Review of PTSD Group Treatment Programs: Final Report

Coordinating Author: Dr Annabel McGuire

Katrina Bredhauer, Dr Renee Anderson, Professor Peter Warfe

31 August 2011

Research team

Dr Annabel McGuire

Professor Peter Warfe

Katrina Bredhauer

Dr Renee Anderson

Statisticians

Michael Waller

Jeeva Kanesaraja

Consultants and advisors

Professor Justin Kenardy

Dr Len Lambeth

Professor Helen Lapsley

Disclaimer

The views and recommendations expressed in this report are solely those of the Centre for Military and Veterans' Health and do not reflect those of the Department of Veterans' Affairs or the Australian Government.

Table of Contents

List of Tables

List of Figures

Table of Abbreviations

The following abbreviations are used throughout the report.

Abbreviations	Meaning
ACPMH	Australian Centre for Posttraumatic Mental Health
ADF	Australian Defence Force
ASD	Acute Stress Disorder
Australian Guidelines	Australian Guidelines for the Treatment of Adults and Acute Stress Disorder and Posttraumatic Stress Disorder 2007 (ACPMH, 2007)
CAPS	Clinician-Administered PTSD Scale
CBT	Cognitive Behavioural Therapy
CI	Confidence Interval
CMVH	Centre for Military and Veterans' Health
CPT	Cognitive Processing Therapy
DAR	Dimensions of Anger Reaction
DAS	Dyadic Adjustment Scale
Defence	Department of Defence
DVA	Department of Veterans' Affairs
EMDR	Eye Movement Desensitization and Reprocessing Therapy
ESO	Ex-Service Organisation
HADS	Hospital Anxiety and Depression Scale
HONOS	Health of the Nations Outcome Scale
MEAO	Middle East Area of Operations
MilHOP	Military Health Outcomes Program
NHS	National Health Service (UK Health System)
NICE	National Institute for Clinical Excellence
PCL-M	Posttraumatic Stress Disorder Check List – Military Version
PTSD	Post traumatic Stress Disorder
RCTs	Randomised Controlled Trials
SIT	Stress Inoculation Therapy
SMD	Standardised Mean Difference Effect Size
SSRIs	Selective Serotonin Reuptake Inhibitors
SUD	Substance Use Disorder
TAU	Treatment as Usual
TBI	Traumatic Brain Injury
TF-CBT	Trauma Focused Cognitive Behavioural Therapy

Abbreviations	Meaning
TLDP	Time Limited Psychodynamic Therapy
VAC	Veteran Affairs Canada
VR	Virtual Reality
VRE	Virtual Reality Exposure
VRE-AC	Virtual Reality Exposure with Arousal Control
VVCS	Veterans and Veterans Families Counselling Service
WHOQOL- Bref	Brief World Health Organisation Quality of Life Instrument

Executive Summary

The Centre for Military and Veterans' Health (CMVH) provides the following report on the independent review of the Post Traumatic Stress Disorder (PTSD) mental health group treatment programs for consideration by the Repatriation Commission and the Military Rehabilitation and Compensation Commission.

The two phases of the review were conducted by CMVH between November 2010 and August 2011. The first phase was a literature review of the evidence-based best practice treatment of PTSD and the task of the second phase was to critically review the 12 PTSD programs including the process of referral, the programs themselves, discharge planning and follow-up. The review was commissioned and funded by the Department of Veterans' Affairs (DVA).

Objectives

The objectives of the review were twofold:

- To take into account the issues raised by Professor Dunt (Suicide Study, 2009), who recommended: "A strategic review of PTSD programs in Australia as a matter of urgency. This should be comprehensive in scope and cover service access, acceptability and cost and most successful models of care. Priorities should be defined such that their implementation will have the most effect on the level of participant care i.e. the programs that are funded will be effective as well as efficacious" (Recommendation 9.4).
- To review national and international programs and theories relating to the treatment of PTSD, taking into account significant developments over the past decade and the changed nature of deployments, in order to ensure that services offered to clients of DVA are evidence based and meet the needs of both older and younger cohorts.

Structure of report

This Final Report summarises the key analyses, conclusions and findings of the review and makes recommendations based on the critical analysis. The literature review of evidence-based best practice treatment for PTSD (Phase One of the review) is included as Appendix 1. The complete in depth quantitative and qualitative analysis (Phase Two of the review) is included in Appendix 2.

Methods

The international literature on evidence-based best practice treatment of PTSD published since the *Australian Guidelines for the Treatment of Adults and Acute Stress Disorder and Posttraumatic Stress Disorder 2007 (ACPMH, 2007)* (Australian Guidelines) was reviewed. This included searching and reviewing information published in relevant electronic databases, the "grey literature" and Veterans' Affairs websites in Australia, Canada and the United States.

The Phase Two tasks for the critical review and analysis of the PTSD group treatment program included: visiting all sites delivering group treatment programs for PTSD; interviewing key staff from DVA and VVCS (Veterans and Veterans Families Counselling Service); analysing the efficacy

of the programs against the findings of the literature review using data collected by the Australian Centre for Posttraumatic Mental Health (ACPMH) over the last five years; evaluating the current and alternative models for group treatment programs for PTSD; conducting a cost-benefit analysis; and identifying strategies to support the implementation of any recommended model.

Referrals to and Demand for PTSD programs

Referral rates to the PTSD group treatment programs have been declining in recent years. The *Independent Study into Suicide in the Ex-Service Community 2009* (Dunt Suicide Study) indicated that it was too early to make any judgements about the likely number of PTSD claims that will be made in the future. In Australia, there are currently no available prevalence rates for PTSD associated with deployment to Iraq or Afghanistan. Consequently, it is difficult to anticipate future demand for group treatment PTSD programs.

Comparing the location of PTSD group treatment sites by state against the number of veterans with an accepted claim for PTSD demonstrates that the approximate distribution of sites relates to where there is likely to be greater demand. Most programs are located in or near capital cities; however, there does not appear to be enough demand to warrant increasing programs available in regional Australia.

Most referrals to the programs come from psychiatrists. At some sites this is the only source of referral. This creates a potential bottle-neck and may result in delays for the treatment of some participants... Other sources of referral include psychologists, general practitioners, ex-serving organisations, VVCS and the veteran or their families. People who actively seek treatment for mental health conditions are likely to have more positive outcomes in part due to their desire to get well. Multiple source of referral increases the opportunities available to participate in the programs.

The literature review identified several barriers to accessing care that were relevant for those suffering PTSD. The most commonly cited barriers to care included:

- uncertainty about what help was available,
- difficulty accepting the presence of a problem,
- economic or time constraints,
- insufficient numbers of mental health professionals,
- stigma and concerns about privacy,
- career concerns,
- previous unsuccessful treatment,
- lack of confidence in mental health professionals.

The inability to access information about potential treatment easily and simply, is a barrier that may be readily addressed. Very limited information about the treatments available for PTSD was evident on the DVA website. Currently, the eligibility requirements for accessing programs and issues associated with providing detailed clinical information online suggest that access to

the programs would be improved by ensuring that providers and referrers have regularly updated information on the services, methods and outcomes of the programs available in their location.

Recommendation 1. Potential referrers to the PTSD group treatment programs should have up-to-date information about the objectives, methods and outcomes of the programs and clear understanding of who would benefit from the programs. This information could be located online.

The work of the individual sites and VVCS is closely linked. Some sites have a close and positive working relationship with VVCS and there are referrals from VVCS to the programs and from the programs back to VVCS as part of discharge planning. It is important that VVCS and sites each understand the work of the other as close collaboration between the two would provide the most benefit to veterans and their families.

Evidence from the literature

There are no randomised control trials (RCTs) evaluating the outcomes of PTSD group treatment programs, or any studies directly comparing group with individual therapies for PTSD. Indirect comparisons suggest better outcomes from individual approaches, and the treatment outcomes from DVA-funded programs appear to be more modest than those achieved by the best practice individual treatments. However, there is no conclusive evidence indicating whether this is due to lower effectiveness of the programs or the difficulties of achieving good treatment outcomes in the veteran population.

However, staff from sites and VVCS believes group treatments achieve some outcomes that cannot be achieved from individual interventions alone, and this is in line with literature on the benefits of group treatments for other mental health disorders. There was widespread support for PTSD group treatments as an option in the treatment continuum.

Similarly, reviewing satisfaction data on surveys from veterans who had participated in the programs showed that more than 97% were satisfied or very satisfied with the programs.

Reviewing the literature associated with individual treatment for PTSD showed that there were multiple recommended methods for treating PTSD. These included: trauma-focused Cognitive Behavioural Therapy (CBT), Eye Movement Desensitization and Reprocessing Therapy (EMDR) and imaginal exposure therapy. In addition, where trauma-focused interventions had not been sufficiently successful, stress management and pharmacotherapy may be considered.

One of the keys to comparing one therapy to another was to compare them using the same unit of measurement. The gold standard measurement in the literature is the Clinician-Administered PTSD Scale (CAPS). This measure is currently collected on entry to the programs but not at any other time-point. If it were also collected on discharge and follow-up, then DVA would have an indication of the effectiveness of the programs as they relate to other individual treatment models described in the literature.

Recommendation 2. Include the CAPS, a clinician rated assessment of PTSD, in the measures taken on discharge from the group treatment programs.

Use of the CAPS at three and nine month follow-up would be beneficial for future analysis and clearly understanding how changes resulting from this review impact upon outcomes across all time points. However, administering the CAPS takes time and may detract from the main purpose of the follow up sessions, which is focussed on group work. Consequently, inclusion of the CAPS at three and nine months after the programs should be considered in consultation with the sites and while considering the practical implications.

Finally, the literature was explored for emerging and innovative treatments that might be relevant for the treatment of PTSD. No new treatment protocol with a sufficiently strong evidence base has emerged from the literature since 2007.

The current model for DVA funded Group Treatment programs.

DVA contracts with ACMPH to accredit the PTSD group treatment programs. In order to be accredited each site has to meet defined criteria. The criteria include: the programs must be run by a multi-disciplinary team; with a cognitive behavioural orientation to the program; and the core components of the program must include: psychoeducation, trauma focused work, symptom and anger management, individual therapy and attention to discharge planning amongst other things. Sites are required to run at least five programs every two years with no fewer than five participants attending each program.

The requirement for the PTSD group treatment programs includes many criteria that are also the recommended treatments appropriate for treating individuals with PTSD.

Sites are required to collect specific outcome data from the participants at entry, discharge, three months and nine months after the program is completed. The following five key outcome measures were selected for the quantitative analysis to evaluate whether the programs result in improvement for participants.

1. PTSD Check List, Military Version (PCL-M): PTSD symptoms
2. Brief World Health Organisation Quality of Life Instrument (WHOQOL-BREF): quality of life (physical, psychological, social relationships and environmental scales)
3. Dimensions of Anger Reaction (DAR): anger
4. Dyadic Adjustment Scale (Abbreviated) (DAS): family functioning, focusing primarily on the partner relationship
5. Hospital Anxiety and Depression Scale (HADS): anxiety and depression

These measures represent the severity of the participants' PTSD symptoms, how it influences their overall quality of life, its impact on family relationships and the extent of co-morbidities like anger, anxiety and depression. Evaluating these measures provides the best overall picture of the effects of the programs on the participants' lives.

The statistical analysis showed that, overall, there was a significant improvement on the PCL-M

(measure of PTSD symptoms) between entry to the programs and discharge (an average reduction of 6.1 points). The improvement was maintained and increased slightly between discharge and three months and again at nine months after discharge (a further 1.9 point reduction, on the PCL-M on average, between discharge and nine months).

Across all measures from entry to nine months follow-up, the group treatment programs resulted in statistically significant changes for participants on the overall reduction of PTSD symptoms, improvement in perceived quality of life, improvement in family relationships, reductions in anger and reductions in symptoms of anxiety and depression.

Are all the programs the same?

The literature review and the questions raised in the tender highlighted several areas where the effectiveness of treatments for people in different situations was not well understood. Although each site is accredited against the same guidelines there were considerable differences between the PTSD programs. For example, programs differed on the level of trauma focus, partner involvement and program structure (i.e. number of days, focus on additional modules such as anger management and substance use, etc.). Further, some sites had different programs for older and younger participants.

The program factors evaluated against the selected outcome measures (PTSD Check List, Military Version [PCL-M]; Brief World Health Organisation Quality of Life Instrument [WHOQOL-BREF]; Dimensions of Anger Reaction [DAR]; Dyadic Adjustment Scale (Abbreviated) [DAS]; and, Hospital Anxiety and Depression Scale [HADS])were:

1. **Contemporary veterans versus veterans aged 50 and over**
    - ***Contemporary veterans***: Deployed after Vietnam i.e. post 1972.
    - ***Veterans aged 50 and over:*** Includes Vietnam veterans, some older peacekeepers e.g. Rwanda, and veterans from WWII and other deployments.

Contemporary veterans benefit from the programs to the same extent as veterans aged 50 and over in relation to improvement on measures of PTSD symptoms, quality of life, anger and family function, but to a lesser extent in relation to anxiety and depression.

2. **Employment category**
    - Participants reported their employment status as working or looking for work, retired, unable to work or other/unknown.

The programs are most effective for those who are currently retired or unable to work. One might assume that those who were in the workforce were managing their PTSD better and consequently, this finding appears counter intuitive. The programs include residential components of various lengths. It may be that those who are in the workforce find it difficult to get the time off work to attend the programs. Alternatively, while they are attending the program they may be concerned about the consequences of missing work, including managing questions about why they were absent. Given that those who are in the workforce are also

likely to be younger and as future demand for the programs will increase from this demographic, the effectiveness of the programs for those in the workforce should be monitored. Individual evidence-based treatments remain an option for veterans whose work commitments are a barrier to accessing a PTSD group treatment program.

3. **Trauma focus**
    - ***Low***: trauma focus is indirect, focusing on symptom management psycho-education, triggers and restoration of affect, but no exposure or direct trauma work.
    - ***Medium***: trauma focus in group work incorporates some exposure work, including imaginal and in vivo, but participation is choice-based and varies with participant and cohort
    - ***High***: trauma focus is explicit and structured, incorporating several group sessions.

On discharge, participants in programs with a medium to high trauma focus had improved more than participants attending programs with a low trauma focus. However, the difference in outcomes between a low and either a medium or high trauma focus were not evident at nine month follow-up.

4. **Partner inclusion.** The programs were grouped according to the opportunities offered to partners and families to be involved in the program:
    - ***Low***
    - ***Medium***
    - ***High***

Partner inclusion in the programs was beneficial to participants and their partners, as evidenced by stronger outcomes on depression, family functioning and anger and indications in the satisfaction data from veterans and partners. The qualitative interviews found overwhelming support for the involvement of partners and families, and the consulting psychiatrist, Dr Len Lambeth, believes family involvement is critical in the treatment of PTSD.

5. **Mixed Cohorts**
    - ***Veteran-only***
    - ***Mixed:*** includes civilians, typically from other uniformed services such as police.

Including other uniformed civilians in the group treatment programs was not detrimental to outcomes for veterans. Consequently, sites where there are low numbers of veterans participating could consider including uniformed civilians in their programs without this being detrimental to veteran outcomes. The data available to the review did not indicate veteran preference with regards to the mixing of both older and younger veterans or the inclusion of uniformed civilians in cohorts.

It is clear that the ways in which different factors are addressed by the different sites impacts upon outcomes for participants. However, before making any recommendation it is important to evaluate whether one site delivers their program better.

How do the programs compare with each other?

It was not clear whether one particular site's interpretation of the accredited model was superior in comparison to any other site. In order to compare one site to all other sites, statistical modelling was used to adjust for participant characteristics such as baseline severity, age, gender, service and service type. The overall pattern of findings showed a strong improvement on all measures between entry and discharge. After all other demographic factors had been accounted for; the improvement at each site was close to that anticipated.

There was variation between the sites on the maintenance of program effects between discharge and nine month follow-up. However, sites that maintained or slightly increased the improvements through the follow-up period did not necessarily demonstrate the largest amount of improvement between entry and discharge.

No site emerged as a clear "winner".

Programs that specifically address the needs of contemporary veterans

Site staff during their qualitative interviews suggested that contemporary veterans had different needs compared with veterans aged 50 and over. Contemporary veterans were likely to have: more acute symptoms; a slightly different symptom profile; different/diverse deployment experiences; different family needs; different stage of life and associated demands; and a potentially different experience of camaraderie.

Triggers for seeking help, generational attitude and working status were also likely to be different between the age groups.

Three sites work with higher numbers of contemporary veterans and, based on their expertise and experience, have made changes to their program to better work with this demographic. Statistical analyses indicated that these changes have been successful to some extent. However, the improvements achieved were not statistically significantly better than programs that have not been changed. The programs may require ongoing refinement and would benefit from further evaluation as to the effectiveness of treatment outcomes, particularly as future demand is likely to arise from contemporary veterans.

The number of contemporary veterans has remained relatively steady for the past five years generally less than 60 per year; or 38% of the total in 2010). Further, the Department of Defence (Defence) has sought to consistently improve mental health care for its members. The impact this will have on how many veterans likely to require DVA's services is unclear.

The outcomes from the MilHOP (Military Health Outcomes Program) program of research, which includes Health and Wellbeing study, the MEAO (Middle East Area of Operations) census study and the Prospective MEAO study, currently being conducted in coordination between Defence and CMVH should provide an indication of potential future need. Similarly, outcomes from the Timor-Leste Family Study may also provide useful insight on the issues for contemporary veterans and their families. Consequently, making new and large changes to the

PTSD group treatment programs to better meet the needs of contemporary veterans should wait until after the findings of these studies are considered.

Discussion

Before evaluating any suggested changes to the programs it is important to evaluate how outcomes are measured. Dr Len Lambeth and Professor Justin Kenardy, the psychiatrist and psychologist consulting on this review, noted that measuring functional improvement was fundamental to understanding the gains made by participants. Functional improvement may be different for different people. For instance, one participant might hope to be able to attend church after the program and another might hope to improve their family relationships.

The Health of the Nation Outcome Scale (HONOS) is currently collected and is an adequate measure of functioning, but appears to be completed only on entry to the programs. Therefore, there is no measure of functional improvement after veterans have completed the program.

Recommendation 3. Collect the HONOS, a good measure of functioning, on discharge and follow-up, as well as entry.

