HOUSE OF REPRESENTATIVES

STANDING COMMITTEE ON FAMILY AND COMMUNITY AFFAIRS

Reference: Health Information Management and Telemedicine

BRISBANE

Friday, 20 September 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	Mr Quick
Mrs De-Anne Kelly	Mrs Vale
	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

HOUSE OF REPRESENTATIVES

STANDING COMMITTEE ON FAMILY AND COMMUNITY AFFAIRS

Health Information Management and Telemedicine

BRISBANE

Friday, 20 September 1996

Present

Mr Slipper (Chairman)

Mrs Grace	Mrs Vale
Mr Allan Morris	Mrs West

The committee met at 9.55 a.m.

Mr Slipper took the chair.

CHAIRMAN—I open this hearing of the House of Representatives Standing Committee on Family and Community Affairs in Brisbane. I am pleased to open this second day of hearings on the committee's inquiry 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 in 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 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 hospitals or home settings in urban or remote rural areas.

To date the committee has received a total of 117 submissions from a wide range of organisations and individuals. I must say that in my experience this is one of the largest number of submissions that we have ever received. 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 Queensland, is committed to broad consultation on this very important topic. The program will continue with further public hearings throughout the country in Adelaide, Melbourne, and Sydney in November and the remaining capital cities next year. We have already had a hearing in Canberra. For this reason, the evidence to be given today will provide the first opportunity to explore some of the key issues from a state government perspective. To assist us in this task I would like to welcome representatives of the Queensland government appearing before us today.

While the committee has already authorised the publication of the majority of submissions received, the submissions from the Queensland government and the University of Queensland have been received only recently. For this reason, before we commence the questioning and the formal hearings I seek leave of the committee to authorise the publication of submissions numbered 110 and 114 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—

CHAIRMAN—I would like to introduce members of the House of Representatives Standing Committee on Family and Community Affairs. We have Mrs Elizabeth Grace, who is the member for Lilley and who very ably represents the Royal Brisbane Women's and Children's Hospital in the Commonwealth parliament. We have Mrs Andrea West, who represents the area you can see to the far right of the window. I represent an area stretching from the Glasshouse Mountains north to Maroochydore and west to Kingaroy. For Queensland witnesses, you are very clearly among friends today. We also have Mrs Dana Vale about to arrive. She is the member for Hughes, west of Sydney.

MOSS, Mr Nicholas, Principal Project Officer, Information Management Branch, Queensland Health, Queensland Government, GPO Box 48, Brisbane, Queensland 4001

PACKBIER, Ms Yvonne, Portfolio Manager, Enabling Portfolio, Information Industry Board, Queensland Government, PO Box 1449, Milton, Queensland 4064

YOUNGMAN, Dr John, Deputy Director-General, Health Services, Queensland Health, Queensland Government, GPO Box 48, Brisbane, Queensland 4001

CHAIRMAN—I now call witnesses from the Queensland Government to be sworn in. Would you like to give the committee a summation of those issues in your submission that you would like us to take special note of?

Dr Youngman—Queensland Health, in conjunction with other arms of government, has been very aware of the need to ensure that we have an appropriate information management strategy to address the needs of the health portfolio within government, but, at the same time, address the needs of the wider health industry—in other words, the collaboration of the private sector and public sector with the technology industry. Various initiatives have occurred over recent years to try to further this agenda.

As an example, a year ago I was seconded to develop an information management strategy for Queensland Health, looking at the wider forum of how health would benefit from an appropriate information management strategy. I think the key phrase is 'information management' as opposed to 'information' because it does have wider connotations particularly when you look at the terms of reference of this inquiry which refers to things like telemedicine. We believe that in a state such as Queensland, with a fairly wide geographical mass and fairly small populations in many centres, the issue of access and appropriateness of service delivery can be further enhanced by the use of technology.

Within the overall information management agenda what has attempted to be addressed is how we can better further the provision of medicine and the provision of health services throughout the state. We are attempting to find out what information we actually do need and how that information can best be collected and then getting on with an agenda of putting in systems to facilitate that process.

I think it would be fair to say that we have come a long way over the last 10 years through much experience in the provision of health information services. We have had not too many disappointments. What we have been trying to do—and I think successfully doing—is providing standardised systems across the state so that we do not have difficulties with different standards, protocols, et cetera. To date, we do have a common system throughout the public sector and we have been working with the divisions of general practice and other groups to further develop systems which can look at the collaboration between two sectors. I note that in your further hearings today you have one

particular division which has a successful project down at the Gold Coast for translating information from a hospital environment into the community.

CHAIRMAN—It is a very comprehensive submission.

Dr Youngman—It is something on which we have headed in the right direction and are fairly proud of as far as what we are trying to achieve there. Given the limitations we have about communication architecture throughout the state, which I think has been addressed by other groups, I think it would be fair to say that we are now all doing the same thing in a common direction. At the end of the day, our patients and our staff are the beneficiaries of good information systems providing relevant information.

CHAIRMAN—One of the things we have noticed from a broad range of submissions is that there seems to be no standard definition of 'telemedicine'. People tend to use the words 'telemedicine' and 'telehealth' interchangeably. Every person or group we speak to seems to have a different understanding of what the term means. Do you think it would be useful if we developed some kind of national standard definition of what is meant by telemedicine so that when the word is used we all know what we are talking about? And how do you suggest this be achieved?

Dr Youngman—I would support that concept. I am not sure whether the committee is aware of what is happening under the auspices of the health minister's advisory council. There actually is a working party responsible to that group which in fact is addressing telehealth. It was 'telemedicine' not so long ago; it is now—

CHAIRMAN—Why the change?

Dr Youngman—I think because telemedicine seemed to have a narrow focus. If we are serious about addressing the total needs of the health system, I think telehealth is the most appropriate. I am not saying this has got wide recognition, but I think it was an attempt to broaden the agenda because of the needs of all health professionals. I suppose the initial thrust for this was for rural and remote communities, but I think if we are really being serious about the use of technology to translate health services through the use of information, we are really looking at the wider spectrum of looking at the needs of the work force and looking at the needs of our customers.

CHAIRMAN—I refer to the TARDIS project. The Nambour General Hospital on the Sunshine Coast, not far from my own electorate, is involved in that. Obviously that is a hospital near and dear to my heart. Having said that, I would think this is certainly the way to go. Has there been an appropriate overview of the results, particularly in relation to achieving the goal of taking health service to the patient? Do you feel that this has been a sufficiently successful project to extend it? I imagine it is only a matter of time before you can link other hospitals to this particular project and perhaps have a network throughout the state.

Dr Youngman—I think it would be fair to say—I do not want to pre-empt the group who will present evidence to you after us—that the process is still in its embryonic stages as far as producing results. In fact, getting the infrastructure put together is a significant challenge in its own right. I think these projects are raising all the issues we need to address before we get to an end product.

There has been very much of a vacuum in standards and policies for which these projects could be developed. At the same time there is difficulty with regard to what you might call venture capital to invest in such projects, which is fairly significant and which does not materialise benefits for some time. These benefits need to be looked at from not just a purely dollar perspective of the investment in the infrastructure, but also the benefits to patients, which is often very difficult to quantify.

CHAIRMAN—I know that the health regional authority has now been abolished. Prior to that we had hospital boards in Queensland. The area of this particular project—Brisbane to the Sunshine Coast to Maryborough—obviously transcends the previous authority boundaries and clearly transcends many board boundaries. How have you been able, within this project, to apportion costs? What incentive is there for, say, the specialists at Royal Brisbane Hospital to pass this knowledge down the system to other hospitals? In doing so, presumably they are increasing the amount they have to spend on their own services. It would mean that Nambour and Maryborough would not necessarily have as many specialists in their own area because they are able to access specialist facilities from Brisbane. So how do you share this cost equitably?

Mr Moss—As John said, the underlying infrastructure is all very important in what we are doing, putting in place the infrastructure to be used as a utility for the wider Queensland Health customers and staff. What Queensland Health has done recently—under John's leadership, when he was the Director of Information Management—is to support the need to actually get our infrastructure together, transcending the boundaries based on the flow of the patients rather than the administrative boundaries.

So we have endeavoured to create a truly enterprise network that transcends the boundaries that is now going to be managed from a coordinated perspective. There is a brand new Corporate Infrastructure Development and Coordination Unit within Health looking after the fundamental infrastructure that we relied on. We are looking at ways of actually apportioning costs and sharing costs based on the different costs of the infrastructure throughout the state.

The TARDIS project and other projects, as John indicated, are pretty much in their embryonic form. To actually look at the mechanisms or the benefits is, I think, the important bit at the moment. The infrastructure and the costs and the apportioning will be done at a later stage, once we know more about the implications and the load and the kind of traffic on the infrastructure versus the actual services.

CHAIRMAN—How successful has it been? To what extent is it actually used?

Dr Youngman—At this point the TARDIS project is not a functional system that is up and working. Again, I think you will have greater detail provided to you later. It is conceptually very sound in its methodology, but it really is breaking a lot of new ground as far as what we need to put in place to actually effect it if we are going to be all-inclusive about the sort of data transfer that can come across the system.

I think within Queensland many of these regional centres do not have these services presently being provided. What projects like TARDIS are addressing is that if you are an intensive care patient at, say, Maryborough, you presently would have to be flown out of Maryborough to Brisbane or somewhere else to try to receive your services. These projects are orientated around enabling the local health community to look after patients in that community without the need to fly them out. If they do need to fly out, there is a much more significant awareness of the clinical situation of that patient.

As you may or may not be aware, we do have difficulty recruiting specialists in many of our provincial centres. The opportunities provided through telemedicine are trying to encourage us to provide a better accessible service in the provincial centres where we cannot recruit specialists and subspecialists.

CHAIRMAN—Through the available resources.

Dr Youngman—This is useful particularly when you need a team approach. It is not just often one specialist; you need a number of specialists. I think the evidence is that, if you can use technology such as teleconferencing, we are now within the state having a much greater use of it to enable better consultation and accessibility to services. It is all fairly embryonic from our point of view because, historically, we had a lot of energetic people who were doing their own thing. Recently, in Queensland Health we have now just formed a Telemedicine Steering Committee—with representatives of the north and the south and the universities and the department—to address some of these issues, because the need for standardisation is just so imperative.

CHAIRMAN—Do you have any other questions, Mr Morris?

Mr ALLAN MORRIS—I am curious to get some technical answers, if I could. I am mindful that you have written your submission for parliamentarians so you have been very thoughtful to keep it non-technical, but it is not clear in your submission how you are going to manage the hardware. There is a potential for having a centralised database, or it could be decentralised. It is not clear whether that is the case. If that is so, how are you going to transfer data between them? The issues of privacy, hacking and a number of other things would therefore come into it. You may have answered that in your earlier remarks, and I am sorry that I was late.

Dr Youngman—I would suggest there is no one right answer to any of these questions, but Queensland Health has adopted a fairly standardised model throughout its hospitals. We have tried to provide an 80 per cent solution rather than looking at the total solution. To date, the implementation of information systems in hospitals has had, I would say, a significant level of success compared with many others who have done it in a different type of model of allowing people to do their own thing. We are very much about developing a corporate framework.

The issues of confidentiality, security, privacy, confront us all the time. I think it comes back to looking at which processes we put in place and ensuring that it is the best we can do rather than being the perfect solution. To date we have not had any significant security breaches within our system because of the nature of the way they have been established. Our present models do have a lot of distributed computing throughout the state—in other words, each of the major health facilities does have its own processing. Now that we have better opportunities through communication infrastructure, we are starting to look at alternative models based on what is the best model from the business perspective as opposed to looking at the local needs from the point of view of having something that is going to work there.

I think the communication infrastructure has opened up so significantly. It still has a long way to go because of the bandwidth and other things, but I think we are now starting to get some what I would call inroads into the previous models. We have found that we just cannot support distributed processing through the technology infrastructure support in every site within Queensland. At Longreach we might have to rely on the TAFE college. Up in Doomadgee and Mornington Island you really do not have any infrastructure support. One of the major complaints we have from those areas is about the fact that we just do not have anyone to train us or support the infrastructure. I think we are coming back to more centralised models as long as we can see the opportunity through the communication technology to facilitate distribution of information.

Mr Moss—I think it is very important to look at where we have come from in a relatively short period. Maybe some of the raw infrastructure statistics might help you put in context where we are at and where some of the projects are really going in terms of how innovative the initiatives are. In 1993, Queensland Health really did not have any communications infrastructure linking its sites. With the roll-out of our financial system, we connected roughly 80 of our 440 sites throughout the state. That was the first time that there really were some mechanisms to communicate using the technology.

Over the next couple of years we went from the 80 to about 110 sites being capable of communicating with each other. We are having a ramp-up at the moment to gear up to connecting roughly 250 by the middle to the end of next year, so we are still getting to only about half our sites and our responsibilities having some kind of input into the infrastructure. We have gone from having in 1993 the most basic, narrowest kind of communications to having some communications that support administrative or basic

functions of communications such as messaging, but we still have not got an infrastructure that can be commonly used for the telehealth or telemedicine applications over those infrastructures, and bringing them together. We need to look at where we are going—hence the coordination and centralisation of a number of functions—so we can make the next jump to better use of the technologies and advances. So we are quite embryonic.

To answer your question about security, I understand there will be a security manager in one of the Information Management branch's units who will be appointed in our restructuring and who will take on board a number of the issues that you have probably raised or are thinking of.

CHAIRMAN—It would be nice if we can actually keep our questions and answers as short as possible. We have Mrs Grace, Mrs Vale and Mrs West wishing to ask questions.

Mrs ELIZABETH GRACE—You have answered a fair bit of what I was thinking about. Having spent 20 years in western Queensland, I am very conscious of the lack of facilities and how remote that part of this country is. That was probably what I was leading to. You are going to have about half of these up by the middle or towards the end of next year, so the very small rural and remote areas are still going to have the same struggles and the same problems, aren't they? It is going to be a while before they can be resolved.

Mr Moss—At the moment a lot of it is not to do with us; it is more the tariffs and the availability. It is very difficult unless you get, for example, five government departments together. This was done quite recently to get ISDN services into Blackall. It really needs some kind of coordinated push. It is always going to be difficult to get an agency the size of Health in there.

Dr Youngman—I think you should be aware that we do have another thing called TSN11, which is a satellite network for educational purposes to about 120 sites which does facilitate that type of non-interactive communication. That certainly has been working very well for a number of years, but it is the interactive video conferencing with telemedicine and things which is going to—

Mrs ELIZABETH GRACE—Which obviously is a huge advantage for our remote and rural areas in Queensland. That is why I was interested to see how far you were going. I am happy with your thinking on that.

Mr Moss—It has only been recently that there has been the technology to allow what they call multi-point conferencing. Instead of point to point with one person, you can actually get several people together. This has only just recently occurred.

Mrs VALE—I would like to talk to you about standards. You have touched on

that also, but your submission states:

Queensland Health is committed to the National Health Data Dictionary as the authoritative source of definitions and agreed standards, to ensure the comparability of health and health related information.

Further, to give you some background, submissions to the committee from Queensland have contained a diversity of views on the subject. For example, the Mater Misericordiae Hospital suggests that HL7 is currently the standard for electronic data exchange in health care, but nationally it is difficult to measure compliance to this standard.Professor Gupta, the head of the Department of Computer Science at James Cook University, notes that standards for coding are desirable but that many doctors find the coding cumbersome and wish to use systems that they have developed themselves. The Australian Association of Provincial Radiologists supports the Dicom 3 international standard. The question regarding standards does seem to be rather controversial.

Could you explain the current status of standards development from your point of view? What are the impediments to developing standards, as you see them? Who are the players in the development of standards? What role should governments play in the development of national standards? Do you have any thoughts on those issues?

Dr Youngman—I think there are a number of different types of standards. You are looking at technical standards and then you are looking at many of the applied standards, such as coding et cetera. I think when we are looking at technical standards our position would be that, unless we have some standardisation, we will not go anywhere because of the costs of it and the lack of performance. Certainly HL7 and those sorts of technical standards are very much endorsed within our framework arrangements. As far as coding et cetera, I think all of us who have been clinicians and others will see that everyone has got their own agenda. I think, again, it is looking at the stratification of standards and asking what we need to put in place to achieve what. Certainly in things like morbidity and mortality, databases are mandatory to have some degree of consistency across the country if we are really going to look at the outcome of our interventions with regards to health—be they preventative or curative.

With regard to radiologists and pathologists, there is a whole range of different sorts of coding mechanisms in place, and I think there is no problem with those as long as they can roll up. In other words where you have a hierarchical structure where you have the stratifications looking at individual needs and rolling those up into the common ICD9-CM standard for morbidity and mortality—that is the sort of model that needs to be developed across the country to get recognition by all the various interested parties, be they radiologists or governments.

Mr Moss—In terms of HL7 standards in Australia, one of our officers in Information Management has been very active in Standards Australia and the HL7 group, and that has been going on for a couple of years. So we are actively participating as an

organisation in there at the moment.

Mrs WEST—Could you discuss the method of sharing information and the experience of telemedicine and what constitutes an overall framework, realising that there is a reluctance amongst certain groups of health care professionals, particularly GPs, to use this technology. What are the reasons which might deter prospective users? First, how are you sharing the information experience, and, second, to what extent is there a reluctance of health care professionals to take this on board?

Dr Youngman—As I indicated previously, a lot of people were going alone in this, and we felt that there was merit in bringing various the parties together. We have done that through the steering committee process, and the infrastructure will go on for that. That has only just started. We are going to have some project infrastructure in both the north and the south of the state pursuing that agenda.

I think that a lot of these initiatives have come around through the energies of various individuals, and the Gold Coast is a classic example of that. I think that we have a number particularly in general practice where the divisions of general practice are seeing merit in these processes.

At the end of the day, we will not succeed in any of these endeavours unless we have ownership and the individual sees merit in the proposal as to what the benefits are to them, given the costs that they need to incur to develop some of these particular infrastructures. The surveys that we did at the Gold Coast indicated that less than half of GPs had PCs and less than half of them had facsimile machines.

Mrs WEST—Less than 14 per cent.

Dr Youngman—Therefore, there was a fairly low penetration of technology. But there is a whole range of issues to do with privacy, which we alluded to, and to do with Medicare benefits as to whether there is some reward for pursuing this sort of agenda.

CHAIRMAN—How do you suggest that there be changes to the Medicare schedule and perhaps to private health insurance? At the moment, there is no incentive for anyone to participate in telemedicine because one cannot claim for it. That is my understanding.

Dr Youngman—I do not think that the Queensland government has penetrated into this as an issue.

CHAIRMAN—There clearly has to be an incentive for people to carry out telemedicine. Private specialists are not going to be interested unless there is some benefit.

Dr Youngman—Much of the service in rural and remote Queensland is provided by medical superintendents with the right of private practice, who, in fact, use Medicare as the source of funding for much of their service delivery. If specialists are going to be available to those consultants, on the normal, appropriate referral mechanism from GPs through to specialists—be it done by telemedicine or a direct consultation—I would suggest that one has got to look at whether the Medicare schedule is in the appropriate means, given the cost of the infrastructure, and it can come back to who is paying for the infrastructure. The difficulty we still have is the capacity and cost of the communication infrastructure. The other issue that I think is significant is capacity: if everyone starts to do it, can the system stand up to that sort of challenge?

CHAIRMAN—What is the role of the state and federal governments in all of this in relation to the field of telemedicine?

Dr Youngman—Firstly, I think standard setting of a technical nature is absolutely imperative as a start. Secondly, I believe that the professional groups—be they stimulated by government or not—should address the various requirements, particularly relating to privacy, as to how they will be effected.

Mr ALLAN MORRIS—I would like to go further into some of those things that Dr Youngman raised. Firstly, provision of an electronic highway should be no different to the provision of an office or a building or a staircase. It will be fundamental infrastructure in 20 years time. It has not been in the past, but in the future it clearly is going to be. Whether it is a person sitting in one room talking to a person across the corridor or a person 500 kilometres away it should be as one. Isn't that a logical thing to be planning for departments now?

Dr Youngman—I would totally agree with you. I think Queensland Health is making a significant investment in capital infrastructure and, as part of that, we are looking at communication and transportation as being the two key things for the future.

Mr ALLAN MORRIS—I want to go back to the shape of the future. We have got pathologists, we will have radiologists with digitalised X-rays eventually, we have GPs and we have got surgeons—we have got a whole range of different specialities and HL7 is obviously beneficial to some; but with the shape of the data and its interrelationship, one can envisage systems of data sitting in eight or ten different systems where we cannot talk to each other, anyhow, or we communicate in different languages or in different jargon. I'm talking about the nightmare of the information technologists—as to how it is used by the people in their own professions.

I have not got a clear picture from any submission from any of you as to just what kind of database it would be and what the database would look like—distributed, segregated or otherwise. Can you draw a picture or is there a diagram somewhere that actually maps it for us?

Mr Moss—Are you talking about the information holdings and how they will actually be made accessible?

Mr ALLAN MORRIS—Yes. I guess I am talking about someone doing a map.

Mr Moss—Okay. There are a couple of things that I think a lot of people have said about this in the past and one of the initiatives we have got relates to this. We have talked from a technical perspective for quite some time, but what we really need to do is look at the information holdings and provide an information network more than repositories of databases; in other words, where they are actually held and how they are managed. The procedures side needs to be addressed by one group and the actual technology lying underneath addressed by another group.

Mr ALLAN MORRIS—They cannot be separated, though. They are so integrated, in a sense, that there is not much point in storing it unless the people in different areas can use it and you can open up the specialities into areas of different conditions. It really necessitates an open communication system between them in some form, but there is a danger that you are going to create subsets of data that do not relate. Unless somebody—at the health department level or at a broader level—ensures that compatibility—

Dr Youngman—This is a personal perspective, having looked at these problems throughout the world, but it seems to me that we do not seem to make much progress on the matters you are alluding to because, I suppose, something like ego prevails on the agenda and everyone wants to do it their way. In Queensland, the Gold Coast Hospital is regarded as a demonstration hospital where we have put all the information systems in place to demonstrate to others that it is possible rather than have cynical views that it could not be done with regards to just one vendor related information system. I believe that the only way to progress this issue is to look at some sort of model site somewhere involving the general practitioners, the pharmacists and other groups.

You will probably find from the GPs at the Gold Coast that they have been talking to people. We have had meetings down there with the Health Insurance Commission and other groups all being present to try to look at ways of progressing this issue. At least one environment is a demonstration project to see whether it is possible. I wonder whether the only way to progress this is actually to demonstrate that it is possible, because centrally driven processes are saying, 'You will or won't do this or that,' or seem to get involved too much in debate without actually having an outcome.

Mr ALLAN MORRIS—What I want to put to you is something much more serious. There is a danger that information technology may be actually medically harmful or medically very dangerous in the sense that information that would normally be available on a verbal basis—in a person's head—or on a written medical record may end up being kept in five separate locations and therefore never come together. So, for

example, if a person is getting home care and medication, but also some other treatment, the treating authorities do not know what exists in different databases. The barriers that technology creates in communication and coding and the professional barriers, if you like, could be medically very dangerous.

We are perhaps entering a phase where information mismatching or the lack of information coordination could in fact become quite a serious medical problem. It is not a matter of Big Brother oversighting and dictating or of central control; it is a matter of saying that the duty of care of every medical practitioner or person supporting a person in the community obligates them to actually ensure that they are in full communication with all other people offering care.

Dr Youngman—But there is a corollary to your statement—and I think this has underpinned the Queensland Health information management strategy—that in the future the great opportunity for information and health is the fact that you can have a longitudinal health record underpinning a continuous care model. That is probably the position I am coming from. We need to be able to get all of these parties to talk to each other, but still have the checks and balances to protect the rights of the individual in this process.

Mr ALLAN MORRIS—And that is the question I started with, I suppose. It seems to me that it is not just a desire but a professional obligation, because, if they do not, their duty of care is being abdicated. My concern is that there is a real danger that computer and information technology could provide a vehicle for the breakdown of understanding communications rather than a vehicle for progress, unless we can persuade all the people involved that they actually have a responsibility to all the other people who may be involved—professional jealousies and egos are involved. I think you know what I am talking about. Leadership should come from the department or from somebody from a broad position, perhaps the colleges. It has to happen soon; I am really quite worried about where it is getting to.

Dr Youngman—At the various forums one attends, be it the college of GPs' annual or biannual computer meeting or some of the other groups, you still find that there are so many different views being put forward. The success of any of these projects seems to be driven by the energies of individuals looking at the best interest of the patient. But I think the cost of all of this is so significant. With the trillions of dollars that are spent on information management in health throughout the world, we still do not have universally accepted health information systems anywhere. I can get six pathologists around the table who want six different pathology systems. That is the dilemma.

CHAIRMAN—And the cost to the community throughout the world is enormous.

