

## The webinar, “**They are older now: a snapshot of self-identified Veterans in the Canadian Longitudinal Study on Aging**” will begin shortly.

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# CLSA Webinar Series



## They are older now: a snapshot of self-identified Veterans in the Canadian Longitudinal Study on Aging

Presented by Dr. Christina Wolfson

12 to 1 p.m. ET | November 13, 2017

It is estimated that 600,000 Canadian Forces Veterans are alive today. However, little is known about the physical and mental health of older Veterans released from military service prior to the 1990s, or whether the trajectory of aging is different for these Veterans than amongst those who did not serve in the military.

In 2009, a partnership was struck between the CLSA and Veterans Affairs Canada (VAC) to create the CLSA-Veterans' Health Initiative (CLSA-VHI). As a result of this partnership, a set of VAC-approved Veteran Identifier questions and a four-item Post Traumatic Stress Disorder screening tool were included in the baseline interview of all CLSA participants.

At the time of CLSA baseline data collection, more than 3,500 participants self-identified as Canadian Forces Veterans (including 466 women), and 900 participants identified as Veterans of other countries (including 39 women). In this webinar presentation, Dr. Wolfson will describe the CLSA participants who are part of the CLSA-VHI and share preliminary information about their physical and mental health status at baseline.

Register online at <http://bit.ly/clsawebinars>



Canadian Longitudinal Study on Aging  
Étude longitudinale canadienne sur le vieillissement

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# They are older now: a snapshot of self-identified Veterans in the CLSA

Veterans Health Initiative Team: Christina Wolfson, Alice Aiken, Anthony Feinstein, Linda VanTil, Sandra Magalhaes, Brittany Scarfo, Juliana Schulz

CLSA Co-Principal Investigators: Christina Wolfson, Susan Kirkland and Parminder Raina

CLSA Webinar: Monday, November 13<sup>th</sup>, 2017



Canadian Longitudinal Study on Aging  
Étude longitudinale canadienne sur le vieillissement

# Why study Veterans?

- These individuals served on behalf of the population
- Many older people in Canada served in the military, some in situations of conflict
  - Estimated 700,000 Canadian Armed Forces Veterans
- Some returned with injuries that may now, years later, affect their health
- Military service may be a determinant of health and possibly of healthy aging
- Once released from the military, Veterans are difficult to identify

# Canada 20<sup>th</sup> and 21<sup>st</sup> century Context

	Troops Sent	~Killed or Wounded
WWI	620,000	210,000
WWII	> 1.1 million	100,000
Korea: 1950-53	27,000	1,500
Vietnam*:1955-75		110
Gulf: 1990-91	4,000	No deaths attributed
Afghanistan: 2001-2014	40,000	1950
Peacekeepers Somalia, Balkans	40,000	200

**30,000 Canadians Volunteered for the US military and served in Vietnam**

# What do we know about the health of Veterans in Canada?

- 2013 Scoping Review
  - Little information available
- Transition to civilian life
  - Veterans released between 1998-2007
- Ontario Cohort\*
  - Veterans released between 1990-2014
- No data on those released prior to 1990

# The CLSA Veterans' Health Initiative

- Early in the planning stages the CLSA Principal Investigators connected with the Research Directorate of Veterans Affairs Canada to discuss possible research opportunities within the CLSA
- This culminated in a research partnership in which VAC agreed to provide partial financial support for the inclusion of two supplementary modules in the baseline assessments of the CLSA
  - **Veteran Identifier Questions**
  - **Screening tool for Post Traumatic Stress Disorder**

# The Canadian Longitudinal Study on Aging

- Strategic initiative of CIHR Institute of Aging; on the Canadian research agenda since 2001; nearly 10 years in the planning stages
- 3 co-principal investigators
  - Parminder Raina (McMaster), Susan Kirkland (Dalhousie), Christina Wolfson (McGill) supported by more than 160 co-investigators from 26 institutions
- Multidisciplinary - biology, genetics, medicine, psychology, sociology, demography, nursing, economics, epidemiology, nutrition, health services
- Largest study of its kind to date in Canada: following 51,000 participants (aged 45-85 at enrolment) for at least 20 years



# CLSA Aim and Vision

- **AIM:** To examine life transitions and capture trajectories to enable the identification of modifiable factors with the potential to inform interventions/strategies to improve the health of populations as they age
- **VISION:** To create a research platform and infrastructure for researchers to enable state-of-the-art, interdisciplinary population-based research leading to better health and quality of life for Canadians as they age.

# The CLSA design overview

51,338 women and men in Canada aged 45 - 85 at baseline

Questionnaires by telephone interview on 21,241 participants

Randomly selected  
10 provinces

Questionnaires by in-person interviews and physical assessments on 30,097 participants

Randomly selected  
25-50 km of 11 sites in 7 provinces

20 year study: Follow up every 3 years

Data Linkage with health care, mortality and disease registries

# Recruiting the Cohort

using 3 sampling frames

## 1. Partnership with Statistics Canada

- Canadian Community Health Survey 4.2 Healthy Aging (2008-09)  
CCHS 4.2
  - CCHS participant agreement to share contact information with the CLSA – *a first for Statistics Canada*

## 2. Partnership with provincial Ministries of Health

- Health Card Registration databases
- Mailouts, return Consent-to-Contact form, CLSA follow up

## 3. Random Digit Dialing

- Leger Marketing and CLSA Computer Assisted Telephone Interview Sites

# Cohort Exclusion Criteria at Baseline

Driven by CCHS 4.2 exclusion criteria 1. to 5.

