Clever Health

Evaluation Report 4

Centre for Regional Innovation and Competitiveness (CRIC)

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1 Executive Summary

This report is the fourth and pen-ultimate report in a series of evaluation reports intended to provide ongoing monitoring of the Clever Health project. Clever Health is the result of funding received by the Grampians Rural Health Alliance Network (GRHA, now referred to as GHRA) in mid 2007 under the Clever Networks program. The Clever Networks project, managed by the Department of Broadband, Communications and the Digital Economy (DBCDE), formerly known as the Department of Communications, Information Technology and the Arts (DCITA), provided a grant of $3.385 million.

The current round of evaluation of Clever Health investigated the change in perceptions of the Clever Health project in general and the following project components in particular: (1) Room-based and 'MediLink' High Quality Mobile Video Conference (VC) Units associated specialist equipment and Primary health care service delivery; (2) eLearning; (3) Ballarat Health Services (BHS) Operating Room VC; and (4) the GRHA and the University of Ballarat link. The Clever Health evaluation takes a formative and summative approach to these five main project components and also looks at peer support as an outcome of aforementioned equipment installations.

1.1 Outcomes

The aim of the fourth phase of evaluation was to capture current awareness, expectations and projected use of Clever Health components; and to compare those to initial perceptions and expectations for themes and perceived changes in awareness and progress of the Clever Health project. A quantitative data collection approach was utilised in the form of an online survey. The framework underpinning the survey is based on the Theory of Planned Behaviour to measure uptake of CH components and planned behaviour around such uptake. The survey was complimented with one-on-one interviews with key stakeholders in the project. Salient themes on each component and a project summary are reflected below

1.1.1 Room Based VC

During this phase, 12 new room-based VC units were added to the network. There is a statistically significant change in use from executive meetings to cross-campus and dispersed team meetings, which as such is not surprising given the decreased representation of senior managers in the current sample.

Also of note is the statistic that, despite a high level of expectation and satisfaction the Clever Health components, the majority of respondents indicated that they were not planning an increase in use of Room Based VC facilities in the near future.

1.1.2 Mobile VC

Considering both quantitative and qualitative data, it is clear that attitudes and satisfaction levels with Mobile VC are overwhelmingly positive with increased expectations around Mobile VC units' ability to improve patient care and save time. Participants had high expectations of Mobile VC units, which have been used regularly for cross-campus meetings and weekly VC-based debrief sessions for allied health students across Grampians as an add-on to face-to-face training. A series of clinical trials have also taken place using MediLink units.

While these trials are highly encouraging and an enormous step forward from the last evaluation round, in which no clinical usage of the Mobile VC units was reported, there are still some technical and protocol concerns on both the practitioner side and client side.

1.1.3 eLearning

There has been a substantial increase in the region in the uptake of eLearning, in particular in core competencies. Attitudes around the usefulness of eLearning for professional development, access to training, saving time and reducing travel are increasingly positive and favourable towards eLearning, although the perception of its ability to assist with staff retention remains relatively low.

Clever Health is clearly helping to pave the way for future delivery of eLearning, but since any of the eLearning units have yet to be evaluated, it is not possible to determine overall technology barriers or enablers for eLearning learning in terms of benefits for health professionals or return on investment in eLearning.

1.1.4   UB-GRHA Link

Although the GHRA-UB link has been operational since mid year, some technical difficulties have been experienced with the move of GRHA to new premises at the University Mt Helen campus. This has resulted in occasional drop out of VC services at the GHRA offices and reduced quality of VC delivery to selected parts of the network. GHRA is working closely with the University to resolve these technical issues. The coordination and rollout of training via the GRHA-UB link has continued to be a slow process

1.1.5   BHS Operating Room VC

The BHS Operating Room VC is yet to be used to broadcast live operations, but of interest is the fact that the BHS VC system is being utilised for in-theatre display of relevant data – such as x-rays, blood pressure, and heart monitoring – and the development of training resources.

Live broadcasts will become relevant when the first Deakin Medical School students start to enter the region in 2010, for which protocols still need to be put in place around the type of patients, type of consultations, how consultations are set up, how information gets reviewed and what information gets transferred..

1.1.6   Peer Support

Both the survey and stakeholder interviews reflect a considerable increase in interest in using VC among practitioners and health professionals for case conferencing, team meetings and peer support in terms of access to specialist support services in Ballarat and Melbourne. VC use for cross-campus or team administrative meetings and mentoring purposes is saving an enormous amount of travel up and down the highway and is receiving positive feedback from stakeholders.

Of special note is the growing relationship with the Loddon Mallee region and the link GHRA is establishing into the Adult Retrieval Service, which will interconnect respective VC equipment systems and assist in accessing emergency experts, the efficient relay of advanced information and transfer of patient data.

1.2 Evaluation Summary

Survey results indicate that general awareness of the Clever Health project across survey respondents has increased among nursing and allied health professionals, indicating a broader awareness across primary and allied health practitioners and down organisational structures. Of note is the continued high level of technological readiness among respondents, despite 66% of respondents' being in the 45-64 age brackets. Despite this readiness, there is, however, still a notable lack of trust in the technology itself, which influences willingness vis-à-vis the adoption of the technology.

Nonetheless, there continues to be generally high level of interest and expectation around program components enhancing patient care; accessing expertise; professional development and peer support; saving time; reducing staff travel and associated risks.

There are potentially some warning signs about the reliability of the network considering that for both Room Based and Mobile VC the modes (the most common response) on the reliability and work performance are lower than the other performance measures. While the infrastructure appears to be creating value in the area of patient care, professional development and peer support, operational issues such as the quality of the wireless networks and access to VC equipment in multi-function rooms and the complexity of separate equipment and room bookings remain a concern (the latter falls outside the parameters of the Clever Health project).

There are solid indications that the increased adoption of VC is starting to pay off in terms of improved ability for case analysis, facilitating rapid diagnosis, early intervention, efficient and accurate information transfer, and timely patient care. Access to the Clever Health infrastructure is providing better health information for the broader community and facilitating patients to stay in their communities near their family, translating into better service integration for patients.

Developing online courses and building eLearning capacity among health educators, which was started during this evaluation round, is enhancing targeted development, rollout and uptake of relevant training and increases the use, value and potential of the infrastructure. Stakeholders external to the Clever Health network are starting to show interest in eLearning offerings being developed for and by the region. The staggered release of eLearning courses is proving to be a benefit rather than a drawback, as the adoption of eLearning is an incremental process and allows time for health professionals to get used to and experience the benefits of eLearning.

While use of the network and VC in particular continues to increase at a satisfactory pace, it is clear that health services and professionals struggle with change management issues, which, in turn, impacts on changing work practices. Clever Health continues to be a significant change management exercise and the notion that Clever Health can contribute to working smarter and more sustainably has yet to be instilled in the culture. Hand-holding remains an important component of the Clever Health Officer's work, as being comfortable with the technology enhances uptake.

It is, however, imperative that the human factor of Clever Health is addressed so that it may be integrated in work practices. Lack of processes and protocols tend to perpetuate a fear mentality that the adoption of VC technology means an increase in workload. Workload issues are real and merit consideration above and beyond putting protocols in place. Workforce and services planning is a long term, strategic process, involving everyone from GPs to nurses, administrative staff and of course patients.

This round has shown that the patient side of VC-based consultation also merits further consideration. An unanticipated Clever Health benefit has come to the fore vis-à-vis the use of MediLink probes for patient education. This use of the MediLink for patient education appears to be working well and should be considered for wider use to assist patient exposure and adoption of VC-based consultation.

Use of VC technology should, however, not be seen as a 'one size fits all', but rather be underpinned with a 'horses for courses' framework of appropriate or optimal 'tiered' technology use for services delivered, e.g. Internet-based or fixed VC work well for talking heads and peer support; whereas live patient consults and specialist services would benefit from wireless mobile VC, etc. Such a framework would lead to more effective change management, workforce and services planning.

Exciting new partnerships continue to be forged, such as the one with the Loddon-Mallee region. This connection reflects the ongoing development of and increased collaboration across alliances and networks as more parties show interest in being linked into the expanding e-health network.

All signs are that Clever Health is continuing to improve and innovate in terms of connectivity and practices towards timely patient care and strong professional development and support networks for primary and allied heath professionals across the region. Despite growing resource challenges, it is proactively generating new opportunities and innovative practices for the use of the network across the region. It is strategically aligning itself with other e-health initiatives across Victoria and beyond, contributing towards integrated service provision and a wider value-based e-health system that enhances clinical and patient-based outcomes.

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2 Project Overview

2.1 Background

This report is the fourth and pen-ultimate report in a series of evaluation reports for the Clever Health project. The aim of the report is to continue the evaluation of stakeholder perceptions of the extent to which outputs and outcomes were achieved, timelines were met, and how efficiently resources were allocated and distributed to the project and its activities. This, in turn, will be utilised to assist in the optimisation and efficacy of this and future telehealth programs.

2.2 Project Context

The Clever Health project is designed to:

1. Develop innovative delivery of Primary Health Care (PHC) services to the region and ways of providing: peer support and advice mechanisms, decision making pathways and development of evidence based practice and case analysis by linking the Emergency/Urgent Care and Maternity Departments in the region with high quality video conference and associated specialist equipment. These are expected to deliver increased levels of patient care and are crucial in attracting and retaining skilled professionals;

2. Increase skills for health professionals in the region by working with providers to develop and deliver blended learning professional development programs via the network;

3. Trial innovation using wireless technologies in the delivery of better patient care;

4. Improve the high availability characteristics of the network to a level that complements the mission critical nature of the network by redundant connections to crucial sites through the alternative telecommunications path provided by the NextG network;

5. Distribute surgical expertise by establishing high quality video conference facilities in the new Operating Theatre at Ballarat Health Services linked to their Education Resource Centre and the rest of the GRHANet network. This will enable doctors to view new surgical techniques and interact with surgeons;

6. Link the GRHANet and University of Ballarat networks, thus facilitating the delivery of first level training and professional development to the region from within the region; and

7. Enable broader community education and access through the more effective use of broadband technologies.

2.3 Objectives

The evaluation program is designed to investigate the progress of Clever Health in the five categories of activities above. The five components have been incorporated into an evaluation plan (see Appendix 1), which in summary are:

1. Room-based and High Quality Mobile Video Conference Units, associated specialist equipment and Primary health care service delivery.