Dr Youngman—You just wonder why the Americans, with all their whizzbang technology, have not come up with an answer. But at every computer show you go to you

find 20 new vendors and that 20 of the old ones have dropped out and are bankrupt.

Mrs WEST—We have a suggestion from Sullivan and Nicolaides today that we should establish a system of accreditation of practice management software to ensure that the integrity of critical patient clinical data is maintained. Would you have a view on how a system of accreditation of practice management software could be established and how its integrity could be maintained? That is starting with one idea and bringing the others together around that.

Dr Youngman—I would support any concept, on behalf of Queensland Health, that does have a framework and a policy and a standard which is consistently agreed across the country, and use that as the benchmark for which we should accredit how we are doing our business. There are opportunities there through ISO processes to have systems accredited and I think we need to be going down that track. But the difficulty is that we need to get conformity across them and that is the barrier we have had historically—that even in pathology companies you have got no consistency.

CHAIRMAN—Sullivan and Nicolaides refer to inducements of free hardware and software offered to GPs by some pathology laboratories and they claim that this is in breach of the of the Health Insurance Commission guidelines and, according to them, section 129 AAA of the Health Insurance Act. Are you aware of this situation? Have you heard of this happening? Do you know any culprits and who are they?

Dr Youngman—It has been raised but I do not know of any inducements having been provided. What has happened is that, through mutual arrangements, the private providers in the pathology laboratory have arranged for transmission of data; but I am not aware of any inducements as far as providing the technology. There used to be a scenario where some of the drug companies used to provide computers as part of participating in a hypertension trial or something like that which was part of a research project. Certainly in other countries governments have provided inducements, such as in the United Kingdom the general practitioners have been given an awful lot of technology, be it hardware or software, to participate in immunisation systems, in cancer screening systems and various other formats and that in turn has created an environment in Britain where there is significant penetration of technology into primary care.

CHAIRMAN—Why has that not happened here?

Dr Youngman—I do not think there has been an interest by government to progress that agenda in view, I suppose, of the perceived costs rather than the reality that the costs might be insignificant if we ended up with an outcome which was of benefit to the community.

CHAIRMAN—Do you think government should move in that direction?

Dr Youngman—I think governments ought to take a fairly significant lead agency role in some of our key health priority agendas, particularly if you are looking at education and primary care. Secondary care and tertiary care are much more difficult because they are based at hospitals but, again, it can be progressed down the line and you might find that if you start to address some of the key elements in the primary sector you may find there is an automatic flow-on of standardisation. For example, if general practitioners have got the technology in place it becomes very difficult for the specialist to ignore it because many of their referrals and information can then be going down that line. So I am certainly an advocate of enhancing the primary care sector, even though it is not a true responsibility of Queensland Health.

Mrs ELIZABETH GRACE—Changing the direction slightly: it has been put to the committee that Australia should get it right here at home first before looking to export its knowledge in health information management and telemedicine. Do we have the capabilities of playing a role either in the region or internationally in this area of health care?

Dr Youngman—I agree with your first comment—that we have to get our own act together. There is no point in exporting lemons—our credibility as an exporter will not be enhanced; I think we have a lot of work to do between the states in conjunction with the Commonwealth to get our act more consistent, given the fact that we are a country of only 18 million people.

Mrs VALE—Just going back to some discussion on privacy and ethics. The committee is aware of concerns about the lack of clarity of medico-legal implications of using computer based systems for storing patient medical data. The Queensland government's submission states that the current provision of the Health Services Act 1991 is creating operational difficulties and is being reviewed; and that a project being conducted by Queensland Health's legislative project unit is reviewing the legislation under the health act 1937. Could you discuss why it is that information technology should create concern about ethical, privacy and legal issues in the health system, particularly when information about patients has always been exchanged between practitioners, by sometimes not so secure files and by telephone conversations which could be overheard.

Dr Youngman—I think there are a number of issues in this area. The Health Services Act which underpins the way our system works in this state has got some fairly significant legislative loopholes, I suppose would be the best way of describing it, relating to quality assurance procedures where you have a mass of aggregated data, some of it even being identifiable. Similarly we have problems with research facilities contacting an organisation to gain access to data which we cannot separate as being identifiable or non-identifiable within the way it is configured.

The issue for us is trying to address all of these various needs given the fact that access to a database—a phone conversation between you and me relates to only one issue,

but a phone conversation with a database often relates to a significant population. I think they are the dilemmas; and also a lack of understanding of the entirety of the databases—as was raised by Mrs West—the issue of there being so many components that access to one component may not reveal a fairly typical picture of the content of our phone conversation. So we are addressing this from the point of view of the fact that the Health Services Act is being reviewed next month.

Mr ALLAN MORRIS—Just one final question. It is a final comment rather than a question, but doesn't it seem to you passing strange that a profession that is so eager to use the very latest medication and the very latest drugs has been virtually the last profession at all to engage modern information technology and have been such troglodytes in how they use what is available in terms of reviewing their own performance?

Dr Youngman—I think you have to look at the way a health practitioner works. The historical past generations have not been keyboard literate.

Mr ALLAN MORRIS—It has nothing to do with a keyboard.

Dr Youngman—No, but accessing technology—they have basically had people providing it—

Mr ALLAN MORRIS—Go and talk to their staff; their staff who are keyboard literate and who are very professional are not given access to the technology because the doctor would rather keep it all in his head. On one hand the medication he prescribes is absolutely the most expensive and the most modern but on the other the methodology he uses to store his information came out of the ark.

CHAIRMAN—It could be a case, though, of its being a generational thing.

Mr ALLAN MORRIS—No.

CHAIRMAN—The next generation of doctors will grow up having used computers and be much more computer literate—

Mr ALLAN MORRIS—I studied computers in 1968—that was 30 years ago. They were pretty common then. We are already in the next generation of doctors and they are still not computer literate.

Mr Moss—It is more than technology—

Mr ALLAN MORRIS—It is the approach.

Mr Moss—There is a really big paradigm shift that needs to occur. The technology is there as an enabler but the actual health systems, or the mechanisms that are needed to

complement that in a modern environment, are not really there. The actual enablers, not from the technology but more from the software and other things, are not really there at this stage.

Mr ALLAN MORRIS—It was the same with architects or engineers or accountants or lawyers: people said years ago, 'You cannot make law computer usable.' Of course they did, but it had to be driven by somebody. If the medical profession itself does not drive it, it will not be enabled.

Ms Packbier—That is why it is very important that the medical profession actually works together with the IT industry because the medical profession is very complicated and so an IT company cannot come up with a product and dump it in a doctor's or nurse's lap. That is why we initiated, here in Queensland, that there is really strong cooperation between the companies and the health professionals and that is very important—

Mr ALLAN MORRIS—I think it will only change when we as a society decide to say to our doctors: unless you are using modern technology and modern information systems and are a bit more up to date with the rest of your stuff, I may not trust your medical knowledge either. When we do that, then they will change.

Ms Packbier—There is not that much available. There are hardly any clinical systems available to assist clinical professionals with doing their job.

Dr Youngman—Can I make one point though: you talked about assisting us in technology. I think it goes back to fundamentals before that. It is the use of information. Until we get to a scenario where there is, evidence based health, medicine, decision making—whatever you like to call it—an acceptance of probability for what it is in the context of a clinical situation. I think that is the one of big difficulties.

Mr ALLAN MORRIS—They look up the book on the latest drug and find out what it does and what its side effects are but they will not look up a computer system on drugs.

Dr Youngman—In my observation, in my travels, I have only seen one site, virtually, that I felt were captured by the health professionals in using technology.

CHAIRMAN—Out of curiosity, Dr Youngman, are you a medical practitioner?

Dr Youngman—Yes.

CHAIRMAN—Thank you very much for appearing before the committee this morning; I must say that we found your submission very interesting. Thank you for the frank and open way in which you have spoken to us.

We will adjourn the hearing for about a quarter of an hour.

[10.35 a.m.]

YELLOWLEES, Professor Peter, Head and Chairperson, Psychiatry Department, University of Queensland, Mental Health Centre, Royal Brisbane Hospital, Herston, Queensland 4029

JAMES, Professor Basil, Director, Integrated Mental Health Services, North Queensland Clinical School, Townsville Hospital, Townsville, Queensland 4810

CHAIRMAN—Welcome. I now call on witnesses from the University of Queensland and the North Queensland Clinical School to be sworn in. Would you please state the capacity in which you appear here today.

Prof. Yellowlees—I am here in several capacities: in a personal capacity because of my long-standing clinical interest in Telemedicine; I am also here representing the University of Queensland, having discussed that with the Vice Chancellor and he is in accord with me representing him in this process. I also have submitted via the Royal Australian and New Zealand College of Psychiatrists.

Prof. James—I am a director at the Integrated Mental Health Services in Townsville and related districts. I am here because we have a very active television network in a non-metropolitan setting, about which I think the committee might like to hear; and I'm here, too, to represent what we do at the clinical school in North Queensland.

CHAIRMAN—Professor James, we have not got a submission from you.

Prof. James—That is true, Mr Chairman, and what I would appreciate is if you could consider me somebody who complements what Professor Yellowlees is saying and who perhaps might be able to contribute something from a rural perspective.

CHAIRMAN—Would you like to give us an opening statement, Professor Yellowlees; just a brief statement outlining the things in your submission on which you would like the committee to concentrate.

Prof. Yellowlees—First of all I am primarily a clinician with an academic background. I am user of Telemedicine. I think both Basil and I are here primarily to talk about Telemedicine rather than more general health information management situations. I have probably had more experience working clinically on Telemedicine than anyone in the country and I have been working on these systems now for about 3½ years. I am at the present time developing my third Telemedicine system here in Queensland.

I have been asked by Queensland Health to direct the Telemedicine network that John Youngman has already told you about, through the Department of Psychiatry at the university and we will be doing that in conjunction with Professor James, which is one of

the reasons he is here. So I guess at one level we will be taking over the infrastructure and the driving of Telemedicine throughout this state in all disciplines.

CHAIRMAN—What do you understand Telemedicine to mean and do you believe there should be a standardisation in terminology?

Prof. Yellowlees—In terms of definitions, I see it as being simply the delivery of health care at a distance via any communications system, so the telephone is equally valid. We tend to concentrate on video conferencing, which is the provision of audio and visual data and, obviously, information.

CHAIRMAN—Do you think there is a reasonable prospect that there might be agreement across the field on standard terms, standard definitions, that all talk about the same thing?

Prof. Yellowlees—I very much doubt it because there is so much political fuss made of this. Some people talk about telehealth and some people talk about telemedicine. 'Medicine' is seen as being a bad term to use because it does not include other aspects of health. I think it would be sensible to have a working definition that could be used. Not everybody will agree with that, though, clearly.

CHAIRMAN—We notice that Dr Whiting has said in his submission that there ought to be some more pilot programs, but, from what you are saying, you feel that this area has now progressed beyond the pilot stage. Why are you right and Dr Whiting wrong?

Prof. Yellowlees—I think Dr Whiting is working in a rather different area of medicine. He is talking about broadband use of that technology and is working in an area that is much more experimental. I think from his perspective, using that type of technology, that is a reasonable proposition. I am talking about using telemedicine systems primarily via ISDN technology. That is well utilised worldwide. I do not believe there is any reason to call those sorts of projects 'pilot'.

CHAIRMAN—Do you feel that telepsychiatry is further advanced than other aspects of telehealth/telemedicine?

Prof. Yellowlees—In Australia it certainly is. Yes, it has clearly been the leading medical discipline.

CHAIRMAN—Why?

Prof. Yellowlees—I think primarily because there have been a few people like me who have worked in rural areas, who have been in the situation of having no support from colleagues and from hospitals—they have had no beds to admit people to—who have

understood that telemedicine as a way of communicating is a vital tool and who have then been fortunate enough to be able to get themselves into a variety of projects. We have just simply driven it.

CHAIRMAN—So you feel there are not going to be cost savings to the community. You feel that it is going to be cost neutral but that there would be significant improvement in delivery of health care to people in rural and regional Australia. From what you are saying, of itself that is sufficient benefit to drive this technology: it is not going to cost more, and health treatment will be better.

Prof. Yellowlees—What you are talking about is the transfer of costs from those at present associated with travelling, social inconvenience and obviously a lack of access to health care—which then later may have very significant costs because emergency situations arise—to a much more planned, organised, forward looking process that would clearly improve the quality of health care. I do not believe that it is possible to say at this stage that that will save money. I think anybody who comes in saying telemedicine is a great saver of money is grossly naive.

CHAIRMAN—I have just two more sub-questions, and I will then invite Mrs West to ask a question. To what extent would you say people in rural and regional Australia are now able to access telemedicine? Secondly, you feel that we are beyond the pilot stage—yet, as I understand it, we have not done a lot of work with respect to people living in very remote settlements. How, without further pilots, can the determination be made that telemedicine will help very remote people access improved health care?

Prof. Yellowlees—A problem for very remote people using ISDN technology is simply getting the lines out. The lines are not available in all locations. For instance, the Tanami network in the Northern Territory, which is the oldest telemedicine functioning network in the country, was designed primarily for Aboriginal use. It uses satellite technology, which is extremely expensive. There is a technical issue in getting to very remote sites.

CHAIRMAN—Why is satellite technology so expensive?

Prof. Yellowlees—I genuinely do not know. I can just tell that you it is. It costs much more per hour to broadcast.

Mrs WEST—I was going to ask for some specific examples of how you think telemedicine works.

Prof. Yellowlees—There is a whole series of areas in which you can use telemedicine. Basically, it can be used in any area of health where you need to see a patient. You can do that with people helping at the other end. Perhaps you could have an emergency physician sitting in a central city and a GP with a patient in the middle of

nowhere. The GP could do extra parts of a physical examination under the direction of the emergency physician, for instance, and determine extra clinical findings.

The first thing to say is that it really should be seen as a multi-disciplinary tool. It is a clinical tool. It is not as good as face-to-face work; nobody can argue that it is. It is clearly preferable to see a patient up front. Where it is really useful is in a system organised for patients, such as psychiatry, where the clinicians can go out and see people individually—maybe on a monthly visit to a town—and then follow up on them via telemedicine. We use it both for emergency assessments without that first human contact and for follow-up visits.

Mrs WEST—That is what I really wanted to know. I wanted specific examples of how you use it.

Prof. Yellowlees—I will run through its uses. Clinically, it is used for seeing patients in acute emergencies, generally with a mental health worker in the country or a GP, and getting a psychiatrist to review them in town. It is also used for follow-up visits, outpatient appointments and long-term care. When people are in hospital in town, it is very helpful to do a video conference to their family and GP in the country to help with discharge planning and the organisation of management after hospitalisation. You can do it from that end with the patient online. They are the major face-to-face uses.

Probably a more important use of it from a clinical point of view is in supporting, educating and teaching health care workers in country areas, again in all disciplines. I have done that in a variety of settings. For instance, until recently, I was supervising the Alice Springs mental health team. I used to do two-hourly sessions once a fortnight with them from Brisbane. They would present difficult patients and we would discuss them as a group. I have also trained a registrar in Darwin from Brisbane and had regular sessions with her so that she was able to get her specialist training and still live in Darwin. Without that, she would have had to leave Darwin and they would have lost a psychiatric trainee. It is very hard to get specialist trainees into country areas. There is a huge opportunity for training specialists in areas that they would not normally work in.

CHAIRMAN—It seems from what you have said that the single most important block to the continuing development of telemedicine in the health area is the lack of recognition of telemedicine consultations on the medical benefits schedule. Can you tell us how it could be done. Private specialists are not going to be wildly excited about doing work without being paid. I would not, if I were a specialist.

Prof. Yellowlees—Absolutely. I have spent many hours trying to convince private specialists to be involved. I have got some involved for short periods. The doctors basically know each other. They build up referral networks over years: perhaps they went through medical school together; a GP goes to the country; his friend, a specialist, may live in town. Over the years, that GP refers to that specialist. They build up networks like

that. You find that you have this series of specialists who tend to link to particular towns or country centres because of those referral networks.

Telemedicine could be used perfectly in those networks by allowing the specialists in town to see these patients who now travel every three months, six months or a year from their town to the city to be reviewed by the specialist. It allows those city based specialists to see those longstanding patients from all disciplines in their general practices with their GP in their home towns. They may only see them once every couple of years for a follow-up visit or once every couple of years in the city face to face. Ideally, they would be paid to go out to the country to review the people who are part of their referral network. That would be a huge cost saving. That is one area where you could clearly make cost savings.

CHAIRMAN—Professor James, could you outline for the committee the work you are doing in North Queensland?

Prof. James—I will very briefly sketch the area we operate in. It is the size of Japan and ranges from Mount Isa in the west to Townsville in the north.

CHAIRMAN—Not as many people are resident there.

Prof. James—There are not as many people. There are a quarter of a million, and they are very scattered, although there are significant populations, such as in Mount Isa. About 35,000 people last year consulted one nurse in the mental health field. I was very sympathetic to what Mrs Grace said about Western Australia being a very decentralised state. This morning, I travelled 1,200 kilometres to come here. We really are quite remote.

We have been able to access from Townsville one very needy population that the committee might be interested in, and that is the Aboriginal community in Palm Island. This is the first time that a mental health service has been delivered to Palm Island. We complement it with a dedicated psychiatrist going there once a month and a registrar going there once a fortnight. That link is absolutely vital.

We have a link in Mount Isa, which is about two hours flying time from Townsville. It enables us to support a trainee in Mount Isa and provide supervision for him and the mental health services in general, which are beginning to grow. We have tested user acceptability both in terms of patients and health professionals, including Aboriginals. We find a very high acceptability rate. There are certain techniques, which Peter would be very familiar with. If the patient knew the doctor or health professional at the other end beforehand, it is seen as much more acceptable, at least on the second time of use, it is much more acceptable; for the first time, it is slightly anxiety producing. It has a very high level of acceptability.

We use it particularly in the way that Peter described, which is for reassuring families with a very sick relative who has come, for instance, from Mount Isa to our hospital in Townsville, that the patient is really doing very well. We are putting parents in touch with children weekly and maintaining family contacts. We now have a network, which includes not only the two I have mentioned—that is, Palm Island and Mount Isa—but also Charters Towers, Ingham and Ayr. Our child and adolescent mental health service has a desktop set in their premises. This is a very rapidly developing field in North Queensland. We have a research project that has finished investigating the increase in user rates and acceptability.

CHAIRMAN—And you are based in Townsville?

Prof. James—Yes.

Mr ALLAN MORRIS—Professor Yellowlees, your patients are saying that it is all there. I would have wanted more information technology than simply telemedicine. 'Telemedicine' is really a pretty bad word. It is a word that is dangerous to use at any time. You would be better saying medicine in a building or surgery, because we are using communications as medicine. It is in danger of prejudicing the whole issue. You are saying that we are largely there. However, all the evidence is to the contrary. The evidence states that, of all the professions in the country, medicine is probably the least information technology oriented. As psychiatrists, you might be able to comment on that.

Prof. Yellowlees—I am delighted that you have asked me that. I was very anxious to say something when you asked that question of the last person. You are right; doctors have not taken to technology.

Mr ALLAN MORRIS—As psychiatrists, do you place your personal view first and your technical view second? I am curious about what you as psychiatrists would see as being the reason for that amongst doctors.

Prof. Yellowlees—There are basically two reasons. Doctors are a fairly independent bunch. They will use anything that helps them clinically. They are very clinically based. You can get doctors to do almost anything you want if it is seen as being useful. If it is not seen as being useful, they will write it off very quickly. The problem with information technology is that the health care system was introduced entirely incorrectly. It has been used essentially as an administrative and financial tool within the health services. The large proportion of money from government that has gone into developing new systems has essentially developed financial management systems and accountability systems, all of which make doctors increasingly paranoid. It is all about observing what they do and checking on what they do and slapping them on the wrist.

There has been very little work done towards putting money into useful clinical systems. Doctors are clinicians; people often forget that. They have concerns about patient

care. Until we start putting money into clinical systems that are useful, you will find that doctors will not be thoroughly interested. The sorts of views being put around about it being a different generation are complete and utter nonsense. That is not true in any other area. Other professionals take up technology very nicely. It is a matter of whether things are useful. At the moment, we do not have very clinically useful systems, although video conferencing—I am using that term very deliberately because of your comments—is seen as being useful. Doctors are taking it up very quickly when they are given access to it.

CHAIRMAN—Doctors are business people. If there could be some financial incentive to make it beneficial to them to take up the challenge of telemedicine and technology, more would do so. They are not driven by altruistic motives, any more than any other section of the community.

Prof. Yellowlees—You have to remember that doctors work in two separate areas—public and private settings. In the private setting, clearly, financial benefits are of particular interest. I can assure you that there is one hell of a lot of very altruistic doctors working in the public setting who could be earning a lot more in the private setting and who would love to use these things.

CHAIRMAN—If it was not for those doctors, the public health system would collapse.

Prof. Yellowlees—That is true. That is one of the reasons I am making this point. I am clearly employed in the public health system. I have been using these systems for several years. They are clinically very useful. I have been doing this on top of my normal work. I have not been paid for any of this. I get no benefit for doing it except that I find it very interesting. It is clearly clinically effective.

Mrs WEST—Isn't it essentially a time management thing as well? If you have doctors in the surgery spending time behind a PC, that is patient time or patient care that is being lost.

Prof. Yellowlees—The fact is that there are quite good clinically useful systems around. It is not seen as being terribly important within the system. The clinical use of computers is not terribly important.

Mrs WEST—So there is room for improvement.

Prof. Yellowlees—Yes. I can give you an example from Queensland. Queensland spent an enormous amount of money on McDonnell Douglas information systems that are clinically useless. It is just seen by clinicians as being a pain. We are at the moment introducing a new information system in community health where I work. I have about 50 staff working for me in one of the mental health centres that I run. All those staff are expected to input clinical data into the system. But we have only been provided with 20 computers. That would not happen in other areas. I do not really think it is realistic to

expect clinicians, who are very busy—these are not just psychiatrists but also nurses and social workers—to have to queue up at a desk when they have seen a patient and be expected to input their clinical information in a very inefficient way.

Prof. Yellowlees—Until computers are seen as being an essential part of clinical practice, we will not get very far. It is not a belief that the bureaucracy should take.

Mr ALLAN MORRIS—May I put an alternative scenario to you? There was a belief some years back that middle management felt very threatened by computers because, historically, they were the information repository; middle managers were the ones who knew the most about the companies. That information gave them power. There is a thesis that doctors feel very threatened by the computer's capacity to hold information and to be up to date. They are reluctant to demand clinical systems. It is a question of supply and demand. There has been no demand by doctors for clinical systems. I will give you an example. Doctors have in their surgeries models of brains, drawings of the body and all kinds of things that they can show a patient. They may want to show what a nerve looks like in order to show how leg pain is being created. With a PC, they could be showing a picture much more easily and much faster. That technology has been available for 20 years, but it has not been considered to be relevant.

Prof. Yellowlees—It must be available in a clinically useful way, where you can immediately tap in, pull out the information and give it to the patient. It has now become available through the Internet. I use the Internet and E-mail every day. I am a clinician. I do not pretend to be a whizzbang administrator. I happen to have a series of administrative responsibilities. These sorts of things are clinically useful, whereas we have not had clinically—

Mr ALLAN MORRIS—Until clinicians say that they want that information available to them, no-one will develop a system that they like. It is a chicken and egg situation. Which comes first: the demand by clinicians for usable information systems; or the technologists creating systems so that the clinicians can say they are of no use? As you have said, it is irrelevant. Perhaps it is designed by technologists rather than clinicians.

Prof. Yellowlees—I can assure you that within the public health system there is a huge demand for these systems but there is not the money to pay for them. There is not the money to support them when they go wrong. There are huge demands. It is a fact of life. If you gave me another 25 computers tomorrow, I would take them and give them to every nurse in my centre. They would use them. There is a huge demand within the public system. Within the private system, the reality is that there is a cost issue. You are suggesting that doctors are troglodytes who are not interested in technology.

Mr ALLAN MORRIS—The take-up rate is so low when compared with other professions.

Prof. Yellowlees—It is because they are not clinically useful. I do not think it is a power or control issue.

Mr ALLAN MORRIS—Lawyers had a similar view about 20 years ago. People said that you could not use computers for the legal profession; that it was too complicated. They said that there are too many words, it is too complicated and they could not write them all down via a keyboard. All the things doctors are saying were said by lawyers 20 or 30 years ago. Yet the take-up rate by lawyers today is enormous. It is almost all of them.

CHAIRMAN—So how can we speed it up?

Prof. Yellowlees—The University of Queensland is introducing a new medical course this year. It is mandatory for all medical students commencing at the University of Queensland from next January to be highly computer literate. It is recommended that they all have their own notebook. We are doing a lot of teaching on the worldwide web.