From the analyses that we have reviewed it appears that not all measures collected by ACPMH are analysed. ACPMH has a long history with the sound reasoning behind the measures chosen for collection and are best placed to evaluate their utility.

Recommendation 4. Review all measures collected at entry, discharge, three and nine months after the programs for their current utility. Future requirements and the changing demographics of participants in the program should be considered when evaluating the measures.

Other aspects of data collection could also be improved. Two examples in particular are:

1. Referral data: at sites where there is a single referring psychiatrist there is no additional information available on the referral pathway to the psychiatrist. As discussed, understanding referral pathways assists in identifying and removing access barriers.
2. Recording partner attendance for each veteran. These data would improve the accuracy and reliability of the analysis concerning improved veteran outcomes associated with partner attendance at programs.

The previous discussion has highlighted several factors that affect treatment outcomes and suggest a group of iterative changes that may be appropriate for the programs. The potential changes are highlighted in Recommendation 5. However, because no site had the mix of such factors adjusted to the extent that they stood out as distinctly better than all other programs, articulating precisely the adjustments that must be made in order to elicit the largest improvement has not been clearly supported by the available evidence.

The staff who deliver the programs are experts in their field and in the day to day detail of how each program operates. Consequently, they are in the best position to evaluate potential changes to their programs based on the findings of this review.

Recommendation 5. Consider regular meetings with all contractors of PTSD programs that include all Clinical Directors, Program Coordinators and ACPMH. The purpose of the first meeting should be to discuss how relevant findings from the review could be incorporated into the programs.

Proposed discussion topics for the first meeting include:

1. Outcomes of the review of PTSD programs.
2. Increasing partner involvement, particularly at sites where this is currently low. Increasing the trauma focus at sites where this is currently low. Considering the introduction of mixed cohorts at sites where this is not occurring.
3. Trialling extended follow-up.
4. Discussing the needs of contemporary veterans and working participants and formulating program changes where appropriate.
5. Strengthening relationships with VVCS.

Including representatives from VVCS in the first meeting would not necessarily be beneficial as the sites discuss the fine grained detail of their programs. However, VVCS may benefit from attending these meetings on future occasions as this may help strengthen the relationships between key personnel.

After the programs

It was clear from interviews with VVCS and site staff that follow-up care is critical to the maintenance of program effects, particularly with chronic conditions such as PTSD. On completion of the program, individuals were usually referred back to the original referral source. In cases where participants did not have a supporting mental health professional, efforts were made to arrange one. Sites indicated that discharge planning for participants was coordinated between the program and VVCS, DVA, local ESOs, and ACPMH where appropriate.

From the Phase 1 literature review, it was clear that ongoing support can be provided by community-based practitioners, such as a GP, psychiatrist, psychologist or other treating professional. However, it is vital that treating practitioners are experienced in evidence-based treatment for PTSD. This may be more difficult in smaller communities. In these cases, exploring options such as VVCS outreach counselling or video counselling, or internet-based therapies which have empirical support should be explored as effective treatment options (Litz, Engel, Bryant, & Papa, 2007).

Recommendation 6. Technology-based follow-up options should be trialled for program participants living in areas where access to ongoing care or support programs is restricted. Potential options include VVCS video counselling or internet-based therapies.

Economic analysis

It was not possible to estimate an average cost per participant for each site based on the financial data provided as the data were incomplete, did not correlate with participant attendance and were subject to changing contractual arrangements. Costs per participant should include all costs associated with the program that are paid by DVA, including those that are refunded to participants, hotels, pharmacies and the sites. Without clear understanding of contractual arrangements and what was or was not included in the program, cost was indefinable. Accordingly, there are no data available that could be used to form the basis of any valid comparisons or recommendations.

Recommendation 7. Collect accurate and comprehensive collection of costs associated with the PTSD group treatment programs for a period of 12 months and measure participant's improvement on the CAPS and HONOS between entry and discharge. At the end of this period analyse and compare the cost-effectiveness of the programs.

Table 1 provides an example of the financial data required.

Table 1: Examples of data required for cost-effectiveness analysis.

Cost	Site 1 (Cohort X)	Site 1 (Cohort Y)	Site 2 (cohort X)
Number of program days			
Number of participants			
Individual cost per day attended			
Individual cost for assessment			
Individual cost follow-up			
Individual cost for one on one therapy sessions			
Number of partners/family members participating in the program			
Individual cost for partner/ family work			
Other costs to DVA: • Travel • Accommodation • Medication • Accreditation process			
Any additional costs refunded to participants			
Any additional other costs paid to sites e.g. staff supervision			

Are the programs sustainable?

In order to demonstrate sustainability the first evaluation criteria for any program must be that it is able to provide clear and consistent improvements for the participant in terms of how they feel and how they are able to manage in their day to day lives. CMVH found during structured interviews at all sites that some treatment is better than none and there exists clear clinical and statistical evidence that participants in the programs improve Generally, the sites demonstrated long standing clinical leadership and team membership over some years. This

was reflected by enthusiastic interview contribution by all available team members at most treatment sites. The teams' longevity and cohesion appeared to contribute to sound group professional judgement and practice.

This is probably not surprising given the comprehensive accreditation processes and clinical guidelines to support evidence-based treatment. Certainly, the programs should be subject to continual evaluation and improvement, as they have been. Additionally, sites, VVCS, ACPMH, ESOs and individuals are consistently and constantly seeking to improve outcomes for veterans suffering PTSD.

Several sites commented that the changed accreditation process (from site visits to self-accreditation) has meant that they receive less information. Access to information, including data from the accreditation process and this review, provide staff with a benchmarking opportunity and indicates any areas in their program that may be improved. Site staff also valued the contact with ACPMH and DVA which has also been reduced.

Recommendation 8. All sites are given access to their accreditation reports and where possible access to general overall accreditation outcomes that allows them to evaluate how well they are doing.

The recommendations made provide guidance on the next phase of the group treatment programs. However, they are not a radical departure from the model as it currently stands.

This is not surprising. The current model is based on evidence that has been regularly re-evaluated by ACPMH. The model is acted upon by professional multi-disciplinary teams who also actively and consistently analyse their own work and seek to improve. The programs are valued by the practitioners, the participants and staff from DVA and VVCS. The program treats people who are motivated to get well. Overall, they are successful.

The recommendations offer suggestions for improvements that would enhance the programs, provide the ability to compare outcomes from the programs with outcomes reported in the literature, facilitate knowledge sharing and make economic analysis possible next year.

Chapter 1: Review of the PTSD Mental Health Group Treatment Programs

Structure of report

This Report summarises the key analysis, conclusions and findings of the review and makes recommendations based on the critical analysis. The full in depth quantitative and qualitative analysis (Phase Two) can be found in Appendix 2. The literature review of evidence-based best practice treatment for PTSD (Phase One) can be found in Appendix 1

Background to the review

Professor Dunt's *Independent Review into Suicide in the Ex-Service Community* 2009 noted in Section 9 Mental Health Programs and Services for Veterans that:

> *"A strategic review of PTSD programs in Australia as a matter of urgency. This should be comprehensive in scope and cover service access, acceptability and cost and most successful models of care. Priorities should be defined such that their implementation will have the most effect on the level of participant care i.e. the programs that are funded will be effective as well as efficacious*"(recommendation 9.4).

The Government response was to accept the recommendation and agreed to fund a review of departmentally funded Group PTSD programs. DVA released a tender in 2010 and the Centre for Military and Veterans Health (CMVH) was the successful tenderer. The review commenced in November 2010 and comprised two phases:

- Phase One: a **literature review** of evidence-based best practice treatment of PTSD with specific reference to the *Australian Guidelines for the Treatment of Adults with Acute Stress Disorder and Posttraumatic Stress Disorder* (Australian Guidelines), released by Australian Centre for Post Traumatic Mental Health (ACPMH) in 2007. Phase One was completed in February 2011, culminating in a workshop with key DVA and VVCS staff to discuss the findings and outline the methodology for Phase Two (see Appendix 1: *"Review of PTSD programs: International literature review of evidence-based best practice treatments for PTSD"*).
- Phase Two: a **critical review and analysis** of the PTSD group treatment programs, including the role and function of VVCS in referral, discharge planning and follow-up. Specifically, the tasks of Phase Two were to:
    - Analyse the existing treatment programs against the key findings of the literature review
    - Identify recommended treatment model(s) and options(s)
    - Detail cost-benefit analysis of recommended treatment model(s)
    - Identify strategies to support a systematic implementation of the model(s)
    - Identify strategies to ensure effective linkages into ongoing, sustainable community based support where required.

The methodology for Phase Two was outlined and discussed at the February workshop, as follows:

Table 1: Agreed methodology for Phase Two

Preparation	• Consult with ACPMH and Veterans and Veterans Families Counselling Service (VVCS) • Review most recent report
Cost-benefit	• Collate data from DVA on costs per participant at each site (e.g. cost centre data regarding who is paid, rent costs, staff costs etc; number of people treated and utilisation data such as number of sessions; contracting arrangements)
Site visits	• Site visits will occur for all 12 sites listed by DVA • Format is semi-structured interview providing personnel opportunities to answer specific questions and provide more details on key points as required
Compare and evaluate	• Data from ACPMH/DVA, site visits and cost benefit research will be analysed • Efficacy of programs at different sites will be evaluated • Comparison with potential alternative models will be conducted
Report	• Complete draft report for DVA • Complete final report for DVA
Additional	• In addition to the outlined methodology, CMVH was asked to interview several nominated DVA and VVCS staff. • DVA requested an additional workshop on 31 May 2011 to discuss the preliminary findings of Phase Two

Data collected and collated:

Site visits

Semi structured face-to-face interviews were conducted during March and April 2011 with program staff at each site included in the review. The interviews were 120 to 210 minutes in length.

This review examined 12 DVA-funded group treatment programs for PTSD, based in the following locations:

- Greenslopes (QLD)
- Mater Townsville (QLD)
- Toowong (QLD)
- Palm Beach Currumbin (QLD)
- Northside Cremorne (NSW)
- St John of God Richmond (NSW)
- Geelong (VIC)
- Heidelberg (VIC) (2 programs)
- Hollywood (WA)
- Daw Park (SA)
- Hyson Green Calvary (ACT)

Hyson Green Calvary and Palm Beach Currumbin no longer operate a DVA-funded group treatment program, and Heidelberg ceased the program it offered for WWII and Korean veterans

Written information requested from sites

CMVH requested a small amount of written information from sites and several provided additional useful information of their own volition.

Program data

- Annual PTSD Program Quality Assurance Accreditation reports from 05/06 to 09/10.
- Five years of quantitative outcome data, collected by site staff at four time points: entry, discharge, three month follow-up and nine month follow-up.
- Three years of quantitative and qualitative satisfaction data, collected at the time of accreditation from past participants of the PTSD program.

Program data only includes those who have returned their completed questionnaires. Not all participants in the programs completed the data collection at all time points. Program outcome data are not collected for non-veteran participants at sites that operate mixed cohorts of veterans and non-veterans.

Financial data

Financial data on the costs of the programs was received from DVA.

DVA and VVCS interviews

CMVH conducted phone interviews with:

- 15 VVCS staff, including Directors and Group Program Coordinators
- 8 DVA staff

The interviews were semi-structured, with questions based upon the agreed research questions and the aims of the review. VVCS also provided data to CMVH on issues at intake and counselling.

Chapter 2 – Referrals to and demand for the programs.

The first step in evaluating the DVA funded treatment programs was to examine the current demand for the programs and how people who may need the programs gain access to them, including how they are referred to the programs.

Who needs the programs?

Tables 2 and 3 provide information on the age distribution of DVA veterans with an accepted claim for service related PTSD by age and by state.

Table 2: Numbers of veterans with PTSD known to DVA by gender and age group

Age Group	Gender		Total
	Male	Female	
Under 55	2353	185	2538
55 to 74	23114	51	23165
75 and over	4449	27	4476
Total	29916	263	30179

Source: DVA Data, December 2010

Clearly, the largest group with identified PTSD is the age group (55-74) that includes Vietnam veterans. There are far fewer veterans that are under 55. DVA classifies veterans who deployed after 1972 or after the Vietnam conflict as contemporary veterans.

The Dunt Suicide Study (2009) indicated it was too early to make any judgements about the likely future number of PTSD claims in Australia. PTSD prevalence rates in Korean War veterans are estimated at 15% to 17% and lifetime prevalence for Vietnam veterans is estimated at 21%, with current prevalence rates sitting at 12% when assessed 20-25 years after deployment. For Australian Gulf War veterans, PTSD rates assessed at 10-15 years post-deployment are estimated at 5.4%. Estimates of PTSD in ADF ground forces serving in Iraq and Afghanistan remain unpublished. Comparatively, PTSD in the general Australian population is estimated at 6.4% (Australian National Survey of Mental Health and Wellbeing, 2007).

Consequently it is difficult to predict the future demand for the PTSD programs. There has been a significant (38%) decrease in participant numbers in the PTSD group treatment programs over the past five years. Decreasing numbers of participants jeopardises the sustainability of the programs.

CONCLUSION: PREVALENCE RATES OF PTSD IN CONTEMPORARY VETERANS ARE NOT CURRENTLY KNOWN. CONSEQUENTLY, IT IS NOT POSSIBLE TO ANTICIPATE FUTURE DEMAND FOR THE PTSD PROGRAMS.

Table 3: DVA data of veterans with PTSD as of 31 December 2010 by state/territory

State/Territory	N	%
Queensland	9497	31.5
New South Wales	8809	29.2
Victoria	4527	15.0
Western Australia	3029	10.0
South Australia	2651	8.8
ACT	500	1.7
Tasmania	728	2.4
Overseas	229	0.8
Northern Territory	209	0.7

Source: DVA data, December 2010

The numbers of veterans in any state does not equate to the number of people who would seek treatment in the group programs. However, it does provide an estimate of the size of the population that might require those services.

There are three currently accredited programs in Queensland, with one of those in regional Queensland:

- Ramsay Health Care Greenslopes Private Hospital, Greenslopes, Brisbane, QLD
- Toowong Private Hospital, Brisbane, QLD
- The Mater Health Services North Queensland (Limited) Townsville, QLD

There are two accredited programs in NSW one in the city and one on the outskirts of the Sydney region:

- Ramsay Health Care Northside Clinic Cremorne, Sydney, NSW,
- St John of God Health Care North Richmond Private Hospital, Sydney, NSW

There are two accredited programs in Victoria:

- Healthscope The Geelong Clinic, Regional Victoria
- Austin Health Heidelberg Repatriation Hospital, Victoria

One accredited program in Western Australia

- Ramsay Health Care Hollywood Clinic, Perth, WA

One accredited program in South Australia

- Repatriation, General Hospital Daw Park, Adelaide, SA

There are no accredited programs in either the Northern Territory or Tasmania. The Palm Beach Currumbin Clinic, QLD and the Little Company of Mary Calvary Private Hospital Mental Health-Hyson Green Unit in the ACT have ceased operation. However, a comparatively small proportion of those who potentially would be eligible for treatment are located in those states. Most programs are conducted from the capital cities with only two programs (Mater, Townsville and Geelong) operating from regional centres.

Site interviews suggested that perhaps Daw Park and Geelong struggled to a greater extent with a smaller client base compared with other sites.

In order to maintain the programs there must be a sufficiently large pool of clients. The current distribution of sites is roughly proportional to the state in which the client base is located. Although, the proportion of clients that are located in the capital cities compared with regional centres cannot be extrapolated from the available data. Under the current system those located in country Australia would need to travel to attend the programs and this clearly occurs. For instance, programs in Victoria accept participants from Tasmania.

CONCLUSION: THE CURRENT DISTRIBUTION OF PROGRAM SITES APPEARS PROPORTIONAL TO THE CLIENT POOL IN THE DIFFERENT STATES. THERE DOES NOT APPEAR TO BE SUFFICIENT DEMAND TO WARRANT OPENING ADDITIONAL SITES IN EITHER THE CAPITAL CITIES OR IN REGIONAL AUSTRALIA.

Referrals to the PTSD group treatment programs

Program data shows that most (70%) referrals come from psychiatrists. At sites like St John of God or Hyson Green Calvary, where the program is located within the hospital, virtually all referrals are from the internal psychiatrist. Where there is only one referring psychiatrist this can create a bottleneck, particularly when the workload of that psychiatrist is high. In turn this may lead to long delays in participants accessing the programs.

Other referral sources include: psychologists (8%), General Practitioners (GP) (8%), self or family (5%), and 10% from a mix of other sources such as ex-serving organisations, or health and welfare organisations. Just as at some sites, referral by a psychiatrist is the only mechanism for entering the programs, other sites have a much broader distribution of referral sources. For instance, at Geelong referrals are taken from: Psychiatrist (18%), Psychologist (27%), Self/family (22%), ESO (13%), and health welfare agency (13%). Broadening the ways in which participants can access the programs both reduces potential barriers to care and increases ways in which the programs are accessed. Referral is the first point of access to the programs; however, all programs screen potential participants for their suitability and readiness for the program.

Self-referrals are particularly relevant. People who actively seek treatment for mental health conditions are likely to have more positive outcomes in part due to their desire to get well. Consequently, they participate in and benefit from the programs, to a potentially larger extent. The pre-screening process provides the opportunity to 'weed-out' any inappropriate self-referrals.

CONCLUSION: MULTIPLE SOURCES OF REFERRAL, INCLUDING SELF-REFERRALS TO THE PROGRAMS SHOULD BE ENCOURAGED.

The literature review in Phase 1 identified a number of barriers to PTSD treatment for Australian veterans. The literature review identified several barriers to accessing care that were relevant for those suffering PTSD. The most commonly cited barriers to care included:

- uncertainty about what help was available,
- difficulty accepting the presence of a problem,
- economic or time constraints,
- insufficient numbers of mental health professionals,
- stigma and concerns about privacy,
- career concerns,
- previous unsuccessful treatment,
- lack of confidence in mental health professionals,

The inability to access information about potential treatment easily and simply, is a barrier that may be readily addressed. For people with PTSD, the inability to access information easily and simply is a key barrier to sourcing appropriate help. While it is easy to find information on some of the services provided by DVA, for example it is easy to find contact numbers for VVCS offices, there is no information readily accessible via the DVA website that describes exactly what treatment services are available in relation to PTSD. The most relevant information is contained in DVA Factsheet HSV67, Health Entitlement:

> What type of treatment can I receive for PTSD?
>
> You can access a wide range of services that are clinically necessary for the treatment of your PTSD. These services include psychological or psychiatric treatment, counselling and pharmaceuticals.