2. eLearning rollout

3. Installation of NextG IP gateway

4. Establishment of high quality video facilities in new Operating theatre at BHS

5. Linking GRHANet and University of Ballarat.

The Clever Health evaluation takes a formative and summative approach to these five main project components and also looks at peer support as an outcome of aforementioned installations. Formative evaluation includes regular stakeholder feedback during the course of the project to ensure that it remains on track. This incorporates online survey results and key stakeholder interviews reported on in this report.

Both formative and summative program evaluation focuses on the extent to which the project achieves its specific goals and objectives. Summative evaluation focuses on the extent to which project goals are realised (awareness, effectiveness), and at what perceived cost (outcomes, impact, efficiency).

Specifically, the evaluation seeks to examine stakeholders' perceptions of:

- The extent to which outputs and outcomes were achieved;
- The timeliness of project milestone achievement; and
- The awareness, use and benefits of the program.

The evaluation will produce a total of five (5) reports with 6-monthly intervals. Reports are delivered to the Program Director in line with Clever Health program reporting. This report is the fourth in a series of five reports, which will be delivered according to the following schedule:

- June 2009 (fourth report)
- November 2009 (final report).

2.4 Project Team

The University of Ballarat (UB) Project Team comprises individuals from the Centre for Regional Innovation and Competitiveness (CRIC). Contributors to this report include:

- Dr Patrice Braun (Clever Health Steering Committee Member)
- David Lynch (Survey Design & Quantitative Data Analysis)
- Ti-Ching Peng (Data analysis)

3 Methodology

3.1 Study Design

The methods used to collect data for this report were semi-structured interviews and an online survey and with key stakeholders in the project. Until the third stage of rollout of the Clever Health project, the evaluation methodology remained largely qualitative. The last phase established baseline quantitative data on perceptions and expectations of the Clever Health project from that evaluation round forward. This report adds new data to the baseline and, where applicable, compares the baseline data with new data.

3.2 Evaluation Method

The aim of the fourth phase of evaluation was to capture new qualitative and quantitative data on awareness, expectations and projected use of Clever Health components and to correlate those with perceptions and expectations captured during earlier phases of evaluation for themes and perceived changes in awareness and progress of the Clever Health project.

From the past three evaluation rounds, conducting interviews with key stakeholder has proven to be a suitable method to capture qualitative data and this method was again adopted for this round. In reviewing the options to capture quantitative data, and in particular capturing usage data on each component of the Clever Health project, it became apparent that it would be difficult, or in some instances inappropriate, to capture hard usage data. Hence it was decided to design a survey based on the principles of the Theory of Planned Behaviour (Ajzan, 2002). This theory comprises two elements: self-efficacy (dealing largely with the ease or difficulty of performing a behaviour) and controllability (the extent to which performance is up to the actor). This approach facilitates the measurement of attitudes, perceptions and seized opportunities (perceptual scales) vis-à-vis awareness, expectations and use of Clever Health components.

Measuring perception of change, actual change, and impact of change over time facilitates the longitudinal measurement of changes to work practices, peer support and learning practices.

3.3 Phase IV Intervention

The Phase IV Intervention for Evaluation Report 4 took place between March 2009 and May 2009. The intervention consisted of:

(a) Interviews with key stakeholders strategically involved in the Clever Health project;

(b) An online survey for Clever Health stakeholders across the Grampians region.

3.3.1   Interviews

Face-to-face interviews were conducted with key stakeholders, selection of which was determined in consultation with the Clever Health project team (See Appendix 2). Interviewees were selected for their expertise in telehealth, understanding of and/or close involvement with the Clever Health project. For consistency with earlier report and methodology, the same semi-structured interview guide was administered to elicit levels of awareness and perceptions pertaining to the five key components of the Clever Health project (See Appendix 3). Prompts were used to encourage stakeholders to freely express their thoughts and ideas, raise issues of concern, and pursue areas of interest that might arise from the conversation. Recording stakeholder perceptions in this way was considered useful to reveal factors that may influence uptake and speed of adoption of the various telehealth initiatives in stakeholders' respective settings.   The interviews were transcribed, collated and analysed for recurring themes. Salient interview themes are reflected in Section 4.

3.3.2 Online Survey

The survey instrument (see Appendix 6) administered in Phase III was again utilised for Phase IV. This survey was designed based on the planned behaviour methodology in consultation with the Clever Health project team. The survey instrument was reviewed and feedback from the Clever Health Project Officer and the last survey were incorporated, which included minor changes in nomenclature and the addition of an open question at the end of the survey, providing an opportunity for survey participants to add any other comments they might have about the Clever Health Initiative.

Potential survey participants were targeted based on their involvement with the GHRA infrastructure and/or because they recently were involved in GHRA training in the use of video-conference equipment. Potential participants received an email invitation to participate in the survey from either the Clever Health project officer and/or via staff within their health service. Participants were informed that the survey was voluntary, confidential and anonymous and that they could withdraw at any time (see introduction to survey, Appendix 4). The survey was made available online at www.cricweb.com.au/chsurvey from March 23rd through April 8th, 2009.

A total of 68 surveys were received, however, 18 of those were not completed and had to be excluded from analysis, leaving a total of 50 respondents, 19 of which provided additional feedback via the open question.

4 Findings

Outcomes of the quantitative data analysis are summarised below with comparative findings from both rounds displayed. Significant findings are highlighted in blue.

4.1 General Perceptions

4.1.1 Survey Demographics

	REPORT 3		REPORT 4	
	Count	%	Count	%
Gender				
Female	26	79%	40	80%
Male	7	21%	10	20%
Age group				
Under 18	0	0%	0	0
18-24 years	1	3%	4	8%
25-34 years	2	7%	2	4%
35-44 years	5	17%	11	22%
45-54 years	18	60%	25	50%
55-64 years	4	13%	8	16%
65 years or over	0	0%	0	0%
Total	30	100%	50	100%
Occupation/role within the organisation[1]				
Senior management	18	62%	15	28%
GP/specialist	0	.0%	0	0%
Nurse	9	31%	20	37%
Allied staff	2	7%	11	20%
Student	0	0%	0	0%
Other	0	0%	8	15%
Total	29		54	
Health Service Location[1]				
East Wimmera HS	5	15%	13	26%
Stawell Regional Hospital	5	15%	10	20%
Wimmera Health Care Group	5	15%	1	2%
Edenhope Soldiers Memorial Hospital	4	12%	0	0%
BHS	3	9%	12	24%
Djerriwarrh HS Hepburn HS	2	6%	2	4%
Dunmunkle HS	2	6%	1	2%
East Grampians HS	2	6%	1	2%
Rural North West HS	2	6%	2	4%
West Wimmera HS	2	6%	2	4%
Beaufort/Skipton HS	1	3%	0	0%
Hepburn HS	1	3%	1	2%
Other	0	0%	7	14%
Total	33		50	

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[1] Due to multiple responses some tables may add to more than 100%

As may be noted from the above table, the ratio between female (80%) and male (20%) of the 50 respondents has not changed much since the last survey; however of note is the 34% increase in respondents not holding senior management positions.

4.1.2   Clever Health Awareness

As highlighted in the last report, the Clever Health Project Officer has been liaising with stakeholders across the region to raise awareness of the Clever Health project and provide training in the use video-conferencing (VC) equipment.

Survey results indicate that general awareness of the Clever Health project across survey respondents is high and has increased among nurses and allied health professionals, but that in comparison to the last round, overall awareness was higher in Report 3. The latter may be attributed to the high ratio of senior management respondents in the last survey round, many of which have been involved in the Clever Health project from its inception.

Awareness of the Clever Health project				
	Report 3		REPORT 4	
	Count	%	Count	%
Yes*	31	94%	36	72%
No	2	6%	14	28%
Total	33	100%	50	100%

Below graph indicates the level of awareness pertaining to the various components of the Clever Health project. The highest awareness was recorded for Room Based Video-Conference Facilities (Room Based VC), followed by Mobile Video-Conference units (Mobile VC). The last survey showed a higher level of awareness of the BHS Operating Room and eLearning and a lower percentage of people with no awareness of Clever Health components at all. Again, this may be attributed to the high number of senior management respondents in the last survey; when senior managers were excluded, there was no significant difference between participants in report 3 and 4.

Clever Health Components				
	REPORT 3		REPORT 4	
	Count	%	Count	%
Room Based Video Conference Facilities	27	82%	40	80%
High Quality Mobile Video Conference Units	26	79%	33	66%
eLearning Courses*	23	70%	21	42%
Ballarat Health Services (BHS) Operating Room Video Conference*	14	42%	7	14%
None of the above	2	6%	5	10%

* Significant at the 95% level

4.1.3 Technological Readiness

A series of questions were included to gauge Clever Health stakeholders' technological readiness, measured on a scale from 1 to 7 (1=strongly disagree, 7=strongly agree).

Technology Readiness Index (1=strongly disagree, 7=strongly agree)								
	REPORT 3				REPORT 4			
	Mean	Median	Mode	Valid N	Mean	Median	Mode	Valid N
I prefer to use the most advanced technology available	5.13	5	5	32	5.00	5	4	50
Technology makes me more efficient in my occupation	5.64	6	6	33	5.70	6	6	50
Other people come to me for advice on new technologies	4.64	5	6	33	4.74	5	5	50
I keep up with the latest technological developments in my areas of interest	5.27	6	6	33	5.08	5	5	50
I generally have fewer problems than other people in making technology work for me	4.97	5	6	33	4.98	5	5	50
Sometimes, I think that technology systems are not designed for use by ordinary people	3.27	3	2	33	3.96	4	4	50
Technology always seems to fail at the worst possible time*	3.55	3	2	31	8.12	4	4	50
Whenever something gets automated, I need to check carefully that the machine or computer is not making mistakes	3.79	4	2	33	6.30	5	5	50
The human touch is very important when dealing with an organisation	5.42	6	6	33	9.58	7	7	50
If I provide information to a machine or over the Internet, I can never be sure it really gets to the right place*.	2.78	2	2	32	3.60	3	3	50

* Significant at the 95% level

Technological readiness remains consistently high (mean above 5), although confidence in the robustness of technology itself remains low. Two statements (highlighted in blue) are statistically significant, indicating that people in report 4 still lack of trust in technology.