CHAIRMAN—That is an excellent idea. The next generation will be computer literate.

Prof. Yellowlees—That is right. We have taken a very clear view that doctors absolutely have to know how to use PCs effectively.

Prof. James—I believe that it may be a pessimistic view to wait for the next generation.

CHAIRMAN—I am not suggesting that we should. But a safety net is that the next generation will be more computer literate.

Prof. James—I am sure that it will. My experience has certainly been that the general practitioners are taking up the technology. But there has been the convenience factor of not having one on your desk, particularly with interactive television. You have to make an appointment and go down to a hospital, which may be half an hour down the road, et cetera, and which interrupts everything. It is a chicken and egg thing in a way. Who do you talk to if you have the only one in the northern part of wherever? It is not until they become commonly available that they become valuable and easily accessible. Once that convenience factor comes in, the barriers will drop very rapidly. You made the point that this may have been driven largely by information technologists. I think that is true. What is very good about Dr Youngman and the Queensland Health development is that people like Peter and I have been involved at a very critical, pivotal level as well as the technologists. We are going to see a very rapid expansion of utilisation.

CHAIRMAN—Could it be patient resistance as well? Does the computer screen make the whole consultation more impersonal? It seems like the doctor knows nothing; he has to press a couple of buttons to find out something.

Prof. Yellowlees—There is a very interesting point to be made about screen savers. When you have the computer sitting in the background, the screen savers change every few minutes. The patients think it is wonderful. I do not think it is an issue. The patients think it is really interesting.

CHAIRMAN—I was at one of the Edelston style clinics once and they had a screen that changed every couple of minutes. It was encouraging you to seek extra medical attention.

Prof. Yellowlees—We have beautiful alpine views and wonderful views generally.

Prof. James—We have had only one patient refuse out of 150.

Mrs ELIZABETH GRACE—We have been saying that we do not quite have it right in the domestic arena. We are still ironing out lots of kinks or bumps. You said in your submission that we are perfectly placed to become an international leader in communications technology and health. Perhaps we are going back to the chicken and egg situation. Should we be concentrating on getting it right here first or should we be looking at the big picture?

Prof. Yellowlees—We clearly should be doing both. Again, it is not sensible to try to get it all perfect here, because the technology and the attitudes change over time. For instance, I am starting a process of negotiation with the World Health Organisation at the moment. We are creating a WHO collaborating centre at the university in drug and alcohol rehabilitation. We have four psychiatrists coming from India to spend three months with us starting in January. We are proposing to WHO—this is in the very early stages of negotiation—that we follow them up via telemedicine or video conferencing in India after they have had their educational time with us. We will support them and follow them through. That is a very obvious, very sensible and practical use of video conferencing internationally.

We could clearly deliver university programs and educational programs to overseas markets. There is a tremendous demand for them. Again, the problem is that you need the infrastructure to do that. Between us, Basil and I are trying to create the infrastructure. Queensland Health has been incredibly supportive of that. They have a very good model that I would certainly advise for other states. It seems to be because it is clinician and user driven. There are opportunities. You have to go out there and chase them.

Prof. James—Finding impediments to the development of the system can be quite compatible with world leadership. To publish those impediments and how they are

overcome puts you internationally in a very high profile.

Mrs WEST—I have a question about standards. Could you elaborate on your view that the coding and dissemination of medical information should address the hospital systems first.

Prof. Yellowlees—I find it fascinating that people get so hung up about confidentiality and standards within video conferencing. I am not necessarily talking about wider information systems. The reality is that we now see patients by their beds. We talk about their sex lives in front of four or five other patients with just a curtain around them. We see patients with doors open, so that half the world can see us.

I have been trying to shut a very small in-patient unit here in Brisbane for a year now because it is clinically unsafe and because the patients can be seen inside by everybody who walks past in the street because there are great big windows on the ground floor on a major road. If you were admitted to this particular unit, everybody would know you are there. I have been unable to shut that unit because it is politically unacceptable.

CHAIRMAN—What sort of unit is it?

Prof. Yellowlees—It is a drug and alcohol unit. There are issues like that around. We do not pay a lot of attention to confidentiality in the general health care system, quite honestly. I find it fascinating that there is a different level of standards being applied with this technology. That was why I was making that point.

Mr ALLAN MORRIS—It is important to realise that you are simply talking about video conferencing, not information.

Prof. Yellowlees—Yes, it is very clearly video conferencing.

Mrs VALE—I wish to follow on from your statements on confidentiality, Professor. Referring to page 1 of your submission, you actually did indicate that confidentiality issues were not fully addressed, and they certainly were not legally tried in the telemedicine areas. Given that the medical profession is bound by traditional ethical and privacy codes and bound by established laws, would you indicate that the practice of telemedicine brings with it extra challenges regarding the privacy and legal areas? I know that you have partly answered it.

Prof. Yellowlees—It certainly does. For instance, if I am seeing a patient in Alice Springs, Darwin or wherever I am seeing them, I would always assure them that there is nobody else in my room. If necessary, I could swing the camera around in my room to prove that there was no-one else there or if there was somebody else there, they would know who they were and they would be introduced to them. You clearly have to be careful about that because obviously it is potentially possible for somebody to be slipping

in on the side and out of camera range. It is very important to do that.

One of the major issues is that we do not videotape any of our interviews. In America it is generally considered legally sensible to videotape interviews to protect the doctors in the future. The legal advice we have had here is that we should not videotape interviews because they could potentially then be obtained under freedom of information and perhaps used against the patients in the future in a legal situation. There are issues like that that really have not been clearly sorted out. It is the totally opposite legal advice in America compared with here.

Mrs VALE—In your submission, on the same page, you also commented on the use of ISDN lines and related technologies, saying they should be strongly supported. Would you like to explain your comment a little further.

Prof. Yellowlees—I think that ISDN is here and available. It is cheap. It would be fair to say that Telstra has made a lot of money from ISDN. I think it would be very interesting for this committee to try to find out why they are so expensive. I can see no reason for ISDN being so expensive. I think it has been an extraordinary money-making business for Telstra.

Mrs WEST—Maybe it is not competitive.

Prof. Yellowlees—Absolutely; of course it is not competitive.

CHAIRMAN—The committee will write to Telstra.

Prof. Yellowlees—I would be fascinated to know why. The price has come down a lot in recent times but it is still far too expensive for what it is. I am just being pragmatic. It is here and it is very good. It is a uniform system across the country. We do not have the problem that they do in the states where there is a different telephone company in every state.

Mr ALLAN MORRIS—There are some privatised ones, you mean.

Prof. Yellowlees—Yes, but we won't go into that. I am just being pragmatic about it. It is there and we might as well use it. It is sensible and it is easy.

CHAIRMAN—What do you see as being the role of government in relation to telemedicine?

Prof. Yellowlees—Clearly, there is a very important driving role for government.

CHAIRMAN—State and federal?

Prof. Yellowlees—Yes. I think there is a real lack of coordination across the states. There is a group that reports through to AHMAC that is attempting to coordinate the systems, although I do not think there is a tremendous amount of clinical input into that. That is very much a bureaucratically driven group of people, although they are prepared to have clinicians involved.

To me, the most important role that government could give would be the message that clinicians should be consulted and involved in decisions about IT—and telemedicine, in particular. I can assure you that most of the time decisions are not made in close consultation with clinicians. It depends very much on particular individuals within bureaucracies—particularly with video conferencing—who see it as being a sexy area, decide they wish to make their careers in it and therefore promote it and work in that area, but do not necessarily involve clinicians because clinicians are seen as being potentially a powerful threat who, if they get their hands on this technology, will take away the kudos and the glory.

That has been a very major issue in several of the states. It is not the case in Queensland. One of the reasons I moved to Queensland was that I had extreme difficulty implementing these sorts of systems in South Australia, where I was previously. I think Queensland has a very different view—and a very sensible, pragmatic and supportive view.

CHAIRMAN—Just before I ask for any last questions, are there any other comments you have, Professor James, since you were kind enough to travel such a long distance to appear?

Prof. James—The only other comment is the paradox that sometimes the most needy communities—that is, the most remote—are the ones without the ISDN lines. It may be something where this committee might feel able to influence Telstra in actually putting lines in.

CHAIRMAN—I think Telstra would be very vocal about that.

Prof. James—I could give you two examples—Doomadgee and Mornington.

Mr ALLAN MORRIS—In theory, your digital mobile systems may well give that. Very briefly, I am concerned that those of us who are not very telegenic worry about getting the equivalent of a white coat syndrome. I come back to the question about the role of government and the issue of benchmark standards. If you look back at our previous inquiry into home and community care and the lack of a common instrument of assessment, those kinds of issues are where the Commonwealth and states could and should play a role in actually trying to get common language, common standards and common process. How the industry then uses it is another issue.

Prof. Yellowlees—I think you are basically asking about the need for some central standardisation of procedures, policies and assessment protocols.

Mr ALLAN MORRIS—Do you see it as protocols?

Prof. Yellowlees—Absolutely.

Mr ALLAN MORRIS—Is that happening?

Prof. Yellowlees—No, it is not, not at a basic level. The AHMAC group has produced quite a good document—I am sure you have copies of it—that looks at the more general issues. One of the things that we have done here as part of the telemedicine network is to develop procedures, policies, manuals and instructions for how to interview. It is very important, for instance, for women in particular not to wear dangly-dangly earrings.

Mr ALLAN MORRIS—Why?

Prof. Yellowlees—Because on video conferencing they get quite distracting. They move around a lot, the lights flick on them and they can be really quite a nuisance. There are some very simple approaches that one can use to make interviews work better—simple approaches about how to introduce yourself, what the process of the interview is, how to finish off an interview and how to make people feel comfortable at a great distance. To the best of my knowledge, there is no work on any of those sorts of areas going on nationally, although we have essentially written all of those books here.

I think there is a clear need for those sorts of things to be addressed. I would have to argue that there is a major academic component to video conferencing—to all of those things. I personally believe that there is a very strong need for some sort of clear academic central unit that has a national perspective in this area. Whilst we are on the *Hansard* record, I would love to run it.

CHAIRMAN—We might conclude this part of the proceedings. Thank you very much, Professor Yellowlees and Professor James, for appearing before the committee.

[11.16 a.m.]

HAYES, Dr Leith, Project Manager, ICU Telemedicine TARDIS Project, Room F18, Clinical Sciences Building, Royal Brisbane Hospital, Herston, Queensland 4029

HOGG, Mr Peter David, Partner representative, TARDIS Project, Room F18, Clinical Sciences Building, Royal Brisbane Hospital, Herston, Queensland 4029

WHITING, Dr Robert, Project Director, ICU Telemedicine TARDIS Project, Room F18, Clinical Sciences Building, Royal Brisbane Hospital, Herston, Queensland 4029

CHAIRMAN—I now call on witnesses from the Royal Brisbane Hospital to be sworn in. Would any or all of you like to make a brief statement before we commence with questions?

Dr Whiting—TARDIS is a telemedicine initiative which is primarily based within the intensive care environment. This project began, driven by the clinicians, some two years ago. We realised very early on in the piece that we needed to have significant involvement from as many participants as possible, and we spent much of the last two years trying to get the right mix of people together. That mix comes from industry, such as Telstra and IPEX, and academia, through the University of Queensland and the CRC for distributed systems technology; and obviously Queensland Health is a very active participant.

The intention of this project is to allow clinicians to consult with one another in as comprehensive a fashion as possible irrespective of distance. I have sat in on the two preceding presentations and discussions, and I guess a good point to start here would be based around our definition of telemedicine. We differ from just about every other one that you are going to come across. Most of telemedicine is defined with a significant technological background to it. If you look at the vast majority of telemedicine that is out there, it is nothing more than desktop video conferencing. Much of it has been driven by industry, by the technologists trying to find some value in there. In doing that, what has happened is that systems have gone in with very little appraisal, very little evaluation, and very little where you can, at the end of the day, say why this is effective, why this works.

Where TARDIS is different is where we come from with regard to telemedicine. We look at telemedicine as the practice of telemedicine, very much like the practice of medicine. The clinical drive is related to delivering a service. It is about understanding where the technology sits within that, but the technology is just one of the enablers of the practice of telemedicine. To understand how the practice is going to work, how it is going to be beneficial, whether it is going to be cost-effective, and what is the most effective way to do it, you have actually got to first of all look at how you deliver the services, the nature of the practice of telemedicine and then the impact of delivering that over distance.

What we have been doing over the last seven months, in conjunction with the social technical research team down in Melbourne, is actively looking at what goes on within the telemedicine environment at the moment, irrespective of the technology, irrespective of putting communications linking Maryborough Hospital, Nambour Hospital and the Royal Brisbane Hospital. We need to understand what happens now before we introduce anything which may have some form of impact on that. Otherwise we simply will not understand whether we have done any good or any bad, or the benefits of what we are endeavouring to achieve.

This project really has two facets. One is about getting a solution that is of benefit, but, secondly, it is about understanding and measuring and evaluating the components that make a successful project—or even understanding how an unsuccessful project would work.

As a final comment, I would like to offer the opportunity to the committee at some stage, preferably in the new year, to come and see what we are doing and why it may not work within the environment, because the initial component of what we are doing is nothing more than just video conferencing. As we learn the lessons from that, we will be evaluating and developing a more comprehensive, integrated, distributed environment. But come and see what we are doing, why it does or does not work, and how it is that we are going about it because, at the end of the day, that is going to be far more informative than just asking questions.

CHAIRMAN—That is a generous offer and a worthwhile suggestion. The committee will consider that at a meeting. I understand your different definition of telemedicine. I really do not care how we define telemedicine so long as there could be some common usage so that when someone uses a word the entire community understands what is denoted by that word. Do you see any light at the end of the tunnel? Is it possible to get some kind of standard understanding of what words mean? Otherwise, it seems we may as well all be talking different foreign languages.

Dr Whiting—When you talk about the practice of medicine, if I say that it generates a whole variety of ideas and views in your head, telemedicine is exactly the same.

CHAIRMAN—You do not see that as a problem?

Dr Whiting—I do not see it as a problem. I think it is just explaining a new means of providing a service.

Dr Hayes—I think you need to separate telemedicine from the technology that enables it and supports it, because they are different.

Mr ALLAN MORRIS—Could you explain that further?

Dr Hayes—Certainly. The technology that underlies telemedicine is the same technology, as you have pointed out, that underlies a lot of other processes in different industries and sectors. There is not a great deal of difference. At a detailed level, there are differences, certainly, to fit it into the medical environment, but we are talking about computers, PCs; we are talking about standard telecommunications links; we are talking about software which is becoming standard, such as video conferencing, such as collaborative software and Internet software. So we are not talking about, at a technology level, anything that is basically different. How we put it together and how we specialise it for the health environment, yes, that is different. But that is at the very top level of what is happening.

CHAIRMAN—If Commonwealth and state governments have limited involvement in the telemedicine pilot projects, who should evaluate and coordinate these projects, and how should the information be disseminated within the health system?

Dr Whiting—If we are defining it around a clinical service, then we need the stakeholders within that. The stakeholders include the clinicians—and I do not just necessarily mean doctors; I mean the spectrum of clinicians—and the people who will be utilising the service. They include the patients, clients, et cetera and, at the end of the day, those people who will be administering the systems as well as paying for it. So you need to have state organisations such as health departments and government organisations involved in that process. If you do not, then you just get one viewpoint. Also by getting that milieu together, you tend to get a good, common understanding of the issues. That is what is often missing in all of these things.

CHAIRMAN—Professor Yellowlees said that he felt that we no longer had to do pilot projects. But you felt that we needed to do more. He did not see any inconsistency in what the two of you were saying. How do you feel about this matter?

Dr Whiting—To give a good example, we should look at the practice of radiology. There is very little difference between that and the practice of teleradiology. Teleradiology has become an accepted medium—

Mr ALLAN MORRIS—Sorry to interrupt you, but I would have thought that teleradiology would consist of digitised signals and the fact that you can transmit the actual picture down the line. Therefore, you can have more than one picture for starters; you can have a dozen pictures. It would therefore be quite different, I would have thought.

Dr Whiting—Maybe the collection technology is different and where that information is coming, but how the radiologist interprets it—

Mr ALLAN MORRIS—Well, let us go slightly further. You can actually put up four, six, eight or 10 pictures at a time one after another from all over the world, which normally you cannot do. How they actually approach looking at a picture will be quite

different in terms of their practice of radiology.

Dr Whiting—Not necessarily, because they have the technology for having multiple pictures, even though they are hard films. There are machines where you put up 12 X-rays—you flash them up in front of you.

Mr ALLAN MORRIS—I am looking ahead. In theory, that is where it could be, which could therefore change the practice. In a sense, the technology will lead to practice changes potentially. I am not saying how it will, but unless we see that as well and unless we see the feedback effect on that, we are probably underestimating this.

Dr Hayes—That maybe answers your question. That is exactly one of the reasons we still need pilots; it is only through pilots that we get those answers.

Mr ALLAN MORRIS—I accept your thesis.

Dr Whiting—There are two components to teleradiology: there are the radiologists but there are also the clinicians. If you look at how the clinicians may be using it, that is very different. There are dramatic changes in clinical practice—PACS systems and things like that. You will have very dramatic impacts on the provision of services. Some serious questions need to be asked about how those are implemented and the cost benefit.

CHAIRMAN—Mr Hogg would be disappointed if we did not ask why Telstra is still charging such an outrageous fee for use of ISDN lines.

Mr Hogg—I am not involved in the pricing area; I would like to make that clear to start with. We have got directors and the government at the moment to roll ISDN out. There have been some price reductions. We are digitising our networks in a nationwide program, which is several billion dollars worth of expenditure and infrastructure. There will be a drawing of some sort of pricing parity between ISDN and PSDN, but I do not know what the time frames are for that.

CHAIRMAN—Do you have any comment on the lack of ISDN lines in more rural and remote areas?

Mr Hogg—From an infrastructure perspective, we do a lot of work with Queensland Health now. An example was cited concerning Palm Island earlier. We actually did an abnormal thing to get ISDN in there because there were only analogue radio bearers to that site. If you take that in the context of other remote areas, a lot of our infrastructure is still very much analogue. Putting in a digital infrastructure is a very costly exercise, but that is being programmed and it is happening.

Mr ALLAN MORRIS—Could you clarify for me the capacity for digital mobiles to carry ISDN.

Mr Hogg—Digital mobiles in Australia do not carry ISDN. I believe that there are ISDN digital services being developed in Europe, and Telstra is reviewing those services at the moment.

Mr ALLAN MORRIS—The question about rolling out cable to small towns and small communities and outlying farms and so on is not going to happen very readily, but I would have thought that the more likely scenario would have been digital mobiles. I am asking you about the capacity of the digital mobile system to carry ISDN at some point in the future.

Mr Hogg—I have a different perspective—that satellite will overtake digital mobiles. With digital mobiles the actual footprint around a transmitter is quite small and you need high capacity digital lines to link those transmitters or you may need satellite links to link those transmitters.

CHAIRMAN—Professor Yellowlees said that he could not tell us why satellites were so expensive to use. Can you?

Mr Hogg—It is because of the enormous cost of the satellites—putting them up in space and all the development that has gone into them over time. They are just horrendously expensive.

Mr ALLAN MORRIS—At the risk of getting bogged down, I am just trying to get a fix on this early on. Sure, satellites can be part of the digital mobile network anyhow in just how you get the signal to the phone, but what I was trying to get towards was the bandwidth and the actual technical capacity. The trouble with some lines is that the transponders are relatively choked. You end up with a cost problem in terms of transponder rental. I was getting towards the bandwidth of the digital mobile to carry the kind of ISDN load.

Mr Hogg—I still think that may be able to be achieved through digital mobiles, but the ability to penetrate those remote areas is going to be very hard to address.

Mr ALLAN MORRIS—But it does not matter whether you use transmitters or satellites; it is the bandwidth. Mr Chairman, it is a bit unfair coming at Mr Hogg with this kind of technical question at this stage. Would it be possible for him to provide us with some more information? I think he is aware what we are asking about. He might be able to do some checking first and give us some information.

CHAIRMAN—Yes, if there is something that he cannot answer.

Mr ALLAN MORRIS—I think it is more reasonable to ask it on notice.

CHAIRMAN—Yes. We are not holding a position; we would just like you to get the information back to us. We are just trying to find out whatever information we can so that we can make recommendations to the government.

I just wanted to pick up on something that was said. In your submission, you mentioned that telemedicine is about cooperation and that Australia, with its universal health service and the needs generated by distance, is an ideal environment for effective telemedicine services. Given the lack of technology extending to rural and remote areas, how is it possible to practise telemedicine in rural towns with small populations in remote settlements which have limited health services and technological infrastructure? You would say that, when satellite arrives, this could well reach all parts of the country and this is the answer?

Mr Hogg—The view is that with the low earth satellite infrastructure that will be deployed, I think the vision is that by about 2005 there will be bandwidth capacity on those sorts of services up to about 34 megabits which is quite enormous in the context of 64 kilobits available on ISDN, and that those sorts of solutions will then be able to be employed.

Mr ALLAN MORRIS—That is what I am trying to get. Could you give us a paper on that?

Mr Hogg—Sure.

Mrs VALE—Dr Whiting, I have some questions on ethics and privacy issues. I would like to know if you think telemedicine and technological information management presents ethical, privacy and legal issues which cannot be addressed by the current ethical medical codes and laws. If technology presents extra problems, do you have an opinion on how these problems could be addressed? In addition to that, could you also discuss the legal issues surrounding the teaming agreement which the project participants signed for the TARDIS? That was in page 3 of your attachments to the submission.

Dr Whiting—I will start with the easy one first, which is the teaming agreement. What we needed to do was to create an environment that was based on a partnership—a looking after each other sort of environment. Queensland Health has not been in that particular business before. What it has done is to go out and purchase or lease services, et cetera. But this project is very much about R&D research. If we were serious about getting people involved and owning what was going on, and owning some of the outcomes, we needed to be able to protect their investment. We needed them to own a portion of the project and not just be interested in getting their little bit right but have a vested interest in getting it all right.

So as an initial foray into that, we decided to go down the lines of a teaming agreement. Teaming agreements are used in private industry on a regular basis. What it

does is that it acknowledges who the participants are; it acknowledges their contribution; and it goes some way towards protecting their contribution and some of the outcomes—the intellectual property. It acknowledges that everybody has some level of ownership in that.

That is very much a start, though, if you were going to go on and develop robust systems which may have some form of commercial viability, or functional viability, depending on where you happen to sit: functional from the point of view of Queensland Health, but commercial from the point of view of potential partners. And one needs to move beyond that to ensure that there is any hope of that actually coming to fruition.

With regard to privacy issues, it is an interesting concept. I have been involved in clinical IT now for some five years—heavily frustrated by it and trying to find a whole variety of ways to make something happen. There are two components to it. There is a technological solution, but there is also a process solution. Most of the hospitals now around Australia are going through accreditation. Much of accreditation is looking at standards, and standards look at issues of quality of care as well as privacy. So what we need are standards initially which determine the ethics and how one does one's business. If you do not get those bits right to start with, then it does not make any difference what you put behind it; you are not necessarily going to get any quality systems coming out. So we need to have the ethics in place which appreciate and understand the issues coming out of telemedicine or information technology in medicine. As Professor Yellowlees described, there are different issues involved with those.

But you have to somehow separate the two and we have not done that to date. We have gone from one end where we have paper records sitting on desks at the entrance of a ward where anybody can see who is in the ward. People may not necessarily open them, but they can see that Joe Bloggs is sitting in there. Then we are looking to talking about total closed systems. It does not seem to make sense there. We have not asked the right questions, I believe, as to what we mean by privacy, what the components of the ethics are, and what belongs within the culture of the delivery of the service, and what belongs within the data repositories. The data repositories do need to be secure; they need to be safe; you have to be sure the integrity of the information is maintained in that only the right people have access to it.

But you have to put that in context, and in the context it has to be easy to get at. The controls, in reality, will be on how people get to that information. The banks have good quality security; lawyers obviously have secure systems. So I do not think the technology is an issue. I just think we have to ask the hard questions on what we want out of it and then come up with some responsible answers. We have not asked the right questions about how we access that information: how we use it and who uses it. At the moment, anybody can use it and anybody has access to it. Is that right?

Dr Hayes—I think one of the big dangers there, and half the problem, is not that

the information will not be held securely, but that it will be held securely up to a point. But because it is IT, people will see that technology as a crutch and think it is totally secure, when it is no more totally secure than any other system we have got. So half the problems are mismatched expectations of exactly what IT can provide, and therefore abdicating the social, cultural, environmental responsibility for ethical security. So that is half of what we were addressing there.