CMVH assume that those who have an accepted PTSD claim receive additional information about what service they can access. Currently the eligibility requirements for accessing programs and issues associated with providing detailed clinical information online suggest that access to the programs would be improved by ensuring that providers and referrers have regularly updated information on the services, methods and outcomes of the programs available in their location.

Recommendation 1. Potential referrers to the PTSD group treatment programs should have up-to-date information about the objectives, methods and outcomes of the programs and clear understanding of who would benefit from the programs. This information could be located online.

Clearly, multiple referral sources and providing readily accessible information to those who want to seek care would increase the accessibility to the programs, reduce perceived barriers to starting the program, and consequently increase participant numbers.

The relationship between the sites and VVCS

The quality of VVCS' relationship with the individual sites varied. Some sites have a close and positive working relationship, while others seem to have little contact with VVCS. However, even where the relationship was strong there were very few referrals to the programs from VVCS. Perhaps this is due to perceived competition between VVCS and sites and a different understanding of what the group treatment programs do and for whom they are suitable.

As outlined above, both VVCS and the sites agreed that the mechanisms for referral could be improved and streamlined. Key to this process would be ensuring that VVCS clearly understood the services offered by the programs, how they complimented the work done by VVCS and who the programs were likely to benefit. Sites such as Hollywood and Northside Cremorne already manage this process and relationship well. Similarly, it is important that the sites understand the services that are offered by VVCS and how their participants might benefit from utilising some of those services both before and after participation in the group treatment programs.

Increased collaboration between VVCS and the group treatment programs would benefit the veterans being treated. There are multiple ways in which collaboration could be improved including: case conferencing where appropriate, regular meetings between the sites and the relevant VVCS representative and use of each others' services.

Chapter 3: Evidence from the literature

CMVH conducted a review of international literature on evidence-based best practice treatment of PTSD published since the *Australian Guidelines for the Treatment of Adults and Acute Stress Disorder and Posttraumatic Stress Disorder 2007 (ACPMH, 2007)*.

The relevant electronic databases were searched for systematic reviews, meta-analyses and randomised controlled trials (RCTs) on effectiveness of therapies for PTSD. For the "grey literature" search, the Australian, Canadian and US Veteran Affairs and Defence Force websites and Google Scholar were searched.

The review included an evaluation of 20 systematic reviews and meta-analyses, 34 RCTs on the effectiveness of therapies for PTSD, 19 RCTs addressing the issues raised by the Dunt review and numerous electronic and "grey literature" sources on Australian and overseas models of treatment of PTSD in veterans.

The full literature review is included at Appendix 1.

Evidence on the efficacy of group treatment programs

There are no RCTs evaluating the outcomes of PTSD group treatment programs, or any studies directly comparing group with individual therapies for PTSD. Indirect comparisons suggest better outcomes from individual approaches, and the treatment outcomes from DVA-funded programs appear to be more modest than those achieved by the best practice individual treatments. However, there is no conclusive evidence indicating whether this is due to lower effectiveness of the programs or the difficulties of achieving good treatment outcomes in the veteran population.

There is no evidence that inpatient or residential treatment is more beneficial than outpatient treatment, but there is some evidence that matching participant symptom severity to the intensity of the program may be beneficial (Forbes, Lewis, Parslow, Hawthorne, & Creamer, 2008).

The Australian Guidelines recommend that group Cognitive Behavioural Therapy (CBT) may be provided as adjunctive to, but should not be considered an alternative to, individual therapy. There is limited evidence from two recent studies indicating that group CBT and group exposure, if modified to the group conditions, may be an effective treatment of PTSD (Beck, Coffey, Foy, Keane, & Blanchard, 2009; Falsetti, Resnick, & Davis, 2008).

Due to a lack of evidence from inadequate research in this area, it is difficult to assess the current PTSD group treatment model based on published literature.

CONCLUSION: THERE IS NO SYSTEMATIC RESEARCH EVIDENCE IN THE LITERATURE THAT SUPPORTS PTSD GROUP TREATMENT PROGRAMS.

Alternative support for group treatment programs

Clinical staff and staff from VVCS

While there may be no systematic research evidence supporting the effectiveness of group treatment programs for PTSD, strong and reasoned support does exist based on clinical expertise and experience.

Staff from sites and VVCS believes group treatments achieve some outcomes that cannot be achieved from individual interventions alone, and this is in line with literature on the benefits of group treatments for other mental health disorders. There was widespread support for PTSD group treatments as an option in the treatment continuum. A summary of these benefits are highlighted below. Section 9 of Appendix 2 includes an extended discussion of this topic. Appendix 2 is the Phase 2 in depth quantitative and qualitative analysis report. The main reported benefits include:

- **Improved social skills, relationships and support**: PTSD as an illness can isolate and marginalise sufferers. A group setting counters this and helps people begin to form connections, which is important as they may have previously avoided veterans and veteran gatherings.
- **Normalisation and validation**: One of the most powerful benefits of group treatments for veterans is the realisation that they are not alone in their experience – they are not the only ones who experienced trauma, and they are not the only ones struggling, which normalises their condition.
- **Camaraderie**: important within the military context, and one of the reasons group treatments can work well with this population.
- **Incentive to attend** – the group members provide external motivation for others to attend.
- **Help each other to process, understand and change:** participants provide motivation, talk together, share strategies, and help each other through the "tough bits".
- **Modeling and application**: participants see the skills in action and practise what they are learning.
- **Enhanced trauma work**: participants hear each others' stories and are encouraged to disclose. Group members validate each others' trauma experiences and the discussion of one persons' trauma may in turn trigger recall for other members of the group.
- **Contributes something the therapist cannot:** including different ways of wording concepts and peer perspectives. This is especially the case where the therapist does not have military or deployment experience.
- **Time efficiencies**: especially around psycho-education (it is quicker to deliver to a group than one-to-one). Several psychiatrists noted that the shared background and experience and more 'minds' in the room working together means groups may achieve outcomes in weeks that sometimes take two years to achieve in one-to-one therapy.

- **Staff is skilled** in trauma work and work with veterans. Group programs often provide benefits for staff such as reduced burnout due to the multi-disciplinary involvement, co-facilitation of sessions, and ongoing support and supervision.

Several of those interviewed noted that individual and group treatment are complementary and may be more effective together than alone. Similarly, it was reported that the majority of participants may have had up to 10 years of individual therapy prior to commencing the program, yet overall participants still achieved a significant improvement.

CONCLUSION: VVCS AND SITE STAFF VOICED STRONG SUPPORT FOR GROUP TREATMENT PROGRAMS REMAINING AN OPTION FOR THOSE WHO WISH TO PARTICIPATE OR WHO WOULD BENEFIT FROM THESE PROGRAMS

Support from the participants in the programs

Veteran satisfaction data was available for the 2007/08 and the 2008/09 financial years. Data for 2008/09 is summarised here; and extended analyses from both years may be found in Section 5 of Appendix 2.

In 2008/09, 224 participants responded anonymously to this survey and satisfaction rates were very high, with approximately 97% of participants indicating they were satisfied or very satisfied with the PTSD program in which they participated. The free text data highlighted elements of the program that the participants found most useful and these are highlighted in Figure 1 below.

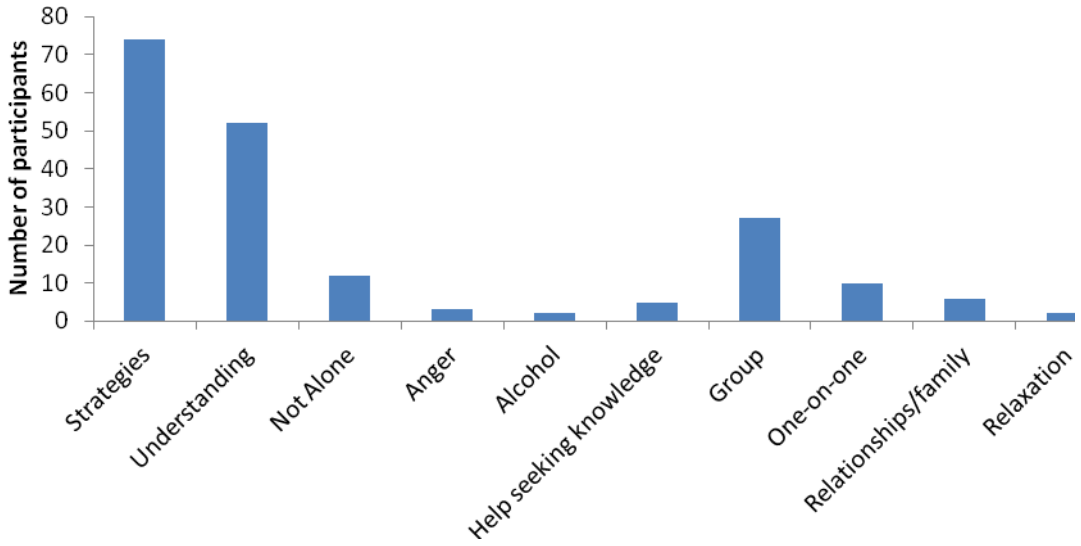

Figure 1. Participants' qualitative responses for the most important assistance received (2008/2009)

CONCLUSION: PARTICIPANTS IN THE PROGRAM BELIEVED THAT THEY RECEIVED BENEFITS FROM ATTENDING THE PROGRAM.

Evidence-based best practice individual treatment models

Given that there was little empirical evidence supporting group treatment programs for PTSD it is worth commenting on the evidence based best practice models for the treatment of individuals. The full literature review is available at Appendix 1.

Generally, the conclusions drawn by the literature review do not differ from those in the Australian Guidelines. Recent research provides some support for emerging technology-based interventions, but conclusive evidence will rely upon further investigation.

Trauma-focused psychological therapy (cognitive behavioural therapy and/or eye movement desensitization and reprocessing in addition to in vivo exposure) should be used as the most effective treatment for Acute Stress Disorder (ASD) and PTSD. They have the best evidence, effectively reduce PTSD symptoms as well as co-morbid anxiety and depression, and achieve improvements in broader quality of life. Table 4 ranks treatments according to effect size (ES), which is the change (effect) a treatment has on PTSD symptoms; a larger number is better. (See Appendix 1, the literature review)

Table 4: Effect Size Rank Information for PTSD Symptom Changes by Type of Treatment

Type of treatment	Number of studies	Mean ES rank	ES Rank Range
Exposure therapy	18	7.94 (1.66)	5-10
Exposure + cognitive therapy	14	8.04 (2.09)	3-10
cognitive therapy/cognitive restructuring	6	8.83 (1.17)	7-10
EMDR	9	5.89 (2.65)	4-10
Problem-centred therapy	3	5.67 (2.08)	4-8
Supportive counselling	5	5.00 (2.12)	2-7
Treatment as usual	3	5.00 (2.64)	3-8

In cases where individuals have not responded to a range of trauma-focused interventions, evidence-based non-trauma-focused interventions should be considered; for example, stress management, pharmacotherapy.

Medication should not be used in preference to trauma-focused psychological therapy and drug treatments should not be used as a routine first line treatment. Effect sizes for pharmacological treatments are relatively small, and many studies had relatively large placebo responses.

Key practice recommendations from the Australian Guidelines

Based on the review of psychological interventions for adults with PTSD, the following general key recommendations were presented by the Australian Guidelines:

- Adults with PTSD should be provided with trauma-focused interventions (trauma-focused CBT or EMDR in addition to in vivo exposure)
- Non-trauma-focused interventions such as supportive counselling and relaxation should not be provided to adults with PTSD in preference to trauma-focused interventions
- Where symptoms have not responded to a range of trauma-focused interventions, evidence-based non-trauma-focused interventions (such as stress management) and/or pharmacotherapy should be considered
- Sessions that involve imaginal exposure generally require 90 minutes

- Following assessment, diagnosis and treatment planning, eight to 12 sessions of trauma-focused treatment is usually sufficient

CONCLUSION: THERE ARE MULTIPLE RECOMMENDED TREATMENTS FOR INDIVIDUALS WITH PTSD.

Robust measurement of PTSD

Key to comparing one treatment method to another is the ability to use a gold standard measure of improvement in symptoms of PTSD. Most commonly this includes clinician rated measures of participant improvement taken at the beginning and at the conclusion (and/or follow-up) of the treatment course. The program data collected and used to evaluate the efficacy of group treatment programs relies on self-reported data from the participants (i.e., PCL-M, the HADS and so on), which is less reliable for research purposes.

It is not possible to directly compare the effectiveness of group with individual-only treatment programs as all group treatment programs include up to 10 individual treatment sessions. Clearly the two approaches cannot be separated. Further, self-report measures of PTSD cannot be reliably or validly compared to clinician-rated measures reported in the PTSD literature.

The Clinician-Administered PTSD Scale (CAPS) is the most frequently cited measure of PTSD in the literature and is considered the gold standard in PTSD assessment. It is a clinician-administered structured interview used to determine diagnostic status, symptom severity, and functionality. Because it is clinician-rated, the outcomes are more reliable compared to self-report measures for PTSD.

Currently the CAPS is conducted at intake to the programs by clinicians. If it were also collected on discharge and follow-up, then DVA would have an indication of the effectiveness of the programs as they relate to other individual treatment models described in the literature.

Recommendation 2. Include the CAPS, a clinician rated assessment of PTSD, in the measures taken on discharge from the group treatment program.

Use of the CAPS at three and nine month follow-up would be beneficial for future analysis and clearly understanding how changes resulting from this review impact upon outcomes across all time points. However, administering the CAPS takes time and may detract from the main purpose of the follow up sessions, which is focussed on group work. Consequently, inclusion of the CAPS at three and nine months after the programs should be considered in consultation with the sites and while considering the practical implications

Emerging/innovative treatments

One aim of this review was to evaluate whether there were any new treatment models that could or should be included in the group treatment programs. The literature review showed that there are several innovative treatments that have shown promise in the treatment of PTSD. However, there remains insufficient evidence about these treatments to warrant their inclusion in any programs. All require further systematic investigation, and monitoring the emerging literature is all that is currently required.

Virtual reality, acupuncture, hypnotherapy and yoga are showing promise. Internet-based interventions and imaginal rehearsal therapy focused on nightmares have been successful. Real-time video/audio interactions for treatment of combat-related PTSD are reported to be as effective as same-room therapy. Virtual reality shows promise for military populations, including those who are still serving and those who have Traumatic Brain Injury (TBI), and those who have not responded to prior treatment. Academic articles may be published in the future that support these emerging treatments evidence based inclusion in treatment protocols. Consequently, literature should be monitored.

CONCLUSION: NO NEW TREATMENT PROTOCOL WITH A SUFFICIENTLY STRONG EVIDENCE BASE HAS EMERGED FROM THE LITERATURE SINCE 2007

Chapter 4: The current model for DVA funded Group Treatment programs.

The previous discussion has highlighted that there is no empirical support for a group treatment program for PTSD. However, VVCS, staff conducting the programs and veterans express strong support for the programs in the programs.

There are no new and innovative treatments supported by strong evidence emerging from the literature. Consequently, the following segment of the report discusses the treatment model as it currently stands, paying particular attention to issues raised by the literature.

As noted in the literature review, military veterans with combat-related PTSD form a unique population, and treatment methods that are appropriate for civilian populations may not be directly transferable. The major distinction between the veteran population suffering from combat-related PTSD and other populations is that veterans may be both "perpetrators and survivors of trauma" (Creamer and Forbes, 2004).

Some of the other unique circumstances that may be face by veterans and particularly combat veterans include: (a) a constant presence of threat; (b) prolonged periods of autonomic arousal; (c) hyperarousal as a survival mechanism; (d) a threat appraisal system inappropriate in a noncombat environment; (e) witnessing of violence and death that challenges an individual's worldview; and (f) limited rules of engagement resulting in feelings of frustration, powerlessness, and a lack of control over circumstances.

Improvements in PTSD symptoms in veterans following treatment are usually more modest than those achieved in civilian populations. There are many possible explanations for this finding. Veterans often present for treatment many years after their deployment service. By this time their presentation is very complex with high levels of co-morbidity and deterioration in social and occupational functioning (Forbes et al., 2003). In such cases, the goal of eliminating all symptoms of PTSD and returning veterans to pre-trauma levels may be unrealistic. Although the empirical data in this area are lacking, it is reasonable to assume that the treatment goal should be redirected towards emphasis on psychosocial rehabilitation, reintegration, relationships and vocational functioning (Creamer and Forbes, 2004).

For contracted PTSD programs to be accredited, each site has to meet defined criteria, which are:

- A multidisciplinary team
- A cognitive behavioural orientation
- A program with core components including:
    - Psychoeducation about PTSD and its treatment
    - Trauma focused work
    - Symptom management in areas such as anxiety and depression

  - Anger management groups
  - Substance abuse and addictive behaviours
  - Interpersonal, problem-solving, and communication skills
  - Physical health and lifestyle issues
  - Relapse prevention
  - Education and support to veterans partners
- Individual therapy
- Attention to discharge planning and appropriate follow-up

Sites are required to maintain a minimum cohort size (i.e. no less than five participants in each cohort) and cohort frequency (i.e. equal to or greater than three programs per year, or five in two years). If the participant numbers and cohort frequency fall below these guidelines, then the feasibility of the program must be questioned. Further, the level of staff experience for those taking the programs must be maintained (i.e. minimum 3.0 effective full time clinical positions).

It is clear that the accredited program guidelines include most, if not all, of the elements that are the key practise recommendations for the treatment of PTSD in individuals. For instance, the key practice recommendations from the Australian Guidelines state that: "Adults with PTSD should be provided with trauma focussed interventions" and "... non-trauma focused interventions (such as stress management)... should be considered". The recommendations form fundamental components of the guidelines for the group treatment programs. Finally, the site staff are highly experienced individuals delivering programs in accordance with those guidelines.

CONCLUSION: THE PTSD GROUP TREATMENT PROGRAMS INCLUDE MANY CRITERIA THAT ARE ALSO THE RECOMMENDED TREATMENTS APPROPRIATE FOR THE TREATMENT OF INDIVIDUALS WITH PTSD.

