

The Intergenerational
Health Effects of Service
in the Military

Research Protocol

July 2007



CMVH

CENTRE FOR MILITARY & VETERANS' HEALTH

Acknowledgements

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The starting point for this work was "The Feasibility of a Study into the Health of the Children of Vietnam Veterans" (DVA, 2006) which has been further developed in this project.

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Executive summary

Background

The Centre for Military and Veterans' Health was appointed to develop a "sound and workable" research protocol in response to the Feasibility Study into a Health Study of the Sons and Daughters of Vietnam Veterans (DVA 2006). This work will build on the work of the Deployment Health Surveillance Program, which is conducting cross-sectional studies of serving and ex-serving personnel who have deployed on specific operations and which aims to develop a longitudinal health surveillance system for personnel who have served in the military.

Objectives

The objectives of this project are:

- To conduct a review of the relevant literature for previous research and current work to inform the study methodology
- To develop the research questions in consultation with DVA
- To produce a research protocol
- To pre-test the research protocol and developed instruments with veterans and their families
- To develop and document a plan for data analysis and data linkage.

This project was managed by the Centre for Military and Veterans' Health (CMVH) in consultation with the Department of Veterans' Affairs (DVA). An expert team was established to determine an appropriate methodology for a study on the health of the sons and daughters of Vietnam veterans.

Literature review

This systematic literature review sought to identify a wide range of research studies into the effects of military service on spouses, family functioning and children. This was achieved by using broad descriptors and searching databases that specialized in research from different disciplines. Approximately 290 relevant papers were included in the initial phase of the review process. These papers were mapped to an ecological model of health to gain an understanding of the breadth of research carried out in this area, to identify research themes, and identify gaps in the research. This model describes macro environmental factors such as social and cultural environments, distal social environments such as communities, proximal social environments such as family and friends, individual characteristics eg social skills and adjustment behaviours and genetics and pathobiology. The outcomes in the model were physical, mental and social wellbeing of children.

Of particularly relevance to this review, themes that emerged included risk of adverse child physical outcomes in relation to parental exposure to toxins, the effects of family mobility, deployment and combat exposure on the health and wellbeing of both

spouse and children. The areas of child abuse and interpartner (IPV) violence were significant areas of research.

Important under researched areas included the possible impact of upstream (macro and distal) factors such as social climate and policy, midstream (proximal) factors such as parent-child relationships, and downstream factors such as child-parent attachment, and studies investigating salient development stages of child development and periods of transition.

A limited number of studies investigated the impact of military service across multiple levels of the ecological model. Importantly, few studies specifically sought to causally link upstream and proximal environmental factors specifically to child outcomes.

To make causal links prospective long term studies are required. However, very few prospective studies were identified. The vast majority of studies were of a cross-sectional nature. The few more recent longitudinal studies, from the Gulf war in particular, are currently of limited duration. There are few large scale studies using representative random samples. This is particularly evident in the important areas investigating the effects of paternal mental health on spouse and children.

Studies of current military service on spouse and family functioning outcomes did not find significant adverse effects, although several studies were suggestive of greater health service utilization for children of military personnel.

There is suggestive evidence that there are higher rates of severe IPV within the current military population. Studies of deployment to the Gulf war found greater length of deployment were related to poorer interpersonal functioning and spousal stress, family functioning, and IPV. Although, no significant differences were found in spouse mental health ten years post war. Interpersonal violence was not found to be higher in veterans in general, but was a problem within subpopulation of veterans with post traumatic stress disorder (PTSD) and high combat exposure.

The important area of the impact of combat exposure and PTSD in veterans is hampered by small study sizes, and the use of clinical or convenience samples. However, there was a consistent theme of adverse associations between veteran combat exposure and PTSD and problem of interpersonal relationships, marital relationships and increased carer burden.

In children the outcomes from the ongoing US Institute of Medicine [Committee to Review the Health Effects in Vietnam Veterans of Exposure to Herbicides, 2005] appraisal of research in the area of herbicides has concluded that there is adequate evidence associating spina bifida in children with parental exposure to Agent Orange, largely based on Australian research. However, to date not enough studies have been conducted, to determine whether there is an association between other birth defects and childhood cancers and parental exposure to Agent Orange.

Research on protective factors, as opposed to risk factors, is strikingly sparse in the literature although a positive sense of community and unit support was reported to be positively related to family adaptation, and spousal wellbeing was positively related to

mastery, satisfaction in personal life and the predictability of the military partners schedule.

In relation to child health and wellbeing outcomes, very few studies were of sufficient sample size and properly controlled. The most consistent finding was the negative association between combat exposure and parental PTSD and child outcomes. This maybe mediated via spouse mental health indicating that future studies should include the whole family. Further, to establish causal links between parental military service with child outcomes long term prospective studies are required that follow the children through salient developmental stages.

The conclusions drawn from the literature review were:

1. That a potentially important mechanism for an association between military service and child ill-health is that family disruption and parental mental ill-health associated with military service gives rise to family dysfunction which in turn may have a negative impact on child health and wellbeing.
2. That potential protective factors include a positive sense of community, unit support, predictability of military partners schedule and spousal mastery and satisfaction in personal life, however research using a positive construct of health was relatively rare.
3. That there is still currently inadequate evidence, that is, not enough studies have been conducted, to determine whether there is an association between other birth defects, other than spina bifida, and childhood cancers and deployment to Vietnam.

Research questions

(1) Does the physical, mental and social health of sons and daughters of Vietnam era servicemen who went to Vietnam ('a Vietnam veteran') (i.e. Group 0), differ from that of:

- Group 1. The sons and daughters of other Vietnam era servicemen who served in the military but did not go to Vietnam?
- Group 2. The sons and daughters of their brother(s) (or twin) who had military service in the same era but who did not go to Vietnam?
- Group 3. The sons and daughters of the siblings of Vietnam veterans who did not serve in the military?

(2) If so, what are the risks and protective factors associated with these differences - especially those which may have implications for service delivery?

(3) To what extent, if any, can direct association be established between those distinctive health characteristics and the active Vietnam service of the father?

Study proposal

The starting point for this research proposal was "The Feasibility of a Study into the Health of the Children of Vietnam Veterans" (DVA, 2006). The Intergenerational

Health Research Methods seminar was designed to highlight key opportunities for exploring intergenerational transmission and to identify the key methodological challenges associated with exploring intergenerational transmission. Seminar participants agreed that it is doubtful whether family relationships can be explored very effectively in a population where the children are in their forties. This concern was due to problems such as a lack of validated tools for exploring these issues in a population of this age, recall bias, confounding factors and anticipated difficulties in recruiting adult sons and daughters. It was suggested that the study should perhaps be conducted on a younger cohort. The expert team recommended that qualitative research to explore the life experience of Vietnam veterans should be added to the research proposal. It was noted that this would also assist to understand the temporal aspects at play in this project (relationship between parents' service and childrens' age) and the meaning of being a Vietnam veteran (service was usually 12 months in a life but being a Vietnam veteran seems to have broader and longer connotations).

The expert team progressed the proposal made in the feasibility study by adding qualitative research components; by strengthening the emphasis on social health, especially in relation to family dynamics; by proposing a family study, rather than a study of the sons and daughters only; and by recommending that the study be delivered in components (tiers).

The proposed tiers are:

Tier 1 would involve substantial qualitative research investigating resilience and protective factors, family dynamics, family health service usage and the experience of returning to a hostile community and would be conducted with Vietnam veterans and their families in the first instance.

Tier 2 would be a survey to compare the effects of service in Vietnam on the sons and daughters of Vietnam veterans with the effects of being in the military on sons and daughters of Vietnam era service personnel who did not go to Vietnam.

Tier 3 would be a survey to compare the effects of service in Vietnam on the sons and daughters of Vietnam veterans with the effects of being in the military on sons and daughters of the brothers (including twins) of Vietnam era service personnel who did not go to Vietnam.

Tier 4 would be a survey to compare the effects of service in Vietnam on the sons and daughters of Vietnam veterans with a community sample who have never served in the military, specifically the sons and daughters of siblings of Vietnam veterans who did not serve in the military.

Tier 5 would be a mortality study which would compare the mortality rates of sons and daughters of Vietnam veterans with mortality rates of sons and daughters of veterans who served in the military but were not sent to Vietnam and with the mortality rates of a community sample who have never served in the military, specifically the sons and daughters of siblings of Vietnam veterans who did not serve in the military.

Recruitment

The Nominal Roll of Vietnam Veterans will be the starting point for recruitment into the study. In addition, the Australian Institute of Health and Welfare (AIHW) nominal roll of Vietnam era Army personnel will be used for recruiting service personnel who served in the military but did not go to Vietnam. This proposal is not designed to be a census of all veterans and their families, a random sample of 10,000 Army veterans will be recruited for this study.

- A letter and information sheet will be sent to the Veteran explaining the purpose of the research.
- An interviewer will then follow up the letter with a telephone call asking if the Veteran would like to participate in the research (by completion of a questionnaire) and for permission to contact their sons and daughters, should they exist and be living.
- The Veteran will also be asked to identify the mother(s) of these sons and daughters to potentially help in contacting and securing participation of their sons and daughters, and to also ask them to complete a questionnaire.
- The Veteran will also be asked to identify all his brothers and sisters (and any twins amongst them), and their sons and daughters. Veterans will also be asked if their brothers served during the Vietnam era (and if so whether they were sent to Vietnam). We will explain that the reason for asking this is that we may wish to invite these nephews and nieces to participate.
- The sons and daughters will then be sent an approach letter and information sheet explaining the purpose of the research.
- An interviewer will then follow up the letter with a telephone call asking the sons and daughters to participate in the research.

The Vietnam era servicemen will include:

- Army but not Navy or Air Force personnel. Reasons for this include the difficulty in locating a control group for Navy and Air Force personnel and differences in exposure between services
- Conscripts and regular soldiers
- A sample of men from any year in the campaign. (The questionnaire will manage the expected variation in exposure to combat [collecting information on corps/unit, use of a combat index] and the attitudes of the Australian community at the time of their return).

Qualitative research component

Well designed and implemented, rigorous, qualitative research can describe and elaborate the concepts, understandings, themes and discernible patterns that are meaningful to a group as expressed by them, from the 'inside'. This is in line with the finding from the literature review of the need for more research on family function and mental health. In particular, this methodology will allow the exploration of the impact of the whole experience of being a Vietnam veteran, not just during war

service. This information will be relevant to current Middle East conflicts, for which community support is divided.

This qualitative research draws on a desire to know:

- Family structure and dynamics in relation to physical, mental and social health outcomes
- The patterned strategies employed by sons and daughters of Vietnam veterans as a group
- How negative community attitudes to a particular conflict may affect physical, mental and social health outcomes of families which include a Vietnam veteran
- Protective factors which enable physical, mental and social wellbeing
- Attitudes to existing services available to assist the families of veterans.

The objective of the qualitative research proposed is to gain insight into the physical, mental and social health of the sons and daughters of Vietnam veterans and comparable groups as is understood, explained and 'lived' by them.

The qualitative component will explore the self-reported experiences of daily life as sons and daughters of Vietnam veterans so as to describe the relationships between their lived experience and their health status in relation to their family/ies and community/ies and their use of available services.

Based on these 'insider' perceptions and descriptions of the 'lived experience', the worldview and ways of life of the sons and daughters of Vietnam veterans can be described, compared and contrasted to those of sons and daughters of the comparable groups who also relate to the Vietnam War era. It is then possible to contrast the qualitative similarities and differences among the four studied groups.

The overall aim of the qualitative research is to identify the views and experiences of adult sons and daughters (18-50 years) of surviving Vietnam veterans and comparable groups in relation to their physical, mental and social health, their family context and their father's experience of military service, service in Vietnam or civilian life.

There are two broad alternative approaches proposed for the conduct of qualitative research:

1. Qualitative research used as a component of a mixed method study commencing with qualitative analysis as a way of informing further work of the quantitative study.
2. Separate qualitative research to provide insights into the questions formed through development of the quantitative study.

A total of five research protocols are presented, each using different and well established methodologies.

The first two protocols correspond with qualitative research approach 1 (above) and are:

1. Semi-structured telephone interviews to inform the quantitative research
2. A qualitative study of the intergenerational transfer of health resilience and dysfunction: focus group research.

The remaining three studies are alternative methods for qualitative research approach 2 and could either precede the quantitative study to inform refinement of research instruments, or be conducted as stand alone studies.

These are:

3. A reanalysis of the data collected during the Vietnam Veterans Sons and Daughters Project undertaken by VVCS
4. A case history of health and perceived risk among three groups of sons and daughters of veterans and civilian fathers from the time of the Vietnam War
5. A focused ethnographic study of six sons and daughters from the Vietnam War era.

Quantitative research component

A cohort study is proposed in which exposures are defined in terms of an individual's father's Vietnam War experience and service during the Vietnam War era (1962-1975).