Mr ALLAN MORRIS—But is it not also part of the question of active and passive information? Is it not partly the fact that the words sitting on a page are passive, and words sitting in a computer are potentially active in that they can actually get off the computer into somebody else's? Is that not partly the public perception of privacy?

Dr Whiting—The most effective system I am aware of with regard to this is one that does not have these big controls about getting access. What it is does is that it logs who had access to your records. This is coming out of Boston Beth Israel Hospital. The patients have the right at their discharge to ask who accessed their records. I think that is a fundamental right, whether it is an electronic record or it is a paper record.

Mr ALLAN MORRIS—But in a country where the patient has not got the right to the medical records anyhow—

Dr Whiting—But you are not necessarily saying the medical record; you are saying who has accessed it. That is a subtle difference.

Mrs WEST—There is a Canadian experiment where the user has the right of password access and they can actually deny access for information. That is the pharmaceutical project in British Columbia—Pharmanet. The consumer in the first year, I think, ended up where 400 out of the total number of people on the line used the password to stop or prevent people from accessing that information. So it can be done.

Dr Whiting—With Beth Israel, the number of people who abuse the system is very few. The areas where the system has been most abused is actually where one of their own staff has been in the hospital, and the people are just checking up to see how they are doing and things like that.

Mrs WEST—You talk about the process of test bed environments and the project—moving ahead through project. Correct me if I am wrong, but does that not stall the process of getting the introduction of telemedicine across the board? By doing it project by project by project, is that not a slow process of implementation—

Dr Whiting—I will talk about it from the clinical point. We are going into an intensive care environment, an area which is highly rich in information, a very dynamic area where critical things happen quickly. There is no way we can put something in there quickly that works and get it right. We have to move very slowly and understand what we

are doing. We have very little leeway to get it wrong and, if we get it wrong, we need to be able to pick it up very rapidly.

If we are all-encompassing about what we try to put in, it is very hard to identify what bit was wrong, and very hard to step back. Also it is very hard to manage expectations. This is one way, and also it is one way of getting the expectations generated realistically out of end users, which is really where we want to get them from. They see a little bit; they have input; they have ownership. Then they recommend that, 'Look, this doesn't work' because of X, Y or Z or, 'We think this is the next critical bit you really have to work on because we are desperately in need of it.' Without that bit of information, this just does not work. So it is a model which allows us to build a comprehensive environment to put all this information together which is focused on care delivery and consultation.

Mrs WEST—You would have to have projects all over Queensland, would you not?

Dr Hayes—Can I just pick up there? I think there is a second part of the project model or test bed model which is very important. That is that it is a very inclusive model. We have project officers who are clinical nurses full-time at each of the hospitals: full-time at two, part-time at the third. Their role is not just to do the project, but to make sure that as many people in the hospital know what is going on and can come in and see it for themselves. So in that sense, it is giving everyone else in the hospitals the opportunity to see what they could be asking for.

The second part of the inclusivity is that we talk regularly with the IT departments in the hospitals. At Royal Brisbane we are in very close contact with them. Our long-term strategy, once we have learned enough to start thinking about real deployed systems, is that they will have been involved enough and we will be able to hand over to them parts of the infrastructure, along with the lessons we have learned about what the clinicians were really doing with this technology. So you are right, with just individual projects there is a danger. But if the projects are set up to be as inclusive and as open—and I very much like the idea of the information exchange as a third plank—as possible, then you can actually do some good out of this.

Mr Hogg—There is one other aspect, too. It is really incremental prototyping. You are starting at a level, assessing that. In fact, we start before that. As mentioned before, our Telstra socio-technical people are in studying clinical work practices at the moment. So how information flows, how clinicians relate to each other, is all being documented. People who are writing software platforms to integrate the different modalities of information are very cognisant of the way that the clinicians are operating on a day-to-day basis with patients and their colleagues. Once we start deploying solutions, we have also got an accompanying evaluation process with that from the IT level, but also more importantly from a clinical level.

Mrs WEST—Have we asked in practical terms how computing resources can be shared? Have we covered that, Dr Whiting?

Dr Whiting—Shared in what regard?

Mrs WEST—How costs for such an arrangement are divided. Computing resources in practical telemedicine require shared use of computing resources by a population that potentially works at multiple locations with minimum impact on bedside and ward space.

Dr Whiting—That is a very critical thing. One of the reasons that we have selected intensive care to start with is because it is a controlled stationary environment. Another area that would have just as great a need is emergency medicine, but patients and staff move through there much more dynamically and we are trying to make it as easy for us as possible, so an environment which has high technology input, which has the ability to access computers and things like that, is readily available.

However, if we focus primarily and solely on the intensive care environment, we are not going very far very quickly. What we are doing is we are implementing systems that use the lowest standard of technology possible, so we are not using high-end work stations to do this, we are using PCs. We are trying to find the lowest level of PCs that can be used. Though it is slow, PCs are turning up on doctors' desks, they are turning up in wards, they are turning up in environments where they can be readily accessed.

We do need to look at and ask questions about how we access information in a mobile manner so that it is at the bedside. You cannot just have a PC at the bedside of every patient—maybe in an intensive care environment you can, but not in the ward. There is work being done on that sort of thing in the US. We need to be cognitive of that and bring it in when it becomes a cost-effective solution. It is not at this stage. We need to be aware of the limitations of what we are doing, and part of that is that we are not getting close enough to where information is being collected and used. That is the critical thing.

Mrs WEST—Do you think each health sector needs to conduct their own sort of investigation into the cost effectiveness and the viability of telemedicine's use in that sector—like psychiatry and emergency and GPs and so on?

Dr Whiting—I would answer no. We did not do it with the telephone and I do not think we need to do it with telemedicine. Ultimately, the resources for basic telemedicine will be as ubiquitous as the telephone. And that is not that far away. It is only a number of years away.

Dr Hayes—To come back to your point, standard PC networking technology does assume one user per PC at the moment, particularly if you have a security system

underneath that. For us that is one of the reasons part of our research team is the CRC for distributed systems technology. One of their areas of expertise is distributed security. That is obviously going to be fundamental to real deployed systems in the future. Although we cannot do it right now in a commercial sense, we certainly know what is coming and when and what it will look like.

Mr ALLAN MORRIS—You raise in your submission the question about legal liability. We are all aware of the state registration of doctors and so on, and obviously you are referring to that. In theory telemedicine would cross state and national boundaries. Have you done any work on that? Has there been any work done that you know of on what would be required?

Dr Whiting—The closest is the US.

Mr ALLAN MORRIS—But in Australia?

Dr Whiting—In Australia there has been very little work that I am aware of that is addressing that. We get around it by saying that this is a consultation, so the person who is generating the consultation has legal responsibility and ownership of that patient. There is no obligation to act on the direction of the person they are consulting with. But that has to be addressed.

Mr ALLAN MORRIS—Still, there would be a question of liability. If a doctor in Brisbane consults a doctor in Melbourne, acts on that advice and it is a disaster, he could be accused of acting unprofessionally by using the advice of someone who was not registered for practice in Queensland, could he not? There could be litigation about that, couldn't there?

Dr Whiting—But we do that already with telephones. We do consultations every day—hundreds, thousands, tens of thousands—about patients both within states and outside the state and—

Mr ALLAN MORRIS—Within states is understandable, but if you are getting advice from a person who is not registered to practise in the state, does that not raise the question of professional negligence?

Dr Whiting—No. At the end of the day you are responsible; you have to have the capabilities of looking after that patient up to the level—I am on some anaesthesiology discussion groups on the Internet, and people regularly, all around the world, ask advice. They get access to advice from world experts that day.

Mr ALLAN MORRIS—What do you think about this: if for example the specialist in Melbourne advised a particular medication and that was prescribed and given and caused some unfortunate side effects. Would it not be possible for the patient to sue

both the doctor in Melbourne and the doctor in Brisbane?

Dr Whiting—If it is only advice that you are being given, the answer would be no. If it is actual direct care management, it is different. If you hand over your obligation of care to that other person, things change. But as long as you retain that, that is a consultation. A consultation is just seeking advice.

Mr ALLAN MORRIS—I am with that. I am mindful of the doctor's position, but what I am saying is: from the patient's point of view, is the patient able to sue both people who were involved in the discussion, if the original suggestion for that medication came from someone in Melbourne? Even though the person in Brisbane takes responsibility, in the sense that they accepted the advice and are still in charge, the patient could be seen to have a right to take litigation against the person who first offered the advice.

Dr Whiting—I am unaware of any legal cases that have gone to completion whereby just on purely consultation processes somebody at the other end has been sued. If they actually hand over some level of responsibility because they do not have the expertise, that is different.

Mr ALLAN MORRIS—I suppose it is difficult to apply in terms of surgery by remote advice, but that could apply, could it not?

Dr Whiting—Yes, and it is a question that needs to be addressed. If you have got a remote clinician or general practitioner who seeks the advice of a cardiologist or some sort of specialist on matters obviously outside the realms of their expertise, there are serious issues there both within a state and outside of a state. How you manage that situation needs to be asked and answered.

CHAIRMAN—Could you elaborate on your statement that current reimbursement models are not suited to the delivery of health care at a distance. We received submissions from a number of people saying similar things. Clearly doctors are altruistic individuals, but equally clearly they are motivated by balance sheets. In my view they are not going to do a lot of telemedicine, in the private sector, if they are not going to get paid for it.

Dr Whiting—I think it applies just as much to the public environment in this day and age as it does to the private. If you send a patient to one of your colleagues, at the moment they physically move. What ends up happening is they are then in the position to charge in relation to the service that they have provided. Ninety-nine per cent of the consultations that go on are over the telephone and they do not get paid for it.

What we are now doing is providing an environment where the patient stays in one place, they are generating a cost in that locality for the clinician and also the environment that provides that service. Now somebody has the ability to give an objective, formal

delivery of service from a distance.

Dr Hayes—And potentially spend a lot of time doing it.

Dr Whiting—Yes. What happens now is that there are two parts to it. Firstly, how do you reimburse and how do you work out the component of the service that that remote clinician has generated? Secondly, the retention of patients, particularly those that are using high level services in the initial environment, is generating costs there.

If you had a patient that would normally have been moved from point A to point B, if they are staying in point A, first of all you may find that there is not the infrastructure to manage them—and intensive care is a prime example of that—and you are going to increase the number of patients that are being retained and the potential complexity of those cases, which is going to put demands on increased resources within that peripheral hospital. Then, in conjunction, you have got the extra cost of the clinician who is being consulted remotely. So the model is very different. It is a distributed model. At the moment what happens is that the patient turns up in one locality and you have at least contained your costs geographically.

CHAIRMAN—What role do you see state and federal governments playing in telemedicine?

Dr Whiting—We have already mentioned things with regards to standards, ethics, issues with regards to reimbursement. One of the greatest difficulties this project has found is getting the right mix of people and getting the resources to make it happen. We need serious involvement from industry; we need serious involvement from academia. The part of the industry which has those resources is really the overseas companies.

They look on their offices in Australia as nothing more than service providers or, as we found in some cases, they look on things like this as direct competition and they are not interested in resourcing or funding things that are here because it is in potential direct competition to something they may be doing.

We believe that government organisations need to be committed to asking the questions as to whether this is an effective means of service delivery and how it can be done most cost effectively. That demands some level of resources and commitment, because the government organisations are the ones which are going to be paying for the service. You need to have some ownership, and the only way you can really have the ownership is to have the buy-in at the start.

CHAIRMAN—Could you just outline this RICSHA project you have got involving South Africa. It just seems to me that if this works well you could access the best quality medical advice anywhere in the world and get that advice to the coalface. If this is working well, what opportunities do you see for us in the area of the export of

medical services? If you can do what you are doing from Brisbane now, surely you could perhaps assist our foreign aid program in the Pacific or in Papua New Guinea or, maybe on a commercial basis, provide these services to overseas hospitals.

Dr Whiting—Just with regard to RICSHA to start with, we are using a big bandwidth—ATM experimental broadband network provided through Telstra. That is not generally available and it really will not get much beyond major hospitals. We need to have an understanding of the needs, both from a clinical environment and technological point of view, of the lower technological environments. We need to end up having an integrated environment. So, irrespective of where you are coming from, you can tie into the same network so to speak.

For various reasons, the opportunity to do some conjoint development with the South Africans arose. They have significant needs to address in primary-secondary health care services into their rural environments. Their technological limitations are enormous. They may have a very big bandwidth out of Cape Town, going up to places a couple of hundred kilometres away, simply because there was a military base nearby. But townships 30 kilometres outside of Cape Town do not even have a public telephone service. So we need to understand the implications of that.

What RICSHA is about is asking: how do you provide, with those constraints, a telemedical service that is looking at more primary-secondary focus and yet has the same infrastructure as this high-end ICU environment? So, at the end of the day, what has developed in South Africa you can pick up and put down anywhere in Australia and it marries into what is going on here with regard to what we are doing at times. The converse is just as true. So it means that we have a technologically scalable and clinically scalable solution.

From the point of view of export, if we can achieve that, we have learnt many of the lessons on how to manage these sorts of networks, how to manage the clinical services, how to manage the technology. Some of the components of telemedicine are readily exportable now. If it is just simple images such as X-ray pathology, we could be quite aggressive, set up the infrastructure to capture that, get them sent down overnight and in the morning somebody is reading them at this end.

CHAIRMAN—Why are we not doing it?

Dr Hayes—Can I tell a bit of a story?

CHAIRMAN—As long as it is the truth.

Dr Hayes—I am under oath. I remember that. We do a lot of ad hoc advisory work just to help other groups. One of the groups which we have been involved in is actually a company, and they are looking at doing telemedicine to a very remote site in

Australia. They have spent months doing their project planning, getting all their technical infrastructure in place, and thinking through what they are going to need in terms of telecommunications, computer equipment, software and all the rest. They are nearly ready to roll, and they had forgotten to put one key piece into place, and that is to link up with the potential consultants who would be prepared to be available on the end of that telemedicine link to help.

CHAIRMAN—It sounds like a financial nightmare.

Dr Hayes—They have now been put in touch with at least one group who is interested in helping, and there will probably be a couple of others. As Peter Yellowlees said, a lot of clinicians are in this because it is so interesting. But, if you go ahead and do the technology side without getting the people involved and tying that up as well, you might as well forget it. That also means not just having the people in Australia prepared to do it, but having them either with existing links to doctors, nurses, other sorts of health workers in the Pacific, South-East Asia or wherever, or else be prepared to build those links, because you also need to do that to actually make it work.

Dr Whiting—One potential thing is that we could be offering aid to these countries in the form of medical services, yet the investment dollar stays onshore—

Mr ALLAN MORRIS—We do that now.

Dr Whiting—As opposed to putting the money at the other end and you have not got any control over it. There is no reason why we could not be providing pathology services in the form of aid, radiology services in the form of aid, and yet what it is doing is paying for infrastructure here.

CHAIRMAN—I think, if that were done more, that would hose down a lot of the community opposition to the level of foreign aid.

Mr ALLAN MORRIS—But it is actually happening now. In Queensland, for example, research into malaria, as foreign aid, is taking place in Brisbane.

CHAIRMAN—That is an excellent development.

Mr Hogg—I have some notes on foreign aid that I would like to share with you. We have explored this and discussed this to some extent. Foreign aid also builds the IT&T industry in Australia. We have already made mention of the fact that a lot of the clinical systems that people are using here now are imported from the States or Europe. They do not necessarily meld into our clinical environments as well. So there is a great opportunity for us to build our own systems here. Thirdly, we are able to provide that service and control the funds, as we have all recognised. There is another adjunct to that: we can also be delivering educational services over that same medium. So it is a very complex and

interesting area and it has huge potential value for us, I believe.

Mrs WEST—I have just one question. Do you have your program's expenditure outlined, listed? Do you have a documented—

Dr Hayes—We do have a project budget both in terms of income and expenditure.

CHAIRMAN—Could we have a copy of it?

Dr Whiting—I do not see any reason why not.

Dr Hayes—Probably the expenditure side, yes. We would need to check with the partners whether they were prepared to make other information available in terms of—

CHAIRMAN—If you could do so and perhaps contact the secretariat, that would be very good. I have one final question. I understand you two gentlemen went to America. How do you see telemedicine developments in Australia as being different from what has been happening in the United States?

Dr Whiting—The US model is one very much of reimbursement. There is a significant private health environment over there. The public health environment is extremely strapped for cash and there is very little telemedicine going on within that environment.

Because they are so focused on the reimbursement issues—and the reimbursement is based on items, individual consultations, individual components of service delivery—they have not addressed any of the questions about integrating those services. They have been very heavily focused on technology. They have some of the most amazing technology that just blows your mind out and they have invested huge sums of money.

There was a paper in 1992 that was published by one of the main supporters of telemedicine, Doug Peridnia, and of all the telemedicine projects that were commenced between 1960 and 1990, in 1992 only one of them was still in existence. They have no recurrent funding, they are so technologically focused, so focused on one component and one quick solution that they had not asked the questions on how to take advantage of this and how to roll it out. I saw very little that helped me believe that they were doing anything differently.

We have a universal health system here which goes a long way to enabling us to work together and come up with some form of model which allows us to fund this and to roll it out.

Mr Hogg—I support, basically, the things that Rob has said. The huge amount of money that is being invested in telemedical investigations in the States seems to come

from the military where they have a very strong view on how they should be looking after their field people.

CHAIRMAN—Some of that is happening here, in the navy.

Mr Hogg—Some of the things they are doing over there are pretty interesting. On the technological side we saw the robotic side of it. Georgia Tech developed solutions that could potentially offer remote surgery, remote endoscopic examination and those sorts of things whereby a clinician, maybe a nurse even, could have the patient at a remote site and the specialist could be miles away and achieve the results that they were requiring to get. But I do not know how practical some of those things are, that is the other big question.

The only other area we saw that seemed to be working well was in Kansas City where they were providing services to remote areas. It was based out of the university medical hospital and we actually sat through a live consultation with a paediatric patient, a newly born girl who had a heart disorder. They had the professor of paediatric cardiology there providing a service and that was a very emotional and interesting experience. It did prove how powerful the solution was even in a situation where they were jumping from a video of the clinician to an ultrasound of the patient then to a stethoscope, et cetera. It was very disjointed but they were still able to communicate and come to a very satisfactory consultation for that patient.

Dr Whiting—We also went to the UK. That was interesting because nothing of any significant value is happening in the UK despite some significant investment. That is very much because of the health model that has been brought into existence. The hospital trust environment is about competition. Telemedicine is about cooperation. If you are competing for resources and money and patients, why would you consult somebody outside of your trust area?

I went to Belfast, where they have the Centre for Telemedicine. The parting words were, 'Do not tell anybody what we are doing in the next site you go and visit.' When we got there they said, 'If you get back in contact with the previous group, don't say anything about what we were doing.'

CHAIRMAN—You weren't cooperating with Dublin?

Dr Whiting—Dublin is different. It was sad. They had some very good people and some good ideas but the environment was totally destructive.

Mr Hogg—I would like to make a last comment. We talked about government involvement. There is one model that I think is working very well in the IT&T industry at the moment with federal government involvement and state government to some extent—that is, the cooperative multimedia centres. They are drawing on industry and government

to further develop multimedia, which is like trying to define telemedicine—how do you define multimedia? It has been my experience in Queensland, where I have involvement with the QANTM Australia CMC, that it seems to be a very positive way to deal with that involvement.

CHAIRMAN—Could you put some notes together for the committee in relation to that and perhaps forward that to the secretary. I think we would find that information very useful. Thank you very much for appearing before the committee this morning.

[12.06 p.m.]

ALOIZOS, Dr John, Executive, Brisbane Southside Central Division of General Practice, QEII Hospital, Nathan, Queensland 4111

PLUTA, Dr Andrew, Chairman, Brisbane Southside Central Division of General Practice, QEII Hospital, Nathan, Queensland 4111

BIRRER, Mr Robert Vincent, Executive Director, Gold Coast Division of General Practice Ltd, PO Box 2764, Southport, Queensland 4215

HODGSON, Mr Ron, Consultant, Clinical Data Transfer Project, Gold Coast Division of General Practice Ltd, PO Box 2764, Southport, Queensland 4215

NELSON, Dr Hugh, Chair, Information Technology Management Subcommittee, Gold Coast Division of General Practice Ltd, PO Box 2764, Southport, Queensland 4215

DISHER, Mr Gary James, Executive Officer, Ipswich and West Moreton Division of General Practice, PO Box 55, Ipswich, Queensland 4305

RICHARDS, Ms Debbie, Dietitian/Project Officer, Ipswich and West Moreton Division of General Practice, PO Box 55, Ipswich, Queensland 4305

CHAIRMAN—I now call on witnesses from the Brisbane Southside Central Division of General Practice and the Gold Coast Division of General Practice and the Ipswich and West Moreton Division of General Practice to be sworn in. Why is the Gold Coast division incorporated but apparently the others are not?

Dr Pluta—It is a structural issue which is chosen by each individual division to suit its long-term goals. For us, it suits us more to be incorporated associations, whereas—

Dr Nelson—We are a company limited by guarantee.

CHAIRMAN—I know that you all receive some government funding; correct?

Dr Pluta—Yes.

CHAIRMAN—Were the formations of these divisions generated from practitioners or from the government?

Dr Aloizos—The formation of the Southside Central Division of General Practice was a government initiative. There were trials in divisions prior to 1982—that is, on a trial basis through projects on industry GPEP—and, since 1992, there are now 122 divisions

that are government funded. So the origin in the early days was small groups of private GPs, but subsequent to 1992 it has been government funded.

CHAIRMAN—Would the majority of general practitioners support the principle of the divisions? In other words, do you really speak for general practitioners?

Dr Pluta—The membership in our division accounts for approximately 50 per cent of GPs in my area—that is, paid up membership. We would routinely communicate by mail to all the GPs in our area, which number about 280 to 330.

Mr Birrer—We have 65 per cent of 375 GPs as paid members.

Mr Disher—We have 87 per cent of 125 GPs as paid members.

CHAIRMAN—How does the role you play compare with the role played by the Royal Australian College of General Practitioners?

Dr Pluta—We represent general practice at a local level, with local interests and in areas of service delivery and health projects. The Royal Australian College of General Practitioners represents GPs at a national level with a centralised organisation, and also has political aims and goals as well as educational goals.

CHAIRMAN—Are you competitors?

Dr Pluta—No.

Mr Disher—I would like to see us as partners.

Dr Pluta—We have different goals and aims.

Mr Disher—Divisions are regionally determined.

CHAIRMAN—Thank you for answering our procedural questions. Would someone like to make an opening statement perhaps summing up the submissions which you have provided to the committee?

Dr Nelson—It is probably appropriate for each of us to speak to them.

CHAIRMAN—I think that is fair enough.

Mr Disher—Ipswich and West Moreton division has projects which are impacting upon general practitioners and their use of communication systems and information technology systems to better improve services to patients, using the division as a focal point for the provision of an allied health service which reaches the patients through the general practitioner.

Dr Nelson—Our division has one very successful international technology project going. We got some money and gave it to the Gold Coast Hospital, and all the GPs on the Gold Coast and slightly beyond are getting electronically generated hospital discharge summaries within 24 hours of a patient—

CHAIRMAN—All general practitioners?

Dr Nelson—Yes, where the patient identifies the GP when they come to hospital. Like all information technology systems, the human part of it is the most difficult to make work reliably—so recording a name is the hard part. We have a vision of extending this.

For your information, for over three years in some places, many GPs have been getting their laboratory results electronically. We still receive the paper reports, but the laboratory reports appear on a computer screen, a terminal, and are then able to be filed into the patient's record. This makes it much easier to share information with others when you are doing a referral letter, or sharing information with another doctor.

CHAIRMAN—What proportion of general practitioners would be receiving information that way? It would be very low, I would imagine.

Dr Nelson—I would be happy to give you this document here which summarises some information. I have some up-to-date information. There are two parts to it. There will be are about 4,000 practices by the end of this year—that is, around Australia—at an average of 3½ doctors per practice; so that is something like 12,000 doctors who have the potential to receive laboratory results within their practice software, which they own. About 2,350 are currently doing this, according to the medical software industry.

CHAIRMAN—So you are saying 12,000 have the practice software.

Dr Nelson—That can receive laboratory results, yes.

CHAIRMAN—Are you saying that there are practitioners beyond that 12,000 who have not got that software?

Dr Nelson—That is right.

CHAIRMAN—How many would there be in total?

Dr Nelson—There are 17,000 GPs. It depends on who you ask how many there are. The HIC thinks there are 17,000, I think.

CHAIRMAN—Would they be provider numbers?

Dr Nelson—They are provider numbers.

CHAIRMAN—Some doctors have more than one provider number.

Dr Pluta—That is 16,000 GPs, I think.

CHAIRMAN—So you are saying that there are 16,000 GPs, 12,000 of those have the software to receive this information and about 2,000 are actually receiving it.