The overall effectiveness of the accredited programs – statistical findings

Ideally, in order to assess the effectiveness of a program, outcomes would be directly compared to another form of treatment. Alternatively, outcomes would be measured using some form of unbiased estimate of improvement. Program staff reported that most participants had been under the care of mental health professional(s) prior to entering the programs and participants receive individual therapy during the program, making it extremely difficult to make any direct comparisons of group treatment programs with other forms of treatment. Further, clinician rated measures commonly reported in the literature have not been collected both before and after the treatment. Recommendation 2 addressed this issue.

Consequently, the closest estimate available to test whether the programs result in improvement for participants is to compare participants' self-reported wellness across various measures collected at four different time points of the program.

The program data has been collected from the participants in the programs over several years. Sites are required to collect specific outcome data from the participants at entry, discharge, three months and nine months after the program is completed. The following five key outcome measures were selected for the quantitative analysis to evaluate whether the programs result in improvement for participants.

1. PTSD Check List, Military Version (PCL-M): PTSD symptoms
2. Brief World Health Organisation Quality of Life Instrument (WHOQOL-BREF): quality of life (physical, psychological, social relationships and environmental scales)
3. Dimensions of Anger Reaction (DAR): anger
4. Dyadic Adjustment Scale (Abbreviated) (DAS): family functioning, focusing primarily on the partner relationship
5. Hospital Anxiety and Depression Scale (HADS): anxiety and depression

These measures represent the severity of the participants' PTSD symptoms, how it influences their overall quality of life, its impact on family relationships and the extent of co-morbidities like anger, anxiety and depression. Evaluating these measures provides the best overall picture of the effects of the programs on the participants' lives.

CONCLUSION: THE FIVE MEASURES (PCL-M, WHOQOL-BREF, DAR, DAS AND HADS) REFLECT HOW AN INDIVIDUAL BELIEVES PTSD IS AFFECTING THEIR LIVES OVERALL.

In the current section of this chapter, a brief summary of the outcomes on each of the five measures analysed will be reported, as well as a brief summary of what each of the measures aims to quantify. For all other chapters and sections short and succinct summaries of the analyses will be included. Further detail of the extensive analysis that was conducted on these measures is included in full in Appendix 2, Sections 4 and 5. The extended analyses evaluated changes in raw scores, movement between categories, and whether any change in scores represented a reliable change. Presented below are descriptions of each measure and the overall findings.

Introduction to Data Analysis

This next section of the review summarises five years of data collection. On most measures at entry outcomes are reported for up to 1476 participants. Not all participants who completed the measure on entry went on to complete the questionnaires at all other time points. Accordingly, the sample size (N) for each measure and at each time point varies. This finding is the same for each analysis discussed below. The sample size for the Dyadic Adjustment scale is also much lower and should only be completed by those in a relationship.

One concern in this type of analysis is that participants who do not complete later questionnaires are different in some way from those who complete the questionnaires on all time points. In order to assess whether there was an overt bias the proportion of people completing all measures and scoring above the screening cut off (50) at each time point was compared to the proportion of the sample that scored above 50 on the PCL-M at each time point. There were no differences in comparative proportions. This analysis is included in Appendix 2.

The tables report confidence intervals. A confidence interval shows a range within which the treatment effect is likely to lie. Interpreting the confidence interval reported in the first line of Table 5 would read "We are 95 per cent confident that the true mean PCL-M score on entry to the PTSD group treatment programs lies between 60.9 and 62.1. Reporting confidence intervals helps to understand natural variation that occurs in outcome measurement.

The other statistic reported in the tables is the p-value. The p-value is calculated to show whether the difference that occurred simply through chance. So the p-value is the probability that we would observe effects as big as those seen in the study if there was really no difference between the time points. A p-value of less than 0.05 indicates that the results are statistically significant. For instance, reading the first line - we are 99.9% sure that the 6.1 point drop in PCL scores between entry and discharge represents a true improvement in participants reported symptoms of PTSD

PTSD Check List, Military Version (PCL-M)

Table 5 reports outcomes on the military version of the PCL which measures self-reported symptoms of PTSD in line with the criteria for PTSD listed in the Diagnostic and Statistical Manual Version Four (DSM-IV). It is a 17 item scale, with a score range of 17 to 85. Scores above 50 on the PCL-M indicate a positive screen for PTSD. Clinical review is required for diagnosis. As this is a program for treating PTSD, it is expected that participants would screen positive for the illness. A lower score is indicative of a participant reporting fewer symptoms or being affected by those symptoms to a lesser degree. Table 5 shows the changes in PTSD scores as measured at the four time points.

Table 5: PCL-M scores by time point

	N[1]	Mean	95% CI[2]	p-values[3]
Entry	1470	61.5	(60.9, 62.1)	-
Discharge	1303	55.5	(54.7, 56.2)	-
3 months	1159	54.4	(53.7, 55.1)	-
9 months	984	53.7	(52.9, 54.5)	-
DIFFERENCES:				
Entry to Discharge	1296	-6.1	(-6.7, -5.5)	<0.0001
Entry to 9 months	1155	-6.9	(-7.6, -6.4)	<0.0001
Discharge to 9 months	940	-1.9	(-2.6, -1.2)	<0.0001

Average scores remain above 50 at discharge and follow up. However, there has been a clear and statistically significant improvement on average for all participants. Figure 2 presents the same data pictorially. The extended analysis included in Appendix 2 also demonstrates that this improvement is reliable; that is it represents a real improvement not a statistical anomaly. Similarly the overall pattern of improvement is similar across all measures.

CONCLUSION: THERE IS A SIGNIFICANT IMPROVEMENT ON THE PCL-M BETWEEN ENTRY TO THE PROGRAMS AND DISCHARGE. THE IMPROVEMENT IS MAINTAINED AND INCREASED SLIGHTLY BETWEEN DISCHARGE AND THREE MONTHS AND AGAIN AT THE MEASURE TAKEN AT NINE MONTHS AFTER DISCHARGE.

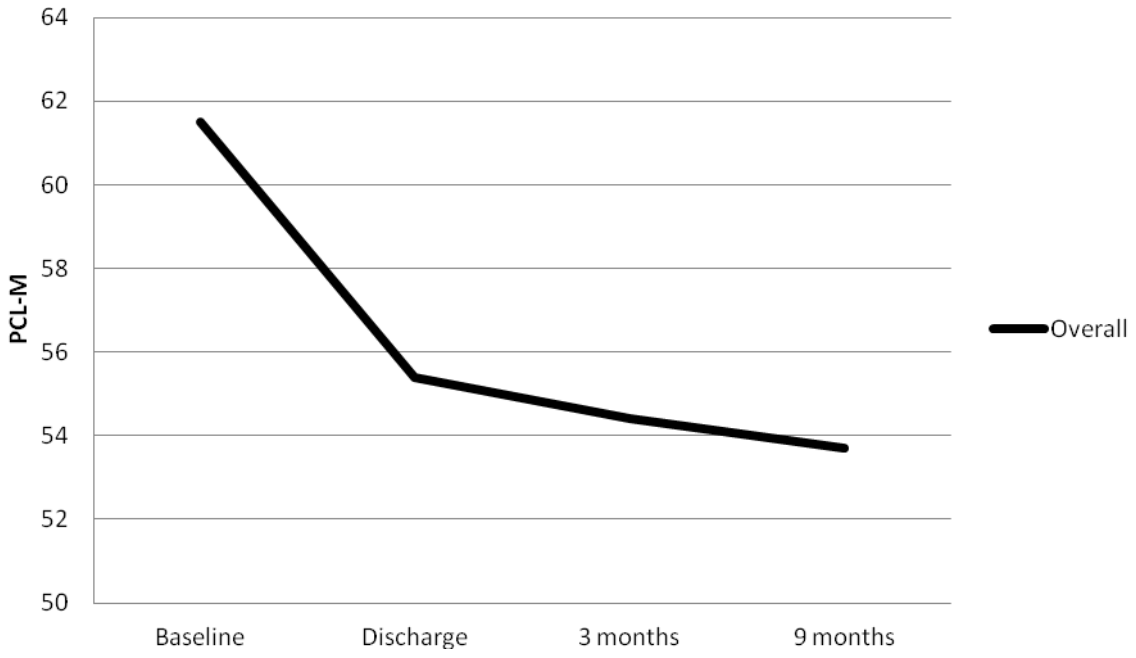

Figure 2. PCL-M raw scores overall

Brief World Health Organisation Quality of Life Instrument (WHOQOL-BREF (Quality of Life))

Brief World Health Organisation Quality of Life Instrument (WHOQOL-BREF) is a 26-item self-report measure reflecting four quality of life domains; physical, psychological, social and environment. The World Health Organisation (WHO) define quality of life (QOL) as "an individual's perception of their position in life in the context of the culture and value systems in which they live, and in relation to their goals, expectations, standards, and concerns" (WHOQOL Group, 1994). This measure captures changes in personal meaning and functioning in daily life. Therefore, the outcomes observed for this measure may be more likely to capture meaningful functional improvements in participants' lives, compared to a measure such as the PCL-M which is designed to measure symptomatology. The four scales of this measure were analysed separately.

Brief World Health Organisation Quality of Life Instrument - Physical scale

The Physical scale of the WHOQOL-BREF asks participants to respond to questions concerning activities of daily living; dependence on medicinal substances and aids; energy and fatigue; mobility; pain and discomfort; sleep and rest; and work capacity. The measure taps into how heavily participants rely on medical treatment to function in their daily life, to what extent they experience pain, and if this interferes with their ability to do the things they wish to do. This is an important measure because it offers some quantifiable indication of changes in functioning.

Table 6: Brief World Health Organisation Quality of Life Instrument -Physical scores by time point

	n	Mean	95% CI	p-values
Entry	1476	39.7	(38.9, 40.4)	-
Discharge	1309	46.3	(45.4, 47.1)	-
3 months	1161	45.4	(44.5, 46.3)	-
9 months	984	46.4	(43.4, 47.4)	-
DIFFERENCES:				
Entry to Discharge	1307	6.6	(6.0, 7.2)	<0.0001
Entry to 9 months	982	6.5	(5.6, 7.3)	<0.0001
Discharge to 9 months	944	-0.01	(-0.8, 0.8)	0.98

Improvements on the physical scale suggest that participants, on average, were significantly less reliant on medical treatments to function in their daily life, were sleeping better, and experiencing less pain. In contrast to the WHOQOL-BREF norms, however, participants were still functioning with lower satisfaction at nine month follow-up compared to population norms (PTSD program mean of 46.4 compared to population means of 61.6 for outpatients and 51.8 for inpatients, where higher scores are better). Overall, there is a clear and significant improvement on the WHOQOL-BREF Physical scale between entry and discharge. These gains were maintained at nine month follow-up (See Table 6).

Brief World Health Organisation Quality of Life Instrument - Psychological scale

The Psychological scale of the WHOQOL-BREF asks participants to respond to questions concerning body image and appearance; negative and positive feelings; self-esteem; spirituality, religion, personal beliefs; and thinking, learning, memory, and concentration. This scale taps into how satisfied people feel about themselves, their sense of self worth, and to what extent their life has meaning. Higher scores indicate higher satisfaction.

Overall, there is a clear improvement on the WHOQOL-BREF Psychological scale between entry and discharge for people who participated in the PTSD programs (see Table 7). Between discharge and nine month follow-up, the average score of the WHOQOL-BREF Psychological falls back slightly. However, overall the gain is significant and is maintained from entry to nine month follow-up.

Table 7: Brief World Health Organisation Quality of Life Instrument - Psychological scores by time point

	n	Mean	95% CI	p-values
Entry	1476	36.5	(35.8, 37.3)	-
Discharge	1309	45.5	(44.7, 46.4)	-
3 months	1161	43.9	(43.1, 44.8)	-
9 months	985	44.3	(43.3, 45.4)	-
DIFFERENCES:				
Entry to Discharge	1307	8.9	(8.2, 9.7)	<0.0001
Entry to 9 months	983	7.2	(6.2, 8.1)	<0.0001
Discharge to 9 months	945	-1.4	(-2.3, -0.6)	0.0009

This finding suggests that after participating in a PTSD group treatment program, participants have significantly greater satisfaction regarding the quality of their life, self-worth, and meaningfulness. However, the average score for participants at nine month follow-up (mean = 44.3) is below the population norms for outpatients (mean = 65.3) and inpatients (mean = 64.1). This suggests that participants may continue to experience lower psychological quality of life at follow-up compared to norms, despite significant improvements after treatment.

Brief World Health Organisation Quality of Life Instrument - Social Relationships scale

The Social Relationships scale of the WHOQOL-BREF asks participants to respond to questions concerning how satisfied they are with their personal relationships; social support from friends; and sexual activity. Positive changes on this scale represent improvements in the quality of personal relationships, friendships, social support, and intimate relationships. Higher scores indicate higher satisfaction.

Overall, there is a significant improvement in the WHOQOL-BREF Social Relationships scale between entry and discharge. Between discharge and three month follow-up the scores decline slightly and then remain steady until nine month follow-up (see Table 8).

Table 8: Brief World Health Organisation Quality of Life Instrument - Social Relationships scores by time point

	n	Mean	95% CI	p-values
Entry	1472	37.8	(36.8, 38.8)	-
Discharge	1304	47.3	(46.2, 48.4)	-
3 months	1160	45.6	(44.4, 46.7)	-
9 months	982	45.8	(44.5, 47.1)	-
DIFFERENCES:				
Entry to Discharge	1298	9.6	(8.6, 10.6)	<0.0001
Entry to 9 months	977	7.7	(6.5, 8.9)	<0.0001
Discharge to 9 months	941	-1.5	(-2.6, 0.3)	0.01

Whilst participants' scores, on average, significantly improved from entry to nine month follow-up, it is important to note that ratings are still below population norms for outpatients (PTSD program mean of 45.8 compared to population outpatient mean of 62.9). This finding suggests that participants in the program continue to experience less satisfaction with their social relationships compared to norms for outpatient populations.

Brief World Health Organisation Quality of Life Instrument - Environment scale

The Environment scale of the WHOQOL-BREF asks participants to respond to questions concerning financial resources; freedom, safety, and security; health and social care; home environment; opportunities for recreation activities; the physical environment in which they live; and access to transport. This scale determines the quality of participants' ability to function and act within their environment.

On the Environment scale of the WHOQOL-BREF, statistically significant improvements were found between entry and discharge and entry to nine month follow-up, although there was a slight decline between three months and nine months (see Table 9). This suggests that people who participated in the PTSD programs made significant improvements in their environmental QOL and that these gains were maintained at nine month follow-up. Increases in the environment scale indicate that participants felt more satisfied with the environment in which they live.

Table 9: Brief World Health Organisation Quality of Life Instrument - Environment scores by time point

	n	Mean	95% CI	p-values
Entry	1476	56.5	(55.8, 57.3)	-
Discharge	1309	60.8	(60.0, 61.5)	-
3 months	1161	59.8	(59.0, 60.6)	-
9 months	985	60.6	(59.7, 61.5)	-
DIFFERENCES:				
Entry to Discharge	1307	4.0	(3.3, 4.6)	<0.0001
Entry to 9 months	983	3.3	(2.5, 4.1)	<0.0001
Discharge to 9 months	944	-0.4	(-1.2, 0.3)	0.28

Although participants improved from entry to discharge on this scale, the mean score at nine month follow-up (mean = 60.6) was lower than the population norms for outpatients (mean = 68.2) and inpatients (mean = 67.1). This suggests that whilst participants significantly improved, their quality of life remains below the population's average on this scale.

Dimensions of Anger Reaction (DAR) overall

The Dimensions of Anger Reaction (DAR) is a seven-item self-report scale that measures anger reactions. It has a score range of zero to 56, with higher scores indicating worse symptomatology. Anger is often associated with PTSD.

Overall, a clear, statistically significant reduction was observed in the DAR (Anger) scale between entry and discharge (from a mean of 31.0 to a mean of 26.1), with a further marginal improvement from discharge to nine month follow-up (from a mean of 26.1 to a mean of 24.3) (see Table 10).

Table 10: Dimensions of Anger Reaction scores by time point

	n	Mean	95% CI	p-values
Entry	1474	31.0	(30.3, 31.7)	-
Discharge	1304	26.1	(25.3, 26.9)	-
3 months	1159	25.1	(24.3, 25.9)	-
9 months	981	24.3	(23.4, 25.2)	-
DIFFERENCES:				
Entry to Discharge	1300	-5.0	(-5.6, -4.3)	<0.0001
Entry to 9 months	978	-6.3	(-7.1, -5.5)	<0.0001
Discharge to 9 months	939	-1.6	(-2.3, -0.9)	<0.0001

Dyadic Adjustment Scale (DAS (Family Function)) overall

The Dyadic Adjustment Scale (DAS) is a self-report scale measuring the general quality of marital/co-habiting relationships. It has seven items, and the score ranges from zero to 36, with higher scores indicating better functioning. A mean of 22.5 (SD 5.4) indicates a high incidence of happily married couples.

Table 11: Dyadic Adjustment Scale (Family Function) scores by time point

	n	Mean	95% CI	p-values
Entry	1184	18.4 (6.5)	(18.0, 18.7)	-
Discharge	1055	20.3 (6.2)	(19.9, 20.7)	-
3 months	921	20.1 (6.2)	(19.7, 20.5)	-
9 months	764	19.8 (6.2)	(19.4, 20.3)	-
DIFFERENCES:				
Entry to Discharge	1011	1.9	(1.6, 2.2)	<0.0001
Entry to 9 months	728	1.3	(0.9, 1.7)	<0.0001
Discharge to 9 months	715	-0.7	(-1.0, -0.3)	0.0004

Overall, there was an improvement in the DAS (Family Function) scale between entry and discharge (from a mean of 18.4 to a mean of 20.3), before the scores fall back slightly at three month and nine month follow-up (from a mean of 20.3 on discharge to a mean of 19.8 at nine months) (see Table 11). Note: fewer participants completed the DAS as those without current partners were instructed to skip the scale.

Hospital Anxiety and Depression (Anxiety) overall

The Hospital Anxiety and Depression (HADS) is a 14 item self-report scale that incrementally measures states of anxiety or depression. This first section reports the analysis of the anxiety

scale. Seven items relate to anxiety, with a score range of zero to 21. Lower scores represent less anxiety.

Overall a statistically significant reduction in HADS (Anxiety) scores is observed between entry (mean = 13.7) and nine month follow-up (mean = 11.6). The largest drop occurs between entry and discharge (from a mean of 13.7 to a mean of 11.9) and further small reductions in HADS (anxiety) score occur at three month and nine month follow-up (see Table 12).