4.2 Project Components

4.2.1 Room Based Video Conference Facilities

There are now a total of 90 room-based units in place, which is a mixture of older units that have been in place as part of the GHRA infrastructure and new units that have been installed during the life of the Clever Health project. During this phase, 12 new room-based VC units have been installed, the most recent of which include unit installations at EWHS Wycheproof campus, EWHS Charlton campus and Grampians Community Health in Ararat.

Below table indicates that the frequency of use of Room Based VC facilities over the previous two has remained the same for 63% of respondents and increased for 32% of respondents.

Use of Room Based VC compared to two months ago				
	REPORT 3		REPORT 4	
	Count	%	Count	%
Significantly increased	0	0%	0	0%
Increased	10	37%	13	32%
Remained the same	13	48%	25	63%
Decreased	2	7%	0	0%
Significantly decreased	0	0%	0	0%
Have not used Room Based VC	1	4%	0	0%
Have never used Room Based VC	1	4%	2	5%
Total	27	100%	40	100%

The most common activity among those aware of the Room Based VC facilities (40 people) was cross-campus meetings, followed by dispersed team meetings. There is a statistically significant change in use from executive meetings to cross-campus and dispersed team meetings, which is not surprising given the decreased representation of senior managers in the current sample.

Room Based VC activities				
	REPORT 3		REPORT 4	
	Count	%	Count	%
Cross-campus/regional meetings	16	59%	22	55%
Executive meetings*	14	52%	10	25%
Dispersed team meetings	11	41%	15	38%
Other (e.g. planning, education, clinical discussion)	8	30%	11	28%
Case conferencing	6	22%	8	20%
Have not used Room Based Video Conference Facilities	2	7%	4	10%
Mentoring	1	4%	3	8%
Total	27		40	

* significant at 95%

The average frequency of use of for such activities was 2-3 times a month and has not significantly changed since the last report.

Frequency of Room Based VC Usage		Every day		Several times a week		Once a week		2-3 times in the past month		Once in the past month		Don't know		Total	
		Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Executive meetings	Report 3	0	0%	2	14%	3	21%	3	21%	5	36%	1	7%	14	100%
	Report 4	0	0%	0	0%	2	20%	4	40%	3	30%	1	10%	10	100%
Dispersed team meetings	Report 3	0	0%	4	36%	0	0%	4	36%	2	18%	1	9%	11	100%
	Report 4	2	13%	1	7%	4	27%	4	27%	3	20%	1	7%	15	100%
Cross-campus meetings	Report 3	0	0%	4	25%	2	13%	5	31%	5	31%	0	0%	16	100%
	Report 4	1	5%	2	9%	2	9%	6	27%	10	45%	1	5%	22	100%
Case conferencing	Report 3	0	0%	0	0%	0	0%	2	33%	3	50%	1	17%	6	100%
	Report 4	1	13%	0	0%	3	38%	1	13%	2	25%	1	13%	8	100%
Mentoring	Report 3	0	0%	0	0%	0	0%	0	0%	0	0%	1	100%	1	100%
	Report 4	0	0%	1	33%	1	33%	0	0%	1	33%	0	0%	3	100%
Other	Report 3	0	0%	0	0%	0	0%	3	38%	5	63%	0	0%	8	100%
	Report 4	0	0%	0	0%	0	0%	3	27%	3	27%	5	45%	11	100%

Respondent expectations for the Room Based VC facilities, measured on a scale from 1 (strongly disagree) to 7 (strong agree), are similar to the last report, continuing to be consistently high.

Room Based VC Expectations (1=strongly disagree, 7=strongly agree)		Mean	Median	Mode	Valid N
Be easy to use	REPORT 3	5.58	6	6	26
	REPORT 4	5.69	6	7	37
Have the technological capabilities I need	REPORT 3	5.50	6	7	24
	REPORT 4	5.75	6	7	38
Provide the help I need to complete tasks effectively	REPORT 3	5.12	5	5	25
	REPORT 4	5.35	5	5	37
Be very reliable	REPORT 3	5.62	6	7	26
	REPORT 4	5.39	6	7	38
Improve my work performance	REPORT 3	5.35	6	6	23
	REPORT 4	5.29	5	5	38

Performance of the Room Based VC facilities, measured in the table below on a scale from 1 (strongly disagree) to 7 (strong agree), generally remained the same. This can be attributed to fact that no major upgrade/changes have occurred in the actual network structure.

Room Based VC Actual Performance (1=strongly disagree, 7=strongly agree)		Mean	Median	Mode	Valid N
Have been easy to use	REPORT 3	5.44	6	6	27
	REPORT 4	5.16	6	6	37
Have provided the technological capabilities I need	REPORT 3	5.04	6	6	23
	REPORT 4	5.08	5	6	37
Have provided the help I need to complete tasks effectively	REPORT 3	5.21	6	6	24
	REPORT 4	4.87	5	5	38
Have been very reliable	REPORT 3	5.38	6	6	26
	REPORT 4	4.70	5	4	37
Have improved my work performance	REPORT 3	5.09	5	6	23
	REPORT 4	4.95	5	4	37

The minimal statistical gap between expectations and actual performance, measured on a scale from 1-7 by factors such as ease of use and technological reliability of the Room Based VC facilities, indicates that VC performance continues to live up to expectations, but overall satisfaction levels with Room Based VC did not increase.

Room Based VC: Performance vs. Expectations (1=strongly disagree, 7=strongly agree)					
		Mean	**Median**	**Mode**	**Valid N**
Has been easy to use	REPORT 3	-0.14	0	0	27
	REPORT 4	-0.53	0	-1	37
Has provided the technological capabilities I need	REPORT 3	-0.46	0	-1	23
	REPORT 4	-0.67	-1	-1	37
Has provided the help I need to complete tasks effectively	REPORT 3	0.09	1	1	24
	REPORT 4	-0.48	0	0	38
Has been very reliable	REPORT 3	-0.24	0	-1	26
	REPORT 4	-0.69	-1	-3	37
Has improved my work performance	REPORT 3	-0.26	-1	0	23
	REPORT 4	-0.34	0	-1	37
Room Based VC Satisfaction (1=strongly disagree, 7=strongly agree)					
I am highly satisfied with the quality of the Room Based Video Conference Facilities	REPORT 3	5.27	6	6	26
	REPORT 4	4.71	5	4	38
I have said positive things about the Room Based Video Conference Facilities to other people I work with	REPORT 3	5.65	6	7	26
	REPORT 4	5.27	6	6	37
The Room Based Video Conference Facilities have been much better than I expected	REPORT 3	4.92	5	4	26
	REPORT 4	4.58	4	4	36

Attitudes around reduction of travel and VC usefulness for cross campus meetings were again positive and consistent with the last report. Respondents were less certain about Room Based VC helping case analysis, but believed it helped the reduction of backfill.

Room Based VC Attitudes (1=strongly disagree, 7=strongly agree)					
		Mean	**Median**	**Mode**	**Valid N**
Reduces time spent travelling	REPORT 3	6.70	7	7	27
	REPORT 4	6.73	7	7	40
Allows for cross campus meetings	REPORT 3	6.26	7	7	27
	REPORT 4	6.35	7	7	40
Helps Professional Development	REPORT 3	5.65	6	6	26
	REPORT 4	5.89	6	7	36
Helps case analysis	REPORT 3	4.89	5	5	18
	REPORT 4	5.11	5	4	27
Reduces backfill	REPORT 3	4.78	5	4	18
	REPORT 4	4.45	4	7	29

Reflected in below table, overall attitude to the Room Based VC facilities was consistently positive to highly positive.

Overall Attitudes to Room Based VC Facilities				
	REPORT 3		**REPORT 4**	
	Count	**%**	**Count**	**%**
Very positive	13	48.1%	17	42.5%
Positive	11	40.7%	13	32.5%
Neutral	3	11.1%	7	17.5%
Negative	0	0%	2	5.0%
Very negative	0	0%	0	0%
Don't know / can't say	0	0%	1	2.5%
Total	27	100%	40	100%

The following table reflects the social norms around Room Based VC. Like last time, participants were generally comfortable using the technology. In this round respondents' perceived stronger peer pressure to use the technology (which may be interpreted as increased pressure among nursing and allied health staff, due to the decrease in senior manager respondents) although the level of control over their decision to use VC was not significantly different.

Social Norms & Perceived Behavioural control (1=strongly disagree, 7=strongly agree)					
		Mean	Median	Mode	Valid N
I am confident that I could use the Room Based VC if I needed to	REPORT 3	5.78	6	7	27
	REPORT 4	5.48	6	7	40
For me to use the Room Based VC is easy	REPORT 3	5.48	6	6	27
	REPORT 4	5.05	6	7	40
Most people in my organisation who are important to me think that I should use the Room Based VC	REPORT 3	5.43	6	6	21
	REPORT 4	5.00	5	6	32
It is expected of me that I use the Room Based VC	REPORT 3	4.80	5	6	25
	REPORT 4	5.00	5	7	38
Doing what others in my profession do is important to me*	REPORT 3	4.22	4	4	27
	REPORT 4	5.08	5	4	40
Whether I use the Room Based VC or not is entirely up to me	REPORT 3	4.15	4	4	27
	REPORT 4	4.35	5	6	40
The decision to use the Room Based VC is beyond my control	REPORT 3	2.81	2	1	26
	REPORT 4	3.36	3	1	39

 * Significant at the 95% level

Despite a high level of satisfaction, the majority of respondents indicated that they had no intention to increase their frequency of use with (66%) indicating that they did not know whether or indicated they would not use Room Based VC at all in the future, followed by 2-3 times in the next month. Not surprising, survey participants in the last report were more likely to use it for executive meetings in the next month.

