about the lack of a specific or standard drug code for Australia. Every computer system uses a different code; every stakeholder uses a different coding system. There is nothing which governs any standards for that particular element of medicine. Drugs have an implicit role in therapeutics and you cannot talk about one without the other. Not having a standard code for the country means that different systems cannot talk to each other and people are using different things for different purposes.

What has happened, as I indicated before, is that various groups have got together at various times to try to come to some agreement. But it always flounders because it is too hard and because no one group is prepared to take ownership of the situation, actually run with it, maintain it and so on.

Again, as part of the database design—and really something that tends to have shaken itself out of the database just by virtue of the relational nature of the data structures—we have a classification system for drugs. We obviously need a drug list as a component of the database, and that drug list is hierarchical, which means that it fits into various therapeutic categories, antibiotics, or drugs for cardiovascular disease. Within that classification system, we can have particular drugs, drug forms, drug strength, pack sizes, manufacturers and so on.

That effectively is a tree structure, or a hierarchy if you like, each element of which has a unique identifier which is something that computer companies need in order to get the computer systems to work and to talk to each other. They do not operate with a drug description, for example, aspirin or penicillin. Computers need a number; they do not understand words.

But beyond that, we actually have a system which can provide a contextual

framework for those same drugs inasmuch as, in the example I have got in the form here, aspirin can be used for a number of different purposes—as an analgesic drug or as an anti-platelet drug. The database structure allows you to apply a therapeutic classification as well as a drug classification, but that unique identifier actually links the system for computer purposes. What a lot of the coding systems require, for example, for DRG purposes and so on, is a code for drugs. A code simply means a number which a coder can apply to a computer system which tells the system which drug it is they are talking about. They either put the code in or they select a drug from the list. That is essentially a tree number, if you like, and I have illustrated what some tree numbers could look like. Even though the numbers are different, there is a unique code which brings everything together.

That is one key opportunity for Australia. It is something that has been developed as part of the AMH database. And because of the data structure and because of the various codes that are used at the moment—for example, the pharmaceutical benefits code—we actually have to incorporate a number of other coding systems into the AMH structure. So not only do we have an opportunity to provide a systematic approach to drug classification in this country, but also we have an opportunity to map the various coding systems that are out there. Again, it is not necessarily wanting to impose the AMH standard on various vendors but to provide a repository where those different coding systems can be maintained and then distributed for future use. The same concept really applies to the terminology, but Don Walker is probably in a better position to explain it.

CHAIRMAN—The committee is canvassing views about the likely changes to the medical benefits schedule imposed by Telemedicine. Do you have a view on who should pay for multidisciplinary Telemedicine?

Mr Misan—That is a question which certainly I have not given a great deal of thought to. Telemedicine in general is likely to be an expensive exercise in terms of infrastructure and implementation simply because of the technology involved, the computer systems, the fact that systems are obsolete very quickly.

If it is possible to demonstrate that the implementation of Telemedicine services result in cost savings to the government either in terms of service provision or by development of epidemiological databases that can control costs in perhaps a better way than we do at the moment, perhaps some of those savings, at least in the first instance, can be used to fund the infrastructure and some of the development costs. I would not like to see the costs passed to the user—essentially, the patients—because they are already bearing a significant proportion of the costs either via Medicare or through additional payments and so on.

Certainly the industry has a role—the software industry, computer vendor suppliers, the telecommunications industry. If everybody works together to really rationalise services, bring in some standards and reduce costs as a result of having fairly uniform technology, then some of the savings that result from that could, at least in the first instance, subsidise it.

Mrs ELIZABETH GRACE—Do you see cost benefits and things like that from this handbook? What is your evaluation of those cost benefits to medicine in particular, but also specifically looking at it from the Telemedicine end and probably more so in the rural and remote areas of the country?

Dr Walker—Can I ask you what you mean by Telemedicine?

Mrs ELIZABETH GRACE—The medical procedures that are being conducted from our major hospitals into remote and rural areas, largely. Some of it is being done in the metropolitan areas.

Dr Walker—So, it is like remote consulting?

