

HISTORY OF THE NEW ZEALAND TELEPAEDIATRIC SERVICE

The New Zealand TelePaediatric Service (NZTPS) was founded in 1999 as a non-profit incorporated society to provide medical videoconferencing to the paediatric community in New Zealand. The National Tertiary Services review conducted between 1997 and 1999 identified the need for an enabling technology to improve the delivery of specialist clinical services, enhance workforce development, and co-ordinate continuing medical education. This document was called “Through the Eyes of a Child”. This important document looks to the year 2010 and provides a framework for all paediatric services.

<http://www.paediatrics.org.nz/documents/Tertiary%20Services%20Review/Default.htm>

One of the recurring themes throughout the whole review process was equity of access to knowledge and services. With the location of speciality tertiary paediatric services in metropolitan centres there was considerable concern about the equity of access for children outside these areas.

One of the strong recommendations that came from this extensive review process was for an IP based videoconference network to be set up throughout New Zealand. The benefits from such a network would be numerous. No such national network existed at the time and the NZTPS remains the only network that connects all DHBs on a unified technology platform.

The charter organisations were the Starship Foundation and the Paediatric Society of New Zealand, together with 10 District Health Boards. The Founding Chairman was Professor Erik Heinemann (Professor of Surgery, Starship) and the board was constituted of representatives from the District Health Boards, the Paediatric Society of NZ and the Starship Foundation.

The Starship Foundation had a crucial role in the development of the NZTPS. In addition to raising funds, the Starship Foundation initially provided; infrastructure support, administration services, financial oversight and human resources support. The growth of NZTPS has meant that over the period they have been able to step back to providing financial support only.

In line with the “Through the Eyes of A Child” review the NZTPS identified a number of key objectives in its initial Business Plan and identified several progressive stages in the development of a new service.

The Objectives:

1. Support the development of a National network to progress the best practise guidelines, planning for service delivery etc.
2. Promote coordinated national speciality services in Child Health
3. Provide a number of paediatric clinical services, which may include tertiary consultations and other clinical services between centres.
4. Facilitate educational and professional peer support to paediatric units and services in New Zealand tertiary centres.
5. Support multi disciplinary distance education and training opportunities for interested paediatric health practitioners.
6. Provide national registrar training.

7. Establish national, paediatric medical grand rounds and other educational meetings.
8. Provide opportunities for child and parent health education.
9. Support national planning, policy and research projects.
10. Provide a foundation for the development of outreach clinical services from regional centres to their catchment areas.
11. Explore the viability of a Paediatric Network Website

Development Stages:

- Stage one: Create an Incorporated Society and enter into a Memorandum of Understanding with stakeholders.
- Stage two: Assess modes of carrier technology and equipment.
- Stage three: Develop the managed services model.
- Stage four: Roll out of a truly national service.

Process:

The first phase was incorporation of the Society and signoff of a memorandum of understanding between the NZTPS and each of New Zealand's 21 District Health Boards (DHBs). This process, which took over 18 months, occurred in 2000/2001 concurrent with a rapidly changing health management landscape during the formation of the DHBs. This process attracted 10 of the 21 DHBs in the first instance.

The second phase (2001/2002) was an assessment of existing technology, the formulation of a national telehealth backbone and evaluation of Video Conferencing equipment. As there was no precedent for a national telehealth network the board were working in a technology vacuum. The NZTPS elected to develop an IP based network (internet protocol) rather than use ISDN technology. This decision has proven to be correct as virtually all established VC networks are now IP based; the only ones currently using ISDN are legacy systems locked into expensive user call charges. Note: An ISDN based network is charged as line rental (per month) as well as cost per call.

The NZTPS technology group (chaired by Dr Michael Sullivan) assessed the existing VC hardware in 2001/2002 and recommended purchase of Polycom VC equipment. However, for reasons at that time (prior to Dr Sullivan's appointment as Chair and the employment of Simon Hayden) the previous manager entered into an arrangement with a supplier of inferior equipment. This equipment and its management hardware were mediocre at the time but we were locked into a contract and service agreement.

Shortly after Dr Sullivan became Chair of the NZTPS (2002); in agreement with the Starship Foundation, Simon Hayden was recruited. Simon was responsible for the design, roll out and installation of the national network into the 10 DHBs and commissioning of the VC equipment. This process involved protracted individual negotiations with Information Service at each DHB as all had their own technology and process requirements. We believe, in the process, the Service has overcome all the technology barriers for a medical IP based VC network. By removing responsibility for support of the VC equipment from the local information systems staff, it helped remove a barrier of getting the equipment and network links installed. Different DHB IS managers have different requirements for configuration. Some require the NZTPS network to be completely separate while others were happy for us to co-exist with other applications.