There are four levels of exposure:

V = Fathers had service in Vietnam (i.e. father is a Vietnam veteran);

S = Fathers had service but not sent to Vietnam;

B = Fathers had service but not sent to Vietnam and was a brother of a Vietnam veteran; and

N = Father or mother had no service in Vietnam but was a sibling of a Vietnam veteran.

The start time of the exposure is defined in terms of the sons and daughters and is from birth, or if born before 1962, age at time of service.

A broad range of health outcomes, that is, physical, mental and social health will be assessed in this study. The outcomes proposed are detailed in Table 1 below.

<i>Sons and Daughters</i>	<i>Fathers</i>	<i>Mothers</i>
Demographic data	Demographic data	Demographic data
Diagnosed or treated medical conditions	Diagnosed or treated medical conditions	Diagnosed or treated medical conditions
Anxiety and depression	Anxiety and depression	Anxiety and depression
Drug and alcohol use	Drug and alcohol use	Drug and alcohol use
Post traumatic stress disorder	Deployment to Vietnam	Pregnancy history and pregnancy outcomes
Health risk behaviours	Post deployment experiences	Major health outcomes for sons and daughters
Quality of life		
General health		
Employment		
Intimate relationships		
Parenting		
Social participation		

Parent bonding		
Significant life events		
Perceived social support		
Coping styles		

Suicide has previously been identified as an important concern in the sons and daughters of Vietnam veterans and a mortality study has been proposed as part of this research proposal. Fathers in all study groups (that is, Vietnam veterans, veterans who did not serve in Vietnam, and brothers of Vietnam veterans who have never served in the military) will be asked to identify any sons and daughters who have died. This information will be linked to the National Death Index held by the Australian Institute of Health and Welfare (AIHW) and comparison of all cause mortality rates and specific cause mortality rates will be undertaken across the study groups.

Data collection

Participation will involve completion of a questionnaire comprising measures of physical, mental and social health. It is proposed that all consenting veterans, spouses and sons and daughters complete the questionnaire by one of the following means:

1. Postal survey
2. Computer aided telephone interview
3. Internet.

Data Analysis

It is proposed that the data be analysed by comparing the physical, mental and social health outcomes of specific family members in each of the three arms of the study. For example, the scores of the Vietnam veterans and siblings, the scores of wives and partners, and the scores of the sons and daughters in each of the study groups would be compared in three separate analyses.

Regression modelling will be used to compare outcomes between the two groups directly. The mean outcomes in each of the three groups will be compared using one-way Analysis of Variance (ANOVA) modelling.

Power calculations for some of the primary outcomes, based on items from the questionnaire, were calculated. Power estimates based on 10,000 veterans and 10,000 comparison 'veterans' demonstrated that even at 30% compliance the study still has significant power to detect differences between groups in these primary outcomes.

Power calculations were also undertaken based on death rates in sons and daughters between two arms of the study. Power estimates were based on a maximum of 20,000 children in each arm and demonstrated that even at 30% compliance the study has significant power to detect differences between groups in mortality rates when the rate of deaths in sons and daughters of Vietnam veterans is 4% and the rate ratio of deaths between sons and daughters of Vietnam veterans and the comparison groups is 1.5.

Pre-testing

A pre-test refers to an assessment of attitudes of stakeholders to the proposed research and proposed research instruments. The objectives of the pre-testing were:

- To test whether our research strategy was acceptable
- To seek advice on aspects of methodology - particularly recruitment and the lived experience

The purpose of the pre-testing was to gain an insight into how the Veterans themselves (as well as their spouses and offspring) would react to the proposed intergenerational research. In particular, the pre-testing was designed to illicit views on the study methodology including the contact methods. The Centre for Military and Veterans' Health (CMVH) conducted focus groups or short telephone interviews with 72 individuals from the Vietnam Veteran community.

In the first instance, informal 'focus groups' were conducted separately with 23 Veterans and 7 spouses. In the second instance, short 'telephone interviews' were conducted with 16 Veterans, 17 spouses and 9 offspring. Key issues identified by the Veteran community were:

- A desire for the study to investigate both physical and psychosocial outcomes;
- Support for both qualitative and quantitative methods in the data collection;
- Unanimous agreement that *all* sons and daughters (including step-children) of the Veteran be approached to participate;
- Unanimous agreement that *all* wives of the veteran should be approached to participate;
- Strong agreement that Veterans are the most appropriate point of contact for other family members;
- Strong concern that there has been such a long delay to commence the type of research proposed.

Recommendations

1. This research protocol has been designed such that it can be conducted in tiers and it is recommended that such an approach be adopted. Possible tiers for consideration are:

- substantial qualitative research investigating resilience and protective factors, family dynamics, family health service usage and the experience of returning to a hostile community be conducted on Vietnam veterans and their families in the first instance;
- although it is proposed that both comparison groups (service personnel who did not go to Vietnam and who have never served in the military) be recruited initially, data collection and analysis be undertaken consecutively. That is the first wave of data collection (Tier 2) be conducted for the families of those who served in Vietnam (Exposure V) and the families of those who were in the service but did not serve in Vietnam (Exposure S); while the second wave of data collection (Tier 3) would be for the brothers of Vietnam veterans, and their families (Exposure B) who served in the military during the Vietnam era but did

not go to Vietnam and the final wave of data collection (Tier 4) would be for families including a sibling of a Vietnam veteran who have not had military service (Exposure N); and

- further detailed qualitative and quantitative research be conducted on smaller sub-samples after some preliminary data has been collected and analysed.

2. It is recommended that extensive qualitative research be conducted with Vietnam veterans and their families, before any quantitative research is commenced. This qualitative research would explore the experiences of returning to a community in which there was significant opposition to the operation to which they have been deployed, resilience and protective factors, family dynamics and family health services usage, as well as collecting further information on the best methods for recruitment of spouses and sons and daughters.

3. A hypothesis which emerged from the literature review is that family dysfunction arising from parental ill-health, especially mental ill-health, following war service and the subsequent family dysfunction contributes to subsequent child ill health. While this hypothesis is deserving of further research, to date it has not been well researched. However the expert team had serious concerns that such research may not be feasible in a population where the sons and daughters are middle aged. Reasons included a lack of validated tools for exploring these issues in a population of this age, recall bias, confounding factors and anticipated difficulties in recruiting adult sons and daughters.

In order to design a study which has the benefit of developing family health and social services, the expert team consensus was that research into family dysfunction arising from war service and the possible link to child health would produce valid, meaningful, useful and generalisable results if it was carried out in a cohort with younger children, thus overcoming the problems of recall bias and a lack of validated tools for studying families in which the sons and daughters are adult.

4. The expert team noted that epigenetics is a newly emerging field which is likely to add to knowledge about how family dynamics impact on child health, and recommended that DVA continue to track developments in this area through its proposed Advisory Panel.

5. Despite the lack of evidence from the literature review for adverse physical outcomes related to service in Vietnam, the exception being some evidence to support an association with spina bifida, it is recommended that future research collects information about physical, mental and social health as has been proposed in this research protocol.

6. Suicide is an important contemporary issue for the population of sons and daughters of Vietnam veterans. It is recommended that a mortality study be conducted as a part of this research and it has been included in the study design.

7. It is recommended that the quantitative component of the study be limited to Army personnel only. Reasons for this include the difficulty in locating a control group for Navy and Air Force personnel and differences in exposures between services. Qualitative research should be undertaken with Navy and Air Force personnel and

their families in order to determine if their collective experiences were similar to, or were significantly different, to those of Army personnel.

Chapter 1 Introduction and Study overview

Background

The Vietnam veteran community has over the years raised concerns about the mental health, emotional well-being and physical health of their sons and daughters. One major concern is the perception that their sons and daughters are more unwell when compared to those in the general community. In *Morbidity of Vietnam Veterans: A Study in the Health of Australia's Vietnam Veteran Community* (DVA 1998), Vietnam veterans reported a higher prevalence of health problems among their partners and sons and daughters. In particular, it was reported that sons and daughters of Vietnam veterans had a substantially higher rate of suicide than that experienced by the general Australian community.

In response to the concerns of Vietnam veterans and their families, the Australian Government announced that it would examine the feasibility of conducting a study into the health of sons and daughters of Vietnam veterans. An independent advisory committee, the Scientific Advisory Committee (SAC), was appointed by the Repatriation Commission for this purpose.

The Feasibility Study identified a number of significant issues that could impact on the success of any future research into intergenerational health effects of Vietnam service. These issues included difficulties in locating and recruiting the sons and daughters of Vietnam veterans across the three services, while avoiding recruitment bias, and taking into account other factors which may impact on the health of the son or daughter, such as the role of the mother or other family members and other environmental influences. In response The Honourable Bruce Billson MP, Minister for Veterans' Affairs announced that "staged approach" research would commence this year with a view to supporting early action.

The Centre for Military and Veterans' Health was appointed to develop a "sound and workable" research protocol in response to the Feasibility Study into a Health Study of the Sons and Daughters of Vietnam Veterans (DVA 2006). This work will build on the work of the Deployment Health Surveillance Program, which is conducting cross-sectional studies of serving and ex-serving personnel who have deployed on specific operations and which aims to eventually develop a longitudinal health surveillance system for personnel who have served in the military.

Aims and objectives

The objectives of this project are to:

- conduct a review of the relevant literature for previous research and current work to inform the study methodology
- develop the research questions in consultation with DVA
- produce a research protocol

- pre-test the research protocol and developed instruments with veterans and their families
- develop and document a plan for data analysis and data linkage.

Process undertaken to achieve objectives

Establishment of a CMVH working group

The CMVH recruited a team of researchers to contribute to this project. The team consisted of:

Ms Ann Allica – Research Assistant

Ms Jacqui Beall – Senior Research Assistant

Dr Ruth McLaughlin – Research Fellow

Dr Pete Nasveld – Research Manager

Dr Eva Pietrzak – Senior Research Assistant

Mr Michael Waller – Research Fellow (Statistician)

Establishment of an expert team

The CMVH established an expert team for research into “Intergenerational health effects of service in the military”. Intergenerational research typically investigates the social, behavioural and health problems in successive generations of families. CMVH drew on its academic network, both within the CMVH consortium (University of Queensland, University of Adelaide and Charles Darwin University) and outside, to assemble a team of national academic staff that have expertise in intergenerational research, public health, social welfare, child and adolescent mental health, paediatrics and the Australian Institute of Health and Welfare (AIHW) linkage analysis.

Prof Niki Ellis (Chair)	Director, Centre for Military and Veterans’ Health (CMVH), University of Queensland
Prof Annette Dobson	Head of the Division of Epidemiology and Social Medicine, University of Queensland
A/ Prof Jane Halliday	Head, Public Health Genetics, Murdoch Children’s Research Institute
Prof John Hopper	Centre for Molecular, Environmental, Genetic and Analytic Epidemiology, University of Melbourne.
Prof Jake Najman	Director, Queensland Alcohol and Drug Research and Education Centre, University of Queensland

A/Prof Jan Nicolson	Principal Research Fellow, Murdoch Children's Research Institute
Prof Michael Sawyer	Head, Research and Evaluation Unit, Children, Youth and Women's Health Service, University of Adelaide
Prof Elizabeth Waters	Chair in Public Health, Faculty of Health and Behavioural Sciences, Deakin University

Content analysis

CMVH undertook a content analysis of the book 'And the Pine Trees Seemed Greener After That' to gain an insight into the lived experience of sons and daughters of Vietnam veterans and to inform the study methodology. A copy of this content analysis can be found in Appendix 1.

Intergenerational Health Research Methods Seminar

CMVH hosted a seminar on the 28th and 29th March 2007 entitled "Intergenerational Health Research Methods". A full report from this seminar is included in Appendix 2.

Research questions

The expert team took the research questions proposed by the Feasibility Study as a starting point and adapted them. The following are proposed:

(1) Does the mental, physical and social health of sons and daughters of Vietnam era servicemen who went to Vietnam ('a Vietnam veteran') (i.e. Group 0), differ from that of:

- Group 1 The sons and daughters of other Vietnam era servicemen who served in the military but did not go to Vietnam?
- Group 2 The sons and daughters of their brother(s) (or twin) who had military service in the same era but who did not go to Vietnam?
- Group 3 The sons and daughters of the siblings of Vietnam veterans who did not serve in the military?

(2) If so, what are the risks and protective factors associated with these differences especially those which may have implication for service delivery?

(3) To what extent, if any, can direct association be established between those distinctive health characteristics and the active Vietnam service of the father?

Study proposal

Rationale

The starting point for the research proposal was “The Feasibility of a Study into the Health of the Children of Vietnam Veterans’ (DVA., 2006). The expert team progressed the proposal made in the Feasibility Study by including qualitative research components, by strengthening the emphasis on social health, especially in relation to family dynamics; by proposing a family study, rather than a study of the sons and daughters only, and by recommending that the study be broken down into tiers.