Mrs ELIZABETH GRACE—Yes, along those lines. I am just wondering, with this handbook that you are producing, whether you see cost benefits and whether you see a practical use for it in this area.

Mr Misan—We are in the business—I use 'business' in the broad sense—of producing a knowledge resource which can be applied in the clinical setting and also as a foundation for instruction for students who will become professionals and apply therapeutic knowledge in a clinical setting. There is no doubt that inappropriate drug use is rife in this country, not necessarily intentionally but certainly as a result of a range of pressures which impinge on the prescribing process. Adverse consequences include under- or over-treatment, adverse effects, iatrogenic disease and so on, all of which have a measurable cost. If it is possible to promote rational, safe and economic use—by 'economic' I mean choosing perhaps the most cost-effective drug from a range of alternatives—then there is no doubt that cost benefits will result.

I come from a hospital background. Through a drug usage evaluation program which we have been operating for a number of years, we have saved probably a million dollars in drug costs and drug associated costs over seven or eight years. It does not mean that there is a million dollars extra in the budget; it means that that million dollars can be directed to other sources that would not otherwise be funded.

In the broader context, that is a bit harder to demonstrate, because there are so many other things that impinge on patient outcome. But it should be relatively straightforward to identify at some point, once the handbook is actually out and then a year or two into its implementation. The principles that are engendered in the book, hopefully, will influence prescribing perhaps as measurable in terms of utilisation statistics or perhaps patient outcomes—for example, GI bleeding from use of non-steroidal anti-inflammatory drugs and so on.

I think the savings are there. If you look at, for example, the cost of the Pharmaceutical Benefits Scheme, which is now of the order of $3 billion a year, even saving one or two per cent of that will fund this project for about the next 50 years. With the magnification factor, there are certainly savings to be made which could fund this and other projects.

CHAIRMAN—Or which could go to help balance the budget.

Mr Misan—That too, yes. There is obviously additional effort involved in adoption of these new technologies and so on, so I guess for people to really have some incentive, apart from the altruistic incentive to improve patient care, they are going to want to see perhaps some return in whatever form it may be. I see that this has an application for one particular niche of therapeutic medicine, and use of drugs is only one component of that. In that sense, I can see that it is cost-effective but I cannot provide any sound evaluation data outside the local context.

CHAIRMAN—Thank you. I gather Mrs Grace has a question.

Mrs ELIZABETH GRACE—I just wanted to follow up on that. Do you envisage, then, it being marketed to all GPs? All practising medical practitioners would be better than just GPs, I suppose.

Mr Misan—Our target groups are medical practitioners and pharmacists, both in hospital and community—and by medical practitioners I mean GPs in both country and rural areas, specialists and so on. The nature of medicine particularly in rural areas means that practitioners generally have less access to colleagues and information networks than city-based people, so we are hoping that this has a very sound uptake in rural areas.

We are primarily looking at producing paper in the first instance, because that is what people are still used to using. But the development process will allow us to produce electronic forms, including data tables for use by medical application systems which may incorporate other aspects of medicine, diagnoses and so on. Computerised prescribing is a case in point, and this would be an information resource which is independent, peer reviewed and up-to-date, which would make it quite different from the existing resources such as MIMS and so on which are supported by industry.

If the system is implemented correctly by the software vendors then, as a doctor comes to prescribe a particular drug, with the other information that underpins the system there could be links between perhaps what the patient has had before, adverse reactions they have had before, or allergies or other co-existing conditions. This kind of knowledge resource could be used to make intelligent decisions via the systems and assist the doctor in rational prescribing. But the crux of it is to get the information resource right and to make it available to computer systems, and that has really been our basis.

CHAIRMAN—Thank you very much. Dr Walker, is there anything else you would like to add? Or are there any other questions?

Mr FORREST—I would like to hear from Dr Walker, but I have a question about the use of what I will describe as alternative medicines used by the public and even some medical practitioners now. I wonder if you have been giving any consideration to listing homoeopathic drugs in this big dictionary that you are preparing?