Table 12: Hospital Anxiety and Depression (Anxiety) scores by time point

	n	Mean	95% CI	p-values
Entry	1469	13.7 (3.5)	(13.5, 13.9)	-
Discharge	1309	11.9 (3.7)	(11.7, 12.1)	-
3 months	1158	11.7 (3.7)	(11.5, 11.9)	-
9 months	980	11.6 (3.8)	(11.4, 11.8)	-
DIFFERENCES:				
Entry to Discharge	1300	-1.8	(-2.0, -1.6)	<0.0001
Entry to 9 months	971	-2.1	(-2.3, -1.9)	<0.0001
Discharge to 9 months	939	-0.3	(-0.5, -0.1)	0.004

Hospital Anxiety and Depression (Depression) overall

Please note this section reports the results of the depression subscale of the HADS. The Hospital Anxiety and Depression (HADS) is a 14 item self-report scale that incrementally measures states of anxiety or depression. Seven items relate to depression, with a score range of zero to 21.

Overall a statistically significant reduction in HADS (Depression) scores is observed between entry (mean = 11.3) and discharge (mean = 9.40). Scores worsen slightly after discharge; from a mean of 9.4 on discharge to a mean of 9.8 at nine month follow-up (see Table 13).

Table 13: Hospital Anxiety and Depression (Depression) scores by time point

	n	Mean	95% CI	p-values
Entry	1469	11.3 (3.7)	(11.1, 11.5)	-
Discharge	1308	9.4 (4.0)	(9.2, 9.6)	-
3 months	1157	9.7 (3.9)	(9.5, 9.9)	-
9 months	980	9.8 (4.1)	(9.5, 10.0)	-
DIFFERENCES:				
Entry to Discharge	1299	-1.9	(-2.1, -1.7)	<0.0001
Entry to 9 months	971	-1.5	(-1.7, -1.2)	<0.0001
Discharge to 9 months	939	0.4	(0.1, 0.6)	0.002

Discussion of the overall findings on the effectiveness the programs

Participants in the programs are generally chronic sufferers (diagnosed if the symptoms persist for three or more months) of PTSD. As noted in the introduction to this chapter, improvements

in PTSD symptoms in veterans following treatment are usually more modest than those achieved in civilian populations.

Accordingly, it would be unreasonable to expect the programs to result in participants achieving 100% wellness. Improvements in PTSD symptoms for veterans following treatment in the PTSD programs were modest, but they did achieve a clear, statistically significant reduction on all measures, which indicates that they effectively reduce symptoms of PTSD, anger, anxiety and depression and improve quality of life and family relationships for participants.

The programs are conducted by highly-experienced staff who are passionate professionals who seek out evidence and endeavour to deliver the best treatment possible for their participants. Furthermore, the programs are designed according to evidence-based guidelines and are regularly accredited. This provides strong evidence that the system DVA has in place is working well.

CONCLUSION: OVERALL, THE GROUP TREATMENT PROGRAMS RESULT IN STATISTICALLY SIGNIFICANT CHANGES FOR PARTICIPANTS ON THE REDUCTION OF PTSD SYMPTOMS, IMPROVEMENT IN PERCEIVED QUALITY OF LIFE, IMPROVEMENT IN FAMILY RELATIONSHIPS, REDUCTIONS IN ANGER AND REDUCTIONS IN SYMPTOMS OF ANXIETY AND DEPRESSION.

Chapter 5: Are all the programs the same?

The literature review and the questions raised in the tender highlighted several areas where the effectiveness of treatments for people in different situations was not well understood. Although each site is accredited against the same guidelines and therefore deemed to be operating within an evidence-based approach to therapy, there are considerable differences between the PTSD programs. For example, some sites have a strong, explicit trauma focus whilst other sites have little to no trauma focus and only address trauma if it is brought up specifically by a group participant. Similarly, programs differed on the level of partner involvement and program structure (i.e. number of days, focus on additional modules such as anger management and substance use, etc.). Some sites had different programs for older and younger participants, whilst other sites had made little change to the program structure to accommodate demographic changes.

Tables 14 and 15 provide an overview of the programs as they are presented at each site and information on the basic demographics of participants by site.

Notes on the tables

1) Demographic information. The demographic information is not complete across all cells of the table. This is because not every participant responding to the questionnaire completed every question.

2) Veteran Type. Neither age nor deployment information clearly categorised all veterans as belonging to the contemporary veteran group or veterans deployed to Vietnam and earlier conflicts. For instance some veterans indicated that they have been on multiple deployments without specifying which ones. Similarly, it is possible that those who are aged 50 and over have served in Vietnam and more recent Peace Keeping Operations. Consequently, for the purpose of this analysis and report the following criteria have been applied.
    a. Contemporary veterans are those who are under 50 and have deployed on more recent operations, such as on peace-keeping operations to East-Timor. These deployments occurred after 1972.
    b. Veterans aged 50 and over are those who are more likely to have deployed to Vietnam or conflicts such as Korea.

    This definition categorised most veterans correctly by age and deployment type.

Table 14: Program details across key variables by site

	Heidelberg	Geelong	Greenslopes	Toowong	Townsville	Palm Beach	St John of God	Northside Cremorne	Calvary	Daw Park	Hollywood
Structure of days	4d/wk for 4 weeks, 1d/wk for 8 wks OR 3d/wk for 6wks, 1d/wk for 6wks OR 2d/wk for 12 wks	2d/wk + live-in wk 5	5d/wk for 4wks OR 2d/wk for 10wks	1d/week OR 4d/wk for 6wks, 2d/f'night for 12 wks	2d/wk for 2wks, 4d/wk for 4wks, 2d/wk for 2wks	4d/wk for 6wks	5d/wk for 4 wks,1d/m for 9m	3d/wk for 7wks, 2d/wk for 4wks	3d/wk for 12 wks	3d/wk for 8wks	TR: 5d/wk for 2wks then 2d/wk for 16wks PTSD: 5d/wk for 4wks then 1d/wk for 8 wks
Partner/ other	Partner	Anyone	Partner	Partner	Partner	Anyone	Anyone	Anyone	Partner	Anyone	PTSD: partner TR: anyone
Partner structure	Weekly partner group, 2x communi-cation skills w veterans, 6 ed. Sessions	Weekly family group (9x1hr). Shared communi-cation group, review, & relaxation.	5 days. 5x2hr couple sessions in group, 4x1hr women sessions.	Follow-up sessions 5+6 incl. partner, partner only sessions and some shared w veterans.	Partner groups, sessions w veterans on comm., invited to several other sessions	Was 1d/wk for 6wks, then changed to 3 workshops.	2 day orient. pre-program, family day last wk of residential, follow-up days. Shared w veterans.	10 partner days incl. @ follow-up 4 comm. sessions w veterans.	Meet together at start. Can attend general carer group. Referred for support.	Shared sessions with veterans plus partner-only group.	PTSD – shared sessions and partner-only grp. 1d/wk for 12 wks. TR – 6 sessions, kids' day, friends' session
Follow-up structure	Come back for ½ day @3m and 9m. Partners invited.	None. Just post ACPMH booklets.	Come back for 1d @ 3m and 9m. Partners invited.	Come back for 1d @ 3m & 9m.	Come back for 1d @ 3m & 9m.	Come back 1d @ 3m and 9m. Partners invited.	Come back 1d/m for 9m.	Come back 1d @3m & 9m. Partners invited.		Come back ½ day @ 3m & 9m. Partners invited.	Come back for 1d at 3m and 9m.
Context of cohorts	Veteran only. Old + young, & old only. Young only did not work.	Veteran-only. Old + young.	Veteran only. Old + young, PK only did not work.	Veteran only. Old + young, young only did not work.	Veterans + non-veterans. Old + young, mainly young.	Veteran only. Old + young.	Veterans + non-veterans. Mainly older.	Veteran only. Mainly older.	Veteran-only. Old + young, mainly older.	Veterans + non-veterans. Mainly older. Had WWII-only.	Veterans + non-veterans. Old only + young only (not mix ages)
Staffing structure	9 + guests and others Multi-disc	3 + guests + contractors. Multi-disc	7 + guests Multi-disc.	7 + guests +contractors Multi-disc	Multi-disc, large-ish	Smaller team	Smaller team	3 + guests Nurses + psyc	Smaller team	Smaller team	8 + psychiatrist Multi-disc
Trauma focus	Indirect	Explicit	Indirect	Indirect	Explicit	Explicit	Explicit	Choice-based	Explicit	Choice-based	Explicit

See notes on the tables above Source: Qualitative face-to-face interviews with site staff

Table 15: Demographic characteristics for program participants from 05/06 to 09/10

	Heidelberg		Geelong		Greenslopes		Toowong		Townsville		Palm Beach		St John		Cremorne		Calvary		Daw Park		Hollywood	
	n	%	n	%	n	%	n	%	N	%	n	%	n	%	n	%	N	%	n	%	n	%
Gender:																						
• Male	253	(100)	58	(97)	161	(99)	228	(98)	186	(97)	31	(100)	68	(99)	141	(99)	30	(100)	132	(99)	171	(98)
• Female	0	(0)	2	(3)	1	(1)	4	(2)	6	(3)	0	(0)	1	(1)	1	(1)	0	(0)	1	(1)	3	(2)
Age:																						
• Contemporary Veteran	40	(16)	14	(23)	21	(13)	58	(25)	123	(64)	11	(35)	14	(18)	9	(6)	7	(23)	15	(11)	61	(35)
• Veterans 50 and over	213	(84)	46	(77)	141	(87)	175	(75)	68	(36)	20	(65)	63	(82)	133	(94)	23	(77)	118	(89)	113	(65)
Education.:																						
• Primary	11	(4)	1	(2)	8	(5)	15	(6)	7	(4)	0	(0)	2	(3)	5	(4)	0	(0)	5	(4)	10	(6)
• Second.	128	(52)	32	(54)	83	(52)	119	(52)	106	(55)	21	(70)	37	(54)	72	(51)	14	(47)	74	(56)	80	(46)
• Post-second.	93	(38)	19	(32)	58	(36)	81	(35)	66	(34)	8	(27)	27	(40)	50	(35)	12	(40)	46	(35)	67	(39)
• Tertiary	16	(6)	7	(12)	11	(7)	16	(7)	13	(7)	1	(3)	2	(3)	14	(10)	4	(13)	7	(5)	16	(9)
Marital status:																						
• Single	10	(4)	4	(7)	3	(2)	13	(6)	25	(13)	1	(3)	0	(0)	6	(4)	1	(3)	3	(2)	9	(5)
• Married	174	(69)	46	(77)	129	(80)	154	(67)	107	(57)	20	(67)	51	(75)	105	(76)	21	(70)	89	(67)	108	(63)
• De-facto	19	(8)	3	(5)	8	(5)	17	(7)	25	(13)	2	(7)	6	(9)	8	(6)	2	(7)	11	(8)	16	(9)
• Sep/div	35	(14)	6	(10)	21	(13)	43	(19)	32	(17)	6	(20)	11	(16)	20	(14)	2	(7)	26	(20)	37	(22)
• Widow.	14	(6)	1	(2)	0	(0)	2	(1)	0	(0)	1	(3)	0	(0)	0	(0)	4	(13)	4	(3)	2	(1)
Employ. Status:																						
• FT	34	(14)	10	(17)	14	(9)	44	(19)	88	(45)	1	(3)	7	(10)	0	(0)	5	(17)	15	(11)	25	(15)
• PT	12	(5)	3	(5)	6	(4)	3	(1)	10	(5)	0	(0)	1	(1)	1	(1)	2	(7)	10	(8)	1	(1)
• Not work	11	(5)	4	(7)	8	(5)	16	(7)	8	(4)	2	(7)	7	(10)	5	(4)	0	(0)	6	(5)	9	(5)
• Retired	68	(28)	18	(30)	36	(22)	53	(23)	20	(10)	4	(13)	12	(18)	30	(21)	7	(23)	21	(16)	31	(18)
• Unable	116	(47)	24	(40)	95	(59)	106	(46)	63	(32)	21	(70)	39	(58)	103	(74)	15	(50)	78	(59)	103	(60)
• Other	6	(2)	1	(2)	3	(2)	7	(3)	3	(2)	2	(7)	1	(1)	1	(1)	1	(3)	2	(2)	3	(2)
Service:																						
• Navy	34	(15)	13	(23)	44	(28)	61	(27)	29	(16)	6	(20)	20	(29)	38	(27)	7	(25)	23	(18)	45	(27)
• Army	191	(85)	42	(76)	116	(73)	167	(73)	155	(84)	24	(80)	48	(71)	101	(73)	21	(75)	108	(82)	124	(73)
• NK	28		5				4		8		1		1		3		2		2		5	
Deployed:																						
• Post-'72	43	(17)	14	(23)	27	(17)	58	(25)	127	(66)	11	(35)	15	(22)	7	(7)	7	(23)	14	(11)	66	(38)
• Pre-'72	210	(83)	46	(77)	135	(83)	174	(75)	65	(34)	20	(65)	54	(78)	93	(93)	23	(77)	119	(89)	108	(62)

See the notes on the table above. Source: Quantitative outcome data provided by ACPMH

Tables 14 and 15 have highlighted that there are large differences in the overall demographics of the participants who attend each program and in how the accreditation guidelines are interpreted at each site. These differences provide a perfect opportunity to assess whether any particular approach to treatment in relation to these variables results in different outcomes. This section will explore those differences. The specific areas of interest are described briefly below.

Contemporary veterans versus veterans aged 50 and over

There has been considerable interest around whether contemporary veterans are fairing less well than their older counterparts. Some sites treat more contemporary veterans and have made adjustments to their programs for these veterans. For the purposes of the following analysis this definition has been employed:

- ***Contemporary veterans***: Deployed after Vietnam i.e. post 1972.
- ***Veterans aged 50 and over:*** Includes Vietnam veterans, some older peacekeepers e.g. Rwanda, and veterans from WWII and other deployments.

Employment category

Participants reported their employment status as working or looking for work, retired, unable to work or other/unknown. It is unclear whether employment status affects outcomes on the program.

Trauma focus

The Australian Guidelines specifically state that:

- Non-trauma-focused interventions such as supportive counselling and relaxation should not be provided to adults with PTSD in preference to trauma-focused interventions

Exposure therapy, a trauma focused therapy which was shown to be one of the most effective elements of the treatment for PTSD, has relatively modest treatment benefits in veterans compared to civilian populations. Exposure may be particularly difficult for veterans. Imaginal exposure requires patients to repeatedly narrate their trauma experiences with their eyes closed to facilitate engagement of their imaginative capacities. Avoiding reminders of the trauma is one of the defining symptoms of the disorder, and many patients are unable or unwilling to effectively visualise the traumatic event (Creamer & Forbes, 2004). Some sites also expressed concern about whether there was a potential to re-traumatise participants if the trauma focus was too strong. Three categories of trauma focus were defined based on qualitative information collected from sites (see Table 14 for specific details) –

- ***Low***: trauma focus is indirect, focusing on symptom management psycho-education, triggers and restoration of affect, but no exposure or direct trauma work. Sites: Greenslopes and Heidelberg.
- ***Medium***: trauma focus in group work incorporates some exposure work, including imaginal and in vivo, but participation is choice-based and varies with

participant and cohort. Sites: Toowong, Northside Cremorne, Hyson Green Calvary, and Daw Park.

- ***High***: trauma focus is explicit and structured, incorporating several group sessions. Sites: Geelong, Townsville, Palm Beach Currumbin, St John of God and Hollywood.

Partner inclusion

Marital and relationship difficulties are common in individuals with PTSD. The qualitative interviews found overwhelming support for the involvement of partners and families, and the consulting psychiatrist, Dr Len Lambeth, believes family involvement is critical in the treatment of PTSD. There are differences between the sites on the extent to which partners are involved in the program. However, individual partner involvement could not be matched with individual participant outcomes. Instead the programs have been grouped according to the opportunities offered to partners and families to be involved in the program (see Table 14 for specific details of partner focus in each program).

- ***Low***. Sites: St John of God, Hyson Green Calvary
- ***Medium***. Sites: Greenslopes, Toowong, Palm Beach Currumbin
- ***High***. Sites: Heidelberg, Geelong, Townsville, Northside Cremorne, Daw Park and Hollywood

Mixed Cohorts

In general terms the overall numbers of DVA veteran participants has been steadily declining. Accreditation requires that sites run a minimum of three programs a year with a minimum of five participants in each program. At some sites sustaining that throughput has been difficult and in order to have sufficient participants in programs they have included "uniformed civilians", for instance police personnel. Clinical opinion varies as to whether this approach is appropriate. Additionally, the literature highlighted that PTSD may manifest somewhat differently for veterans compared to civilians. In order to evaluate outcomes difference based on whether the cohort was mixed the following definitions have been used.

- ***Veteran-only***. Sites: Heidelberg, Geelong, Greenslopes, Toowong, Palm Beach, Northside Cremorne, and Hyson Green Calvary.
- ***Mixed*** (includes civilians, typically from other uniformed services such as police). Sites: Townsville, St John of God, Daw Park and Hollywood.

Analysis of factors affecting outcomes on the program

Appendix 2, the Phase 2 in depth quantitative and qualitative analysis report, includes extensive analysis of the differences in outcomes based on the variables described above. Each factor, mixed cohorts, partner involvement etc, was evaluated against each of the five outcome measures described above. This analysis is summarised here in a single table with an extended discussion below.

In addition, there are several other variables that are known to systematically correlate with measures evaluating mental health. Clearly, when the measure was taken (before, on discharge or after the program= time point) affects outcome measures. In addition, age, education, marital status, employment, and service (Army, Navy and Air Force) and service type (Regular or Conscript) were all important predictors of the overall PCL-M scores. The analysis described below adjusts for these variables in the statistical model. Being single, having a post high school qualification, being retired or unable to work or being from the Army or a conscript were all associated with lower (improved) scores on the PCL-M.

Table 16 highlights measures where outcomes were different depending upon the factor of interest. For example, looking at the age column, outcomes on the HADS (depression) and HADS (anxiety) scales differed depending upon which age group a participant was in. In statistical terms this is an interaction. The outcomes are explained in detail below.