Dr Nelson—Yes.

CHAIRMAN—So 10,000 who have the capacity are not accessing it.

Dr Nelson—Yes. It is still new. People are gradually getting the idea of using it. Most practice software has been oriented towards just paying the bills and doing the administration.

CHAIRMAN—Like legal office software.

Dr Nelson—Yes, that is right. There are two parts to it. One is the laboratory results. The other is a big common gateway which is what the HIC is encouraging us to do with the Medclaims—to bulk-bill electronically. According to the medical software industry, about 3,300 practice sites have software that will allow them to bulk-bill electronically. The Health Insurance Commission tells me that, as of the 17th of this month, there were 532 practice sites representing 3,183 GPs who were bulk-billing electronically. But this represents a tremendous potential to share information.

CHAIRMAN—Do you feel that the Health Insurance Commission should permit non-bulk-billing doctors to bulk-bill the Medicare rebate proportion of the doctor's bill with the patient being able to pay the balance of the bill to the practice? Would that dramatically increase the number of electronic payments?

Dr Nelson—Yes. If we were able to bulk-bill with co-payments, that would dramatically increase the utilisation of the Medclaim system. They have planned for the HIC mailbox system to also carry information on the immunisation system. It makes sense for that to be a place to put all sorts of information. The trouble is that that particular kind of electronic mailbox has been very expensive up till recently.

In this document, which I will pass on to you, we are asking strongly that a role for this committee would be to argue for making free electronic mailboxes, in the same way as the bulk-billing electronic mailboxes are provided. So we could then get our hospital discharge summaries and our laboratory results; we can send our referral letters to the domiciliary nurses; the domiciliary nurses can send messages back easily. Some of them are carrying around these little Apple Newtons and doing their home visits this way. It is just a question of a little bit of practical software so that that would be all they would have to do on their Apple mutant, and the message would then be transmitted back to the

GP who could do a home visit.

There is a tremendous number of ways in which this can really facilitate health care, provide better outcomes and save money. I must confess that I have been guilty of doing a laboratory test or an x-ray only because it is so tedious trying to find out what the report done 48 hours ago in the hospital was, having to negotiate all the phone numbers.

CHAIRMAN—So you redo an x-ray?

Dr Nelson—Every GP will tell you that in their lifetime they have been guilty of doing this more than once. There is a lot of duplication of investigations, which potentially would disappear if you had really efficient communication from different health care providers to each other. It is going to help GPs cut down their practice overheads. We do not place these pathology reports into our patient charts any more. We look at them and keep them on our desk if we need to ring somebody about an abnormal result. They then go in the shredder because the information is stored safely and securely electronically on the practice record.

It makes it terribly easy to pass that information to another practitioner or to do a referral. When I want to do a referral letter, the computer puts in the specialist's name and address, my letterhead, my provider number, the patient's details and all the current medication. I only have to type a relatively simple message. It is also easy to add things like current lab reports to an electronically created referral letter like that. I have done the letter; that is easy. Most good practice software will let you do that. I should then be able to click a button and not have to think about it because I know that a copy will be received in the electronic mailbox of the specialist, the hospital or the other GP.

Just as I get a screen full of laboratory results—for example, a liver function test or a blood count—I would like to see a hospital discharge summary and a specialist letter. I can just go through my mail. There are simple tools in wide use that would allow that kind of processing of information. They would not cost a lot of money to implement. The way in which it has been done until now is a cheap and dirty method called PIT, which stands for pathology information transfer. The authors of this format have agreed that it should be called patient information transfer. It is just a way of displaying the actual text. Everybody who is keen on computers would say that it is not good enough and that they would like to be able to record the graph showing how, for example, the serum creatine changed when they introduced the new drug. It is purely a 'displaying a piece of paper' type process.

HL7 is a standard way of encoding information. It is not a world standard practice, but it is moving that way and moving with the European standards, in effect. All around Australia, the state hospitals have agreed that this will be the standard way of storing information for admissions and discharges. Everybody agrees that this would be the best way of transferring clinical information to each other so that our computer programs can

file it acceptably. There is no agreed way of doing it in Australia. The New Zealanders have an agreed way of doing it.

Another role for this committee would be to get somebody to write a cheque and to get a consultant to come from New Zealand with some of the software they have developed and give it to the Australian software industry. We would then have a level playing field where we could get a rapid advance towards the right way of doing this. At the moment, one laboratory in New South Wales does it this way while another laboratory in New South Wales does it another way. They are not communicating with the software industry. It does not have a broad base and a level playing field.

CHAIRMAN—We might investigate this.

Dr Nelson—These are more detailed points. They are also in the documents.

Dr Pluta—I will very briefly summarise my submission. The focus term of my submission is 'killer app', which is short for killer application. I will define the word 'application'. An application is a task a computer can do. It can play a game, be a word processor and do spreadsheets. They are all very familiar things. A killer application is something which a person really wants a computer to do. The fact is that over 50 per cent of GPs have accessed their computers. However, less than 10 per cent of general practices are computerised. That fact speaks for itself. It says that most GPs do not see tangible money benefits in computerising. My submission focuses on concepts, not so much on fine details. Mind you, there have been time limitations.

The overall strategy of my submission has been to list a number of applications which could, in the right circumstances, be killer applications. They are things GPs really want to do and which will encourage them to computerise.

CHAIRMAN—The word telemedicine means many things to different people. Do you see any possibility or desirability in trying to get a common definition for this term so that we all know what we are talking about?

Ms Richards—I see benefit in it. You have lots of different people, including allied health services, trying to understand what are you talking about. There is video conferencing, satellite communication, education sessions or whatever it may be.

CHAIRMAN—You have all mentioned the need to encourage practices to use technology. Do you think a mixture of a carrot and a stick approach from the Health Insurance Commission or the government might be the way to go? It seems to me that doctors are like other business people in that they are naturally driven by some altruistic motives. However, clearly, they have a bank manager, like everybody else. You are not going to do all these things for the greater good of the community. Some might, but most will not. What would you suggest the government should do to encourage the use of

technology and telemedicine?

Dr Pluta—I would like to make a point in response to that. One problem with bank-rolling a submission is that, if you put money out there and tell people to computerise, you will get a hotchpotch or a total network of systems which do not integrate, talk or function together. One of the key things is really to plan the introduction and what you want to get out of it. One of the key things is a fundamental understanding that introducing information technology and information management will lead to better outcomes. It is a very fuzzy feeling. There is not a lot of assessment saying that, if you introduce this piece of IT, these results will come out of it.

Before we start introducing bank-rolling changes, you need to have a trial program of a particular concept, idea or method of communication. At the end of the day, you need to come back, review those proposals and try to integrate them. We will try, via the carrot and stick, to introduce an integrated solution to some of the information technology problems.

CHAIRMAN—What are you suggesting we should do in these pilot programs?

Dr Pluta—I have identified a number of pilot programs for us. There are different concepts and thoughts coming across the board. There are concepts with regard to focuses and health outcomes assessment. In other words, general practice does a large number of medical procedures. As a government, you really want to know what you are getting for the dollars you are putting into general practice. At this time, you really do not know because there is no way of measuring or getting concrete information on specific health problems.

Having specific health projects, specific areas and developing them is what it is about. It is about having projects in transferring information and looking at exactly what you are achieving with that improved information transfer. It is about having projects with education and looking at GP needs for education. Do they need more stuff on line? Do they want to do integrated modular vocational educational programs? Do they want to communicate with other GPs? There is a whole range of particular areas where you as a committee are very well positioned to identify the specific needs and to try to get a list of solutions in those areas and then move on from there.

CHAIRMAN—Do you have any additional ideas, other than those contained in your division's submission, that you would like to pass on to the secretary?

Dr Aloizos—I would like to talk about immunisation. That is one of the key areas that this country does not manage very well. One reason for that is that we do not have a way of collecting the information in a quality fashion. We have only just begun to establish a register, which is having all sorts of problems because of complexities in the way we do it.

One way of ensuring that we might achieve our targets is to be able to find out information on every child who walks through a general practitioner's surgery. We should be able to look up their status on the screen immediately and begin the process, record the process and set up a system of reminders that will facilitate the ongoing mechanism for doing that. Certainly, this would happen through the use of IMT—information management technology. It happens the same way when you are searching for other information, which is what Hugh Nelson was talking about, such as from the hospital and the interface you get from there. There would be an enormous benefit to be able to access information on a register in the area of immunisation.

That same model extends across a whole range of areas, such as cervical cytology, pap smears and a whole range of other public health systems and information. It is something that would revolutionise the way of addressing immunisation; it would give you a way of gathering that information, referring to it and following it up.

Dr Pluta—I will also give you a specific example. One of the key problems with managing asthmatic patients—and makes some GPs succeed and some GPs fail—is that there is an identified group of people out there whom the medical system, whilst they are very accessible, is failing. In our project, we have been identifying a target population of people, identifying the problems as seen at general practice level, taking those proposals and working them into best practice management protocols. We have been using whatever information technology we have to identify target population.

If you are going to do health interventions and then monitor health outcomes, the first thing you need to define is who you are going to target or try to deliver care to, using the IT to assess the development in real time and using a shared care concept. In other words, the GP is not the only one providing health care; it is a health system, after all. There are hospitals and a lot of people out there. A lot of those people may have very valid feedback. They are using IT to provide the feedback to the GP at the front line. They are looking at the health outcome.

Basically, it is about evaluation. It is looking at what you are doing, why you are doing it, whether you are succeeding or failing in trying to process the delivery. That process applies to asthma, where it can be measuring lung functions and very fuzzy things like breathing and coughing at night. It can measure how many times the person wakes at night. That concept applies to asthma evaluation and health outcomes assessment. It applies to just about anything. It applies to cardiovascular, diabetes, immunisation, coordinated care. All those concepts can quite easily fit into a quite properly developed computerised model.

Mrs WEST—Most submissions to the inquiry urge the committee to address ethical, privacy and legal issues. At the same time, some commentators are expressing concern that a variety of organisations, such as insurance companies, may seek access to data relating to, for example, genetically inherited disease. They are calling for these

issues to be addressed. Could you elaborate on how the model suggested in the submission by the Brisbane Southside Central Division addresses concerns with data transfer, personal privacy protection in health information systems, and utilisation of the corporate strategy to allow private sector development of the system while maintaining non-conflict of interest for the GP in securing personalised patient data?

Dr Pluta—There are two major responsibilities or functions. The first function is that there is a responsibility to look after the patient's interests, which is a data gathering organisation function, which is about looking after the patient's information. You can set it up quite easily in IT, but that organisation has specific responsibilities which match data, the principles of personal protection and health information systems.

The problem with that is that there also needs to be a role whereby that information is used for the public health benefit. There is a responsibility to the public or the general local health of the community. For instance, I may have an asthmatic; that I have to look after that person does not mean I do not also have a responsibility to the community and the asthma community in general. We identified that when one organisation could gather data, the second organisation could have access to that data through a barrier, which basically comes as de-identified data. The principle is that that organisation can work with other outside providers and search the database, find information on compliance, health outcomes and end points of national projects, such as how many hypertensives there are, how successfully hypertension is being treated, how high cholesterol is and how successfully it is being treated.

There are two roles for two different organisations. It is very important to cast those roles very concretely. The first one is a responsibility to the patient and a responsibility for looking after the patient's information. The second one is the responsibility to the public and the public's use of that information. The patient is the critical person, because the patient can only give permission to their provider to access the information.

It is about how you set up that sort of a system. One solution we have is to have a great big database where everything feeds into it. Therefore, everything is known and everybody feeds into it. The second solution is to run it along the current lines of IT development at the moment, which is basically the worldwide web system. I am a GP. If a patient sees me, I collect information on them. If they choose not to see me, they can withdraw my permission to have that information and take it somewhere else. The system we have set up means that the patient is entitled to give a password or pass key to another provider, who may then take that information with them.

One of the key factors is that patients attend one GP about 70 per cent of the time. They attend the hospitals even less, because there is a lot of work done in the hospitals. They attend many other providers, such as geriatric assessment teams and adult health providers, a lot. If the patient has a file which you can follow into the system, the patient

can choose to whom to give access to that information. It is for their benefit. Again, the organisation that is set up is responsible for making sure that people have access to it and use that information for the patient's benefit only and with the patient's permission.

Mrs WEST—They could doctor shop.

Dr Pluta—That is one concept. It is not a smart card; it is an access code. The computer in my surgery, for example, would maintain the patient's information. If they go to another provider, the patient can request that their files be transferred. The file can be transferred after they have given permission for their file to be transferred. That file cannot be accessed by anybody other than their recognised provider or their nominated person.

CHAIRMAN—You said that 70 per cent of patients go to the same GP every time. Would you say that the balance—30 per cent—doctor shop?

Dr Pluta—No. There would be some doctor shoppers amongst them. There would be some people who go on holidays and access a general practitioner. There would be some people who access a general practitioner at night or on the weekends. It is not really fair to say that they are doctor shopping. At the end of the day, a lot of these people, after they have gone out to other doctors, come back to you.

CHAIRMAN—With the system you have in mind, how would you allow information to be available to that temporary service provider?

Dr Pluta—You are talking about a smart card. You are not talking about the smart card holding the file; you are talking about the smart card holding the key to the system. The patient has their pin number or whatever they may allow to be used to allow that second person either a one-time access to the file or access on a longer basis if they so choose.

Mrs VALE—I have some questions on pricing benefits. On page 2 of your submission, this was noted:

> No medical software application in Australia at this time addresses the problem of properly structured medical information. The Division has been involved in assessing a number of medical software programmes and the usefulness in gathering structured medical information.

Could you elucidate the problem of software availability, about which a number of people have raised concerns, and advise whether the software question is preventing take-up by some doctors. Given the Gold Coast division statement that there are large benefits to be made in areas of coordinated care, hospital to community care transition, improved prescribing and reduced duplication of health care expenses, could representatives discuss whether cost benefit assessments have been made and inform the committee of the results.

Deal with the first question first. This is the problem about software availability, about which a number of people have raised concerns with us. Can you advise whether your software is preventing take-up by some doctors?

Dr Pluta—Of the software practices I have seen available in the medical community in Brisbane, one of the problems is that they store information but it is not always completely structured. For example, when patients attend a surgery, you can collect their name, address, phone number, postcode and date of birth. That is usually stored in a little box, which is basically structured database field information. That can be accessed on a search. When you are talking about letters from specialists and radiologists, you are starting to find a page of text that is stored basically in an ASCII file. If you want to look at all your patients who have had an angioplasty and you do a search on your database for the word 'angioplasty', you have to dig up the whole database and run through it bit by bit. You are not actually storing information related to the key word 'angioplasty'.

Much of the medical software that is available stores a lot of its medical records in basically unstructured fields, which means that it is accessible. But you have to sift a lot of information to find very specific things. It is the same with blood pressure. You can search an unstructured database for blood pressures, which is great. You put in a query: who is to say that 160 over 95 is not the patient's height and weight, their head size and girth, what they have blown in the spirometer or anything else? It is not necessarily their blood pressure. Unless you record a specific field with a divider and say it is systolic and diastolic, that is the structured field. You cannot really search via numbers to see what their blood pressure is, because you could get just about anything. That is one thing that that software has to address.

We have seen two major packages from overseas, which have been very impressive. One is called Vamp Vision from the United Kingdom, which is one of the predominant software packages used in general practice there. The second one is a system called Health Point ACS, which has just been released in the United States for health professionals. They both try to provide structured database fields literally from initial consultation all the way through. They are even trying to structure some of the symptoms on the way through. Again, you can search in any of those fields. If you are searching for 165 over 95, you know it is a blood pressure and not height and weight. That is as much as I need to say on that.

Mr Hodgson—I would like to comment on that. One of the dilemmas for software development is in achieving those sorts of outcomes. That is perhaps why there has not been more emphasis on structured databases to this time. The implication of a better structured database is that there will be greater demands on the user of that software in terms of entering the data. Many of us recognise the problems that GPs have and the time pressures they are under in dealing with their patients in a normal consultative process. Somehow breaking that nexus between the pressure on their time and the reluctance to

enter data in a very structured way but the need to have the data in a structured way is a huge dilemma. It is not clear to me how that dilemma is going to be solved at this stage.

Dr Nelson—It is an evolution. Various software packages are moving towards making it easy to record information as you do with a script. There is a software package that allows you to type in a few letters that leads you straight to the diagnosis, which might be tonsillitis or hypertension. You have stored information in the process of providing the care rather than having to store the information separate from the provision of care. We are basically care providers and the storing of data will always be secondary for caring for our patients. There is a tension there, but there are good moves being made in that direction.

Mrs WEST—Do you realise that the solutions to your problems are in your own backyard? Do you think you can address the software needs of your business? Is there input? Is there business liaison? Is there a possibility for you to build the necessary software packages that you need to deal with?

Mr Hodgson—I think there is a need for a lot more consultation and cooperation at the user level. General practice in Australia to date has seen a conspicuous lack of that cooperation. I feel, as an outsider, that the emergence of the divisional structures is possibly a good step towards increasing that sort of cooperation. Groups of GPs can start to get together and talk about what their needs are and present their requirements to the software industry in a clearer and more lucid way than has been possible in the past.

Mrs WEST—You could only ever overcome those problems with your desired input because they do not know what you know. They need to know what you know and you need to tell them what they need to know for you to get it back and use it.

Mr Disher—I also think general practitioners need to know what the productivity benefits are from computerising their businesses. The software is great. There is a plethora of software programs. What is the productivity benefit to be gained when I can probably write a script as fast as I can push a button? It is the end user, the person who is taking that drug, who benefits by having an automatic script.

Mr ALLAN MORRIS—It could automatically update your own records.

Mr Disher—There is a benefit that has yet to reach a majority of people.

Mr ALLAN MORRIS—Earlier I asked why doctors are the most lax at taking up technology. I raised the point that in the future people may judge doctors badly if they do not use technology. People will say, 'If you are up to date with your drugs, why are you so far behind with your own technology? At home I have a PC which my kids are using which you do not have in your office.' People may start judging doctors who do not use modern equipment very harshly. They use modern cars and very modern drugs, but they

do not use modern methodologies. It has been put to us this morning that it is due to a lack of clinical systems being available. You said a moment ago that there is a plethora of systems.

Mr Disher—In the last few weeks, I have seen a number of medical practice software programs.

Mr ALLAN MORRIS—I am talking about clinical systems. It was pointed out that because there are no decent clinical systems—

Mrs VALE—It is probably part of Dr Nelson's evolutionary process.

Dr Nelson—There are a lot of useful clinical things happening. Even when you have perfect computer systems many doctors are still going to keep paper. That does not mean they are not computerised, it is just that it is easy to draw a picture of a lump.

CHAIRMAN—Doctors would be suspicious of new programs. Technology is galloping ahead. One normally does not want to make a major investment in an inferior software program. I know from when I ran law offices that you want to get something that is going to suit you.

Dr Pluta—There is a plethora of software systems and that is part of our problem. In Australia, we have 16,000 GPs and a small percentage are computerised. We are a very small market.

I think we all use Microsoft Word and WordPerfect. I think we have to think about how many million man hours of work went into designing those programs. They are superb at what they do, but a lot of the software companies in Australia have three, 10, 30, 100 sites. The most popular software package in Queensland has about 700 to 1,000 sites. It is free and given away.

Mr ALLAN MORRIS—Which one is that?

Dr Pluta—It is Medical Director. It was written by a GP in Bundaberg.

Mr Hodgson—The problem in Australia which underpins a lot of these issues is that while there has been a lack of cooperation and coordination at the GPs' end, there has been a plethora of activity at the software developers' end. Generally, it is an industry that is based on the back garage mentality. The HIC tells me that there are something like 100 different medical billing packages registered with them as being interested in introducing claims. That is clearly absurd in a situation where your total potential market is about 16,000 GPs and 7,000 or 8,000 practices at the most. If you can go to that spread of effort, you are very unlikely to get quality outcomes.

Mrs VALE—On page 2 of submission No. 25 it states:

There are large benefits to be made in the areas of coordinated care, hospital to community care transition, improving prescribing and reduced duplication of healthcare expenses.

Have cost benefit assessments been made and have there been any results?

Dr Nelson—It is still premature. We have been getting electronic discharge summaries within 24 hours since July of this year. It is still too early to be able to measure those things in dollar terms.

Mr Birrer—We have had a committee on the Gold Coast which, for over a year, has been looking at the area of coordinated care as part of the COAG trials. The problem is that we have a very fragmented health system. That is one of the other problems. There is a culture which does not help cooperation.

In Queensland we have new health districts and the divisions moved in quickly to identify them as part of the whole system. The part that GPs look after is the general care area. The things that we have to try to link with the hospitals are pre-admission and discharge and how we get them back into the GP care or, if they have complex needs, how we move them into coordinated care. Hospital people on the Gold Coast tell me that there are another three to five years of cost savings in the acute care setting in maybe three or four areas. If there are going to be any savings they have to be in the coordinated care area.

We did not go into the coordinated care trials because we wanted to work on collaboration and cooperation. We also believe that there needs to be an IT system and that is why we have pushed for X400 mailboxes so there is no centre and there is a free flow of the information that will eventually spin-off some information that we can use generally.

While we wanted to be in contact with the best of what is going on in Australia—and I think the AMA-RACGP-IMIT strategy is accepted—it is going to take a long time for that and we are going to have to set up places of excellence that are looking at the infrastructure questions.

That is the other thing, Mrs West—we do not have the infrastructure to do that. So we have to think infrastructure first. Set up an infrastructure and do pilot projects. We have to do that with all the health care professionals. The things that we have identified with our GPs, because they are on a long continuum, is where they are up to in the IT stuff, where they want to be and then organise how to get them there. One of the biggest problems for them is money.

The second area is then educating them. The third area is having somebody on the

ground working with them to help them with their IT needs. We are going to need that sort of investment of time, energy and money to make this happen. But we want it to happen in the general practice area. We can be the catalyst because in divisions we are the new players on the block. One of the great gifts of divisions is that we have been able to bring people to tables who have not talked before.

Mrs WEST—We have got the three of you here.

Mr Birrer—No, there is no lack of cooperation between the divisions. We are working on a whole south side section.

Mrs WEST—There is a faster way of doing it—on the internet.

Mr Birrer—But then you have privacy and confidentiality issues. We have looked at that very carefully. We employed Ron to do a consultancy brief for our projects. We were very concerned about it. We have not opted to go onto the internet because of the privacy and confidentiality issues. We really think that, if we are going to do that, a lot of the information needs to be coded.

Mrs WEST—Encrypted.

Mr Birrer—Encrypted—and that is why we have picked the X400 Mailbox system.

Mr Hodgson—That is in terms of the exchange of patient-related information. Certainly, the internet has a big part to play in bringing people together.

Mrs VALE—Page 12 of your submission states:

The IBM report gave the impression that little of value exists in Australian GP informatics currently, and opens the door to feeling we need a multi-national owned "all-in-one" solution, rather than the quality coming from competition between locally developed independent modules of the "Workstation".

Would you like to discuss that?

Mr Birrer—There are a lot of changes going on in the software industry. There is a standardised way of presenting laboratory information coming from a project supported by a pathology company, which has been responded to by the whole software industry throughout Australia in the last year. Even though some of these companies are relatively small, they are very responsive to users' requests, so there is a continuous move towards these systems being more and more useful.

In my office I have a CD-ROM with Harrison's textbook of medicine. My mate next door has got a CD-ROM with drugs on disk and another one has a CD-ROM with

the Bodyworks program. They are all part of the network so we can pull things up on the screen, print them out and give them to our patients. You can have a multiplicity of useful information sources. The Victorian Medical Education Committee's antibiotic and drug therapeutic guidelines should be on CD-ROM soon. There are all sorts of really useful things. They do not have to be in one program to make a generally useful clinical workstation.

Mr ALLAN MORRIS—Firstly, I would like to make a couple of comments. It might be of interest to you to look at our previous inquiry on home and community care, particularly the section on our assessment of regionalisation and the recommendation as to how that could be done.

Secondly, I think it is disappointing that coordinated care trials are being cut back in terms of funding because I think they were seen to have major potential for the whole area of medicine, particularly when you have problems across boundaries of states like the Gold Coast, where you have northern NSW and southern QLD—which is the bane of our lives.

The other matter of interest is, in many parts of the country, the divisions of GPs are bagged fairly heavily. We do get a fair bit of criticism about whether they should go on existing or whether they should be funded. So I am apprehensive about your future funding, whether or not there will be funds available to maintain the division. I would be curious about that.

I came in part way through a discussion earlier—and I apologise if I have missed it and you have already said it—but are you arguing for an individual medical identification number for each person? It seems to me that, for anything we talk about in this area at all, somehow you need to be able to identify the individual. Has that been put forward by yourselves?