Dr Walker—I cannot say that we have given it a lot of thought, but we have

certainly said in conversation that we would include these things. The drugs that are non-homoeopathic or on the government list tend to come first in our task, but there is no philosophical reason—

CHAIRMAN—Royal Jelly, surely, should rate a mention given the health problems that people have had as a result of it.

Mr FORREST—I did not hear from Dr Walker in response to my question about the ongoing role. You described the basic start of it where you wanted to come from. We gave Dr Walker the next opportunity but he did not respond. Perhaps he did not want to.

Dr Walker—The ongoing role of the handbook, did you say was your question? That is probably better answered by Gary, he is in the hot seat.

Mr FORREST—It is a bit of a football, nobody wants it.

Mr Misan—If I can just address that last question, certainly, as Don indicated, we plan to include all prescription drugs available in Australia. The difficulty is actually getting a comprehensive list. There is no place in the country that has a comprehensive list. Even the Australian Register of Therapeutic Goods has a number of holes in it, and getting the data out of them is problematic because of the systems that they developed. That is a problem that we are working on and we expect to solve in the next couple of months. But there are a number of other drugs, the homoeopathic preparations, over-the-counter preparations, herbal preparations and so on. So we have developed a data structure which we anticipate will incorporate all of those.

The broader role of the handbook, or at least the handbook development process, with the immediate imperative of getting the book out in its various forms, and then evaluating the impact of the book through obtaining additional funding for those kinds of things—either us or other groups who are interested in that aspect—is really to identify what is required out there. As I said, what we are trying to promote at the moment is this project as a vehicle for actually bringing together a range of these other aspects which are currently being talked about at the federal level: the clinical desktop diagnostic systems, pathology systems, bringing the Medicare schedule in and trying to get intelligent resources which can be applied in the clinical setting so that doctors can make rational, intelligent decisions.

Dr NELSON—When do you think it will be ready and how much is it likely to cost?

Mr Misan—The publication schedule is for the end of next year. We expect to release the first edition in hard copy form in November-December of next year, if everything continues to go to plan. The subscription cost is likely to be $100 to $120 per annum for two copies of a book published six months apart. So it is effectively priced about the same level as the MIMS annual and the bi-monthlies and so on.

As I said, the project needs to be self-sustaining. The more we sell, the cheaper we

can make it, because of the economies of scale in the production runs and so on. At the moment, our costings are for $100 to $120 which we think is fairly reasonable for the amount of time and effort it has actually taken.

Mrs ELIZABETH GRACE—Do you envisage putting it out on CD-ROM as well at the same time?

Mr Misan—We would like to have those being coincidental. It is a question, again, of the amount of resources it takes to fund one or other publishing phase. For electronic, although it is cheaper in production costs, it is quite a lot in development costs. It may well be that we actually need to sell the hard copy in order to generate sufficient funds to do that. Our approach and our advice at the moment is that it may be easier to develop the CD and then go to hard copy, and that is something that we are exploring and hope to rationalise and set up before the end of February.

CHAIRMAN—Thank you very much for appearing before the committee this afternoon; we appreciate your coming along. The secretariat will forward you a draft copy of evidence for you to proofread and make any necessary corrections.

Mr Misan—Thank you for the opportunity to appear.

CHAIRMAN—We have received also from Mr Misan this addendum to the submission. Is it the wish of the committee that the document be incorporated in the transcript of evidence? There being no objection, it is so ordered.

The document read as follows—

[4.07 p.m.]

BRITTAIN, Professor J. Michael, Professor of Information Management, and Leader, Health Information Research Group, University of South Australia, North Terrace, Adelaide, South Australia 5000

WARREN, Dr James Roy, Lecturer in Computer and Information Science, University of South Australia, The Levels, South Australia 5095

CHAIRMAN—Gentlemen, welcome to our public hearing this afternoon. Would you like to make an opening statement?

Prof. Brittain—I will be very brief because I know it is the end of the afternoon. I do not envy you having sat here all the afternoon. I would like to make three main points: firstly, spending on information management and technology worldwide in health services is absolutely amazing and enormous. There are many cases now worldwide, including in Australia, of failed information systems. One of the key reasons that have been highlighted in studies of failed systems is the fact that information management strategies, including Telemedicine strategies, do not have in place an education and training strategy. The people who have put forward and delivered these information management programs have themselves assumed that the people who are going to implement them would have the same skills, knowledge and motivation as they do. This just is not true.