Behavioural Intentions - Room Based VC Facilities Usage																
		Every day		Several times a week		Once a week		2-3 times in the next month		Once in the next month		Not at all		Don't know		Total	
		Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Executive meetings*	Report 3	0	0%	2	7%	3	11%	6	22%	4	15%	10	37%	2	7%	27	100%
	Report 4	0	0%	0	0%	1	3%	5	13%	8	20%	21	53%	5	13%	40	100%
Dispersed team meetings	Report 3	0	0%	4	15%	0	0%	7	26%	3	11%	10	37%	3	11%	27	100%
	Report 4	2	5%	0	0%	3	8%	5	13%	8	20%	16	40%	6	15%	40	100%
Cross-campus meetings	Report 3	0	0%	5	19%	1	4%	7	26%	6	22%	6	22%	2	7%	27	100%
	Report 4	2	5%	1	3%	3	8%	10	25%	14	35%	8	20%	2	5%	40	100%
Case conferencing	Report 3	0	0%	0	0%	0	0%	0	0%	4	15%	15	56%	8	30%	27	100%
	Report 4	1	3%	0	0%	3	8%	2	5%	4	10%	22	55%	8	20%	40	100%
Mentoring	Report 3	0	0%	0	0%	0	0%	0	0%	1	4%	18	67%	8	30%	27	100%
	Report 4	0	0%	0	0%	2	5%	3	8%	2	5%	24	60%	9	23%	40	100%

* Significant at the 95% level

4.2.2   High Quality Mobile Units and associated PHC Service Delivery

During this phase, the last round of Mobile VC units – referred to in earlier reports as Intern II units but since renamed MediLinks – were delivered and installed in Rainbow, Hopetoun, Birchip and Ballarat Health Services' Emergency department and Intensive Care Unit. A total of 17 Medilink units are now in place across the network. Continued training for the MediLink units has also been taking place during this phase and a number of different people and groups have used the MediLinks for regional meetings, training, case analysis and patient care. Feedback pertaining to these activities is discussed in Section 4 of this report.

Despite the fact that a number of new units have been rolled out, below table shows the use of MediLinks compared to two months ago has not significantly changed. Use remained the same for 24% of respondents, increased significantly for 8% of respondents and the majority (52%) indicated they had never used a MediLink.

Nonetheless, significant to note is that in the last report half the respondents had never used a MediLink, whereas in this report that number has dropped to one-third, indicating there is more awareness which may be due to training

Use of Mobile VC Units compared to two months ago				
	Report 3		Report 4	
	Count	%	Count	%
Significantly increased	2	8%	2	0%
Increased	1	4%	1	22%
Remained the same	6	24%	6	28%
Decreased	0	0%	0	6%
Significantly decreased	0	0%	0	0%
Have not used Mobile VC	3	12%	3	13%
Have never used Mob VC	13	52%	13	31%
Total	25	100%	26	100%

The table below shows that among those that were aware of the Mobile VC units (26 people) the majority still used it for meetings, followed by training. While there is little statistical difference in purpose of use between reports, the number of usages has increased with the MediLinks now being used for purposes other than training and meetings, such as case conferencing, mentoring, and clinical/ bedside consultations.

Usage of Mobile VC Units				
	Report 3		Report 4	
	Count	%	Count	%
Clinical consultation	0	0%	4	8%
Bedside consultation	0	0%	3	6%
Training	5	17%	8	15%
Meetings	6	20%	13	25%
Case conferencing	0	0%	5	9%
Mentoring	0	0%	3	6%
Other	2	7%	2	4%
Have not use Mobile VC	17	57%	15	28%
Total	30	100%	53	100%

Average frequency of use for aforementioned activities, and meetings in particular, was 2-3 times a month. As outlined in the table below, there was no significant difference in the frequency of usage of the MediLinks, with the most common level of usage for Mobile VC being client consultation less than three times a month. Of note is the fact that although frequency is still low, the Mobile VC units are now being used for purposes other than training and meetings, such as case conferencing, mentoring, and clinical/ bedside consultations.

Frequency of Mobile VC Unit Usage													
		Several times a week		Once a week		2-3 times in the past month		Once in the past month		Don't know		Total	
		Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Clinical consultation	Report 3	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
	Report 4	1	25%	1	25%	0	0%	2	50%	0	0%	4	100%
Bedside consultation	Report 3	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
	Report 4	0	0%	0	0%	0	0%	3	100%	0	0%	3	100%
Training	Report 3	1	20%	1	20%	3	60%	0	0%	0	0%	5	100%
	Report 4	0	0%	1	13%	2	25%	5	63%	0	0%	8	100%
Meetings	Report 3	2	29%	0	0%	2	29%	2	29%	1	14%	7	100%
	Report 4	0	0%	6	46%	3	23%	3	23%	1	8%	13	100%
Case conferencing	Report 3	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
	Report 4	0	0%	2	40%	1	20%	0	0%	2	40%	5	100%
Mentoring	Report 3	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
	Report 4	0	0%	1	33%	1	33%	1	33%	0	0%	3	100%
Others	Report 3	0	0%	0	0%	0	0%	0	0%	1	100%	1	100%
	Report 4	0	0%	0	0%	0	0%	0	0%	2	100%	2	100%

Respondents' expectations for the Mobile VC units, measured on a scale from 1 (strongly disagree) to 7 (strong agree), were consistently positive and remained the same as the last report.

Mobile VC Expectations (1=strongly disagree, 7=strongly agree)		Mean	Median	Mode	Valid N
Be easy to use	Report 3	5.61	6	6	18
	Report 4	5.65	6	6	26
Have the technological capabilities I need	Report 3	5.83	6	6	18
	Report 4	5.58	6	6	26
Provide the help I need to complete tasks effectively	Report 3	5.35	6	6	17
	Report 4	5.33	6	6	24
Be very reliable	Report 3	5.71	6	6	17
	Report 4	5.56	6	7	25
Improve my work performance	Report 3	5.13	6	6	16
	Report 4	5.54	6	7	24

Actual performance of the Mobile VC units measured on a scale from 1 (strongly disagree) to 7 (strong agree) generally matched expectations as displayed below. Again, there are potentially some warning signs about the reliability of the network considering the modes (the most common response) in below table and reported usefulness in terms of work performance, indicating a slow change in work practices.

Mobile VC Actual Performance (1=strongly disagree, 7=strongly agree)		Mean	Median	Mode	Valid N
Be easy to use	Report 3	5.63	6	7	8
	Report 4	5.00	5	6	20
Have the technological capabilities I need	Report 3	5.88	6	7	8
	Report 4	5.11	6	6	18
Provide the help I need to complete tasks effectively	Report 3	5.50	6	5	6
	Report 4	4.67	5	4	18
Be very reliable	Report 3	5.88	6	7	8
	Report 4	4.35	4	6	20
Improve my work performance	Report 3	5.00	5	5	6
	Report 4	4.88	5	5	17

As show in below table, the relatively small gap between expectations and actual performance, such as ease of use and technological reliability of the Mobile VC units, measured on a scale from 1 (strongly disagree) to 7 (strong agree), indicates that mobile VC performance is living up to expectations and that respondents were very satisfied with Mobile VC.

Statistically of note are the reliability and perceived stronger peer pressure than last time (which as indicated above, may be interpreted as increased pressure among nursing and allied health staff, due to a decrease in senior manager respondents) to use the Mobile VC technology, although the level of control over their decision to use VC was not significantly different.

Mobile VC Performance vs. Expectations (1=strongly disagree, 7=strongly agree)					
		Mean	**Median**	**Mode**	**Valid N**
Has been easy to use	Report 3	0.01	-0.5	1.0	8
	Report 4	-0.65	-1.0	0.0	20
Has provided the technological capabilities I need	Report 3	0.04	0.0	1.0	8
	Report 4	-0.47	-0.5	0.0	18
Has provided the help I need to complete tasks effectively	Report 3	0.15	-0.5	-1.0	6
	Report 4	-0.67	-1.5	-2.0	18
Has been very reliable	Report 3	0.17	0.0	1.0	8
	Report 4	-1.21	-2.0	-1.0	20
Has improved my work performance	Report 3	-0.13	-0.5	-1.0	6
	Report 4	-0.66	-1.0	-2.0	17
Mobile VC Satisfaction (1=strongly disagree, 7=strongly agree)					
I am highly satisfied with the quality of the Room Based Video Conference Facilities	Report 3	6.13	6.5	7	8
	Report 4	5.20	6	7	20
I have said positive things about the Room Based Video Conference Facilities to other people I work with	Report 3	6.13	6.5	7	8
	Report 4	5.67	6	7	21
The Room Based Video Conference Facilities have been much better than I expected	Report 3	5.11	5	6	9
	Report 4	4.75	6	3	20

Attitudes around the usefulness of Mobile VC for quality clinical support and improved client consultation were generally positive and remained the same as last time. Respondents' general attitudes towards Mobile VC's ability to improve patient care and to save time (highlighted in blue) has improved (mode value is higher).

Mobile VC Attitudes (1=strongly disagree, 7=strongly agree)		Mean	Median	Mode	Valid N
Provides quality clinical support	Report 3	5.68	6	7	19
	Report 4	5.52	6	6	21
Improves client consultation	Report 3	5.33	6	6	18
	Report 4	5.74	6	7	19
Provides easier & faster access to medical/ diagnostic expertise	Report 3	5.32	5	5	19
	Report 4	5.50	6	7	22
Improves patient care in emergency/urgent care	Report 3	5.30	6	4	20
	Report 4	4.69	5	6	16
Reduces risk	Report 3	5.28	5	5	18
	Report 4	5.19	6	7	21
Improves the sharing of patient information	Report 3	5.11	5	4	19
	Report 4	5.88	6	7	24
Saves time	Report 3	5.05	5	4	19
	Report 4	5.78	6	7	27

Reflected in below table, overall attitudes to the mobile VC units ranged from very positive to positive, although 18.2% of respondents were either unsure or did not know.

Overall Attitude to Mobile VC				
	Report 3		Report 4	
	Count	%	Count	%
Very positive	11	42.3%	11	45.5%
Positive	8	30.8%	8	21.2%
Neutral	3	11.5%	3	15.2%
Negative	0	0.0%	0	0.0%
Very negative	0	0.0%	0	3.0%
Don't know	4	15.4%	4	15.2%
Total	26	100%	26	100%

Below table reflects the social norms pertaining to Mobile VC units. Participants were generally confident that they could use the technology and did not feel pressured to use it, although respondents' perceived their control over the decision to use mobile VC as low.

The following table reflects the social norms around the MediLinks. Like last time, participants were generally comfortable using the technology. In this round respondents' perceived stronger peer pressure to use the technology (which may be interpreted as increased pressure among nursing and allied health staff, due to the decrease in senior manager respondents) although the level of control over their decision to use VC was not significantly different.