Table 16: Interactions found for key variables

	Key variables of interest				
Measure	Age	Employment	Trauma focus	Partner involvement	Mixed/veteran-only cohorts
PCL (PTSD)	×	✓	✓(med. focus)	×	✓ (both)
WHOQOL Physical	×	✓	×	×	×
WHOQOL Psychological	×	✓	✓ (high focus)	×	×
WHOQOL Social R'ships	×	✓	×	×	×
WHOQOL Environmental	×	×	✓ (high focus)	×	×
DAR (Anger)	×	✓	×	✓ (med+high)	✓ (veteran)
DAS (Family Function)	×	×	×	✓ (med+high)	×
HADS (Anxiety)	✓ (<50)	✓	✓ (med+high)	×	✓ (mixed)
HADS (Depression)	✓ (<50)	✓	×	✓ (med+high)	×

Age

Contemporary veterans entered the programs with scores showing more distress compared with veterans aged 50 and over, across all measures on average. Across all measures contemporary veterans also improved by a similar amount compared with veterans aged 50 and over – that is if the average improvement on the PCL-M was six points between entry and discharge then contemporary veterans also improved by six points on average. However, this does mean that just as they entered with more distress they also exited the programs with more distress compared with veterans aged 50 and over. This was true for measures of PTSD symptoms, quality of life, anger and family functioning. On anxiety and depression, the magnitude of change for contemporary veterans was smaller – that is contemporary veterans did not show the same amount of improvement on measures of anxiety and depression as their older counterparts did.

This finding does not support the views expressed in the qualitative interviews. Program staff felt that contemporary veterans did not benefit to the same extent from the programs, and their needs were different from those of the Vietnam and older veterans. This will be discussed in greater detail in a later in this chapter; however, the analysis did not demonstrate

differences in the benefits received from the programs depending upon the era in which the veteran served.

CONCLUSION: CONTEMPORARY VETERANS BENEFIT TO THE SAME EXTENT AS VETERANS AGED 50 AND OVER FROM THE PROGRAMS IN RELATION TO IMPROVEMENT ON MEASURES OF PTSD SYMPTOMS, QUALITY OF LIFE, ANGER AND FAMILY FUNCTION, BUT TO A LESSER EXTENT IN RELATION TO ANXIETY AND DEPRESSION.

Three sites have adapted their programs in an attempt to meet the needs of contemporary veterans; these changes are discussed further in Section 7 of Appendix 2.

Employment category

Employment status was shown to influence every variable except family functioning. Participants who were in the labour force (working or looking for work) received consistently lower benefits on PTSD, quality of life, anger, anxiety and depression than those who were retired or unable to work.

Normally, one might assume that those who were in the workforce were, at least overtly, managing their PTSD better and consequently, this finding appears counter intuitive. It seems to indicate that the programs are currently most suited to participants who are retired or unable to work, and may be less effective for participants in the workforce. The programs include residential components of various lengths. It may be that those who are in the workforce find it difficult get the time off work to attend the programs. Alternatively, while they are attending the program they may be concerned about the consequences of missing work including managing questions about why they were absent. Given that those who are in the workforce are also likely to be younger and as future demand for the programs will increase from this demographic, the effectiveness of the programs for those in the workforce should be monitored. Individual evidence-based treatments remain an option for veterans whose work commitments are a barrier to accessing a PTSD group treatment program.

CONCLUSION: THE PROGRAMS ARE MOST EFFECTIVE FOR THOSE WHO ARE CURRENTLY RETIRED OR UNABLE TO WORK.

Trauma focus

The evidence base for the treatment of PTSD states that some level of trauma focus is necessary for effectiveness. Overall analyses found that between entry and discharge, programs with a medium or high trauma focus achieved slightly stronger results on PTSD, quality of life and anxiety than programs with a low trauma focus (see Table 16), and that overall more participants reliably improved (as measured on the PCL-M). However, the differences in outcomes between a low and either a medium or high focus were not evident at nine month follow-up.

CONCLUSION: AT DISCHARGE FROM THE GROUP TREATMENT PROGRAM, PARTICIPANTS IN PROGRAMS WITH A MEDIUM TO HIGH TRAUMA FOCUS HAD IMPROVED MORE THAN PARTICIPANTS ATTENDING PROGRAMS WITH A LOW TRAUMA FOCUS.

During the qualitative interview, sites with a lower focus on trauma argued strongly that they were concerned that focussing too closely on the trauma that lead to the PTSD may actually be detrimental to the participants. While it is clear from the analysis that this was not the case, the benefits of a trauma focus were not sustained through to the nine month follow-up.

Partner involvement

The level of partner involvement was shown to positively influence outcomes on depression, family functioning and anger but no effect was observed on other measures (see Table 16). These findings must be interpreted cautiously because whether partners attended the programs is not known. The analysis has been done comparing the opportunities to attend. Further, partner inclusion provides the partners with the opportunity to increase their understanding of PTSD, share their experience and receive support and understand from other partners in the same situation.

The analyses could be significantly strengthened by the ability to link individual participant outcome to partner attendance. CMVH is not aware whether such data currently exists. However, given the apparent benefits and costs associated with partner involvement more accurate analyses should be conducted.

CONCLUSION: PARTNER INCLUSION IN THE PROGRAMS IS BENEFICIAL TO PARTICIPANTS AND THEIR PARTNERS.

Mixed cohorts

The outcomes were mixed on comparisons of veteran-only cohorts with mixed cohorts. Veteran only cohorts did very slightly better between entry and discharge on measures of PTSD symptoms and anger, but mixed cohorts and veteran-only cohorts were equal in positive outcomes at the three month and nine month follow-ups. In contrast, on measures of anxiety, mixed cohorts did slightly better between discharge and nine months (see Table 16).

From the qualitative interviews support was voiced for whatever was the status quo at that particular site. At veteran-only sites interviewees did not believe that veterans would 'like' the inclusion of others in the program. At mixed-cohort sites interviewees said that the process worked and there were benefits to understanding that PTSD happened to other service professions.

CONCLUSION: INCLUDING OTHER UNIFORMED CIVILIANS IN THE GROUP TREATMENT PROGRAMS IS **NOT** DETRIMENTAL TO OUTCOMES FOR VETERANS.

This finding is particularly important in the context of the sustainability of the programs. To meet the accreditation guidelines sites must maintain treatment teams and must run a

minimum of five programs every two years with a minimum of five participants in each cohort. In recent years there has been some evidence of declining numbers of veterans participating in the programs (see Appendix 2, Section 1). Including uniformed civilians in the programs may assist some sites to maintain their accreditation.

How do the programs compare with each other?

The discussion in this section so far has focussed on attempting to establish from the programs themselves whether one interpretation of the accreditation guidelines is superior to another in some facet.

However, it is not clear whether one sites' interpretation of the accredited model is clearly superior in comparison to the other sites. Appendix 2, Section 6, provides the extended analysis comparing each site to the others on measures of PTSD symptoms, quality of life, anger, family function and anxiety and depression. Presented below is the first analysis that compares raw scores on the PCL-M.

Analysis comparing the sites to each other

Each site reduces PCL-M scores from entry to discharge and this reduction is statistically significant in all sites but one (see Figure 3). The exception was Palm Beach Currumbin. Currumbin had only 30 participants in the relevant time frames and has since ceased delivering the DVA-funded PTSD program.

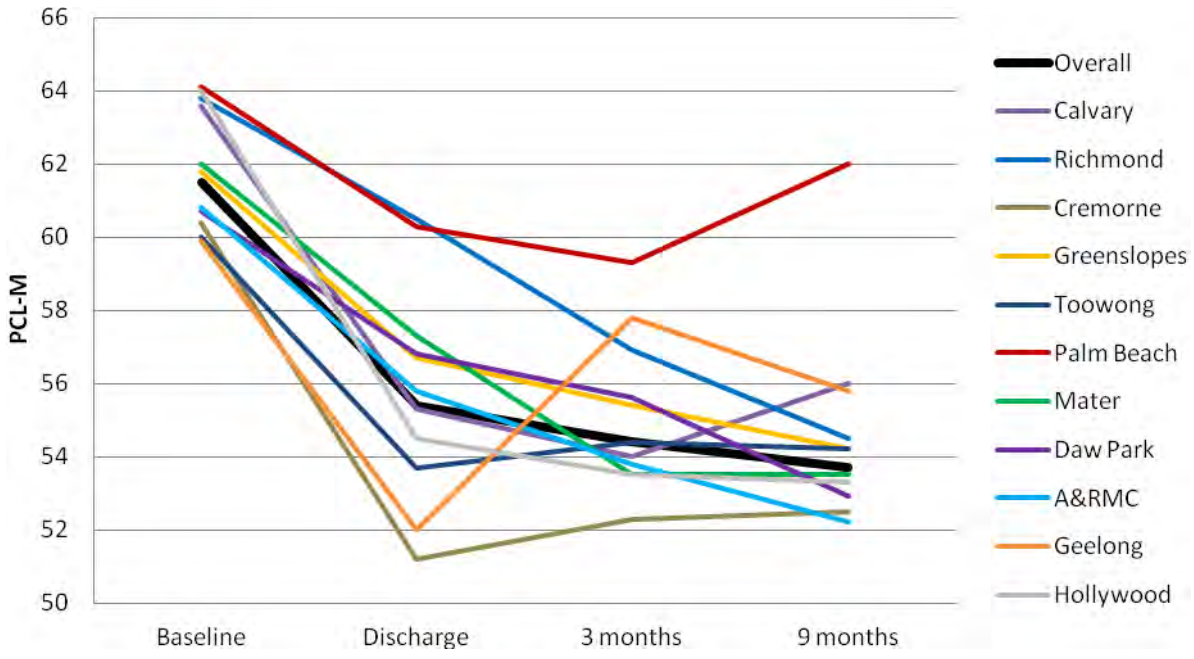

Figure 3. PCL-M raw scores overall and by site

A flatter or dropping tail on the line indicates that the benefits of the program were maintained after completion of the program or that participants continued to improve slightly after the

program was completed. A line that goes up from discharge suggests that some of the treatment gains were not maintained.

The data shown in Figure 3 are the raw data. They are not adjusted for any demographics relevant to the site. Each site serves a slightly different demographic and previous analyses have shown that age, gender, service and education all may affect the outcomes. Further, participants may or may not have sought additional treatment following the programs and this too affects the outcomes. Consequently it is important not to over interpret the lines shown in Figure 3.

Nonetheless, different sites use different follow-up protocols for their participants and some of the changes would be attributable to these differences. Most sites invite participants to return at three months and nine months follow up for a full or half day. St John of God Richmond have a unique follow-up model of one day per month for nine months after discharge, which may contribute to the large drop in PCL scores post-discharge, and the low attrition in data. However, Richmond's amount of improvement is not as marked between entry and discharge as the improvement achieved by a site like Geelong. Participants in the Geelong program do not return to the site, but are sent the program questionnaires for completion. This may account for the high attrition in data and perhaps the increase in PTSD symptoms for their participants at the three month measure.

In order to compare one site to all other sites, statistical modelling was used to adjust for variables such as baseline severity (how symptomatic participant were on entry to the program) the age of the participants and so on. The full analysis is available in Appendix 2, Section 6.

The overall pattern of finding was similar to that shown in the raw data analysis shown in Figure 3. Each site showed a strong improvement on all measures between entry and discharge. After all other demographic factors had been accounted for; the improvement was close to that anticipated.

There was variation between the sites on the maintenance of program effects between discharge and the nine-month follow up. However, sites that maintained or slightly increased the improvements through the follow-up period did not necessarily demonstrate the largest amount of improvement between entry and discharge. No site emerged as a clear "winner".

CONCLUSION: ALL SITES DELIVERED POSITIVE OUTCOMES. NO INDIVIDUAL SITE STOOD OUT AS SIGNIFICANTLY BETTER THAN THE OTHER SITES.

Programs that specifically address the needs of contemporary veterans

Appendix 2, Sections 8 and 9 specifically address whether contemporary veterans have different needs from veterans aged 50 and over and discusses how those needs are being met.

Site staff during their qualitative interviews suggested that contemporary veterans did have different needs compared with veterans aged 50 and over. In summary, contemporary veterans were likely to have:

- More acute symptoms
- A slightly different symptom profile
- Different/diverse deployment experiences
- Different family needs
- Different stage of life and associated demands
- Potentially different experience of camaraderie

In contrast, veterans aged 50 and over were likely to have:

- Long term symptoms and patterns of behaviour
- Different stage of life
- Issues to do with ageing

Triggers for seeking help, generational attitude and working status were also likely to be different between the age groups.

Three sites work with higher numbers of contemporary veterans and, based on their expertise and experience, have made changes to their program to better work with this demographic. These sites are Mater Townsville, Toowong and Hollywood.

Changes to programs for contemporary veterans

Changes made to the programs for contemporary veterans include:

- Greater focus on acute symptoms, particularly nightmares, anger, sleep, and anxiety
- Greater focus on partner communication
- Partner sessions opened up to any significant other, flexible days, BBQ/ family fun day for kids, psycho-education sessions for family and friends
- More peacekeeper-friendly: connected with peacekeeper organisations, invite both a Vietnam veteran and a peacekeeper from past programs as guest speakers
- Inpatient phase and teambuilding activities to build a cohesive group
- Flexibility: modules that can be moved forward/ back/ left out, content within modules that can be changed, structure that can change on the day according to needs and reactions
- Focus on rehabilitation not retirement, with an emphasis on quality of life
- Extra liaison with other treating professionals
- Intensive supervision and support of staff due to the intensity of the work

In order to analyse whether the changes made by the Mater Townsville, Toowong and Hollywood have improved outcomes for younger veterans analysis of these sites was conducted comparing their outcomes to the outcomes achieved at Heidelberg. Heidelberg treats a comparatively large number but small proportion (16% of their sample) of contemporary veterans and so they have not made substantial changes to their program to accommodate this demographic.

Summary of analysis focusing on outcomes for contemporary veterans

The analysis conducted compared the four programs (Townsville, Toowong, Hollywood and the comparison site Heidelberg) on PTSD symptoms, quality of life, anxiety and anger. All four programs demonstrated that they are effective for contemporary veterans.

Included below are figures highlighting the effectiveness of the four key sites on the PCL-M, a measure of PTSD symptoms.

- The thick purple line represents the adjusted overall change observed at the other sites, adjusted for differences between sites. It is what the site could be expected to achieve based on the results being achieved overall for those with similar levels of severity on intake.
- The gold line is the observed result – what the site did achieve i.e. PCL-M raw score.
- The dotted gold lines represent the confidence intervals – if multiple samples were taken from this site we would expect the "true" mean to lie within this confidence interval in 95% of the samples we observe. Note: confidence intervals are related to sample size. For sites with large numbers the confidence intervals are narrower. For sites where there are attritions in data over time, the confidence interval widens. Tighter (narrower) CI's are preferable because the range of scores that the "true" score lies within is more precise.
- If the adjusted overall (the thick purple line) is within the confidence interval (dotted gold lines) then the program has performed as expected at that point in time.

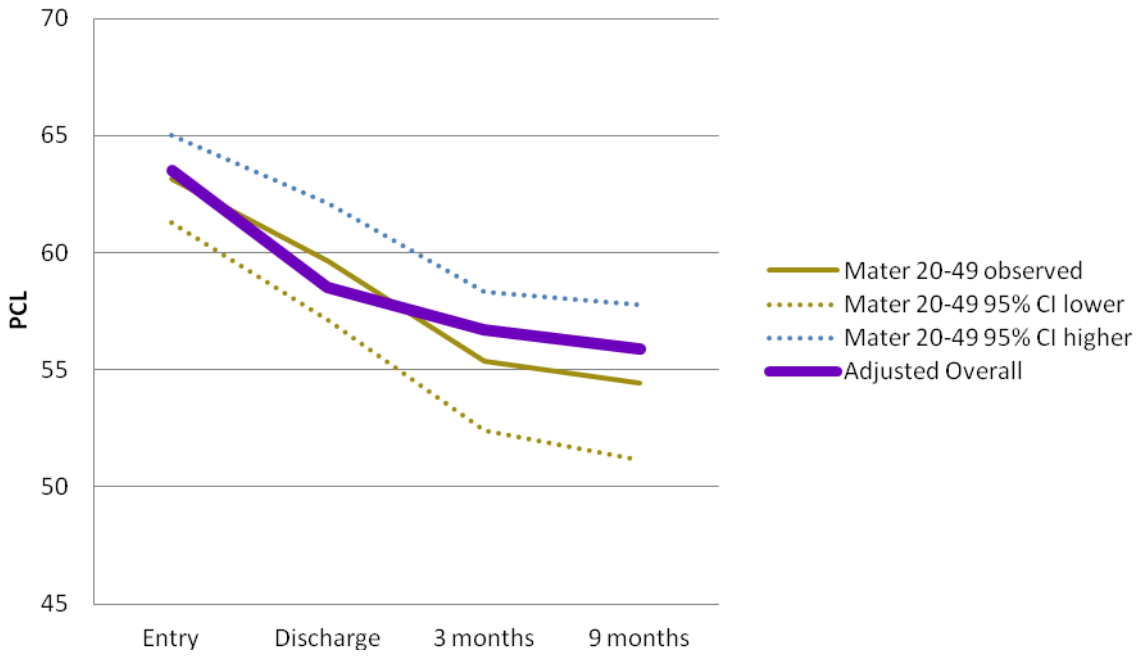

Figure 4. PCL-M results for contemporary veterans at Mater Townsville (n=123)