Based on the literature review examining the Intergenerational Health Effects of Military Service the most promising biological mechanism is family disruption associated with service/deployment and mental health problems in parents having a negative impact on child health and wellbeing. Thus based on the literature review it would appear that family disruption is perhaps the critical factor underlying intergenerational health. Therefore, a decision was made by the expert team that the study should be a family study, rather than a study limited to the sons and daughters of Vietnam veterans only.

It is proposed that the study be conducted in tiers. The study design is shown in Figure 1.

**Primary Study Roll
10,000 Army veterans
and their families**

Qualitative

Tier 1

1. telephone interviews, N= 300
2. focus groups – 10 groups of 6-8
3. re-analysis of S&D project data
4. case history - 3 groups of 10
5. ethnographic study – N=6

Quantitative

Tier 2

Questionnaire survey
VV families with
Group 1
comparison
families

Tier 3

Questionnaire survey
VV families with
Group 2
comparison
families

Tier 4

Questionnaire survey
VV families with
Group 3
comparison
families

Data Linkage

**Tier 5
Mortality Study**

offspring of
Vietnam
veterans

Tier 1 would involve substantial qualitative research investigating resilience and protective factors, family dynamics, family health service usage and the experience of returning to a hostile community and would be conducted with Vietnam veterans and their families in the first instance;

Tier 2 would be a survey to compare the effects of service in Vietnam on the sons and daughters of Vietnam veterans with the effects of being in the military on sons and daughters of Vietnam era service personnel who did not go to Vietnam;

Tier 3 would be a survey to compare the effects of service in Vietnam on the sons and daughters of Vietnam veterans with the effects of being in the military on sons and daughters of the brothers (including twins) of Vietnam era service personnel who did not go to Vietnam; and

Tier 4 would be a survey to compare the effects of service in Vietnam on the sons and daughters of Vietnam veterans with a community sample who have never served in the military, specifically the sons and daughters of Vietnam veterans who did not serve in the military.

Tier 5 would be a mortality study which would compare the mortality rates of sons and daughters of Vietnam veterans with mortality rates of sons and daughters of veterans who served in the military but were not sent to Vietnam and with the mortality rates of a community sample who have never served in the military, specifically the sons and daughters of siblings of Vietnam veterans who did not serve in the military.

Target audience

Tier 1 of the project will target:

- Vietnam veterans (Army, Navy and Air Force)
- Wives/partners of Vietnam veterans
- Sons and daughters of Vietnam veterans.

Tier 2 of the project will target:

- Vietnam veterans (Army only)
- Wives/partners of Vietnam veterans
- Sons and daughters of Vietnam veterans
- Service personnel who were enlisted but did not serve in Vietnam
- Wives/partners of service personnel who were enlisted but did not serve in Vietnam
- Sons and daughters of service personnel who were enlisted but did not serve in Vietnam.

Tier 3 of the project will target:

- Vietnam veterans (Army only)
- Wives/partners of Vietnam veterans
- Sons and daughters of Vietnam veterans
- Brothers of Vietnam veterans who were enlisted but did not serve in Vietnam

- Wives/partners of brothers of Vietnam veterans who were enlisted but did not serve in Vietnam
- Sons and daughters of brothers of Vietnam veterans who were enlisted but did not serve in Vietnam.

Tier 4 of the project will target:

- Siblings of Vietnam veterans who have never served in the military (Army only)
- Wives/partners of siblings of Vietnam veterans who have never served in the military
- Sons and daughters of siblings of Vietnam veterans who have never served in the military.

Tier 5 of the project will target:

- Sons and daughters of Vietnam veterans (Army only)
- Sons and daughters of service personnel who were enlisted but did not serve in Vietnam.
- Sons and daughters of brothers of Vietnam veterans who were enlisted but did not serve in Vietnam.
- Sons and daughters of siblings of Vietnam veterans who have never served in the military.

Recruitment for quantitative component

The Nominal Roll of Vietnam Veterans will be the starting point for recruitment into the study. In addition the Australian Institute of Health and Welfare (AIHW) nominal roll of Vietnam era Army personnel will be used for recruiting service personnel who served in the military but did not go to Vietnam. Sophisticated electronic methods of contact tracing will be used. This proposal is not designed to be a census of all veterans and their families, a random sample of 10,000 Army veterans will be recruited for this study.

If Vietnam service information is known, the selection of servicemen not sent to Vietnam (Exposure S) will be based on frequency matching with those in Exposure V for factors such as type of service (Conscripts, Regular), age, corps, calendar years of service, etc.

- A letter and information sheet will be sent to the Veteran explaining the purpose of the research.
- An interviewer will then follow up the letter with a telephone call asking if the Veteran would like to participate in the research (by completion of a questionnaire) and for permission to contact their sons and daughters, should they exist and be living. *There is an important step here in which it may be necessary for the veteran to contact their family to get permission for the study to approach the other family members – this will depend on the ethics committee.*
- The Veteran will also be asked to identify the mother(s) of these sons and daughters to potentially help in contacting and participation of their sons and daughters and to also ask them to complete a questionnaire.
- The Veteran will also be asked to identify all his brothers and sisters (and any twins amongst them), and their sons and daughters. Veterans will also be

asked if their brothers served during the Vietnam era (and if so whether they were sent to Vietnam). We will explain that the reason for asking this is that we may wish to invite these nephews and nieces to participate. This will identify potential subjects for Groups 2 and 3.

- The sons and daughters will then be sent an approach letter and information sheet explaining the purpose of the research.
- An interviewer will then follow up the letter with a telephone call asking the sons and daughters to participate in the research.

Sons and daughters

Others have developed a template to obtain family information prior to conducting family studies. This type of template will be modified for use in this study. A copy of this template can be found in Appendix 5. This will facilitate a systematic approach by the telephone interviewer to obtaining the required preliminary details from the Servicemen about their own sons and daughters and their siblings sons and daughters.

Fathers will be asked to identify all sons and daughters, including those who have died. For deceased sons and daughters, servicemen will be asked to provide the information necessary to link the death to the National Death Index. This information will be used to conduct a Mortality Study on the sons and daughters of Vietnam veterans.

Inclusion criteria

The Vietnam era servicemen will include:

- Army but not Navy or Airforce. Reasons for this include the difficulty in locating a control group for Navy and Airforce personnel and differences in exposure between services.
- Conscripts and regular soldiers
- A sample of men from any year in the campaign. ((The questionnaire will manage the expected variation in exposure to combat (collecting information on corps/unit, use of a combat index) and the attitudes of the Australian community at the time of their return)).

It is anticipated that the selection of an Army only population for the study will invite some criticism and comment about the design of the study. The expert team considered that selection of Army would likely result in a more robust sample and that the development of comparator cohorts could be more readily obtained from existing sources. National Servicemen also were only represented within the Army elements.

Royal Australian Air Force (RAAF) and Royal Australian Navy (RAN) elements were also involved in land based operations in Vietnam, with some estimates putting the Navy contribution as up to 25% of the total deployed force. Most of these Navy personnel served on either the “gun line” of ships off shore, or in providing troop and logistics lift capability from Australia to South Vietnam. Exposure in these ships is likely to be significantly different from that experienced in the ground based forces and may confound the findings through different environmental exposures and confounding on the issue of family separation. Navy elements did provide land based

helicopter roles and contributed to Special Forces activity, but the numbers are considered to be too small to consider as viable sub populations. It is considered that the experiences of these land based elements would not have been significantly different than those of Army personnel.

Air Force numbers were also significant but again issues of controlling for exposure, lack of National Servicemen involvement in the force and the diffuse nature of operations mitigate against the use of RAAF personnel in the study. Canberra bomber crews are also represented in the RAAF deployment numbers but flew from airfields outside of Vietnam proper. While their were significant air crew involvements on the ground, along with troop and equipment lift activity, the lack of difference in exposures between the South Vietnam land based elements, along with the lack of suitable comparator cohorts would potentially confuse the analysis. A particular high exposure group was operated by the RAAF (and by RAN) where the helicopter crews involved in both force support and casualty evacuation, but the numbers again are unlikely to be significant enough to develop a small sub study with any significant statistical power.

It is recommended that qualitative research should be undertaken with Navy and Air Force personnel and their families in order to determine if their collective experiences were similar to, or were significantly different, to those of Army personnel.

Chapter 2 Qualitative research component

It is proposed that the study include qualitative research as well as quantitative, from a broad (representative) range of veterans. A total of five research protocols are presented, each using different well-established methodologies:

1. Semi-Structured telephone interviews to inform the quantitative research
2. A qualitative study of the intergenerational transfer of health resilience and dysfunction: focus group research
3. Reanalysis of data collected during the Vietnam veterans Sons and Daughters project undertaken by VVCS
4. A case history of health and perceived risk among three groups of sons and daughters of veterans and civilian fathers from the time of the Vietnam War
5. A focused ethnographic study of six sons and daughters from the Vietnam War era.

Background

Why conduct qualitative research?

Well designed and implemented, rigorous, qualitative research can describe and elaborate the concepts, understandings, themes and discernible patterns that are meaningful to a group as expressed by themselves, from the 'inside'. This is in line with the finding from the literature review of the need for more research on family function and mental health.

It also conforms with DVA's request for research into protective factors relevant to service delivery and social models of health including wellness, early intervention, prevention, and shared responsibility. In particular this methodology will allow the exploration of the impact of the whole experience of being a Vietnam veteran, not just during war service. This information will be relevant to current conflicts, for which community support is at best divided.

This qualitative research draws on a desire to know:

- family structure and dynamics in relationship to physical, mental and social health outcomes;
- the patterned strategies employed by Vietnam veteran sons and daughters as a group;
- how negative community attitudes to a particular conflict may affect physical, mental and social health outcomes of families which include a Vietnam veteran; and
- attitudes to existing services available to assist the families of veterans and ideas.

These topics acknowledge that a trauma may have been suffered and highlights that wellness can still be achieved in later life. It will also help the study to investigate the health of Vietnam veteran sons and daughters within the community rather than as an isolated sub-group compared to the community.

Aims and objectives

The objective of the qualitative research proposed here is to gain insight into the physical, mental and social health of the sons and daughters of Vietnam veterans and comparable groups as it is understood, explained and 'lived' by them. The qualitative component will explore the self-reported experiences of daily life as sons and daughters so as to describe the relationships between their lived experience and their health status in relation to their family/ies and community/ies and their use of services.

Based on these 'insider' perceptions and descriptions of the 'lived experience', the worldview and ways of life of the sons and daughters of Vietnam veterans can be described, compared and contrasted to those of sons and daughters of the comparable groups who also relate to the Vietnam War era.

It is then possible to contrast the qualitative similarities and differences among the three studied groups.

This can be unpacked as:

- Delineate and define the meaning of being a Vietnam veteran, including exploration of the impact of return to Australia to hostile attitudes to the conflict in which they served, as understood by the now adult sons and daughters of fathers who served in the military and served in Vietnam, now adult sons and daughters of fathers who served in the military during the Vietnam era, and now adult sons and daughters of fathers who did not serve in the military during the Vietnam era.
- Describe the place of the fathers' experience as a Vietnam veteran, compared to the experience of being in the military but not deployed to Vietnam, or civilian experience in relation to their physical, mental and social health through their lifecourse as understood by sons and daughters.
- Recall the lived experience of being the son or daughter of a Vietnam veteran as a child, and as an adult child, within the context of their family relationships.
- Recall the lived experience of being the son or daughter of a Vietnam veteran as a child, and as an adult child, within the context of their community/ies.
- Compare and contrast this definition and lived experience with those of:
 - being a son or daughter of a veteran who did not serve in Vietnam.
 - being a son or daughter of a family-related civilian father.
- Describe and document the nature of the intergenerational impact of war service as perceived by the sons and daughters of Vietnam veterans and their perceptions of intergenerational transmission of health, illness, disease and/or disability.
- Describe and document the nature of the intergenerational impact of Vietnam War service as perceived by the sons and daughters of the two comparison groups within the context of their own communities with a particular focus on community hostility to the Vietnam War.
- Describe and document attitudes of all three study groups to family support services provided, and ideas for any additional services.

Overarching Aim

The overall aim of the qualitative research is to identify the views and experiences of adult sons and daughters (18-50years) of surviving Vietnam veterans and comparable groups in relation to their physical, mental and social health, their family context and their father's experience of military service, service in Vietnam or civilian life.

Methodology

The methodological options are suggested below, commencing with a short description of the purpose for each option.

There are two broad alternative approaches proposed for the conduct of qualitative research:

1. Qualitative research used as a component of a mixed method study commencing with the qualitative analysis as a way of informing the scope of the quantitative study.
2. Separate qualitative research to provide insights into the questions formed through development of the quantitative study.

A total of five research protocols are presented below, each using different well-established methodologies.

The first two protocols are in response to approach 1 (above). The remaining three studies are alternative methods for approach 2 and could either precede the quantitative study to inform refinement of research instruments, or be conducted as stand alone studies.

Option 1 Semi-structured telephone interviews to inform the quantitative research

Research aims

- Obtain data indicative of health status risk factors
- Obtain data indicative of health status protective factors.