Social Norms & Perceived Behavioural control (1=strongly disagree, 7=strongly agree)					
		Mean	Median	Mode	Valid N
I am confident that I could use the Mobile VC if I needed to	Report 3	5.11	6	6	18
	Report 4	5.44	6	7	27
Whether I use the Mobile VC or not is entirely up to me	Report 3	4.85	5	7	20
	Report 4	4.56	5	7	27
For me to use the Mobile VC is easy	Report 3	4.83	5	6	18
	Report 4	5.25	6	6	24
Most people in my organisation who are important to me think that I should use the Mobile VC	Report 3	4.62	5	6	13
	Report 4	4.43	5	4	23
Doing what others in my profession do is important to me*	Report 3	3.84	4	2	19
	Report 4	4.92	5	4	26
It is expected of me that I use the Mobile VC	Report 3	3.74	4	1	19
	Report 4	4.31	5	6	26
The decision to use the Mobile VC is beyond my control	Report 3	2.61	2	1	18
	Report 4	3.52	3	1	25

*significant at the 95% level

In terms of behavioural intentions pertaining to the use of Mobile VC, the majority of respondents did not know whether they would be using Mobile VC in the future for any of the activities, followed by not at all and once in the next month for meetings and training. Significant in this table is the higher frequency in intention to use clinical consultation, bedside consultation, case conferencing, and mentoring.

Behavioural Intentions Mobile VC																
		Several times a week		Once a week		2-3 times in the next month		Once in the next month		Not at all		Don't know		Total	
		Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Clinical consultation*	Report 3	0	0%	0	0%	1	4%	0	0%	10	38%	15	58%	26	100%
	Report 4	0	0%	2	6%	2	6%	2	6%	20	61%	7	21%	33	100%
Bedside consultation*	Report 3	0	0%	0	0%	1	4%	0	0%	10	38%	15	58%	26	100%
	Report 4	0	0%	0	0%	2	6%	2	6%	23	70%	6	18%	33	100%
Training	Report 3	0	0%	1	4%	5	19%	2	8%	8	31%	10	38%	26	100%
	Report 4	0	0%	2	6%	3	9%	3	9%	16	48%	9	27%	33	100%
Meetings	Report 3	1	4%	1	4%	4	15%	3	12%	8	31%	9	35%	26	100%
	Report 4	1	3%	7	21%	3	9%	3	9%	12	36%	7	21%	33	100%
Case conferencing*	Report 3	0	0%	0	0%	1	4%	0	0%	11	42%	14	54%	26	100%
	Report 4	1	3%	2	6%	1	3%	2	6%	20	61%	7	21%	33	100%
Mentoring*	Report 3	0	0%	0	0%	0	0%	0	0%	11	42%	15	58%	26	100%
	Report 4	0	0%	1	3%	2	6%	1	3%	21	64%	8	24%	33	100%

*significant at the 95% level

4.2.3 eLearning

Overseen by the Grampians eLearning Working Party (GReWP), the work to develop scripts for the online delivery of the identified modules involving staff across the region is continuing. Six courses are now available online and include Introduction to Infection Control (completed by 2 users, average score 98%); Basic Life Support (completed by 139 users, average score 100%); IV Cannulation (completed by 58 users, average score 87%); Manual Handling 2008 (completed by 88 users, average score 90%); Preventing Elder Abuse (completed by 77 users, average score 98%); and Office Ergonomics 2008 (completed by 60 users, average score 85%).

Four prototype courses have been developed and are currently under review, including Hand Hygiene, Fire and Evacuation, Medication Management and Cardiac Assessment. Several more are currently in script form, including Preventing Occupational Violence and Aggression in Health Services, Triage and Assessment and Interpreting ECGs, with several more in the planning phase, including an Aged Care Funding Instrument.

During this round, the University of Ballarat completed the delivery of both IT and Cert IV Front Line Management units and is again offering Cert IV Front Line Management from June 2009 onwards (not included in current survey results).

Two 'Learning to eLearn' workshops were organised for education officers in conjunction with DHS. Run by Michael Gwyther from YUM productions, these workshops provided an overview of learning tools available. Both workshops were well attended and received positive feedback.

Despite the aforementioned increase in rollout of and participation in eLearning units during this evaluation round, below table reflects that participation in eLearning has remained the same over the past two months. These results imply that the majority of eLearning participants may not have been included in this sample.

Participation in eLearning compared to two months ago				
	Report 3		Report 4	
	Count	%	Count	%
Significantly increased	1	4%	0	0%
Increased	0	0%	1	5%
Remained the same	7	30%	4	19%
Decreased	0	0%	2	10%
Significantly decreased	0	0%	0	0%
Have not participated in eLearning courses	2	9%	2	10%
Have never participated in eLearning courses	11	48%	10	48%
Don't know	2	9%	2	10%
Total	23	100%	21	100%

Below table shows that the majority of respondents (73%) who were aware of eLearning (21) had not used an eLearning course; five respondents had participated in clinical competencies. Of significance is the reduced proportion of respondents who have not participated in eLearning course, indicating that they are more likely to participate in an eLearning course in the future.

Use of eLearning courses				
	Report 3		**Report 4**	
	Count	**%**	**Count**	**%**
Have not participated in an eLearning course*	19	83%	16	73%
Clinical competencies	3	13%	5	23%
Other	1	4%	0	0%
IT units	0	0%	0	0%
Frontline Management units	0	0%	1	5%
Total	23	100%	22	100%

*significant at the 95% level

Most respondents indicated that participation in eLearning was three times a month or less, which is not significantly different from the last evaluation round.

eLearning - Frequency of Participation													
		Several times a week		**Once a week**		**2-3 times in the past month**		**Once in the past month**		**Don't know**		**Total**	
		Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Clinical Competencies	Report 3	0	0%	0	0%	1	34%	2	66%	0	0%	3	100%
	Report 4	0	0%	0	0%	2	40%	3	60%	0	0%	5	100%
Frontline Management Units	Report 3	0	0%	0	0%	0	0%	0	0%	0	0%	0	100%
	Report 4	0	0%	0	0%	0	0%	1	100%	0	0%	1	100%
Others	Report 3	1	100%	0	0%	0	0%	0	0%	0	0%	1	100%
	Report 4	0	0%	0	0%	0	0%	0	0%	0	0%	0	100%

Respondents' expectations for eLearning, measured on a scale from 1 (strongly disagree) to 7 (strong agree), were higher than the last round, indicating a significant increase in expectations around ease of use, reliability, improvement of work performance.

eLearning Expectations (1=strongly disagree, 7=strongly agree)					
		Mean	**Median**	**Mode**	**Valid N**
Be easy to use*	Report 3	5.61	6	6	18
	Report 4	6.58	7	7	12
Provide the technological capabilities I need	Report 3	5.33	6	6	18
	Report 4	6.09	6	6	11
Provide the help I need to complete tasks effectively	Report 3	5.06	6	6	18
	Report 4	6.09	6	6	11
Be very reliable*	Report 3	5.28	6	6	18
	Report 4	6.50	7	6	12
Improve my work performance*	Report 3	5.22	5	5	18
	Report 4	6.17	6	6	12

*significant at the 95% level

The performance of eLearning, measured on a scale from 1 (strongly disagree) to 7 (strong agree), its reliability and improvement of work performance had significantly increased from the previous survey.

eLearning Actual Performance (1=strongly disagree, 7=strongly agree)					
		Mean	**Median**	**Mode**	**Valid N**
Be easy to use	Report 3	5.67	7	7	6
	Report 4	6.67	7	7	6
Have the technological capabilities I need	Report 3	4.86	5	3	7
	Report 4	5.80	6	6	5
Provide the help I need to complete tasks effectively	Report 3	4.86	5	6	7
	Report 4	6.17	6	6	6
Be very reliable*	Report 3	4.43	5	3	7
	Report 4	6.33	6	6	6
Improve my work performance*	Report 3	4.50	5	5	6
	Report 4	6.33	6	6	6

*significant at the 95% level

The reduced gap between expectations and actual performance, measured on a scale from 1 (strongly disagree) to 7 (strong agree), shows that eLearning generally meets expectations and that satisfaction levels are higher than before.

eLearning Performance vs. Expectations (1=strongly disagree, 7=strongly agree)					
		Mean	**Median**	**Mode**	**Valid N**
Has been easy to use	Report 3	0.06	0.50	1.00	6
	Report 4	0.08	0.00	0.00	7
Has provided the technological capabilities I need	Report 3	-0.48	-1.00	-3.00	7
	Report 4	-0.29	0.00	0.00	7
Has provided the help I need to complete tasks effectively	Report 3	-0.20	-0.50	0.00	7
	Report 4	0.08	0.00	0.00	6
Has been very reliable	Report 3	-0.85	-1.00	-3.00	7
	Report 4	-0.17	-0.50	0.00	6
Has improved my work performance	Report 3	-0.72	0.00	0.00	6
	Report 4	0.17	0.00	0.00	7
eLearning Satisfaction (1=strongly disagree, 7=strongly agree)					
I am highly satisfied with the quality of eLearning	Report 3	5.17	6	3	6
	Report 4	6.33	6	6	6
I have said positive things about eLearning to other people I work with	Report 3	5.57	6	6	7
	Report 4	6.14	6	6	7
eLearning has been much better than I expected	Report 3	4.83	5	3	6
	Report 4	6.17	7	7	6

As seen in below table, attitudes around the usefulness of eLearning for professional development, access to training, saving time and reducing travel were very positive and respondents' attitudes are favourable towards eLearning. However, the perception of its ability to assist with staff retention is relatively low.

eLearning Attitudes (1=strongly disagree, 7=strongly agree)		Mean	Median	Mode	Valid N
Saves time	Report 3	6.33	7	7	21
	Report 4	6.31	7	7	16
Improves access to training	Report 3	6.29	6	7	21
	Report 4	6.63	7	7	16
Reduces time spent travelling	Report 3	6.19	6	7	21
	Report 4	6.69	7	7	16
Helps continuing professional development	Report 3	6.00	6	6	21
	Report 4	6.44	7	7	16
Increases the skills of health professionals in the region	Report 3	5.86	6	6	21
	Report 4	6.31	6	6	16
Assists with the retention of staff	Report 3	5.39	6	5	18
	Report 4	5.27	5	4	15
Assists with the attraction of skilled professionals	Report 3	5.31	6	6	16
	Report 4	5.53	6	7	15

Reflected in below table, overall attitudes to the eLearning remain positive to very positive (reversed from last survey); 33% of respondents were either neutral or did not know.

