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CANADIAN FORCES HEALTH SERVICES GROUP

GRUPE DES SERVICES DE SANTÉ DES FORCES CANADIENNES



The Health of the Canadian Armed Forces: A unique healthcare experience

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Canada



Faculty/Presenter Disclosure

- Presenter: Maureen Carew and Jeff Whitehead
- Relationships with commercial interests: None
- Potential for conflict(s) of interest: None



Objectives

By the end of this session, participants will be able to describe:

- the personnel structure of the Canadian Armed Forces
- the military health care system including public health
- common health care problems affecting the Canadian Armed Forces
- the approach to disease surveillance and prevention in the Canadian Armed Forces



Overview

1. Organization – Military 101
2. Challenges in Health Care
3. Public Health in DND
4. Measuring Health
5. Health Issues





Legal Statutes

Legislative Considerations for the Canadian Military

Constitution Act of 1867 set out the federal and provincial heads of power. Section 91(7) provides federal Parliament jurisdiction over “Militia, Military, and Naval Service and Defense”.

National Defence Act - is the primary enabling legislation for organizing and funding the military in Canada.

The Queen’s Regulations and Orders (QR&O) for the Canadian Armed Forces (CAF) are regulations having the force of law for the governance of the CAF. They are the primary document of military law and regulations in Canada – aside from the National Defence Act.

Chapters 34 and 35 of QR&O include the provision of medical, dental and preventive medicine/public health roles for the CAF. Section 34.011 – RESPONSIBILITIES OF MEDICAL OFFICERS, the senior medical officer is the public health authority for a Base/Wing (similar to a Medical Officer of Health).



Organization: The Department of National Defence

Under Canadian Defence policy, the Canadian Armed Forces fill three major roles:

1. Defend Canada

2. Defend North America

3. Contribute to International Peace and Security

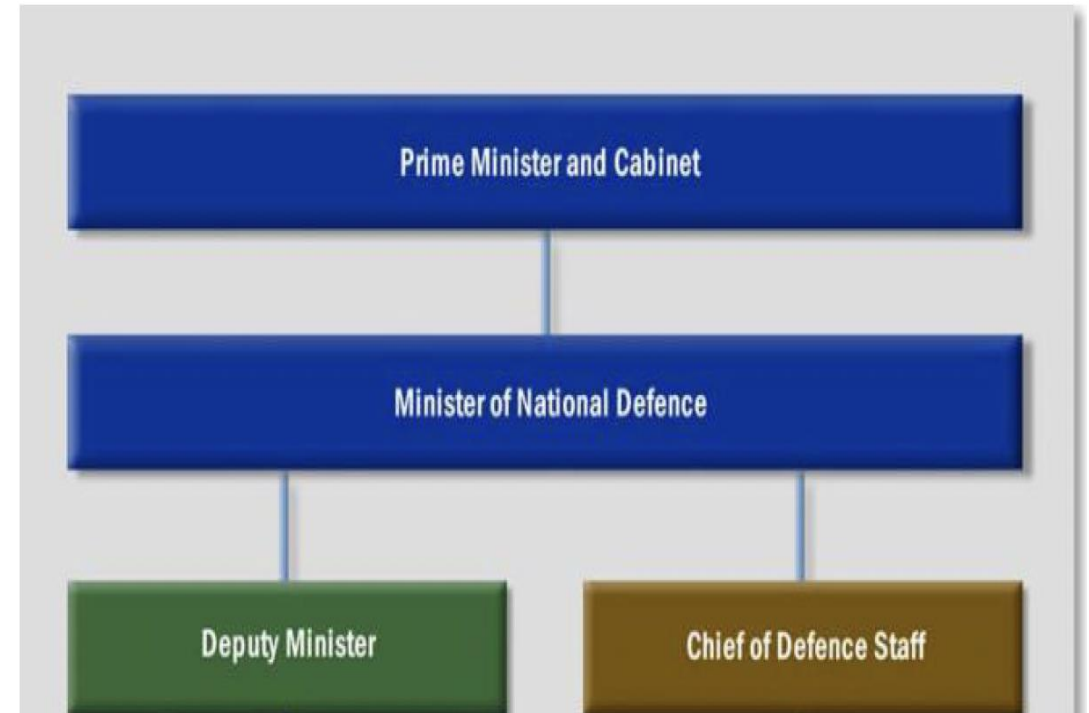
Department of National Defence and the Canadian Armed Forces are governed through various Acts of Parliament such as:

- The National Defence Act
- The Emergencies Act
- The Emergency Preparedness Act



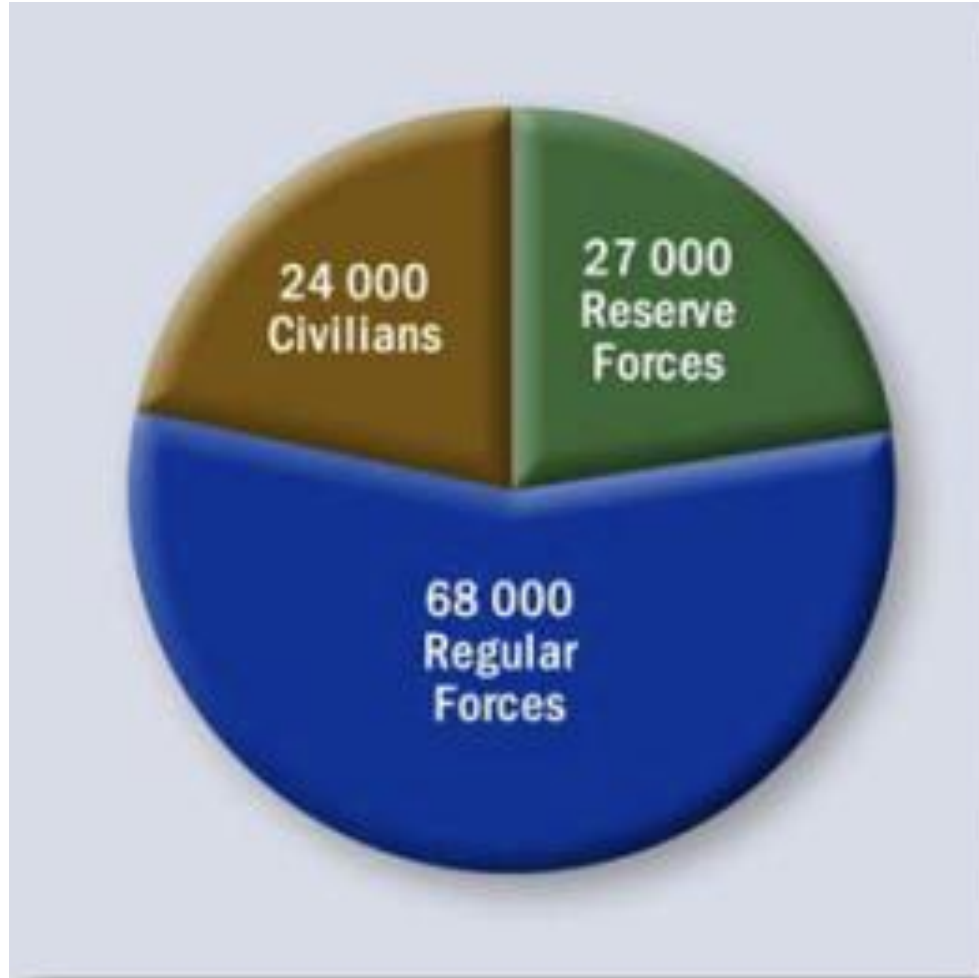
Organization: The Department of National Defence