1. Residents of the 3 territories
  - Northwest Territories, Nunavut, Yukon
2. Living in an institution
3. Living on a First Nation Reserve
4. **Full time members of the armed forces**
5. Temporary visa holders

## CLSA Added Criteria

- Cognitively impaired (at baseline)
- Unable to communicate in French or English

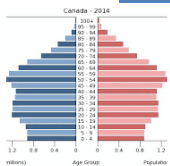
1 to 5 exclude <4% of the target population

# Baseline questionnaire modules

## All 51,338 participants

### Demographic

- Education
- Marital status
- Sexual orientation
- Language
- Ethnicity
- **Veteran Status**
- Smoking, alcohol
- Nutritional risk
- Physical activity
- Health care utilization
- Medication use
- Supplement use



### Health

- General health
- Chronic conditions
- Disease symptoms
- Sleep
- Oral health
- Injuries, falls
- Mobility
- Pain, discomfort
- Functional status
- ADL, IADL
- Cognition
- Mental Health
- Depression
- **PTSD Screen**
- Life Satisfaction



### Social

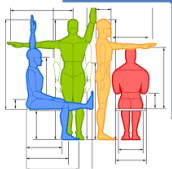
- Social
  - networks
  - support
  - Participation
  - inequality
- Online communication
- **Care receiving**
- **Care giving**
- Labour force participation
- **Retirement planning**
- **Retirement status**
- Transportation
- Mobility, Migration
- Built environments
- Home ownership



# Additional COMPREHENSIVE Assessments (30,097 of 51,338)

## Basic Measures

- Height
- Weight
- Hip Circumference
- Hearing
- Vision



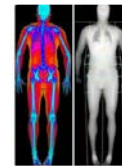
## Function

- Timed-up-and-go
- Standing balance
- 4 metre walk
- Chair rise
- Hand grip strength
- Neuropsych testing



## Physical Measures

- Blood pressure
- Spirometry
- Carotid ultrasound
- ECG
- DEXA
- Blood sample
- Urine Sample
- Tonometry
- Fundus photography



# How did we identify Veterans in the CLSA?

Questions\* asked of ALL CLSA participants at baseline

1. Have you ever served in the military forces?
  - Yes, the Canadian Military Forces
  - Yes, the Military Forces outside of Canada (specify country)
  - No
2. Was this service in the
  - Army, Navy, Air Forces, Reserves, Other?
3. Are you currently in the military forces?
  - Yes/No
4. What year did you release from the Military?
5. What year did you join the Military?



# Primary Care–PTSD screen

asked of ALL CLSA participants by phone or face-to-face

- The PC-PTSD screening tool
- In your life, have you ever had any experience that was so frightening, horrible, or upsetting that, in the past month, you.....
  1. Have had nightmares about it or thought about it when you did not want to?
  2. Tried hard not to think about it or went out of your way to avoid situations that reminded you of it?
  3. Were constantly on guard, watchful, or easily startled?
  4. Felt numb or detached from others, activities, or your surroundings?



# PC-PTSD Features

- Validated in U.S. Veterans Affairs primary care settings.
- PC-PTSD demonstrated excellent sensitivity (78%) and specificity (87%) using a cut point of 3/4 when compared to a more extensive clinician-administered scale
- The PC-PTSD reflects the DMS-IV PTSD diagnostic criteria using a score of at least 3 out of 4 as the screening threshold
  - There has been some recent work on a modification to the PC-PTSD to reflect the 2013 DSM-V which included revisions PC-PTSD-5
- Prins, A., Ouimette, P., Kimerling, R., Cameron, R. P., Hugelshofer, D. S., Shaw-Hegwer, J., Thrailkill, A., Gusman, F.D., Sheikh, J. I. (2003). [The Primary Care PTSD Screen \(PC-PTSD\): Development and operating characteristics](#) (PDF). *Primary Care Psychiatry*, 9, 9-14.

# Baseline Data Collected 2012-2015

**Focus: CLSA Self Reported Veterans**

# Veteran Identification

	<b>Canadian Veterans</b>	<b>Non Canadian Veterans</b>	<b>Total</b>	<b>Current Military Service</b>	<b>Missing Data</b>
<b>Tracking Cohort</b>	1446	329	1775	<b>32</b>	<b>4</b>
<b>Comprehensive Cohort</b>	2112	580	2692	<b>36</b>	<b>8</b>
<b>Total</b>	<b>3558</b>	<b>909</b>	<b>4467</b>	<b>68</b>	<b>12</b>

# Veteran Descriptors

	<b>Canadian Veterans N=3558</b>	<b>Non Canadian Veterans N=909</b>	<b>Full CLSA Cohort</b>
<b>Mean Age (SD)</b>	66.6 (10.8)	69.6 (11.1)	62.9 (10.4)
<b>Median Age</b>	68	72	62
<b>Age Range</b>	45-85	45-85	45-85
<b>Sex (%Male)</b>	86.8	95.7	49%
<b>Number Females</b>	466	39	
<b>Marital Status (% Married)</b>	73.3	76.2	68.6

