



Clever Health

Evaluation Report 3

**Centre for Regional Innovation and Competitiveness
(CRIC)**

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Date Released: 8 December 2009

Executive Summary

This report forms the third of 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 (GRHANet) 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) High Quality Mobile Video Conference Units, associated specialist equipment and Primary health care service delivery; (2) eLearning; (3) Ballarat Health Services (BHS) Operating Room VC; and (4) the GRHANet and the University of Ballarat link. For this phase a quantitative data collection approach was utilised in the form of an online survey. The framework underpinning the survey was 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.

While survey results validate that awareness Clever Health in general and project components was high, the small number of respondents and their demographic make-up indicate that awareness continues to be predominantly on a senior management level and that broader awareness across primary and allied health practitioners and down organisational structures has not changed dramatically since the last report.

As part of the continuing awareness raising and training campaign, Clever Health Project Officer has been demonstrating the capabilities of the mobile VC units to health staff across the region. This approach and the change management workshop have assisted to familiarise staff with the equipment and ensure that they are comfortable using it.

The campaign has also had positive impact on the perceptions of the potential of Clever Health components, which were by and large optimistic. There is a generally high level of expectation around program components enhancing patient care; accessing expertise; professional development and peer support; saving time; reducing staff travel and associated risks.

Fixed Video Conferencing Facilities

Social norms in terms of usage of fixed video-conferencing facilities are relatively high, which implies that a culture of usage is developing. Nonetheless, 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 to use components such as Fixed or mobile VC facilities in the near future.

Where use was envisioned, it was mostly for meetings and training. Although this reflects a use of VC components for more routine interactions, it does indicate there is a shift towards a desire by health services to work smarter, spend less time travelling and take advantage of the available infrastructure. As one stakeholder pointed out, "You don't need to say well, here it is, here is the one on wheels and we can move it between your emergency department and your intensive care unit. It could be: here is a piece of equipment that you can use to communicate and leave it open slather because it is all about usage. If you get people to use it, that behaviour issue, they will appreciate its functionality".

Mobile Video Conference Units

The usage of the Mobile VC units remains low with rollout and training still in progress. With each agency nominating a key agent to facilitate the introduction and training required within the site, interest and awareness is extending, according to the Clever Health Project Officer, but change management remains a key issue.

There are also still some structural issues to be resolved, such as financial considerations for medical practitioners, who cannot claim a Medicare payment for VC-based consultation, and final agreement on communication protocols.



One of the anticipated benefits of the Mobile VC units is that sites can now communicate between one another, so the doctor located in more than one town can have images sent to another site, which may reduce patient travel between sites. This in turn may help moderate patient transfers or make transfers more efficient. It may also mean better service integration for patients.

eLearning

To date, health professionals in the region have had limited opportunity and exposure to eLearning as reflected by the statistics. Where eLearning has been introduced, it has received a positive response in the workplace. Some of the core competencies have been looked at by health service educators and are starting to be put in the curriculum. One of the issues reiterated was that people isolated in the bush really want to go to meet their colleagues and have face-to-face contact. Thus, a blended learning model in time remains very important.

There is no doubt that Clever Health is helping to pave the way for future delivery of eLearning, but since the units that have been rolled out are yet to be evaluated, it is too early to assess such issues as technology barriers or enablers for eLearning, learning benefits for health professionals or return on investment in eLearning.

1.1.1 UB-GRAHNet Link

During the pilot rollout of the Front Line Management units, some valuable lessons were learnt. Firstly, offering non-clinical modules identified as part of the eLearning wish list in the Grampians eLearning Feasibility Study, did not mean that they would instantly be taken up. Frontline Management may be considered less urgent or 'soft' skills, which are not always as easily recognised as being needed as so-called hard skills, such as undertaking IT-training.

Another lesson from this project was the somewhat ad hoc approach to marketing the availability of Frontline Management training. Pressured by a tight time line, project team focused on the content, pedagogy, blended learning design and technological requirements for the units. The development of a comprehensive marketing plan alongside the unit development plan might have led to the use of additional marketing channels and contributed to higher student enrolment.



Planning for both hard and soft skills and planning eLearning into staff work schedules as is currently done for face-to-face learning would assist the uptake of eLearning and potentially increase appreciation of eLearning. A feedback loop between the end user and health services management would also help increase the uptake of eLearning as provide management with information on how well it works for their staff, and invest accordingly in eLearning programs.

BHS Operating Room

Not surprisingly, there still is low awareness of the BHS Operating Room VC with equipment installation only recently completed and installation in the BHS lecture theatre still pending. To date, GPs, anaesthetists and others have taken part in demonstration sessions and were favourably impressed with the setup. While statistics around usage are not yet available, perceptions and attitudes are consistently high around the future usefulness of the BHS VC facilities as an effective educational tool. In terms of the latter, it is anticipated that Deakin University medical school students coming online in 2010 will especially benefit from the BHS VC link.

Protocols are still in the process of being developed 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 GRAHNet network also need to be resolved.

Peer Support

Both the survey and stakeholder interviews reflect considerable enthusiasm among practitioners and health professionals around peer support access via Clever Health components, and VC components in particular.