- Prime Minister
- Minister of National Defence
- Deputy Minister of National Defence
- Chief of Defence Staff





Organization: Demographics



CAF personnel belong to air, land, sea and special operations components

- 68,000 Regular Force members
- 27,000 Reserve Force members including 4,000 Canadian Rangers
- Present in every province and territory in Canada.



Organization: Regular vs. Reserve Force

Regular Force

68,000 members

Members have made the military their career.

Deployment is not voluntary

Full-time career

Members enroll in the Navy, Army or Air Force

Consists of Officers and NCMs of all ranks

Follows the Command Structure

Members can release from the military after a Term of Service contract has been completed.

Members will be posted and move around during their career. Their location is based on where they are posted or deployed to.

Members can be deployed on a mission overseas.

Reserve Force

27,000 members

Members volunteer to devote a portion of their time to military service.

Deployment is voluntary

Can be full-time or part-time work. Many members have a career outside of the military.

Members enroll in the Navy, Army or Air Force

Consists of Officers and NCMs of all ranks

Follows the Command Structure

Reservists have no minimum time commitment; members can choose to leave the Reserve Force at any time. There are terms of employment that may have to be complied with and leaving early may result in removal from the reserve list

If a reservist has taken a deployment, the member has to complete the mission.

Members will not be posted or do a military move. They will remain with the Reservist Unit that they joined. They can volunteer to move to another base.

Members can volunteer to go on a mission overseas.



Organization: Reservist Categories

Class A Reservist

Highly part-time work (e.g students). Work a few evenings per month and weekends from Sept to May



Class B Reservist

Part time work (civilian jobs as well). Have signed an agreement to train or work between 14 and 365 consecutive days. Pay increases if period > 180 days



Class C Reservist

Working in a Regular Force line serial for a period greater than 90 days, pay and benefits similar to regular force, usually in a deployed ops