The third phase was the development of the managed service model. As mentioned there was no existing model for a national telehealth service or any example of a managed telehealth service - there is still no comparable managed telehealth service in NZ and this model has been identified internationally as one of the best in existence. Prior to the NZTPS all medical VC services in NZ

have failed or become obsolete. We have developed a model for delivering and broadcasting content involving a mix of clinical consultation, continuing medical education (CME) and workforce development. The employment of an Education Officer assisted with the development of processes for delivery of new content and methods of content delivery.

The NZTPS Managed Service offers a range of solutions that support and enhance the network.

The focus of the managed service team is to provide a first line support mechanism to each location, undertake and manage the systems that have been deployed, support when required the various meetings and ensure effective planned meetings with support of ad hoc dial up connections.

The NZTPS also provides support for booking sessions both internally on the network and externally to international networks via ISDN and the Web.

This service is available during normal business hours, but is extended to include after hours support when required. The NZTPS offers a range of services that are tailored to suit user requirements.

Managed Services offered by NZTPS:

- Central video conferencing unit management via the appropriate management package.
- Configuration, management and updated software support of latest international standards to all network based videoconferencing systems.
- Help Desk is defined as a simple first line telephone response and quick fix support function. This is a help desk during weekday hours of 8.30am to 5pm.
- Managed directories for all videoconferencing systems as applicable.
- Centralised booking of the MCU (bridge), using email, fax or phone.
- Monthly reporting of video endpoint usage. Call Detail Records record the site called, by whom, duration, and accumulation of use over the month.
- Video On Line (On Screen) support:
- A face to face and help desk via videoconference for direct user support and giving ease of access to other endpoints.
- Giving general advice and user support.
- Provides a practice site and testing for external connections.
- Provides remote ad-hoc assistance.
- Offers demonstration of system capabilities.

The service was launched in May 2003. This was earlier than we had wished but happened because our various sponsors sought some tangible evidence that the NZTPS was ready to connect.

This service was funded by sponsorship and cost participating district health boards nothing for the first 3 years. The original sponsorship agreement and partnership with Telecom NZ was negotiated allowing the founding partners to enjoy a free period of 6 months, but due to ongoing support from the Starship Foundation and sponsors, it extended to 3 years. However we were tied into using the bandwidth available, which was the standard at the time. Things have changed considerably in the last 2-3 years permitting a better broadcast quality.

Next was the fourth phase - roll out of the NZTPS service to all 21 DHBs. This involved increasing in the IP bandwidth where required and the replacement of all existing VC units. The original contract with Telecom was for IP VC using 256kbps bursting to 512kbps. Telecom charged this to the NZTPS against their sponsorship at a standard commercial rate. The network was also limited to a total of 8 concurrent users because of previous infrastructure.

With further generous sponsorship from the Starship Foundation and enhanced and scalable video conferencing control unit/bridging facility/gateway was installed . This at the time allowed 30 participants in any configuration in concurrent sessions. We also negotiated with Telecom an increase in bandwidth (512kbps dedicated).

The new generation VC equipment we employ has vastly improved data compression and audio quality. We have negotiated with the supplier, the best price possible. Users are able to choose their own configuration and type of unit.

All existing centres had their legacy equipment replaced by the NZTPS through further sponsorship from Starship Foundation on signing of a service agreement.

The NZTPS believes that we have now developed the best model for the provision of national and regional medical videoconferencing. Support for this view came from meetings in October and November of 2004 with the then Minister of Health, Mrs Annette King, which led to the NZTPS Chair and Chief Executive being invited onto the ministerial committee on medical videoconferencing. The interim report recommended that all future medical VC networks use the managed service model as developed by the NZTPS, run over IP systems.

In 2006, we realised the initial vision. With continued financial support from Starship Foundation, we re-engineered the network and connected all DHBs in the country to a fast, secure, fibre optic backbone. All centres in New Zealand that provide specialist secondary and tertiary child health services are now connected to our managed telemedicine service.

We are now the only provider of managed telemedicine services in New Zealand. The rapid development in telemedicine over the last 24 months has moved beyond a simple desire or interest, and is now seen as an essential capability for the delivery of many different types of care within and beyond district health board boundaries.

The New Zealand TelePaediatric Service is a pioneer and leader in the supply of health based video conferencing services. The network enables us to deliver integrated, customised, and managed collaboration services: audio, video and presentation solutions; to address health care providers' clinical, education and networking needs through real-time collaboration. The NZTPS' solutions are distinguished by their ease of use, quality, reliability and cost-effectiveness.

The managed service model which has proven successful for paediatrics has been made widely available and will continue to support NZ's health community.



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