Of special note is the positive outcome in terms of accessing psychology support and services in the region which, according to one of the stakeholders, has traditionally experienced a huge deficit in mental health care. With the increased availability of VC equipment, access to mental health care has already significantly improved for the region with both routine and emergency consultations taking place. Being able to see mental health patients has had positive effect on treatment.



With the relatively slow uptake and use of Clever Health components, no significant changes can be reported in this evaluation round of the project. There are, nonetheless, clear indications that the project is moving towards the delivery of improved patient care, especially in areas such as mental health. There are also clear indications that the use of technology for virtual meetings is creating value in the area of professional development and peer support.

It is evident that the Clever Health project 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. Encouraging technology uptake through training and change management activities and working with stakeholders on adopting appropriate policies and protocols are key steps towards enabling new, more efficient ways of patient care, professional development, peer support and risk reduction in the Grampians region. There is no evidence at this stage that the project can also contribute to complex issues such as attraction and retention of medical staff in the region, an issue that will become increasingly important in the years to come.

An immediate and positive outcome of Clever Health is the planned utilisation of the infrastructure not just for emergencies, but also for routine practices such as the conducting of (allied) health clinics or linking practice sessions across campuses. This type of practice should be encouraged across the board as it both enhances adoption and general use of VC technology. The project continues to solidifying relationships and goodwill across the region and the project is well placed to proactive contribute towards integrated service provision through the GRHANet infrastructure.



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2 Project Overview

2.1 Background

This report is the third evaluation report in a series 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. 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. 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. 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 third in a series of five reports, which will be delivered according to the following schedule:

- November 2008 (third report)
- May 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). Participants include:

- Dr Patrice Braun (Clever Health Steering Committee Member)
- David Lynch (Survey Design & Quantitative Data Analysis)
- Sue Tomkinson (Administrative Assistant)



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 this stage of rollout of the Clever Health project, the evaluation methodology has remained largely qualitative. This phase is adding baseline quantitative data to the process to capture quantitative data on perceptions and expectations of the Clever Health project from this evaluation round forward.

3.2 Evaluation Method

The aim of the third phase of evaluation was to capture both 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.

In the past two 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). The 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 III Intervention

The Phase III Intervention for Evaluation Report 3 took place between July 2008 and October 2008. 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. Building on the outcomes of Reports 1 and 2, a semi-structured interview guide was designed 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

A survey instrument (see Appendix 4) was designed based on the planned behaviour methodology in consultation with the Clever Health project team. The survey instrument was repeatedly reviewed and tested with a small group of Clever Health stakeholders.

Potential survey participants were targeted based on their involvement with the GHRANet infrastructure and/or because they recently were involved in GHRANet 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 September 18 to October 2, 2008.

During the first week of the survey, going live 18 stakeholders responded. Reminder emails were circulated 1 and 1.5 weeks into the survey, resulting in an additional 15 respondents and generating a total number of 33 survey respondents.

4 Findings

Outcomes of the quantitative data collection are summarised below. Pertinent findings of the qualitative data collection will be included in the next section.

4.1 General Perceptions

4.1.1 Survey Demographics

		Count	%
Gender	Female	26	79%
	Male	7	21%
Age group	Under 18	0	0%
	18-24 years	1	3%
	25-34 years	2	7%
	35-44 years	5	17%
	45-54 years	18	60%
	55-64 years	4	13%
	65 years or over	0	0%
	Total	30	100%
Occupation/role within the organisation¹	Senior management	18	66.7%
	GP/specialist	0	.0%
	Nurse	9	33.3%
	Allied staff	2	7.4%
	Student	0	.0%
	Total	29	
Health Service Location	East Wimmera HS	5	17.2%
	Stawell Regional Hospital	5	17.2%
	Wimmera Health Care Group	5	17.2%
	Edenhope Soldiers Memorial Hospital	4	13.8%
	BHS	3	10.3%
	Djerriwarrh HS Hepburn HS	2	6.9%
	Dunmunkle HS	2	6.9%
	East Grampians HS	2	6.9%
	Rural North West HS	2	6.9%
	West Wimmera HS	2	6.9%
	Beaufort/Skipton HS	1	3.4%
	Hepburn HS	1	3.4%
	Total	33	

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



As may be noted from the above table, close to 80% of the 33 respondents were female with two-thirds of the respondents holding senior management positions. Respondents were fairly evenly spread across health services. This corresponds with qualitative results.

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 fixed and mobile video-conferencing (VC) equipment.

Survey results indicate that general awareness of the Clever Health project across survey respondents is high, which is not surprising given that the majority of respondents were senior management, many of which have been involved in the Clever Health project from its inception.

Awareness of the Clever Health project		
	Count	%
Yes	31	94%
No	2	6%
Total	33	100%

Below graph indicates level of awareness pertaining to the various components of the Clever Health project. The highest awareness was recorded for Fixed Video-Conference Facilities (Fixed VC), followed by Mobile Video-Conference units (Mobile VC), and eLearning.