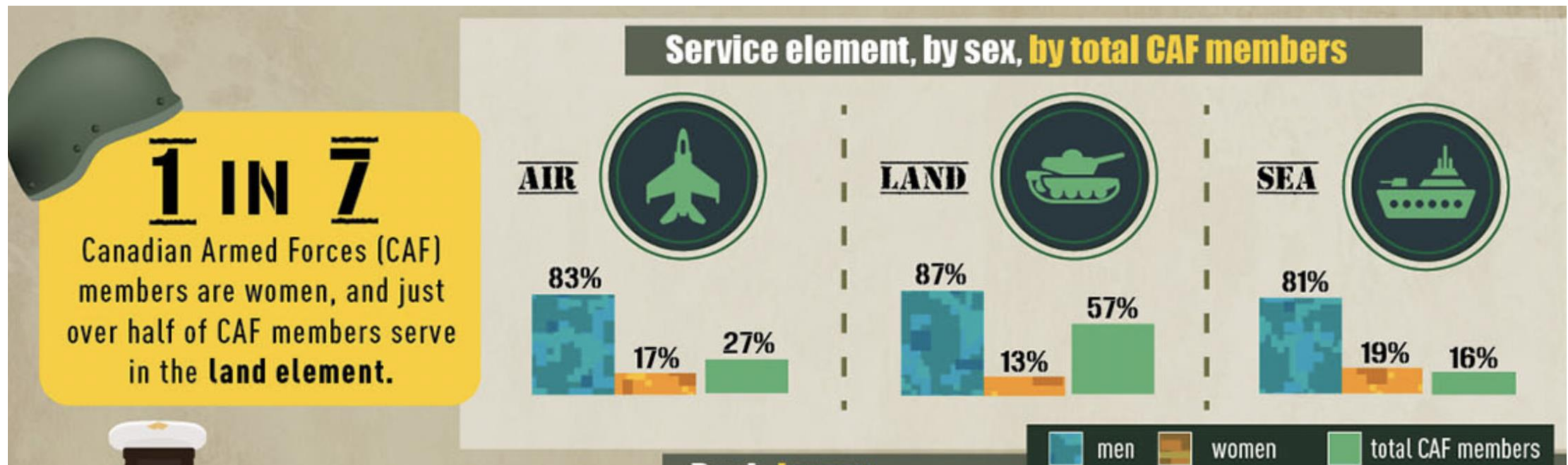


Poll Question #1





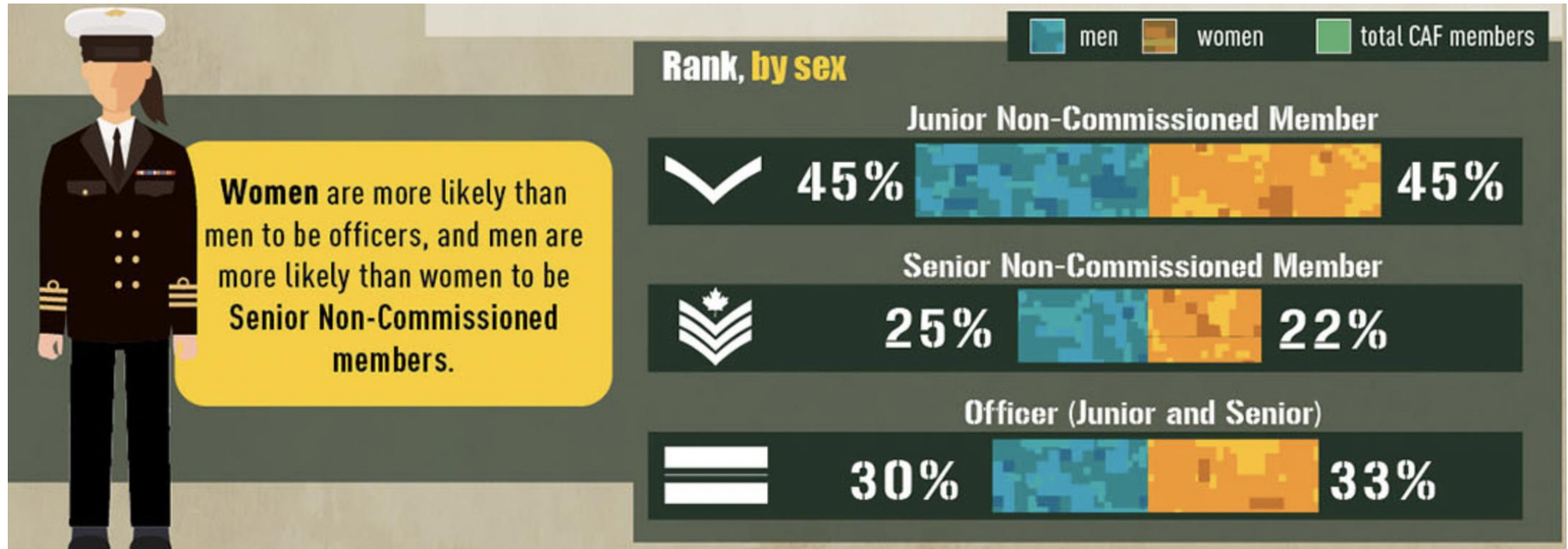
Organization: CAF Demographics



Source: Canadian Armed Forces Health survey, 2019 Statistics Canada



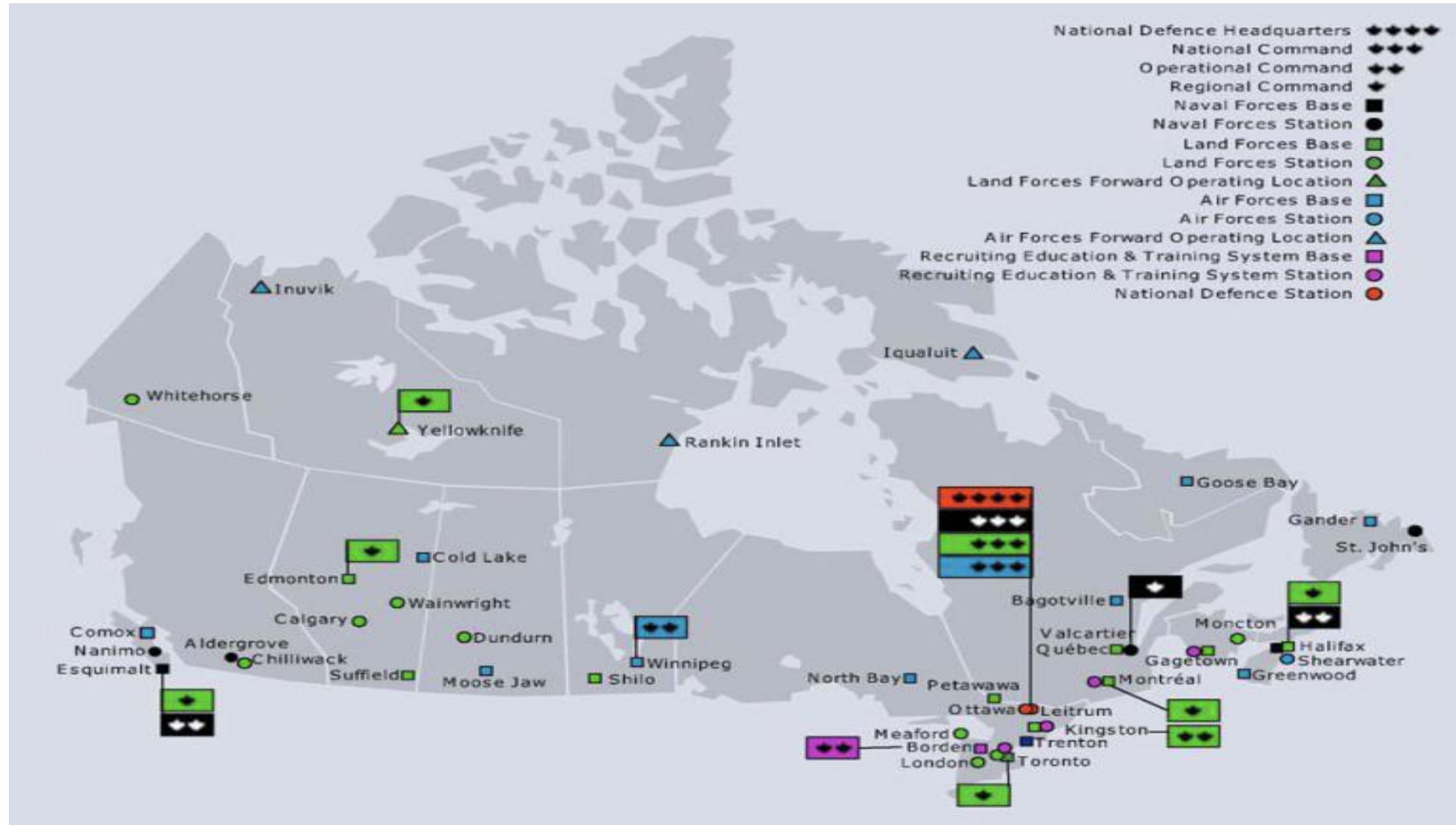
Organization: CAF Demographics



Source: Canadian Armed Forces Health survey, 2019 Statistics Canada



Organization: Map of CAF Bases and Wings





Organization: Rank Structure

- Rank reflects a level of ability, capability, experience, and knowledge
- 19 ranks in the CAF
- The higher military members are in the rank structure the higher they are in the command structure
- Consists of officers and non-commissioned members (NCMs)
- Rank encompasses education level and salary scale (in epidemiological studies)