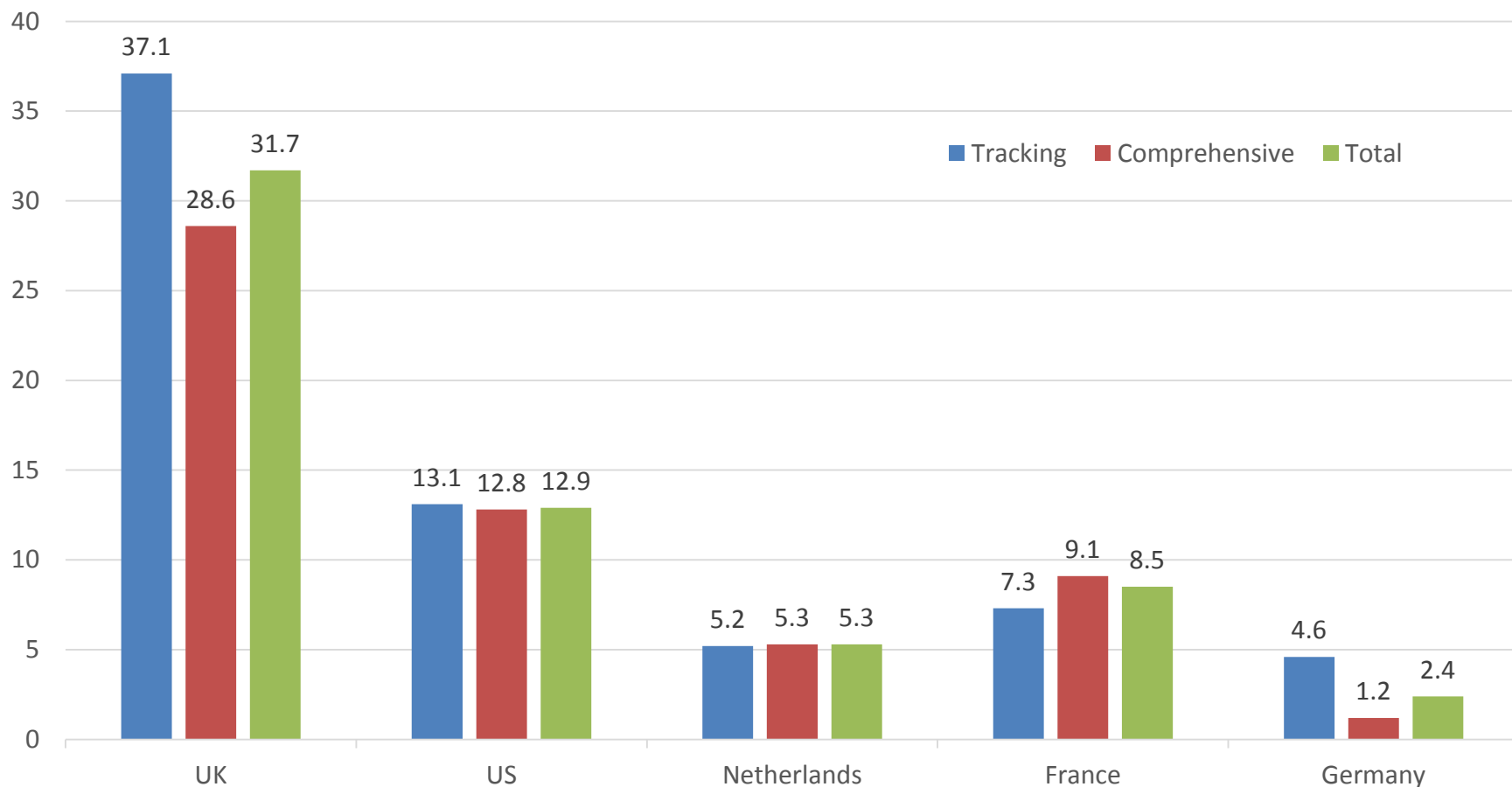
# CLSA Subgroups by Province unweighted

<b>Province</b>	<b>Full Sample 51,528</b>	<b>Canadian Veterans 3558</b>	<b>Non Canadian Vets 909</b>
<b>British Columbia</b>	8858(17.3)	602 (16.9)	244 (26.8)
<b>Alberta</b>	5091 (9.9)	299 (8.4)	89 (9.8)
<b>Saskatchewan</b>	1391 (2.7)	65(1.8)	9 (1.0)
<b>Manitoba</b>	4595 (9.0)	289(8.1)	53 (5.8)
<b>Ontario</b>	11122 (21.7)	784 (22.0)	225 (24.8)
<b>Quebec</b>	9663 (18.9)	477 (13.4)	158 (17.4)
<b>New Brunswick</b>	1357 (2.6)	133(3.7)	14(1.5)
<b>Nova Scotia</b>	4616 (9.0)	561 (15.8)	76(8.4)
<b>Prince Edward Island</b>	1138 (2.2)	118(3.3)	10(1.1)
<b>Newfoundland</b>	3457(6.7)	231 (6.5)	31 (3.4)