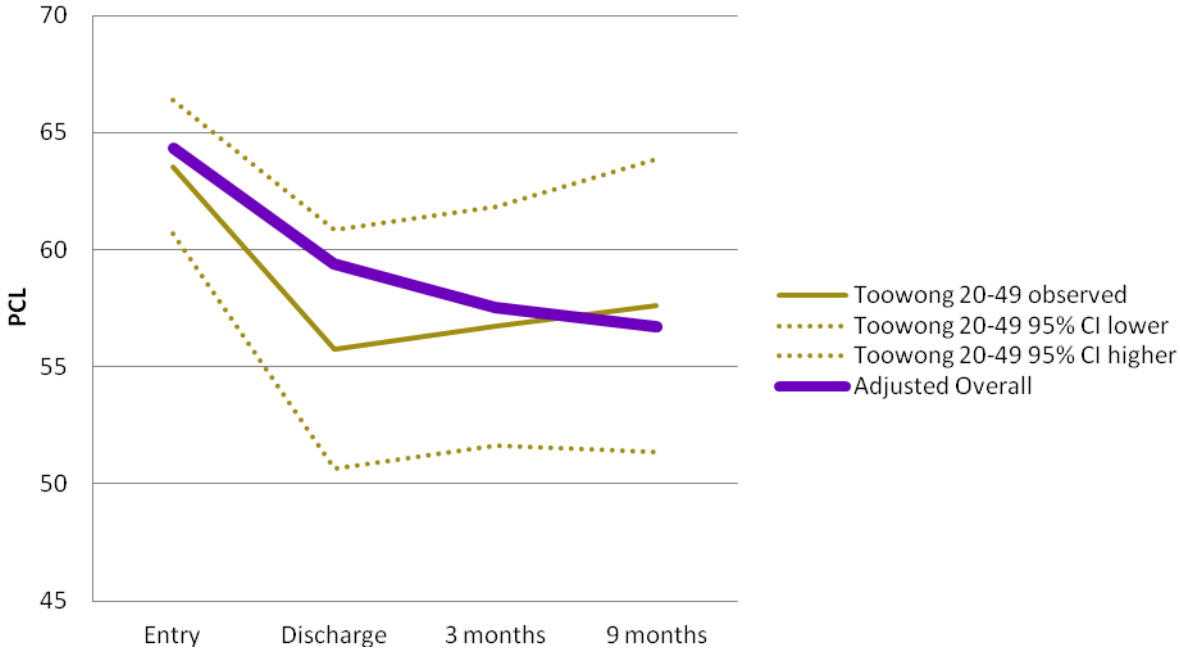

Figure 5. PCL-M results for contemporary veterans at Toowong (n=58)

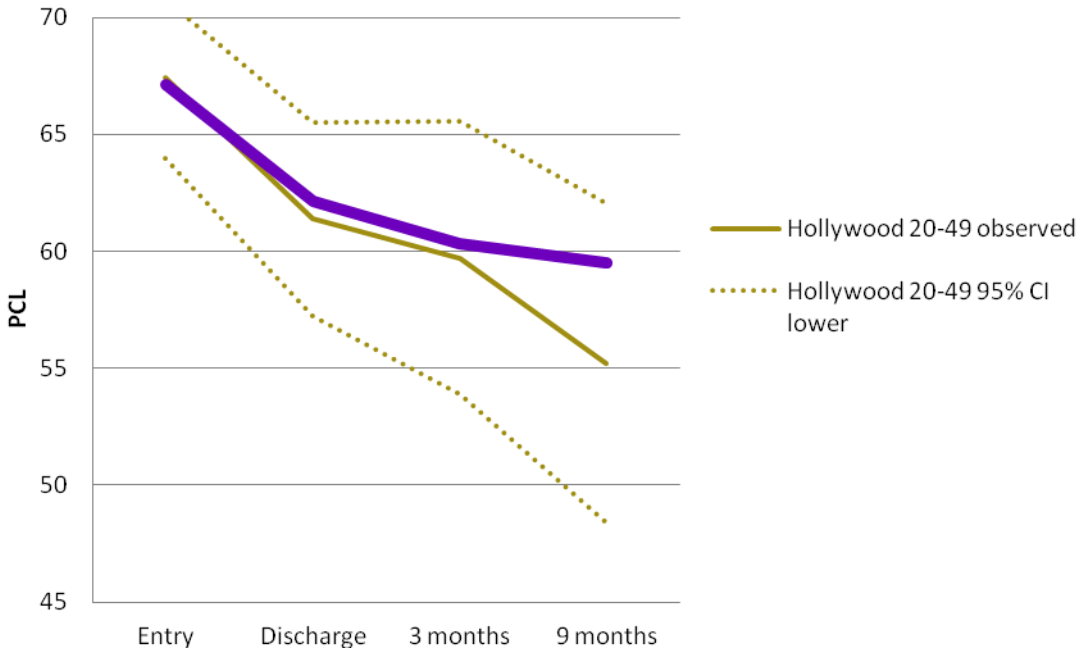

Figure 6. PCL-M results for the Trauma Recovery program at Hollywood (n=51)

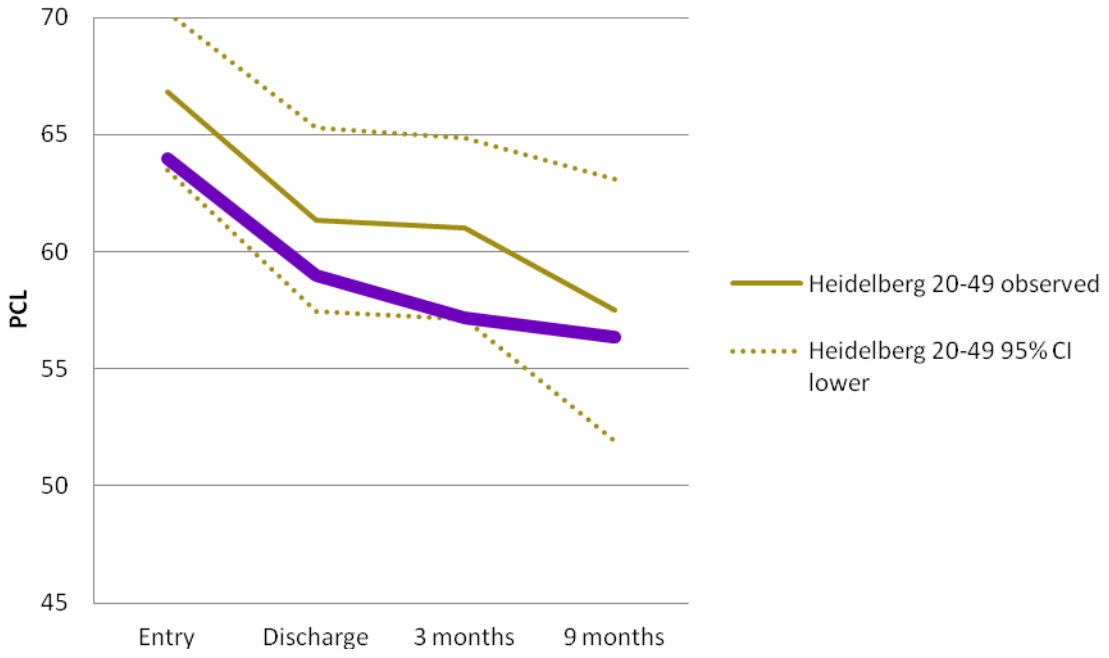

Figure 7. PCL results for contemporary veterans at Heidelberg (n=40)

It is clear from the figures that all four programs are successfully reducing the symptoms of PTSD in their participants.

In general terms, on both the PCL-M and the DAR (Anger), contemporary veterans entered with worse symptoms than older groups but received a similar benefit from the programs. On the WHOQOL-BREF, there was almost no difference between sites on the physical scale, including the comparison site. On the Psychological scale, results for the three programs of interest were stronger than that of the comparison site. Hollywood showed some additional promise because of the continued improvement after discharge.

On the DAR (Anger), results seem much closer to the outcomes that were expected. This appears to be consistent with clinician reports that anger is the most difficult problem to change in contemporary veterans. This also seems to be the case for the comparison site.

These analyses indicate that the three programs that have made changes to better work with the younger demographic have been successful to some extent. They may require ongoing refinement and would benefit from further investigation. However, they each show promise. The full analysis is available in Appendix 2, Sections 8 and 9.

CONCLUSION: THE PROGRAMS THAT HAVE BEEN ADAPTED TO BETTER FIT THE NEEDS OF CONTEMPORARY VETERANS ARE PROMISING. HOWEVER, THE IMPROVEMENTS ACHIEVED ARE NOT STATISTICALLY SIGNIFICANTLY BETTER THAN PROGRAMS THAT HAVE NOT BEEN CHANGED.

Discussion

Chapter 5 has evaluated how the programs differed from each other, how they compared to each other and evaluated more closely the programs that have been adjusted for contemporary veterans.

It is worth reiterating the findings of this section:

1. The group treatment programs result in statistically significant changes for participants on the reduction of PTSD symptoms, improvement in perceived quality of life, improvement in family relationships, reduction in anger and reduction in symptoms of anxiety and depression.

2. Contemporary veterans benefit to the same extent as veterans aged 50 and over from the programs in relation to improvement on measures of PTSD symptoms, quality of life, anger and family function, but to a lesser extent in relation to anxiety and depression.

3. The programs are most effective for those who are currently retired or unable to work.

4. At the end of the group treatment program, participants in programs with a medium to high trauma focus had improved more than participants attending programs with a low trauma focus.

5. Partner inclusion in the programs is beneficial to participants and their partners.

6. Including other uniformed civilians in the group treatment programs is not detrimental to outcomes for veterans.

7. All sites delivered positive outcomes. No individual site stood out as significantly better than the other sites.

8. The programs that have been adapted to better fit the needs of contemporary veterans are promising. However, the improvements achieved are not statistically significantly better than programs that have not been changed.

Although improvements on the measures discussed are statistically significant, what this means in terms of meaningful change in a person's life is less clear. As discussed previously and forming **recommendation 2, including the CAPS measure at discharge** would significantly improve DVA's ability to understand the amount of improvement gained by participants attending the program as assessed by an objective clinician rather than the participant's subjective view of their gains.

Dr Len Lambeth and Professor Justin Kenardy, the psychiatrist and psychologist consulting on this review, noted that measuring functional improvement was fundamental to understanding the gains made by participants. Functional improvement may be different things for different people. For instance, one participant might hope to be able to attend church after the program and another might hope to improve their family relationships.

The Health of the Nation Outcome Scale (HONOS) is currently collected and is an adequate measure of functioning, but appears to be completed only on entry to the programs.

Recommendation 3. Collect the HONOS, a good measure of functioning, on discharge as well as entry.

From the analysis that we have reviewed it appears that not all measures collected by ACPMH are analysed. If Recommendations 2 and 3 are accepted this would also be an opportune time to review all collected measures for their utility and value. ACPMH has a long history with the reasoning behind the measures chosen for collection and are best placed to evaluate their utility. We understand that they may already be in the process of conducting this evaluation. Nonetheless, in the context of Recommendation 2 and 3:

Recommendation 4. Review all measures collected at entry, discharge, three and nine months after the programs for their current utility. Future requirements and the changing demographics of participants in the program should be considered when evaluating the measures.

Other aspects of data collection could also be improved. Two examples in particular are:

1. Referral data: at sites where there is a single referring psychiatrist there is no additional information available on the referral pathway to the psychiatrist. As discussed, understanding referral pathways assists in identifying and removing access barriers.
2. Recording partner attendance for each veteran. These data would improve the accuracy and reliability of the analysis concerning improved veteran outcomes associated with partner attendance at programs.

The factors that affect outcomes that were discussed in this section - partner involvement, including mixed cohorts, the special needs of contemporary veterans and so on - suggest a group of iterative changes that may be appropriate for the programs. However, because no site had the mix of such factors adjusted to the extent that they stood out as distinctly better than all other programs, articulating precisely the adjustments that must be made in order to elicit the largest improvement has not been clearly supported by the available evidence.

In general terms, the analysis suggests that programs would benefit by:

1. Increasing partner involvement in the programs. This should be considered by sites with a low (St John of God, and Hyson Green Calvary) or medium (Greenslopes and Toowong) level of partner involvement.
2. Increasing the trauma focus at sites that do not directly focus on trauma (Heidelberg and Greenslopes).

3. Including uniformed civilians in the program (mixed cohorts) particularly if the program is not sustainable in its current veteran-only format (Heidelberg, Geelong, Greenslopes, Toowong, Northside Cremorne and Hyson Green Calvary)

4. Increase follow-up after the programs following the model used by St John of God Richmond of one day per month for nine months. Only one site did no follow-up and all other sites included either half or a full day follow-up at three months and nine months. Clearly there is a cost associated with this. Consequently, a trial is the practical way to evaluate whether increasing follow-up improves maintenance and further improvement of outcomes for participants. The recommended sites for a trial are:

    a. Northside Cremorne, to see if the strong result between entry and discharge can be further extended.

    b. Toowong, because they have a good mix of age groups and have adjusted their program for contemporary veterans.

    c. Townsville, because they have a high number of contemporary veterans.

    d. Geelong, because they have a strong result between entry and discharge and are not currently offering face-to-face follow-up.

The next section will discuss how these changes might be implemented.

Strategies for implementing the identified model

CMVH was tasked with identifying strategies for implementing the identified model. It is clear from the review of the literature and the qualitative and quantitative evaluation of the programs that no substantially different model had been identified. However, iterative changes that are likely to benefit the programs have been identified.

In August 2011 the Health Consultative Forum meeting - that included representatives from DVA, Defence, VVCS, ACPMH and CMVH - considered the concurrent work relevant to these programs. One issue raised is the work currently being conducted by VVCS. They are conducting an assessment of cognitive processing therapy as it is used in counselling. This form of therapy has been shown to be beneficial but take up within the VVCS system is in its infancy. Clearly, apart from the current review of the PTSD group treatment program, the process of refining, reviewing and reworking the programs is constant. How people with military related PTSD and other associated mental health conditions can be best assisted is being consistently and constantly addressed by a wide variety of people and organisations.

The process of conducting the analysis and interviewing the site staff highlighted the genuine commitment the programs have to continual improvement. Improvement is facilitated by having a benchmark or a point of comparison. Site staff discussed that in the past there was a mechanism for understanding and comparing the outcomes from all sites: regular meetings

that included Clinical Directors and Program Coordinators from all sites. The meetings were discontinued and the detrimental effect of that noted repeatedly by site staff.

While CMVH has reviewed and evaluated the programs, that process does not provide an in depth understanding of the day to day practical workings of the programs; of how changes should be incorporated into the programs and the preparation work that would be required by the sites to implement any recommended changes. The sites themselves are best placed to develop and adapt their programs to meet the following recommendation.

Recommendation 5. Consider regular meetings with all contractors of PTSD programs that include all Clinical Directors, Program Coordinators and ACPMH. The purpose of the first meeting should be to discuss how relevant findings from the review could be incorporated into the programs.

Proposed discussion topics for the first meeting include:

1. Outcomes of the review of PTSD programs.
2. Increasing partner involvement, particularly at sites where this is currently low. Increasing the trauma focus at sites where this is currently low. Considering the introduction of mixed cohorts at sites where this is not occurring.
3. Trialling extended follow-up.
4. Discussing the needs of contemporary veterans and working participants and formulating program changes where appropriate.
5. Strengthening relationships with VVCS.

Including representatives from VVCS in the first meeting would not necessarily be beneficial as the sites discuss the fine grained detail of their programs. However, VVCS may benefit from attending these meetings on future occasions as this may help strengthen the relationships between key personnel.

Including representatives from ACPMH, with its extensive and current knowledge of evidence based treatments, will help to ensure that any of the suggested adjustments to the programs are in line with current evidence.

Chapter 6: After the programs

Discharge Planning

During interviews with the PTSD program sites, staff members were asked what care or treatment is provided to participants after they have finished the PTSD program, including treatment or care provided by external sources.

Discharge planning often starts before the program finishes and typically includes:

- Relapse prevention strategies
- Planning for follow-up
- Identification of perceived barriers to care
- Discharge letters sent to appropriate external people (e.g., psychiatrist or GP)

On completion of the program, individuals are usually referred back to the original referral source. In cases where participants did not have a supporting mental health professional, efforts are made to arrange one, which is particularly important where ongoing pharmacological treatment is required. Sites generally indicated that discharge planning for participants was coordinated between the program and VVCS, DVA, local ESOs, and ACPMH where appropriate.

VVCS

VVCS has programs suitable for participants after discharge. The programs are recommended to individuals by site staff, as they are required. Site staff expressed that they valued the lifestyle programs offered by VVCS because they assisted in reducing participants' dependency on the unit in which the PTSD program was completed. At some sites, the VVCS program 'Moving Forward' is offered to PTSD group participants (including their partners), although no information on this program was readily available on the DVA website.

Some sites provide assistance to group participants to make contact with VVCS prior to discharge. Participants are provided information that partners and children are able to access assistance through VVCS. VVCS are often involved with the partners of the participating veterans, generally in a supportive and counselling capacity. However, not all sites actively stream participants to VVCS.

External involvement in activities/community

All participants, but particularly the contemporary veterans, are encouraged to engage with the community. For example, after being discharged from the program, participants are encouraged to continue with education, such as going to university. Contemporary veterans often engage in individual efforts after completing the program such as continuing individual therapy or participating in different courses.

Heidelberg indicated that most participants disperse back into the community rather than staying at the inpatient centre. Northside Cremorne said that their participants often sought activities, more so than treatment, after the PTSD program finished. Such activities included cooking, TAFE courses, computer courses, and woodworking.

Outpatient and inpatient care

In all sites, participants are encouraged to consult their referring psychiatrist and/or psychologist for ongoing treatment, particularly during the nine month follow-up period.

Does follow-up care have any impact on outcomes?

Due to the recognised chronicity of PTSD symptoms, sites agreed that it is an essential part of treatment to have follow-up. Programs are not viewed as a cure, but one element in the treatment process. It is an opportunity to provide support to participants and to help prevent relapse.

Follow-up sessions are recognised in the psychological literature as an important requirement in order to maintain treatment gains (Cukor, Spitalnick, Difede, Rizzo, & Rothbaum, 2009). It is not uncommon for participants to struggle with the implementation of newly learned behaviours when returning home; therefore, follow-up sessions to consolidate program material are important. The three month follow-up sessions can allow for emotions such as guilt, stress, and frustration to be managed. Further, families and social support systems often require encouragement and support during periods of re-adjustment.

The nine month follow-up session is an opportunity to consolidate and shape the skills participants' have acquired. It is an opportunity to provide encouragement to build ongoing confidence, and to assist participants in their endeavour to reconnect with the community and in some cases, other programs.

Anecdotally, sites generally thought that those participants who attended the follow-up sessions, completed follow-up with other programs/services, and whose wives/partners participated, tended to do better. There is empirical evidence to support the validity of conducting follow-up sessions for people with chronic mental health conditions, such as PTSD (Cukor et al., 2009).

Differences between sites

The review has already highlighted differences between the sites in the follow-up processes used. For example, St John of God conducts extensive follow-up whilst Geelong does not offer follow-up at all.

Trialling extended follow-up forms part of Recommendation 5. Additionally, sites, such as Northside Cremorne, thought that improvements could be made to follow-up care. They suggested more extensive follow-up at three, six, and nine months that spanned a few days. Changes and improvements to the follow-up structure at some sites were also endorsed in the qualitative data obtained from participants who had completed the programs.