Clever Health Components		
	Count	%
Fixed VC Facilities	27	82%
High Quality Mobile VC	26	79%
eLearning	23	70%
Ballarat Health Services (BHS)	14	42%
Operating Room Video Conference		
None of the above	2	6%

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). Technological readiness was predominantly high (mean above 5), although confidence in the robustness of technology itself was considerably lower.

Technology Readiness Index (1=strongly disagree, 7=strongly agree)				
	Mean	Median	Mode	Valid N
I prefer to use the most advanced technology available	5.13	5	5	32
Technology makes me more efficient in my occupation	5.64	6	6	33
Other people come to me for advice on new technologies	4.64	5	6	33
I keep up with the latest technological developments in my areas of interest	5.27	6	6	33
I generally have fewer problems than other people in making technology work for me	4.97	5	6	33
Sometimes, I think that technology systems are not designed for use by ordinary people	3.27	3	2	33
Technology always seems to fail at the worst possible time	3.55	3	2	31
Whenever something gets automated, I need to check carefully that the machine or computer is not making mistakes	3.79	4	2	33
The human touch is very important when dealing with an organisation	5.42	6	6	33
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

4.2 Project Components

4.2.1 Fixed Video Conference Facilities

Room based video conference (VC) facilities have been available as part of the GHRANet infrastructure. As part of this round of the Clever Health project, three new room-based VC units are being installed at the Grampians Community Health Service in Horsham and Stawell and the East Grampians Community Health Service

in Ararat. Questions pertaining to fixed VC conference equipment were included to determine the satisfaction levels and use of fixed VC equipment.

Below table indicates that the use of fixed VC facilities compared to two months ago has remained the same for 48% of respondents and increased for 37% of respondents, although not significantly

Use of Fixed VC compared to two months ago		
	Count	%
Significantly increased	0	0%
Increased	10	37%
Remained the same	13	48%
Decreased	2	7%
Significantly decreased	0	0%
Have not used Fixed VC	1	4%
Have never used Fixed VC	1	4%
Total	27	100%

The most common VC-based activities among those aware of the fixed VC facilities (27 people) were cross-campus meetings, followed by executive meetings and dispersed team meetings.

Fixed VC Activities		
	Count	%
Cross-campus/regional meetings	16	59%
Executive meetings	14	52%
Dispersed team meetings	11	41%
Other (e.g. planning, education, clinical discussion)	8	30%
Case conferencing	6	22%
Have not used Fixed Video Conference Facilities	2	7%
Mentoring	1	4%
Total	27	100%

The average frequency of use of for such activities was 2-3 times a month.

Frequency of Fixed VC 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	%
Executive meetings	2	14%	3	21%	3	21%	5	36%	1	7%	14	100%
Dispersed team meetings	4	36%	0	0%	4	36%	2	18%	1	9%	11	100%
Cross-campus meetings	4	25%	2	12%	5	31%	5	31%	0	0%	16	100%
Case conferencing	0	0%	0	0%	2	33%	3	50%	1	17%	6	100%
Mentoring	0	0%	0	0%	0	0%	0	0%	1	100%	1	100%
Other	0	0%	0	0%	3	38%	5	62%	0	0%	8	100%

Respondent expectations for the fixed VC facilities, measured on a scale from 1 (strongly disagree) to 7 (strong agree), were consistently high. Actual performance of the fixed VC facilities, measured on a scale from 1 (strongly disagree) to 7 (strong agree) generally matched expectations.

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

Fixed VC Actual Performance (1=strongly disagree, 7=strongly agree)				
	Mean	Median	Mode	Valid N
Be easy to use	5.44	6	6	27
Have the technological capabilities I need	5.04	6	6	23
Provide the help I need to complete tasks effectively	5.21	6	6	24
Be very reliable	5.38	6	6	26
Improve my work performance	5.09	5	6	23

The minimal gap between expectations and actual performance, such as ease of use and technological reliability of the fixed VC facilities, measured on a scale from 1 (strongly disagree) to 7 (strong agree), indicates that VC performance is living up to expectations, generating higher than average satisfaction levels.

Fixed VC Performance vs. Expectations (1=strongly disagree, 7=strongly agree)				
	Mean	Median	Mode	Valid N
Has been easy to use	-.15	.0	.0	26
Has provided the technological capabilities I need	-.43	.0	.0	23
Has provided the help I need to complete tasks effectively	.00	.0	.0	24
Has been very reliable	-.23	.0	.0	26
Has improved my work performance	-.26	.0	.0	23
Fixed VC Satisfaction (1=strongly disagree, 7=strongly agree)				
I am highly satisfied with the quality of the Fixed Video Conference Facilities	5.27	6	6	26
I have said positive things about the Fixed Video Conference Facilities to other people I work with	5.65	6	7	26
The Fixed Video Conference Facilities have been much better than I expected	4.92	5	4	26



Attitudes around reduction of travel and VC usefulness for cross campus meetings were positive, but respondents were less certain about Fixed VC helping the reduction of backfill or case analysis.