Overall Attitude to eLearning				
	Report 3		Report 4	
	Count	%	Count	%
Very positive	10	43%	5	24%
Positive	9	39%	9	43%
Neutral	2	9%	3	14%
Negative	0	0%	0	0%
Very negative	0	0%	0	0%
Don't know	2	9%	4	19%
Total	23	100%	21	100%

Below table reflects the social norms pertaining to eLearning. In this round respondents' perceived stronger peer pressure to use eLearning may again be interpreted as increased pressure among nursing and allied health staff to use eLearning although control over their decision to use VC was not significantly different.

Social Norms & Perceived Behavioural control (1=strongly disagree, 7=strongly agree)					
		Mean	Median	Mode	Valid N
I am confident that I could use eLearning if I needed to	Report 3	5.90	6	7	21
	Report 4	5.94	7	7	17
For me to use the eLearning is easy	Report 3	5.53	6	7	15
	Report 4	6.07	7	7	14
Whether I use eLearning or not is entirely up to me	Report 3	5.00	6	6	21
	Report 4	4.72	6	6	18
Doing what others in my profession do is important to me*	Report 3	3.95	4	2	20
	Report 4	5.18	5	4	17
Most people in my organisation who are important to me think that I should use eLearning	Report 3	3.88	5	1	16
	Report 4	4.79	6	7	14
It is expected of me that I use eLearning	Report 3	3.58	4	1	19
	Report 4	4.38	5	7	16
The decision to use eLearning is beyond my control	Report 3	2.90	2	1	20
	Report 4	3.00	2	1	16

* Sig. at the 95% level

As reflected below, the highest percentage of respondents expected to not participate in clinical, IT or frontline management units at all, followed by once a month and 2-3 times in the next month for clinical competencies. Compared to the last report, this round indicates an increase in the uptake of clinical competencies on a monthly basis.

Behavioural Intentions – eLearning Participation											
		2-3 times in the next month		Once in the next month		Not at all		Don't know		Total	
		Count	%	Count	%	Count	%	Count	%	Count	%
Clinical competencies	Report 3	1	4%	4	17%	13	57%	5	22%	23	100%
	Report 4	2	10%	5	24%	10	48%	4	19%	21	100%
IT units	Report 3	0	0%	1	4%	17	74%	5	22%	23	100%
	Report 4	0	0%	1	5%	13	62%	7	33%	21	100%
Frontline Management units	Report 3	0	0%	1	4%	17	74%	5	22%	23	100%
	Report 4	0	0%	2	10%	13	62%	6	29%	21	100%

4.2.4 Video-conferencing Facilities in BHS Operating Room

The installation of the videoconference equipment into the Theatre 1 at Ballarat Health Services (BHS VC) was completed during the last phase. BHS. To date the BHS VC system is being utilised for in-theatre display of relevant data – such as xrays, blood pressure, and heart monitoring. The Clever Health Project Office has also been working with representatives of the Victorian College of Surgeons to discuss recording of live surgery to underpin the development of training resources for International Medical Graduates (IMGs).

As the below table reflects, the majority of respondents who were aware of the BHS VC facilities (7) have never used the facilities.

Use of BHS VC compared to two months ago				
	Report 3		Report 4	
	Count	%	Count	%
Significantly increased	0	0.0%	0	0.0%
Increased	0	0.0%	0	0.0%
Remained the same	1	7.1%	0	0.0%
Decreased	0	0.0%	0	0.0%
Significantly decreased	0	0.0%	0	0.0%
Have not used BHS VC	0	0.0%	1	14.3%
Have NEVER used BHS VC	12	85.7%	5	71.4%
Don't know	1	7.1%	1	14.3%
Total	14	100.0%	7	100.0%

Given that among those that were aware of BHS VC (7) the majority (93%) had not used BHS VC, it is not surprising that below table shows that none had any BHS VC training or used it for any other activity.

Usage of BHS VC				
	Report 3		**Report 4**	
	Count	**%**	**Count**	**%**
Have not used BHS VC	14	100%	7	100%
On-site training	0	0%	0	0%
Recording surgery session(s)	0	0%	0	0%
Downloading surgery session(s)	0	0%	0	0%
On Site/Remote student training and/or lecturing	0	0%	0	0%

As reflected in the table below, since data pertaining to respondents' expectations for the BHS VC facilities, measured on a scale from 1 (strongly disagree) to 7 (strong agree) was not rated by any respondents, data pertaining to expectation levels was not available this evaluation. This may be attributed to the change in sample which included (12 BHS) staff that were likely not part of BHS VC processes.

BHS VC Expectations (1=strongly disagree, 7=strongly agree)		**Mean**	**Median**	**Mode**	**Valid N**
Be easy to use	Report 3	4.67	5	3	3
	Report 4	NA	NA	NA	0
Have the technological capabilities I need	Report 3	2.50	2	1	4
	Report 4	NA	NA	NA	0
Provide the help I need to complete tasks effectively	Report 3	2.00	1	1	5
	Report 4	NA	NA	NA	0
Be very reliable	Report 3	4.67	5	3	3
	Report 4	NA	NA	NA	0
Improve my work performance	Report 3	1.83	1	1	6
	Report 4	NA	NA	NA	0

Similarly, since actual performance ratings of the BHS VC facilities was only rated by one respondent, a comparison between performance, expectations and satisfaction levels with the BHS VC was not relevant and was hence omitted from this evaluation. Actual performance (as rated by one respondent) of the BHS VC facilities, measured on a scale from 1 (strongly disagree) to 7 (strong agree) reflects mixed expectations.

BHS VC Actual Performance (1=strongly disagree, 7=strongly agree)		Mean	Median	Mode	Valid N
Be easy to use	Report 3	4	4	4	1
	Report 4	NA	NA	NA	0
Have the technological capabilities I need	Report 3	4	4	4	1
	Report 4	NA	NA	NA	0
Provide the help I need to complete tasks effectively	Report 3	4	4	4	1
	Report 4	NA	NA	NA	0
Be very reliable	Report 3	4	4	4	1
	Report 4	NA	NA	NA	0
Improve my work performance	Report 3	4	4	4	1
	Report 4	NA	NA	NA	0

Since the sample was too small, it was not possible to provide a reliable analysis of attitudes around the usefulness of the BHS VC facilities for watching of operations in real time, VC streaming, recording, as an effective educational tool and to save time.

BHS VC Attitudes (1=strongly disagree, 7=strongly agree)		Mean	Median	Mode	Valid N
Provides an effective education tool	Report 3	5.14	6	6	7
	Report 4	5.50	6	4	2
Provides the ability to watch operations in real time or through video streaming methods	Report 3	5.00	6	6	7
	Report 4	4.00	4	4	1
Provides the ability to record and playback procedures on demand	Report 3	5.00	6	6	7
	Report 4	4.00	4	4	1
Saves time	Report 3	4.50	5	5	6
	Report 4	NA	NA	NA	0

Reflected in below table, overall attitudes to the BHS VC facilities could not be recorded given the small sample, the majority of which indicated that they did not know. One person indicated that his/her attitude was positive; one person indicated a neutral attitude.

Overall Attitude to BHS VC				
	Report 3		Report 4	
	Count	%	Count	%
Very positive	2	14%	0	0%
Positive	4	29%	1	14%
Neutral	1	7%	1	14%
Negative	0	0%	0	0%
Very negative	0	0%	0	0%
Don't know	7	50%	5	71%
Total	14	100%	7	100%

Below table reflects the social norms pertaining to the BHS VC facilities. Participants were not confident that they could use the BHS VC technology; nor did they feel pressured to use it.

Social Norms & Perceived Behavioural control (1=strongly disagree, 7=strongly agree)		Mean	Median	Mode	Valid N
The decision to use the BHS VC is beyond my control	Report 3	4.00	4	1	5
	Report 4	4.50	5	2	2
Doing what others in my profession do is important to me	Report 3	3.71	4	2	7
	Report 4	3.00	3	2	2
Whether I use the BHS VC or not is entirely up to me	Report 3	3.50	3	1	6
	Report 4	6.00	6	5	2
I am confident that I could use the BHS VC if I needed to	Report 3	3.33	3	1	6
	Report 4	1.50	2	1	2
For me to use the BHS VC is easy	Report 3	3.00	4	4	3
	Report 4	1.00	1	1	2
Most people in my organisation who are important to me think that I should use the BHS VC	Report 3	1.75	1	1	4
	Report 4	1.00	1	1	2
It is expected of me that I use the BHS VC	Report 3	1.75	1	1	4
	Report 4	1.00	1	1	2

Similarly to the last report, the highest percentage of respondents did not know or expect to be using the BHS VC in the future for activities such as recording/downloading surgery sessions or on/off site training.

Behavioural Intentions – BHS VC Facilities										
		Once in the next month		Not at all		Don't know		Total	
		Count	%	Count	%	Count	%	Count	%
On-site training	Report 3	1	7%	10	71%	3	21%	14	100%
	Report 4	0	0%	5	71%	2	29%	7	100%
Recording surgery session(s)	Report 3	0	0%	11	79%	3	21%	14	100%
	Report 4	0	0%	5	71%	2	29%	7	100%
Downloading surgery session(s)	Report 3	0	0%	11	79%	3	21%	14	100%
	Report 4	0	0%	5	71%	2	29%	7	100%
On Site/Remote student training and/or lecturing	Report 3	1	7%	10	71%	3	21%	14	100%
	Report 4	0	0%	5	71%	2	29%	7	100%

4.2.5 Next G

The NextG component was not included in the survey as such since use of the technology cannot be measured on its own.

The NextG redundancy aspect was completed during the last phase and has proven to be an effective backup for health services during recent outages. The usage of NextG technology for the provision of video and data calls to hand-held devices for the transmission of images or files for remote review by medical practitioners has not progressed during this phase. This is of significant interest to hospitals, especially with the potential to impact on the after hours call rosters for medical practitioners. This component is expected to become relevant once the Next G network starts to be used beyond the redundancy aspect.

4.2.6 GRHA–University of Ballarat Link

In the survey, the effectiveness of this component is predominantly being measured through the uptake and use of eLearning (see section 3.2.3), and in particular those modules rolled out via the GRHANet-University of Ballarat link.

Although the GRHA-UB link has been operational since mid year, the coordination and rollout of training via the GRHA-UB link has continued to take time to come to fruition. As described in the last report, three introductory Information Technology units and two core units from the Certificate IV in Frontline Management were rolled out in late 2008. Three units from the Certificate IV in Frontline Management are again made available to Grampians region health services, but has not resulted in any uptake to date.