Organization: Rank Structure

NAVY Officers		ARMY Officers		AIR FORCE Officers	
Admiral	Adm	General	Gen	General	Gen
Vice-Admiral	VAdm	Lieutenant-General	LGen	Lieutenant-General	LGen
Rear-Admiral	RAdm	Major-General	MGen	Major-General	MGen
Commodore	Cmdre	Brigadier-General	BGen	Brigadier-General	BGen
Captain (N)	Capt (N)	Colonel	Col	Colonel	Col
Commander	Cdr	Lieutenant-Colonel	LCol	Lieutenant-Colonel	LCol
Lieutenant-Commander	LCdr	Major	Maj	Major	Maj
Lieutenant (N)	Lt (N)	Captain	Capt	Captain	Capt
Sub-Lieutenant	SLt	Lieutenant	Lt	Lieutenant	Lt
Acting Sub-Lieutenant	A/SLt	Second Lieutenant	2Lt	Second Lieutenant	2Lt
Navel Cadet	NCdt	Officer Cadet	OCdt	Officer Cadet	OCdt
Non-Commissioned Members		Non-Commissioned Members		Non-Commissioned Members	
Chief Petty Officer 1st Class	CPO1	Chief Warrant Officer	CWO	Chief Warrant Officer	CWO
Chief Petty Officer 2nd Class	CPO2	Master Warrant Officer	MWO	Master Warrant Officer	MWO
Petty Officer 1st Class	PO1	Warrant Officer	WO	Warrant Officer	WO
Petty Officer 2nd Class	PO2	Sergeant	Sgt	Sergeant	Sgt
Master Seaman	MS	Master Corporal	MCpl	Master Corporal	MCpl
Leading Seaman	LS	Corporal	Cpl	Corporal	Cpl
Able Seaman	AB	Private	Pte	Private	Pte
Ordinary Seaman	OS	Private (Recruit)	Pte (R)	Private (Recruit)	Pte (R)



Organization: Canadian Forces Health Services

- Canadian Forces Health Services is a formation of the Canadian forces within the Military Personnel Command
- Includes personnel from both the Royal Canadian Medical Services and the Royal Canadian Dental Corps
- Fulfills all military health system functions from education and clinical services to research and public health
- Composed of health professionals from over 40 occupations across Canada and overseas





Challenges in Health Care

- CAF members are excluded from provincial health care by the Canada Health Act, not in provincial databases
- 14th health care system looking after 72K people
- Lacks economies of scale e.g. diabetes prevalence
- Other models have been considered, need to deploy and unique occupational aspects argue against
- In large part a primary care system, most specialist care referred to provincial health care systems, there are no military hospitals



Challenges in Health Care

- Primary care providers include physicians, nurses, PAs, NPs, Medical Technicians (Med Techs), Preventive Medicine Technicians (PMeds)
- Most physicians in Canadian Forces Health Services (CFHS) are contracted third party civilians, not military or public servants
- Med Techs, PMeds, and physician assistants are trained in-house
- Few military specialists – general internists, surgeons, anesthesiologists and 5 others, generally embedded in provincial hospitals (PHPM not included)



Challenges in Health Care

- Health care facility leaders on bases/wings are known as Base or Wing Surgeons, but they are military family physicians, not surgeons, generally with additional occupational training such as aviation medicine
- Unusual health care system in that many of the providers and the patients are quite mobile
- Typical military member is away from home about ¼ of the time, mainly training and deployments
- The electronic health record CF Health Information System (CFHIS) has made this much easier



Challenges in Health Care

- Universality of Service – all military members must be deployable
- Medical releases are required if there are geographic or occupational limitations to where or how one can work that do not improve over time (and retraining cannot lead to another military occupation)
- Physicians have a dual role of family physician and occupational physician which can be a challenge



Challenges in Health Care

- Public health is centralized in the Directorate of Force Health Protection (DFHP), roughly 55 employees
- Similar to a public health department except that occupational health is included, there is no separate Ministry of Labour equivalent
- 5 sections – Health Promotion, Epidemiology, Communicable Disease, Occupational and Environmental Health, and Administration
- At the base/wing level, it is the responsibility of the Base/Wing Surgeon with the assistance of PMeds