Fixed VC Attitudes (1=strongly disagree, 7=strongly agree)				
	Mean	Median	Mode	Valid N
Reduces time spent travelling	6.70	7	7	27
Allows for cross campus meetings	6.26	7	7	27
Helps Professional Development	5.65	6	6	26
Helps case analysis	4.89	5	5	18
Reduces backfill	4.78	5	4	18

Reflected in below table, overall attitude to the fixed VC facilities was positive to very positive.

Overall Attitudes to Fixed VC Facilities		
	Count	%
Very positive	13	48%
Positive	11	41%
Neutral	3	11%
Negative	0	0%
Very negative	0	0%
Don't know / can't say	0	0%
Total	27	100%

The following table reflects the social norms around Fixed VC. Participants were generally comfortable using the technology and did not feel pressured to use it, although respondents' perceived level of control over their decision to use VC or not was markedly lower.

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

Despite a high level of satisfaction, the majority of respondents anticipated that they would not use Fixed VC at all in the future, followed by 2-3 times in the next month.

Behavioural Intentions - Fixed VC Facilities Usage												
	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	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Executive meetings	2	7%	3	11%	6	22%	4	15%	10	37%	2	7%
Dispersed team meetings	4	15%	0	0%	7	26%	3	11%	10	37%	3	11%
Cross-campus meetings	5	19%	1	4%	7	26%	6	22%	6	22%	2	7%
Case conferencing	0	0%	0	0%	0	0%	4	15%	15	56%	8	30%
Mentoring	0	0%	0	0%	0	0%	1	4%	18	67%	8	30%



4.2.2 High Quality Mobile Units and associated PHC Service Delivery

Stage 2 Intern II units (referred to as Mobile VC units) have been delivered to St Arnaud, Nhill, Edenhope, Bacchus Marsh, and Ararat. These are all online and available for use. The next round of the installations of the Interns is underway at Dunmunkle, Warracknabeal, Donald, Beaufort and Hepburn. Training has been taking place or is being scheduled in all of these sites. Each agency also nominated a key agent to facilitate the introduction and training required within the site. Nominated individuals attended a change management workshop in August 2008, which introduced them to change management theory and identified strategies for change to assist their planning processes.

Below table shows that the use of mobile VC units compared to two months ago has remained the same for 24% of respondents, increased significantly for 8% of respondents, but the majority (52%) indicated they had never used a Mobile VC unit.

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



Usage of Mobile VC Units		
	Count	%
Have not used Mobile VC	19	73%
Meetings	6	23%
Training	5	19%
Clinical/Bedside consultation/Mentoring	0	0%
Total	26	100%

The above table shows that among those that were aware of the Mobile VC units (26 people) the majority used it predominantly for meetings, followed by training.

Average frequency of use for aforementioned activities, and meetings in particular, was 2-3 times a month.

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	%
Training	1	20%	1	20%	3	60%	0	0%	0	0%	5	100%
Meetings	2	29%	0	0%	2	29%	2	29%	1	14%	7	100%

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

Mobile VC Expectations (1=strongly disagree, 7=strongly agree)				
	Mean	Median	Mode	Valid N
Be easy to use	5.61	6	6	18
Have the technological capabilities I need	5.83	6	6	18
Provide the help I need to complete tasks effectively	5.35	6	6	17
Be very reliable	5.71	6	6	17
Improve my work performance	5.12	6	6	16

Actual performance of the Mobile VC units, measured on a scale from 1 (strongly disagree) to 7 (strong agree) generally matched expectations

Mobile VC Actual Performance (1=strongly disagree, 7=strongly agree)				
	Mean	Median	Mode	Valid N
Be easy to use	5.44	6	6	27
Have the technological capabilities I need	5.04	6	6	23
Provide the help I need to complete tasks effectively	5.21	6	6	24
Be very reliable	5.38	6	6	26
Improve my work performance	5.09	5	6	23

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.

Mobile VC Performance vs. Expectations (1=strongly disagree, 7=strongly agree)				
	Mean	Median	Mode	Valid N
Has been easy to use	-.50	.00	.00	8
Has provided the technological capabilities I need	-.38	.00	.00	8
Has provided the help I need to complete tasks effectively	-.50	.00	.00	6
Has been very reliable	-.38	.00	.00	8
Has improved my work performance	-.67	-.50	.00	6
Mobile VC Satisfaction (1=strongly disagree, 7=strongly agree)				
I am highly satisfied with the quality of the Fixed Video Conference Facilities	6.13	7	7	8
I have said positive things about the Fixed Video Conference Facilities to other people I work with	6.13	7	7	8
The Fixed Video Conference Facilities have been much better than I expected	5.11	5	6	9

Attitudes around the usefulness of Mobile VC for quality clinical support and improved client consultation were generally positive, but respondents were less certain about speeding up and improving emergency patient care, saving time and sharing of patient information.

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

Reflected in below table, overall attitudes to the mobile VC units ranged from very positive to positive, although 27% of respondents were either unsure or did not know.

Overall Attitude to Mobile VC		
	Count	%
Very positive	11	42%
Positive	8	31%
Neutral	3	12%
Negative	0	0%
Very negative	0	0%
Don't know	4	15%
Total	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.