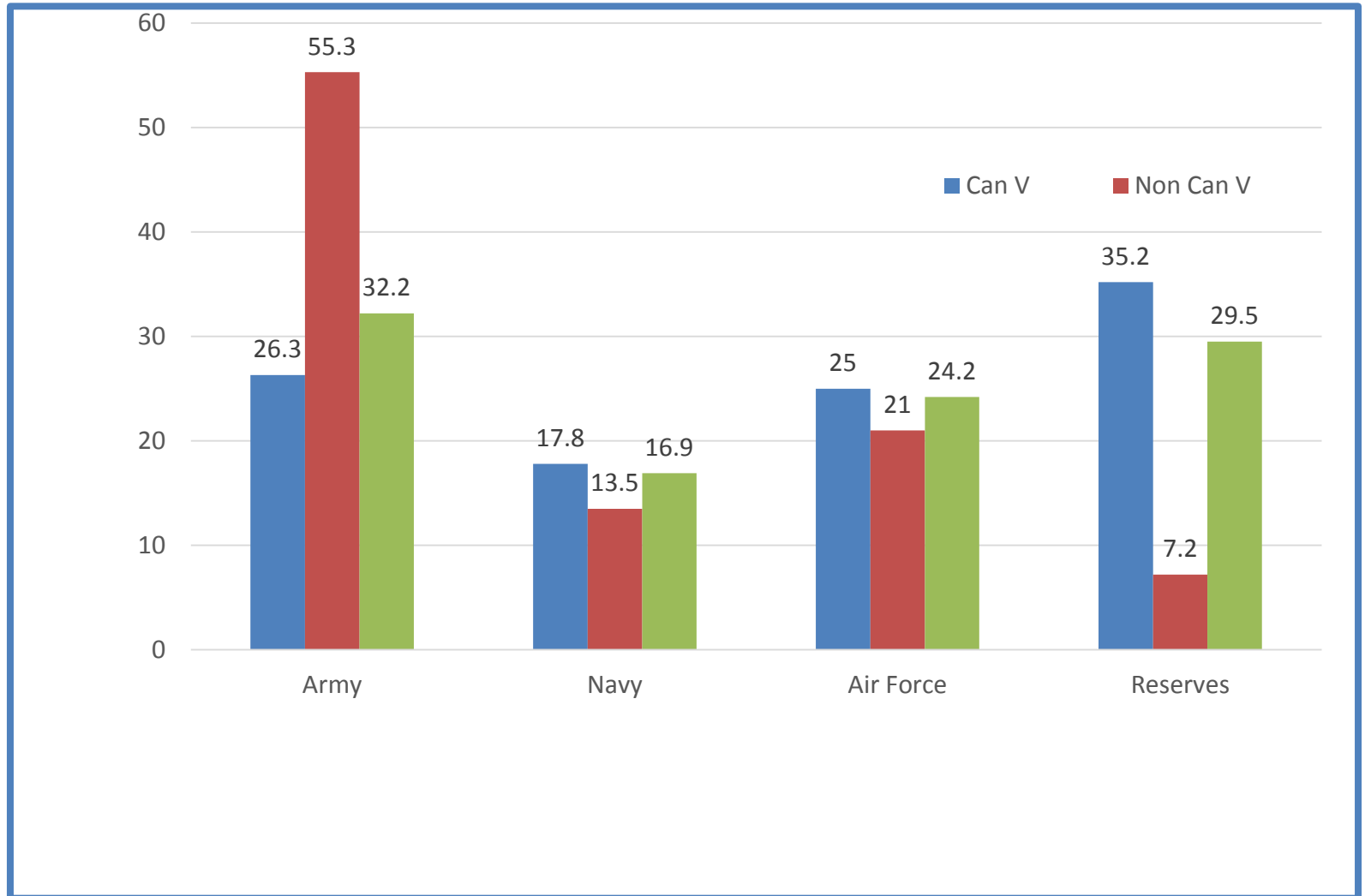


# 909 Non-Canadian Veterans

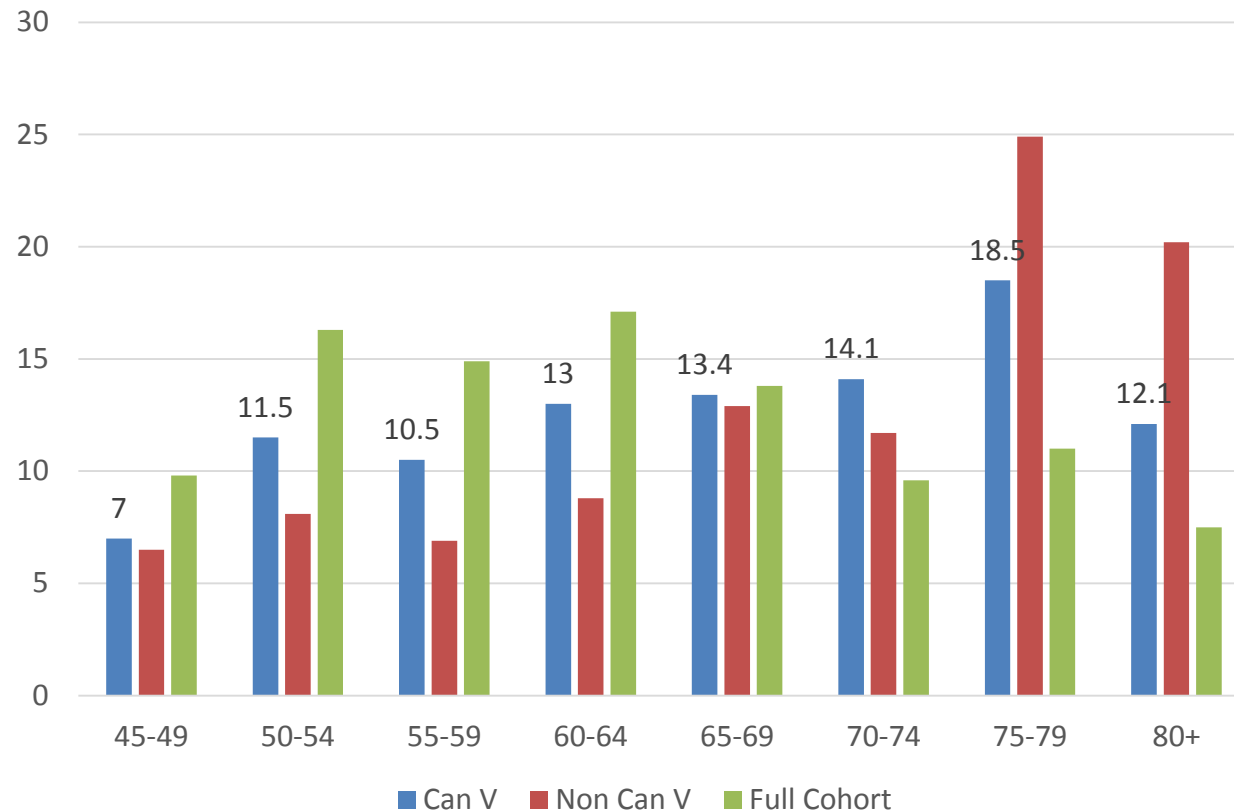
## Most commonly reported country of service