Methodology

Subjects

This methodology would attempt to replicate the research group - sons and daughters of Vietnam veterans, and the two comparison groups in the same way as conducted within the quantitative study. Therefore, respondents would be a smaller sample of those who participate in the quantitative study, say 300 respondents across the three groups: adult sons and daughters of fathers who served in the military and served in Vietnam, now adult sons and daughters of fathers who served in the military during the Vietnam era, and now adult sons and daughters of fathers who did not serve in the military during the Vietnam era. Respondents would be sub-divided by gender.

The breakdown of respondents is:

- Now adult sons and daughters of fathers who served in the military and served in Vietnam (50 daughters and 50 sons)
- Now adult sons and daughters of fathers who served in the military during the Vietnam era (50 daughters and 50 sons)
- Now adult sons and daughters of fathers who did not serve in the military during the Vietnam era (civilian fathers) (50 daughters and 50 sons).

Method

Computer-assisted telephone interview data collection using a questionnaire generated from the quantitative instrument/s.

The proposal here is to conduct social health research that informs the quantitative study and useful additional information to a web-based or postal questionnaire (if those methods are used).

Using open-ended questions, respondents would be encouraged to express their own views within a structured data collection process. Open ended questions have the scope of obtaining more information on family dynamics, physical and mental health as well as quality of life and experience of community hostility.

The questionnaire design can be structured or semi-structured depending on the level of flexibility desired in the response participants can provide.

Computer Assisted Telephone Interviewing (CATI) is a form of telephone interviewing that uses a sophisticated software package to automate the interviewing process. Generally a paper questionnaire is sent to the participant prior to the CATI and then during the telephone interview participants answer questions. Interviewers read the questions from a computer screen and then key answers directly into a computer.

The data can be analysed a short time after data collection is complete. A CATI has the advantage of decreased costs and potentially higher participation rates than the use of postal questionnaires alone.

These additional open-ended interviews with a sub-set of the broader study population would be undertaken after the initial analysis of the quantitative data to collect information highlighted by the quantitative research.

Recruitment

Recruitment would be conducted in synchrony with recruitment for the quantitative study. (Note if the quantitative study uses CATI then the two components could be combined in the same interview.)

Data analysis

This would follow the analysis methods used in the quantitative study as closely as possible so as to elaborate on the variables shown considered significant within the quantitative methodology.

Strengths

This methodology would align closely with the specific topics and sub-populations investigated by the quantitative research while at the same time giving individuals the opportunity to describe their responses in their own words.

Limitations

While this additional study may put ‘flesh on the bones’ of the quantitative study, it would not necessarily elaborate any other factors that may be associated with the quantitative findings.

Budget

Detailed costing can be undertaken when this becomes a preferred option.

Option 2 A qualitative study of the intergenerational transfer of health resilience and dysfunction: focus group research

Research Aim

1. To explore the intergenerational transfer of individual function and dysfunction from the family of origin to the sons and daughters of Vietnam veterans, the sons and daughters of defence force personnel who served in the same era but who did not go to Vietnam and the sons and daughters of the siblings of Vietnam veterans who did not serve in the military.
2. To explore attitudes to existing family support services and ideas for additional services.

Methodology

Subjects

Focus group participants would be a smaller sample of those who participate in the quantitative study. Ten focus groups are proposed, each with 6-8 respondents for each of the two groups (dysfunctional and resilient) with a total not exceeding 100.

They would be selected into this qualitative study on the basis of high scores of dysfunction.

Method

A process would be put in place to identify groups of adult sons and daughters with particular conditions of dysfunction as well as individuals who are demonstrating functional resilience for this qualitative research.

Definitions of function and dysfunction would be established at the commencement of each focus group to form definitions agreed by each of the 3 research groups the now adult sons and daughters of Vietnam veterans, the now adult sons and daughters of defence force personnel who served in the same era but who did not go to Vietnam

and the now adult sons and daughters of the siblings of Vietnam who did not serve in the military.

With a lag time of 3-6 months to the quantitative surveying, conduct focus groups to compare the lived experiences of the three cohorts (sons and daughters of veterans-who served in Vietnam (regular army and conscripts); veterans (regular army and conscripts) and family-related civilians).

Focus group question development will be guided by the findings of the quantitative survey and focus on those specific areas of functional resilience and dysfunction found to be of greatest significance.

Recruitment

Recruitment would be conducted in synchrony with recruitment for the quantitative study.

Proposed analysis

Thematic analysis of the transcribed data recorded during the conduct of the focus groups.

Strengths

This study would provide self-reported data on physical, mental and social resilience and dysfunction across the three comparison groups - (sons and daughters of veterans-who served in Vietnam (regular army and conscripts); veterans (regular army and conscripts); family-related civilians) and qualitative differences in the understanding of resilience and dysfunction as perceived by the three groups; and information on attitudes to existing family support services and ideas for new services.

Limitations

Focus groups can be poorly conducted so that only a minority of participants are able to express their views.

Budget

Detailed costing can be undertaken when this becomes a preferred option.

Option 3 Reanalysis of data collected during the Vietnam Veterans Sons and Daughters Project undertaken by VVCS

Study Aim

To ask a new set of questions of the transcribed data held by the Vietnam Veterans Counselling Service in relation to the physical, mental and social health of the sons and daughters of Vietnam veterans. This study would therefore be a re-analysis of focus group data collected by VVCS using the questions pertinent to this research undertaking.

Methodology

Subjects and Recruitment

No new subject recruitment required.

Method/s

Development of a new protocol for re-examination of the transcribed data while taking into consideration that the key areas included in the national focus group consultation identified:

- Health issues and risk factors for the sons and daughters
- The types of strategies currently used to manage and achieve in their daily lives
- Any new strategies that sons and daughters wanted to incorporate into their lives to improve their personal self-management
- The range of services, programs and supports in the region best suited to this group
- This included existing supports and those that may need to be created.

The new questions for interrogation of the existing data would be based on the priorities of the current research initiative including community hostility to the Vietnam War.

A priority here would be to see to what extent the well veteran, and well sons and daughters is present, and the potential for further analysis.

If necessary further focus group work would be conducted with the sons and daughters of Vietnam veterans who are not clients of VVCS.

Proposed analysis

Re-analysis using thematic analysis methods. This study could be done before the quantitative study, to inform questionnaire design, or as an independent study.

Strengths

Data already exists.

Limitations

Data may not be able to respond to the new set of questions. The influence of the researcher who originally collected the data may be difficult to detect and interpret. There may be ethical constraints that preclude re-use of these data.

Budget

Detailed costing can be undertaken when this becomes a preferred option.

Option 4 A case history study of health and perceived risk among three groups of Sons and Daughters of veterans and civilian fathers from the time of the Vietnam War.

Subjects and Recruitment

This study could be done before the quantitative study, to inform questionnaire design, or as a stand alone study. Recruitment would be conducted in synchrony with recruitment for the quantitative study.

A total of 30 case histories would be collected with 10 (5 sons and 5 daughters) from each of the three groups.

Methodology

This is a comparative case history study that would be conducted to compare and contrast the lived experiences of the three sub-populations of sons and daughters. This study would be characterized by broader, comparative investigation of the mental, physical and social health of sons and daughters aged between 18 and 50, family and community dynamics including experiences of community hostility to the Vietnam War, information on attitudes to family support services and ideas for additional services.

The aims of this study remain as:

- Obtain thematic data indicative of health status risk factors
- Obtain thematic data indicative of health status protective factors
- Obtain thematic data on attitudes to family support services and ideas for additional services noting need for support with community hostility to the Vietnam War.

Methods

The research methods for this study are:

- focussed ethnographic methods (limited participant observation and structured interviewing with each respondent using open-ended questions)
- a collection of individual health status and service usage data as recalled by respondent combined with DVA Medicare data
- the Adult Attachment Interview.

Case study collection involves collecting and organising the data by specific cases for in-depth study and comparison. Well-constructed case studies are holistic and context sensitive in for this research would be person specific. Each case would be used as a unit of analysis and comparison.

Topics and issues are specified in advance and specific questions developed using open-ended questions. Open-ended questions are designed so that respondents can reply in their own words to minimise the likelihood of collecting fixed data predetermined by the questions (cf. closed questions). To collect the required data a structured interview guide would be developed drawing on the instrument topics included in the quantitative research.

The interviewer generally follows the sequence of the predetermined questions, however remains flexible to change in their sequencing so as not to repeat topics or content. The interviewer will also add some supplementary questions to explore a particular view or experience of the interviewee when it is pertinent to the topic being explored.

Interview questions would be developed based on the data collection instruments for the quantitative study. In addition, the Adult Attachment Interview Protocol would be included to strengthen data collection on parent attachment.

The possibility of linking qualitative findings with DVA accessed Medicare data for each respondent could be explored.

Proposed analysis

The compiling of in-depth case histories requires a combination of analytical methods combined to form a rigorous process of analysis. The ultimate aim is to describe the 30 in-depth case histories and then draw from these, and the broader data collection to set the experiences of individuals with a broader social health context. The latter can be achieved using thematic analysis of transcriptions and relevant document collection.

Strengths

Findings are based on several data collections that cross-checked the other as used in triangulation studies. Findings are therefore 'harder' rather than softer interpretations.

Data for each respondent is completed on the predetermined topics and this method tends to reduce, or make more transparent, interviewer bias when more than one interviewer is involved in the research. The outline provided by the structured interview guide increases the comprehensiveness of the data collected and it is gathered in a more systematic way. The research interaction is fairly conversational and most importantly, allows the respondent to elaborate on situation and context within the body of their response. Respondents answer the same questions, thus increasing comparability of responses.

Individuals case histories are contextualised within the wider social experience

Limitations

This is a rigorous qualitative research that takes time and money. It is not therefore a 'soft option'.

The standardising of questions can limit the naturalness and relevance of questions and answers if poorly constructed.

Budget

Detailed costing can be undertaken when this becomes a preferred option.

Option 5 A focused ethnographic study of six Sons and Daughters from the Vietnam War Era

Study Aim

This study would be characterised by deeper, more personalised though still socially representative, meanings associated with the lived experience of being the son or daughter of a Vietnam veteran, the son or daughter of a soldier who did not serve in Vietnam and the son or daughter of a civilian father who lived through the Vietnam War era in relation to their mental, physical and social health (aged between 18 and 50).

The aims of this study remain as:

- Obtain thematic data indicative of health status risk factors
- Obtain thematic data indicative of health status protective factors.

Methodology

This study would draw on grounded theory and the immersion of the researcher, who is themselves the research instrument, in the experience of the sons and daughters participating in the study, to produce data.

Subjects and Recruitment

This study could be done before the quantitative study, to inform questionnaire design, or as a stand alone study. A total of 6 informants (one female and one male from each of the 3 groups) are proposed.

Methods

Focussed ethnographic research using participant observation with key informants along with informal conversational interviews in which questions emerge from the immediate context would be asked in the natural course of interaction and circumstances. There are no predetermined questions or working although the topics of particular interest to the research are kept in mind during the course of participating with the informants.

Proposed analysis

Thematic analysis (mining the data for significant themes and issues rather than to identify frequency) of the text will be undertaken.

A strong example of an interpretative study using text is the content analysis of the book for the sons and daughters of Vietnam veterans, **“And the Pine Trees Seemed Greener After That”**. A copy of this content analysis can be found in Appendix 1.

Strengths

The salience and relevance of the questions asked and the observations made are exposive of the unfiltered realities of individuals and their circumstances. Conversation and informal interviews can be matched to individual informants and the circumstances in which the researcher and the informant find themselves.

Limitations

Different questions asked and different information collected from different people can result in unsystematic and superficial data collection making its organisation and analysis difficult to impossible.

It is imperative that a highly trained, skilled and experienced qualitative (anthropological or sociological) field researcher be engaged to conduct such a study.

Summary and conclusions

The objective of the qualitative research is to gain insight into the physical, mental and social health of sons and daughters of Vietnam veterans and comparable groups, as it is understood, explained and 'lived' by them. The qualitative research component will explore the self reported experiences of daily life as sons and daughters so as to describe the relationships between their lived experiences and their health status in relation to their family/ies and community/ies and their use of health services. Based on these 'insider' perceptions and descriptions of the 'lived experience' the ways of life of the sons and daughters of Vietnam veterans can be described, compared and contrasted to those of the comparable groups.

A total of five research protocols are presented, each using different well-established methodologies:

1. Semi-structured telephone interviews to inform the quantitative research;
2. A qualitative study of the intergenerational transfer of health resilience and dysfunction: focus group research;
3. Reanalysis of data collected during the Vietnam veterans Sons and Daughters project undertaken by VVCS;
4. A case history of health and perceived risk among three groups of sons and daughters of veterans and civilian fathers from the time of the Vietnam war; and
5. A focused ethnographic study of six sons and daughters from the Vietnam war era

The main outcomes of the proposed qualitative research will be:

- a deeper understanding of the issues identified and recognised by veterans and their families and some understanding of why;
- clarification of what veterans and their families believe would meet their needs in terms of DVA services and health care; and
- greater insight into the military experience and the longer term impacts which can be translated to more recent deployments.