Dr Nelson—My personal feeling is that we want to use informatics to do what we are doing better. Another view of informatics is that we have to centralise everybody and have an Australia Card so that we can identify them accurately. I know that there are advantages if you want to do statistics in having everybody in a great big database, but I just feel that I am a GP; I want to give good care; I want to get quickly and easily information that concerns the patient I am looking after now and I want to share that information quickly and easily with other people who are going to look after this patient. It does not need to be centralised.

Mr ALLAN MORRIS—I was not saying centralising. What I was getting at was in your files your patient has been identified, you know who they are and you know them face to face. If that patient goes to somebody else, say a specialist, you have separate bits of information. They may go to a physiotherapist, they may become a diabetic and go to a dietitian, so you get whole stacks of information sitting around all about the same person

and it is not correlated or coordinated.

Dr Nelson—It is very important that the way we develop systems keeps the GP as the hub, the information broker.

Mr ALLAN MORRIS—I have no problem with that, but what concerns me, firstly, is that the GP has wanted to be at the hub often—that has been part of the problem. If you go to the aged care industry, you have comments about the absence of GPs in areas with high rates of older people. We had some quite interesting information on that last time.

What I was trying to get towards was not a centralised system but to be sure that the information about a person is brought together so the total information is available. It seems to me that you cannot do that unless you have got something unique, say, Mrs Jones and her date of birth. Name and date of birth seems to be the only way we try to do it.

There seems to be an incapacity to come to terms with the technology available. I am saying you can pull together the information from all different providers to that person that may give an insight to a GP about the diabetics, the physiotherapy or something that happened five years ago that you were not aware of. But it cannot be if you are going to use Mrs Jones from Wauchope Street.

Dr Nelson—The trouble with that is, if the patient wants her physiotherapist to let Dr Nelson know what is happening to her, then she will tell the physiotherapist.

Mr ALLAN MORRIS—She does not think it is relevant. You are asking her to know what is important for her. She does not think it is relevant. The fact that—

Dr Nelson—But if it happens automatically because there is a unique identifier, there are 1,000 privacy issues involved. That is why the Australia Card got kicked out.

Mr ALLAN MORRIS—Your tax file number is much more invasive and much more intrusive. We have a much worse system with the tax file number than with the Australia Card, quite frankly.

Mr Hodgson—I do not see the existence of a unique patient identifier implies any form of automatic provision of information. I do not think anybody could argue that, if we are going to be transferring lots of information about patients between parties—one who has requested it and one who has agreed to give it—with the patient's approval and if that particular patient was uniquely identified, it would make it a whole lot easier for the various systems that have to deal with that information to know that it has the right patient and it can link that information with the right person. I think that is the point you are trying to make.

Mr ALLAN MORRIS—Yes, at the moment you cannot do that.

Dr Pluta—The Medicare number is a unique patient identifier.

Mr ALLAN MORRIS—But it is not. It might cover five people.

Mr Hodgson—It is a family number. That is the problem.

Mr ALLAN MORRIS—You could make it a subset of the Medicare number if you wanted to.

Dr Pluta—The problem with the Medicare number is the failures of the database in that I could probably apply for a Medicare number in a number of different names and get a Medicare number for each one.

Mr Birrer—Mr Morris, you asked about funding for divisions; I think that most of us are only three years old, but, if you take the funding away, you are going to move GPs out of the health care system again.

Mr ALLAN MORRIS—Do not get me wrong; I think the divisions have done a great job. I have talked to a lot of divisions over the last two or three years, and I think they have been a great innovation. I am very supportive. I am just saying that if you are insecure about your funding, you had better start telling people soon because these things often have a habit of coming up by surprise. Often it is the case of the last to learn. I am actually very positive. I think the division of GPs has been a major improvement. I am seeing such good things around the countryside with GPs now actually working together, which they were not doing before. It has been great.

Mr Birrer—Not just with one another but also with the whole health care system.

Mr ALLAN MORRIS—Yes, between them. I see the reports from different GPs on various areas—for South Australian aged care, for example. Some good work was done there with post-acute follow-ups and so on with the division of GPs. I have seen my own division of GPs in Newcastle doing some excellent stuff on youth homelessness. It had a superb report—well worth reading, by the way—about why street kids do not access doctors. You should all read that report because the fact is that they do not access them. I have seen some great work from the divisions. I am very positive. I am not sure whether or not they are the flavour of the month still.

Mrs WEST—Are the divisions in a position to outline an appropriate model for assessing who pays the multi-disciplinary consultations by telemedicine? A lot of it is over the phone or over the wire.

Dr Pluta—Divisions are relatively small localised service organisations and are not

really placed to have a national focus or a national goal. Perhaps an organisation such as the Australian urban divisions might.

Dr Aloizos—I guess there is a vast difference between the use of telemedicine in rural communities in rural divisions for rural general practice and what you might do in city areas in terms of access and availability of services. I am sure that if there were some rural divisions here they would be better able to answer that.

CHAIRMAN—There is no Medicare rebate at the moment for telemedicine, is there?

Dr Nelson—We have telemedicine at Helensvale, which is about 25 minutes drive from Southport. The radiologist sits in Southport and he gets the X-ray on his screen, but the X-ray is taken in Helensvale, and the patient sits there in the office until the report comes back through the printer.

CHAIRMAN—How are the providers reimbursed?

Dr Nelson—It is just the same as ordinary radiology.

Dr Pluta—In that system where a patient is getting a consultation with a doctor, he must actually see that doctor. In this case he is getting a consultation with the practice and then the picture is being reported by someone somewhere else. So he does not actually have to attend a doctor.

CHAIRMAN—It is the same practice.

Dr Pluta—He does not actually have to attend a doctor, though, for radiology or pathology. He does not actually have to see the specialist pathology or radiology provider to be eligible for a Medicare rebate. That is the difference between general practice and specialist pathology or radiology.

CHAIRMAN—But the Health Insurance Commission should address this particular matter.

Dr Nelson—It works; it is just an existing system that suits the market forces that are driving towards telemedicine for radiology companies all around Australia.

Mr ALLAN MORRIS—Probably what the chairman is raising is that, with a patient talking to a cardiologist 300 miles away, the cardiologist cannot get paid because the patient is not seeing the cardiologist. Have you any ideas about how that can be addressed?

CHAIRMAN—In fact, other submissions have said that the greatest thing

inhibiting the progress of telemedicine is the fact that the Health Insurance Commission has not revised the basis on which it is prepared to reimburse medical practitioners. Would you agree with that?

Dr Nelson—Yes, with fees we have a thing where you will fax an ECG to a cardiologist and then ring him up and say, 'What do you think about that?' He will say such and such, and he is providing a definite clinical service, but there is no mechanism for paying up.

CHAIRMAN—So you would suggest that we ought to consider that when making our recommendations.

Dr Nelson—Yes, even in the suburbs you will do that, in that the cardiologist deserves some payment.

CHAIRMAN—Helensvale to the Gold Coast proper—it is not far, is it?

Mrs ELIZABETH GRACE—I want to follow up on the rural side of things. The Ipswich and West Moreton division general practice said that the most sophisticated telecommunications equipment available to most rural GPs are the telephone and fax, and, to rural based people, the telephone. It also noted that the most advanced telecommunications systems could improve the services from a GP perspective. Have you discussed the type of telemedicine which is being practised in rural areas, and is there some way it can be improved under the present telecommunications system?

Mr Disher—Things that have been available in America for quite a while, such as video phones, would enhance that tremendously, if it was through the division, in accessing our allied health services, for example, on a one to one consultation basis. It would be a great advancement. The technology is already there, but it has just not made it to Australia.

Mrs ELIZABETH GRACE—Using medicine in rural and remote areas is said to remove the isolation of the GP. Back in my day when we were living in western Queensland, we used to call it professional isolation because there was usually one of you in a town and you had no-one else you could discuss your similar professional expertise with. It would remove that isolation because they would be able to consult with specialists in teaching hospitals and that sort of thing. Could you also say whether the introduction of sophisticated technology on its own would solve the problem of distance and, as a rider to that, what type of extra training would a GP posted to rural or remote areas require so that they could make use of that technology in practising medicine?

Mr Disher—What has happened so far is that there is satellite education material which has blossomed across Queensland and the country, and that has been very effective in improving education opportunities for rural general practitioners—I am thinking of my

rural general practitioners at the moment, some 18 of them. Not only do the general practitioners access that technology but also the hospitals in which they work, the nursing staff and other people who are interested in the topics. The educational opportunities occur on a monthly basis; it is not a weekly program.

Mrs ELIZABETH GRACE—Have you seen anything in the way of easing this professional isolation? You say you have 18 rural doctors, has it—

Mr Disher—The division itself has helped to remove some of that isolation, but we are a small rural area so travelling from one end to the other is about a two-hour exercise.

Mrs WEST—I want to know if you have all done country service in remote areas in Queensland—yes or no.

Dr Aloizos—I do rural locums. On three occasions this year I have worked in North Queensland.

Mr Disher—Dr Nelson is still in the country on the Gold Coast.

Dr Nelson—I have had 12 years in Alice Springs in remote areas—

Mrs WEST—They have their own division, is that correct?

Dr Aloizos—There are five of our rural divisions—

Mrs WEST—And I suppose you cannot swap locums.

Dr Aloizos—In Queensland we have initiated a program called city docs go bush which is a cooperative relationship between the urban and the rural divisions. Currently, 57 per cent of rural locums are engineered through city doctors. The proposal and the implication of that is to allow the similar training that rural doctors need to be able to practice in the communities to be accessible to urban doctors which currently is not being addressed. The same tools you need as a general practitioner in rural communities really should be given to urban doctors if the work force is to be able to travel and work in those areas.

Mrs WEST—There is a place for telemedicine to translate in those two areas.

Dr Aloizos—Most definitely. Two weekends ago I was at a workshop in Cairns on tropical medicine. There was a session there on telemedicine; we were connecting to the Townsville hospital and giving case presentations to the core group of GPs that were there. That worked really well and it has actually made me very envious that we do not

have facilities like that in the city areas. It was of great benefit to the rural doctors who came from all over North Queensland to attend that. I was there as part of this program. That, as an ongoing process, would be greatly beneficial to all general practitioners.

CHAIRMAN—Just a final question: Sullivan and Nicolaides, who will be appearing before the committee later today, refer in their submission to inducements of free computer hardware and software offered to GPs by some pathology laboratories—presumably not Sullivan and Nicolaides—and state that it is in breach of Health Insurance Commission guidelines. According to Sullivan and Nicolaides, it is also contrary to section 129AAA of the Health Insurance Act. Are you aware of this allegation, have you seen any evidence of it, and which pathology laboratories are culpable? Silence?

Dr Pluta—For my division I would say that I have heard allegations and that type of claim made before. There has never been any hard evidence. Yes, it is illegal.

CHAIRMAN—What about the Gold Coast?

Dr Nelson—Back when I was in Alice Springs, people used to put telex machines in all the GPs' surgeries. The health department made them rip them out because it created an unwholesome relationship between the GP and the provider so that it decreased the choice of the consumer, the patient.

I have seen a demonstration of the Healthnet system, with a New South Wales laboratory provider. I do not know who owned the computer. It is part of an intranet—in other words, the . . . as is mentioned in this wonderful submission which we are going to give you to read. This is actually the scoping document, and it describes a lot of these technical issues about the standardisation of the way in which the information which is transmitted can be shown on screen.

CHAIRMAN—Would you be happy if the committee decided to incorporate that as part of your submission?

Dr Nelson—Yes. This is the scoping document which we actually used our funds, some of which were raised by our personal exertion, to do. We would like to give you that, but we would like to keep on using it ourselves. Is that okay?

CHAIRMAN—Of course.

Dr Nelson—Here is a copy bound, and here is a copy for photocopying. This is the scoping document which outlines the thing and describes a lot of those technical issues. This is just a brief that goes with what we are saying today. That is Macquarie; they say, 'Unless we have control of both ends we cannot guarantee that a pap smear which is abnormal is going to be displayed in such a way that the doctor will take notice of it.' And that is a very legitimate concern. So the ownership of the computer system, as

I understand it, stays with Macquarie.

CHAIRMAN—With respect to the matter raised by Sullivan and Nicolaides, you have got no hard evidence either?

Dr Nelson—I have been told by the practice staff with Macquarie that they would be happy to provide a PC which they would install software on, but we would not be able to run software relating to other laboratories on this computer.

Mr Disher—In my region there has only been one pathology provider until the last month—that was not Sullivan and Nicolaides; they have just set up shop there now—so my GPs have been using that provider, QML, since it set up. So it has not been an issue, really. But I do not know of any software that is being given to GPs.

CHAIRMAN—In South Street, Ipswich, is it?

Mr Disher—Yes, I think that is one of their little areas.

CHAIRMAN—Thank you very much for appearing.

Dr Nelson—You asked specifically what we can do to speed up informatics. At the moment we pay for computer prescription papers, and we get our handwritten prescription papers free. We should reverse that. If we started paying for our handwritten scripts and we got our computerised prescriptions free, that would make sense. It is only a little bit of money. Secondly, we want a free mailbox; we want to be able to put documents, letters, referral letters, laboratory results as well as our claims through a free mailbox.

CHAIRMAN—What would that cost?

Dr Nelson—Not much and, as it says in that thing, it would be an invisible cost, really, but if it looks free doctors will do it because we are scungy, we don't like spending money. And the third thing is that we want you to break the nexus. The medical software industry will say that it does not have the money to write a cheque to get somebody from New Zealand to come across and to provide the technology, the standards, the application program interfaces that will make it easy for all the general Australian software people to implement the standard way of doing HL7, and that would be a great standardisation and a great step forward.

CHAIRMAN—Just for the purposes of the committee, what is your definition of informatics?

Dr Nelson—Informatics means using computers to help me do my job.

CHAIRMAN—Thank you, thank you very much.

Dr Aloizos—Can I just say you started off by asking what the difference was between the college and the divisions. Hopefully from what you heard today the answer is obvious: the divisions are very much about service delivery at the point of delivery and I believe that if information or informatics is to expand in general practice it is the divisions that are going to produce and provide the resource and the back up and the education and the assistance for GPs to do that. I don't think that the college or the AMA has the facility to do that.

CHAIRMAN—But the AMA and the college would have a much higher proportion of members than your division which has 50 per cent.

Dr Aloizos—No, I don't believe that is true. I think that what we are saying is that there are a different number of paid up GPs who are have paid an added sum like $40 or $20 to identify as belonging to a division but no GP in a divisional area has ever been excluded from the facilities of the division. They all receive the benefits that the division has. I think on a count throughout Australia currently—and I have done the figures recently—if you look at the membership of divisions, they are a larger percentage than the AMA or the college. If you looked at the number of the GPs who belong to the college or the AMA they are both under 50 per cent.

Dr Pluta—May I make the point that a recommendation to support evaluation programs and information technology and information management in general practice would be a reasonable first step in assessing implementation of computers in general practice.

CHAIRMAN—Thank you very much. Just for the purpose of the committee, this extra document—you are happy for us to incorporate that? 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—

[2.30 p.m.]

CAMPBELL, Dr Bruce Gordon, Partner and Pathologist, Drs J.J. Sullivan, N.J. Nicolaides and Partners, 134 Whitmore Street, Taringa, Queensland 4068

HODGSON, Mr Ronald John, External Consultant, Drs J.J. Sullivan, N.J. Nicolaides and Partners, 134 Whitmore Street, Taringa, Queensland 4068

CHAIRMAN—Welcome. I now call on witnesses from Drs J.J. Sullivan, N.J. Nicolaides and Partners to be sworn in. I apologise for our delayed start—the weather has played havoc with the proceedings today. We have received your submission and we have circulated it to the members. Hopefully they have all digested it. Mr Hodgson, do you have any comments to make on the capacity in which you appear?

Mr Hodgson—I act as a consultant to Drs Sullivan, Nicolaides and Partners with a primary focus on advice regarding the development of electronic pathology delivery systems.

CHAIRMAN—Would you like to make an opening statement and perhaps highlight some aspects of your submission on which you would like our questioning to focus?

Dr Campbell—As pathologists we have an enormous interest in transfer of information—it is our business. We have a huge operation where we communicate with thousands of doctors, in many cases multiple times per day. The volume of information that comes in and out of our business is vast.

CHAIRMAN—How many branches do you have?

Dr Campbell—We have 80 or 90. We have 14 laboratories scattered as far south as Coffs Harbour and as far north as Bundaberg.

CHAIRMAN—That was just for the record. I am well aware of what a major pathology—

Dr Campbell—Obviously we have got an interest in the accurate transfer of information, and currently it is fairly primitive. In the main, doctors hand write request forms which are given to patients. Patients bring them to collection centres and then one of our staff has to interpret that form.

CHAIRMAN—Do you make mistakes often?

Dr Campbell—Not often, but on average we are seeing 6,000 patients a day: that is 6,000 written requests. There are laboratories in Australia that see 10,000 patients a day.

Everybody knows what doctors' handwriting is like, so there is a problem in interpreting those requests—

CHAIRMAN—It is worse than lawyers'.

Dr Campbell—And errors occur. On the converse side, in reporting we have much more control. But currently, in the main, we print hard copies on paper and we rely on manual, mailing or courier type delivery systems. There is enormous scope for electronic transfer of information on both sides of these transactions and we have got an interest in facilitating that kind of communication. Within that, the key issues are agreed standards of communication and a network which has open access for all players to other players who are connected to that network. We would like to see accreditation of the software that players put in attached to this network to deal with information that we provide so that we can be confident that the information we provide remains intact through to the stage where it is interpreted and there is some bearing on the outcome to the patient.

Strongly relating to that, we have an interest in the medico-legal aspects of the whole process. Is that a fair summary, Ron?

Mr Hodgson—I think you have summed it up very well.

CHAIRMAN—It seems to me that we have around Australia a number of very efficient pathology firms or partnerships. What makes a doctor, a general practitioner, choose one pathology firm over another?

Dr Campbell—We obviously have an enormous interest in this, and I have to say that the first thing is proximity of a collection centre. If there is one right next door to the doctor's surgery—

CHAIRMAN—Or in the doctor's surgery.

Dr Campbell—Or in the doctor's surgery—that is No. 1. After that there are a lot of factors that influence the selection, and of course quality of service—which relates to accuracy and, in particular, turnaround time of results—is by far the next biggest factor.

CHAIRMAN—Free hardware and software?

Dr Campbell—That occurs in a minority of cases, and it does influence practitioners, but in the main I have to say that that is not a big issue, particularly in Queensland. But it is when it does occur, and some practices lose referring doctors. Obviously, they do not like it.

CHAIRMAN—Is there anything else you would like to add before we ask questions?

Dr Campbell—No, you are here to question me.

CHAIRMAN—Do you have a particular definition you use for Telemedicine and do you think it is possible to get an industry standard definition so that everyone knows what is meant by Telemedicine or Telehealth—whatever term is adopted?

Dr Campbell—I do not think I am competent to answer that. Can I ask Ron if he feels that he is. That is a very broad question.

CHAIRMAN—A number of submissions we have had from various bodies each define telemedicine as being something quite different from what other organisations are saying, so it just seems that the word does not actually mean anything.

Dr Campbell—I think that is pretty reasonable. We are a pathology operation; we have a specific interest in certain types of communication. If you are a radiologist it is different; if you are an epidemiologist working for the Commonwealth or state government—everybody has got different interests, but the essence of it is transfer of information by electronic means between interested parties, and the ancillary issues that arise from that, which I am sure you are all well aware of.

CHAIRMAN—It seems to me that your firm has been proactive in developing a number of industry standards and that you have actually been prepared to share this information with QML and others with a view to possibly achieving a common practice. I think that is very commendable, but is there any government regulation in existence that you feel is working against increased use of telemedicine by you on the one hand and your referring doctors on the other?

Dr Campbell—I would have to say that in the longer term I would like to see the ability for doctors to actually order tests directly from their work station to our laboratory. It is not as simple as that because there is a patient involved, and the patient has to often leave the doctor's surgery and go to another place where those specimens will be collected. There are a number of variations, but that is the common situation. We have to know when the patient arrives what to collect. If the patient had a piece of paper but we already had registered in the computer what the doctor truly wanted—it would not matter if that piece of paper was handwritten but I guess in this situation it should be machine generated, printed—we would have an enormous benefit. We would have an enormous benefit if all the requests were generated on the doctor's computer anyway just because they would be legible—

CHAIRMAN—And complete.

Dr Campbell—Yes, and complete—and there would be other benefits. We could probably get a machine to read them, instead of having somebody sitting and typing them and potentially making an error when they are typing. Every million key strokes typists

are going to make some errors. When it comes to health care, occasionally that is very significant, especially if it results in the name or the address being incorrect with the result not finding its way to the patient or if the wrong test has been done, et cetera. If there had been direct communication in the first place so that we had a copy of exactly what the doctor wanted already in the computer, those errors would not occur.

CHAIRMAN—Is it possible under the current rules for that to occur?

Dr Campbell—My understanding is that it is not, but I would have to—

Mr Hodgson—Yes, my understanding as well is that HIC currently requires a handwritten request form as evidence of the test being ordered.

Dr Campbell—I know that is right. They require a signature; the doctor's signature must be on it. It does not have to be handwritten.

Mr Hodgson—Yes, signed by the doctor.

Dr Campbell—There is no facility for an electronic signature. It has to be handwritten.

Mr ALLAN MORRIS—But don't you have electronic systems linked up for people with requests?

Dr Campbell—No, we do not. The doctor may have a computer on his desk on which he types in the test, prints out a form, signs the form, gives it to the patient and the patient takes it to the collection centre. That is where we first encounter it: in the patient's hand.

CHAIRMAN—Could not the computer scan in the form and the form then be transmitted with the scanned signature? You said that you do not require an original signature, so if it is a scanned in signature—

Dr Campbell—We do. We require an original signature.

Mr ALLAN MORRIS—That is to take the blood to do the test; that is to take the specimen.

Dr Campbell—It is to bill Medicare. If the government is paying, they want us to hold in our records a piece of paper with the doctor's signature on it or an image of that, but we had to have had it originally with the test on it. They do not have to be handwritten, but they have to be there.

CHAIRMAN—So it does not have to be handwritten; it obviously does not have

to be signed by hand then.

Dr Campbell—Yes, it does have to be signed by hand.

CHAIRMAN—So it would be entirely competent for the Health Insurance Commission to devise a more efficient means of communication between referring doctor and pathology lab; in other words, if the Health Insurance Commission said that something transmitted by computer from the surgery to you would do in lieu of that bit of paper, that would obviously assist in achieving greater use of this technology.

Dr Campbell—It would, and it would assist in us having accurate knowledge of what the doctor really wants.

Mr ALLAN MORRIS—There are two separate things involved. One is the authorisation to make sure that the person who was actually authorised is the one to get the test taken—and that is what the HIC is on about: basically, making sure that a person is not self-prescribing.

Mr Hodgson—Probably more importantly, he is authorised to get a benefit from generating that.

Mr ALLAN MORRIS—Yes, in other words, they are going to pay for it, so they want to be sure that the doctor has actually authorised it. That is the first point. But there is a second point which is quite different: the data transfer between the doctor and yourselves, whether by hand, computer or how, and the potential for error in that. That is a separate issue.

Dr Campbell—Yes, that is fair to say.

Mr ALLAN MORRIS—And it could be a separate issue, so it could well be that the doctor could sign a form which says 'AZYX' which you and he have worked out as a code that means something specific between you both. You could actually develop a technique where what he wrote on the form was not necessarily a test for triglycerides or cholesterol but a series of codes that were compatible with yourselves, or a pre-printed form, or a bar-coded form from which you could take up the bar code and access the database.

Dr Campbell—At the moment there are prescribed terminologies which the HIC recognises as requests for tests. I guess there have been abuses of pathology scheduling in the past by unscrupulous laboratories. The HIC has always been trying to catch up with the unscrupulous practitioners. So there have been more and more rules brought in over the years. There is a plethora of rules. We can live with that, but there is still room for improvement in communication through electronic means.

CHAIRMAN—But supposing, instead of the referring doctor filling in a scrip or a request—

Dr Campbell—A request.

CHAIRMAN—and then the patient taking the request form to a collection centre, handing it over and having the sample taken, that the doctor, by use of technology, were to transmit that request to you, the patient then goes to the collection centre, all the information needed to take the test is there at the collection centre—because obviously they are all linked by some computer database—so the right test is taken. Wouldn't that be a step forward if the HIC were to permit that to occur?

Dr Campbell—That is perfectly feasible, and it would be an advance on the current situation.