Secondly, there is an enormous amount we can learn in Australia from failed systems. Of course we do not have any in South Australia, but there is certainly an example of a failed system in New South Wales health, which is public knowledge. There are now failed systems in Europe and the United States which have been subjected to interparliamentary committees. We can now quite clearly see from these reports of failed systems that there are a number of key success factors and a number of key failure factors.

Thirdly, what I am arguing for is that, before we go much further down the road in Australia, health authorities, health departments and health commissions here should have a look at these key success and key failure factors so we do not make the same mistakes in Australia. In some ways we are in advance in Australia of what they are doing in Europe and North America, but in some ways we are behind as well. We can, of course, telescope the development processes that have taken place elsewhere. We do not have to take as long as they have done.

CHAIRMAN—Could you tell us about the failed system in New South Wales?

Prof. Brittain—The failed system in New South Wales is the contract which the New South Wales government signed with Guber Alley some seven or more years ago. That is an American company that became, I think, First Digital. It is a well-known public fact. I do not know details; I am sure you yourselves would have much more access to this information than I would. From what I know as an outsider on that system, one of the reasons for failure was the absence of a training and education strategy.

However brilliant information management strategies may be, they come a cropper when it comes to implementation, if you do not have a critical mass of the work force properly trained at the point of use. I speak enthusiastically about it because for five years in the UK Department of Health I was in charge of their information management and training strategy which, between when we first launched it in June 1989 and the present, has spent the equivalent of $130 million just on their training strategy. Even this does not represent two to three per cent of the recommended OECD countries expenditure on training and education for IT implementation.

Obviously people in the airline business have been far more advanced than we have in the health services because they have got the thing up and working—although it is much more simple. It is amazing in the health services how we continue to support new information management strategies without a concomitant, relatively cheap education and training strategy.

CHAIRMAN—You mentioned that in some respects we are ahead of some overseas countries yet in others we are behind them.

Prof. Brittain—Yes.

CHAIRMAN—Could you compare and contrast our experience; in other words, where are we doing well and where are we not? With our federal system, with the various state health departments all heading off in their own directions, are you finding that this disparate approach to Telemedicine might be inhibiting a successful national implementation of a strategy?

Prof. Brittain—I think there is a great problem with the rivalry between the states and the absence of any central directive that you would see apparent in many European countries where they have developed a national education and training strategy. European countries are much ahead of us because they have, in fact, put in place a central education and training strategy to support IT implementation. At the 1996 HISA meeting in Melbourne just two months ago, I asked all the IT directors from each state in Australia what were their plans for their education and training strategy in information management in health. They all paid lip-service to it, but there was a general feeling that their answers were not backed up by action. One of the reasons is that there is this competition from one state to another. So, South Australia gets an education and training program going. It thinks that New South Wales or Queensland will take it over and use it at relatively small cost. So, we are behind in Australia on that.

One area that we are particularly good at in Australia is clinical information systems and hospitals and clinicians using information systems both for patient administration and for clinical diagnosis and treatment. In this respect we are ahead of many countries in Europe. There are obviously many other details. For instance, in GP computing—a very topical area—Australia is well behind some European practice, where the uptake is 80 per cent of GPs. The real question concerns not using IT for GPs to administer their practice versus using IT for clinical purposes. In Australia we are behind some other countries in using IT for clinical purposes—but most countries are lagging on

that application.

CHAIRMAN—Incentives have to be offered to the medical profession to induce them to use this technology.

Prof. Brittain—In the United Kingdom, the uptake is now 85 per cent for GP practices being computerised. There was an incentive some eight or nine years ago, because some computer companies offered GPs a free computer; but it was not much of an incentive. I think the incentive has come, really, having champions. A few people, to begin with, were very keen and then other GPs came on board and said, 'Look what you can do with this. We must get ahead.'

CHAIRMAN—When you say 80 to 90 per cent, do you mean that they use it as a clinical tool?