It is recommended that substantial qualitative research investigating resilience and protective factors, family dynamics, family health service usage and the experience of returning to a hostile community be conducted on Vietnam veterans and their families in the first instance before any quantitative research is conducted.

Chapter 3 Quantitative research component

A cohort study is proposed in which exposures are defined in terms of an individual's father's Vietnam War experience and service during the Vietnam War era (1962-1975).

There are four levels of exposure:

V = Fathers had service in Vietnam (i.e. father is a Vietnam veteran)

S = Fathers had service but not sent to Vietnam

B = Fathers had service but not sent to Vietnam and was a brother of a Vietnam veteran

N = Father or mother had no service in Vietnam but was a sibling of a Vietnam veteran

Four study groups, each with a different level of exposure, were identified in the research questions:

- Group 0 The sons and daughters of Vietnam era servicemen who went to Vietnam (Vietnam veterans). *Exposure V*
- Group 1 The sons and daughters of other Vietnam era servicemen who served in the military but did not go to Vietnam. *Exposure S*
- Group 2 The sons and daughters of their brother(s) (or twin) who had military service in the same era but who did not go to Vietnam. *Exposure B*
- Group 3 The sons and daughters of the siblings of Vietnam veterans who did not serve in the military. *Exposure N*

Comparison of Group 0 with Group 1 is by comparing the sons and daughters whose fathers were in exposure level V with those whose fathers were in exposure level S.

Comparison of Group 0 with Group 2 is by comparing the sons and daughters whose fathers were in exposure level V with those whose fathers *were their brothers (including twins)* and were in exposure level S.

Comparison of Group 0 with Group 3 is by comparing the sons and daughters whose fathers were in exposure level V with those whose fathers *were their brothers or sisters (including twins)*, and were in exposure level N.

The start time of the exposure is defined in terms of the sons and daughters and is from birth, or if born before 1962, age at time of service.

Data collection

Participation will involve completion of a questionnaire comprising measures of physical, mental and social health. Questionnaires can be undertaken by post, by telephone or online.

Questionnaire development

It was decided by the expert team that the Lynch (2000) Ecological Model of Health should be used to underpin this research proposal. This model utilises both multiple

environmental and individual contexts and a lifespan perspective. This model was considered when determining the broad range of outcomes that should be included in this proposal. Using the recommendations of the Feasibility Study as a starting point the expert team proposed a range of outcomes that should be measured along with appropriate standardised data collection instruments for each outcome. The questionnaire developed is a combination of the instruments outlined below. Three questionnaires were developed for the study – Vietnam veteran, spouse and son or daughters of Vietnam veteran. Samples of the questionnaires can be found at Appendices 6, 7 and 8.

A summary of the areas covered in each questionnaire can be found in Table 1 below.

Table 2: Summary table of questionnaires developed for the three groups of participants

<i>Sons and Daughters</i>	<i>Fathers</i>	<i>Mothers</i>
Demographic data	Demographic data	Demographic data
Diagnosed or treated medical conditions	Diagnosed or treated medical conditions	Diagnosed or treated medical conditions
Anxiety and depression (<i>Kessler Psychological Distress Scale-10; General Health Questionnaire – 12 item scale</i>)	Anxiety and depression (<i>Kessler Psychological Distress Scale-10; General Health Questionnaire – 12 item scale</i>)	Anxiety and depression (<i>Kessler Psychological Distress Scale-10; General Health Questionnaire – 12 item scale</i>)
Substance abuse <ul style="list-style-type: none"> • Alcohol (AUDIT) • Illicit substances 	Drug and alcohol use (<i>AUDIT</i>)	Drug and alcohol use (<i>AUDIT</i>)
Post traumatic stress disorder (<i>PTSD checklist – civilian version</i>)	Deployment to Vietnam <ul style="list-style-type: none"> • General background • Events that occurred during deployment • Stressful factors during deployment 	Pregnancy history and pregnancy outcomes
Health risk behaviours <ul style="list-style-type: none"> • Tobacco • Physical activity (National Physical Activity Survey instrument) 	Post deployment experiences	Major health outcomes for sons and daughters
Quality of life (<i>WHO-QOL</i>)		
General health (<i>SF-36 Version 2</i>)		
Employment (<i>Karasek’s Job Content Questionnaire</i>)		
Intimate relationships <ul style="list-style-type: none"> • Satisfaction (Dyadic Adjustment Scale) • Violence/conflict (Hurt, Insulted, Threatened, Screamed) 		
Parenting (<i>Parenting Sense of Competence Scale</i>)		
Social participation (<i>The Social Adjustment Scale</i>)		
Parent bonding (<i>Parent Bonding Instrument</i>)		
Significant life events (<i>Life events scale</i>)		
Perceived social support (<i>Duke Social Support and Stress Scale</i>)		
Coping styles (<i>The Proactive Coping Inventory</i>)		

Data collection instruments

The Short-Form-26 Health Survey

The SF-36 is a multi-purpose, short form health survey with 36 questions. It yields a 9-scale profile of functional health and well-being scores as well as psychometrically based physical and mental health summary measures and a preference-based health utility index. It is a generic measure, as opposed to one that targets a specific age, disease, or treatment group. The SF-36 includes multi-item scales to measure the following eight dimensions: Physical functioning; Role limitations due to physical health problems; Bodily pain; Social functioning; General mental health, covering psychological distress and well-being; Role limitations due to emotional problems; Vitality, energy or fatigue; and General health perceptions.

The World Health Organisation Quality of Life Scale

The WHOQOL provides a subjective assessment of a broad definition of quality of life. The WHOQOL was designed as an international quality of life assessment to make it possible to carry out quality of life research collaboratively in different cultural settings, and to compare directly results obtained in these different settings. The WHOQOL was designed to be a health profile measure covering broad domains of quality of life, each divided into facets. Domains and facets were chosen as being applicable across cultures. The six original domains included physical and psychological health, level of independence, social relationships, environment, and spirituality, religion and personal beliefs.

Body mass index

Body mass index (BMI) is a simple index of weight-to-height ration that is commonly used to classify underweight, overweight and obesity in adults. It is defined as the weight in kilograms divided by the square of the height in metres (kg/m^2). It is considered to provide the most useful, although crude, population-level measure of obesity and the risks associated with it.

Physical activity

Participation in physical activity has important benefits for the physical and mental health of individuals. Physical activity is recognised as an important factor in reducing the risk of chronic disease among Australians. It is important for the reduction of mortality and morbidity from cardiovascular disease, type 2 diabetes, some forms of cancer, and morbidity from some injuries, and mental health conditions. The Expert Group for the National Physical Activity Survey developed a standard instrument for collecting physical activity information. The instrument questions were derived from questions used in the National Heart Foundation Risk Factor Prevalence Survey (Risk

Factor Management Committee, 1990), the Australian Bureau of Statistics National Health Surveys 1989-90 and 1995 and the New South Wales State Health surveys (Baumann et al., 1996). This instrument was used in both the 1997 and 1999 national physical activity surveys to assess participation in physical activity among Australian adults. A project to assess the reproducibility of this instrument was funded by the Commonwealth Department of Health and Aged Care (DHAC) in late 1999, through the University of Western Australia. For those individual reporting activity the test-retest agreement coefficients were in the moderate to very good range – intra-class correlation coefficients ranged from 0.6 to 0.8 (Bull et al., 2000). Therefore these questions in a population setting are at least as reproducible as other commonly used physical activity instruments.

The Kessler Psychological Distress Scale-10 (K10)

The K10 is a scale measuring non-specific psychological distress. It was developed in 1992 as a short dimensional measure of non-specific psychological distress in the anxiety-depression spectrum (Kessler & Mroczek, 1992, 1994). The scale consists of ten questions about the non-specific psychological distress and seeks to measure current anxiety and depressive symptoms a person have experienced in the four weeks prior to completion. Research has revealed a strong association between high scores on the K10 (indicating high levels of psychological distress) and a current CIDI diagnosis of anxiety and affective disorders. The K10 was used in the Australian Bureau of Statistics 1997 National Survey of Mental Health and Wellbeing, a number of State surveys and the 2001 National Health Survey.

The General Health Questionnaire – 12

The General Health Questionnaire (GHQ) is a self-administered screening instrument designed to detect current diagnosable psychiatric disorders. The GHQ was designed to identify two main classes of problem: ‘inability to carry out one’s normal healthy functions, and the appearance of new phenomena of a distressing nature’ (Goldberg & Hillier, 1979). It focuses on breaks in normal functioning rather than on life-long traits; therefore it only covers personality disorders or patterns of adjustments where these are associated with distress. The GHQ was designed to cover four elements of distress: depression, anxiety, social impairment and hypochondriasis. The main version of the GHQ contains 60 items, however, an alternative shorter version is the GHQ-12. The 12 item version is balanced in terms of ‘agreement sets’ – that is, half of the questions are worded positively and half negatively.

The Alcohol Use Disorders Identification Test (AUDIT)

The AUDIT was developed on the basis of an extensive six-nation validation trial (Saunders et al., 1993a, b) by the World Health Organisation as a simple method of screening for excessive drinking. The AUDIT consists of ten questions about recent alcohol use, alcohol dependence symptoms and alcohol-related problems. The AUDIT is the only test specifically designed for international use; focuses on recent alcohol

use and is consistent with ICD-10 definitions of alcohol dependence and harmful alcohol use.

Post traumatic stress disorder checklist – Civilian version (PCL-C)

The PCL-C is a standardised instrument for self-reporting scale for PTSD comprising of 17 items that correspond to the key symptoms of PTSD.

Karasek's Job Content Index

The Job Content Questionnaire (JCQ) is a questionnaire-based instrument designed to measure the "content" of a respondent's work task(s) in a general manner which is applicable to all jobs and job holders. The best known scales are used to measure the high demand/low control model of job strain development, however over twenty other aspects of work and the individual are assessed. The scales are also relevant for studies of worker motivation, job satisfaction, absenteeism and labor turnover. A shortened version of the questionnaire which was used in the Whitehall studies will be used in this study. The self-report items focus on the central components of the job strain model – that is, job demands, job control and social support from colleagues.

The Dyadic Adjustment Scale (DAS)

The DAS is a standardised 32-item scale that assesses the quality of a relationship according to the individual respondent. Scores from the scale can be compared to one another to determine marital adjustment. The DAS uses four subscales to ultimately determine 'dyadic' or 'couple' adjustment. These scales are: dyadic satisfaction, dyadic cohesion, dyadic consensus and affectional expression. The inventory, developed in 1976, has been widely used in the family sciences field and a number of studies have been conducted to empirically validate the measure and its effectiveness over the past 30 years. The DAS has been used in many research studies with a wide variety of couples (married, co-habiting, divorced).

The Parenting Scale

The Parenting Scale was originally developed to assess parental discipline of preschool children (ages 18 to 48 months). It is a 30-item self-report instrument using seven-point scale items designed to help clinicians identify parenting 'mistakes' that may contribute to ineffectual efforts to discipline young children. Ratings of parental behaviour are obtained in three areas which are labelled 'laxness' (discipline inconsistent and permissive), 'over-reactivity' (discipline characterised by the yelling, insults, and physical punishment) and 'verbosity' (use of lengthy or repetitive verbal responses and reprimands). The items are constructed as hypothetical situations, where the best answer is not always obvious, so that parental reactions to the frequency or severity of child behaviours and response bias are less likely to be a factor in parental responses. Subscale scores are derived by calculating means and can range from 1.0 to 7.0. Higher scores on each scale indicate more frequent use of

ineffective approaches to child management. Sons and daughters who are not parents will not have to complete this section.

The Social Adjustment Scale

The Social Adjustment Scale measures successful adjustment to community living, as distinct from problems in role performance. The scale assesses interpersonal relationships in various roles, covering feelings, satisfaction, friction and performance. The structure reflects two separate dimensions: six role areas and five aspects of adjustment that are applied depending on appropriateness to each role area. The Social Adjustment Scale contains 42 questions covering role performance in six areas of role functioning: work (as employee, housewife, or student); social leisure activities; relationships with extended family; and roles as spouse; parent and member of the family unit.

Parental Bonding Instrument (PBI)

The standard application asks subjects to score their biological parents as the subject remembers them in their first sixteen years. In some studies other 'parent figures' have been rated. Two scales termed 'care' and 'overprotection' or 'control' measure fundamental parental styles as perceived by the child. The measure is retrospective and is to be completed for both mothers and fathers separately. There are 25 item questions, including 12 'care' items and 13 'overprotection' items.

Duke Social Support and Stress Scale (DUSOCS)

The Duke Social Support and Stress Scale rates family and non family relationships in terms of the amount of support they provide and the amount of stress they cause. The DUSOCS is self-administered; 12 items covering perceived support and 12 covering stress are rated in three-point scale for six categories of family members and four categories of non-family members. In addition the most, supportive and most stressful relationships are identified. Four scores are created: family support and stress and non-family support and stress.