# Type of Service (%)

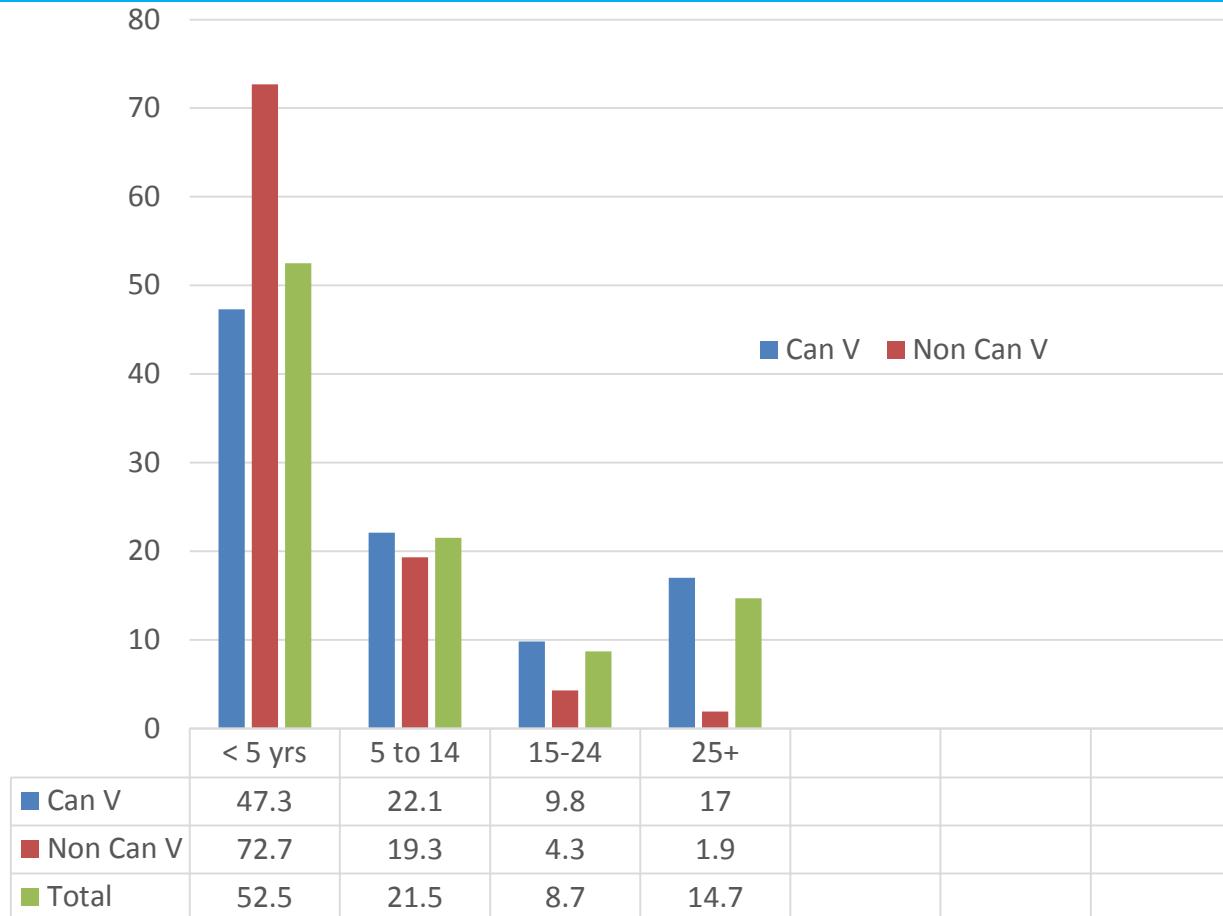


# Age at CLSA enrolment (%)

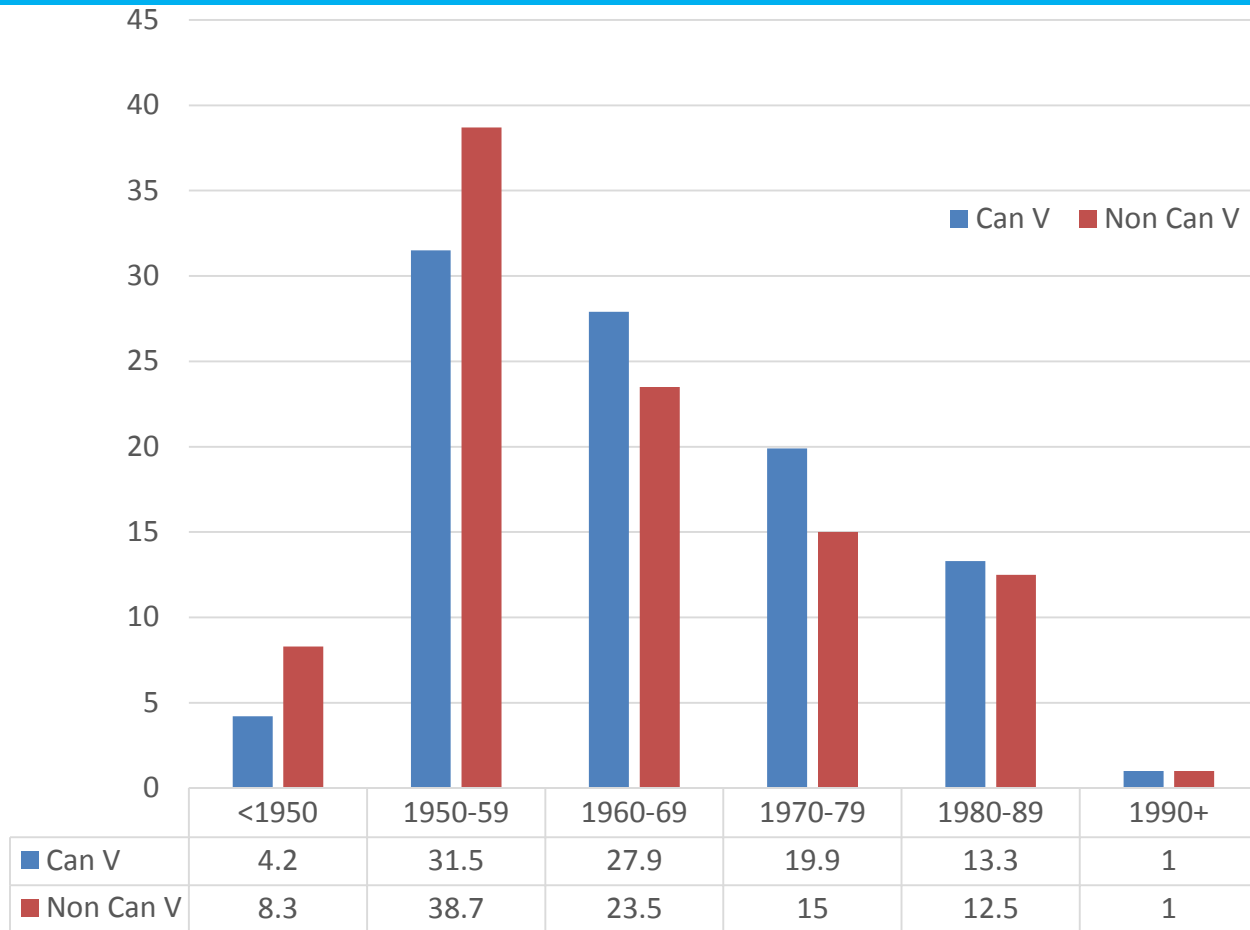




# Duration of military service (%)



# Military Join Year (%)



# Veterans in Canada 45-85

## Further verification needed

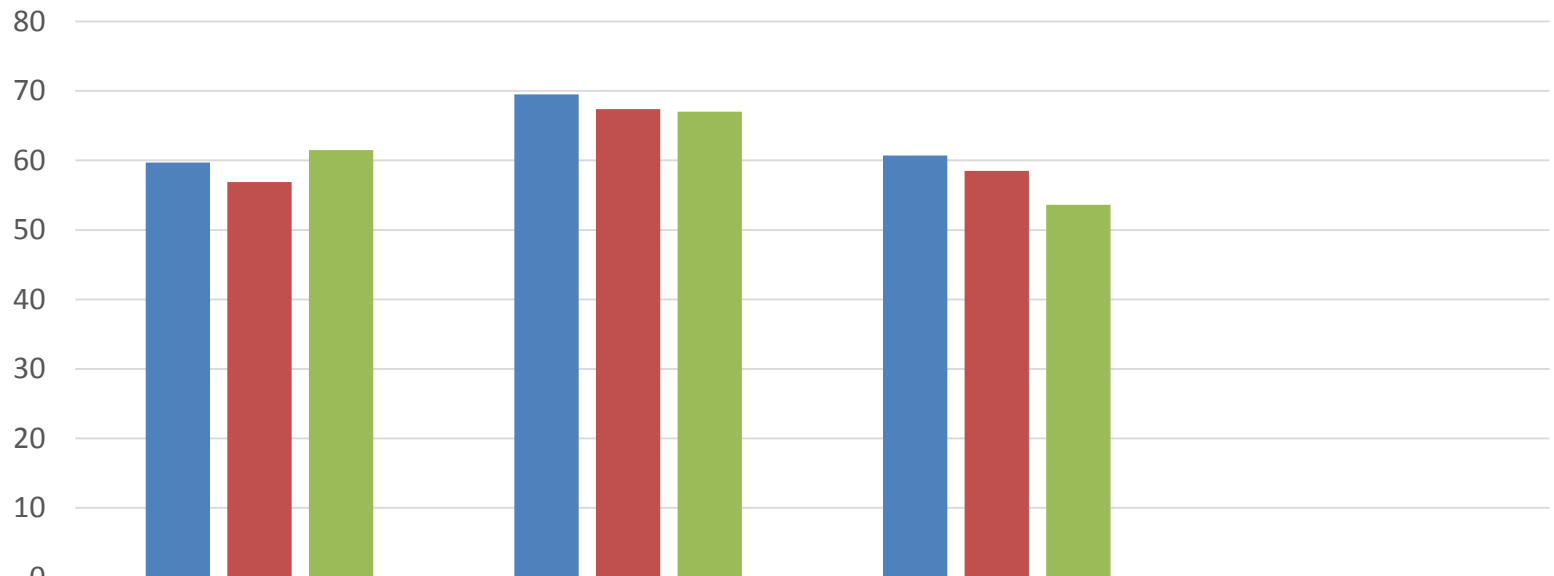
- Based on the CLSA data we estimated
  - 718,893 Canadian Veterans between the ages of 45 and 85
  - 185,548 Non Canadian Veterans between the ages of 45 and 85
- These are underestimates of the total number of Veterans in Canada due to
  - CLSA exclusion criteria
  - CLSA age range
  - Timing of CLSA baseline