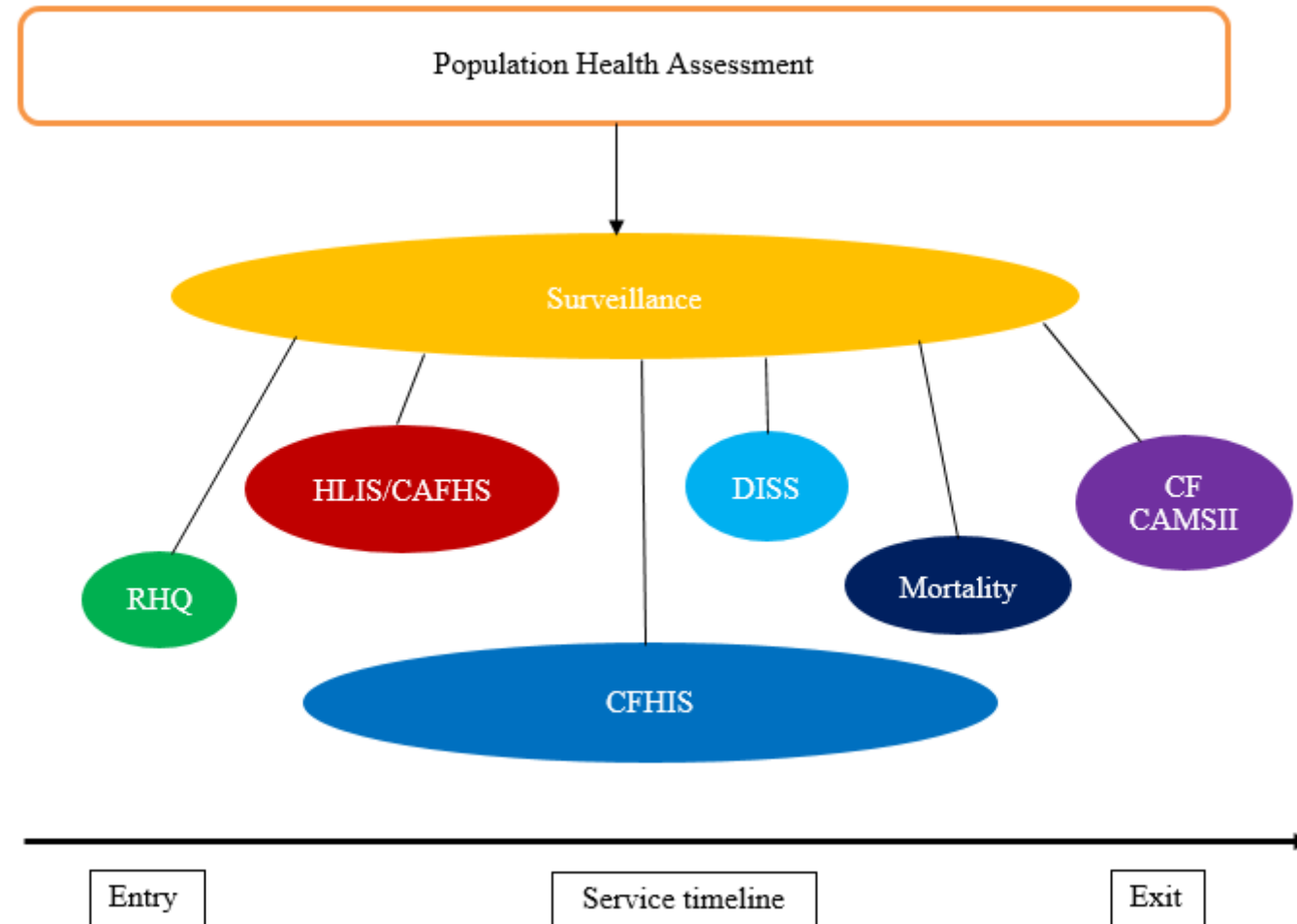


Organization: Public Health in the CAF





Health Surveillance in the Canadian Armed Forces (CAF)





Measuring Health

1. Recruit Health Questionnaire (RHQ)

- A voluntary questionnaire given to all recruits in their first week of basic training with a focus on health behavioural risk factors and risk factors for medically unexplained physical symptoms (MUPS)
- Originated in 2003 due to a need for baseline behavioural risk factor information and due to concerns about deployment-related illnesses
- Response rate in 80 to 90% range
- Consent allows linkage to other health databases
- 55,000 in cohort to date



Measuring Health

2. Health and Lifestyle Information Survey (HLIS)/Canadian Armed Forces Health Survey (CAFHS)

- Military is excluded from CCHS but there is still a need for a population health survey
- Conducted roughly every 5 years, CAFHS is most recent electronic version now contracted out to Statistics Canada
- Analysis and report writing is labour intensive
- CAFHS was in the field in 2019, COVID has delayed analysis, results will be out in 2022



Measuring Health

3. Canadian Forces Health Information System (CFHIS)

- Electronic health record in place since 2010
- Share the difficulty that all provinces have in analyzing diagnostic information
- Diabetes coded does not always indicate diabetes in the patient, need to develop algorithms and validate them
- All lab and periodic health assessment data is not collected as discrete data, some is scanned in
- Cross-sectional data needs to be turned into longitudinal for some analyses



Measuring Health

4. Disease and Injury Surveillance System (DISS)

- Deployment health surveillance system
- Developed in-house, therefore has a better diagnostic drop-down menu, can be analyzed same day, and produces shared NATO diagnostic categories (limitations of CFHIS)
- Will be incorporated into replacement of CFHIS software

5. Mortality Surveillance

- About 50 deaths a year
- Intent is to help guide health promotion efforts
- Few years out of date currently



Measuring Health

6. CF Cancer and Mortality Study (CFCAMS)

- After release from military, the health status of veterans is lost in the various provincial health care systems
- Disease clusters and specifically a couple of cancer clusters affecting people in pre-retirement years made this gap obvious
- Link through StatsCan anyone with Regular or Class C Reserve service since 1972 to national cancer and mortality registries (and more recently to ambulatory care and hospital discharge data) in collaboration with Veterans Affairs Canada, over 300K in cohort
- Suicide has been the focus recently but all-cause mortality is below the general Canadian population rate as expected for an occupational cohort



Measuring Health

7. Other Epidemiology Activities

- Cluster and outbreak investigations
- Outbreaks in conjunction with Communicable Disease section for additional resources including an entymologist
- Clusters in conjunction with Occupational and Environmental Health section who have an industrial hygienist and a toxicologist
- Ad hoc information requests, most of it related to information that only the electronic health record can answer
- Investigating data warehouse and a dashboard to ease this demand but both require additional human resources



Health Issues

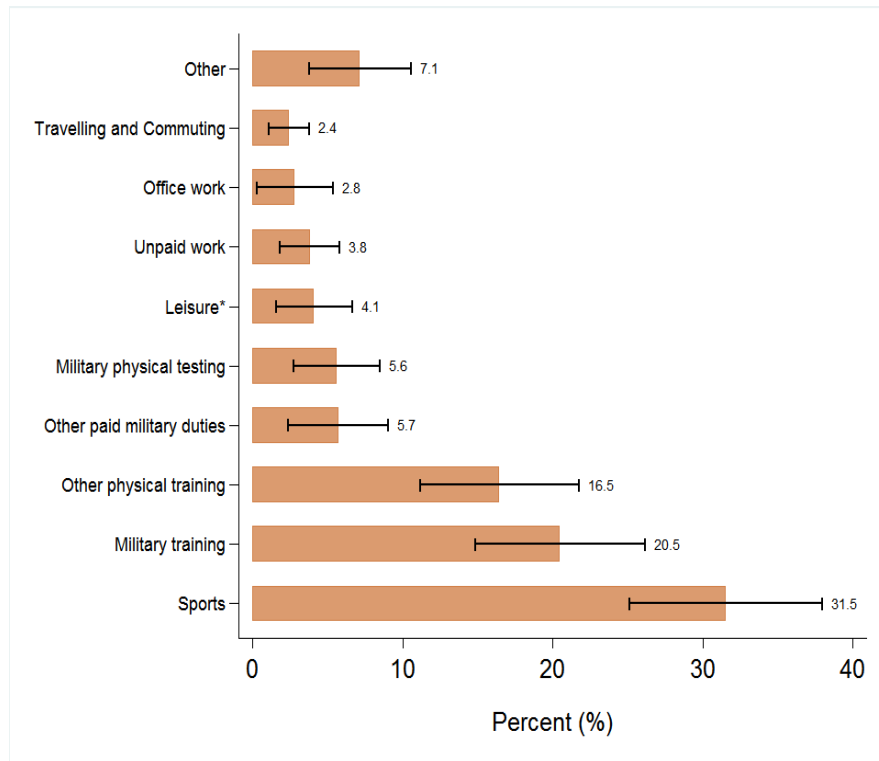
1. Injuries

- Main cause for inability to deploy and an important cause for release
- Both acute injuries and repetitive strain injuries (RSIs) well above civilian rate
- Injury surveillance and health promotion have become a priority