Prof. Brittain—No. In the UK, 85 per cent of GP practices are computerised, but only about 40 per cent of those use it as a clinical tool. The remainder are still using it only for administration and patient billing.

CHAIRMAN—Here it is about 14 per cent, is it not?

Prof. Brittain—Yes, it is.

CHAIRMAN—But would some 60 per cent of practices not have computers for practice administration in this country?

Prof. Brittain—Various estimates have been made. The figures are not reliable. The figures that I know about are that some 45 per cent of practices have computerised. There is difficulty in obtaining accurate information on that.

CHAIRMAN—Perhaps the Health Insurance Commission could induce practices to bring in computers by perhaps allowing practices to claim the Medicare rebate proportion of a medical account electronically and then pick up the balance of the payment from the patient. That would perhaps be an inducement.

Prof. Brittain—This certainly has been suggested and it relates to some of our current work on electronic medical records.

Dr Warren—It seems like a very US style solution actually: that if it lubricates the reimbursement process, then—

CHAIRMAN—I believe the Health Insurance Commission told us that within two years they could build the percentage now using computers in this way to some 80 or 90 per cent. Also, perhaps the Health Insurance Commission could throw in a further sweetener: instead of waiting 14 days for payment, if a payment was claimed electronically then perhaps that could be made by return. It is really within the realm of government to fix this. The government could fix it overnight if government had the will

to do so.

Prof. Brittain—Also I think there would concomitant need for some immediate training at point of use. These are not things that GP practices are totally familiar with.

CHAIRMAN—Should we cease piloting Telemedicine projects and introduce Telemedicine immediately into our health care system?

Prof. Brittain—I do not know the answer. But one thing I think should be taken into consideration is that Telemedicine as often understood—that is, the transmission of images and interactions with patients at a distance—is only one form of Telemedicine. Last year I saw demonstrated a very impressive system that has been developed—I am having it brought over to the NFORM project in Adelaide next August—that not only uses Telemedicine for the normal process of consulting with patients remotely, but also uses Telemedicine for the administration and the cost-effective administration of patients. We were given this demonstration at one of the biggest health computing venues in the world—the HC conferences which take place in March every year.

This demonstration convinced many clinicians and administrators that Telemedicine, which has always been attractive for the medics, is now attractive for administrators. We were shown the system of engaging patients with expert clinicians. We were shown it on the old-fashioned system we all use and we were shown how it works. This was not hypothetical—it was actually happening in pilot sites. We were shown how people who were consulting expert consultants through Telemedicine had actually got their treatment and were finished before the people on the old-fashioned system had even seen their specialist. In many Telemedicine projects you will find that they are ignoring this very valuable aspect of Telemedicine—to use it for the administration side as well as for the clinical side.

CHAIRMAN—What do you know about the PharmaNet trial in British Columbia?

Prof. Brittain—I do not know about that trial in any detail.

CHAIRMAN—What do you think is the role of government in Telemedicine—state or federal?

Prof. Brittain—Your question is the key one about whether we should go on supporting just one-off pilot sites or whether there should be some other action. Obviously, there would be no end to supporting pilot sites; it could go on forever more and we could always be investigating something else. I think at some stage pretty soon now one has got to look worldwide at some of the best practices in the application and somebody has got to take a decision and say, 'Right, we are going down that line.'

I would like to add that I think it could be extremely useful for each participant in Australia to look worldwide. One of the things that has concerned me in talking to health authorities—I have not spoken to the one in Western Australia but I have to others—is that people tend to go about it not realising that there is a great danger of reinventing the

wheel. There are things I hear about in Sydney, Adelaide or Melbourne. I know that there is a lot of extremely good work being done in other countries, so why not use and build upon these developments?

Mr FORREST—I have not had a lot of time to go through your submission but I did notice that you have identified some failures, as you have referred to them, but they appear to be failures only in the sense that they just gobbled up heaps of money and did not deliver. However, in Australia we are smarter than that. Today we have been encouraged by some very good projects here in South Australia. It has been driven by a needs basis rather than just something new and sexy to do. You do not actually go on to say what we should avoid. What should we avoid?