# Health Status Variables

## Preliminary Results

# Self Reported Health/Mental Health and Healthy Aging

% Very Good or Excellent



	SRH VG+	SR Mental Health VG+	SR Healthy Aging VG+
■ Non Vets	59.7	69.5	60.7
■ Can V	56.9	67.4	58.5
■ Non Can V	61.5	67	53.6

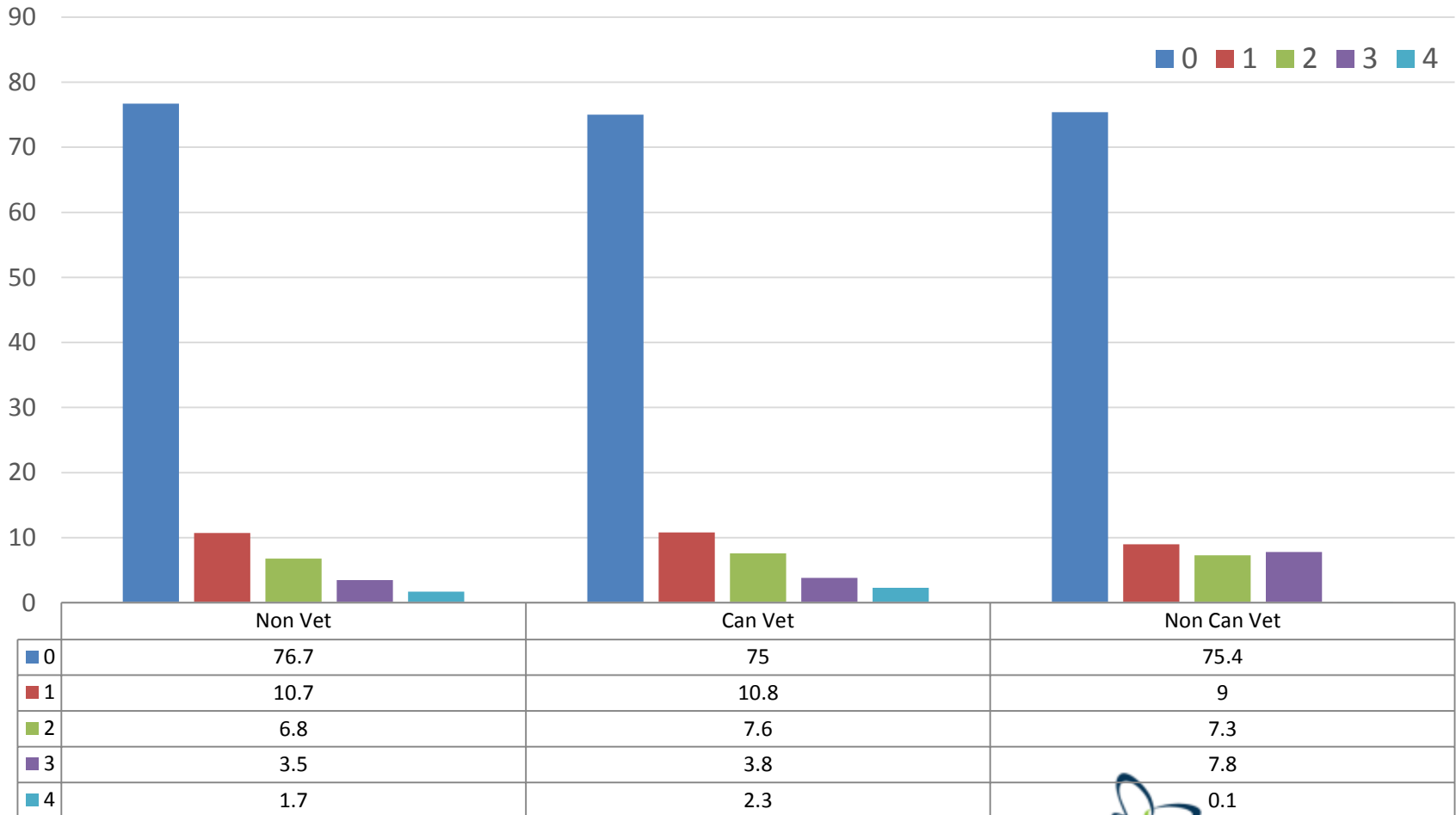
■ Non Vets ■ Can V ■ Non Can V

# Prevalence (%) – selected conditions

	Non Veterans	Canadian Veterans	Non Canadian Veterans
PTSD	5.2	6.2	8.0
Anxiety	8.0	9.6	13.4
Mood disorder	16.0	17.6	22.1
Depression	16.2	16.6	18.0
HBP	37.4	36.5	34.1
Heart Disease	11.1	11.0	8.7
Cancer	15.3	19.1	19.9
OA Knee	15.3	16.9	15.2
OA Hip	8.9	9.7	9.5
OA Hand	13.2	13.7	12.3

Age, sex adjusted

# PC-PTSD Score Adjusted for Age



# Logistic Regression PTSD

## Full Sample

	Coefficient	OR	95 % C.I.
<b>Retired - completely</b>	<b>0.4225</b>	<b>1.5258</b>	<b>(1.3636, 1.7072)</b>
<b>Retired - partly</b>	<b>0.2256</b>	<b>1.2531</b>	<b>(1.0769, 1.4581)</b>
Female	0.4475	1.5643	(1.4352, 1.7051)
<b>Canadian Veteran</b>	<b>0.2828</b>	<b>1.3269</b>	<b>(1.1260, 1.5637)</b>
<b>Non-Canadian Veteran</b>	<b>0.2565</b>	<b>1.2924</b>	<b>(0.8996, 1.8567)</b>
Married	-0.5833	0.5580	(0.4934, 0.6311)
Widowed	0.0028	1.0028	(0.8410, 1.1959)
Divorced	0.1241	1.1322	(0.9736, 1.3165)
Separated	0.1831	1.2009	(0.9686, 1.4889)
<b>Education Level 2</b>	<b>-0.5707</b>	<b>0.5651</b>	<b>(0.4785, 0.6675)</b>
<b>Education Level 3</b>	<b>-0.6544</b>	<b>0.5198</b>	<b>(0.4304, 0.6277)</b>
<b>Education Level 4</b>	<b>-0.7644</b>	<b>0.4656</b>	<b>(0.4073, 0.5322)</b>
Comprehensive Indicator	-0.0832	0.9202	(0.8494, 0.9969)



# Logistic Regression – PTSD

## All Veterans

	Coefficient	OR	95 % C.I.
<b>Age</b>	-0.0875	0.9162	(0.8989, 0.9338)
<b>Retired - completely</b>	0.9873	2.6841	(1.7705, 4.0691)
<b>Retired - partly</b>	0.5334	1.7048	(1.0202, 2.8486)

# Logistic Regression - PTSD Canadian Veterans

	Coefficient	OR	95 % C.I.
<b>Age</b>	-0.0863	0.9173	(0.8991, 0.9358)
<b>Retired - completely</b>	0.9449	2.5725	(1.6619, 3.9821)
<b>Retired - partly</b>	0.5367	1.7104	(1.0067, 2.9057)