Mrs VALE—I would like to ask some questions on the ethical and privacy issues, which have been of great concern during the course of this inquiry. On pages 4 and 6 of your submission, you have a concern about the lack of clarity of the medico-legal implications of using computer based systems to deliver pathology results to private medical practitioners via off-the-shelf medical practice management software. You have recommended a detailed review of all legal issues. This is on pages 4 to 6.

Could you explain why information technology should create concern about ethical privacy and legal issues over the health system or in the health system, particularly when information about patients has always been exchanged within the health care system in order to gain multi-disciplinary benefits from patient care?

Dr Campbell—There are a number of aspects to that question. One is, I guess, we would like encryption of communications because, as I guess you would be well aware, it is possible for people to intercept electronic communications and the means to do so can be quite sophisticated. So encryption is essential, and that has already been recognised by most major players I guess with health information. In fact, the Medclaim system is encrypted. So that is encryption, and there is potential for breach of confidentiality.

There are more complex medico-legal type issues that I referred to before that relate to standards. In our project we have defined a standard for communication—this so-called PIT standard, pathology information transfer standard—as the standard we want adopted at this time. There is a lot of disagreement with that standard because it is inflexible. It sends a block of data, which includes the patient identification and the results. In the PIT format they are tied together; that is, the end user cannot take them apart easily. So we know that, when we send some results and the patient identification, they will stay together.

Currently there are other standards that are widely used in health care, and a

number of bodies recommend that they be used for pathology. An example is HL7. Ron may say more about this later. But HL7 submits all of the different bits of the package of information as separate parts. So the name, the address, the number and the results are altogether, but they are, in fact, loosely tied together. It is very easy for us to envisage a situation where we accurately package them and send them down the line to the doctor. The doctor's software sitting in his computer on his desk takes that and then jumbles it up so that the numbers go off with the wrong patient. Potentially, fatal errors can occur.

CHAIRMAN—That is a nightmare.

Dr Campbell—Potentially a fatal error can occur. We are not confident in the quality of the software that is sitting on the doctor's desk, because there are no accreditation standards. We see it as an interim measure. We want to have this as a safeguard in the interest of patient care and to have this fairly primitive PIT format. Further down the track when you can be confident that the software is not going to make those errors, then you can go to more sophisticated systems of coding that information. Is that a reasonable summary?

Mr Hodgson—Yes, that sums it up.

CHAIRMAN—There are many software packages out there in the community and a lot of them as you say are inadequate. How are you going to achieve an industry standard? Who is going to be in charge of deciding what is acceptable and what is not?

Dr Campbell—I will defer to Ron on that question. He is an expert in this area.

Mr Hodgson—I think there is a clear need for a regulatory authority of some kind. I am not sure whether that regulatory authority is in the government sphere or within the private sphere. I will use the example of the New Zealand experience with the Healthlink network that has been set up over there very successfully with a lot of support from government and from the health department. By using pathology as the initial application, they have now broadened that network to cover a very broad range of information transfer options.

The operator of that network as a value added network provider has an overall responsibility from point of transmission to point of receipt and everything that happens in between. They have the right to decide who connects to the network or not in terms of information providers and information receivers. There is a process of accreditation involved so that, if a third party software provider who is providing software to GPs wants to have their GPs given the right to access that network and therefore receive information from the various providers, that software has to reach certain defined standards and has to go through a process of accreditation.

If they do not comply or if they bring out a future version of their software that for

some reason fails the test, they simply fall by the wayside and that seems to work very very effectively. Their system is so tight that a pathology practice does not get an acknowledgment that the result has been received by the doctor until it has been reviewed, stored and actually backed up onto some form of backup mechanism on the doctor's computer system. That is a very, very tightly controlled system. I think that there is a clear need for a similar type of network service to be established in Australia and not only for pathology.

CHAIRMAN—Why has it not been done?

Mr Hodgson—Nobody has put their hand up and said, 'We're prepared to do this.' Who takes the initiative to do that?

CHAIRMAN—Who took it in New Zealand?

Mr Hodgson—The health department. The government did and it was a very brave decision. They did not even have the standards established. The development of their communication standards was actually a parallel process with their setting up of the network.

CHAIRMAN—Could we piggyback off their system?

Mr Hodgson—I would say it would be fairly easy to transplant their technology and their techniques into the Australian environment.

CHAIRMAN—Would it be possible to get information from you on that particular New Zealand system?

Mr Hodgson—Yes.

Mr ALLAN MORRIS—I thought Hampson Pathology were using the New Zealand system?

Mr Hodgson—No. Hampsons are using a software package developed in New Zealand and happen to be using the New Zealand standard HL7, but they are not actually using the network infrastructure, the Healthlink system.

Mrs WEST—To your knowledge, is that the only model that you are aware of, or are there others in the world in other areas?

Mr Hodgson—To the best my knowledge it is the only successful network of that kind anywhere in the world.

Dr Campbell—My understanding is that there is a network of some sophistication

in Canada, but I do not know a lot about it.

Mrs WEST—Is that pharmanet? Is this pathology?

Dr Campbell—Because there is only one payer in Canada, there is a government driven system at least in some provinces. I am not sure if it is all Canada or not.

Mr Hodgson—I do not think it is fully national.

Dr Campbell—Perhaps it is in Ontario.

Mr Hodgson—But almost certainly not Quebec.

Mrs WEST—How close are you to establishing a similar idea?

Mr Hodgson—S&N would be able to step into that sort of infrastructure very quickly, but I would not see that it would be S&N's responsibility to set the network up. It has really got to be something that is representative of the whole industry—not just pathology and not just one pathology practice. It has to be all encompassing over the whole health care industry.

Mrs ELIZABETH GRACE—One of the things I was quite interested in is that it has to be national and it has to be multi-functionalist through the health industry, does it not?

Mr Hodgson—Absolutely.

Mrs ELIZABETH GRACE—The problem we have there is that GPs are a bit reluctant to use computers in the clinical side of the GP practice. They are using it for administration but we find that they are a bit reluctant to use it for the clinical side of things. Do you think that something like this would help them become more aware of the aid it would be to patient care?

Mr Hodgson—I would personally have no doubt whatsoever. The experience and the influence of the Medical Director prescribing software has really changed the face of clinical computing in Australia over the last 18 months, and that proves to me that the barriers that we all think are there to GPs using computers are, perhaps, a bit of a myth. If people can come along with appropriate software that focuses on killer applications, which were referred to in an earlier presentation, and that are cost effective, then they will use them. The take-up rate of medical director has been phenomenal over the last 12 to 18 months.

CHAIRMAN—What does Medical Director do? Is it for practice management or is it for clinical practice?

Mr Hodgson—It started off just as a prescribing system. It has now been extended to provide some other clinical tools. It does have the facility to generate pathology requests and to receive electronic pathology. In fact, it is one of the packages that has been most prominent in the Sullivan and Nicolaides project in developing the PIT based standard.

Mrs ELIZABETH GRACE—Is that the one that was produced by the fellow in Bundaberg?

Mr Hodgson—Correct.

Mrs WEST—Will this sort out overservicing of any general practice or—

Dr Campbell—Would it sort out overservicing?

Mrs ELIZABETH GRACE—Yes, would it define how much service there is in a practice?

Dr Campbell—I do not think it would have any influence. It is just another way of doing whatever you are doing.

Mrs WEST—Would it be a record of—

Mr Hodgson—There is a potential for software to go a step beyond just an ordering package and perhaps become a piece of artificial intelligence for the GP—that it actually helps the GP order the right tests at the right time. That step is a little bit down the track. In that situation, it is not unreasonable to expect that there would be some reduction in unnecessary ordering. Bruce might not like to hear that.

Dr Campbell—No, I thought it was a very general question. Were you relating to pathology in particular or overservicing in general?

Mrs WEST—In pathology first and then if you can identify any benefit that it could have to determine what level of service is required.

Dr Campbell—Medical Director is the most sophisticated in the area of prescribing and it already has some intelligence in there in that as long as it knows what drugs the patient is on and you order a new one and there is a dangerous interaction it just comes up straight away. The doctor may easily miss that but the computer will never miss it. As Ron has mentioned, the same thing is possible in pathology. You just need more sophistication. It is already starting to happen. The information is available. It is not yet being incorporated into the computer software where you can add some extra intelligence which will assist the doctor in choosing the right test at the right time. In that case there may well be more appropriate test order.

Mrs ELIZABETH GRACE—The Department of Health and Family Services informed the committee that GPs need financial incentives, not necessarily government assistance, and education to benefit from this technology. You had a proposal to provide GPs with electronically delivered investigation results. Do you consider this as an appropriate incentive or do you have other thoughts along that line to become more integrated with the health care system through that information technology?

Dr Campbell—As pathology practitioners, we are forbidden by law to provide incentives to doctors. The most we can do is make their lives easier by providing them with an easy way to get pathology results. That is an incentive and it is working to some extent, but obviously bigger incentives from other sources may well expedite the process of getting doctors computerised.

CHAIRMAN—What incentives?

Dr Campbell—Something financial—faster payment from the government, or better service. You can use the carrot or you can use the stick. I understand in Canada in some provinces where there was one payer the government said unless we receive computer generated bills we will not pay and they stopped paying, so everybody got a computer within a month. But you cannot do that in this country because we have a different payment system for a start and so far we have not operated in that dictatorial type fashion.

CHAIRMAN—Could it be one gets a payment within two days instead of 10?

Dr Campbell—That would make a big difference.

Mr Hodgson—Or 18 days if you cannot do it electronically, which is the current system. To me one of the very obvious incentives is providing cost-effective communications. Certainly it is a real barrier out there at the moment in getting GPs to accept the challenge of becoming electronically connected to their pathology providers and to other information providers. They see the barrier being the actual cost of the communications, the cost of renting the mailbox and the traffic costs.

To me an extension of what HIC is currently providing for Medclaims would be a very effective way of extending cost-effective communications to doctors that also, I believe, would result in a big win for the HIC. The HIC wants to make Medclaims, wants to make electronic lodgements, successful. Huge efficiency gains are possible. They have had a lot of trouble in getting people to take it up. The take-up rate is still abysmal when you think about the total number of GPs that could be connected to the system.

CHAIRMAN—You're referring to bulk billing.

Mr Hodgson—I am referring to Medclaims, yes. Five hundred practices in

Australia are currently connected to Medclaims. I believe if that system was opened up and the GP was able to use the HIC provided Medclaims mailbox for any other form of health care data interchange, at no cost or a heavily subsidised cost, there would be a huge ramp up in the number of GPs using that sort of facility and they would then be prepared to use Medclaims. Virtually every medical practice in Australia today that is computerised has software that is enabled for Medclaims. There is nothing to stop them.

CHAIRMAN—We had some evidence before us this morning along the lines that if non-bulkbilling doctors were able to electronically bill the Medicare rebate proportion of their bill and get the copayment separately, that would increase the amount of electronic traffic to the HIC.

Mr Hodgson—I would go so far as to predict a 40-50 per cent increase in the number of GPs computerised in the first year of introducing that sort of facility.

CHAIRMAN—I wonder why the HIC has not done so.

Mr Hodgson—I would see it as a threat to bulkbilling.

CHAIRMAN—Is that a problem?

Mr Hodgson—I do not see it as a problem.

Mrs VALE—If we could go from incentives to inducements, I note that on page 5 of your submission you refer to inducements of free computer hardware and software to GPs by some pathology laboratories. You state that it is in breach of the HIC guidelines. In recommendation 2 you actually ask that the practice of offering inducements to doctors to procure service referrals by some pathology practices be stopped. Would you like to state if you have taken this matter up with the HIC at all?

Mr Hodgson—I really have to refer that to Dr Campbell, if I may.

Dr Campbell—The Australian Association of Pathology Practices, which is a private pathology lobby group basically, has taken this issue up with the HIC on a number of occasions.

Mrs VALE—It does happen on a number of occasions that you know of?

Dr Campbell—There is no doubt about it.

Mrs ELIZABETH GRACE—You indicated that the high tariff costs of the X400 communications network provided by Telstra and other approved service providers as used by the HIC for Medclaims is a significant deterrent. The HIC has informed the committee that the encryption software was developed by Telstra for HIC, incorporated into

Medclaims and became the base for future marketing. It is also stated that they are proposing to expand the use of the electronic commerce so that the majority of claims received by it are received electronically and to allow its infrastructure to facilitate electronic communication with the Australian health sector. Today over 24 per cent of all medical claims are lodged with the HIC electronically, which is what you are saying—that it is a very low proportion. Given these claims, could you explain their point about the high tariff costs of the X400 communication network used by HIC? Is it because of having had the separate mailboxes?

Mr Hodgson—No, I think the cost of Medclaims transmission and the cost of the mailbox rental is all covered by the HIC. That does not cost the GP anything. If, however, the GP wants to use that X400 mailbox or an alternative X400 mailbox, to receive other health information, like pathology reports, under the current Telstra tariff regime, they are looking at something like 20c per kilocharacter of data, which is quite a substantial cost. It works out at roughly 15c to 20c per pathology report. Given that the GP today believes that he is receiving those reports free by courier and very efficiently—I know in some cases S&N are delivering to GPs around the city five times a day—it is very hard to encourage them to spend 20c per report to receive them electronically.

Mrs ELIZABETH GRACE—Just extending that a little further, the pathology groups themselves pay the courier service though, don't they; the doctors themselves do not?

Dr Campbell—Correct.

Mrs ELIZABETH GRACE—Therefore, that is a cost saving on the pathology groups that then could be picked up by them to help if it were transferred electronically.

Mr Hodgson—Yes. I think the degree of cost saving is arguable because there still has to be a courier system in place to collect specimens. Quite a reasonable proportion of specimens are collected by the doctors themselves.

Mr ALLAN MORRIS—That does not really quite answer the question, does it. But putting that aside for the moment, do you have any people who are hooked up to you now at all, S&N?

Dr Campbell—Yes.

Mr ALLAN MORRIS—How many, or is that confidential?

Dr Campbell—Ninety-five practices covering 300 GPs are receiving reports electronically as of today.

Mr ALLAN MORRIS—I do not want to pry too much into your business, but I

am trying to get some idea. Is that a high percentage?

Dr Campbell—No, it is a tiny fraction of the doctors who communicate with us, although some of the big practices are in there.

Mr ALLAN MORRIS—So the point you made in your submission relates to two areas: one, about the giving of computers or whatever to doctors; and the second, about the accreditation of software with the data transmission being reassembled—that is, perhaps your data being transmitted to somebody else's software. It could be decoded incorrectly and therefore give a false result. Are those two examples based on experience? Are those things happening in Australia at the moment? Is there software that is up there that is being used which is not of a high calibre? Are people giving away computers to doctors?

Dr Campbell—Ron can answer the first question. I certainly do not know of any examples, but it is a significant concern to us. Do you know of any?

Mr Hodgson—Without doubt there are. I mentioned earlier today that the HIC tells us that there are something like 100 different medical billing systems out there. The vast majority of those come out of a one-man band type development environment. There are no quality standards applied in the design and development of the software.

Mr ALLAN MORRIS—That is in billing; that is not pathology though, is it?

Mr Hodgson—No, sure, it is a much smaller percentage. There are probably 25 software packages now capable of accepting a pathology report in one form or another. Three-quarters of those would comply with the PIT specification now, but there are other things. But even within that, just because of the limited resources that a lot of these companies have available to them and the pressures they are under in the marketplace, I think it just stands to reason that the quality is not there.

I do not think we would be able to give an example and say, 'Well, package A is of a low standard because of this, this and this.' But I think there is some real concern from the point of view of Sullivan and Nicolaides and a number of other pathology practices around Australia; they expect that the quality is not what it should be in some cases. The only way you could really remove that concern would be to have some form of standards accreditation in place.

CHAIRMAN—I think Mr Morris was also referring to the inducements mentioned in the Sullivan and Nicolaides submission of free computer hardware and software to GPs by some pathology laboratories.

Mr ALLAN MORRIS—Which may be with access by other suppliers.

CHAIRMAN—You state that apparently it is in breach of the HIC guidelines, according to you, under section 129AAA of the Health Insurance Act. In recommendation No. 2, you ask that the practice of offering inducements to doctors to procure service referrals by some pathology practices be stopped. Could you tell us, firstly, the name of any competitors who you believe are offering these inducements; and, secondly, whether you have reported these matters to the Health Insurance Commission?

Dr Campbell—Earlier this year we lost a referring practitioner on the Gold Coast to Macquarie Pathology. The practitioner stated that he had been given a computer system—and he had needed a new computer system—and, therefore, he was going to stop using us. That is the only example of a competitor of which I know. I know that Gribbles Pathology have in the past distributed a large number of pieces of hardware—not computers, but mainly printers—to practitioners, particularly in South Australia. But they do not compete directly with us, so that is hearsay.

CHAIRMAN—Have you reported that matter with Macquarie to the Health Insurance Commission?

Dr Campbell—I personally have not, and I doubt that our practice has, because we would have no expectation of it having any effect.

CHAIRMAN—You do not think the Health Insurance Commission would seek to enforce section 129AAA of the Health Insurance Act?

Dr Campbell—It is not an easy thing to do. I am not a policeman, but the reason we are given is that it is extremely difficult to collect enough evidence to force a prosecution. How can I argue with that?

CHAIRMAN—I think the Health Insurance Commission might be able to appear before us again. We might ask them that particular question, because it would be unfair if certain competitors were siphoning off your providers and breaking the law in doing so.

Mr Hodgson—There was a health computing conference in Sydney earlier this year—in March, I believe. A large number of the significant medical software companies were represented, they had display stands, et cetera. I was not at the conference and therefore this is third party information. But Macquarie Pathology had a stand at this conference as well. Three or four of the software companies reported back to me that they had experienced a number of situations where they were talking to a prospective client, a GP interested in buying a computer system, who said, 'Why would I bother to pay you money for your system when I have just been offered a free system by Macquarie down the way?' That came from a number of different companies.

Mrs ELIZABETH GRACE—What area does Macquarie draw on? What is its main sphere or area of collection?

Dr Campbell—New South Wales, and they come up to the Gold Coast. So that is where we compete.

Mrs ELIZABETH GRACE—Do they cover all of New South Wales or only northern New South Wales?

Dr Campbell—It is a large area but mainly Sydney.

CHAIRMAN—Are they a big company, as big as you are?

Dr Campbell—They are large. They are not as big as we are, but they are still quite large.

Mr ALLAN MORRIS—So the logical question then to ask, with reference to AAPP, is: isn't it reasonable to suggest that the association set up some process and some protocols as an association for pathology coding, decoding, and so on? Talking about accreditation of software and things of that nature, I would have thought that the association was the logical body to take charge of that and perhaps put some requirements, even some blocks by saying that they would not authenticate, if you like, or publicly disassociate from software that has not been accredited.

Mr Hodgson—I have a draft document in my briefcase to give to Bruce after we finish here. The document is the draft guidelines from the NPAC.

Dr Campbell—That is the National Pathology Accreditation Commission.

Mr Hodgson—That has actually taken the initiative and drawn up some draft guidelines on the whole subject of electronic pathology.

Mr ALLAN MORRIS—Mr Chairman, has that commission made a submission to us, do you know?

CHAIRMAN—They have not. Would you be able to provide us with a copy of that?

Mr Hodgson—I guess we would have to get—

Mr ALLAN MORRIS—Approval.

Mr Hodgson—It is in draft and it has been sent to Sullivan and Nicolaides for comment.

CHAIRMAN—Could you seek permission to release a copy to us?

Mr ALLAN MORRIS—Perhaps they might forward one to us. What I am getting at is that you are asking for us to recommend, say, accreditation in a vacuum. But if there is a process being put forward by a national association, then the committee may well be prepared to either say 'yes' or 'no' or 'who knows?' But at least it gives a more likely vehicle than us being the experts on it.

CHAIRMAN—It is a good idea.

Mrs WEST—The doctors have recommended:

A single data encryption methodology should be adopted for all non-government telecommunications based transfers of non-government patient health information, but this encryption methodology should not be seen as a Government (or HIC) controlled product . . .

Is this the case with the present software used for medclaims? Could you explain how their recommendation on encryption methodology could be formulated and extended by the government to the non-government sector without there being perceptions of its being controlled by government?

Mr Hodgson—I think the concern there is just the natural suspicion of doctors and, I suppose, most people in the community in terms of privacy and confidentiality and Big Brother looking over their shoulder and having access to their information. That sort of recommendation, with all due respect, comes out of a sense of ignorance of the technical issues.

I do not think there is any threat whatsoever if the encryption software happens to have been developed by the HIC and made available to the industry. But I do think in the whole process of encryption and encryption management there is a need to have an effective key management system in place for the distribution of the public keys to the various people who want to communicate with a particular individual or organisation. It would be a very good idea if there were a national key management authority that was probably seen to be independent of government.

Mrs ELIZABETH GRACE—What do you see as a possible federal government role in the information management and telemedicine area?

Dr Campbell—We have already discussed the provision of incentives to all the players to participate in a central network or backbone of communication to facilitate the process. As Ron has already pointed out, the extension of the HIC's network is one area which could happen fairly rapidly. Once the network is available at reasonable cost, you could look at other incentives that are required to get people in to communicate via that network.

Mr Hodgson—I would have thought there would be a role for the government to really take the initiative, like the New Zealand government did, in providing the lead, the incentive and the funding to start setting up some of the serious infrastructure needs of the industry.

CHAIRMAN—What did it cost in New Zealand and what would it cost here?

Mr Hodgson—I am sorry, I have no idea.

Mrs WEST—It says in the submission that doctors have observed:

This practice has been very active over the past two years through its support for a number of initiatives designed to further the cause of information technology in medical practice.

Could you provide a brief overview of how those initiatives with which their practice has been involved has helped to further the cause of health information technology? What barriers have been identified?

Mr Hodgson—The most fundamental one is awareness. Sullivan and Nicolaides, both through their process of surveys and subsequent provision of a training initiative or information dissemination initiative, provided information days and invited suppliers of technology to mix with GPs to just address some of the issues involved in computerisation. They really had to start from a very low level because most of the people involved in those really had no idea what part technology could really play in their practice. Over a series of lectures that were provided last year, I believe 600 or 700 Queensland GPs attended a full day's event. That was totally organised and funded by Sullivan and Nicolaides.

So really it was information dissemination. Subsequent to that and what came out of the interchange with GPs was a realisation of the potential and the requirement for this electronic link with the GPs. From that came the initiative to set up the project to take the PIT standard and develop it into a broader specification and encourage the medical software industry—those people supplying the solutions to the doctors—to incorporate a standard specification. That process continues.

CHAIRMAN—Thank you very much.

[3.30 p.m.]

McKINNON, Mrs Sari, Acting Executive Director Corporate Services, Mater Misericordiae Public Hospitals, Raymond Terrace, South Brisbane, Queensland 4101

FERGUSON, Mr Paul, Manager Information Technology, Mater Misericordiae Public Hospitals, Raymond Terrace, South Brisbane, Queensland 4101

CHAIRMAN—I now call on witnesses from the Mater Misericordiae Public Hospital to be sworn in. Before I invite you to make an opening statement in support of your submission, I just want to clarify something. The Mater public hospitals are run by an order of nuns but with substantial public funding, and the private hospital operates as an ordinary private hospital, does it?

Mrs McKinnon—That is correct.

CHAIRMAN—Would you like to make an opening statement?

Mrs McKinnon—Thank you very much. Information technology is an area that is certainly rapidly changing. There is an awful lot of potential within the realms of information technology for hospitals to improve their service provision.

As a health care provider, the Mater hospital certainly recognises that its main business is to provide health care. Our view on information technology is that it really needs to be used as a clinical tool for us to improve the quality of care that we provide to our patients, which is our fundamental business. So we look at both IT and telemedicine as clinical tools to improve the provision of health care that we provide.

CHAIRMAN—Are you connected with the Mater hospital in Mackay?

Mrs McKinnon—No, we are not.

Mr Ferguson—Same order.

Mrs McKinnon—We certainly have an independent board.

Mrs ELIZABETH GRACE—Following up on that, do you do things with the other Mater hospitals such as interconnecting with them in any way?

Mrs McKinnon—We certainly have communications with the other hospitals, but they are all independent health care providers. There is communication and the potential for cooperative strategies and projects, but generally we operate as the Mater public hospital within the Brisbane area.

Mrs ELIZABETH GRACE—So you do not have integrated procedures, in other

words, one hospital provides something for the other and vice versa?

Mrs McKinnon—No. We have a different selection of patients within the hospitals. The Mater public hospital has a women's hospital, a children's hospital and a hospital for adults which means we have a tertiary level of patient and a much broader spectrum of patient. A lot of our procedures and administrative requirements tend to differ because of the different type of client we have.

Mrs ELIZABETH GRACE—You suggested on page 5 of your submission that:

The utilisation of telemedicine in light of future economic constraints within the delivery of health care is inevitable. It allows the knowledge and expertise of metropolitan specialists and hospitals to be transferred to remote and rural health care providers and in effect, bridges the distance geography imposes.