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	5.11	6	6	18
Whether I use the Mobile VC or not is entirely up to me	4.85	5	7	20
For me to use the Mobile VC is easy	4.83	5	6	18
Most people in my organisation who are important to me think that I should use the Mobile VC	4.62	5	6	13
Doing what others in my profession do is important to me	3.84	4	2	19
It is expected of me that I use the Mobile VC	3.74	4	1	19
The decision to use the Mobile VC is beyond my control	2.61	2	1	18

The highest percentage 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.

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	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Clinical consultation	0	0%	0	0%	1	4%	0	0%	10	38%	15	58%
Bedside consultation	0	0%	0	0%	1	4%	0	0%	10	38%	15	58%
Training	0	0%	1	4%	5	19%	2	8%	8	31%	10	38%
Meetings	1	4%	1	4%	4	15%	3	12%	8	31%	9	35%
Case conferencing	0	0%	0	0%	1	4%	0	0%	11	42%	14	54%



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. All nine agreed modules are expected to be available on line by late February 2009.

eLearning module development progress since the last evaluation report includes:

- BLS script completed and undergoing construction of draft course;
- The IV cannulation package is still in first draft format and is currently with e3 learning awaiting comments;
- The cardiac assessment package is almost completed and will be sent to e3 Learning within the next few weeks for their first review of the learning package;
- The ECG interpretation package is enormous (first review in early August);
- A meeting was arranged with Syntac to determine if a Preventing Occupational Violence and Aggression training needs analysis of the region can be done and implemented via e3Learning.
- A meeting was scheduled to look into developing eLearning courses to assist aged care staff using the aged care funding tool.
- The University of Ballarat commenced the delivery of basic IT units to East Wimmera Health Services and two units from Cert IV Front Line Management. The latter is discussed in more detail in Section 3.2.6

The stage of eLearning rollout in this round of evaluation is reflected in the statistics on eLearning. Below table reflects that participation in eLearning has remained the same over the past two months.

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

Below table shows that the majority of respondents (83%) who were aware of eLearning (23) had not used an eLearning course; three respondents had participated in clinical competencies.

Use of eLearning courses		
	Count	%
Have not participated in an eLearning course	19	83%
Clinical competencies	3	13%
Other (not specified)	1	4%
IT units	0	0%
Frontline Management units	0	0%
Total	23	100%

Most respondents did not know the frequency in eLearning for aforementioned activities; one respondent participated once in the past month; and another one participated in eLearning once a week.



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	0	0%	0	0%	0	0%	1	33%	2	67%	3	100%
Other	0	0%	1	100%	0	0%	0	0%	0	0%	1	100%

Respondents' expectations for eLearning, measured on a scale from 1 (strongly disagree) to 7 (strong agree), were high.

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

Actual performance of eLearning, measured on a scale from 1 (strongly disagree) to 7 (strong agree) exceeded expectations in terms of easy of use, but respondents were less certain whether eLearning would be reliable or have the technological capabilities they need.

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

The (-2.00 and -1.33) gap between expectations and actual performance, measured on a scale from 1 (strongly disagree) to 7 (strong agree), shows that there is some uncertainty around the reliability and technological capabilities of eLearning. While respondents have said positive things about eLearning, satisfaction levels were in the neutral range.

eLearning Performance vs. Expectations (1=strongly disagree, 7=strongly agree)				
	Mean	Median	Mode	Valid N
Has been easy to use	.33	.00	.00	6
Has provided the technological capabilities I need	-.29	.00	1.00	7
Has provided the help I need to complete tasks effectively	-.14	.00	.00	7
Has been very reliable	-.57	.00	.00	7
Has improved my work performance	-1.33	-1.00	-2.00	6
eLearning Satisfaction (1=strongly disagree, 7=strongly agree)				
I am highly satisfied with the quality of eLearning	5.17	6	3	6
I have said positive things about eLearning to other people I work with	5.57	6	6	7
eLearning has been much better than I expected	4.83	5	3	6

Attitudes around the usefulness of eLearning for professional development, access to training, saving time and reducing travel were very positive and respondents were also positive about eLearning assisting staff retention.

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

Reflected in below table, overall attitudes to the mobile VC units ranged from very positive to positive; 9% of respondents were either neutral or did not know.

Overall Attitude to eLearning		
	Count	%
Very positive	10	43%
Positive	9	39%
Neutral	2	9%
Negative	0	0%
Very negative	0	0%
Don't know	2	9%
Total	23	100%

Below table reflects the social norms pertaining to eLearning. 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 participate in eLearning as low.

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	5.90	6	7	21
For me to use the eLearning is easy	5.53	6	7	15
Whether I use eLearning or not is entirely up to me	5.00	6	6	21
Doing what others in my profession do is important to me	3.95	4	2	20
Most people in my organisation who are important to me think that I should use eLearning	3.88	5	1	16
It is expected of me that I use eLearning	3.58	4	1	19
The decision to use eLearning is beyond my control	2.90	2	1	20

The highest percentage of respondents expected to participate in eLearning 2-3 times in the next month in IT units and frontline management units, followed by clinical competencies.