4.2.7 Peer Support

As part of the network building work being undertaken by GRHA, peer support activities have been reported on in earlier reports. As peer support is difficult to measure in and of itself in a quantitative way, peer support was measured in the survey through the uptake of Room Based and Mobile VC facilities for such peer related activities as team meetings, cross-campus and special interest group meetings. Questions on overall progress on peer support progress were included in key stakeholder interviews and any salient themes in this area are reported on below.

5 Implications

The aim of the fourth phase of evaluation was to capture current awareness, expectations and projected use of Clever Health components; and to compare those to initial perceptions and expectations for themes and perceived changes in awareness and progress of the Clever Health project.

Interview and survey questions were designed to add to baseline data generated in earlier reports. The framework underpinning the current design of the survey and interview questions was based on the anticipated uptake of Clever Health components and planned behaviour around such uptake.

Section 3 provided survey results and data on awareness, expectations and projected use of Clever Health components. It also provided demographic and technological readiness data. This section provides salient themes from the survey findings in combination with qualitative data captured in the open ended question and during key stakeholder interviews, and highlights any implications from these findings.

5.1 Salient Themes

Survey results indicate that general awareness of the Clever Health project across survey respondents has increased among nursing and allied health professionals, indicating a broader awareness across primary and allied health practitioners and down organisational structures.

As part of the awareness raising and training campaign, Clever Health Project Officer has continued demonstrating the capabilities of the mobile VC units to health staff across the region. The campaign has been a pivotal influence on the perceptions of the potential of Clever Health components. "*People need people to hand-hold them through the initial setup. Country people need a physical face before they trust a system. [Training] didn't answer all my questions. Gayle is accessible but I think people may not know that she is accessible.*"

Of note is the continued high level of technological readiness among respondents, despite 66% of respondents' being in the 45-64 age bracket. Despite this readiness, there is, however, still a notable lack of trust in the technology itself, which influences willingness vis-à-vis the adoption of the technology. Consistent quality has at times been an issue since Clever Health changed offices. As one stakeholder reported: *"sound and picture quality of videoconferencing hardware is poor; venues are limited also".* As in the last report, room bookings and access to venues continues to be an issue. Illustrates one participant: "*Room bookings muck it up...I have VC booked and then the room is cancelled on me, because it is in physio room, I cannot get access to the room. The solution is to add portables MediLinks where fixed units are causing room booking issues.*"

While the quality comment is relevant to Clever Health, access to venues and IT support, as reflected in the following comment, fall outside the scope and control of the Clever Health project. "*I find the video equipment is reliable, but that our own IT staffs are not. Repair is not timely and IT can be out of action for a while, eg wireless network has been down since [February, 09]. This sort of thing gives a negative impression about Clever Health and it is not the fault of Clever Health…it can feel like all health services in the rural setting are the poor cousins of the metro because of lack of backup in the IT area".*

There also continue to be protocol issues, which may perpetuate a fear mentality that the adoption of VC technology means an increase in workload, despite the fact that to date patient care numbers have been low.

5.1.1 Room Based VC

During this phase, 12 new room-based VC units were added to the network and while frequency of use of Room Based VC facilities over the previous two months is statistically insignificant, a third of respondents have actually increased their usage of Room Based VC, signifying a continuous, steady increase of use. There is a statistically significant change in use from executive meetings to cross-campus and dispersed team meetings, which as such is not surprising given the decreased representation of senior managers in the current sample.

Social norms in terms of usage of Room Based video-conferencing facilities remain relatively high, which implies that a culture of usage continues to develop, but confidence in the usage of VC equipment has not increased significantly, indicating that while training assists to familiarise health professionals with the equipment, it does not ensure that they are comfortable using it. *"It would be great to have an easy step by step instruction sheet; we had to do our own up and we were learning at the same time"*, reports one participant [who did not specify whether this was for Room Based or Mobile VC use].

Also of note is the statistic that, despite a high level of expectation and satisfaction the Clever Health components, the majority of respondents indicated that they were not planning an increase in use of Room Based VC facilities in the near future. Where use was envisioned, there is a clear desire by health services to spend less time travelling and take advantage of the available infrastructure for activities such as dispersed team and cross-campus meetings. As one participant illustrates: "*I think it's great. Time is one of our most precious commodities; we can now save this due to this technology!"*

5.1.2   Mobile VC

If participants had high expectations of Room Based VC, they were rapturous about the potential of the Mobile VC units. "*Love the mobile videoconferencing concept as a clinical resource*", notes one participant. "*Very excited about the possibilities of the MediLink for wound management consultations to regional health services*", notes another. Comments a third stakeholder: "*The unit is fantastic and the education that you* [Clever Health Project Officer] *provide staff was great, the education has increased the level of confidence in the use of the machine*".

During this phase, Mobile VC units have been used regularly for cross-campus meetings and weekly VC-based debrief sessions for allied health students across Grampians as an add-on to face-to-face training. A series of clinical trials have also taken place using MediLink units.

A trial took place between the dialysis support nurses based at Melbourne Health and the dialysis unit at EWHS Donald Hospital allowing the nurse to see the detail of a bruise and advice on treatment, read the displays on the dialysis machine and provide interactive teaching at the same time.

In another instance, Mobile VC was used as a clinical teaching exercise involving a patient being introduced to using an insulin pump by linking diabetes educators in Rainbow to Stawell Regional Health.

The Clever Health Project Officer has also been working with two wound management consultants employed within the Grampians region to explore whether the MediLink units can be used to provide a direct link to them and their offices. A trial took place in April between the staff at Hepburn HS and the offices of DHS in Ballarat. The trial reportedly was a success with the wound management consultant able to clearly see the wound, its surrounds and offer advice and training to participating staff. The two patients involved reportedly found the process interesting and participated in the discussions about their treatments. Once patient was able to view the wound for the first time.

While these trials are highly encouraging and an enormous step forward from the last evaluation round, in which no clinical usage of the Mobile VC units was reported, there are still some technical and protocol concerns on both the practitioner side and client side. *"There is no infrastructure/process in place to enable the initiation of emergency clinical consultation. When trialled for use with regional wound consultant, the vision* [picture] *at her end was reportedly 'not good'. This was to be followed up and we have had no feedback. If this equipment is not used, all the training undertaken is wasted time. It would appear that the hardware arrived with no processes in place", reported one practitioner.*

A protocol has since been established for the MediLink units to be used to contact the wound care consultants and the process was demonstrated to the GRENN meeting in Ararat on April 24th with a link up between Beaufort and Ararat, which also proved to be a useful teaching exercise for the staff at Beaufort.

Additional protocol issues were also raised. "*We need protocol on scope usage. Who is allowed to use scope, how and why. If they are there, they are not effectively circulated. I know who can use auto-scope, but still like more safety measures around it. Infection control is still an issue – sitting there in a basket*".

Feedback pertaining to the client side indicates that "*clients takes a long while to get used to the idea and the thing that is difficult is where a lot of them are based. Room access can be unreliable and I cannot chase the client if they are not there.*" On the positive side, it was reported that one GP started using the MediLink as a tool for patient education, in particular using the scope to educate a patient regarding their throat infection, allowing the patient to clearly see why his throat was causing him pain. The GP in question also used the skin probe to show an elderly patient the progress that an ulcer had made that was located on the back of her leg that she was unable to see.

Considering both quantitative and qualitative data, it is clear that attitudes and satisfaction levels with Mobile VC are overwhelmingly positive with increased expectations around Mobile VC units' ability to improve patient care and save time. Of note is the fact that although frequency is still low, the Mobile VC units are now being used for purposes other than training and meetings, such as case conferencing, mentoring, and clinical/ bedside consultations and the higher frequency in intention to use mobile VC for these activities in the near future.

5.1.3 eLearning

In the past evaluation rounds it was reported that health professionals in the region had limited exposure to eLearning. Although this survey showed a lower percentage of eLearning awareness – which may be attributed to the fact that the majority of health professionals engaged in eLearning were not included in the survey sample – the proportion of respondents who have not participated in eLearning course has significantly reduced and the reliability and improvement of work performance due to eLearning had significantly increased from the previous survey.

As the enrolment figures for clinical competencies indicate, there has been good engagement (possibly due to increased peer pressure) in the region in terms of eLearning and attitudes around the usefulness of eLearning for professional development, access to training, saving time and reducing travel are increasingly positive and favourable towards eLearning, although the perception of its ability to assist with staff retention remains relatively low.

Clever Health is clearly helping to pave the way for future delivery of eLearning, but since any of the eLearning units have yet to be evaluated, it is not possible to determine overall technology barriers or enablers for eLearning learning in terms of benefits for health professionals or return on investment in eLearning.

5.1.4   UB-GRHA Link

The establishment of the UB-GHRA was completed during this phase and the link to AARNET is also in place. Although the GHRA-UB link has been operational since mid year, some technical difficulties have been experienced with the move of GRHA to new premises at the University Mt Helen campus. This has resulted in occasional drop out of VC services at the GHRA offices and reduced quality of VC delivery to selected parts of the network. GHRA is working closely with the University to resolve these technical issues.

The coordination and rollout of training via the GRHA-UB link has continued to be a slow process. As described above, three units from the Certificate IV in Frontline Management are again being offered to Grampians region health services, but no interest in this offering was reported during this phase, indicating that 'soft' skills training has lower priority than mandatory competency training.

Despite the uptake of eLearning-based competencies and the enthusiasm of health education officers for eLearning, there are few signs of a growing eLearning culture within health services that encourages and enables staff to participate in eLearning as they would in any other professional development activity.

5.1.5 BHS Operating Room VC

Within the current sample there was low awareness of the BHS Operating Room VC. Given that there were more nurses, allied and other staff in this sample, it is not surprising that they may not have been familiar with BHS installation.

The BHS Operating Room VC is yet to be used to broadcast live operations, of interest is the fact that the BHS VC system is being utilised for in-theatre display of relevant data – such as x-rays, blood pressure, and heart monitoring – and the development of training resources.

Live broadcasts will become relevant when the first Deakin Medical School students start to enter the region in 2010, for which protocols still need to be put in place around the type of patients, type of consultations, how consultations are set up, how information gets reviewed and what information gets transferred. Security management issues around the latter in terms of people being able to access the GRHA network will also need to be resolved.