Prof. Brittain—It is necessary to look at where the failures have taken place but there have been enormous developments in the last two years in information management strategies and their implications in different countries. For many years it was seen as being driven by the administrators, whereas now there is a greater realisation that it is the clinicians, the people who are enthusiastic at the coalface who really want to use it. So one of the things to avoid is to give too much power to the administrators. We should give more power to the people who will really take it forward, those people at the coalface, the medics and the clinicians and the paramedics and the community health service professionals.

Mr FORREST—Which means focussing on where outcomes are delivered and from what we have heard today, in the psychiatry area, for example. Do you agree with that?

Prof. Brittain—I certainly do.

Mr FORREST—You are not coming here telling us, 'Hey, back off on this,' are you?

Prof. Brittain—I am saying that I have experienced and seen in this country and in other countries some tremendous failures on big, all singing, all dancing information management strategies in health care. I am saying that I am concerned that many of the people that I have seen in different health authorities in Australia do not seem to recognise or want to recognise the work that is good and bad in other countries. Therefore, why not make sure that in Australia we do not duplicate the problems in other countries.

CHAIRMAN—You have hit the nail on the head. It seems to me that so many of our pilot projects seem to be reinventing the wheel. I want to follow on with a further question. What else do we need to do in Australia to make Telemedicine viable? In other words, if I said to you, 'Professor Brittain, the Commonwealth government wants some advice on what it should do and what the state governments should do to use this technology as quickly as possible and as fully as possible in this country', what advice would you give to Dr Wooldridge?

Prof. Brittain—That is a very big question and I could not pretend to have a snap

answer. My first response would be to say do not be insular whether you are in Sydney, Perth, Adelaide or wherever. When you go netscaping and searching on the Internet nowadays you realise that we are all level. You may think you have a brilliant idea but you will always find that somebody somewhere else is doing it better than you are.

Therefore, I would say we must have an open mind, look worldwide at what is happening. Do not just assume that because we have got big spaces in Australia we are leaders in Telemedicine. In Europe, for instance, where you have small spaces you have got traffic snarls and jams that are increasing the use of Telemedicine. That is because people take three hours to get from one side of London to another, or perhaps as long as they do to get from here to Whyalla. So Telemedicine applies in big European conurbations.

CHAIRMAN—We have seen some in Manila.

Prof. Brittain—Yes, that is another good example. Ever so many people are interested in Australia, in the experiments we have had here on Telemedicine, for the wrong reasons, because this old idea of distance no longer applies. It is just as big a distance to get from one side of Paris to another as it is to get from one side of South Australia to another.

CHAIRMAN—Almost, anyway.

Mr FORREST—But, from the perspective of the sort of people that I represent, they are faced with a two-hour air ambulance trip to the metropolis, when seconds can mean the difference between life and death. They are entitled to the best delivery of health care they can get. If this system can deliver them some support which keeps them alive for that hour and a half until they get to the major clinic, then it has to be the need that drives this, not some flash, new, sexy use of technology. It has to be driven by need. Connecting that with your point about the medical profession themselves, we will get it right. We will not make the mistakes.

Prof. Brittain—I think we need to concentrate on the real needs. We need to say that the sexy technology is of no interest at all. This is where the mistakes have been made and where millions of dollars in different countries have been wasted, because people have placed such faith in technology but it is only a means to an end. When we put it where it is needed, this is when we are going to get the success. I have seen clinicians now in Adelaide and other capital cities getting really excited, but they are not interested in the technology; they are just interested in what it can do.

Mrs ELIZABETH GRACE—We had one of the other witnesses today say something very similar. They said, 'Do not let people get wrapped up in buying all the hardware and not allowing in their funding for training and understanding.' You are saying, along the same lines, 'Make sure that there are allowances made so that you learn to use this stuff as well as own it, and be aware of how it operates so that you can get the best use out of it.' That was one thing that came through this morning—when organising funding, always make sure that there is something there for training and for understanding

the programs and things.