Behavioural Intentions – eLearning Participation												
	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	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Clinical competencies	1	4%	4	17%	13	57%	5	22%	1	4%	4	17%
IT units	0	0%	1	4%	17	74%	5	22%	0	0%	1	4%
Frontline Management units	0	0%	1	4%	17	74%	5	22%	0	0%	1	4%

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) has been completed. Cabling is being put in place to link the operating theatre with the lecture theatre and all of the equipment has been ordered from the suppliers. The physical link to the Lecture Theatre is not in place due to heavy usage of that facility, but training has commenced. Below statistics reflect the stage of roll-out of BHS VC.

The majority of respondents who were aware of the BHS VC facilities (14), have never used the facilities.

Use of BHS VC compared to two months ago		
	Count	%
Significantly increased	0	0%
Increased	0	0%
Remained the same	1	7%
Decreased	0	0%
Significantly decreased	0	0%
Have not used BHS VC	0	0%
Have NEVER used BHS VC	12	86%
Don't know	1	7%
Total	14	100%

Below table shows that among those that were aware of BHS VC (14) the majority (93%) had not used BHS VC or been part of any BHS VC training and average use of the BHS VC facilities was not reported.

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

Respondents' expectations for the BHS VC facilities, measured on a scale from 1 (strongly disagree) to 7 (strong agree), were relatively high around reliability and ease of use, but expectations around usefulness and relevance to improve work performance were notably low.

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

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	4.00	4	4	1
Have the technological capabilities I need	4.00	4	4	1
Provide the help I need to complete tasks effectively	4.00	4	4	1
Be very reliable	4.00	4	4	1
Improve my work performance	4.00	4	4	1

Since the performance 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.

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 were consistently high.

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

Reflected in below table, overall attitudes to the BHS VC facilities ranged from very positive to positive, although half of the respondents did not know.

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

Below table reflects the social norms pertaining to the BHS VC facilities. Participants were neutral or not confident that they could use the technology. Respondents did not 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	4.00	4	1	5
Doing what others in my profession do is important to me	3.71	4	2	7
Whether I use the BHS VC or not is entirely up to me	3.50	3	1	6
I am confident that I could use the BHS VC if I needed to	3.33	3	1	6
For me to use the BHS VC is easy	3.00	4	4	3
Most people in my organisation who are important to me think that I should use the BHS VC	1.75	1	1	4
It is expected of me that I use the BHS VC	1.75	1	1	4

The highest percentage 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 a month for meetings and 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	1	7%	10	71%	3	21%	14	100%
Recording surgery session(s)	0	0%	11	79%	3	21%	14	100%
Downloading surgery session(s)	0	0%	11	79%	3	21%	14	100%
On Site/Remote student training and/or lecturing	1	7%	10	71%	3	21%	14	100%



4.2.5 Next G

The rollout of Next G has been plagued by delays, but is now mainly in place. The NextG redundancy aspect is completed with some work still to be undertaken on the mobility aspect. Research is currently being undertaken to identify the technical feasibility and options for provision video calls to mobile phones within the region. This is of significant interest to hospitals, especially with the potential to impact on the after hours call rosters for medical practitioners.

The NextG component was not included in the survey as such since use of the technology cannot be measured on its own. This component will become relevant once the Next G network starts to be used for the transmission of images or files for remote review by medical practitioners.

4.2.6 GRHANet University of Ballarat Link

In the survey, the effectiveness of this component is 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 GRHANet-UB link has been operational since mid year, the coordination and rollout of training via the GRHANet-UB link has taken time to come to fruition. As described in the last report, three introductory Information Technology units were identified for development and rollout by UB to at least one regional health service from late Semester 1, 2008. Rollout of these units has begun with UB delivering the three units sequentially. Sessions are recorded for subsequent re-broadcasting, which is expected to be useful to students unable to attend scheduled video-conferencing times. These units have yet to be evaluated.

Acting on the partners' mutual desire to continue building the relationship between GRHANet and UB and in line with non-clinical training needs identified in the 2006 Grampians Health Regional e-Learning Feasibility Study², a collaborative funding application was submitted to the *Australian Flexible Learning Network Victorian E-*

² Braun, P (2006). Grampians Health Regional e-Learning Feasibility Study, CRIC, University of Ballarat



learning Innovations program to provide non-clinical workforce development modules to start addressing some of the priorities of healthcare providers in the Grampians region such as increasing patient safety, improving the quality of care, and reducing overall risk through.

The funding application was successful and a GRHANet-UB project team was convened to support the customising, contextualising, delivery and evaluation of three core units from the Certificate IV in Frontline Management. The pilot project involved mapping existing Toolbox resources and contextualising those resources for health workers with new video and audio content and case studies to reflect the work environment of GRHANet health workers.

The pilot design included blended learning methodologies with the content and asynchronous communication being accessed through the TAFE VC. Tutorials and learning support would be made available via video-conferencing using the UB-GRHANet link. Web 2 social networking technologies such as UB blog, wiki and podcasting sites were used to promote student independence and collaborative learning.