The committee has noted that a number of submissions, mainly those provided from organisations in metropolitan areas, are about the benefits of telemedicine in communities in rural and remote areas of Australia. Could you discuss the practicalities of bridging the distance in Australia through the use of telemedicine, noting in particular that remote communities are very small, that telecommunications facilities are very basic—sometimes no more than a fax machine and a telephone—and that the availability of health care workers, not to mention general practitioners, is sometimes a luxury. How do you envisage this being beneficial to those rural and remote areas?

Mrs McKinnon—We certainly recognise the initial problems or first stumbling blocks with IT infrastructure across the state that would allow us to utilise technology such as telemedicine and there needs to be some ground work done with regard to that for us to be able to provide a service that is mutually beneficial. As a tertiary level hospital, we have expertise that sometimes is only available through our individual hospital.

CHAIRMAN—What is a tertiary level hospital?

Mrs McKinnon—I suppose I am talking about a tertiary level hospital in a casemix framework. We have very high complexity cases. Rural hospitals and some country hospitals may send their more complex cases to us, to our ICUs or to our specialist facilities. For example, we have the only registered peri-natal, diagnostic specialist in the state within our hospital and, obviously, there are people right throughout the state who need to utilise that service. That is what I mean when I talk about a tertiary hospital. We have high complexity cases often referred to our hospital from other centres when they require backup or that level of treatment.

Mr Ferguson—Just on the specialist that Sari is talking about, one of the areas that they get a great deal of referrals from is the Townsville and Mackay area. A lot of the patients have to come down to have the ultrasound done and the whole peri-natal team get together to look at the outcomes and prognosis for that particular patient. Envisaging the

telemedicine process, that could be done at, say, a clinic up there with a local practitioner and an ultrasonographer available to do that. That can be transferred digitally so it could seen with that whole group. The whole range of obstetrics, gyny, peri-natal, postnatal et cetera could be done, saving these patients from flying down and staying overnight—or perhaps even longer—as they currently do.

CHAIRMAN—Are any referred from your hospital? You have got a Townsville hospital and a Mackay hospital, haven't you?

Mr Ferguson—No, these are public patients. There may be some private amongst them, but it is mainly public patients I am referring to. Going back to your point about the lack of technology at the smaller sites, I think a staged process—this is a personal opinion—would be that the regional centres would provide these clinics with those referrals to the top-flight specialists that are available in most of these metropolitan hospitals. Admittedly there would still be some travelling involved, but it would be far less.

Mrs ELIZABETH GRACE—And probably within their own region where they are living. I see what you are saying.

Mrs WEST—But the help would also be in identifying the up-front and the follow-up. So it would be at that stage of their diagnosis rather than—

Mrs McKinnon—That is right. You could identify the treatment required at that diagnosis stage rather than incur the expense of all that travel plus the distance.

Mr Ferguson—You can monitor those patients much better.

Mrs VALE—I have got some questions on the ethics and privacy issues. On page 7 of your submission you emphasise:

Privacy of patient information must be protected. Methods to protect sensitive patient data and maintain data integrity when it is in data transport mode, must be established prior to the utilisation of this technology.

You also indicate:

Initially, patients must be aware of the risks and obligations to protect their medical information from unauthorised use and disclosure.

You suggest:

This may be one of the barriers to the use of telemedicine and may hinder public acceptance and utilisation of the technology.

Given that information in your submission, this committee has been made aware from other submissions that there appears to be a negative public perception about the maintenance of data technologically. What is your view for addressing public concerns over telecommunications technology in the health sector?

Mrs McKinnon—I very much agree that there is generally a negative public perception about the use of personal information or the transmission of personal information via technology. I think certainly we would need to put some guarantees in place to ensure the security of that information. Even though, as I say, there is a growing public acceptance, I think mainly that has been led by the financial institutions. Obviously there is a lot of information going down-line right at the moment which is very well encrypted and protected by banking institutions and vendors of financial services. I think certainly we could follow suit in their type of practice in being able to guarantee a very secure and protective environment for those people to receive health care over a long distance.

Mrs VALE—Further on from that, Mrs McKinnon, how do you propose dealing with the ethical, privacy and legal issues associated with the maintenance of electronic or medical records in the event that an integrated computer system for data networking or sharing is developed?

Mrs McKinnon—How would we plan to deal with that?

Mrs VALE—Yes.

Mrs McKinnon—I think we would need to look at some sort of targeted solution in the same way the financial institutions have—like encryption of that data—so that during the transmission process it is actually protected.

Mrs WEST—On the projects that have been identified and that you have been involved with, you are currently investigating technology based on solutions and the potential development opportunities for generating automated discharge summaries at the point of discharge. However, you point to the fundamental information distribution problems within the health industry that pose unique challenges. Could you discuss why such problems exist and the extent to which information distribution problems are hampering the development of technologically based information management and telemedicine?

Mrs McKinnon—One of the fundamental areas of concern is the acceptance of the use of IT based solutions within the clinical community. Our primary referral comes from a GP or the general community health care givers. The ongoing care post-discharge is referred back to those people as well. Certainly, they need to have the technology at that end for us to be able to transmit and for those people to be able to read and actually use that information. So there is a certain amount of health care acceptance that we need at

that community level.

Mr Ferguson—I think it goes back to the previous submission in that the penetration, I guess, of clinical practice computers in the GP area is pretty small in Australia. I think it is about 80 per cent in the United States, but do not quote me. It is certainly less than 50 per cent. That is one of the difficulties of getting out to the GPs with the kind of things that Sari was talking about. You can develop the discharge summary automatically and post it with the patient, which would be a plus anyway. It is an improvement on the current process.

Mrs WEST—Further to that, can you discuss how patient care will be improved as a result of the current pilot model for mobile computing in order to bring technology to the point of patient care at the bedside. What are the outcomes anticipated by the project?

Mr Ferguson—This gets back to what people were talking about before in pathology—that is where I come from originally. One of the difficulties in a hospital practice obviously is the tiered layers of residents, registrars and consultants. Often the pathology results, whilst available, may not be easily accessible by the clinician at the time, so you often get the patient coming to casualty and getting their full blood count, electrolytes, et cetera. The resident may order it again and so on. The patient may have two or three goes at having the test done as a pre-op patient or they may be a pre-outpatient and have it done at an outpatient clinic and then come back and have it done as an admission and all the rest of it.

One of the advantages of clinical mobile computing is that information, being in real time access to the clinical information systems in whatever form that takes, is available there. When you do order a patient, you can have reorder type information saying that this test has already been done within the last 24 hours or 48 hours or this particular test is inappropriate for the kind of condition that the patient has. The clinician can also then be monitoring their patients, ordering pharmacy, et cetera, in real time rather than having to go back to a central point, rehashing the same information which is available in disparate systems already, but it is not available at the bedside. They have to go back to a machine that is perhaps sitting at a nurses station, so they are competing with the nursing staff and everybody else. In terms of a mobile situation they could be, dare I say it, anywhere and performing their work.

Mrs WEST—Is the information obtained from the pilot project to be shared with other hospitals?

Mr Ferguson—Yes.

Mrs WEST—Has it been tailored for specific use at the Mater?

Mr Ferguson—There are two components to it. The first stage is the actual device

and how useful that is to the clinician, how easy it is to carry the size, the weight, the way it interacts with them and all those sorts of issues. Another component of that is the actual mechanism of the radio frequency transferral mechanism used to communicate with the local area network. The third component is the data that is presented and how it is presented. Another component is how that data is then integrated from the current pharmacy, pathology and clinical information systems that we have.

Mrs ELIZABETH GRACE—What you are saying is exactly how I am thinking, but doctors seem to have this built-in distrust. For example, if Dr Smith is given the tests and you have been referred to so and so as a specialist or whatever, he immediately orders exactly the same tests because he feels that his tests might be more accurate than the others. When you are talking on these lines, do you think that is something that we are going to overcome—the need to have your own tests, not somebody else's?

Mr Ferguson—I am not sure about the private sector because I have not worked in that area but certainly in the public sector, in our hospital at least, it would be coming from the same laboratory anyway. It is accredited, et cetera. Hopefully, if the accreditation is working, the tests from any laboratory should be accepted. But I take your point. I do not think there would be an issue, certainly within the public hospital environment.

Mrs ELIZABETH GRACE—It would be in the pilot; it will be interesting to see whether it does show up.

Mr Ferguson—Yes, it would be.

Mrs WEST—The United States development of true electronic medical records is proving to be a major challenge for health care providers and health industry software vendors. Mater suggests that the possible solution could be to integrate the electronic medical records. Could Mater discuss the problems which are being faced by health care providers and health care industry software vendors in developing true electronic medical records and elaborate on the benefits to be derived from the national demonstration project for critical pathways in which it is involved?

Mrs McKinnon—Most of the development to date with regard to electronic medical records that has gained acceptance has been basically geared around producing an image of the medical record as opposed to actually developing a solution which is clinically based, a true clinical tool and something that you can write to and get the information back out of. Most of the systems that seem to be piloted and are being installed in some hospitals are read-only systems—actually scanning a copy of the record post-discharge and then using that as an electronic record—where really it is an image of the record as opposed to what I would call a true clinical interactive medical record.

CHAIRMAN—What is the role of the Internet in all this?

Mrs McKinnon—I think we have to consider the Internet as having a potential role in health care delivery. At this stage I do not think the Internet is as advanced or accepted enough as it needs to be throughout the industry for us to really utilise it. There will certainly be security and confidentiality issues associated with that at this stage.

CHAIRMAN—The Intranet perhaps?

Mrs McKinnon—That is a different issue.

Mr Ferguson—The intranet is an issue that we are looking at, not specifically for medical records as such but for other information such as policy procedures, ordering mechanisms, education and that kind of thing, at this stage at least anyway.

Mr ALLAN MORRIS—What does the mobile clinic consist of?

Mr Ferguson—If we start from the base layer, we have our pathology system, our radiology system and our patient information system. We run that over a local area network or a network of some description with a radio transmitting device. You may not have seen them but they are basically a notebook computer. 'Notebook' is probably not the word I am looking for, but they are about the size of an A4 page or less and they are pen-based.

Mr ALLAN MORRIS—Like the Newton.

Mr Ferguson—The Newton is one we are going to trial and other styles which are Windows based ones. That then would allow the clinician to look up my patients for this. Which patients do I have? I have got them here in all these different pages.

Mr ALLAN MORRIS—So that is one way of processing it, but it does not allow videoing at the same time, does it?

Mr Ferguson—No, but it is quite feasible. At this stage, though, I think the expense would be a bit of a deterrent.

Mr ALLAN MORRIS—The other problem that you have is that you are still limited to the communications system—you cannot go to a farmhouse, for example.

Mr Ferguson—That is quite true; in a rural setting, yes. But it is quite feasible between here and the Gold Coast, I think, and even far north. Telstra has a network—I cannot think of the name of it—which could, given the right security, be used to actually transmit that.

CHAIRMAN—How far north—as far as the Sunshine Coast?

Mr Ferguson—I think so. I am not absolutely certain on that. I know it goes down as far as the Tweed anyway.

Mrs WEST—Is it based on radio waves?

Mr Ferguson—Yes. It is different from the mobile data network.

Mrs WEST—Is it digital or analog?

Mr Ferguson—It is the mobile data network, based specifically for that kind of issue. The police use it.

Mr ALLAN MORRIS—I was just pondering earlier the possibility of having in each small town, or even for some country nurses, a black box—telephones—attached to a video, like the CNN type stuff. Whilst they may be considered expensive, they are roughly cheap for what you can do with them.

Mr Ferguson—You are talking in terms of the telemedicine style of things at this stage.

Mr ALLAN MORRIS—Are you talking about mobile—

Mr Ferguson—No, it is clinical mobile computing.

Mr ALLAN MORRIS—I refer to another point. I guess I am always puzzled or bothered by the health community. You say that HL7 is currently the standard but it is not necessarily being observed. There are only so many players in the health game. There is a relatively small number. There are the state governments, the Catholic churches and some private suppliers. It seems amazing that you cannot get your act together in the sense of having a set of common standards or common data. HL7 appears to be fine. But why can't HL7 be adopted? Why can't we adopt common methodologies?

Mrs McKinnon—That is a fairly valid point. I think that one of the historical things that has led to that is that health care is generally state based; we do not actually have a national core group saying that this is the way we need to go, and these are the standards that we all should adhere to. So I think it is a fundamental structural issue of health care.

Mr ALLAN MORRIS—I find it incredibly strange that in an area of health where you have absolute domination by Latin names for drugs, for example, which no-one ever questions, and in some of those complex, intrusive, dictatorial processes in terms of the systems used, there is at the same time some of the most sloppy, careless and fragmented processes imaginable.

Mrs McKinnon—Information technology is still relatively new within the health care industry—information technology I am actually talking about, not so much medical technology. According to industry standards and the cutting edge of information technology development, we tend to sit on the tale generally of what the industry is doing. So we are five, six or seven steps behind within IT development and are setting our fundamentals together to utilise IT to its full potential.

Mr Ferguson—I think the issue it gets back to is that the IT is separate to the medical profession. It is starting to come together. Most of the graduates of this year will probably be basically computer illiterate, from what I am hearing about the new medical course. I believe that the next graduates will be far more au fait with it.

If you have a technology industry that is not medical building standards, it needs to be a combined effort and, from a federal point of view, it probably needs to be federally dictated. HL7 has an American standard and, at the moment, there is an Australian group finding what will be the Australian standard for HL7.

Mrs WEST—But this is also addressing the concerns of the health industry or the health situation where it is in crisis and crisis is causing fundamental changes to case management and streamlining information. We have just got to get smarter quicker because it is out there beating us, is it not?

Mrs McKinnon—That is right. We have great pressure to increase our activity while still reducing our costs. So, we are being forced to become more efficient.

Mr Ferguson—What is actually happening at the moment is that we are building systems that mimic our current method of practising medicine and doing outpatients and treating external patients. The processes have to change as well. Unless we look at using information technology in conjunction with the process of treating patients et cetera rather than trying to computerise the current system, I do not think you are going to really get the benefits. Why do patients actually need to come to an outpatient clinic, given that technology? Even in metropolitan areas why cannot there be remote clinics with a general practitioner talking to a specialist in a special clinic or barefoot doctors going out with telemetry et cetera? Technology is not the solution, it is how it is used.

Mrs VALE—If I could just go back to that privacy issue about which you were concerned, how do you feel the current laws deal with it? Are you satisfied with how their privacy issues are looked at now or would you like to see some improvement? How do you see that it could be tightened up?

Mrs McKinnon—I would like to see some privacy issues with regard to the transmission of patient information being developed specifically for the health care industry. Obviously, there would guidelines within the banking industry and finance and other high security areas which would provide a foundation. I think they need to be geared

towards providing health care and dealing with confidential patient information.

Mr Ferguson—Are you talking about telemedicine or are you talking about—

Mrs VALE—The information technology and telemedicine, yes.

Mr Ferguson—Both, purely transmission, okay.

Mrs VALE—I have some questions on cost and benefits. On page 3 of your submission, you actually stated:

> There are vendor developed electronic medical record solutions available and hospitals can see the long term, value added benefits of introducing such systems. To trial these at tertiary level hospital without additional funding is not currently possible.

We are unclear as to the current status of any pilot project relating to the maintenance of electronic medical record management. Are you aware of any trials that might have been undertaken, say, in other countries such as Canada or the US or anywhere else?

Mrs McKinnon—There are certainly measures being taken in South Australia through the South Australian Health Commission. They are being basically managed by McDonnell Douglas but there is an OASIS project happening at the moment which is going to provide the fundamental structure for a clinically based information system. They are the first state who are actually looking at eventually providing a health care record which is one UR number and one patient care record for the state. I think that is moving very much in the right direction to providing high quality patient care for the people of the state.

Mrs VALE—That is important. There is another question regarding the costs and benefits. On page 3, you actually noted:

> The integration of computer systems and data networking or sharing would have huge patient care related implications as well as a long-term reduction in the costs of care provision.

You also note that the biggest obstacle to date revolves around the fundamental question of who is going to fund the development of telemedicine systems. Could you discuss with us what barriers exist to developing an integrated computer system for data networking or sharing? This probably reflects back to a previous answer you gave.

Mrs McKinnon—I think there are two separate issues there—one is with the IT systems themselves and the other is with telemedicine. Certainly, a hospital such as ours can see the benefits of a telemedicine system, but the problem is we need to provide high quality health care today. We can see that there would be long term benefits of developing such a system, but how do we fund that system today without taking capital or finance away from treating the patients who are walking into our health care facilities today?

CHAIRMAN—You tell us!

Mrs McKinnon—It is certainly recognised, and we need to change the way we are looking at it and look at it as an investment for the future. It is like putting money in the bank now and getting the return later. But who has got that money to invest to start with, and how much? Certainly, from our hospital's point of view, that is something we need to address as well—how much do we need to invest now; what would the benefits be next year, the year after and the year after that; and when would we actually be able to take a benefit of our investment? We have not gone to the dollar level with that yet, which we need to do.

CHAIRMAN—Just flowing on from that, clearly there is a problem in funding telemedicine. What is your view on how it should be funded? What would be the role of telecommunications companies, the software companies, the health care system and the consumer?

Mrs McKinnon—I think we certainly need to establish an alliance with the vendors of these products. Obviously, if we are setting up a telemedicine network, they will ultimately benefit from us using infrastructure, or whatever, that is set up now. I think it does need to be the health care provider, the vendor, the customer—though I suppose it is a bit difficult with the customer—and the government body all working together and setting up an alliance to try and meet these needs. If you can do it at a national level certainly you would think it would ease the financial burden for local areas.

Mrs ELIZABETH GRACE—There has been a lot of discussion about definitions today and the health department suggested that it may be useful to differentiate between the use of the information management technology and telemedicine, and a complicated use of telemedicine—or perhaps it should be telehealth. What are your views on a definition of what we are basically discussing?

Mrs McKinnon—Again, our primary business is to provide patient care so we really see the technology of telemedicine as a tool for us providing the highest quality patient care that we can, as well as being cost-effective in the long run. I probably did not specify that clearly enough in the submission. Obviously there are the technical implications that go with that as well—it is the transmission of data as well as image. But I feel it is primarily a tool for patient care as far as hospitals are concerned.

CHAIRMAN—It is just regrettable that the industry cannot agree on a common definition for telemedicine or telehealth.

Mrs ELIZABETH GRACE—What is your definition of telemedicine—how do you see it from your perspective?

Mr Ferguson—I agree with Mrs McKinnon—I think the technology is basically

just a tool. It is the practice of medicine remotely, I guess, whether that involves video, picture, ultrasound, voice—whatever. As you are probably aware, the United States military are looking at what they are calling 'telepresence' where they are actually at the front line doing operations remotely, using—

CHAIRMAN—The Royal Australian Navy is doing something similar.

Mr Ferguson—I was not aware of that.

Mrs ELIZABETH GRACE—Talking people through operations?

Mr Ferguson—No, not only talking through but actually physically doing it, remotely.

Mrs ELIZABETH GRACE—Right.

CHAIRMAN—Could you send us some information on that?

Mr Ferguson—To be honest, I saw it on one of the current affairs type shows.

Mr ALLAN MORRIS—If I can off at slight tangent, are you aware of the development of Australian DRGs?

Mr Ferguson—Yes.

Mr ALLAN MORRIS—It seems to me that that would be a logical and natural environment for the development of standards of data transfer and data storage for medical records storage, wouldn't it? If you are going to define diagnostically related groups to get casemix, it would be pretty logical to say that that is the same kind of environment. You should be talking about common data structures and common data formats and admission protocols and so on.

Mrs McKinnon—I think along those lines it could certainly provide a fundamental starting point. It certainly is one area where there are more precise definitions than there are globally within health care, and it is somewhere we could actually start from. But, even within the area of DRGs and clinical classification, when you get down to the specifics of classifying morbidity to those classifications, it is still relatively unclear at the coalface, at that operational level. That could be a starting point, I certainly agree, but there is still a long way to go.

Mr ALLAN MORRIS—Perhaps after today you might have some more thoughts on it. In your recommendations you are saying that there really should be a start on national standards and all those things, but you do not quite say how. All I am suggesting is, whether or not the DRG project would be the logical starting point, that they should, in

fact, carry on, not just with DRGs, but with the next step in terms of formats and the like.

Mrs McKinnon—I think you are correct. As far as the clinical terminology that would be used within a medical record is concerned, that would be fundamentally a most ideal and logical place to start. But then there would certainly need to be other methodologies for addressing a lot of the other areas. Yes, I agree with you.

Mr ALLAN MORRIS—What is happening now is we do something over there, we do something over here, we do something over there, and we wonder why we do not gel very well.

Mrs McKinnon—That is right. At least it provides a classification system that all of the hospitals in Australia are using. Everybody is using the same classifications.

Mr ALLAN MORRIS—So, that group having got that, it seems to me that you could take the same vehicle to the next step of data formats, of encoding methods, of records storage. What worries me is that a patient comes to your hospital, and they may have been in Prince Alfred in Sydney three years ago. Both of you have computer systems and both have electronic storage, but to actually look at it, you have to get these printed out and faxed to you or sent to you somehow, because probably the format is entirely different. You then have to work out how that fits with yours. So, it is not just within yourselves; it is also between hospitals.

Mrs McKinnon—It certainly is. That is one thing that the South Australian project is trying to address—having one health care record throughout the state for a patient, regardless of which hospital they go to.

Mr ALLAN MORRIS—How about the country?

Mrs McKinnon—That would be the ideal situation. I am sure that they would be looking at that diagnosis classification system as a fundamental grounding for that.

Mrs WEST—You have indicated that the reimbursement for services provided is an obstacle in the area of telemedicine, and you note that the current casemix payment model would not cover this method of care delivery and that, as far as they are aware, health insurance companies have not yet established such payment bands or parameters. You indicate that the question of health insurance reimbursements is one for the Commonwealth and the health insurance companies. Do you at the Mater have a view on who pays for multidisciplinary telemedicine consultations?

Mrs McKinnon—That is an interesting question. I have certainly given it a little bit of thought. The issue is actually confused when you come into the area of telemedicine because you no longer, in that ideal situation, have only one health care provider. You would have a consultative group of health care providers. So it actually comes to another

question first: who is the body actually providing that individual service?

Certainly there could be parameters built in within the casemix model that would just handle that. It just would need to be defined and put within that model. It is still a consultation between a patient and a clinician. We would just need to identify who the provider actually is. I could see it could still work within that fundamental one-on-one patient care payment. There would certainly be some questions. At the moment we are being paid on in-patients and occasions of service, whereas a telemedicine service would not necessarily be an occasion of service because it could be a highly complex consultation that takes an amount of time and the only reason the admission is not happening is because that person is remote.

So, it would need to be something outside of that standard occasion of service, one-on-one outpatient visit. It would probably need a definition and a classification with its own payment parameters determined by the complexity of the service given to that particular person to address their need.

CHAIRMAN—The Health Insurance Commission would have to pull its socks up as well.

Mrs McKinnon—Yes, and hospitals would as well, within what requirements they would have and what they would classify as complex—

Mrs WEST—It takes in the element of time, doesn't it?

Mrs McKinnon—That is right.

Mrs VALE—I would like to know if you have any thoughts on how you see the role of government in the development of this kind of technology.

Mr Ferguson—I was just about to say, the economic benefits of telemedicine are not hospital or unit related, if you like. They are an outcome related benefit. The hospital gets no extra benefit out of treating someone that is 20 or 30 miles away; the community does because that patient does not have to travel and there are not whatever the costs are that they get a rebate for. So I see that the economic benefits are a community benefit or a health outcome delivery, or an overall health cost benefit. So, going back to your question, I think that it does require the health industry, or the federal government, which is paying the bill in the end, to really be involved heavily because overall they are the ones that would receive at least the monetary benefit of treating patients remotely.

CHAIRMAN—Can you tell me how the government should be involved?

Mr Ferguson—First of all, I think the actual infrastructure, that is the infrastructure of the telecommunications infrastructure, needs to be addressed, and whether

that is done with—

CHAIRMAN—It is happening.

Mr Ferguson—It is beginning to happen, yes. As I said, if the economic benefit is not at the hospital to provide the actual telemedicine—the infrastructure for that, I should say—then perhaps grants or whatever it takes should be available to be able to build that infrastructure, or project office, to develop it and get it moving. That is how I can see government being involved in actually setting it up.

CHAIRMAN—Are there any other questions? There being none, thank you very much for appearing before the committee this afternoon. If there is any further material you would like to pass on to the committee, please send it to the secretary and he will circulate it to members.

Resolved (on motion by Mr Allan Morris, seconded by Mrs Grace):

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 4.11 p.m.