Prof. Brittain—If the state and federal governments give money just to those people who are incredibly enthusiastic, they will overcome the barriers of the knowledge and the application, but it will not necessarily just transfer to people in general. So, if you want a widespread use of Telemedicine, it is no good always putting all the eggs in those enthusiastic baskets, because they are the people who know how to do it anyway.

Mrs ELIZABETH GRACE—That seemed to be the message we were getting. Under our current laws and codes of ethics and confidentiality, do you think they are able to address the challenges of Telemedicine as it is being practised at the moment across the states—probably even across the disciplines, not just across the states?

Prof. Brittain—I think there are many pockets of expertise; but there is still an absence of what I would like to call a critical mass of people who can take this forward to roll it out in general. You get your enthusiastic pockets with the people who are the champions of this and the people who are given the money for special projects; but then when you want it rolled out on a general level—which is our objective, presumably, because we want it for all those people who need it—that is where education and training are still so lacking. There are hardly any health information courses in Australian universities. There is no central program. No state has a policy on producing a critical mass of these people. This is a real issue to address.

Mrs ELIZABETH GRACE—How do you see it affecting our codes of ethics and confidentiality?

Mr FORREST—Just on that subject, in any of the failures overseas, has what Mrs Grace just raised been a problem—the ethics and the legal problems?

Prof. Brittain—Yes, very much so. At this big health computing conference last March it was amazing. I knew there was some problem because there were about 25 journalists interviewing the liaison officer for the British Medical Association. They had just invested in a multimillion dollar thing called HealthNet, which allows the transmission of patient data within the health service. The bigwigs in the Department of Health in London had not taken the advice about encryption. I know nothing about encryption. It has delayed the implementation of the British HealthNet by months, if not perhaps a year or so, because they did not take into consideration the concerns of the medical and health care professionals about patient confidentiality.

Mrs ELIZABETH GRACE—There would be a fairly large cost involved too, wouldn't there?

Prof. Brittain—The cost of delay will be millions, yes.

Dr Warren—However, it is the state of the technology with all the things that you hear about under the umbrella of the world wide web and such. Encryption technology is now easily available. It is a three-digit number of dollars to get information servers that

provide excellent encryption. Of course, people are very suspicious of the availability of information when you put it up on the computer and on the Internet, but certainly it is something that would be much harder to crack than a fax or a telephone call, which we do not seem to think that much of.

Mrs ELIZABETH GRACE—That seems to be the message we have been getting today too.

Dr Warren—But if you make a mistake in your design, suddenly you have opened an immense floodgate where you can have an information leak of much greater magnitude than somebody overhearing a telephone call.

Dr NELSON—In an extraordinary act of mental telepathy, Mrs Grace asked the question I was going to ask, but I will ask another one from that. I have spent some time in general practice and we always had computers to do all the accounts and stuff like that. But there is no way you would have a computer in the clinical situation, at least until recently, because you would see no reason to have it. You would say to yourself, 'Why should I have it?' In the phase we are going into now where the patients are getting access to the Internet and know a lot about their diseases very quickly, there is an increasing pressure as a clinician to say, 'Well, it'd be nice to have a computer here so I can get direct access to that information too.'

So that is one thing. But it occurred to me recently that the Health Insurance Commission has been prosecuting at least one pathology company over the provision of computers to doctors. I wonder whether in fact we ought to be encouraging them to provide computers to doctors rather than discouraging them. But, in terms of getting the medical profession interested in it, I think consumer pressure will be one thing that will push it along. Perhaps also in the medical-legal environment of drug interactions, inappropriate prescribing and things like that, there might be some pressure there.

Providing a better service for the customer or the patient in terms of getting rapid transfer of results and information from other providers might be something else that would push it along. But, at the moment, the average doctor would certainly say, 'Why should I go and spend a week or two weeks or whatever it takes to learn how to use this thing, and then have this intrusive device in my consulting room for a negligible gain?'

Dr Warren—The ideal would be the carrot instead of the stick. Instead of saying, 'What can we do to the GPs to make them need a computer?' the ideal would be that the GPs are spontaneously saying, 'Gosh, a clinical workstation is really what I want to have.' I think you are right. It is interesting that the world wide web provides the educated patient with access to an intimidating amount of information which perhaps is giving the doctor an incentive to at least want to have access to the same thing.