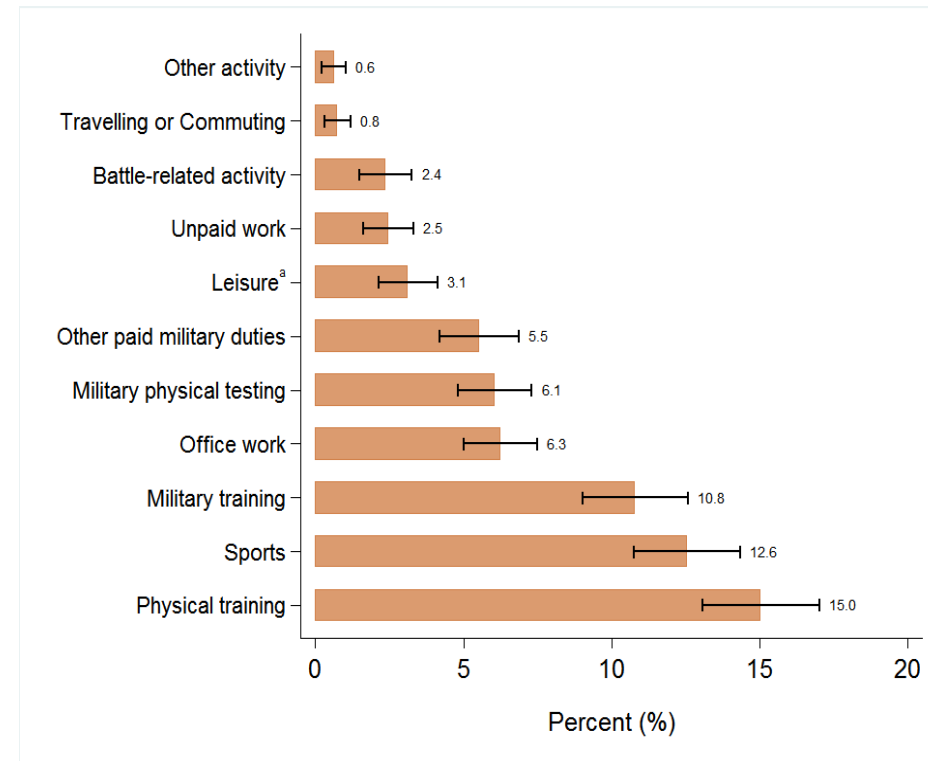


Results – Injuries (HLIS 2013/14)

Type of activity personnel were engaged in when they sustained their most serious acute injury



Type of activity personnel were engaged in when they sustained a RSI





Health Issues

2. Mental Health

- tobacco use is declining as in the general Canadian population, 4/5 of CAF members start before joining
- Trends for alcohol use are less clear
- Depression, anxiety, and PTSD are second most common cause of inability to deploy and a common cause for medical release from CAF
- A separate Directorate of Mental Health looks at epidemiology, research, quality of care in this area



Tobacco Use

Percentage of current smokers^a among Regular Force personnel

HLIS	Percent (95% CI) ^b
2004	25.3 (23.1-27.7)
2008/9	23.0 (19.9-26.5)
2013/14	17.6 (15.5-19.9)*

^aCurrent smokers = daily or occasional.

^bEstimates standardized to the age, sex, and rank distribution of the 2013 Regular Force population.

*2013/14 estimate significantly lower than in 2004 & 2008/9.

HLIS 2013/14



Tobacco Use (HLIS 2013/14)

Percentage of current smokers who started smoking during specific military activities after joining the Canadian Armed Forces





Results – Alcohol Use

Percentage of Regular Force personnel who exceeded the Low Risk Drinking Guidelines for acute effects of alcohol use^a

HLIS	Percent (95% CI)^b
2004	28.3 (25.8-30.8)
2008/9	26.8 (23.4-30.3)
2013/14	23.5 (21.2-25.9)*

^aNo more than 4 drinks on any given day for males, and no more than 3 drinks on any given day for females.

^bEstimates standardized to the age, sex, and rank distribution of the 2013 Regular Force population.

*2013/14 estimate unchanged from 2008/9, but significantly lower than in 2004.

HLIS 2013/14



Results – Alcohol Use

Percentage of Regular Force personnel who exceeded the AUDIT score^a

HLIS	Percent (95% CI)^b
2004	15.7 (13.7-17.9)
2008/9	17.3 (14.5-20.4)
2013/14	19.9 (17.7-22.4)*

^aAUDIT (Alcohol Use Disorder Identification Test).

^bEstimates standardized to the age, sex, and rank distribution of the 2013 Regular Force population.

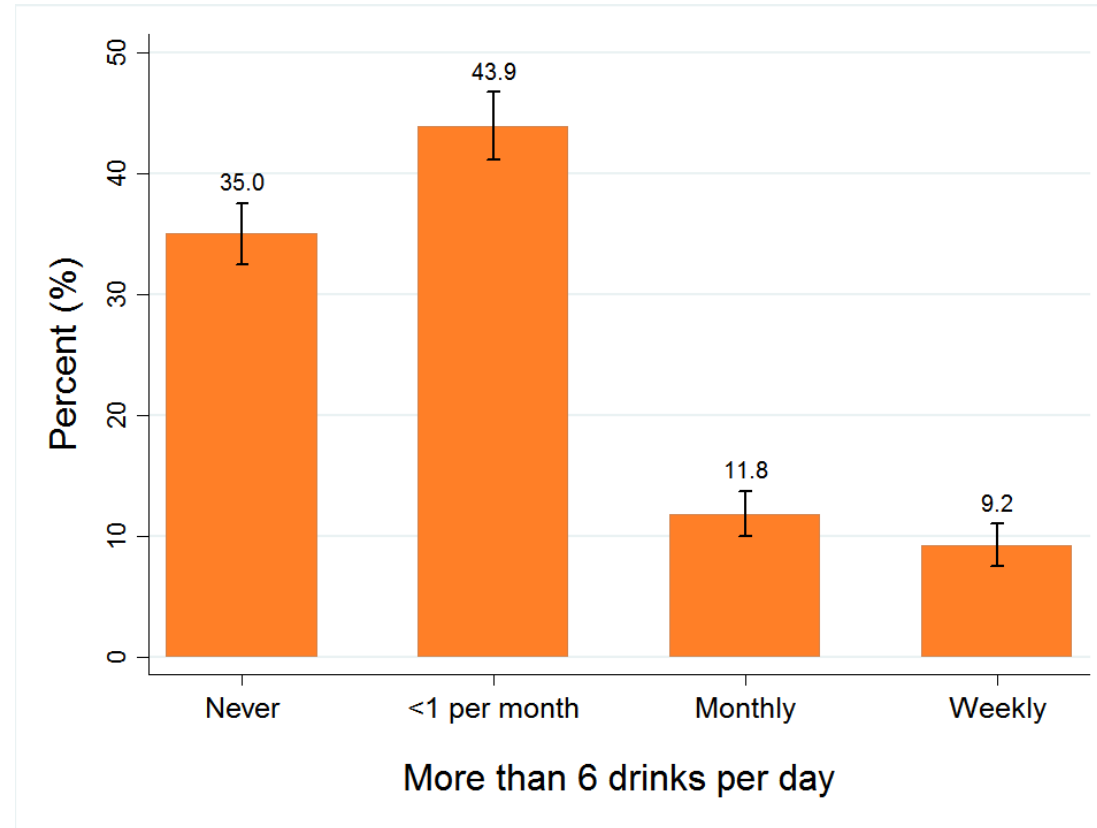
*2013/14 estimate significantly higher than in 2004.