Life Events Scale

In an attempt to measure life changes, Holmes and Rahe developed the Life Events Scale. The life events are ranked in order from the most stressful (death of spouse) to the least stressful (minor violations of the law). Respondents are asked to mark each event they have experienced over the past 12 months.

Proactive Coping Inventory

The Proactive Coping Inventory (PCI) takes a multidimensional approach to coping. A distinction between self-regulatory threat appraisal and self-regulatory goal attainment is made to account for a positive facet of coping. The PCI is distinguished by three features: it integrates planning and preventive strategies with proactive self-regulatory goal attainment; it integrates proactive goal attainment with identification and utilisation of social resources and it utilises proactive emotional coping for self-

regulatory goal attainment. The PCI consists of seven scales and a total of 55 items which implement, on a cognitive and behavioural level, a way of coping based on resourcefulness, responsibility and vision. The seven subscales of the PCI are the proactive coping subscale, reflective coping subscale, strategic planning subscale, preventive coping subscale, instrumental support seeking subscale, emotional support seeking and avoidance coping.

Hurt, Insulted, Threatened, Screamed

The HITS (Hurt Insulted Threatened Screamed) tool is a brief interview instrument that can be used to screen for domestic violence in a primary care setting. The HITS tool has good internal consistency with Cronbach alpha of 0.80 and good concurrent validity with comparison instrument (Conflict Tactics Scale CTS) with correlation of 0.85.

Mortality study

The purpose of the mortality study is to determine whether there is increased mortality in sons and daughters of Vietnam veterans compared with the other study groups. The specific aims of the study are:

- To compare the mortality rates for sons and daughters of Vietnam veterans to sons and daughters of veterans who were in the military during the Vietnam war but were not deployed to Vietnam; and
- To compare the mortality rates for sons and daughters of Vietnam veterans to sons and daughters of a community sample who have never served in the military, specifically the sons and daughters of siblings of Vietnam veterans who never served in the military.

Fathers in all study groups (that is, Vietnam veterans, veterans who did not serve in Vietnam, and brothers of Vietnam veterans who have never served in the military) will be asked to identify any sons and daughters who have died. Information on mortality will be obtained from linkage with the National Death Index (NDI) held by the Australian Institute of Health and Welfare (AIHW). The AIHW is provided with data on vital status from all State and Territory Registries of Births, Deaths and Marriages, as it is a legal requirement to register all deaths in Australia.

Details (full name, gender and date of birth) will be extracted for deceased sons and daughters of Vietnam veterans and the comparison groups and will be forwarded to the AIHW for linkage with the National Death Index.

The AIHW require the data to be in a particular format. This format requires the following information in separate fields:

1. ID number
2. Surname
3. First given name
4. Second given name

5. Third given name
6. Sex
7. Date of birth
8. Date of last contact
9. State of residence at last contact
10. Date of death if known.

The matching process undertaken by AIHW uses a probabilistic matching program. This is necessary because details on the death records and in the project nominal roll may not be completely accurate. For example a birth day may be entered as '1' in one source and '7' in another due to handwriting, misreading or even random error.

Data Analysis

It is proposed that the data would be analysed by comparing the physical, mental and social health outcomes of specific family members in each of the three arms of the quantitative study. For example, scores of the veterans and siblings, the scores of wives and partners, and the scores of the sons and daughters in each of the study groups would be compared in three separate analyses.

Regression modelling will be used to compare outcomes between the two groups directly. Each member of the study will be indexed with a Family ID number directly so that adjustments can be made to models to account for the non-independence of study participants.

The mean outcomes in each of the three groups will be compared using one-way Analysis of Variance (ANOVA) modelling. The ANOVA model tests the hypothesis that the group means are the same in each of the study arms.

As the study design allows for multiple comparisons of different outcomes to be made between different groups of family members, a correction for over testing maybe necessary. Potentially the significance level could be reduced from 0.05 to 0.01 if there are concerns about multiple testing. Analyses should focus on hypotheses defined *a priori*.

Power calculations for some primary outcomes are presented in Appendix 9. The calculations are based on items from the questionnaire and are calculated for differences in the total score on a continuous scale.

The power calculations for primary outcomes are based on 10,000 veterans and 10,000 participants in each of the comparison groups being approached to complete the questionnaire and are based on t-test comparisons between two of the three study arms.

Additionally power estimates for mortality rates in sons and daughters were calculated based on 10,000 veterans being approached and the assumption that each veteran will have two children. These calculations are presented in Appendix 9.

The power estimates undertaken demonstrate that even with a compliance of 30% the study design has significant power to detect differences in primary outcomes between

two groups and differences in mortality rates between the sons and daughters of the two groups when the rate of deaths in sons and daughters of Vietnam veterans is 4% and the rate ratio between deaths in sons and daughters of Vietnam veterans and sons and daughters of the comparison groups is 1.5.

Chapter 4 Pre-testing

Background

A pre-test refers to an assessment of attitudes of stakeholders to the proposed research and proposed research instruments.

Objectives

The objectives of the pre-testing are:

- to test whether our research strategy was acceptable
- to seek advice on aspects of methodology particularly recruitment and the lived experience
- to determine if the protocol and instruments are acceptable and likely to be feasible.

Methodology

Focus groups, a form of in-depth group interviewing, and structured telephone interviews – were used in this project to assess the research strategy and the questionnaire answering process.

The theme list for pre-testing and the key questions to be asked in the focus groups were:

- 1. The expectations of the study population for the proposed study**
 - a. What do the veterans, their spouses and their sons and daughters hope to gain from a study into the physical, mental and social health of children of Vietnam veterans?;
 - b. What are the broad health problems that are perceived by the veterans, spouses and the sons and daughters of the veterans?; and
 - c. What are the services that veterans, spouses and their sons and daughters believe should be provided by DVA?
- 2. Reactions of the respondents to the contact and recruitment strategy**
 - a. Do you think that locating the sons and daughters and partners through the fathers will work?
- 3. The data-collection tools**
 - a. Do you have any major concerns with the questions asked/issues explored?
 - b. What is the best way to implement the survey?
 - i. Postal survey
 - ii. Telephone interview
 - iii. Online questionnaire
 - c. How long does the questionnaire take to complete?
 - i. Is this tolerable?
- 4. Proposed qualitative research**

- a. Do you feel that qualitative work is a suitable means of exploring the broad health problems experienced?
- b. What areas/issues should be explored further through qualitative research?

The script for the telephone interviews conducted as part of the pre-testing was:
Good morning/afternoon, my name is _____ and I am calling from the Centre for Military and Veterans Health. You will be aware that the Department of Veterans Affairs has commissioned CMVH to develop a research protocol that will investigate the health of children of Vietnam veterans. To do this we put together a team of experts from around the country from areas such as child health, mental health and social health. This team have worked with CMVH to design a study that will determine whether the sons and daughters of Vietnam veterans have poorer health outcomes than the general community. Now that we have a protocol prepared we want to consult with veterans and their families to see if what we have proposed meets your expectations and is likely to be accepted by the veteran community.

Are you happy to participate in this pre-testing process by taking some time now to answer a few questions for me?

The team identified very early on that the study should cover a broad range of health outcomes rather than focusing on one specific part of health, for example physical health. As such, the study has been designed to collect information on physical, mental and social health in order to build a comprehensive health profile.

Do you think this is the correct approach to take?

It also became clear very early on that rather than focusing on the sons and daughters of Vietnam veterans only it was important to design a study that included the whole family. Therefore, we are proposing that the study will involve sons and daughters of veterans, veterans themselves and partners of veterans. (*Note we are including all children, step children and biological children and all wives, current or ex*)

What are your opinions on this approach?

What benefit do you think there is in including fathers and mothers in the study?

We know that there are ~40,000 surviving veterans who we contact through the Nominal Roll of Vietnam veterans. It is estimated that there are 120,000 children of Vietnam veterans but there are only contact details for ~7000 of them (those who have used DVA services). It is essential that this study is able to capture a large population of sons and daughters, not just those who have used DVA services. We considered using a national advertising campaign but it is possible that there are many children of Vietnam veterans who do not consider themselves children of veterans for one reason or another. We are recommending that the Vietnam veteran himself, be the starting point for the study. We will contact the veteran and ask him to provide contact information for all of his children and his wife(s). We will then use this information to contact children and wives about the study.

Do you think this approach will be successful?

Can you suggest any other way of locating children?

The study has been designed to include the two main research styles. Quantitative research, that is, number counting, allows us to determine if there are differences in the rates or prevalences of particular conditions. This allows us to determine whether

there are differences between the Vietnam veteran population and the comparison groups. It does not, however, allow us to determine why these differences exist. Qualitative research adopts a completely different approach to the number counting and involves interviewing individuals or groups to find out their thoughts and opinions and to gain an understanding of their experiences and what tools they have used to cope with their life. This approach allows us to gain an insight into why there may be differences between the Vietnam veteran population and the general community. It also allows us to develop and implement strategies to provide support and help to the families of veterans.

Do you agree with this proposal of a combination of both quant and qual research?

Do you have any other comments or suggestions you would like to make?

Finally we would like to capture some information from you:

Age:

Veteran/Partner/Son/Daughter:

Length of service (if appropriate):

Time married (if appropriate):

Number of children (veterans and wives only):

Affiliations (RSL, PVA etc)

Ethical considerations

Pre-testing was conducted in a workshop environment which sought feedback and discussion which was then be used to refine the protocol. Pre-testing sought feedback on written protocols/processes from representatives of the study population and process stakeholders (DVA), to refine the protocol if necessary, rather than gathering new information from a homogenous population for transcribing, thematic analysis and reporting. Therefore ethical approval was not required.

Focus group 1: Vietnam veterans

Recruitment

Participants were recruited through the Healthy Heart programme run by DVA at a Brisbane gym. Dr Nasveld briefed the veterans who attend the GoodLife Gym in Carseldine of the project being conducted and the intention of the pre-test. All veterans who attended the gym were invited to participate in the focus group.

Participants

There are 15 veterans who attend the Healthy Heart programme at the selected gym and a total of 15 veterans and one spouse attended the focus group. The average age of the veterans was 62 years and on average they had served in the ADF for 16 years. The average number of children they had fathered was three.

Venue

The focus group was held at the GoodLife Gym in Carseldine on Wednesday 12th June.

Duration

The focus group lasted for just over an hour.

Results

Outcomes to be included in a health study

The veterans were all in agreement that whilst physical outcomes were an issue that should be included in a health study, psychosocial outcomes should also be included. There was a strong opinion from the veterans that the family unit should be included in any health study and it was acknowledged that family dynamics and any subsequent health effect on sons and daughters was integral to any study on the health of the sons and daughters. The general consensus from this group was also that it was important to include the fathers and mothers in the study in order to gain a meaningful insight into the broad health outcomes of sons and daughters.

It was felt by the veterans that there was much to be gained by spending time talking to the wife(s) to gain information on: family dynamics while the father was deployed; the subsequent impact on family dynamics and mental health when the father returned to the family unit; the reasons for marriages breaking down; the reasons behind successful marriages and coping strategies employed by the mothers and sons and daughters during separation from the father.

Summary: The veterans were happy that the proposed study design included the family, rather than just sons and daughters, and that a broad picture of health was being examined. The veterans were also pleased that the proposed study included both qualitative and quantitative research.

People to include in the study

The veterans were happy that the study design was to include all sons and daughters of the veterans and they acknowledged that the only way to develop a list of their children was for the veterans themselves to identify their sons and daughters.

The veterans were insistent that all wives should be included in the study as the experiences would be likely to vary considerably between wives. They again stated that they would have to provide the detail on their wives and would be happy to do so, even if the current relationship(s) with ex-wives was bad, assuming that they felt the study was worthwhile.

Summary: All sons and daughters and all wife(s) should be included in the study. The best way of recruiting for the study is to go through the veterans.

Alternative ways of accessing sons and daughters of veterans

The veterans proposed a number of different options that could be explored to recruit sons and daughters if the option of recruiting through the father was not viable. These included: access through the mothers, tracing through bank accounts, tracing through the disability pensions and through people who received the Pine trees book.

Summary: There are a number of proposed alternative methods for recruiting sons and daughters to the study.

Other issues raised

Approximately half of the veterans present felt that any study on their sons and daughters was now 5-10 years too late. They acknowledged that many of the problems their sons and daughters face probably stemmed from their experiences as a young child and teenager and that too much time had now passed to address any issues. However there was a strong feeling that if lessons could be learned from the Vietnam population that could be passed onto the young diggers then they felt it was worthwhile to do something.

The veterans also acknowledged that there was a big difference between the peacekeeping operations of today and the experiences of conflict in Vietnam. They recognised that in general today's deployments are appreciated by the public and that service personnel are generally viewed in a positive light by the public.