5.1.6 Peer Support

Both the survey and stakeholder interviews reflect a considerable increase in interest in using VC among practitioners and health professionals for case conferencing, team meetings and peer support in terms of access to specialist support services in Ballarat and Melbourne. For example, links between BHS and the region have been strengthened by the two units that are now in place in the ED and ICU at BHS. Since the two units have been installed, interest is reportedly growing from both technology and non-technology staff at BHS to use the VC system to interact with peers across the region as well as in Metropolitan colleagues. After a recent palliative care network meeting, the regional coordinator reported that the Clever Health setup is *'the envy of the state-wide network'*.

In another example, St Arnaud linked into Melbourne Royal Children's Hospital for wound care protocol discussions, which received positive feedback from both practitioners and patients involved and reflects increased willingness to use VC, and the MediLinks in particular.

Use of VC facilities by other disciplines continues with meetings by such groups as the Western Victoria Division of GPs, anaesthetic group, cross-campus staff and professional/special interest groups such as Neuro-Psychology, Speech Therapy and Palliative Care. *"Without access to video conferencing, it would make it very difficult to be a remotely located provisional psychologist if not impossible".* Additional uses are continually being investigated especially in areas where there is a regional shortage of specialists, such as introducing VC-based gerontology services or conducting remote oncology and dermatology clinics.

Of special note is the growing relationship with the Loddon Mallee region and the link GHRA is establishing into the Adult Retrieval Service, which will interconnect respective VC equipment systems and assist in accessing emergency experts, the efficient relay of advanced information and transfer of patient data.

Last but not least, the VC use for cross-campus or team administrative meetings and mentoring purposes is saving an enormous amount of travel up and down the highway and is receiving positive feedback from stakeholders. *"Videoconferencing makes my mentoring very valuable and very easily accessible. Any technical problems I have had have been easily and efficiently dealt with over the phone. Mostly VC is extremely easy and reliable. Thank you!"*

6 Summary

There continues to be generally high level of interest and expectation around program components enhancing patient care; accessing expertise; professional development and peer support; saving time; reducing staff travel and associated risks.

There are potentially some warning signs about the reliability of the network considering that for both Room Based and Mobile VC the modes (the most common response) on the reliability and work performance are lower than the other performance measures. While the infrastructure appears to be creating value in the area of patient care, professional development and peer support, operational issues such as the quality of the wireless networks and access to VC equipment in multi-function rooms and the complexity of separate equipment and room bookings remain a concern. The latter falls outside the terms of reference for the project, however, to help alleviate this ongoing issue, Clever Health is in a good position to promote via its newsletter and website examples of good practice, such as the protocol adopted by the Stawell Regional Hospital which automatically links the room booking system with the VC conference system. Health Services may also wish to consider whether their VC units are located in an appropriate place in terms of staff and patient access and whether appropriate user protocols are in place.

There are solid indications that increased adoption of VC is starting to pay off in terms of improved ability for case analysis, facilitating rapid diagnosis, early intervention, efficient and accurate information transfer, and timely patient care. Access to the Clever Health infrastructure is providing better health information for the broader community and facilitating patients to stay in their communities near their family, translating into better service integration for patients.

Developing online courses and building eLearning capacity among health educators, which was started during this evaluation round, is enhancing targeted development, rollout and uptake of relevant training and increases the use, value and potential of the infrastructure. Stakeholders external to the Clever Health network are starting to show interest in eLearning offerings being developed for and by the region. The staggered release of eLearning courses is proving to be a benefit rather than a drawback, as the adoption of eLearning is an incremental process and allows time for health professionals to get used to and experience the benefits of eLearning.

While use of the network and VC in particular continues to increase at a satisfactory pace, it is clear that health services and professionals struggle with change management issues, which, in turn, impacts on changing work practices. Clever Health continues to be a significant change management exercise and the notion that Clever Health can contribute to working smarter and more sustainably has yet to be instilled in the culture. Hand-holding remains an important component of the Clever Health Officer's work, as being comfortable with the technology enhances uptake. It is, however, imperative that the human factor of Clever Health is addressed so that it may be integrated in work practices. Lack of processes and protocols tend to perpetuate a fear mentality that the adoption of VC technology means an increase in workload. Workload issues are real and merit consideration above and beyond putting protocols in place. Workforce and services planning is a long term, strategic process, involving everyone from GPs to nurses, administrative staff and of course patients.

This round has shown that the patient side of VC-based consultation also merits further consideration. An unanticipated Clever Health benefit has come to the fore vis-à-vis the use of MediLink probes for patient education. This use of the MediLink for patient education appears to be working well and should be considered for wider use to assist patient exposure and adoption of VC-based consultation.

Use of VC technology should, however, not be seen as a 'one size fits all', but rather be underpinned with a 'horses for courses' framework of appropriate or optimal 'tiered' technology use for services delivered, e.g. Internet-based or fixed VC works well for talking heads and peer support; wireless mobile VC would best be used for live patient consults and specialist services, etc. Such a framework would lead to more effective change management, workforce and services planning.

Exciting new partnerships continue to be forged, such as the one with the Loddon-Mallee region. This connection reflects the ongoing development of and increased collaboration across alliances and networks as more parties show interest in being linked into the expanding e-health network.

All signs are that Clever Health is continuing to improve and innovate in terms of connectivity and practices towards timely patient care and strong professional development and support networks for primary and allied heath professionals across the region. Despite growing resource challenges, it is proactively generating new opportunities and innovative practices for the use of the network across the region. It is strategically aligning itself with other e-health initiatives across Victoria and beyond, contributing towards integrated service provision and a wider value-based e-health system that enhances clinical and patient-based outcomes.

7 Glossary

ADSL	Asymmetric Digital Subscriber Line
BDSL	Business Digital Subscriber Line
BHS	Ballarat Health Services
CRIC	Centre for Regional Innovation & Competitiveness
CPD	Continuing Professional Development
DCITA	Department of Communications, Information Technology and the Arts
DON	Director of Nursing
GREWP	Grampians Region eLearning Working Party
GRHANet	Grampians Regional Health Alliance Network
GWIP	Government Wideband Internet Protocol
ICT	Information and Communication Technologies
MD	Medical Doctor
NCF	National Communications Fund
NextG IP	Next Generation Internet Protocol (third generation wireless)
PHC	Primary Health Care
UB	University of Ballarat
VC	Video-Conference

8   Appendices

Appendix 1 – Evaluation Plan

Program Features	Objectives/Expected Outcomes	Evaluation Measure	Evaluation Method	Actual/Unintended Outcomes/Effects	Longer Terms Issues/Change
1. High Quality Mobile Video Conference Units and associated specialist equipment.	Patient treatment in emergency/ urgent care Peer support and advice mechanisms Development of evidence based practice and case analysis	Equipment procured, installed, tested and operational Number of patients receiving treatment/urgent care Number of Peer support received	Baseline Interviews Survey Panels – online questionnaire Data from sub-committee	Awareness, Use & Efficiency of equipment	Leading Indicators for shifts in program progression
2. eLearning rollout	Increase skills of health professionals in the region Attraction and retention of skilled	2 blended units in 2008 Number of units rolled out 2008-2009 Number of people took up modules;	Baseline Interviews Assessment attached to eLearning rollout Survey Panels –	Awareness, Uptake & perceived benefits of eLearning	Leading Indicators for shifts in program progression

Program Features	Objectives/Expected Outcomes	Evaluation Measure	Evaluation Method	Actual/Unintended Outcomes/Effects	Longer Terms Issues/Change
	professionals	effectiveness of delivery Attraction and retention of skilled professionals	online questionnaire eLearning data from sub-committee Secondary data		
3. Installation of NextG IP gateway	More rapid patient treatment in emergency / urgent care Improved network redundancy	Equipment procured, installed, tested and operational Usefulness of NextG – used by whom	Baseline Interviews Use & Efficiency of equipment Redundancy data from sub-committee	Awareness, Use & Efficiency of equipment	Leading Indicators for shifts in program progression
4. Establishment of high quality video facilities in new Operating theatre at BHS	Watch operations in real time or through video streaming methods	Equipment procured, installed, tested and operational Number of theatre operations watched Number of evidence-based cases	Baseline Interviews Survey Panels – online questionnaire Data from peer sub-committee	Awareness, Use & benefits of equipment	Leading Indicators for shifts in program progression
5. Linking GRHANet	Facilitate		Baseline Interviews	Community	Leading Indicators

Program Features	Objectives/Expected Outcomes	Evaluation Measure	Evaluation Method	Actual/Unintended Outcomes/Effects	Longer Terms Issues/Change
and University of Ballarat	delivery of first level training and professional development Access to AARNET for education and training Community access to education		Survey Panels – online questionnaire Data from Uni sub-committee	awareness, Use & benefits of link	for shifts in program progression

Appendix 2 – Interview Participants

Claire Letts	Chair, Clever Health Steering Committee
David Ryan	Clever Health Project Manager
Gayle Boschert	Clever Health Project Officer
CaraJane Millar	Speech pathologist at Wimmera Health Services and Allied Health lecturer at La Trobe University.

Appendix 3 – Semi-Structured Interview Questions

Q1   How and how much has awareness of Clever Health changed in the last six months?

Q2   Can you provide an update on the implementation of each of the Clever Health components (mobile VCs, eLearning, nextG, BHS Operating Theatre). What are the main enablers/barriers that need to be addressed?

Q3   What implementation/adoption changes have taken place since the last evaluation?

Q4   What are your views on progress in the uptake of Clever Health technologies/components/policies and procedures since the rollout of Clever Health?

Q5   Can you give examples of how people are using Clever Health components (mobile VCs, eLearning, BHS Operating Theatre) and what they are using it for? How has this broadened the capacity of (your) organisation(s)?

Q6   Have there been any unexpected outcomes or bi-products? If so, what are they?

Q7   Have health services/staff perceptions/behaviour changed as a result of the project? If so, how and in relation to what CH components (mobile VCs, eLearning, BHS Operating Theatre)?

Q8   What are your thoughts on the impact of Clever Health on changes in recruitment, retention, professional development, reduction of risk, safety, improved patient care, community access to CH infrastructure?

Q9   What needs to happen to move to the next stage of implementation and through what channels?

Q10   Do you have any other comments?

Appendix 3 – Clever Health Survey

Made available online at: http://cricweb.com.au/chsurvey/