<b>Army Indicator</b>	0.5289	1.6971	(1.2270, 2.3472)

# PC-PTSD and Other Measures

- Simple correlations revealed anticipated relationships between PC-PTSD screen positive and:
  - ↑ self report of mood disorder, anxiety disorder, depression
  - ↓ self report of satisfaction with life, self rated general health, self rated mental health, self rated healthy aging

# Preliminary Findings -1

- Self reported Veterans appear to be very similar to non Veterans in relation to self reported physical conditions (those with prevalence of at least 5%)
- The data suggest slightly higher self report of measures of mental health issues
  - PTSD, mood disorder, anxiety disorder and depression
  - Most apparent amongst non Canadian Veterans

# Preliminary Findings -2

- Robust finding of retirement as a correlate of positive PTSD screen
  - Consistent with other studies
  - Cross sectional data preclude clear interpretation
  - Further analyses needed

# Limitations and Future Work

- Self-reported Veteran Status
- Self-reported health measures
- PC-PTSD screen not a diagnosis of PTSD
- Cross sectional data
- More detailed analyses to confirm the performance of the PC-PTSD
- Further analyses to include objective measures of health and cognitive measures

# Acknowledgements

- CLSA Participants
- Data Analysis was supported by
  - Veterans Affairs Canada
  - CIHR – Catalyst Grant
- CLSA
  - *This research used the data collected in the Canadian Longitudinal Study on Aging. Funding for the CLSA was awarded by the Government of Canada through the Canadian Institutes of Health Research (CIHR) under grant reference: LSA 9447 and the Canada Foundation for Innovation. This research project (#140502) was conducted using the baseline Tracking and Comprehensive dataset version 2.*







LA VIE DE CES HOMMES





# Upcoming CLSA Webinars



**“Visual impairment and eye care utilization in the Canadian Longitudinal Study on Aging (CLSA)”**

Dr. Ellen Freeman

December 12, 2017 | 12 p.m. EST

Register: [bit.ly/clsawebinars](http://bit.ly/clsawebinars)