If a study was to go ahead the veterans felt it was important to advertise it in the newsletters associated with the various ex-service organisations and on the CMVH, DVA websites.

Focus Group 2: Partners of Vietnam veterans

Recruitment

A list of members of the Dedechidna (JABOUP) club was received from one of the veterans who attended the Healthy Heart programme run by DVA. An email was circulated to the partners of the veterans on the members list inviting them to participate in the focus group. Due to a problem with a number of email addresses the email was only received by nine partners.

Participants

A total of four Veteran's spouses attended the focus group. The average age of the spouses was 56 years and on average they had been married to Veterans for 24 years. Spouses had on average three children. There was one spouse who was an 'original wife', that is they had only ever been married to a Vietnam veteran, two wives who were 'retreads', that is they were the second wife of a Vietnam veteran and one wife who had been married twice both times to Vietnam veterans.

Venue

The focus group was held at the Coffee Club, Aspley.

Duration

The focus group lasted for approximately two hours.

Results

Outcomes to be included in a health study

Wives were quick to ensure that the proposed study would not only focus on physical outcomes and would investigate the mental and social health outcomes too. They acknowledged that physical outcomes were an issue for some children of Vietnam veterans but felt that the 'greyer' areas of social and mental health were often overlooked and were likely to have a profound effect on the health of children. The mothers felt strongly that fathers being 'emotionally withdrawn' following Vietnam was likely to have had an effect on the children. It was noted by the mothers that they were likely to be not only a key source of information on the children, but that would also be able to encourage children to participate in the study. They also felt that the stories and experiences of the wives should be included as part of the study design. There was a consensus that family dynamics can only be studied effectively by including the whole family in the study rather than focusing on the children or the veterans only. It was accepted that whilst the proposed qualitative research would provide a wealth of information that could be used to develop strategies and interventions it would have to be carefully planned and conducted to ensure that participants were able to discuss traumatic experiences honestly.

Summary: Wives were pleased that the study was not focused on physical outcomes alone and that psychosocial outcomes would be covered in some detail. The group accepted that the study should be designed to include the family unit as a whole rather than children only. Wives appreciated the value of the qualitative component as well as the quantitative component.

People to include in the study

The partners wanted to ensure that all wives, originals and retreats were included in the study as they would all have valuable information to contribute. It was also accepted that the experiences of wives would be considerably different depending on when they entered the veterans life and whether he had acknowledged his issues and sought help for them. The wives were also keen to ensure that no child was excluded from the study and that it was important to include step children as well as biological children.

Wives appreciated that there would be children who would not consider themselves to be the child of a Vietnam veteran because they either never knew their father or because the parents separated when they were young and they only remember the new husband as their father. In this instance the mothers were keen to highlight that it was essential to include them in the study as they would be the link between veterans and children and would be more likely to still have a relationship with children, when fathers would not.

Summary: All children and all wive(s) should be included in the study. The best way of recruiting for the study is to go through the veterans.

Other issues raised

The wives noted that this was perhaps the last chance to do something for the children of Vietnam veterans and that if a study was not conducted in the next five years then it would be too late for their children and the problems may then have spread to the next generation as many of the sons and daughters of Vietnam veterans now have their own children. However, there was a general feeling that it was never too late to try and help the sons and daughters of Vietnam veterans and that conducting a study may be of benefit to the new younger veterans. The wives were keen that there were lessons to be learned from the Vietnam veteran population which could be applied to future veterans to ensure that they do not have the same problems that the Vietnam population have.

The wives noted that throughout the course of the morning's discussion they had all learned something from the other wives, thus reinforcing the value of qualitative research.

It was reported by the wives that they often felt they came second to Vietnam in their husband's eyes and that the impact of this may be worth pursuing in a qualitative manner.

Focus group 3: Vietnam veterans and their wives

Recruitment

The president of the RSL, Maleney, was contacted and asked if he could put together a group of Vietnam veterans and their wives for a focus group discussion.

Participants

A total of eight veterans and three wives attended the focus group. There were four ex-Army personnel, three ex-Air Force personnel and one ex-Navy captain. The wives were all original wives, that is, they were all the first wives of Vietnam veterans.

Venue

The focus group was held at the RSL Memorial Hall, Maleney.

Duration

The focus group lasted for approximately two hours.

Results

Outcomes to be included in a health study

Both veterans and their partners were pleased that the proposed study was not focused solely on physical health outcomes. There was agreement amongst the group that there had not been enough focus on the greyer areas of mental and social health outcomes among their sons and daughters and were pleased that the proposed study was exploring these areas. They acknowledged that physical outcomes were an issue for some families but that negative mental and social health issues were likely to be

experienced by all families of Vietnam veterans. There was a strong feeling among that group that a big part of this was due to the hostile reception that veterans and their families received on return from Vietnam. They believed that the social unacceptance of the Vietnam War probably had a huge impact on their experiences, thoughts and perceptions which would have impacted on their sons and daughters. In addition it was noted that the unacceptance and isolation that their children may have experienced at school was likely to have had an effect on their children's health. However, it was pointed out that if the social unacceptance of the war was responsible for the perceived poorer health of the sons and daughters, then there was not much that could be done now to alter the situation.

Summary: The group was pleased that the study had been designed to look at the broad picture of health rather than to focus solely on the physical outcomes. There was a strong feeling the negative community reaction to veterans and the war had a significant impact on the health of both veterans and their children.

People to include in the study

The group were encouraged by the fact that the study was involving the entire family unit rather than the sons and daughters only. It was believed that all wives should be included in the study and that all children, including step-children should be eligible for participation, should their father be randomly selected. Wives were identified as the key to the success of the study. The groups were asked if they could identify appropriate comparison groups for the Navy and Air Force but were unable to do so and recognised that the quantitative work may have to be limited to Army only, on the proviso that any benefits for sons and daughters and families, arising from the study not be restricted to Army only. They were reassured that the study would include National Servicemen as well as regulars.

Summary: The group were encouraged that the study was designed to incorporate the whole family unit. The group accepted that it would be very difficult to include Navy and Air Force and that it should be restricted to Army only.

Other issues raised

It was suggested by the veterans that the various associations may be a valid means of verifying the addresses of Veterans. It was acknowledged that there may be privacy and confidentiality issues associated with this approach however.

It was suggested that before any study was conducted a decision had to be made on what was deemed to be 'acceptable' and 'unacceptable' in terms of outcomes and differences between groups.

The veterans were keen to suggest what outcomes or benefits they would hope to gain from any study of their families being conducted. The main outcomes they hoped the study would achieve were:

- Wives, sons and daughters being able to finally understand the veterans experience and how this had affected them. Why they are the way they are.
- The development of a tiered treatment system of individuals by DVA across the continuum.
- Some feedback to the ADF on the long term effects of deployment and post-deployment experiences with recommendations on how these negative effects can be prevented in future populations.

The group discussed in some detail the benefits of the proposed qualitative research and felt that there was more value in this, if done correctly and thoroughly, than the traditional quantitative method of number counting. It was recognised that counting numbers is important but that it does not tend to provide answers for why some numbers are larger or smaller. They appreciated that substantial qualitative research allows the ‘why’ to be explored and mechanisms for prevention/coping to be explored. They accepted that the qualitative research may lead to the development of policies and interventions that can benefit the families not only of Vietnam veterans but of future veterans.

Telephone interviews

CMVH had a list of 64 people who had expressed an interest in participating in the pre-testing process. This list consisted of veterans, veterans’ partners and the sons and daughters of veterans. Two experienced telephone interviewers were recruited to conduct these interviews. Attempts were made to contact all 64 people, however only 42 interviews were conducted. A breakdown of the outcomes of the telephone interviews can be found in Table X.

Table 3. Telephone interview outcomes

People interviewed	42
Numbers disconnected	7
Individuals not available	13
Refused to participate	1
On holiday	1
Total	64

Presentation of results

Individuals who participated in pre-testing by telephone were grouped into veterans, veterans partners and sons and daughters of veterans. An overview of the main findings for each group is presented below.

Telephone interview: Group 1 Vietnam veterans

Participants

Sixteen Vietnam veterans participated in pre-testing by phone. The average age of the veterans was 60 years, with the average length of service being 12 years and the average length of time married 28 years.

Results

Question 1: Do you think that exploring a broad range of health outcomes is the correct approach to take?

Veterans were all supportive of the proposed study covering a broad range of health outcomes. It was recognised that the in order to address veterans issues and any

potential impacts on the family then all areas, that is physical, mental and social health had to be covered.

Question 2: What are your opinions on expanding the study to include veterans and their partners as well as sons and daughters?

Veterans were satisfied with the approach to expand the study to include the whole family, including step children and ex-wives. It was recognised that the issues faced by veterans on return from Vietnam had an impact on the whole family not just the veteran himself. It was suggested that everyone in the family would have moderated their behaviour in some way to compensate for the veterans illness and this could well have impacted on the health of the family. It was also recognised that the wives and children of veterans had to tolerate many things because their husband/father was a veteran and that this would have had a profound impact on the whole family. Veterans believed that including ex-wives was important for the study too, as this would give 'both sides of the story'. There was concern expressed by one veteran that including step-children would 'water down' the outcomes of some of the questions regarding physical health as a result of the veterans chemical exposure.

Question 3: What benefit do you think there is in including fathers and mothers in the study?

It was recognised that there are medical conditions, both physical and mental which can be influence the health and wellbeing of husbands, wives and subsequently their children. Including the mothers and fathers in the study allows these patterns to be studied. The veterans were keen that health issues (mental, emotional and physical) which run in the family should be examined and that the only way to do this is to include the whole family in the study. Veterans hoped that by including the mothers and fathers it would be possible to build up a picture of how an illness affects the whole family unit. It was also noted that veterans and their partners would be able to comment on the health of their sons and daughters also. It was also suggested that looking at the children only would give a distorted view of the problems faced by the veteran community. It was suggested by one veteran that veterans were not likely to tell the truth and that the wives would 'tell it like it was'.

Question 4: Do you think that recruiting families through the veterans will be successful?

In general veterans were satisfied that contacting children and wives through the veterans themselves was the best means of recruiting. It was felt that this more direct and personal approach would have more success than advertising for participants. It was also suggested that trying to contact the children directly would result in the study only including those who 'have made a claim' or the children already using the services offered by DVA. There was some concern expressed about veterans who were estranged from their families and children who do not want to be associated with their fathers. Another concern expressed was that the Nominal Roll was not completely accurate.

Question 5: Can you suggest any other ways of contacting the sons and daughters?

Alternative means of contacting the sons and daughters included recruiting through the Ex-Service Organisations, the RSL, using a national advertising campaign, through GPs or the pension department. Using the Medicare system, the births, deaths

and marriages registry, the electoral roll and the TPI association were also suggested as means of recruiting the sons and daughters.

Questions 6: Do you agree with the proposal of a combination of both quantitative and qualitative research?

Veterans were in agreement that any research conducted should include both qualitative and quantitative research. There was an opinion of ‘the more the better’ expressed by some, as it was felt that such a study was long overdue and should have been conducted years ago. Many veterans felt that the qualitative research component may be the most important part and that there would be a ‘fair bit of scepticism if there are not personal stories’.

Question 7: Do you have any other comments or suggestions that you would like to make?

There was a strong feeling of ‘it’s about bloody time’ and that many veterans would be only too happy to help with such a study. It was felt that if the study goes ahead it is critical to the success of the study that veterans are engaged in the study, and given there is a certain level of mistrust of the government by the veteran community, this would have to be a main focus of the initial phase of the study. It was suggested that the study may have to be extended to cover grandchildren, or perhaps a separate study needs to be designed for the grandchildren. Veterans were also keen that the study be conducted nationwide to give everyone the opportunity to take part. It was suggested that there are not enough services currently provided for the sons and daughters.

Telephone interview: Group 2 Partners and wives of Vietnam veterans

Participants

Seventeen wives or partners of Vietnam veterans participated in the pre-testing by phone. The average age of wives was 60 years, the average length of marriage was 33 years and on average their husbands had served for 9 years.

Results

Question 1: Do you think that exploring a broad range of health outcomes is the correct approach to take?

The wives and partners of Vietnam veterans were in agreement that the study should look at the broader picture of health and include social health. It was thought that the anecdotal evidence regarding mental and social health problems in the children of Vietnam veterans was too strong to ignore. It was suggested by one person that in her experience male children tend to have lots of social and emotional problems which are caused by their fathers pushing them away as children.

Question 2: What are your opinions on expanding the study to include veterans and their partners as well as sons and daughters?

The consensus from the wives and partners was that the proposal to extend the study to include the wives and husbands was a very good approach to take. It was recognised that service in Vietnam had affected the whole family not just the sons and

daughters and as such the entire family unit should be included in any study. There was some concern expressed about whether this was feasible to manage in terms of size and whether including the whole family would complicate the results.

Question 3: What benefit do you think there is in including fathers and mothers in the study?