HLIS 2013/14



Results – Alcohol Use

Frequency of binge drinking^a among Regular Force personnel



^aBinge drinking defined as 6 or more alcoholic drinks on one occasion.
HLIS 2013/14



Stress and Job Satisfaction

Women in the CAF were more likely than men to **report high levels of life stress**



MEN



WOMEN

Proportion of CAF members who reported that most days were "quite a bit" or "extremely" stressful

About **2 in 3** men and women stated that, in the past 12 months, they were satisfied or very satisfied with their job or main activity in the CAF. Those aged **50 years or older** were more likely to report **high job satisfaction**.



High job satisfaction, by age group

17 to 29 **60%**

30 to 39 **62%**

40 to 49 **68%**

50 and older **77%**

total **65%**



Health Issues

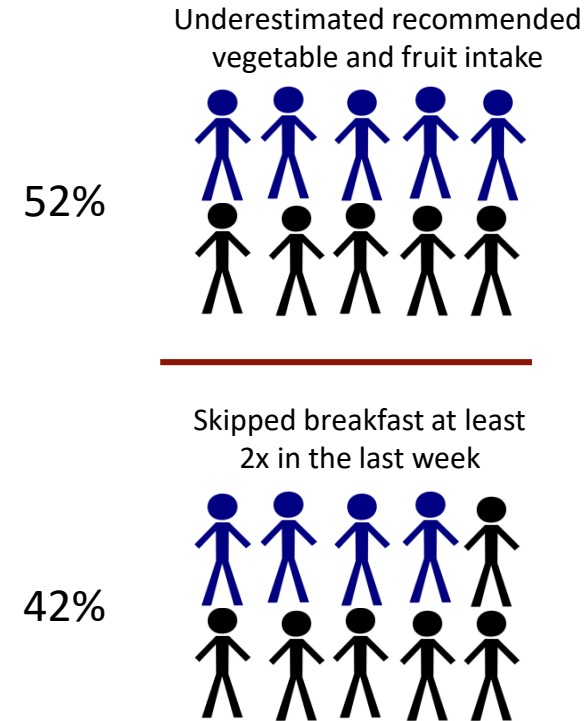
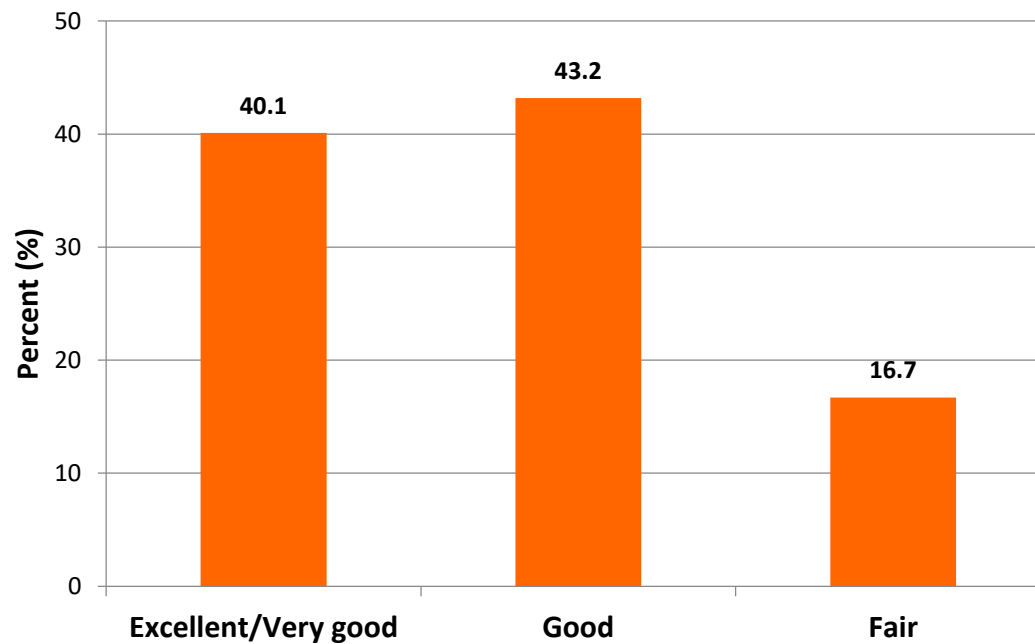
3. Nutrition, Physical Inactivity, Healthy Body Weight

- Although most CAF members self-rate their food intake as being healthy, reported intake of fruit and vegetables would suggest otherwise
- Most occupations in the military are largely sedentary, it is not as shown in the recruiting videos
- Most are given time off to maintain physical fitness and testing to meet occupational requirements is mandatory annually
- Overweight and obesity is a problem as expected in this obesogenic environment



Nutrition (HLIS 2013/14)

Self-rated eating habits of Regular Force personnel





Physical Activity

Physical activity level^a of Regular Force personnel by survey year

HLIS	Percent (95% CI) ^b		
	Inactive	Moderately Active	Active
2008/9	11.7 (9.2-14.2)	9.6 (7.5-11.6)	78.7 (75.7-81.7)
2013/14	7.2 (5.8-8.6)	7.6 (6.1-9.0)	85.2 (83.3-87.2)*

^a Physical activity measured using the Godin leisure-time exercise scale.

^b Estimates standardized to the age, sex, and rank distribution of the 2013 Regular Force population.