If I was going to make any technical contribution—the only means by which I am really useful here—it would be that I think that the Internet style of having computers interact is a very useful thing to look at, as compared with the traditional monolithic solutions that would involve plunking in proprietary hardware, a proprietary solution. The

idea of open solutions is something that is relatively new in being so widely accepted just in the past three years, say—really, less. It allows clinical information systems, health information systems, to potentially have a different flavour from what they have had before. What you have with the World Wide Web is people spontaneously making information sources available and readily adding things to the network until other people volunteer and say, 'Yes, I need to access that, I want to access that.' It is a very nice model.

The word I had come here to say was 'Intranet', which is another possibility. You take the World Wide Web-Internet technology but you utilise it within your organisation, for instance within a hospital. You start attaching your wards, your emergency department, and then, say, the GPs out in the region that interacts with that hospital, into your own little Internet environment using that same technology but where you are not talking to places far away. You are not looking up the weather in Chicago or airline reservations with Qantas, but you are exchanging the information about what is going on down the corridor and what is going on with the GP down the road from the hospital. I think Intranet is a very exciting possibility to give a different flavour to the technology from some of the big failures of the past.

Mr FORREST—There is an added level of security with Intranet, isn't there?

Dr Warren—Yes and no. Again the Internet technology, the World Wide Web technology, now implicitly includes the ability for very impressive, very formidable encryption in messages and people are happy to send their credit card numbers and such. Then again, you can be making your computers accessible to the world by making them accessible to a GP down the road. As such, you do need to have reasonable security precautions—accounts, passwords, all that kind of stuff—or you can create a substantial information leak. There is still a danger. It has to be designed right.

Mr FORREST—So an Intranet is no more secure than the Internet?

Dr Warren—One particular definition of an Intranet would be where you have a Firewall, which is that people cannot communicate outside of that particular domain except through some specific mechanism. When you do that, yes, you have a particularly enhanced level of security. For instance, there is a Firewall protecting the state computing where they do the motor registry records or the court records. It is something that an authorised person can dial into and access, but it is very well protected.

Mr FORREST—The parliamentary database is like that. It has got a Firewall around it.

Dr Warren—With Intranet you can have a situation where within the hospital there is a great deal of easy information flow but a formidable barrier to the outside.

Mrs VALE—Professor, do you think Australia has the capacity yet to compete internationally in the area of Telemedicine? Do you see what we can offer being more in the area of technological software and hardware or more in the area of the field of medical

knowledge and information?

Prof. Brittain—They are just my opinions; I am not an expert on Telemedicine. I am sure Australia has the capacity to compete internationally because in Australia we already are doing so. People from other parts of the world are interested in our pilot studies and what we are doing. We have had lots of presentations at international conferences of work on Australian Telemedicine. I do not see Australia as having a particular lead on the IT side. I think our strength is in the involvement of the health care professionals in pulling it forward, rather than just leaving it to IT to pull us forward.

CHAIRMAN—Dr Warren, you are from North America, I presume.

Dr Warren—The United States, yes. But I am an Australian. I was sworn in two days ago.

CHAIRMAN—Allow us to congratulate you on a very important step. The point I was making, though, is this: given your North American experience, how do you see our progress in this area as compared with the countries of North America?

Dr Warren—The United States picture—though actually Michael could comment more accurately—is very heterogeneous. I would say that the most advanced Intranet project in the world is at Beth Israel Hospital, associated with Harvard Medical School. Yet there are also people out in rural Ohio that have nothing on people in rural Australia. The feature of the United States is that it is a mixture.

CHAIRMAN—It is patchy?

Dr Warren—Yes.

CHAIRMAN—Thank you very much for appearing before the committee this afternoon. Is there anything either of you would like to say before we conclude?

Prof. Brittain—Nothing more than I have said. Thank you for listening to us.

Dr Warren—Thank you.

Resolved:

That, pursuant to the power conferred by section 2(2) of the Parliamentary Papers Act 1908, this committee authorises publication of the evidence given before it at public hearing this day.

Committee adjourned at 4.42 p.m.