The main perceived benefit of expanding the study was that it would be possible to build an overall picture of health for the family, as well as gaining an insight into how the families have coped or have not coped. This approach would give a more clear understanding of the impact that war service has on family. It was also thought that gaining the perspective of others, particularly mothers, would bring a lot to the study and the quality of the results and outcomes. In addition it was noted that mothers would have a lot to contribute regarding the health of their children and that it was important to give everyone a change to input to the study. A final perceived benefit of this approach was that there would be no blame attached to any one person and that it would hopefully result in more understanding for everyone involved.

Question 4: Do you think that recruiting families through the veterans will be successful?

There were mixed feeling about whether this approach would be successful or not. Approximately half of the wives interviewed thought this approach would be successful whereas concern was expressed by the other half about this approach. Some felt that the most effective means of recruiting the children was through the wife, not the veteran. The main concerns expressed about recruiting through the veteran were that veterans are non-responsive and would not pass the information on; a lot of fathers are in denial and would take it personally that they have affected their children; ex husbands often have no means of contacting ex-wives and children and finally that some veterans would be resistant due to a distrust of the government and associated organisations.

Question 5: Can you suggest any other ways of contacting the sons and daughters?

Alternative means of contacting the sons and daughters included: national advertising campaigns, using the RSL and associated organisations to disseminate information, the use of COVES and PVA, TPI assistance, the war widows guild, and the registry of births, death and marriages. It was also suggested that contacting the children through their local doctors may be a successful approach. There was some concern expressed that children keep to themselves like their fathers, so would be hard to contact.

Questions 6: Do you agree with the proposal of a combination of both quantitative and qualitative research?

All of the wives and partners were in agreement that the proposal should include both qualitative and quantitative research. Similar to the veterans there was a feeling that there should be no boundaries to the amount of research and that 'the more the better'. A few wives raised concerns about whether including both types of research would dilute the data or stop them getting a proper answer to their concerns.

Question 7: Do you have any other comments or suggestions that you would like to make?

Concerns raised by the wives and partners were that this study should have been done 30 years ago and this it was perhaps too late for them now. However, if studying this population could benefit others then it should be done. It was also hoped that any study that goes ahead does not take years to complete and see the results from. A number of wives raised the issue of compensation for their children and were concerned that it had not been included as part of the research protocol. Finally it also was suggested that a website be set up for children to register their details and that grandchildren should be considered in the study too.

Telephone interview: Group 3 Sons and daughters of Vietnam veterans

Participants

Nine sons and daughters of Vietnam veterans participated in the pre-testing by phone. The average age of the sons and daughters was 37 and on average their fathers had served 13 years in the military.

Results

Question 1: Do you think that exploring a broad range of health outcomes is the correct approach to take?

All of the sons and daughters who participated in the pre-testing were in agreement that the broad picture of health needs to be covered in the study as 'it all interacts'. The general consensus was that a holistic approach was the best approach to take.

Question 2: What are your opinions on expanding the study to include veterans and their partners as well as sons and daughters?

In general sons and daughters were happy that the study had been extended to include mothers and fathers. It was accepted by the majority that this is 'what needs to happen' but there was a concern that some children may not want their mothers and fathers to be included. It was suggested that the study should focus on sons and daughters first, before moving to fathers and mothers. One daughter could not understand why the study would include step-children, while another daughter thought that this approach was too wide and was missing the point of the study. She felt that 'the family at the time' should be the only people involved and that the proposed approach would be a waste of time and that another study would have to be done in 30 years time.

Question 3: What benefit do you think there is in including fathers and mothers in the study?

The perceived benefits of including the fathers and mothers in the study were: service in Vietnam impacted on the whole family and it would give the children some idea of what it was like for their mothers and fathers who experienced it first hand; including the parents allows the pattern of mental illness in families to be explored; including the families will allow the study to get to 'the root of the problem'; mothers are the person that children usually go to when they have problems so mothers would be able to provide information on the sons and daughters; it may be possible to establish areas and concerns and finally it may be possible to explore patterns within families.

Question 4: Do you think that recruiting families through the veterans will be successful?

It was recognised by the majority of the sons and daughters that contacting them through their father would be a plausible means of generating a sample. It was felt that using the veteran to contact the mother and then having the mother contact the children may be more successful than the veteran contacting the children directly. It was suggested that fathers may not want to provide the details as they then have to admit that something is wrong with them and they may be responsible for problems their children face. There were two daughters who both felt that this approach would be unsuccessful. Reasons for this include veterans now being deceased with no contact details; lots of disintegration of the family structure with the veterans now being alienated from their families and finally children of veterans who have been adopted out and have no idea that they are the child of a Vietnam veteran.

Question 5: Can you suggest any other ways of contacting the sons and daughters?

Alternative means of accessing the sons and daughters include: veterans organisations, an advertising campaign and contacting DVA directly.

Questions 6: Do you agree with the proposal of a combination of both quantitative and qualitative research?

All of the sons and daughters agreed that both qualitative and quantitative methods should be incorporated into the study design. One daughter expressed a slight concern about how this data would be interpreted.

Summary

The purpose of the pre-testing was to gain an insight into how the Veterans themselves (as well as their spouses and offspring) would react to the proposed intergenerational research. In particular, the pre-testing was designed to illicit views on the study methodology including the contact methods. The Centre for Military and Veterans' Health (CMVH) conducted focus groups or short telephone interviews with 72 individuals from the Vietnam Veteran community.

In the first instance, informal 'focus groups' were conducted separately with 23 Veterans and 7 spouses. In the second instance, short 'telephone interviews' were conducted with 16 Veterans, 17 spouses and 9 offspring. Key issues identified by the Veteran community were:

- A desire for the study to investigate both physical and psychosocial outcomes;
- Support for both qualitative and quantitative methods in the data collection;
- Strong agreement that *all* sons and daughters (including step-children) of the Veteran be approached to participate;
- Unanimous agreement that *all* wives of the veteran should be approached to participate;
- Strong agreement that Veterans are the most appropriate point of contact for other family members;
- Strong concern that there has been such a long delay to commence the type of research proposed.

Chapter 5 Research Protocol Overview

The research protocol incorporates both qualitative and quantitative research components. Each component is designed to contribute to the overall understanding of the health and wellbeing of the family unit.

The qualitative research will enable a deeper understanding of the issues identified and recognised by veterans and their families and some understanding of why; will clarify what veterans and their families believe would meet their needs in terms of DVA services and health care and provide a greater insight into the military experience and the longer term impacts which can be translated to recent deployments.

The quantitative research will highlight any distinctions in family dynamics and family health between service in Vietnam specifically, service in the military and no military service while correcting for the genetics and the lived experience.

This research protocol has been designed so that it can be conducted in tiers. These tiers are:

Tier 1 would involve substantial qualitative research investigating resilience and protective factors, family dynamics, family health service usage and the experience of returning to a hostile community and would be conducted with Vietnam veterans and their families in the first instance.

Tier 2 would be a survey to compare the effects of service in Vietnam on the sons and daughters of Vietnam veterans with the effects of being in the military on sons and daughters of Vietnam era service personnel who did not go to Vietnam.

Tier 3 would be a survey to compare the effects of service in Vietnam on the sons and daughters of Vietnam veterans with the effects of being in the military on sons and daughters of the brothers (including twins) of Vietnam era service personnel who did not go to Vietnam.

Tier 4 would be a survey to compare the effects of service in Vietnam on the sons and daughters of Vietnam veterans with a community sample who have never served in the military, specifically the sons and daughters of siblings of Vietnam veterans who did not serve in the military.

Tier 5 would be a mortality study which would compare the mortality rates of sons and daughters of Vietnam veterans with mortality rates of sons and daughters of veterans who served in the military but were not sent to Vietnam and with the mortality rates of a community sample who have never served in the military, specifically the sons and daughters of siblings of Vietnam veterans who did not serve in the military.

The advantages of this approach are that the research is conducted in manageable and achievable stages. An additional advantage is that results will be progressively available for dissemination. Furthermore, the conduct of Tier 1, the qualitative component, allows for refinement of the subsequent tiers, that is, the quantitative component.

The limitations of the surveys proposed in Tiers 2- 4 are that response rates may be low and that the information provided cannot be easily validated.

Based on the literature review undertaken in this project an important mechanism for an association between military service and child ill-health is that family disruption and parental mental ill-health associated with military service gives rise to family disfunction which in turn may have a negative impact on child health and well being. Therefore it would appear that family disruption is perhaps the critical factor underlying intergenerational health.

For this reason the protocol has been designed as a family study, rather than a study of the sons and daughters only, with a broader focus on social health, especially in relation to family dynamics. The study will not be limited to social health and will also capture data on physical and mental health outcomes.

This approach has the advantage of exploring the broad spectrum of health rather than exclusively focusing on an illness model. It allows the research to investigate protective factors and positive outcomes and by consequence is more able to inform on service delivery and policy development.

However, a limitation of this approach is that there is uncertainty about whether family relationships can be explored effectively in a population where the children are in their forties. This concern is due to issues such as a lack of validated tools for exploring these issues in a population of this age, recall bias, confounding factors and anticipated difficulties in recruiting adult sons and daughters. This limitation would not be restricted to this particular study design due to the substantial time gap between the exposure and the conduct of the study.

The opinion of the expert team was that families should be recruited into the quantitative component through the veterans. This was largely substantiated by the pre-testing responses. Therefore, the Nominal Roll of Vietnam veterans will be the starting point for recruitment into the study.

The strengths of this approach are that a comprehensive list of Vietnam veterans exists on which a contact database could be established. Alternative strategies of recruiting spouses or children directly do not allow for a random sample to be generated, thus potentially introducing bias and impacting on the scientific integrity of the study. The veteran represents core contact who is most likely to be able to provide sufficient information to be able to identify their spouse(s), children, step-children and their serving and non-serving siblings (Tier 3 and 4).

Limitations to this recruitment strategy are that there will be veterans who may not respond due to illness; veterans may choose not to respond due to distrust and those who will not want to subject their families to the possibility of further distress.

Chapter 6 Conclusions and Recommendations

1. This research protocol has been designed such that it can be conducted in tiers and it is recommended that such an approach be adopted. Possible tiers for consideration are:

- substantial qualitative research investigating resilience and protective factors, family dynamics, family health service usage and the experience of returning to a hostile community be conducted on Vietnam veterans and their families in the first instance;
- although it is proposed that both comparison groups (service personnel who did not go to Vietnam and who have never served in the military) be recruited initially, data collection and analysis be undertaken consecutively. That is the first wave of data collection (Tier 2) be conducted for the families of those who served in Vietnam (Exposure V) and the families of those who were in the service but did not serve in Vietnam (Exposure S); while the second wave of data collection (Tier 3) would be for the brothers of Vietnam veterans, and their families (Exposure B) who served in the military during the Vietnam era but did not go to Vietnam and the final wave of data collection (Tier 4) would be for families including a sibling of a Vietnam veteran who have not had military service (Exposure N); and
- further detailed qualitative and quantitative research be conducted on smaller sub-samples after some preliminary data has been collected and analysed.

2. It is recommended that extensive qualitative research be conducted with Vietnam veterans and their families, before any quantitative research is commenced. This qualitative research would explore the experiences of returning to a community in which there was significant opposition to the operation to which they have been deployed, resilience and protective factors, family dynamics and family health services usage, as well as collecting further information on the best methods for recruitment of spouses and sons and daughters.

3. A hypothesis which emerged from the literature review is that family dysfunction arising from parental ill-health, especially mental ill-health, following war service and the subsequent family dysfunction contributes to subsequent child ill health. While this hypothesis is deserving of further research, to date it has not been well researched. However the expert team had serious concerns that such research may not be feasible in a population where the sons and daughters are middle aged. Reasons included a lack of validated tools for exploring these issues in a population of this age, recall bias, confounding factors and anticipated difficulties in recruiting adult sons and daughters.

In order to design a study which has the benefit of developing family health and social services, the expert team consensus was that research into family dysfunction arising from war service and the possible link to child health would produce valid, meaningful, useful and generalisable results if it was carried out in a cohort with

younger children, thus overcoming the problems of recall bias and a lack of validated tools for studying families in which the sons and daughters are adult.

4. The expert team noted that epigenetics is a newly emerging field which is likely to add to knowledge about how family dynamics impact on child health, and recommended that DVA continue to track developments in this area through its proposed Advisory Panel.

5. Despite the lack of evidence from the literature review for adverse physical outcomes related to service in Vietnam, the exception being some evidence to support an association with spina bifida, it is recommended that future research collects information about physical, mental and social health as has been proposed in this research protocol.

6. Suicide is an important contemporary issue for the population of sons and daughters of Vietnam veterans. It is recommended that a mortality study be conducted as a part of this research and it has been included in the study design.

7. It is recommended that the quantitative component of the study be limited to Army personnel only. Reasons for this include the difficulty in locating a control group for Navy and Air Force personnel and differences in exposures between services. Qualitative research should be undertaken with Navy and Air Force personnel and their families in order to determine if their collective experiences were similar to, or were significantly different, to those of Army personnel.