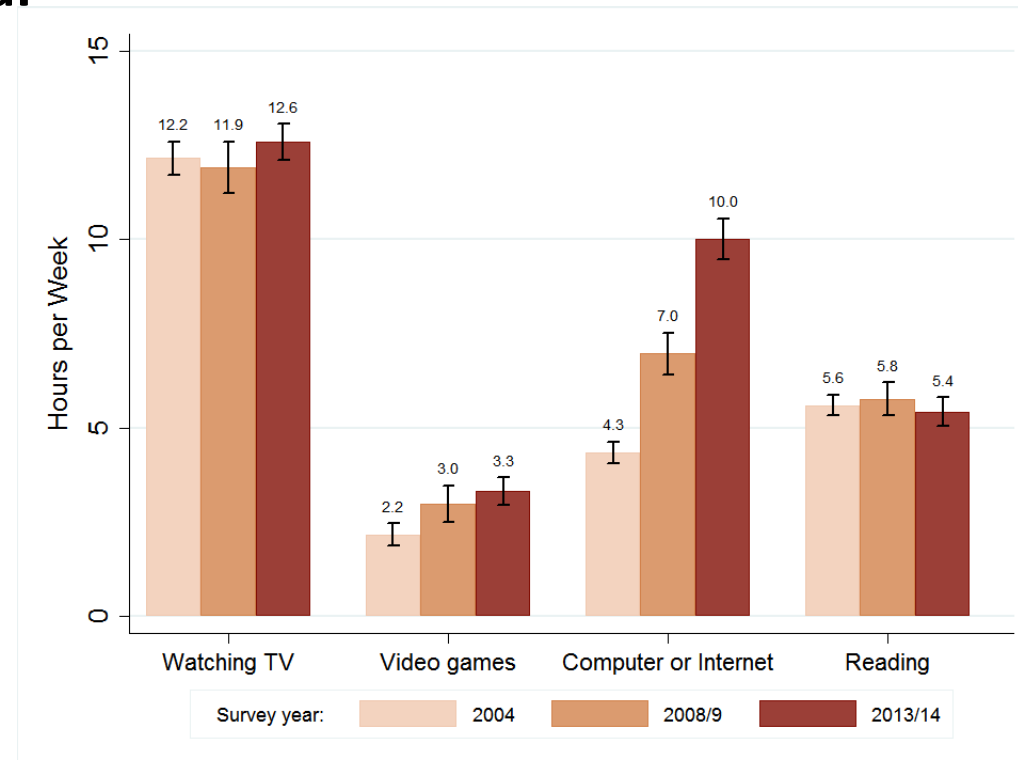
*2013/14 estimate significantly higher than in 2008/9.

HLIS 2013/14



Sedentary Activities

Average time spent in various activities while not at work, by survey year



^aEstimates standardized to the age, sex, and rank distribution of the 2013 Regular Force population.

*2013/14 estimate significantly higher than in 2008/9.

HLIS 2013/14



Obesity

BMI classification of Regular Force personnel by survey year

Percent (95% CI) ^a			
HLIS	Normal Weight	Overweight	Obese
2004	30.2 (27.9-32.5)	49.6 (47.0-52.2)	20.2 (18.1-22.2)
2008/9	28.7 (25.4-32.1)	48.3 (44.6-52.0)	22.9 (19.8-26.1)
2013/14	26.0 (23.7-28.3)	49.0 (46.2-51.7)	25.0 (22.6-27.4)*

^aEstimates standardized to the age, sex, and rank distribution of the 2013 Regular Force population.

*2013/14 estimate significantly higher than estimate in 2004.

HLIS 2013/14



Health Issues

4. Occupational Health

- other than injuries and mental health, hearing loss is the main occupational injury in terms of cost

5. Preventive Health Care Challenges

- An organized cancer screening program is difficult with a mobile population using local laboratory resources and differing provincial guidelines

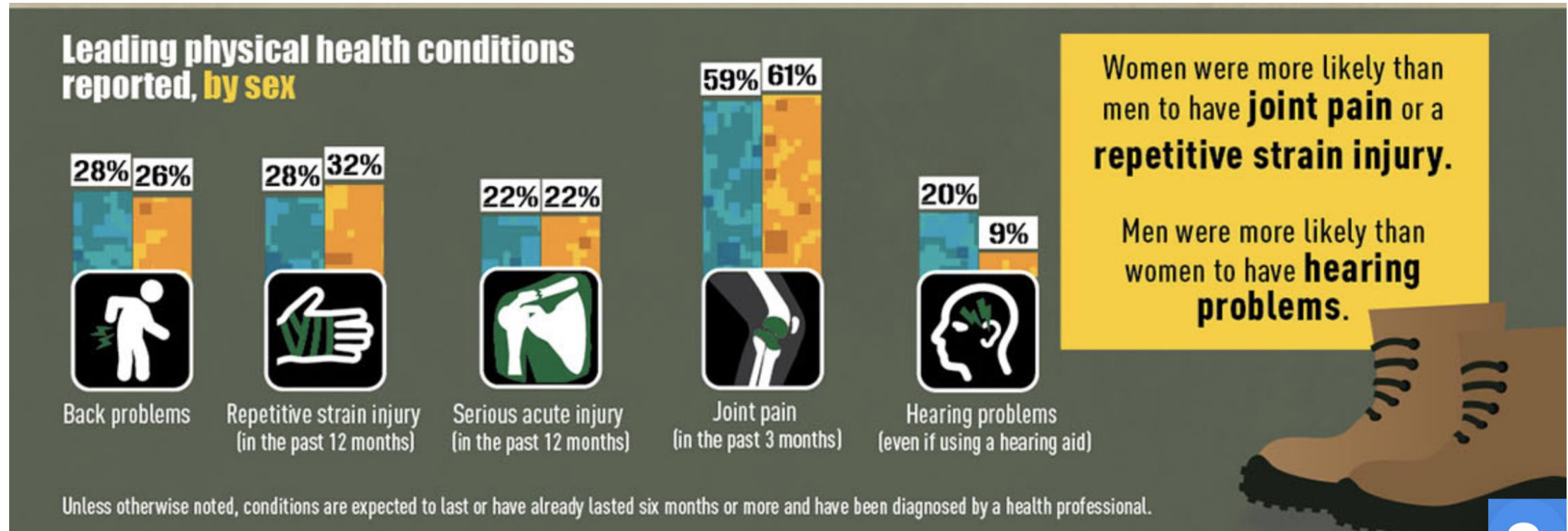


Poll Question #2





Leading physical health conditions in the CAF



Source: Canadian Armed Forces Health Survey, 2019 Statistics Canada



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Contact

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Questions ?

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Questions for You

Question 1

What proportion of Regular Force members are female?

Answer: 1. 6% 2. 12% 3. 16% 4. 26%

Question 2

Which of the following conditions is not a common cause of medical release from the Canadian Armed Forces?

Answer: 1. Mental health diagnoses 2. Obesity 3. Injuries