A principal aspect of this pilot project was to demonstrate the feasibility of delivering training via the UB-GRHANet link; test the link; inform the development of protocols and processes to support eLearning usage via the UB-GRHANet link; and gauge future training opportunities for health professionals across the region as well as the potential of expanding access of the UB-GRHANet network to deliver eLearning to community members.

In the course of the project, which had a relatively tight timeline in terms of customising and contextualising resources, producing new content and testing the blended learning platform, it became apparent that it would not be feasible to deliver three core units from the Certificate IV in Frontline Management within the timeframe of the project. It was decided to reduce rollout to two units. However, a more significant issue proved to be student recruitment. The core units were marketed via the UB-GRHANet networks and newsletters targeting individual staff of health services. To reduce enrolment costs, individuals were offered profile rather than fee-



for-service places, but despite significant efforts by the project team to enrol students, enrolments in the units remained minimal.

Discussions were held with the funding body which agreed that the decisions made were the best ones possible given the issues. It was decided that the project team contact decision-makers within health services to gauge whether they would support staff to enrol in the units. However, due to the tight time line, GRHANet ultimately decided it would fund the 5 enrolments received for the Frontline Management units so delivery could begin in early October 2008. At the time of this writing, unit delivery was still in progress. Student evaluation of these units had not yet taken place and could hence not be included in this report.

4.2.7 Peer Support

As part of the network building work being undertaken by GRHANet, 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 Fixed 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 third 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 during key stakeholder interviews, and highlights any implications from these findings.

5.1 Salient Themes

While survey results validate that awareness of Clever Health in general and project components was high, the small number of respondents and their demographic make-up indicate that awareness continues to be predominantly on a senior management level and that broader awareness across primary and allied health practitioners and down organisational structures has not changed dramatically since the last report. Of note is the high level of technological readiness among respondents, despite 63% of respondents' being in the 45-55 age bracket.

As part of the continuing awareness raising and training campaign, Clever Health Project Officer has been demonstrating the capabilities of the mobile VC units to health staff across the region. This approach and the change management workshop have assisted to familiarise staff with the equipment and ensure that they are comfortable using it.

The campaign has also had positive impact on the perceptions of the potential of Clever Health components, which were by and large optimistic. There is a generally high level of expectation around program components enhancing patient care; accessing expertise; professional development and peer support; saving time; reducing staff travel and associated risks.

5.1.1 Fixed VC

Social norms in terms of usage of fixed video-conferencing facilities are relatively high, which implies that a culture of usage is developing. Nonetheless, 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 to use components such as Fixed or mobile VC facilities in the near future.

Where use was envisioned, it was mostly for meetings and training. Although this reflects a use of VC components for more routine interactions, it does indicate there is a shift towards a desire by health services to work smarter, spend less time travelling and take advantage of the available infrastructure. As one stakeholder pointed out, “You don’t need to say well, here it is, here is the one on wheels and we can move it between your emergency department and your intensive care unit. It could be: here is a piece of equipment that you can use to communicate and leave it open slather because it is all about usage. If you get people to use it, that behaviour issue, they will appreciate its functionality”.

5.1.2 Mobile VC

Not surprisingly, the usage of the Mobile VC units remains low with rollout and training still in progress. With each agency nominating a key agent to facilitate the introduction and training required within the site, interest and awareness is extending, according to the Clever Health Project Officer, but change management remains a key issue.

As another stakeholder illustrated, “mobile [VC] is still in its infancy and we lost a bit of time with the tool change. Having people to connect to on the other end, getting everyone on the same page...is [a] complex cultural change”. There are also still



some structural issues to be resolved as well, according to key stakeholders, such as financial considerations for medical practitioners, who cannot claim a Medicare payment for VC-based consultation, and final agreement on communication protocols.

One of the anticipated benefits of the Mobile VC units is that sites can now communicate between one another, so the doctor located in more than one town can have images sent to another site, which may reduce patient travel between sites. This in turn may help moderate patient transfers or make transfers more efficient. It may also mean better service integration for patients.

Utilising (either fixed or mobile) VC for routine clinics (as well as emergencies), such as running a dietitian consult clinic, or linking practice sessions was also seen as an appropriate use of the VC units.

5.1.3 eLearning

To date, health professionals in the region have had limited opportunity and exposure to eLearning as reflected by the statistics. Where eLearning has been introduced, it has received a positive response in the workplace. Some of the core competencies have been looked at by health service educators and are starting to be put in the curriculum. One of the issues reiterated by one of the stakeholders was the fact that people isolated in the bush really want to go to meet their colleagues and have face-to-face contact. Thus, a blended learning model in time remains very important.

There is no doubt that Clever Health is helping to pave the way for future delivery of eLearning, but since the units that have been rolled out are yet to be evaluated, it is too early to assess such issues as technology barriers or enablers for eLearning, learning benefits for health professionals or return on investment in eLearning. Some of the lessons that were learnt from implementing the Front Line Management units are outlined in the next section.

5.1.4 UB-GRAHNet Link

During the pilot rollout of the Front Line Management units, some valuable lessons were learnt. Firstly, offering non-clinical modules identified as part of the eLearning



wish list in the Grampians eLearning Feasibility Study, did not mean that they would instantly be taken up. The pilot clearly had a 'you can build it, but they may not come' situation on its hands. There are several possible explanations for this phenomenon.