Discussion regarding what happens after the programs

It is clear from all interviews that follow-up is critical to the maintenance of program effect and there was also some preliminary indication of this in the quantitative analysis. There are several different options available for follow-up, including additional support or programs through the site, individual or group treatment with VVCS, return to the referring practitioner, or some other type of support.

There are no data available on the number of participants who go on – or return – to VVCS. Based on interviews with staff from sites and VVCS, it appears this can vary with the quality of the relationship between sites and VVCS. It appears that most sites encourage participants to take up the option of individual support or group programs with VVCS and many have supported referral procedures that involve taking the program participants, and often their partners, to VVCS. This is an example of good practice that is occurring in a small number of sites and which could be expanded to others.

From the Phase 1 literature review, it is clear that ongoing support can be provided by community-based practitioners, such as a GP, psychiatrist, psychologist or other treating professional. However, it is vital that treating practitioners are experienced in evidence-based treatment for PTSD. This may be less likely in smaller communities, such as rural or remote towns where practitioners may be harder to source. In these cases, exploring options such as VVCS outreach counselling or video counselling, or internet based therapies which have empirical support should be explored as effective treatment options (Litz, Engel, Bryant, & Papa, 2007).

Recommendation 6. Technology-based follow-up options should be trialled for program participants living in areas where access to ongoing care or support programs is restricted. Potential options include VVCS video counselling or internet based therapies.

CONCLUSION: DISCHARGE PLANNING INCLUDES PROVIDING PARTICIPANTS WITH RELAPSE PREVENTION STRATEGIES AND INFORMATION ON A WIDE VARIETY OF PROGRAMS, RESOURCES AND ONGOING TREATMENT FOR VETERANS TO HELP SUPPORT THE GAINS MADE DURING TREATMENT.

Chapter 7: Economic analysis

Financial analysis

The financial data provided to CMVH listed dollars paid to sites for the PTSD group treatment programs for the past five years. The financial data received by CMVH was incomplete for many sites and inadequate for any type of rigorous financial analysis. In particular:

- There are different payment and contractual arrangements for different sites:
  - Some sites were paid a lump sum per person per program.
  - Other sites were paid per person per day of attendance.
  - Some sites were paid for assessment and follow-up days and some did not appear to be. Of sites that were, there were only payments for some participants and not all, and the reasons for this were not known.
  - Some sites have changed their payment arrangements during the past five years.
  - It is not apparent whether costs for individual therapy sessions within the program are included in the price or additional to it.
  - It is not clear whether there were additional costs associated with family attendance, pharmacological therapy, follow-up days etc are included in the cost of the program to DVA.
- Incomplete data were received for most sites, and due to discrepancies between participant numbers it was not possible to match the financial and outcome datasets:
  - **Example 1:** Greenslopes. CMVH was provided with a lump sum figure for 05/06 but no information on participant or cohort numbers. For 07/08, 08/09 and two cohorts in 09/10 the data provided included the payment per participant per day. The participant numbers in cohorts largely matched the participant numbers in the program outcome data, however, the days of participation varied from four to 40 days attended. The duration of the Greenslopes program is 22 days including follow-up. To our knowledge no one repeated the program.
  - **Example 2:** Hollywood. The data were lump sum figures for 05/06 to 08/09, as well as numbers of cohorts and participants for each year. These numbers were not the same as those in the program outcome data; consequently the data sets could not be matched. The data may have been complicated because there are two different DVA-funded programs at Hollywood. Data were provided with the payment per participant per day for three cohorts in 09/10; participant numbers in one of the three cohorts did not match participant numbers in the program outcome data.
  - **Example 3:** Geelong**.** Data were provided on the payment per participant per program for seven cohorts – in two of these cohorts the participant numbers in the financial data did not match those in the program outcome data.
  - **Example 4:** Heidelberg. CMVH was provided with the payment per participant per program for 30 cohorts. Site staff also provided information on participant

numbers per cohort. The participant numbers per cohort were different across the financial data, program data and program outcome data, meaning the datasets could not be matched.

- There are additional costs to the programs that are not included in the dollar amount paid to sites:
    - For example, participants in programs like Greenslopes may stay at a nearby hotel while they attend a day program. This cost is reimbursed to participants, not paid directly to the site, but is still part of the cost to DVA of the PTSD program at that particular site. For other sites, the residential/inpatient component appears to be included in the cost of the program and is paid directly to the site.
    - There may be other additional costs such as travel, medication etc that should be accounted for in order to compare programs correctly.

Analysis of the data

It was not possible to estimate an average cost per participant for each site based on the financial data provided as the data were incomplete, did not correlate with participant attendance and was subject to changing contractual arrangements. Costs per participant should include all costs associated with the program that are paid by DVA, including those that are refunded to participants, hotels, pharmacies and the sites. Without clear understanding of contractual arrangements and what were or were not included in the program, cost was indefinable. Accordingly, there are no data available that could be used to form the basis of any valid comparisons or recommendations.

Future economic analysis

The tender specified a cost-benefit analysis of the preferred model. Firstly, there is no single preferred model. Secondly, a cost-benefit analysis involves assigning a numerical value to all costs and benefits experienced by all people impacted in order to evaluate the desirability of an intervention. That is assigning a dollar value to each point of improvement of measures of outcomes – a one point of improvement on the PCL-M is worth X dollars. Professor Lapsley's advice is that this type of analysis is not suited to the purposes of the current review, nor possible with the data available.

A ***cost effectiveness*** analysis typically provides a cost per health outcome and is an analysis appropriate to the purposes of the review. This analysis would be possible in the future with:

- Accurate information on all costs associated with each program (including travel, accommodation, program accreditation, costs to participants, medication costs, assessments, follow-up, individual therapies within the program etc).
- An agreed definition of targeted effect. CMVH has recommended that the CAPS and HONOS be included as measures collected on entry and discharge to the programs. Analysing the change in clinician rated levels of PTSD and the improvement in functional outcomes between these two time points and associating this change with the cost of

the programs would provide a good measure of the overall cost-effectiveness of the programs.

The question of program cost compared to program effectiveness is vital in assessing the ongoing sustainability of the programs and should be conducted as soon as practical. Definitive recommendations about the long-term sustainability without this information are impractical without a clear understanding of the financial costs of the programs.

Recommendation 7. Collect accurate and comprehensive collection of costs associated with the PTSD group treatment programs for a period of 12 months and measure participant's improvement on the CAPS and HONOS between entry and discharge. At the end of this period analyse and compare the cost-effectiveness of the programs.

Table 17 provides an example of the financial data required.

Table 17: Examples of data required for cost effectiveness analysis.

Cost	Site 1 (Cohort X)	Site 1 (Cohort Y)	Site 2 (cohort X)
Number of program days			
Number of participants			
Individual cost per day attended			
Individual cost for assessment			
Individual cost follow-up			
Individual cost for one on one therapy sessions			
Number of partners/family members participating in the program			
Individual cost for partner/ family work			
Other costs to DVA: • Travel • Accommodation • Medication • Accreditation process			
Any additional costs refunded to participants			
Any additional other costs paid to sites e.g. staff supervision			
Total cost per program:			

Chapter 8: Are the programs sustainable?

In order to demonstrate sustainability the first evaluation criteria for any program must be that it is able to provide clear and consistent improvements for the participant in terms of how they feel and how they are able to manage in their day to day lives. Previously, program outcomes were measured at two years following program participation (as reported in early annual reports), and the outcomes had a strong correlation with nine month outcomes, as reported. The clinical improvements achieved by participants in the programs have been consistently supported by participant feedback, during interview and by questionnaire and family observations.

As discussed beforehand, the literature reveals no randomised control trials demonstrating the statistically significant effectiveness of group treatment programs in comparison to individual treatment programs, because individual treatment programs are embedded in all group treatment models. CMVH found during structured interviews at all sites that some treatment is better than none and there exists clear clinical evidence that participants in the programs improve.

A key component of the PTSD group treatment programs is to provide continuity of clinical service support within a stable multidisciplinary team model. This raises health workforce issues in terms of the recruitment and retention of skilled health care providers.

These issues of sustainability were explored during the evaluation through the administration of a questionnaire, an assessment of clinicians' work patterns, interviews with staff at the PTSD group treatment sites, and the analysis of clinical progress data.

Generally, the sites demonstrated long standing clinical leadership and team membership over some years. This was reflected by enthusiastic interview contribution by all available team members at most treatment sites. The teams' longevity and cohesion appeared to contribute to sound group professional judgement and practice.

This is probably not surprising given the comprehensive accreditation processes and clinical guidelines to support evidence-based treatment. Certainly, the programs should be subject to continual evaluation and improvement, as they have been. Additionally, sites, VVCS, ACPMH, ESOs and individuals are consistently and constantly seeking to improve outcomes for veterans suffering PTSD. Moreover, there might be scope for closer integration of military and veteran treatment programs as both Defence and DVA enhance their regional presence throughout Australia

New treatment paradigms, such as the recently successfully trialled cognitive processing therapy (CPT) in VVCS, should continue to be evaluated for their utility in relation to the group

treatment programs or as an adjunct or alternative to the programs, depending upon the participant needs. The randomly controlled trial of CPT reportedly provided evidence that it is an effective treatment for military PTSD and co-morbidities compared to standard treatment models and delivered in a community service environment.

The most frequent request from site staff during the qualitative interview was that they want access to the outcomes of their accreditation reports and to the outcomes of this review. Access to this information provides them with an opportunity to benchmark themselves and indicates any areas in their program that could be improved. It was not clear why they have not had access this information in the past.

Recommendation 8. All sites are given access to their accreditation reports and where possible access to general overall accreditation outcomes that allows them to evaluate how well they are doing.

The final aspect of program sustainability depends on participant throughput and financial support. The annual accreditation reports, and CMVH noted, reduced veteran throughput over the last five years. This may have occurred for a variety of reasons including better preventive programs, early recognition and clinical intervention, and numbers treated to date reducing the pool of participants with PTSD. For whatever reason the reduced numbers potentially threaten the viability for programs and consideration should be given to the inclusion of uniformed civilians, for example police and fire fighters, especially as no degradation in veteran clinical outcomes has been demonstrated in mixed cohort outcomes to date. It is not currently possible to evaluate the financial costs of the program to DVA as suitable data are not available.

Conclusion

Throughout the report a number of recommendations have been made. The recommendations provide guidance on the next phase of the group treatment programs. However, they are not a radical departure from the model as it currently stands.

This is not surprising. The current model is based on best practice treatment and the programs are regularly reviewed and accredited. The model is acted upon by professional multi-disciplinary teams who also actively and consistently analyse their own work and seek to improve. The programs are valued by the practitioners, the participants and staff from DVA and VVCS. The program treats people who are motivated to get well. Overall, they are successful.

The recommendations offer suggestions for improvements that would enhance the programs, provide the ability to compare outcomes from the programs with outcomes reported in the literature, facilitate knowledge sharing and make economic analysis possible next year.

List of Recommendations

Recommendation 1. Potential referrers to the PTSD group treatment programs should have up-to-date information about the objectives, methods and outcomes of the programs and clear understanding of who would benefit from the programs. This information could be located online via a limited access website.

Recommendation 2. Include the CAPS, a clinician rated assessment of PTSD, in the measures taken on discharge from the group treatment programs.

Recommendation 3. Collect the HONOS, a good measure of functioning, on discharge and follow-up, as well as entry.

Recommendation 4. Review all measures collected at entry, discharge, three and nine months after the programs for their current utility. Future requirements and the changing demographics of participants in the program should be considered when evaluating the measures.

Recommendation 5. Consider regular meetings with all contractors of PTSD programs that include all Clinical Directors, Program Coordinators and ACPMH. The purpose of the first meeting should be to discuss how relevant findings from the review could be incorporated into the programs.

Proposed discussion topics for the first meeting include:

1. Outcomes of the review of PTSD programs.
2. Increasing partner involvement, particularly at sites where this is currently low. Increasing the trauma focus at sites where this is currently low. Considering the introduction of mixed cohorts at sites where this is not occurring.
3. Trialling extended follow-up.
4. Discussing the needs of contemporary veterans and working participants and formulating program changes where appropriate.
5. Strengthening relationships with VVCS.

Recommendation 6. Technology-based follow-up options should be trialled for program participants living in areas where access to ongoing care or support programs is restricted. Potential options include VVCS video counselling or internet based therapies.

Recommendation 7. Collect accurate and comprehensive collection of costs associated with the PTSD group treatment programs for a period of 12 months and measure participant's

improvement on the CAPS and HONOS between entry and discharge. At the end of this period analyse and compare the cost-effectiveness of the programs.

The table below provides an example of the financial data required.

Table 1: Examples of data required for cost effectiveness analysis.

Cost	Site 1 (Cohort X)	Site 1 (Cohort Y)	Site 2 (cohort X)
Number of program days			
Number of participants			
Individual cost per day attended			
Individual cost for assessment			
Individual cost follow-up			
Individual cost for one on one therapy sessions			
Number of partners/family members participating in the program			
Individual cost for partner/ family work			
Other costs to DVA: • Travel • Accommodation • Medication • Accreditation process			
Any additional costs refunded to participants			
Any additional other costs to be paid to sites e.g. staff supervision			

Recommendation 8. All sites are given access to their accreditation reports and where possible access to general overall accreditation outcomes that allows them to evaluate how well they are doing.

References

ACPMH, *Australian Guidelines for the Treatment of Adults with Acute Stress Disorder and Posttraumatic Stress Disorder*, Australian Centre for Posttraumatic Mental Health. *http://www.nhmrc.gov.au/_files_nhmrc/file/publications/synopses/mh13.pdf*, 2007.

Beck, J.G., Coffey, S.F., Foy, D.W., Keane, T.M., and Blanchard, E.B. *Group cognitive behavior therapy for chronic posttraumatic stress disorder: an initial randomized pilot study*. Behavior therapy, 2009. **40**(1): p. 82-92.

Creamer, M. and D. Forbes, *Treatment of posttraumatic stress disorder in military and veteran populations*. Psychotherapy: theory, research, practice, training, 2004. **41**(4): p. 388-98.

Cukor, J., Spitalnick, J., Difede, J., Rizzo, A., and Rothbaum, B.O., *Emerging treatments for PTSD*. Clinical Psychology Review, 2009. **29**(8): 715-726.

Dunt, D., *Independent study into suicide in the ex-service community*, 2009.

Falsetti, S.A., Resnick, H.S. and Davis, J.L., *Multiple channel exposure therapy for women with PTSD and comorbid panic attacks.* Cognitive Behaviour Therapy, 2008. **37**(2): p. 117-130.

Forbes, D., et al., *Comorbidity as a predictor of symptom change after treatment in combat-related posttraumatic stress disorder*. J Nerv Ment Dis, 2003. **191**(2): p. 93-9.

Creamer, M. and Forbes, D. *Treatment of posttraumatic stress disorder in military and veteran populations.* Psychotherapy: theory, research, practice, training, 2004. **41**(4): p. 388-98.

Forbes, D., Lewis, V., Parslow, R., Hawthorne, G., and Creamer, M. *Naturalistic comparison of models of programmatic interventions for combat-related post-traumatic stress disorder.* Aust N Z J Psychiatry, 2008. **42**(12): p. 1051-9.

Litz, B.T., Engel, C.C., Bryant, R.A., and Papa, A, *A randomized, controlled proof-of-concept trial of an internet-based, thearpist-assisted self-management treatment for posttraumatic stress sisorder*. American journal of psychiatry, 2007. **164**(11): p. 1676-1683.

Reports consulted for the review

Annual Report 2009/2010, PTSD Program Quality Assurance, Department of Veterans Affairs, 2011.

Annual Report 2008/2009, PTSD Program Quality Assurance, Department of Veterans Affairs, 2009.

Annual Report 2007/2008 PTSD Program Quality Assurance, Department of Veterans Affairs, 2008.

Annual Report 2006/2007, PTSD Program Quality Assurance, Department of Veterans Affairs, 2008.

Accreditation Report for the Northside Cremorne PTSD program, Department of Veterans Affairs, 2007.

Accreditation Report for the Mater Misericordae Hospital Townsville PTSD program, Department of Veterans Affairs, 2007.

Accreditation Report for the Heidelberg Repatriation Hospital Older Veterans Psychiatry Program (OVPP) PTSD program, Department of Veterans Affairs, 2007.

Accreditation Report for the Geelong Clinic PTSD program, Department of Veterans Affairs, 2007.

Accreditation report for the St John of God Hospital Richmond Closed PTSD program, Department of Veterans Affairs, 2007.

Accreditation Review Calvary Private Hospital PTSD program, Department of Veterans Affairs, 2006.

Accreditation Review Austin Health PTSD program, Department of Veterans Affairs, 2005.

Accreditation Review the Hollywood Clinic PTSD program, Department of Veterans Affairs, 2005.

Accreditation Review Greenslopes Private Hospital PTSD program, Department of Veterans Affairs, 2005.

Accreditation Review Geelong Clinic PTSD program, 2005.

ACPMH, *Accreditation guidelines for PTSD programs purchased by DVA for veterans*, Department of Veterans Affairs, 2007.

Acknowledgements

CMVH would like to thank a number of people without whom this review would not have been possible:

The staff at the sites participating in the review:

Staff at all sites delivering the programs (Hyson Green Calvary, Northside Cremorne, St John of God, Greenslopes, Mater Townsville, Palm Beach Currumbin, Toowong, Geelong, Hollywood, Heidelberg and Daw Park) were keen to be involved and cooperated fully with the review. Program coordinators, clinical directors and other site staff participated with openness and candour in the interview process and provided additional written information.

ACPMH

This review would not have been possible without access to the work conducted by ACPMH. Dr Andrea Phelps, Professor Mark Creamer and Valeria Zoteyeva were generous and cooperative in participating in the interview process and providing quality data that they have systematically collected over the last years, which formed the backbone of the quantitative analysis.

Consultants

Professor Justin Kenardy, Dr Len Lambeth and Professor Helen Lapsley provided valuable guidance, advice and comment throughout the review. The final product is significantly improved by their input.

Staff from DVA and VVCS

Finally, a large number of staff from DVA and VVCS has contributed to the review by participating in the interview process, attending workshops and providing comment at various points in the process.

CMVH values the contribution and involvement of all these individuals.