Despite having generated an extensive eLearning wish list, there is no existing eLearning culture in place. This was confirmed by both the survey and the Grampians eLearning Feasibility Study and has been corroborated by other eLearning research³. The latter may translate in a lack of consideration to incorporate time in staff schedules to participate in eLearning as they would in any other professional development activity as part of their work schedule. Moreover, professional development in Frontline Management may be considered less urgent or 'soft' skills, which are not always as easily recognised as being needed as so-called hard skills, such as undertaking IT-training.

Another lesson from this project was the somewhat ad hoc approach to marketing the availability of Frontline Management training. Pressured by a tight time line, project team focused on the content, pedagogy, blended learning design and technological requirements for the units. The development of a comprehensive marketing plan alongside the unit development plan might have led to the use of additional marketing channels and contributed to higher student enrolment.

While a targeted marketing approach might have assisted enrolment, marketing of professional development was also not strongly pursued on the side of health services. Planning for both hard and soft skills and planning eLearning into staff work schedules as is currently done for face-to-face learning would assist the uptake of eLearning and potentially increase appreciation of eLearning. A feedback loop between the end user and health services management would also help increase the uptake of eLearning as provide management with information on how well it works for their staff, and invest accordingly in eLearning programs.

³ 2007 E-learning Benchmarking Project Research Paper No. 3 Attitudes to e-learning by industry sector I & J Management Services, March 2008



5.1.5 BHS Operating Room VC

Not surprisingly, there still is low awareness of the BHS Operating Room VC with equipment installation only recently completed and installation in the BHS lecture theatre still pending. To date, GPs, anaesthetists and others have taken part in demonstration sessions and were favourably impressed with the setup. While statistics around usage are not yet available, perceptions and attitudes are consistently high around the future usefulness of the BHS VC facilities as an effective educational tool. In terms of the latter, it is anticipated that Deakin University medical school students coming online in 2010 will especially benefit from the BHS VC link.

Protocols are still in the process of being developed 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 GRAHNet network also need to be resolved.

5.1.6 Peer Support

Both the survey and stakeholder interviews reflect considerable enthusiasm among practitioners and health professionals around peer support access via Clever Health components, and VC components in particular.

Of special note is the positive outcome in terms of accessing psychology support and services in the region which, according to one of the stakeholders, has traditionally experienced a huge deficit in mental health care. With the increased availability of VC equipment, access to mental health care has already significantly improved for the region with both routine and emergency consultations taking place. Being able to see mental health patients has also had positive effect on treatment, according to one stakeholder.

Use of VC facilities by other disciplines is also encouraging and includes meetings by such groups as the WestVict Division of GPs, the anaesthetic special interest group, cross-campus staff and professional/special interest groups such as Neuro-Psychology, Speech Therapy and Palliative Care.



Issues such as access to VC equipment in multi-function rooms and the complexity of separate equipment and room booking remain of concern, but fall outside the terms of reference for the project.

6 Summary

With the relatively slow uptake and use of Clever Health components, no significant changes can be reported in this evaluation round of the project. There are, nonetheless, clear indications that the project is moving towards the delivery of improved patient care, especially in areas such as mental health. There are also clear indications that the use of technology for virtual meetings is creating value in the area of professional development and peer support.

It is evident that the Clever Health project 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. Encouraging technology uptake through training and change management activities and working with stakeholders on adopting appropriate policies and protocols are key steps towards enabling new, more efficient ways of patient care, professional development, peer support and risk reduction in the Grampians region. There is no evidence at this stage that the project can also contribute to complex issues such as attraction and retention of medical staff in the region, an issue that will become increasingly important in the years to come.

An immediate and positive outcome of Clever Health is the planned utilisation of the infrastructure not just for emergencies, but also for routine practices such as the conducting of (allied) health clinics or linking practice sessions across campuses. This type of practice should be encouraged across the board as it both enhances adoption and general use of VC technology. The project continues to solidifying relationships and goodwill across the region and the project is well placed to proactive contribute towards integrated service provision through the GRHANet infrastructure.



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



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 professionals	2 blended units in 2008 Number of units rolled out 2008-2009 Number of people took up modules; effectiveness of	Baseline Interviews Assessment attached to eLearning rollout Survey Panels – online questionnaire eLearning data from	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
		delivery Attraction and retention of skilled professionals	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 and University of	Facilitate delivery of first		Baseline Interviews Survey Panels –	Community awareness, Use &	Leading Indicators for shifts in program



Program Features	Objectives/Expected Outcomes	Evaluation Measure	Evaluation Method	Actual/Unintended Outcomes/Effects	Longer Terms Issues/Change
Ballarat	level training and professional development Access to AARNET for education and training Community access to education		online questionnaire Data from Uni sub-committee	benefits of link	progression



Appendix 2 – Interview Participants

Claire Letts	Chair, Clever Health Steering Committee
David Ryan	Clever Health Project Manager
Gayle Boschert	Clever Health Project Officer
Peter Ziebell	Former Clever Health Project Manager



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/>